



Repair Manual Golf 2013 ➤

Electrical Equipment

Edition 01.2015



List of Workshop Manual Repair Groups

Repair Group

- 00 - General, Technical Data
- 27 - Battery, Starter, Generator, Cruise Control
- 90 - Instruments
- 92 - Wiper/Washer Systems
- 94 - Exterior Lights, Switches
- 96 - Interior Lights, Switches
- 97 - Wiring



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



Contents

00 - General, Technical Data	1
1 Safety Precautions	1
1.1 High Voltage Vehicles Safety Precautions	1
1.2 Safety Precautions, Working Near High Voltage Components	1
1.3 Start/Stop System Safety Precautions	2
1.4 Road Test with Testing Equipment Safety Precautions	2
1.5 HID Headlamp Usage and Safety Precautions	2
2 Repair Information	5
2.1 Contact Corrosion	5
2.2 Wire Routing and Securing	5
3 Battery	6
3.1 Battery General Information	6
3.2 Battery Types	6
27 - Battery, Starter, Generator, Cruise Control	7
1 Battery	7
1.1 Overview - Battery	7
1.2 Battery, Removing and Installing	10
1.3 Battery, Disconnecting and Connecting	16
1.4 Battery Tray, Removing and Installing	19
1.5 Battery, Checking	20
1.6 Battery, Charging	20
1.7 Ground Cable with Battery Monitoring Control Module J367 , Removing and Installing	20
1.8 Battery Monitoring Control Module J367 , Adapting	23
2 Generator	24
2.1 Overview - Generator	24
2.2 Generator, Removing and Installing	25
2.3 Generator, Checking	32
2.4 Ribbed Belt Pulley, Removing and Installing	33
2.5 Voltage Regulator, Removing and Installing	38
3 Starter	41
3.1 Overview - Starter	41
3.2 Starter, Removing and Installing	43
4 Cruise Control System	48
5 Start/Stop System	49
5.1 General Description for Start/Stop System	49
5.2 Component Location Overview - Start/Stop System	49
6 Adaptive Cruise Control	50
6.1 Component Location Overview - Adaptive Cruise Control (ACC)	50
6.2 Control Module for Adaptive Cruise Control, Removing and Installing	53
6.3 Adaptive Cruise Control, Calibrating	59
7 Special Tools	60
90 - Instruments	63
1 Instrument Cluster	63
1.1 Overview - Instrument Cluster	63
1.2 Instrument Cluster KX2 , Removing and Installing	63
2 Horn	66
2.1 Overview - Horn	66
2.2 High Tone Horn H2 / Low Tone Horn H7 , Removing and Installing	66
92 - Wiper/Washer Systems	68



1	Windshield Wiper System	68
1.1	Overview - Windshield Wiper System	68
1.2	Wiper, Moving Into Service Position	71
1.3	Wiper Blade, Removing and Installing	71
1.4	Windshield Wiper Arms, Removing and Installing	72
1.5	Windshield Wiper Arms, Adjusting	73
1.6	Windshield Wiper Motor V , Removing and Installing	75
1.7	Windshield Wiper Motor, Replacing	76
1.8	Windshield Wiper Motor, Deactivating Alternating Park Position Function	77
1.9	Rain/Light Recognition Sensor, Removing and Installing	78
1.10	Rain/Light Recognition Sensor, Servicing	84
2	Windshield Washer System	88
2.1	Overview - Windshield Washer System	88
2.2	Windshield Washer Fluid Reservoir, Removing and Installing	93
2.3	Windshield Washer Fluid Level Sensor, Removing and Installing	96
2.4	Windshield Washer Pump, Removing and Installing	98
2.5	Spray Nozzles, Removing and Installing	99
2.6	Spray Nozzles, Adjusting	100
3	Rear Window Wiper System	101
3.1	Overview - Rear Window Wiper System	101
3.2	Wiper Blade, Removing and Installing	102
3.3	Windshield Wiper Arm, Removing and Installing	102
3.4	Wiper Arm, Adjusting	103
3.5	Rear Window Wiper Motor V12 , Removing and Installing	103
4	Rear Window Washer System	105
4.1	Overview - Rear Window Washer System	105
4.2	Windshield Washer Fluid Reservoir, Removing and Installing	108
4.3	Rear Window Washer Pump, Removing and Installing	108
4.4	Spray Nozzle, Removing and Installing	109
4.5	Spray Nozzle, Adjusting	110
5	Headlamp Washer System	111
5.1	Overview - Headlamp Washer System	111
5.2	Windshield Washer Fluid Reservoir, Removing and Installing	113
5.3	Headlamp Washer Pump V11 , Removing and Installing	113
5.4	Lift Cylinder, Removing and Installing	115
5.5	Spray Nozzles, Removing and Installing	118
5.6	Spray Nozzles, Adjusting	118
6	Washer Fluid Hoses	119
6.1	Washer Fluid Hoses, Servicing	119
7	Special Tools	120
94	Exterior Lights, Switches	121
1	Headlamp	122
1.1	Overview - Headlamp	122
1.2	Headlamp, Removing and Installing	137
1.3	Headlamp, Adjusting	140
1.4	Headlamp Installed Position, Correcting	140
1.5	Left/Right Front Turn Signal Bulb M5 / M7 , Removing and Installing	142
1.6	Headlamp Housing Repair Kit, Installing	144
1.7	Headlamp, Changing from RHD to LHD	147
1.8	Headlamp, Changing from LHD to RHD	149
1.9	Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing	151
1.10	Low Beam Headlamp Bulb, Removing and Installing	156
1.11	Left/Right High Beam Headlamp Bulb M30 / M32 , Removing and Installing	161
1.12	Left/Right HID Headlamp Bulb L13 / L14 , Removing and Installing	164



1.13	Left/Right Position Lamp Bulb M1 / M3 , Removing and Installing	166
1.14	Left/Right Daytime Running Lamp Bulb L174 / L175 , Removing and Installing	166
1.15	Left/Right Daytime Running Lamp and Position Lamp LED Module L176 / L177 , Removing and Installing	168
1.16	Left/Right Low Beam Headlamp Reflector Motor V294 / V295 , Removing and Installing	169
1.17	Left/Right Cornering Lamp Bulb L148 / L149 , Removing and Installing	169
1.18	Left/Right HID Headlamp Control Module J343 / J344 , Removing and Installing	170
1.19	Left/Right Headlamp Power Output Stage J667 / J668 , Removing and Installing	171
1.20	Left/Right Daytime Running Lamp and Position Lamp Control Module J860 / J861 , Removing and Installing	172
1.21	Headlamp Power Output Stage 2, Removing and Installing	173
1.22	Left/Right LED Headlamp Power Output Module 1 A31 / A32 , Removing and Installing	174
1.23	Sensor for Left/Right Variable Headlamp Positioning Motor G695 / G696 , Removing and Installing	175
1.24	Left/Right Variable Headlamp Positioning Motor V446 / V447 , Removing and Installing	175
1.25	Left/Right Swivel Module Position Sensor G474 / G475 , Removing and Installing	176
1.26	Left/Right Adaptive Cornering Lamp Motor V318 / V319 , Removing and Installing	176
2	Fog Lamp	177
2.1	Overview - Fog Lamps	177
2.2	Fog Lamp, Removing and Installing	178
2.3	Left/Right Front Fog Lamp Bulb L22 / L23 , Removing and Installing	180
3	Exterior Rearview Mirror Lamps	181
3.1	Overview - Exterior Rearview Mirror Lamps	181
3.2	Turn Signal, Removing and Installing	182
3.3	Entry Lamp in Exterior Rearview Mirror, Removing and Installing	183
4	Tail Lamps	185
4.1	Overview - Body Tail Lamps	185
4.2	Overview - Rear Lid Tail Lamps	188
4.3	Rear Lid Tail Lamp, Removing and Installing	189
4.4	Tail Lamp, Correcting Installed Position	190
4.5	Tail Lamp, Removing and Installing	191
4.6	Right/Left Tail Lamp Bulb M2 / M4 , Removing and Installing	192
4.7	Left/Right Rear Fog Lamp Bulb L46 / L47 , Removing and Installing	193
4.8	Left/Right Brake/Tail Lamp Bulb M21 / M22 , Removing and Installing	194
4.9	Back-Up Lamp, Removing and Installing	195
4.10	Turn Signal Bulb, Removing and Installing	196
5	High-Mounted Brake Lamp	198
5.1	Overview - High-Mounted Brake Lamp	198
5.2	High-Mounted Brake Lamp, Removing and Installing	199
6	License Plate Lamp	202
6.1	Left/Right License Plate Lamp X4 / X5 , Removing and Installing	202
6.2	Left/Right License Plate Lamp Bulb X4 / X5 , Removing and Installing	202
7	Access/Start Authorization	204
7.1	Overview - Access/Start Authorization System	204
7.2	Overview - Keyless Access Authorization System	207
7.3	Access/Start System Interface J965 , Removing and Installing	210
7.4	Driver Exterior/Front Passenger Exterior Door Handle Touch Sensor G415 / G416 , Removing and Installing	211
7.5	Access/Start System Antenna 1 in Vehicle Interior R138 , Removing and Installing	212
7.6	Driver Access/Start System Antenna R134 , Removing and Installing	212
7.7	Front Passenger Access/Start System Antenna R135 , Removing and Installing	212
7.8	Access/Start System Antenna in Luggage Compartment R137 , Removing and Installing	212
7.9	Access/Start System Antenna in Rear Bumper R136 , Removing and Installing	213
8	Steering Column Switch Module	214



8.1	Overview - Steering Column Switch Module	214
8.2	Lock Cylinder, Removing and Installing	217
8.3	Ignition Switch Key Lock Solenoid N376 , Removing and Installing	218
8.4	Ignition/Starter Switch, Removing and Installing	219
8.5	Steering Column Switch Module, Removing and Installing	220
8.6	Steering Column Electronics Control Module J527 , Removing and Installing	225
8.7	Turn Signal Switch E2 , Removing and Installing	230
8.8	Cruise Control Switch E45 , Removing and Installing	232
8.9	Windshield Wiper Intermittent Mode Switch E22 , Removing and Installing	232
8.10	Anti-Theft Immobilizer Reader Coil D2 , Removing and Installing	233
8.11	Steering Lock Housing, Removing and Installing	233
9	Parking Aid	235
9.1	Overview - Parking Aid	235
9.2	Parking Aid Control Module J446 , Removing and Installing	239
9.3	Front Parking Aid Warning Buzzer H22 , Removing and Installing	240
9.4	Rear Parking Aid Warning Buzzer H15 , Removing and Installing	241
9.5	Front Parking Aid Sensor, Removing and Installing	242
9.6	Rear Parking Aid Sensor, Removing and Installing	243
10	Parallel Parking Assist	244
10.1	Overview - Parallel Parking Assist	244
10.2	Control Module, Removing and Installing	245
10.3	Front Sensor, Removing and Installing	245
10.4	Rear Sensor, Removing and Installing	246
11	Automatic Headlamp Range Control	247
11.1	Overview - Automatic Head Lamp Range Control	247
11.2	Headlamp Range Control Module J431 / Cornering Lamp and Headlamp Range Control Module J745 , Removing and Installing	249
12	Trailer Hitch	252
12.1	Overview - Trailer Hitch Socket	252
12.2	Trailer Socket U10	252
12.3	Towing Recognition Control Module J345 , Removing and Installing	253
13	Blind Spot Detection	254
13.1	Overview - Blind Spot Detection	254
13.2	Blind Spot Detection Warning Lamp in Left/Right Exterior Mirror K303 / K304 , Removing and Installing	255
13.3	Blind Spot Detection Control Module J1086 / Blind Spot Detection Control Module 2 J1087 , Removing and Installing	255
13.4	Blind Spot Detection, Calibrating	256
14	Special Tools	263
96 - Interior Lights, Switches		265
1	Lamps	265
1.1	Overview - Instrument Panel Lamps	265
1.2	Overview - Front Door Lamps	267
1.3	Overview - Rear Door Lamps	268
1.4	Overview - Center Console Lamps	269
1.5	Overview - Luggage Compartment Lamps	270
1.6	Overview - Roof Trim Panel Lamps	271
1.7	Glove Compartment Lamp W6 , Removing and Installing	272
1.8	Glove Compartment Lamp W6 Bulb, Replacing	272
1.9	Left/Right Front Footwell Lamp K268 / K269 , Removing and Installing	273
1.10	Left/Right Front Footwell Illumination Bulb L151 / L152 , Removing and Installing	274
1.11	Central Locking -SAFE- Indicator Lamp K133 , Removing and Installing	275
1.12	Left/Right Front Entry Lamp W31 / W32 , Removing and Installing	275
1.13	Driver/Front Passenger Door Warning Lamp W30 / W36 , Removing and Installing	277



1.14	Driver/Front Passenger Door Opener Illumination Bulb L108 / L109 , Removing and Installing	277
1.15	Left/Right Front Door Ambient Lighting Bulb 2 L203 / L204 , Removing and Installing	278
1.16	Left/Right Rear Entry Lamp W33 / W34 , Removing and Installing	278
1.17	Left/Right Rear Door Warning Lamp W37 / W38 , Removing and Installing	279
1.18	Selector Lever Transmission Range Position Display Unit Y26 , Removing and Installing	279
1.19	Luggage Compartment Lamp W3 , Removing and Installing	279
1.20	Driver/Front Passenger Vanity Mirror Lamp W20 / W14 , Removing and Installing	280
1.21	Front Interior Lamp W1 Bulb, Removing and Installing	281
1.22	Rear Interior Lamp W43 Bulb Removing and Installing	283
1.23	Left/Right Rear Reading Lamp W11 / W12 Removing and Installing	284
1.24	Ambient Lighting LED, Removing and Installing	284
2	Controls	287
2.1	Overview - Instrument Panel Controls	288
2.2	Overview - Front Door Controls	289
2.3	Overview - Rear Door Controls	290
2.4	Overview - Center Console Controls	291
2.5	Overview - Luggage Compartment Controls	292
2.6	Overview - Roof Trim Panel Controls	293
2.7	Rotary Light Switch EX1 , Removing and Installing	294
2.8	Headlamp Range Control Adjuster E102 , Removing and Installing	294
2.9	Driving Profile Selection Button E735 , Removing and Installing	295
2.10	Start/Stop Mode Button E693 , Removing and Installing	295
2.11	ASR/ESP Button E256 , Removing and Installing	295
2.12	Parking Aid Button E266 , Removing and Installing	295
2.13	Parallel Parking Assistance Button E581 , Removing and Installing	295
2.14	Driving Profile Selection Button E735 , Removing and Installing	296
2.15	Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing	296
2.16	Emergency Flasher Switch EX3 , Removing and Installing	297
2.17	Left/Right Seat Heating Button E653 / E654 , Removing and Installing	298
2.18	Glove Compartment Lamp Switch E26 , Removing and Installing	298
2.19	Exterior Rearview Mirror Adjuster EX11 , Removing and Installing	299
2.20	Power Window Control Head In Driver Door E512 , Removing and Installing	299
2.21	Front Passenger Power Window Button E716 , Removing and Installing	300
2.22	Driver Interior Locking Button E308 , Removing and Installing	300
2.23	Fuel Filler Door Release Button E319 , Removing and Installing	301
2.24	Interior Monitoring And Vehicle Inclination Deactivation Button E616 , Removing and Installing	301
2.25	Driver/Front Passenger Door Contact Switch F2 / F3 , Removing and Installing	302
2.26	Left/Right Rear Power Window Switch in Left Rear Door E52 / E54 , Removing and Installing	302
2.27	Left/Right Rear Door Contact Switch F10 / F11 , Removing and Installing	303
2.28	Electromechanical Parking Brake Button E538 / -AUTO HOLD- Button E540 , Removing and Installing	303
2.29	Start System Button E378 , Removing and Installing	304
2.30	Rear Lid Alarm Switch F123 , Removing and Installing	304
2.31	Driver/Front Passenger Vanity Mirror Lamp Contact Switch F147 / F148 , Removing and Installing	304
2.32	Sunroof Button E325 , Removing and Installing	305
2.33	Front Interior Lamp/Reading Lamp, Removing and Installing	305
2.34	Rear Interior/Reading Lamp, Removing and Installing	306
2.35	Right Front Reading Lamp Button E634 , Removing and Installing	307
3	Anti-Theft Alarm System	308
3.1	Overview - Interior Monitoring	308
3.2	Alarm Horn H12 , Removing and Installing	310



3.3	Anti-Theft Alarm System Sensor G578 , Removing and Installing	311
4	Driver Assistance Systems Front Camera	314
4.1	Driver Assistance Systems Front Camera, Removing and Installing	314
5	Cigarette Lighter and Socket	315
5.1	Cigarette Lighter U1 , Removing and Installing	315
5.2	Socket Illumination Bulb L42 , Removing and Installing	315
5.3	Rear Cigarette Lighter Illumination Bulb L32 , Removing and Installing	315
5.4	Socket U , Removing and Installing	315
6	Special Tools	316
97 - Wiring		317
1	Relay Carriers, Fuse Panels and E-Boxes	317
1.1	Overview - Relay Carriers, Fuse Panels and E-Boxes	317
1.2	E-Box, Removing and Installing	321
1.3	E-Box Relay and Fuse Panels, Removing and Installing	323
1.4	Relay and Fuse Panels Behind Instrument Panel, Removing and Installing	325
1.5	Battery Fuse Panel, Removing and Installing	327
2	Control Modules	328
2.1	Component Location Overview - Control Modules	328
2.2	Overview - Control Modules	332
2.3	Overview - Data Bus On Board Diagnostic Interface	334
2.4	Vehicle Electrical System Control Module J519 , Removing and Installing	334
2.5	Data Bus On Board Diagnostic Interface J533 , Removing and Installing	337
2.6	Vehicle Electrical System Control Module J519 Bracket, Removing and Installing	338
2.7	Vehicle Electrical System Control Module J519 Bracket, Replacing	340
2.8	Parking Aid Control Module J446 / Parallel Parking Assistance Control Module J791 Bracket, Removing and Installing	341
2.9	Engine Sound Generator Control Module J943 Removing and Installing, Vehicles with Active Sound, Golf GTD	341
3	Connectors	342
3.1	Wiring Harnesses and Connectors, Repairing	342
4	Connector Housings, Releasing and Disassembling	343
5	Antenna Wires, Repairing	344
6	Fiber-Optic Cable	345
7	Vehicle Diagnostic Tester	346
8	Revision History	347



00 – General, Technical Data

1 Safety Precautions

(Edition 01.2015)

⇒ [“1.4 Road Test with Testing Equipment Safety Precautions”,
page 2](#)

⇒ [“1.5 HID Headlamp Usage and Safety Precautions”,
page 2](#)

1.1 High Voltage Vehicles Safety Precautions

Danger to Life Through High Voltage

The high voltage system operates through high voltage. Electrocutation can cause death or very serious personal injury.

- Persons with internal electronic/medical life support devices or such devices carried on the body may not work on the high voltage system. Life support devices are, for example, internal analgesic pumps, implanted defibrillators, cardiac pacemakers, insulin pumps and hearing aids.
- The high voltage system must only be de-energized by an appropriately qualified technician.

Risk of Injury When the Engine Starts Unexpectedly

It is difficult to determine whether the ready to drive mode is activated in electric and hybrid vehicles. Risk of parts of the body getting pinched or pulled.

- Turn off the ignition.
- Set the ignition key outside of the vehicle interior.

Risk of Damaging the High Voltage Cables

Misuse can damage the insulation of high voltage cables or high voltage connectors.

- Never support objects on the high voltage cables and the high voltage connectors.
- Never support tools on the high voltage cables and the high voltage connectors.
- Never sharply bend or kink the high voltage cables.
- Pay attention to the coding when connecting the high voltage connectors.

1.2 Safety Precautions, Working Near High Voltage Components

Danger to Life Through High Voltage

The high voltage system operates through high voltage. Death or severe bodily injury caused by electrocution from damaged high voltage components and high voltage cables.

- Perform a visual inspection of the high voltage components and the high voltage cables.
- Never use tools that are for cutting, deformed, or sharp edged.
- Never use welding, soldering, thermal adhesive or hot air.



1.3 Start/Stop System Safety Precautions

When working on vehicles with the Start/Stop System, observe the following:



WARNING

Danger of personal injury because the engine can start automatically on vehicles with Stop/Start.

- ◆ *If necessary, the engine can be started automatically on vehicles with an activated Start/Stop System. A message will appear in the instrument cluster.*
- ◆ *Make sure that the Start/Stop System is deactivated when operating on the vehicle (turn off ignition, turn on ignition again if necessary).*

1.4 Road Test with Testing Equipment Safety Precautions

If measuring equipment are required during a test drive, observe the following:



WARNING

Distraction and inadequately secured measuring equipment poses an accident risk.

There is a risk due to deployment of the front passenger airbag in an accident.

- *Operating measuring equipment while driving creates a distraction.*
- *Unsecured measuring equipment can cause injuries.*
- ◆ *Always secure measuring equipment with a strap on the rear seat and have a second person in the rear seat operate it.*

1.5 HID Headlamp Usage and Safety Precautions



Note

Never change a headlamp bulb if you are not familiar with the corresponding steps, safety precautions and the tool.



WARNING

Danger to life due to high voltage.

- ◆ *It is necessary to disconnect the battery wire cable before working on gas-discharge headlamp components. These parts are marked with yellow high voltage symbols.*
- ◆ *Then switch the low beams on and back off. This removes any possible residual voltage.*
- ◆ *Turn off the ignition and all electrical consumers and remove the ignition key.*
- ◆ *The gas discharge lamp control module should not be operated without the gas-discharge lamp.*
- ◆ *Due to the high voltage, the gas discharge headlamp can only be operated inside the headlamp housing. When ignited, a gas discharge headlamp operates at over 28000 V).*



WARNING

Risk of injury due to burning, UV rays, blinding and explosion.

- ◆ *Due the high temperatures, absorption of UV rays, and the risk of blinding, the gas discharge lamp should only be operated inside the headlamp housing.*
- ◆ *Do not look into the beam of light. It may interfere with the ability to see for a significant period of time.*
- ◆ *Gas-discharge lamps are under pressure and can crack when bulbs are replaced.*
- ◆ *When removing and installing HID bulbs, always wear safety glasses and gloves.*



WARNING

Pollution risk.

- ◆ *Gas-discharge bulbs require special disposal. They contain metallic mercury (Hg) and traces of thallium.*
- ◆ *Do not destroy gas-discharge lamps. Avoid contact with burst glass bulbs.*
- ◆ *Observe disposal regulations.*
- ◆ *Dispose of gas discharge headlamps in suitable containers at an authorized collection site.*





Caution

- ◆ *Do not touch gas-discharge bulbs with bare hands. The remaining fingerprint would evaporate due to the heat of the operated bulb and condense on the reflector which would impair headlamp luminosity. Use clean cloth gloves to insert the gas-discharge lamp.*
- ◆ *Only replace faulty HID lamps with the same type of lamp. Bulb identification can be found on bulb socket or glass cone.*
- ◆ *Connectors must engage correctly when installed and must be checked for proper connection.*





2 Repair Information

⇒ **"2.1 Contact Corrosion", page 5**

⇒ **"2.2 Wire Routing and Securing", page 5**

2.1 Contact Corrosion

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

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

In addition, rubber or plastic parts and adhesive are made of materials that do not conduct electricity.

If there are doubts as to whether parts are suitable or not, use new parts. Refer to the Parts Catalog.

Observe:

- ◆ Use only original replacement parts that have been tested and are compatible with aluminum.
- ◆ Use only Volkswagen accessories.
- ◆ Damage resulting from contact corrosion is not covered by warranty.

2.2 Wire Routing and Securing

- ◆ Wires should be marked before they are removed to prevent confusing them and to guarantee the installation position. This also includes fuel lines, hydraulic lines, vacuum lines, Evaporative Emission (EVAP) systems and electrical lines. Make sketches or take photos if necessary.
- ◆ Due to the restricted space in the engine compartment, make sure to allow for sufficient clearance to all moving or hot components to avoid damaging the wires.



3 Battery

⇒ ["3.1 Battery General Information", page 6](#)

⇒ ["3.2 Battery Types", page 6](#)

3.1 Battery General Information



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery .

3.2 Battery Types



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery .



27 – Battery, Starter, Generator, Cruise Control

1 Battery

⇒ [“1.1 Overview - Battery”, page 7](#)

⇒ [“1.2 Battery, Removing and Installing”, page 10](#)

⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#)

⇒ [“1.4 Battery Tray, Removing and Installing”, page 19](#)

⇒ [“1.5 Battery, Checking”, page 20](#)

⇒ [“1.6 Battery, Charging”, page 20](#)

⇒ [“1.7 Ground Cable with Battery Monitoring Control Module J367, Removing and Installing”, page 20](#)

⇒ [“1.8 Battery Monitoring Control Module J367, Adapting”, page 23](#)

1.1 Overview - Battery

⇒ [“1.1.1 Overview - Battery”, page 7](#)

1.1.1 Overview Battery

1 - Retaining Bracket

2 - Bolt

- ☐ Tightening Specification: 15 Nm

3 - Nut

- ☐ Tightening Specification: 6 Nm

4 - Positive Cable

- ☐ With battery terminal
- ☐ Disconnecting and connecting. Refer to [⇒ “1.2.1 Battery, Removing and Installing”, page 10](#).

5 - Cap

- ☐ For positive wire

6 - Heat Protection Sleeve

7 - Cover

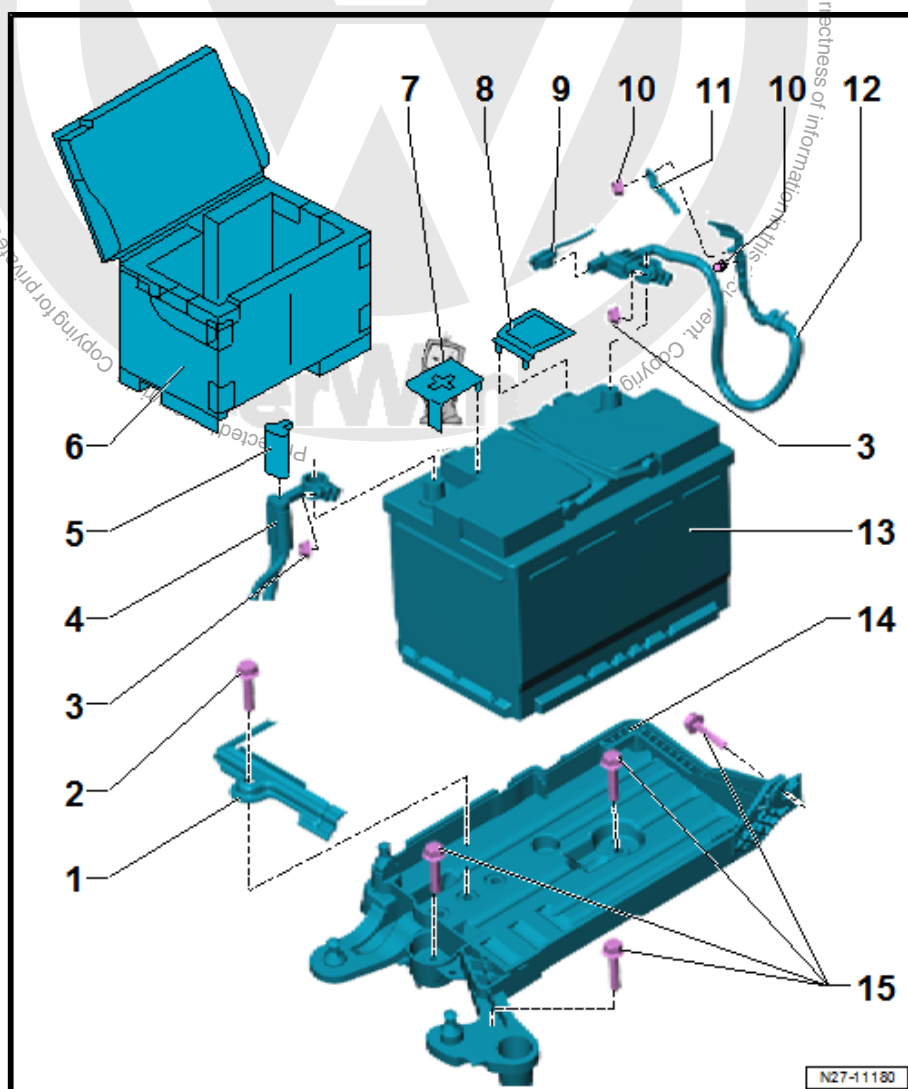
- ☐ For positive terminal

8 - Cover

- ☐ For negative terminal

9 - Connector

- ☐ For the Battery Monitoring Control Module - J367-
- ☐ Follow the sequence when connecting the Ground (GND) cable
⇒ [“1.3.1 Battery, Disconnecting and Connecting”, page 16](#)



N27-11180



10 - Nut

- ☐ Tightening Specification: 9 Nm.

11 - Ground (GND) Cable

12 - GND Cable

- ☐ With battery terminal and Battery Monitoring Control Module - J367-
- ☐ Removing and installing. Refer to [⇒ "1.7.1 Ground Cable with Battery Monitoring Control Module J367 , Removing and Installing", page 20](#) .
- ☐ Disconnecting and connecting. Refer to [⇒ "1.3.1 Battery, Disconnecting and Connecting", page 16](#) .
- ☐ Adapting Battery Monitoring Control Module - J367- . Refer to [⇒ "1.8 Battery Monitoring Control Module J367 , Adapting", page 23](#) .

13 - Battery - A-

- ☐ Removing and installing. Refer to [⇒ "1.2.1 Battery, Removing and Installing", page 10](#) .
- ☐ Disconnecting and connecting. Refer to [⇒ "1.3.1 Battery, Disconnecting and Connecting", page 16](#) .
- ☐ Replacing on a vehicle with the Start/Stop System. Refer to [⇒ page 11](#) .

14 - Battery Tray

- ☐ Removing and installing. Refer to [⇒ "1.4 Battery Tray, Removing and Installing", page 19](#) .

15 - Bolt

- ☐ Tightening Specification: 9 Nm.
- ☐ Quantity: 3



1.1.2 Overview - Battery, Vehicles with High Voltage System

1 - Battery Tray

2 - Battery Trim Panel

3 - Retaining Bracket

4 - Nut

- 20 Nm

5 - Battery - A-

- Removing and installing. Refer to
⇒ ["1.2.2 Battery, Removing and Installing, Vehicles with High Voltage System", page 12](#).
- Disconnecting and connecting. Refer to
⇒ ["1.3.2 Battery, Disconnecting and Connecting, High Voltage System", page 17](#).

6 - Cover

- For negative terminal

7 - Nut

- 6 Nm

8 - Battery Connector Cover

9 - Nut

- 9 Nm
- Quantity: 9

10 - GND Cable

- With battery terminal and Battery Monitoring Control Module - J367-
- Removing and installing. Refer to
⇒ ["1.7.2 Ground Cable with Battery Monitoring Control Module J367, Removing and Installing, Vehicles with High Voltage System", page 21](#).
- Disconnecting and connecting. Refer to
⇒ ["1.3.2 Battery, Disconnecting and Connecting, High Voltage System", page 17](#).
- Adapting Battery Monitoring Control Module - J367-. Refer to
⇒ ["1.8 Battery Monitoring Control Module J367, Adapting", page 23](#).

11 - Bolt

- Tightening specification -item 2- ⇒ [Item 2 \(page 321\)](#).

12 - Nut

- Tightening specification -item 3- ⇒ [Item 3 \(page 321\)](#).

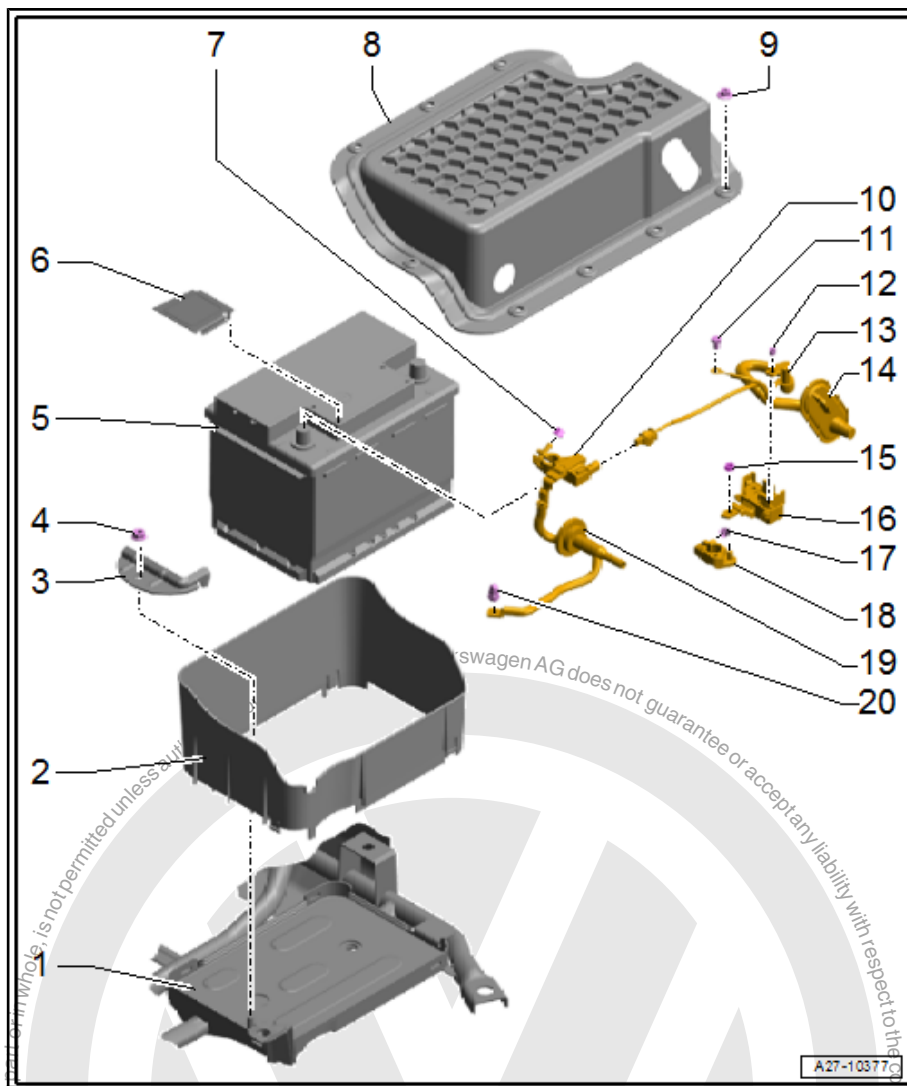
13 - Positive Cable

- With wiring harness
- Disconnecting and connecting. Refer to
⇒ ["1.2.2 Battery, Removing and Installing, Vehicles with High Voltage System", page 12](#).

14 - Grommet

15 - Nut

- Tightening specification -item 5- ⇒ [Item 5 \(page 321\)](#).





16 - Battery Fuse Panel

- ❑ Component location overview. Refer to
⇒ ["1.1.4 Component Location Overview - Battery Fuse Panel, Vehicles with High Voltage System", page 321](#).

17 - Nut

- ❑ 6 Nm

18 - Battery Terminal

- ❑ For positive wire

19 - Grommet

20 - Nut

- ❑ 9 Nm

1.2 Battery, Removing and Installing

⇒ ["1.2.1 Battery, Removing and Installing", page 10](#)

1.2.1 Battery, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1783 2-10Nm - VAG1783-

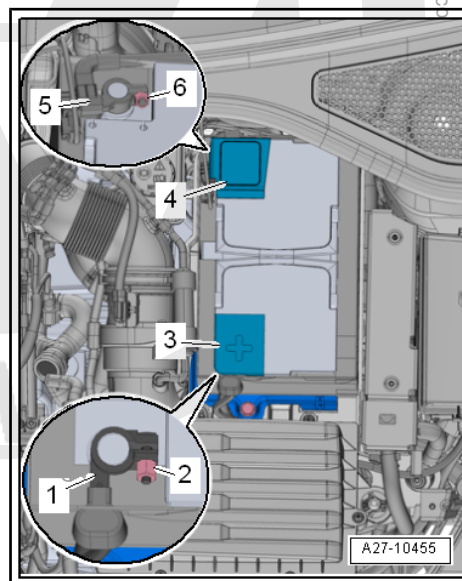


WARNING

Pay attentions when working on the battery to the warning messages and safety precautions. Refer to ⇒ [Electrical Equipment General Information; Rep. Gr. 27](#) ; Battery .

Removing

- Turn off the ignition.
- Then remove the ignition key, if equipped.
- Open the heat protection sleeve cover.
- Open the cover -4- over the battery negative terminal.
- Loosen the nut -6- a few turns and disconnect the Ground (GND) cable from the battery negative post -5-.
- Open the cover -3- over the battery positive terminal.
- Loosen the nut -2- several turns and remove the battery positive cable terminal -1- from the battery positive post.





- Pull the heat protection sleeve -4- slightly upward.
- Remove the bolt -2- from the bracket -1-.
- Remove the bracket -1-.
- Remove the Battery - A- -3- in the direction of travel from the battery tray and lift it upward out of the engine compartment.

Installing

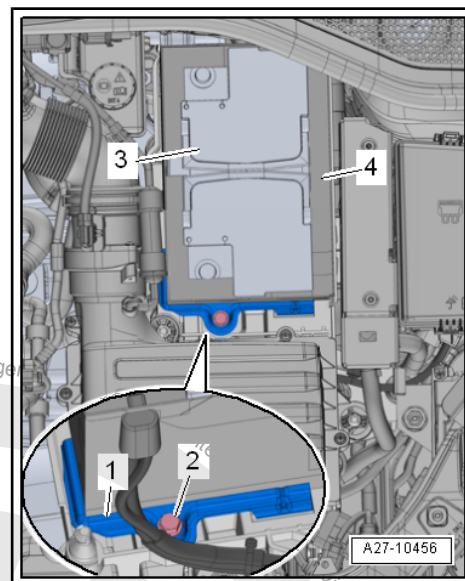
Install in the reverse order of removal. Note the following:



Caution

If battery is not secured properly, the following risks are possible:

- ◆ ***Shortened battery service life due damage caused by vibration (explosion hazard).***
- ◆ ***If the battery is not secured properly, the plates within the battery can be damaged.***
- ◆ ***Damage to the battery housing caused by bracket (possible electrolyte leakage, high subsequent costs).***
- ◆ ***Inadequate crash safety.***



Note

- ◆ ***Only maintenance-free batteries conforming to standards "TL82506" (from 12/1997) and "VW75073" (from 08/2001) may be installed.***
- ◆ ***Batteries from the replacement parts program have a bottom strip-adapter for adapting to different grip channels.***
- ◆ ***For information on how to use the base strip adapter. Refer to the Base Strip Adapter Owner's Manual.***

Vehicles with Start/Stop System



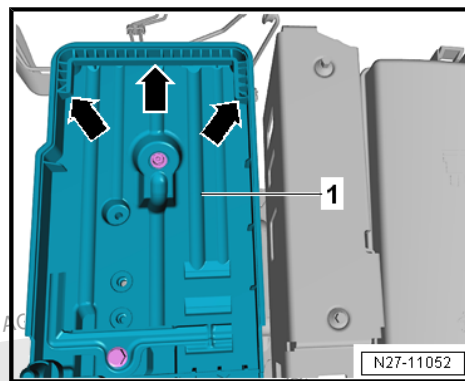
Note

- ◆ ***Vehicles with the Start/Stop System have a special battery due to the increased load on the cycles.***
- ◆ ***When replacing the battery, note the correct replacement part identification.***
- ◆ ***Batteries for vehicles with the Start/Stop System have "AGM" (Absorbent Glass Mat) or "EFB" (Enhanced Flooded Battery) marked on them.***

Continued for All Vehicles



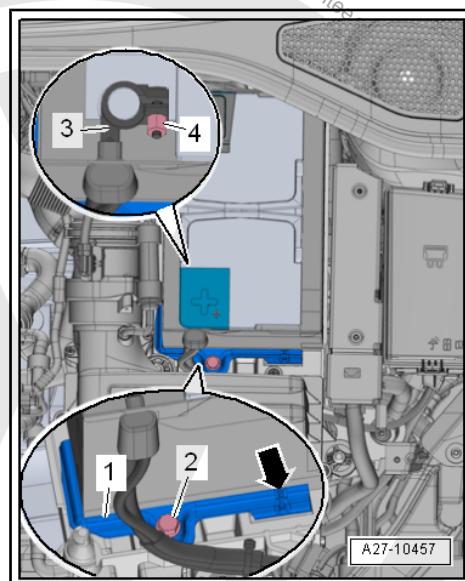
- Insert the Battery - A- into the battery tray -1- so that the battery base strip touches the rear and side stop -arrows-.
- It must not be possible to slide the Battery - A- rearward or to the side.



- Install the bracket -1-.
- The tab -arrow- on the bracket -1- must fit into the opening on the battery clamping strip.
- Tighten the bolt -2- for the bracket -1-.
- Checking the Battery - A- for secure seating.

Turn Off the Ignition and All Electrical Consumers, and Connect the Battery - A- in the Following Sequence:

- Install the battery positive cable terminal -3- on the battery positive terminal “+”.
- Tighten the nut -4-.
- Connect the Battery - A- . Refer to [⇒ “1.3.1 Battery, Disconnecting and Connecting”, page 16](#) .



Note

When the battery is replaced the Battery Monitoring Control Module - J367- must be adapted. Refer to [⇒ “1.8 Battery Monitoring Control Module J367, Adapting”, page 23](#) .

Tightening Specifications

- ◆ Refer to [⇒ “1.1.1 Overview - Battery”, page 7](#)

1.2.2 Battery, Removing and Installing, Vehicles with High Voltage System

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-



WARNING

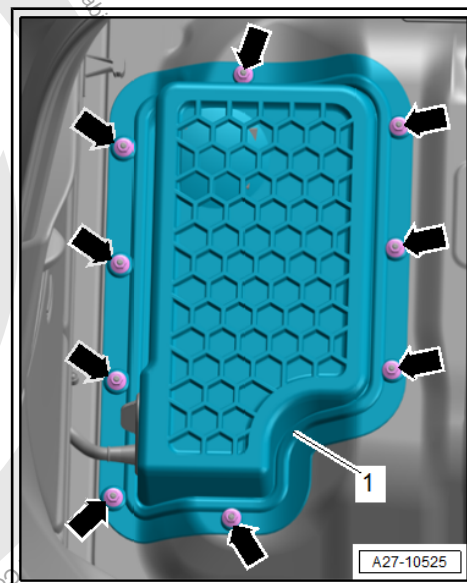
Pay attentions when working on the battery to the warning messages and safety precautions. Refer to ⇒ [Electrical Equipment General Information; Rep. Gr. 27 ; Battery](#) .

Removing

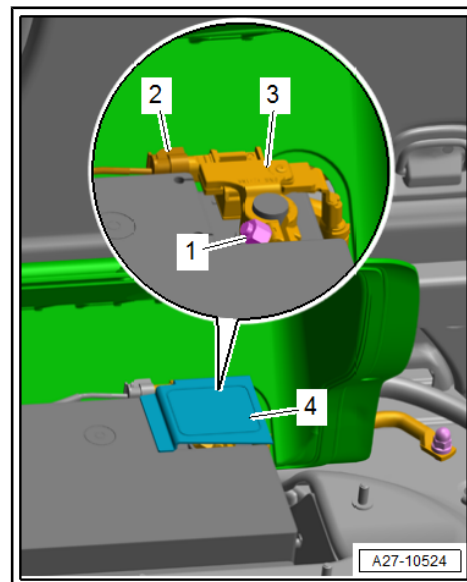
- Turn off the ignition.
- Then remove the ignition key, if equipped.



- Remove the luggage compartment floor from the vehicle toward the rear.
- Remove the nuts -arrows- from the battery cover -1-.
- Tilt the cover -1- upward as far as possible.



- Open the cover -4- over the battery negative terminal.
- Disconnect the connector -2- from the Battery Monitoring Control Module - J367- -3-.
- Loosen the nut -1- several turns and remove the battery Ground (GND) cable terminal from the battery negative terminal.



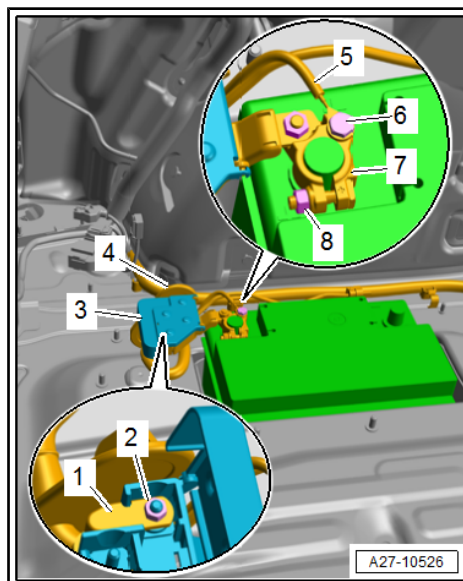


- Remove the bolt -6- and set aside the wire -5-.
- Open the cover -3-, remove the nut -2- and move the positive cable -1- to the side.
- Push through the grommet -4- in the cover outward.
- Guide the positive cable -1- out with the wiring harness through the opening in the cover.
- Loosen the nut -8- several turns and remove the battery positive cable terminal -7- from the battery positive post.



Note

The illustration does not show the battery cover.



- Remove the nut -2- on the bracket -3-.
- Remove the bracket -3-.
- Remove the Battery - A- -1- in the direction of travel from the battery tray and lift it upward out of the luggage compartment.

Installing

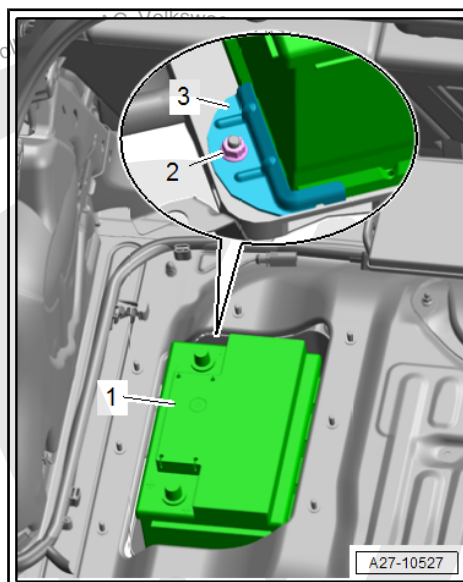
Install in the reverse order of removal. Note the following:



Caution

If battery is not secured properly, the following risks are possible:

- ◆ Shortened battery service life due damage caused by vibration (explosion hazard).
- ◆ If the battery is not secured properly, the plates within the battery can be damaged.
- ◆ Damage to the battery housing caused by bracket (possible electrolyte leakage, high subsequent costs).
- ◆ Inadequate crash safety.

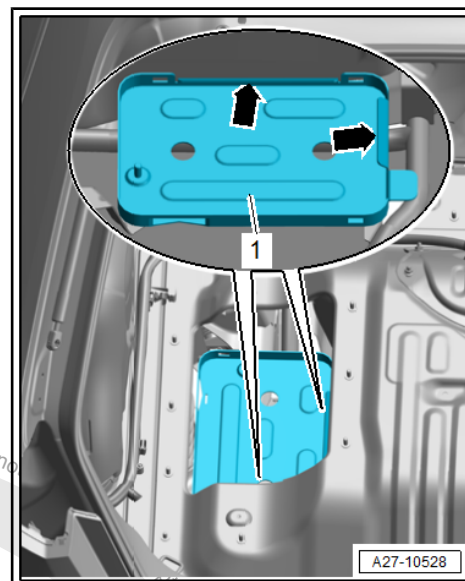


Note

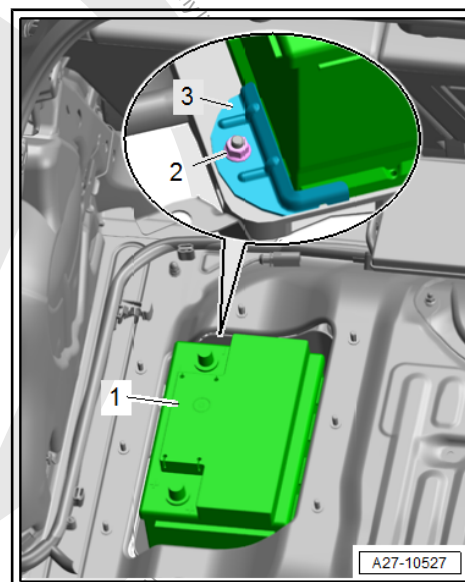
- ◆ Only maintenance-free batteries conforming to standards "TL82506" (from 12/1997) and "VW75073" (from 08/2001) may be installed.
- ◆ Batteries from the replacement parts program have a bottom strip-adaptor for adapting to different grip channels.
- ◆ For information on how to use the base strip adapter. Refer to the Base Strip Adapter Owner's Manual.



- Insert the Battery - A- into the battery tray -1- so that the battery base strip touches the rear and side stop -arrows-.
- It must not be possible to slide the Battery - A- rearward or to the side.



- Mount the bracket -3- for the battery -1-.
- Tighten the nut -2- for the bracket -3-.
- Checking the Battery - A- for secure seating.





Turn Off the ignition and All Electrical Consumers, and Connect the Battery - A- in the Following Sequence:

- Place the battery positive cable terminal -7- on the battery positive terminal “+” and tighten the nut -8-.
- Guide the positive cable -1- in with the wiring harness through the opening in the cover.
- Install the grommet -4- in the cover.
- Mount the positive cable -1-, tighten the nut -2- and close the cover -3-.
- Attach the wire -5- and tighten the bolt -6-.



Note

The illustration does not show the battery cover.

- Connect the Battery - A- . Refer to
⇒ [“1.3.2 Battery, Disconnecting and Connecting, High Voltage System”, page 17](#) .



Note

When the battery is replaced the Battery Monitoring Control Module - J367- must be adapted. Refer to
⇒ [“1.8 Battery Monitoring Control Module J367, Adapting”, page 23](#) .

Tightening Specifications

- ♦ Refer to
⇒ [“1.1.2 Overview: Battery, Vehicles with High Voltage System”, page 9](#)

1.3 Battery, Disconnecting and Connecting

⇒ [“1.3.1 Battery, Disconnecting and Connecting”, page 16](#)

1.3.1 Battery, Disconnecting and Connecting

Special tools and workshop equipment required

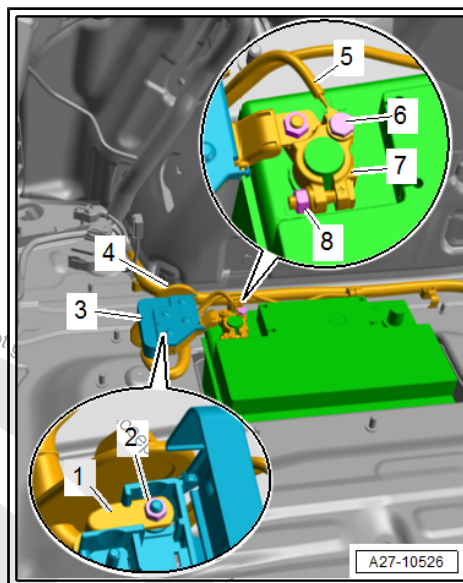
- ♦ Torque Wrench 1783 - 2-10Nm - VAG1783-



Caution

Follow all safety precautions when working on pyrotechnic components:

- ♦ When working on pyrotechnic components (for example the airbag, belt tensioner), it is necessary to disconnect the battery with the ignition turned on, contrary to the following description . Refer to ⇒ *Body Interior; Rep. Gr. 00 ; Safety Precautions; Pyrotechnic Components Safety Precautions* .



Disconnecting

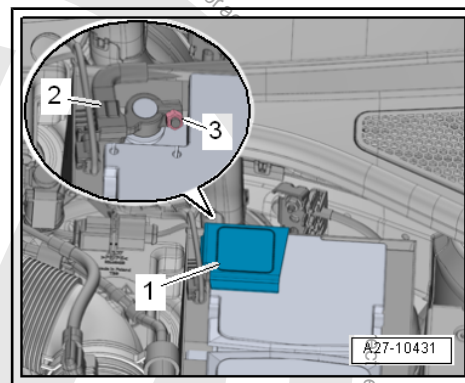
- Turn off the ignition.
- Then remove the ignition key, if equipped.



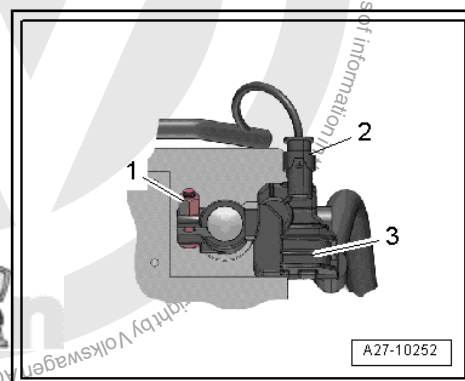
- Open the cover -1- over the battery negative terminal.
- Loosen the nut -3- several turns and remove the battery Ground (GND) cable terminal -2- from the battery terminal.

Connecting

Pay attention to the following when disconnecting the Battery - A- .



- Disconnect the connector -2- from the Battery Monitoring Control Module - J367- -3-
- Install the battery GND cable terminal by hand on the battery GND cable terminal “-”.
- Tighten the nut -1-.
- Reconnect the connector -2- to the Battery Monitoring Control Module - J367- .
- Turn on the ignition.
- Check time and adjust if necessary.
- Window, open and close all the way.
- Then, with the windows closed, pull the power window switch until the relay audibly switches.
- Check the convenience switching for the window regulators.



While comfort switching is operated, window must close without holding the power window switch.



Note

After connecting the power supply, the ABS warning lamp may only go out after the vehicle has been driven a few yards.

Tightening Specifications

- ◆ Refer to ⇒ [“1.1.1 Overview - Battery”, page 7](#)

1.3.2 Battery, Disconnecting and Connecting, High Voltage System

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-



Caution

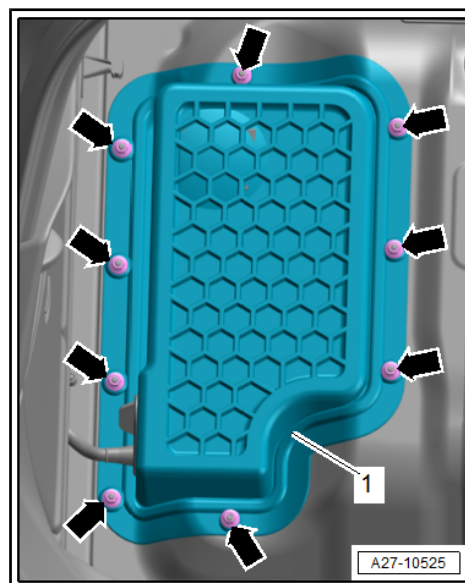
Follow all safety precautions when working on pyrotechnic components:

- ◆ *When working on pyrotechnic components (for example the airbag, belt tensioner), it is necessary to disconnect the battery with the ignition turned on, contrary to the following description . Refer to ⇒ Body Interior; Rep. Gr. 00 ; Safety Precautions; Pyrotechnic Components Safety Precautions .*

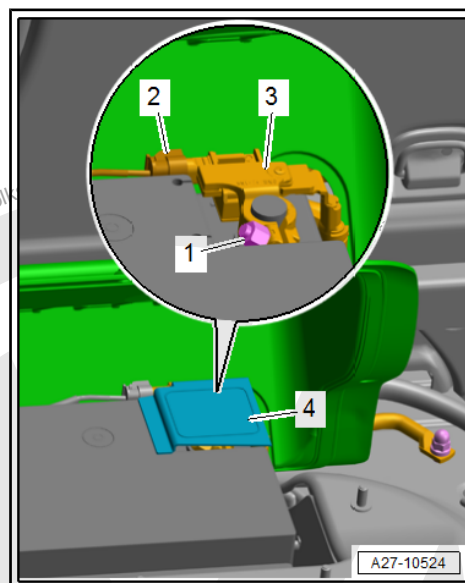


Disconnecting

- Turn off the ignition.
- Then remove the ignition key, if equipped.
- Remove the luggage compartment floor from the vehicle toward the rear.
- Remove the nuts -arrows- from the battery cover -1-.
- Tilt the battery cover -1- upward.



- Open the cover -4- over the battery negative terminal.
- Loosen the nut -1- several turns and remove the battery ground cable terminal -3- from the battery negative terminal.



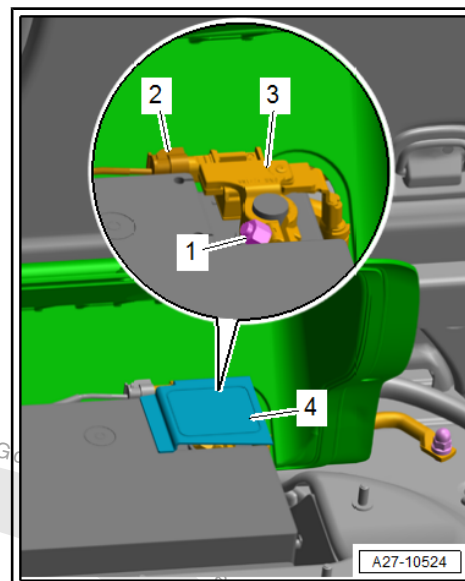


Connecting

Pay attention to the following when disconnecting the Battery - A- .

- Disconnect the connector -2- from the Battery Monitoring Control Module - J367- -3-.
- Install the battery Ground (GND) cable terminal by hand on the battery GND cable terminal “-”.
- Tighten the nut -1-.
- Reconnect the connector -2- to the Battery Monitoring Control Module - J367- -3-.
- Turn on the ignition.
- Check time and adjust if necessary.
- Window, open and close all the way.
- Then, with the windows closed, pull the power window switch until the relay audibly switches.
- Check the convenience switching for the window regulators.

While comfort switching is operated, window must close without holding the power window switch.



Note

After connecting the power supply, the ABS warning lamp may only go out after the vehicle has been driven a few yards.

Tightening Specifications

- ◆ Refer to
⇒ [“1.1.2 Overview - Battery, Vehicles with High Voltage System”, page 9](#)

1.4 Battery Tray, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

Removing

Vehicles with TDI Engine

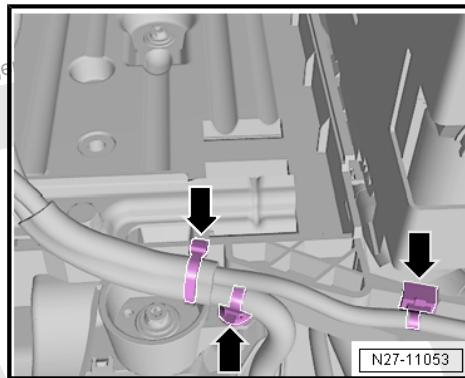
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 23 ; Air Filter; Air Filter Housing, Removing and Installing .

Continued for All Vehicles

- Remove the Battery - A- . Refer to
⇒ [“1.2 Battery, Removing and Installing”, page 10](#) .



- Free up the wiring harness from the battery tray -arrows-.



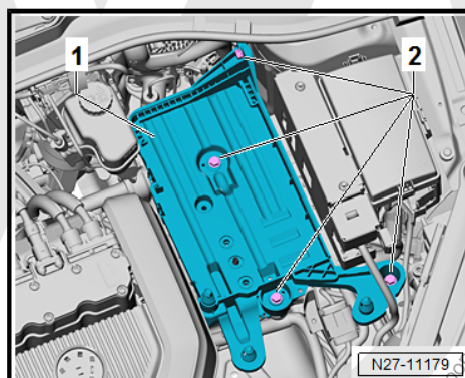
- Remove the bolts -2-.
- Remove the battery tray -1-.

Installing

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ Refer to ⇒ [“1.1.1 Overview - Battery”, page 7](#)



1.5 Battery, Checking

Checking the battery. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery, Checking .

The Battery - A- is checked by the Data Bus On Board Diagnostic Interface - J533- On Board Diagnostics (OBD) in the “Guided Fault Finding” mode using the Vehicle Diagnostic Tester .

1.6 Battery, Charging

Battery charging. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery, Charging .

1.7 Ground Cable with Battery Monitoring Control Module - J367- , Removing and Installing

⇒ [“1.7.1 Ground Cable with Battery Monitoring Control Module J367 , Removing and Installing”, page 20](#)

1.7.1 Ground Cable with Battery Monitoring Control Module - J367- , Removing and Installing

Special tools and workshop equipment required

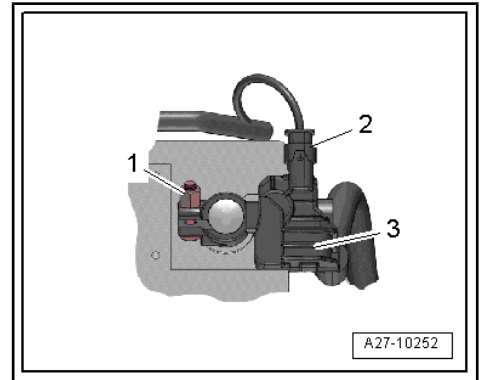
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

Removing

- Remove the Battery - A- . Refer to ⇒ [“1.2.1 Battery, Removing and Installing”, page 10](#) .



- Disconnect the connector -2- from the Battery Monitoring Control Module - J367- -3-.



- Remove the Ground (GND) cable -2- nut -1-.
- Remove the nut -3- and remove the GND cable with Battery Monitoring Control Module - J367- -4-.

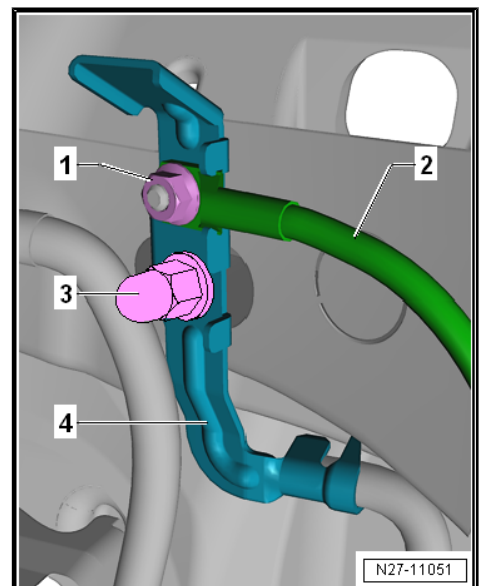
Installing

Install in the reverse order of removal. Note the following:

- Adapt the Battery Monitoring Control Module - J367- . Refer to
⇒ [“1.8 Battery Monitoring Control Module J367, Adapting”, page 23](#)

Tightening Specifications

- ◆ Refer to ⇒ [“1.1.1 Overview - Battery”, page 7](#)



1.7.2 Ground Cable with Battery Monitoring Control Module - J367- , Removing and Installing, Vehicles with High Voltage System

Special tools and workshop equipment required

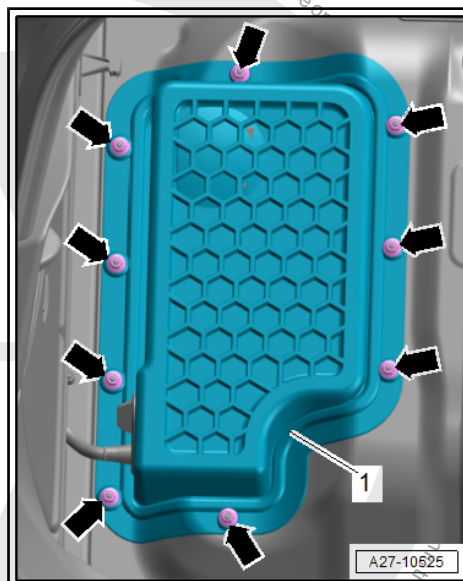
- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-

Removing

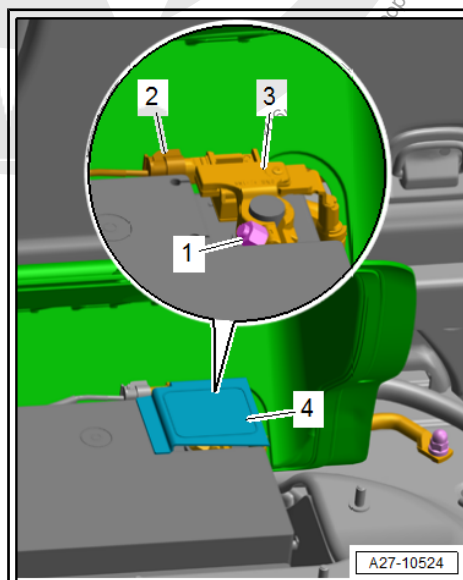
- Turn off the ignition.
- Then remove the ignition key, if equipped.
- Remove the luggage compartment floor from the vehicle toward the rear.



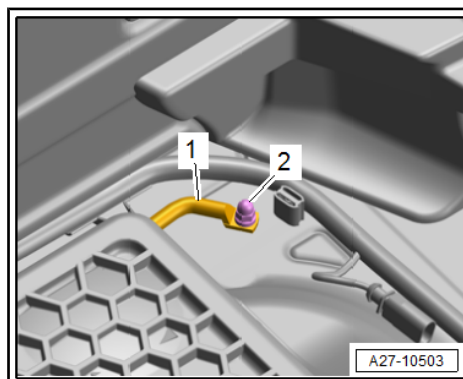
- Remove the nuts -arrows- from the cover -1-.
- Tilt the cover -1- upward as far as possible.



- Open the cover -4- over the battery negative terminal.
- Disconnect the connector -2- from the Battery Monitoring Control Module - J367- -3-.
- Loosen the nut -1- several turns and remove the battery ground cable terminal from the battery negative terminal.



- Remove the nut -2- from the Ground (GND) cable -1-.
- Push the grommet through in the cover inward.



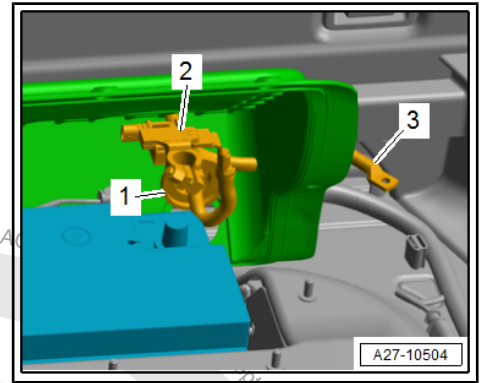


- Guide out the GND cable -3- from the cover.
- Remove the battery terminal -1- with the Battery Monitoring Control Module - J367- -2- and GND cable -3-.

Installing

Install in the reverse order of removal. Note the following:

- Connect the Battery - A- . Refer to
⇒ [“1.3.2 Battery, Disconnecting and Connecting, High Voltage System”, page 17](#) .
- Adapt the Battery Monitoring Control Module - J367- . Refer to
⇒ [“1.8 Battery Monitoring Control Module J367, Adapting”, page 23](#)



Tightening Specifications

- ◆ Refer to
⇒ [“1.1.2 Overview - Battery, Vehicles with High Voltage System”, page 9](#)

1.8 Battery Monitoring Control Module - J367- , Adapting

After installing a new start battery or a new Battery Monitoring Control Module - J367- the Battery Monitoring Control Module - J367- must be adapted.

- Connect the Vehicle Diagnostic Tester . Refer to
⇒ [“7 Vehicle Diagnostic Tester”, page 346](#) .
- Adapt the Battery Monitoring Control Module - J367- . Refer to Vehicle Diagnostic Tester



2 Generator

⇒ ["2.1 Overview - Generator", page 24](#)

⇒ ["2.2 Generator, Removing and Installing", page 25](#)

⇒ ["2.3 Generator, Checking", page 32](#)

⇒ ["2.4 Ribbed Belt Pulley, Removing and Installing", page 33](#)

⇒ ["2.5 Voltage Regulator, Removing and Installing", page 38](#)

2.1 Overview - Generator

⇒ ["2.1.1 Overview - Generator without Bushings", page 24](#)

⇒ ["2.1.2 Overview - Generator with Bushings", page 25](#)

2.1.1 Overview - Generator without Bushings

1 - Bolt

- ☐ Tightening Specification: 23 Nm
- ☐ Quantity: 4

2 - Generator - C-

- ☐ Removing and installing. Refer to
⇒ ["2.2 Generator, Removing and Installing", page 25](#).
- ☐ Checking. Refer to
⇒ ["2.3 Generator, Checking", page 32](#).
- ☐ Ribbed belt pulley, removing and installing. Refer to
⇒ ["2.4 Ribbed Belt Pulley, Removing and Installing", page 33](#).
- ☐ Voltage Regulator - C1- removing and installing. Refer to
⇒ ["2.5 Voltage Regulator, Removing and Installing", page 38](#).

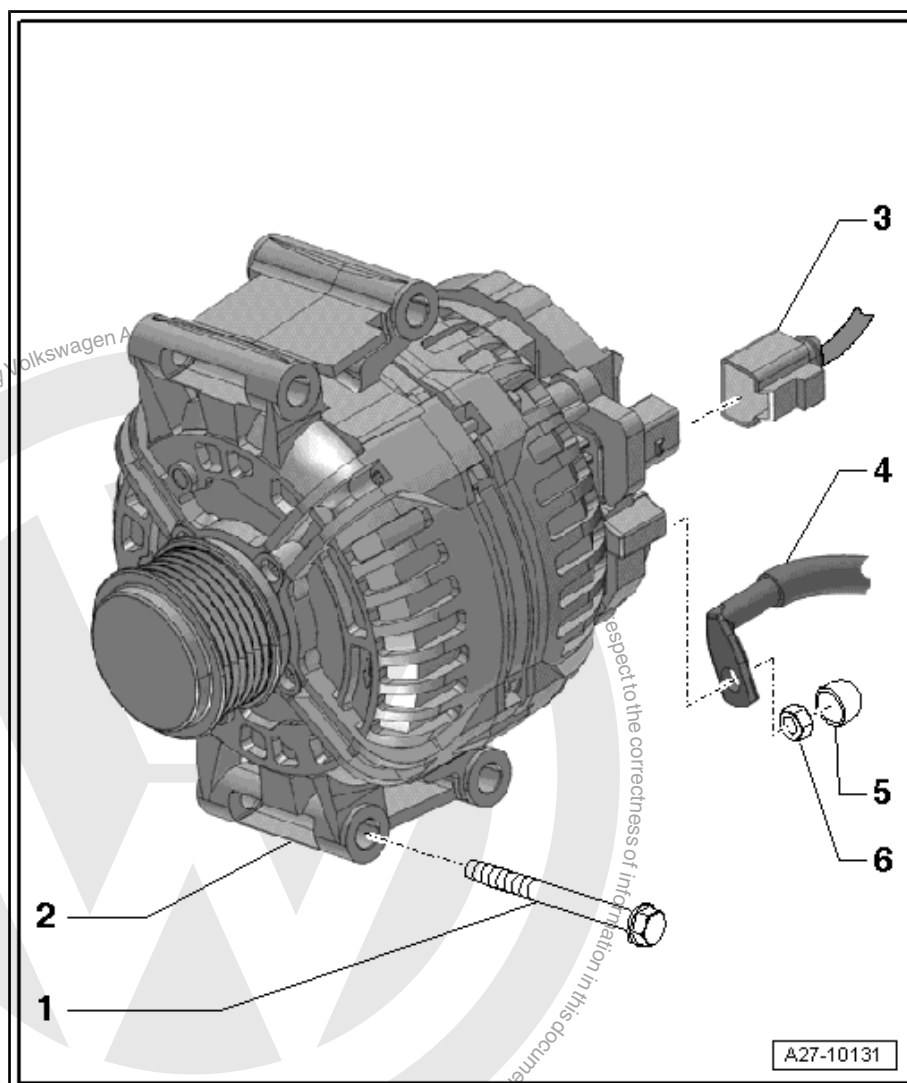
3 - Connector

4 - Terminal 30/B+

5 - Cap

6 - Nut

- ☐ Tightening Specification: 20 Nm





2.1.2 Overview - Generator with Bushings

1 - Generator - C-

- ☐ Removing and installing. Refer to
⇒ ["2.2 Generator, Removing and Installing", page 25](#).
- ☐ Checking. Refer to
⇒ ["2.3 Generator, Checking", page 32](#).
- ☐ Ribbed belt pulley, removing and installing. Refer to
⇒ ["2.4 Ribbed Belt Pulley, Removing and Installing", page 33](#).
- ☐ Voltage Regulator - C1-, removing and installing. Refer to
⇒ ["2.5 Voltage Regulator, Removing and Installing", page 38](#).

2 - Bolt

- ☐ Tightening Specification: 23 Nm
- ☐ Quantity: 2

3 - Bushing

- ☐ Quantity: 2
- ☐ Because the clamping force of a tight bushing is too low despite the correct torque, loosen the bushings

4 - Connector

5 - Cap

6 - Nut

- ☐ Tightening Specification: 20 Nm

7 - Terminal 30/B+

8 - Nut

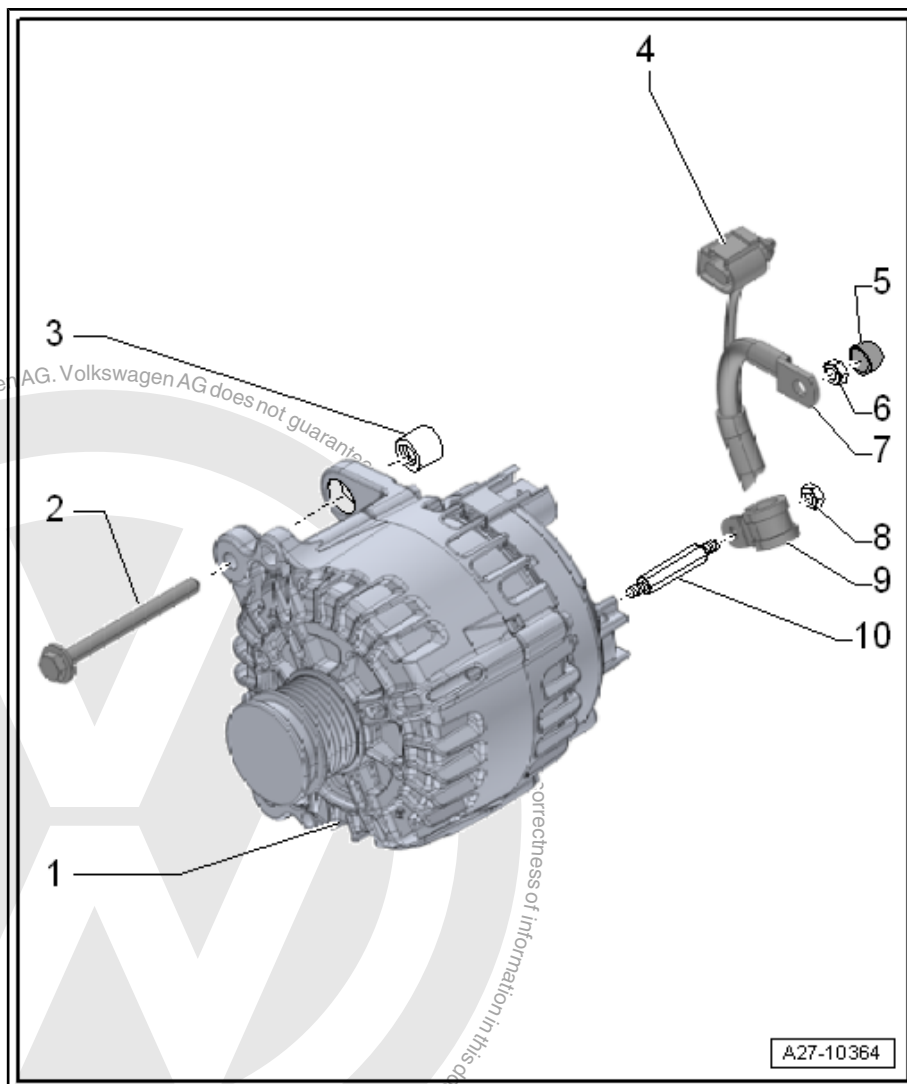
- ☐ Only on vehicles with a TDI engine
- ☐ Tightening Specification: 3.2 Nm

9 - Wire Clamp

- ☐ Only on vehicles with a TDI engine

10 - Threaded Pin

- ☐ Tightening Specification: 3.2 Nm



2.2 Generator, Removing and Installing

⇒ ["2.2.2 Generator, Removing and Installing", page 27](#)

2.2.1 Generator, Removing and Installing, Vehicles with 1.2L TSI-Engine, 1.4L TSI-



Engine and 1.4L TSI-Natural Gas Engine

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

Removing

- Disconnect the ground cable to the Battery - A- when the ignition is switched off. Refer to
⇒ **"1.3 Battery, Disconnecting and Connecting", page 16** .
- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Remove the ribbed belt tensioner. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt Tensioner, Removing and Installing .

Vehicles with A/C system



Caution

Danger of damaging the A/C compressor, the refrigerant line and hoses.

- ◆ ***Do not stretch, bend or kink the refrigerant pipes and hoses.***

- Remove the A/C compressor from the bracket. Refer to ⇒ Heating and Air Conditioning; Rep. Gr. 87 ; A/C Compressor; A/C Compressor, Removing and Installing on Bracket .
- Secure the A/C compressor on the lock carrier so that the refrigerant lines are not under tension.

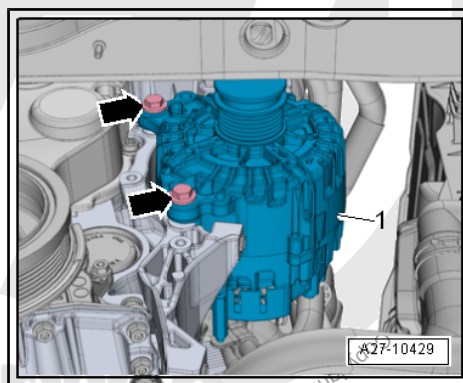
Continued for all vehicles

- Remove the bolts -arrows-.



Note

- ◆ ***If the Generator - C- -1- sticks in the bracket, install screw again down as far as the last two turns.***
- ◆ ***Carefully strike on bolt heads using flat side of hammer - doing this loosens the generator mount bushings.***





- Remove the Generator - C- -1- with the wires still attached from the bracket.
- Disconnect the connector -3-.
- Pry off the cap -2-.
- Remove the nut and remove the terminal 30/B+ -4-.
- Remove the Generator - C- -1- downward and to the right.

Installing

Install in the reverse order of removal. Note the following:

- Move the bolt sleeves slightly to the rear to make it easier to install the Generator - C- .



Note

Tight bushings for generator mount must be made smooth-running, otherwise clamping force of bushing is too little despite correct torque.

- Connect the Battery - A- Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#) .
- After completed work always start the engine and check the belt routing.

Tightening Specifications

- ◆ ⇒ [“2.1 Overview - Generator”, page 24](#)

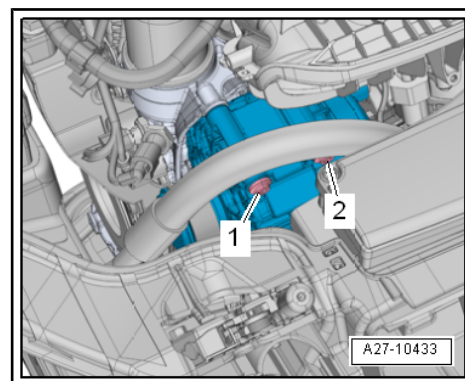
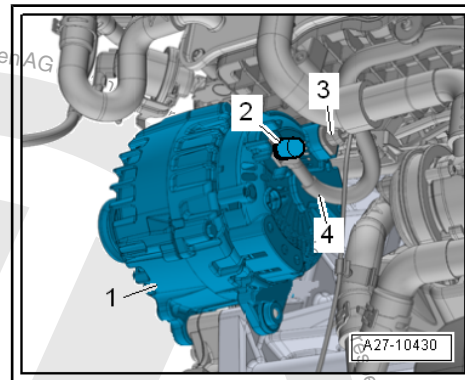
2.2.2 Generator, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Engine Bung Set - VAS6122-

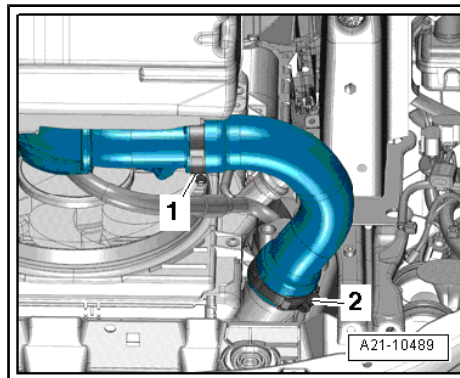
Removing

- Disconnect the Ground (GND) cable to the Battery - A- when the ignition is switched off. Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#) .
- Remove fan shroud. Refer to ⇒ Rep. Gr. 19 ; Radiator/Coolant Fan; Fan Shroud, Removing and Installing .
- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Remove the bolts -1 and 2-.





- Detach the hose clamps -1 and 2- and remove the air hose.
- Seal the open lines and connections with clean plugs from the Engine Bung Set - VAS6122- .



- Free up the coolant hose -3-.
- Loosen the clamp -2-.
- Remove the bolts -arrows-.
- Disconnect the connector -1-.
- Remove the right air pipe.

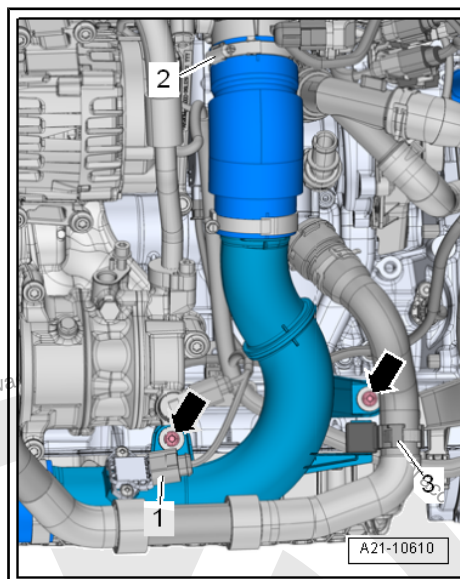
Vehicles with Air Conditioning (A/C) system



Caution

Danger of damaging the A/C compressor, the refrigerant line and hoses.

- ◆ ***Do not stretch, bend or kink the refrigerant pipes and hoses.***



- Remove the A/C compressor from the bracket. Refer to ⇒ Heating and Air Conditioning; Rep. Gr. 87 : A/C Compressor; A/C Compressor, Removing and Installing on Bracket .
- Secure the A/C compressor on the lock carrier so that the refrigerant lines are not under tension.

Continued for All Vehicles

- Free up the wiring harness -arrow-.
- Remove the bolts -5 and 6- and bring the Generator - C- -4- forward.
- Disconnect the connector -3-.
- Pry off the cap -2-.
- Remove the nut and remove the terminal 30/B+ -1-.
- Remove the Generator - C- -4- downward to the center of the vehicle.

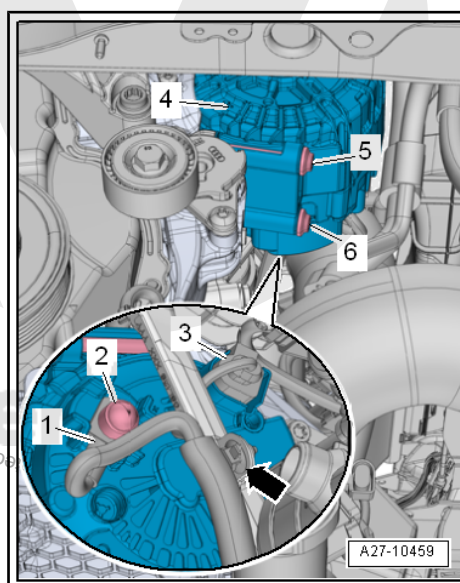
Installing

Install in the reverse order of removal. Note the following:

- Connect the Battery - A- . Refer to ⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#) .
- After completed work always start the engine and check the belt routing.

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Generator”, page 24](#)





2.2.3 Generator, Removing and Installing, Vehicles with TDI Engine

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-

Removing

- Disconnect the ground cable to the Battery - A- when the ignition is switched off. Refer to
⇒ ["1.3 Battery, Disconnecting and Connecting", page 16](#) .
- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Remove the ribbed belt tensioner. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt Tensioner, Removing and Installing .

Vehicles with A/C system



Caution

Danger of damaging the A/C compressor, the refrigerant line and hoses.

- ◆ ***Do not stretch, bend or kink the refrigerant pipes and hoses.***

- Remove the A/C compressor from the bracket. Refer to ⇒ Heating and Air Conditioning; Rep. Gr. 87 ; A/C Compressor; A/C Compressor, Removing and Installing on Bracket .
- Secure the A/C compressor on the lock carrier so that the refrigerant lines are not under tension.



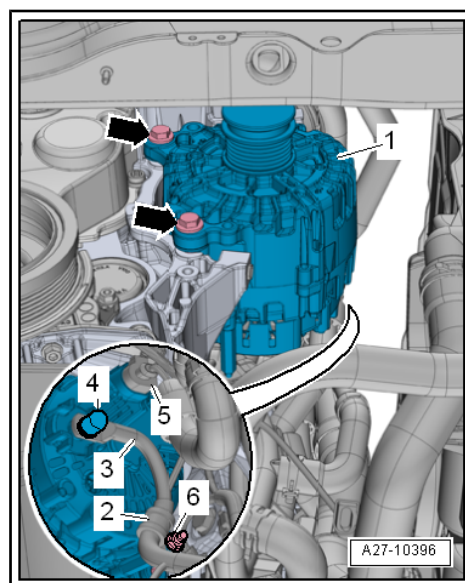
Continued for all vehicles

- Remove the bolts -arrows-.



Note

- ♦ *If the Generator - C- -1- sticks in the bracket, install screw again down as far as the last two turns.*
- ♦ *Carefully strike on bolt heads using flat side of hammer - doing this loosens the generator mount bushings.*
- Remove the Generator - C- -1- with the wires still attached from the bracket.
- Disconnect the connector -5-.
- Pry up the cap -4-.
- Remove the nut and remove the terminal 30/B+ -3-.
- Remove the nut -6- and remove the clamp -2-.
- Remove the Generator - C- -1- downward and to the right.



Installing

Install in the reverse order of removal. Note the following:

- Move the bolt sleeves slightly to the rear to make it easier to install the Generator - C- .



Note

Tight bushings for generator mount must be made smooth-running, otherwise clamping force of bushing is too little despite correct torque.

- Connect the Battery - A- . Refer to
⇒ ["1.3 Battery, Disconnecting and Connecting", page 16](#) .
- After completed work always start the engine and check the belt routing.

Tightening Specifications

- ♦ ⇒ ["2.1 Overview - Generator", page 24](#)

2.2.4 Generator, Removing and Installing, GTD

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm - VAG1331-
- ♦ Torque Wrench 1783 - 2-10Nm - VAG1783-

Removing

- Disconnect the ground cable to the Battery - A- when the ignition is switched off. Refer to
⇒ ["1.3 Battery, Disconnecting and Connecting", page 16](#) .
- Remove the ribbed belt tensioner. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt Tensioner, Removing and Installing .



- Remove the front section of the right wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing .
- Remove fan shroud. Refer to ⇒ Rep. Gr. 19 ; Radiator/Coolant Fan; Fan Shroud, Removing and Installing .
- Drain the coolant. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 19 ; Coolant System/Coolant; Coolant, Draining and Filling .
- Remove the coolant hose from the coolant cooler. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 19 ; Radiator/Coolant Fan; Overview - Radiator/Coolant Fan .

Vehicles with a parking heater:

- Remove the parking heater exhaust pipe. Refer to ⇒ Rep. Gr. 82 ; Parking/Auxiliary Heater; Exhaust System, Removing and Installing .

Vehicles with A/C system



Caution

Danger of damaging the A/C compressor, the refrigerant line and hoses.

- ◆ ***Do not stretch, bend or kink the refrigerant pipes and hoses.***

- Remove the A/C compressor from the bracket. Refer to ⇒ Heating and Air Conditioning; Rep. Gr. 87 ; A/C Compressor; A/C Compressor, Removing and Installing on Bracket .
- Secure the A/C compressor on the lock carrier so that the refrigerant lines are not under tension.



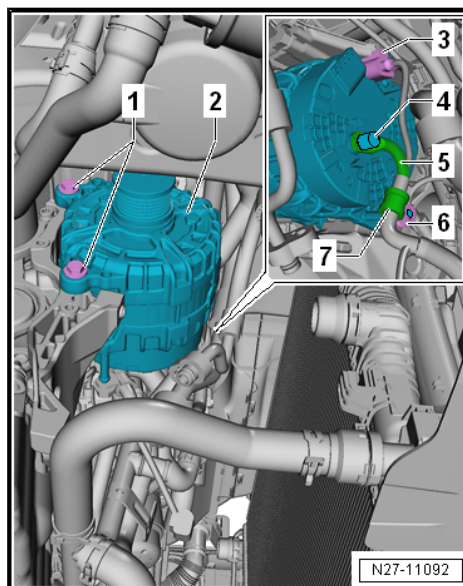
Continued for all vehicles

- Remove the bolts -1-.



Note

- ♦ *If the Generator - C- -2- sticks in the bracket, install screw again down as far as the last two turns.*
- ♦ *Carefully strike on bolt heads using flat side of hammer - doing this loosens the generator mount bushings.*
- Remove the Generator - C- -2- with the wires still attached from the bracket.
- Disconnect the connector -3-.
- Pry up the cap -4-.
- Remove the nut and remove the terminal 30/B+ -5-.
- Remove the nut -6- and remove the clamp -7-.
- Remove the Generator - C- -2- downward and to the right.



Installing

Install in the reverse order of removal. Note the following:

- Move the bolt sleeves slightly to the rear to make it easier to install the Generator - C- .



Note

Tight bushings for generator mount must be made smooth-running, otherwise clamping force of bushing is too little despite correct torque.

- Connect the Battery - A- . Refer to
⇒ ["1.3 Battery, Disconnecting and Connecting", page 16](#) .
- After completed work always start the engine and check the belt routing.

Tightening Specifications

- ♦ ⇒ ["2.1 Overview - Generator", page 24](#)

2.3 Generator, Checking

- Check the Generator - C- using the Vehicle Diagnostic Tester .



2.4 Ribbed Belt Pulley, Removing and Installing

⇒ ["2.4.1 Ribbed Belt Pulley without Freewheel Hub, Removing and Installing", page 33](#)

⇒ ["2.4.2 Ribbed Belt Pulley with Freewheel Hub, Removing and Installing, Bosch", page 33](#)

⇒ ["2.4.3 Ribbed Belt Pulley with Freewheel Hub, Removing and Installing, Valeo", page 35](#)

⇒ ["2.4.4 Decoupling Belt Pulley with Freewheel, Removing and Installing", page 36](#)

2.4.1 Ribbed Belt Pulley without Freewheel Hub, Removing and Installing

Special tools and workshop equipment required

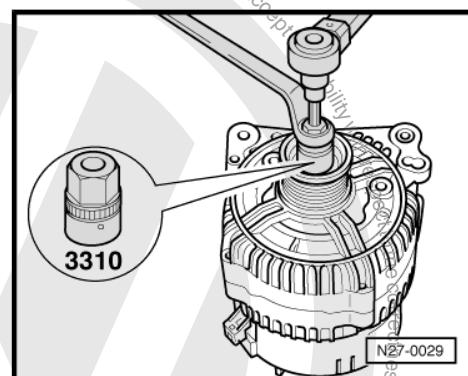
- ◆ Generator Belt Socket - 3310-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

- Remove the Generator - C- . Refer to [⇒ "2.2 Generator, Removing and Installing", page 25](#) .
- Secure the Generator - C- in a vise by the mounting points.
- Remove the ribbed belt pulley nut using Generator Belt Socket - 3310- from the generator shaft.
- Remove the ribbed belt pulley from the generator shaft.

Installing

Install in the reverse order of removal. Note the following:



Tightening Specifications

Component	Tightening Specification
Ribbed belt pulley nut	65 Nm

2.4.2 Ribbed Belt Pulley with Freewheel Hub, Removing and Installing, Bosch

Special tools and workshop equipment required

- ◆ Multi-Tooth Adapter - 3400-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

- Remove the Generator - C- . Refer to [⇒ "2.2 Generator, Removing and Installing", page 25](#) .
- Secure the Generator - C- in a vise by the mounting points.
- Pry up the cap from the ribbed belt pulley.



- Install the Multi-Tooth Adapter - 3400- with the wrench (SW 17) in the ribbed belt pulley.
- Insert an M10 multipoint socket -1- into the generator shaft.
- Hold the generator secure and loosen the ribbed belt pulley with the wrench by turning left.
- Hold the ribbed belt pulley secure by hand.
- Turn the generator shaft until the ribbed belt pulley can be removed.

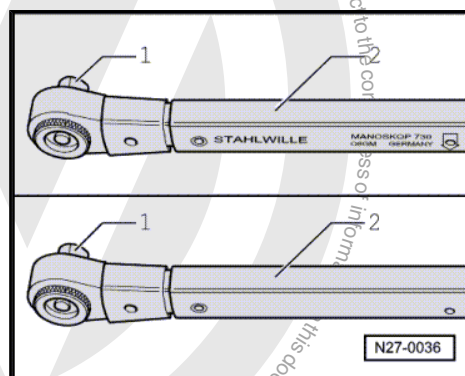
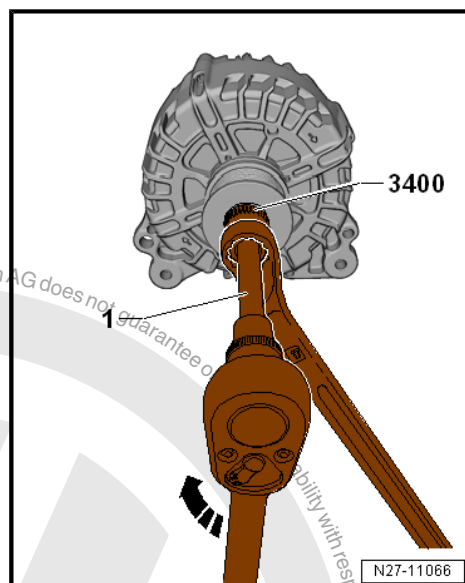
Installing

Install in the reverse order of removal. Note the following:

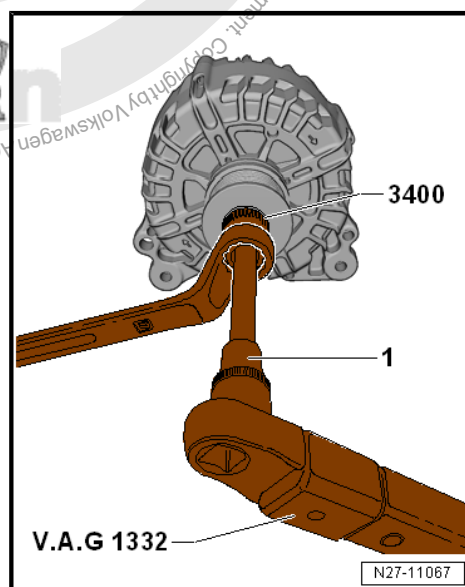
- Install the ribbed belt pulley by hand until stop on the generator shaft.

The Torque Wrench 1332 40-200Nm - VAG1332- must be rearranged for installing ribbed belt pulley as follows:

- Release the insert -1- and remove it from the handle part -2-.
- Turn the handle part -2- 180° and install the socket -1- again.
- Set the rotation direction of the Torque Wrench 1332 40-200Nm - VAG1332- bit to the left.



- Insert an M10 multipoint socket -1- into the generator shaft.
- Counterhold Multi-Tooth Adapter - 3400- with wrench (SW 17).
- Tighten the ribbed belt pulley by turning the generator shaft to the left using Torque Wrench 1331 5-50Nm - VAG1332- .



Tightening Specifications

Component	Tightening Specification
Ribbed belt pulley nut	80 Nm



2.4.3 Ribbed Belt Pulley with Freewheel Hub, Removing and Installing, Valeo

Special tools and workshop equipment required

- ◆ Multi-Tooth Adapter - 3400-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Torx Key Socket Set - VAG1603A/1-

Removing

- Remove the Generator - C- . Refer to
⇒ ["2.2 Generator, Removing and Installing", page 25](#) .
- Secure the Generator - C- in a vise by the mounting points.
- Pry up the cap from the ribbed belt pulley.
- Install the Multi-Tooth Adapter - 3400- with the wrench (SW 17) in the ribbed belt pulley.
- Install the Torx Key Socket Set - VAG1603A/1- in the generator shaft.
- Hold the generator secure and loosen the ribbed belt pulley with the wrench by turning left.
- Hold the ribbed belt pulley secure by hand.
- Turn the generator shaft until the ribbed belt pulley can be removed.

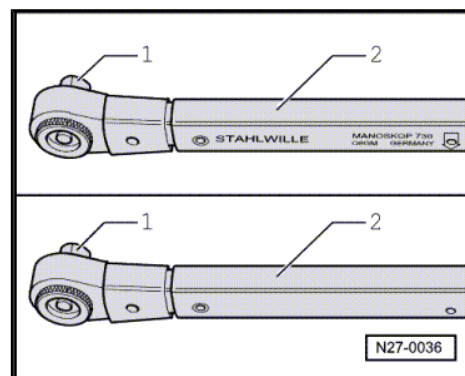
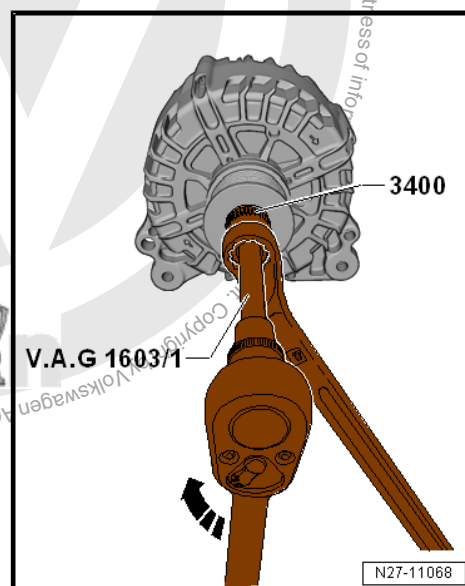
Installing

Install in the reverse order of removal. Note the following:

- Install the ribbed belt pulley by hand until stop on the generator shaft.

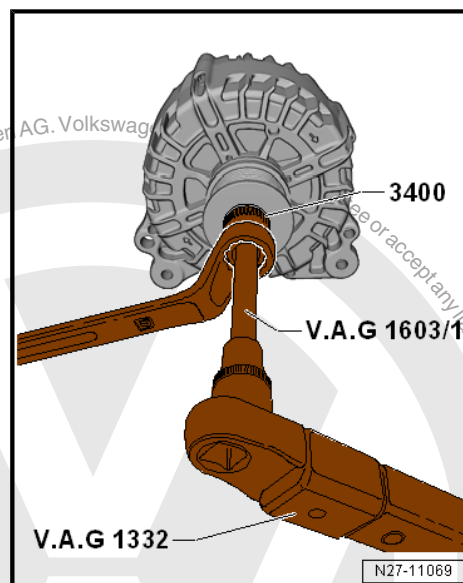
The Torque Wrench 1332 40-200Nm - VAG1332- must be rearranged for installing ribbed belt pulley as follows:

- Release the insert -1- and remove it from the handle part -2-.
- Turn the handle part -2- 180° and install the socket -1- again.
- Set the rotation direction of the Torque Wrench 1332 40-200Nm - VAG1332- bit to the left.





- Install the Torx Key Socket Set - VAG1603A/1- in the generator shaft.
- Counterhold Multi-Tooth Adapter - 3400- with wrench (SW 17).
- Tighten the ribbed belt pulley by turning the generator shaft to the left using Torque Wrench 1331 5-50Nm - VAG1332- .



Tightening Specifications

Component	Tightening Specification
Ribbed belt pulley nut	80 Nm

2.4.4 Decoupling Belt Pulley with Freewheel, Removing and Installing

Special tools and workshop equipment required

- ◆ Puller - Bevel Gear - T10474-
- ◆ Multi-Tooth Adapter - 3400-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Socket - Torx T50 - T10470- or Inner Hex Socket 8 mm

General Information

There are different decoupling belt pulley with freewheel.

Before removing check which special tool must be used for the removal of the decoupling belt pulley with freewheel.



Caution

The length of the ribbed belt is different depending on the decoupling belt pulley with freewheel installed.

Check which decoupling belt pulley with freewheel is installed and make sure that the correct ribbed belt will be installed. For the ribbed belt allocation. Refer to the Parts Catalog

Decoupler Differentiation

-A- small decoupling belt pulley with freewheel, use special tool Multi-Tooth Adapter - T10474-



-B- large decoupling belt pulley with freewheel, use special tool Multi-Tooth Adapter - 3400-

i Note

The ribbed belt for the large decoupling belt pulley with freewheel must be longer, because the larger decoupling belt pulley with freewheel has a larger diameter, and is different for vehicles with and without an Air Conditioning (A/C) system.

Removing

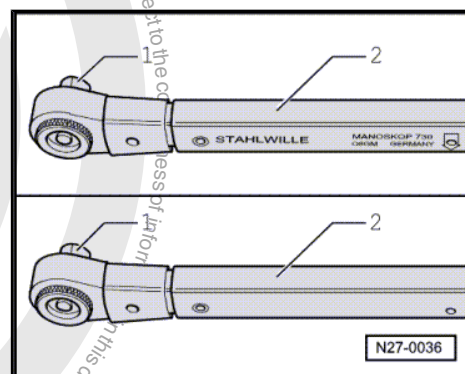
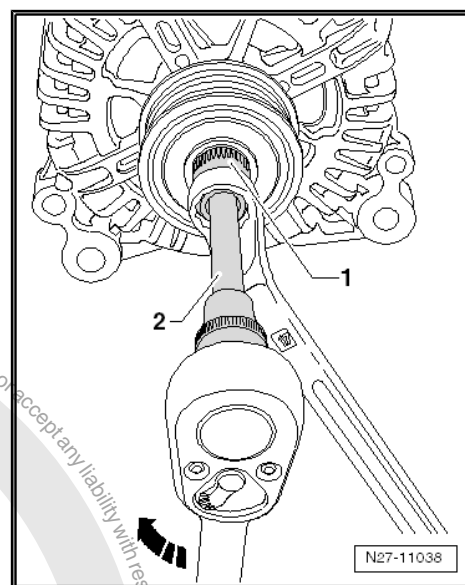
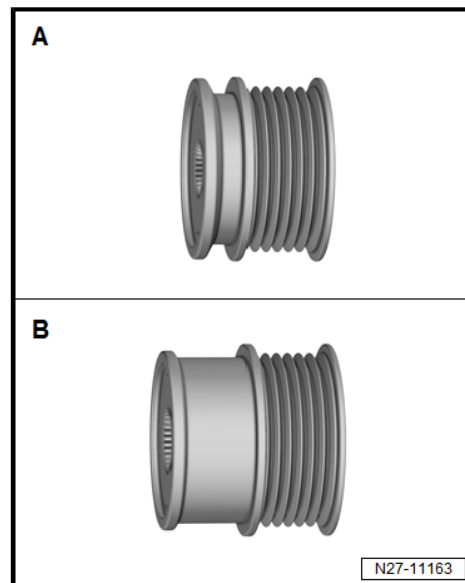
- Remove the generator. Refer to ["2.2 Generator, Removing and Installing", page 25](#).
- Clamp the generator in a vise at the mounting points.
- If equipped, remove the protective cap from the decoupling belt pulley with freewheel.
- Install the Multi-Tooth Adapter - T10474- or Multi-Tooth Adapter - 3400- -1- in the belt pulley and attach a wrench.
- Place a suitable tool -2- in the generator shaft.
- Turn the generator shaft clockwise to loosen and while doing so counterhold with the wrench.
- Hold the decoupling belt pulley with freewheel in place by hand and turn it at the generator shaft until the decoupling belt pulley with freewheel can be removed.

Installing

Installation is performed in the reverse order of removal, noting the following:

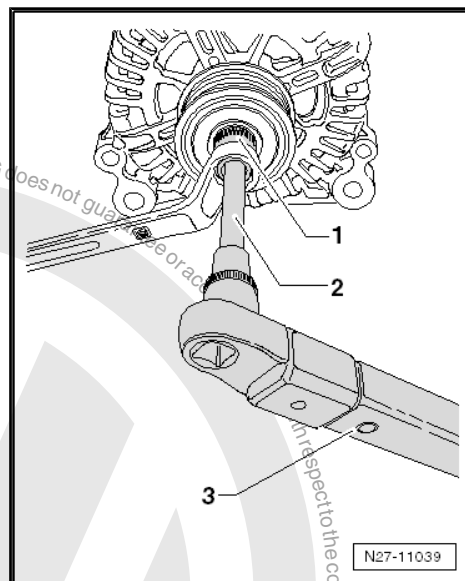
The Torque Wrench 1332 40-200Nm - VAG1332- must be rearranged for installing the decoupling belt pulley with freewheel as follows:

- Release the insert -1- and remove it from the handle part -2-.
- Turn the handle part -2- of the torque wrench 180° and reinsert the socket.
- Set the rotation direction of the torque wrench socket to "left".
- Next, screw the ribbed belt pulley with freewheel by hand onto the generator shaft until stop.
- Install the Multi-Tooth Adapter - T10474- -1- decoupling belt pulley with freewheel and attach the wrench.





- Place a suitable tool -2- in the generator shaft.
- Turn the generator shaft using the Torque Wrench 1332 40-200Nm - VAG1332- -3- counter clockwise to tighten the decoupling belt pulley with freewheel.
- Tighten the threaded connection to 80 Nm.



2.5 Voltage Regulator, Removing and Installing

⇒ [“2.5.1 Voltage Regulator, Removing and Installing, Bosch”, page 38](#)

⇒ [“2.5.2 Voltage Regulator, Removing and Installing, Valeo”, page 39](#)

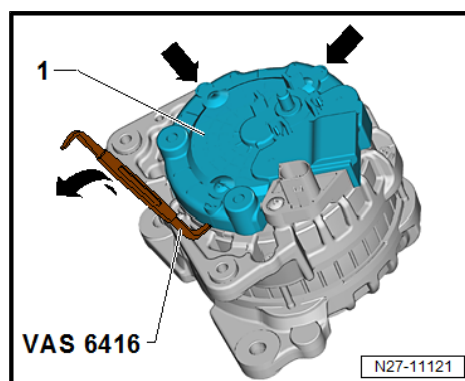
2.5.1 Voltage Regulator, Removing and Installing, Bosch

Special tools and workshop equipment required

- ◆ Angled Screwdriver - VAS6416-
- ◆ Torque Screwdriver - VAG1624-

Removing

- Remove the Generator - C- . Refer to [⇒ “2.2 Generator, Removing and Installing”, page 25](#) .
- Carefully pry out the cap -1- from the catch mechanisms -arrows- using the Angled Screwdriver - VAS6416- .

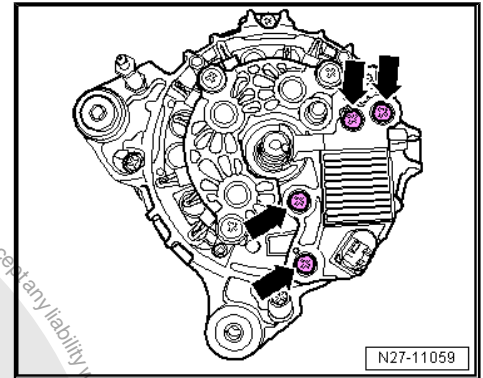




- Remove the Voltage Regulator - C1- bolts -arrows-.
- Remove the Voltage Regulator - C1- from the Generator - C- .

Installing

Install in the reverse order of removal. Note the following:



Tightening Specifications

Component	Tightening Specification
Voltage Regulator - C1- bolts	2 Nm

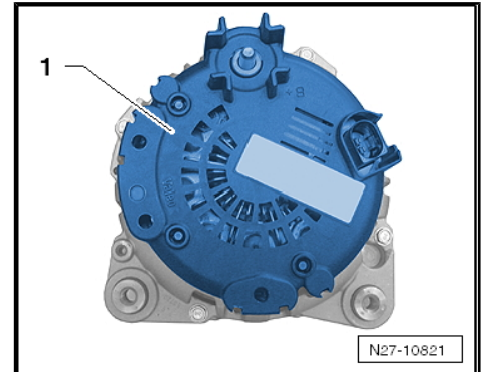
2.5.2 Voltage Regulator, Removing and Installing, Valeo

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-

Removing

- Remove the Generator - C- . Refer to ["2.2 Generator, Removing and Installing", page 25](#) .
- Carefully pry the cap -1- from the Generator - C- .

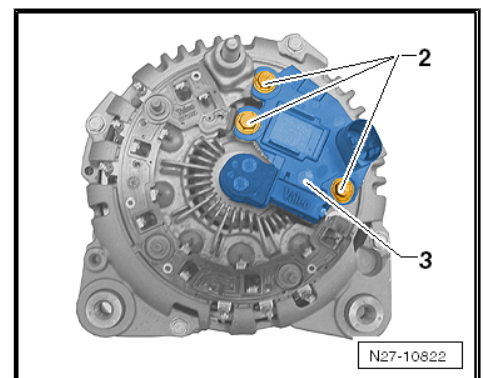


- Remove the Voltage Regulator - C1- -3- bolts -2-.
- Remove the Voltage Regulator - C1- -3- from the Generator - C- .

Installing

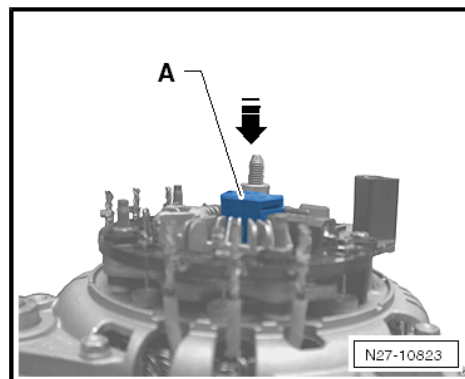
Install in the reverse order of removal. Note the following:

- Install the Voltage Regulator - C1- .

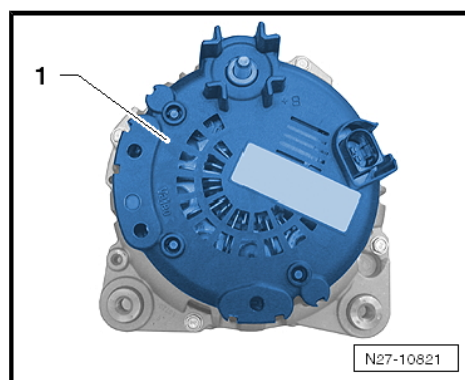




- Press the cap on the carbon brushes -A- down -arrow- until it is flush with the voltage regulator housing.



- Install new cap -1- on the Generator - C- .



Tightening Specifications

Component	Tightening Specification
Voltage Regulator - C1- bolts	4 Nm



3 Starter

⇒ [“3.1 Overview - Starter”, page 41](#)

⇒ [“3.2 Starter, Removing and Installing”, page 43](#)

3.1 Overview - Starter

⇒ [“3.1.1 Overview - Starter, Vehicles with Manual Transmission”, page 41](#)

⇒ [“3.1.2 Overview - Starter, Vehicles with DSG® Transmission DQ200-7F”, page 42](#)

⇒ [“3.1.3 Overview - Starter, Vehicles with DSG® Transmission DQ250-6F”, page 43](#)

3.1.1 Overview - Starter, Vehicles with Manual Transmission

1 - Starter - B-

- ☐ Removing and installing. Refer to
⇒ [“3.2.1 Starter, Removing and Installing, Vehicles with Manual Transmission”, page 43](#).

2 - Double Bolt

- ☐ Tightening Specification: 80 Nm

3 - Ground (GND) Cable

- ☐ Depending on the vehicle equipment level

4 - Nut

- ☐ Tightening Specification: 20 Nm
- ☐ Depending on the vehicle equipment level

5 - Connector

6 - Nut

- ☐ Tightening Specification: 20 Nm

7 - Cap

8 - Terminal 30/B+

9 - Nut

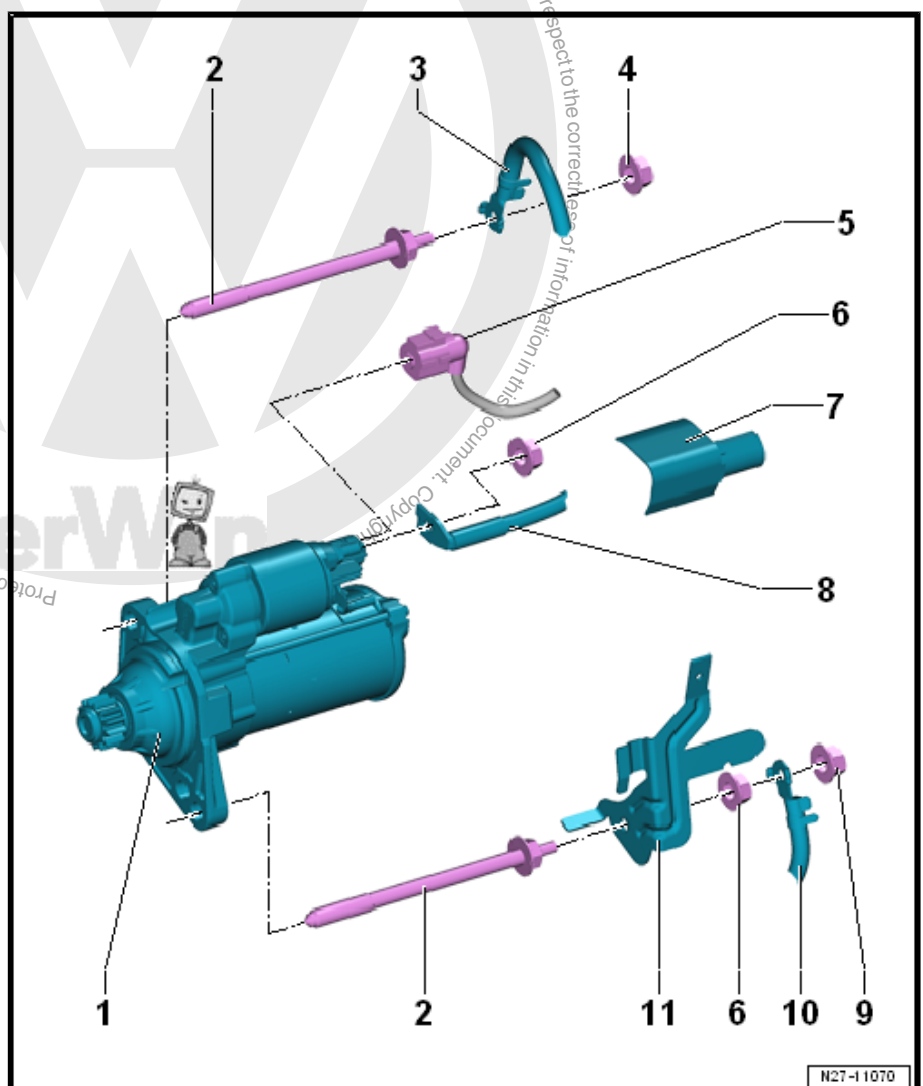
- ☐ Tightening Specification: 20 Nm
- ☐ Depending on the vehicle equipment level

10 - GND Cable

- ☐ Depending on the vehicle equipment level

11 - Bracket

- ☐ For the wiring harness





3.1.2 Overview - Starter, Vehicles with DSG® Transmission DQ200-7F

1 - Starter - B-

- ❑ Removing and installing. Refer to
⇒ [“3.2.2 Starter, Removing and Installing, Vehicles with DSG Transmission DQ200-7F”, page 45](#).

2 - Double Bolt

- ❑ Tightening Specification: 80 Nm

3 - Ground (GND) Cable

- ❑ Depending on the vehicle equipment level

4 - Nut

- ❑ Tightening Specification: 20 Nm
- ❑ Depending on the vehicle equipment level

5 - Connector

6 - Nut

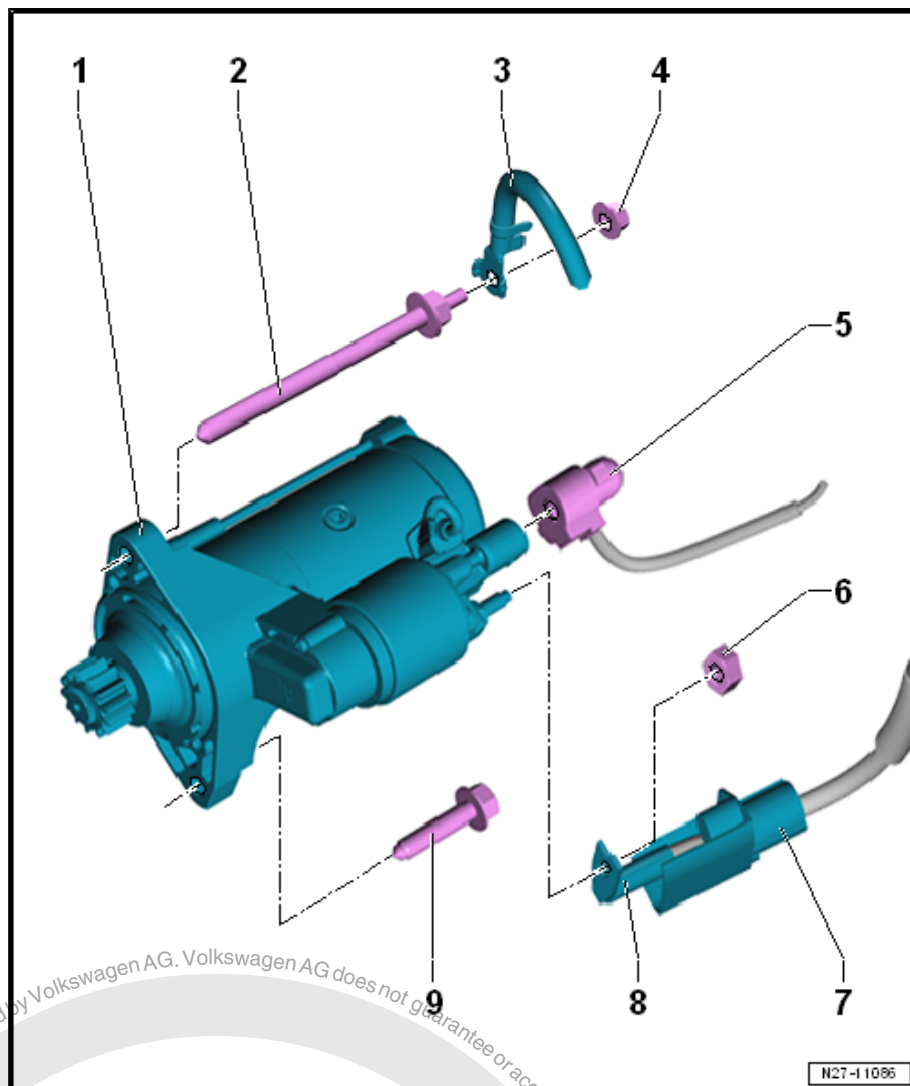
- ❑ Tightening Specification: 20 Nm

7 - Cap

8 - Terminal 30/B+

9 - Bolt

- ❑ Tightening Specification: 80 Nm





3.1.3 Overview - Starter, Vehicles with DSG® Transmission DQ250-6F

1 - Starter - B-

- ❑ Removing and installing. Refer to
⇒ ["3.2.3 Starter, Removing and Installing, Vehicles with DSG Transmission", page 46](#).

2 - Bolt

- ❑ Tightening Specification: 40 Nm

3 - Connector

4 - Nut

- ❑ Tightening Specification: 20 Nm

5 - Cap

6 - Terminal 30/B+

7 - Nut

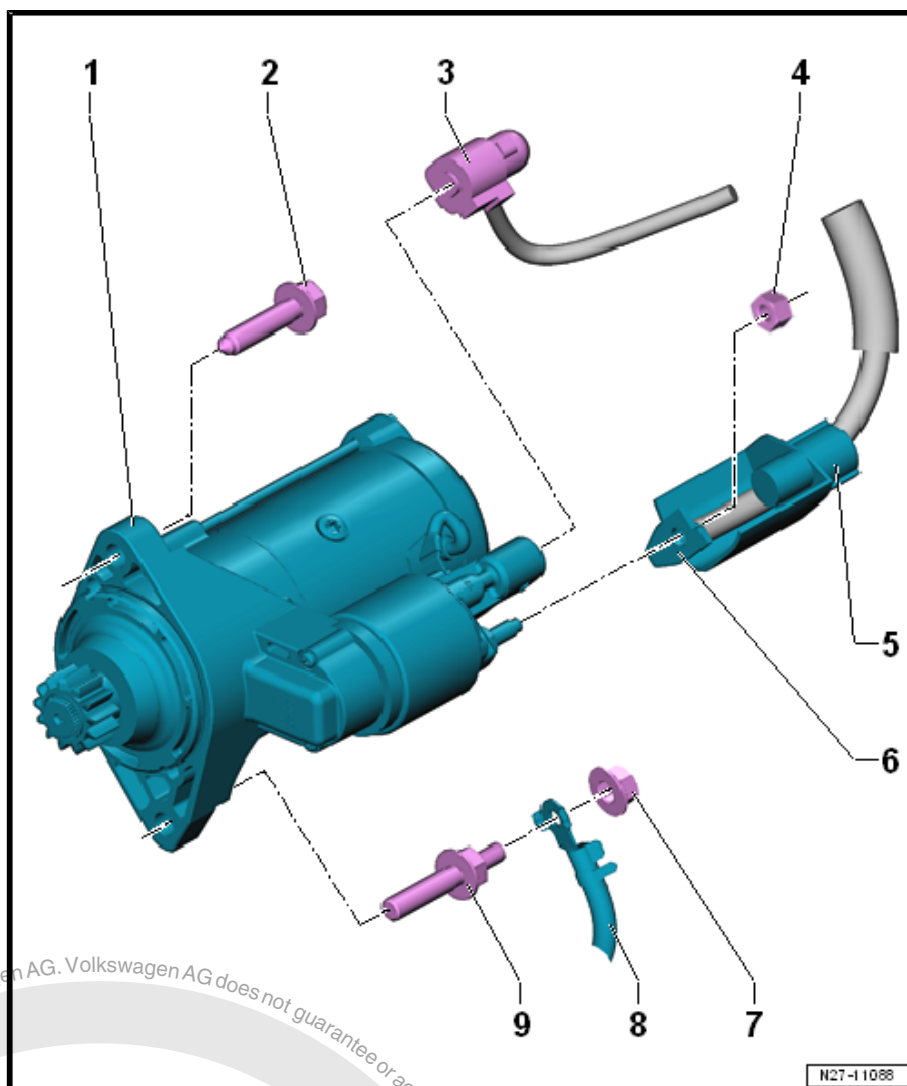
- ❑ Depending on the vehicle equipment level
- ❑ Tightening Specification: 20 Nm

8 - Ground (GND) Cable

- ❑ Depending on the vehicle equipment level

9 - Bolt

- ❑ Tightening Specification: 40 Nm



3.2 Starter, Removing and Installing

⇒ ["3.2.1 Starter, Removing and Installing, Vehicles with Manual Transmission", page 43](#)

⇒ ["3.2.3 Starter, Removing and Installing, Vehicles with DSG Transmission", page 46](#)

3.2.1 Starter, Removing and Installing, Vehicles with Manual Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Valve Guide - Lower Control Arm Drift - 10-14-

Removing

- Disconnect the Ground (GND) cable to the Battery - A- when the ignition is switched off. Refer to
⇒ ["1.3 Battery, Disconnecting and Connecting", page 16](#).



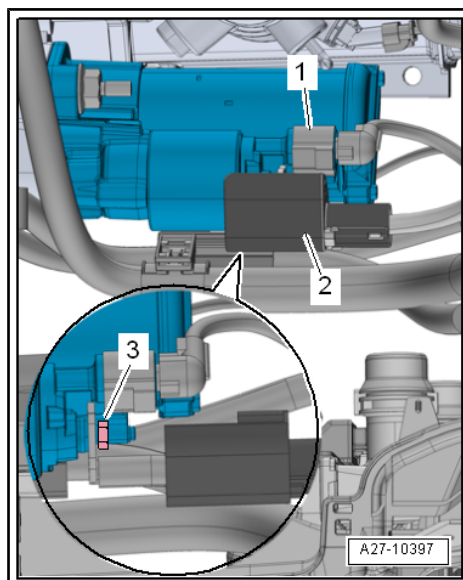
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

Vehicles with TDI Engine

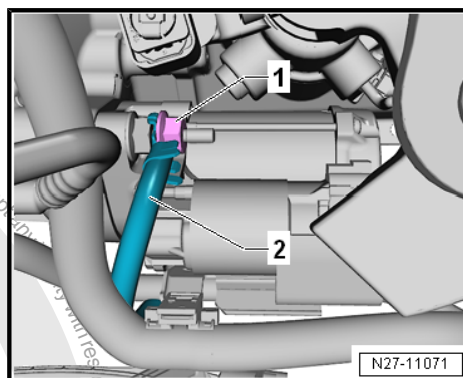
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 23 ; Air Filter; Air Filter Housing, Removing and Installing .

Continued for All Vehicles

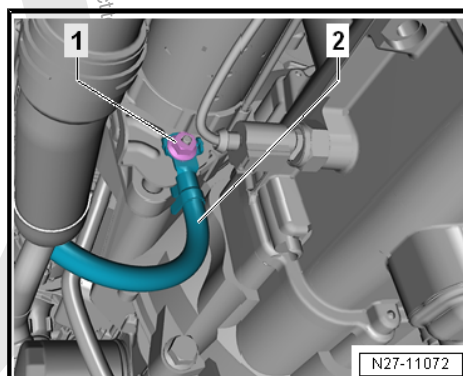
- Disconnect the connector -1-.
- Remove the cap -2-.
- Remove the nuts -3-, and terminal 30/B+.



- If equipped remove the nut -1- from the Starter - B- upper bolt.
- If equipped remove the GND cable -2-.



- If equipped remove the nut -1- from the Starter - B- lower bolt.
- If equipped remove the GND cable -2-.





- Remove the nut -4- and remove the wiring harness bracket -1-.



Note

The wires remain plugged in.

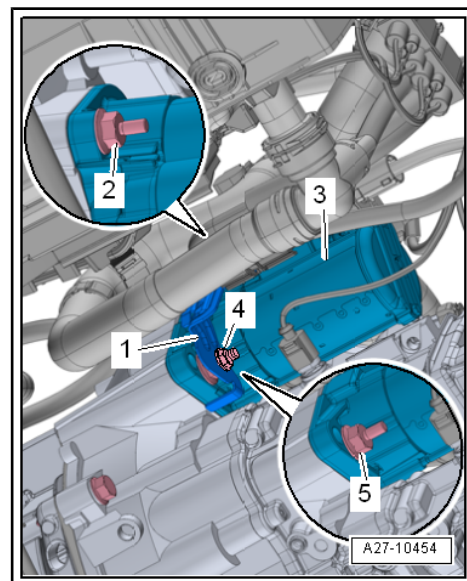
- Remove the Starter - B- -3- bolts -2 and 5-.
- Remove the Starter - B- -3- downward.

Installing

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ Refer to ⇒ [“3.1 Overview - Starter”, page 41](#)
- Connect the Battery - A- . Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#) .



3.2.2 Starter, Removing and Installing, Vehicles with DSG Transmission DQ200-7F

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

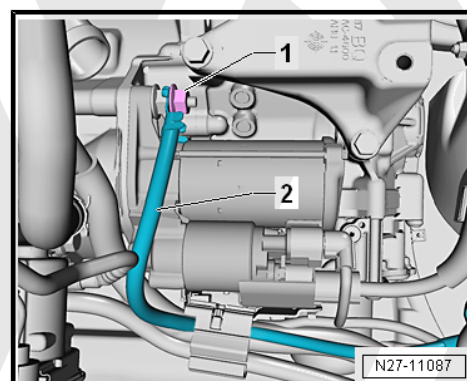
- Disconnect the Ground (GND) cable to the Battery - A- when the ignition is switched off. Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#) .

Vehicles with TDI Engine

- Remove the air filter housing. Refer to ⇒ Rep. Gr. 23 ; Air Filter; Air Filter Housing, Removing and Installing .

Continued for All Vehicles

- If equipped remove the nut -1- from the Starter - B- upper bolt.
- If equipped remove the GND cable -2-.





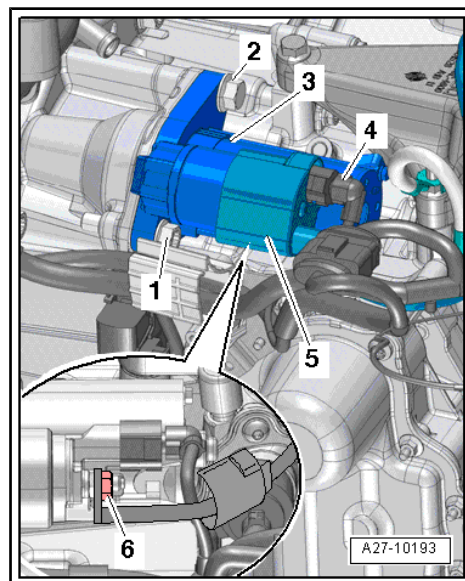
- Disconnect the connector -4-.
- Remove the cap -5-.
- Remove the nuts -6-, and terminal 30/B+.
- Remove the Starter - B- -3- bolts -1 and 2-.
- Remove the Starter - B- -3- upward.

Installing

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ Refer to ⇒ [“3.1 Overview - Starter”, page 41](#)
- Connect the Battery - A- . Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#) .



3.2.3 Starter, Removing and Installing, Vehicles with DSG Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

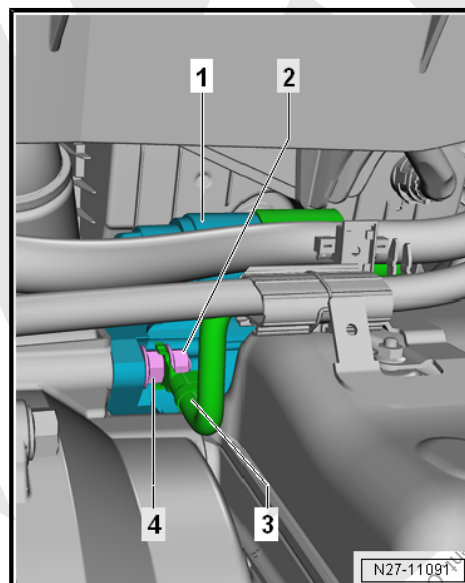
- Disconnect the Ground (GND) cable to the Battery - A- when the ignition is switched off. Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#) .

Vehicles with Air Filter Housing In Front of the Battery

- Remove the air filter housing. Refer to ⇒ Rep. Gr. 23 ; Air Filter; Air Filter Housing, Removing and Installing .

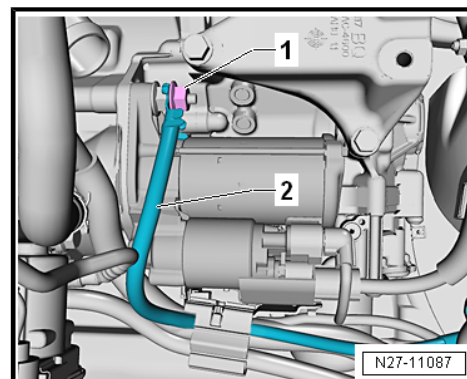
Continued for All Vehicles

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- If equipped remove the nut -2- from the Starter - B- -1- lower bolt.
- If equipped remove the GND cable -3-.
- Remove the Starter - B- -1- bolt -4-.





- If equipped remove the nut -1- from the Starter - B- upper bolt.
- If equipped remove the GND cable -2-.



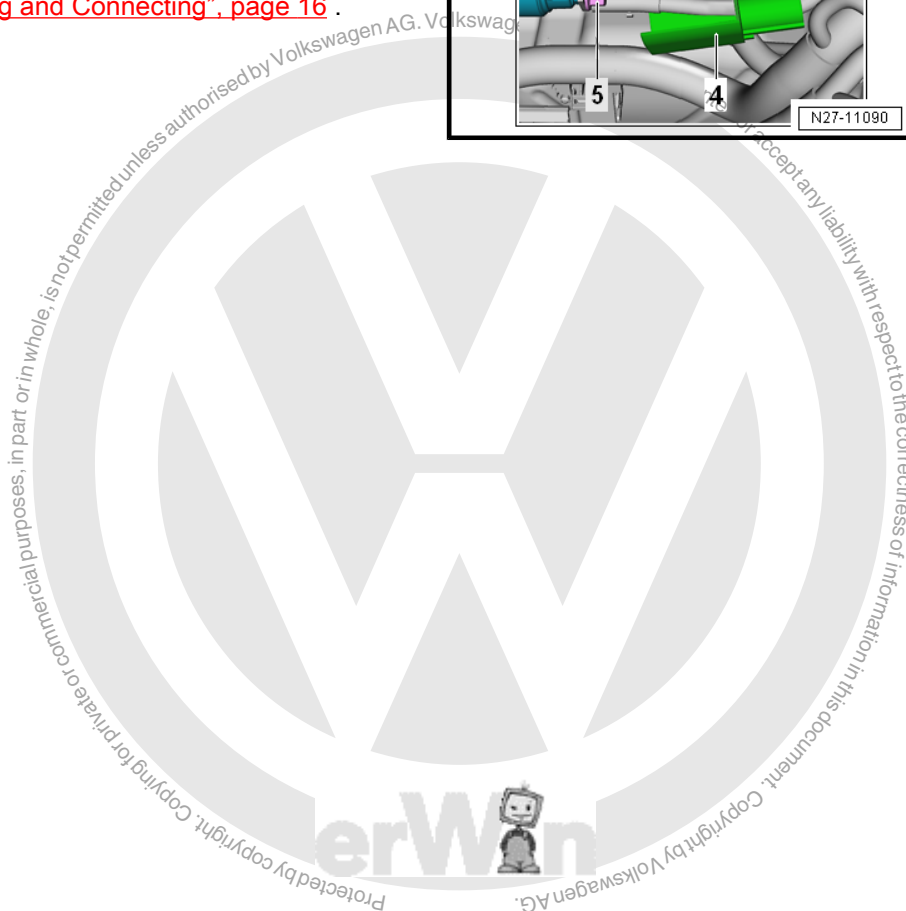
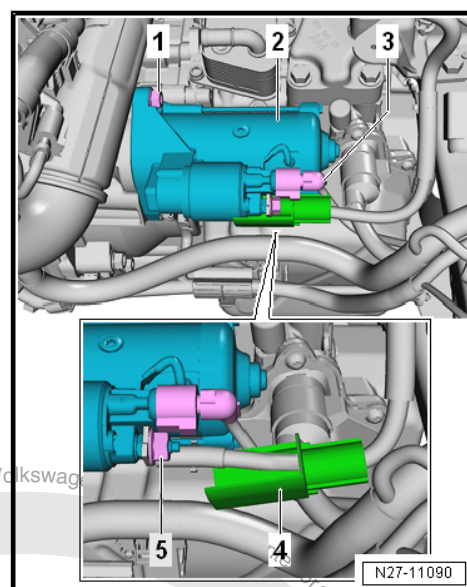
- Disconnect the connector -3-.
- Remove the cap -4-.
- Remove the nuts -5-, and terminal 30/B+.
- Remove the Starter - B- -2- bolt -1-.
- Remove the Starter - B- -2- upward.

Installing

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ Refer to ⇒ [“3.1 Overview - Starter”, page 41](#)
- Connect the Battery - A- . Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#) .





4 Cruise Control System



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Cruise Control System .





5 Start/Stop System

5.1 General Description for Start/Stop System

The Start/Stop System reduces fuel consumption by turning off the engine when the vehicle is at a standstill and turning the engine back on when the driver starts to drive. The Stop/Start System works automatically. As soon as the vehicle is driven for approximately four seconds at a minimum of 3 km/h.

5.2 Component Location Overview - Start/Stop System



Note

Pay attention to the safety precautions. Refer to
⇒ ["1.3 Start/Stop System Safety Precautions", page 2](#).

1 - Start/Stop Mode Button - E693-

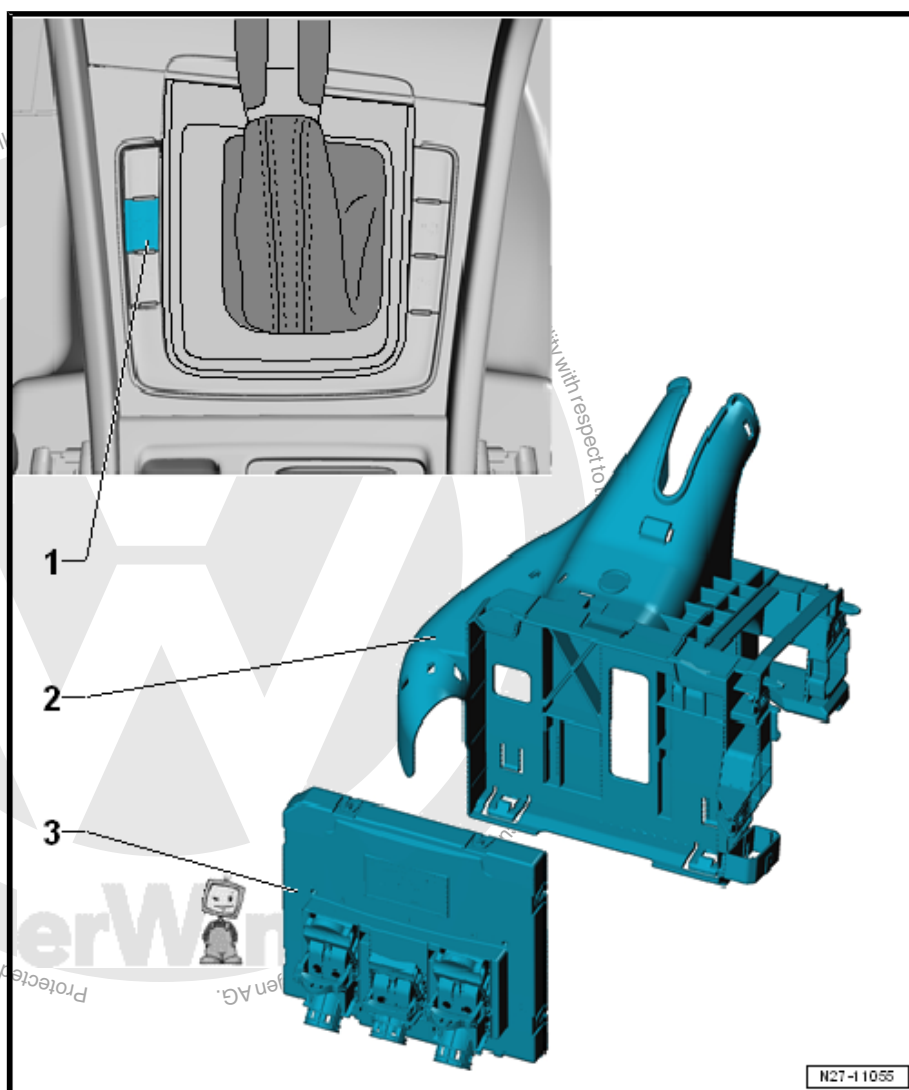
- ❑ Removing and installing. Refer to
⇒ ["2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30, Removing and Installing", page 296](#).

2 - Bracket

- ❑ For Vehicle Electrical System Control Module - J519-

3 - Vehicle Electrical System Control Module - J519-

- ❑ Component location overview. Refer to
⇒ ["2.1 Component Location Overview - Control Modules", page 328](#).



6 Adaptive Cruise Control

⇒ ["6.1 Component Location Overview - Adaptive Cruise Control \(ACC\)", page 50](#)

⇒ ["6.2 Control Module for Adaptive Cruise Control, Removing and Installing", page 53](#)

⇒ ["6.3 Adaptive Cruise Control, Calibrating", page 59](#)

6.1 Component Location Overview - Adaptive Cruise Control (ACC)

⇒ ["6.1.1 Component Location Overview- Adaptive Cruise Control \(ACC\), Version 1", page 50](#)

⇒ ["6.1.2 Component Location Overview- Adaptive Cruise Control \(ACC\), Version 2", page 52](#)

6.1.1 Component Location Overview- Adaptive Cruise Control (ACC), Version 1

1 - Radar Sensor Trim

2 - Distance Regulation Control Module - J428-

- ❑ Removing and installing. Refer to
⇒ ["6.2.1 Control Module for Adaptive Cruise Control, Removing and Installing, Version 1", page 53](#).
- ❑ Calibrating. Refer to
⇒ ["6.3 Adaptive Cruise Control, Calibrating", page 59](#).

3 - Bolt

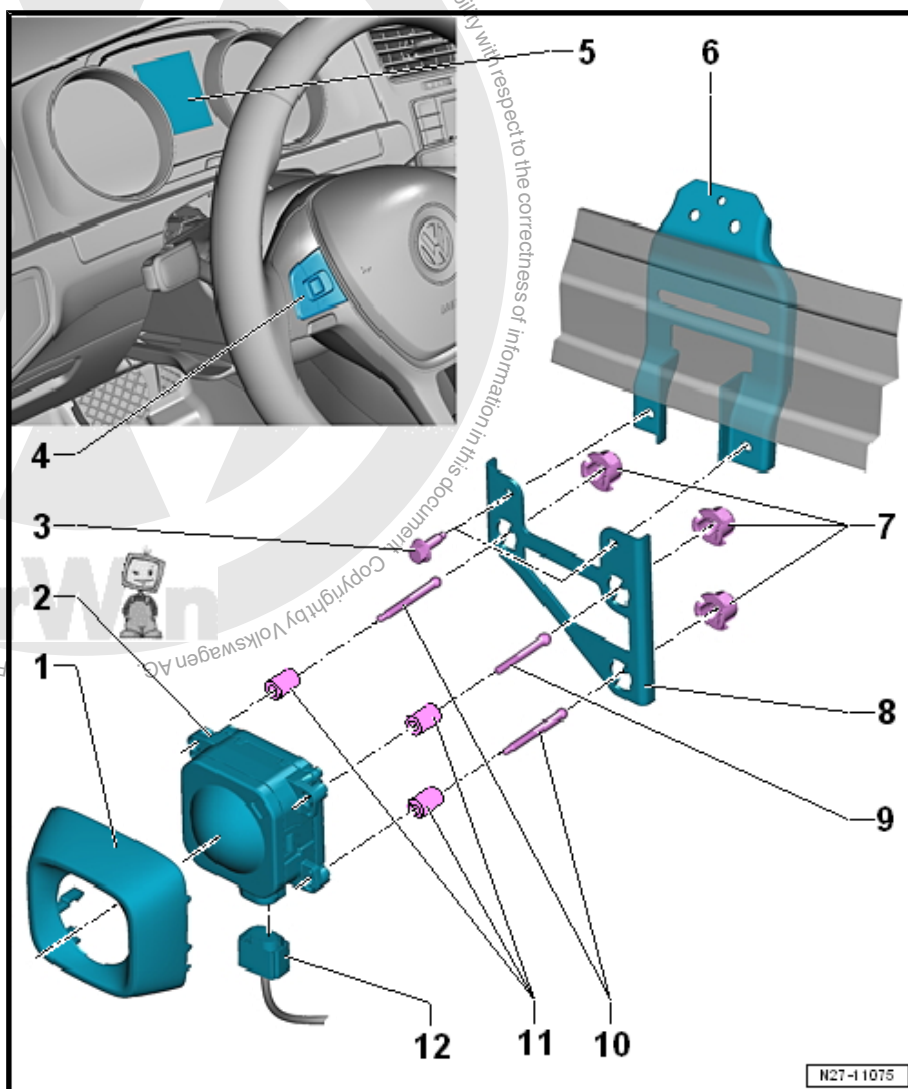
- ❑ Tightening Specification: 8 Nm.
- ❑ Quantity: 2

4 - Adaptive Cruise Control Button - E357-

- ❑ Is integrated in the multifunction steering wheel.
- ❑ Removing and installing. Refer to ⇒ Communication; Rep. Gr. 91 ; Multifunction Steering Wheel; Right/Left Multifunction Buttons On Steering Wheel - E441- / -E440- , Removing and Installing .

5 - Instrument Cluster - KX2-

- ❑ With Instrument Cluster Control Module - J285-
- ❑ Removing and installing. Refer to
⇒ ["1.2 Instrument Cluster KX2 , Removing and Installing", page 63](#).





6 - Front Bumper Carrier

7 - Quick Release Fastener

- ☐ Quantity: 3
- ☐ Replacing

8 - Retaining Plate

- ☐ Removing and installing. Refer to
⇒ [“6.2.2 Control Module for Adaptive Cruise Control, Removing and Installing, from the Retaining Plate, Version 1”](#), page 54 .

9 - Adjusting Screw

- ☐ Screw serves as the pivot point
- ☐ Screw adjustment dimension must not be changed according to the adjustment.
- ☐ Measure the adjustment dimension and if necessary adjust. Refer to ⇒ [page 54](#) .

10 - Adjusting Screw

- ☐ To adjust the Distance Regulation Control Module - J428-
- ☐ Quantity: 2
- ☐ Measure the adjustment dimension and if necessary adjust. Refer to ⇒ [page 54](#) .

11 - Clip

- ☐ Must always be replaced if the adjusting screws -item 9- ⇒ [Item 9 \(page 51\)](#) and -item 10- ⇒ [Item 10 \(page 51\)](#) were removed.
- ☐ Replacing. Refer to ⇒ [page 55](#) .

12 - Connector

6.1.2 Component Location Overview- Adaptive Cruise Control (ACC), Version 2

1 - Instrument Cluster - KX2-

- ❑ With Instrument Cluster Control Module - J285-
- ❑ Removing and installing. Refer to ➤ ["1.2 Instrument Cluster KX2, Removing and Installing", page 63](#).

2 - Front Bumper Carrier

3 - Retaining Plate

- ❑ Removing and installing. Refer to ➤ ["6.2.4 Control Module for Adaptive Cruise Control, Removing and Installing, from the Retaining Plate, Version 2", page 56](#).

4 - Quick Release Fastener

- ❑ Quantity: 3
- ❑ Replacing

5 - Adapter Frame

- ❑ Serves as the mount for the Distance Regulation Control Module - J428-
- ❑ With Distance Regulation Control Module - J428- adjusting screw
- ❑ Measure the adjustment dimension (and if necessary adjust. Refer to ➤ [Fig. "Adjusting Screws, Adjusting", page 57](#).

6 - Distance Regulation Control Module - J428-

- ❑ Removing and installing. Refer to ➤ ["6.2.3 Control Module for Adaptive Cruise Control, Removing and Installing, with Retaining Plate, Version 2", page 56](#).
- ❑ Calibrating. Refer to ➤ ["6.3 Adaptive Cruise Control, Calibrating", page 59](#).

7 - Connector

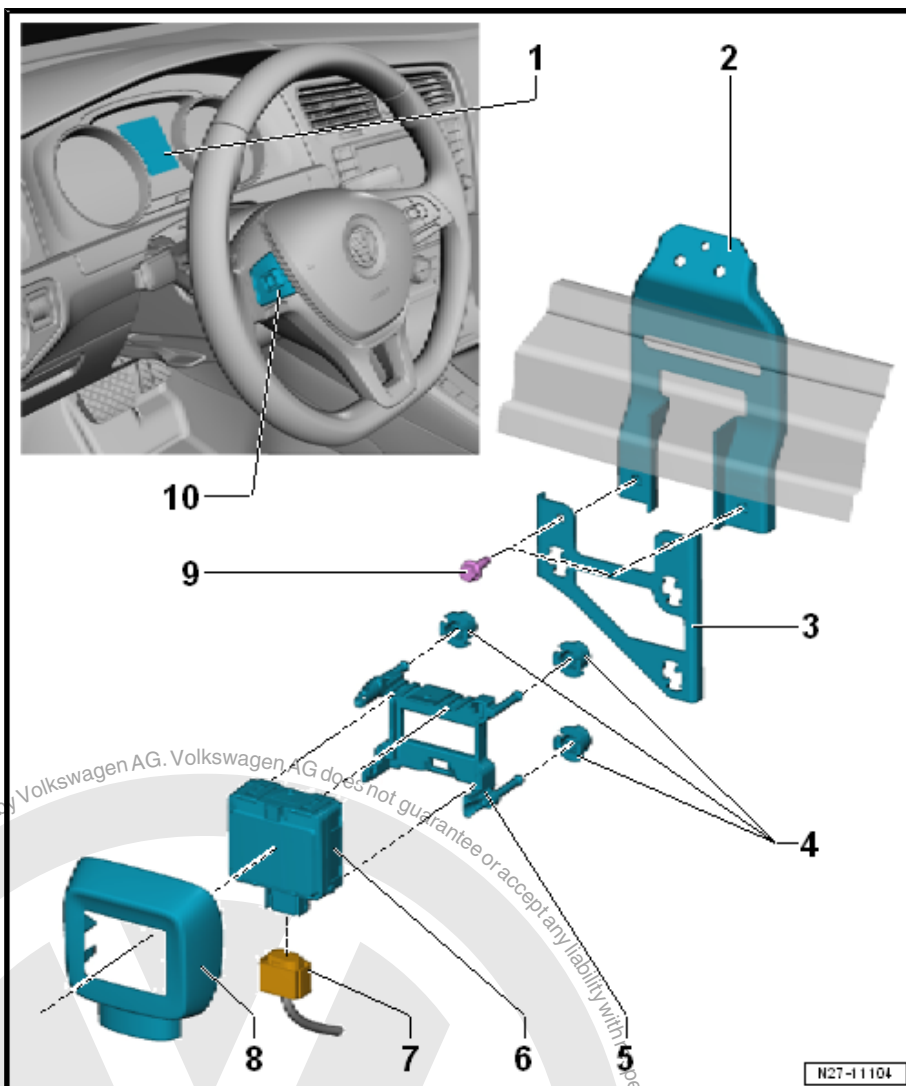
8 - Radar Sensor Trim

9 - Bolt

- ❑ Tightening Specification: 8 Nm.
- ❑ Quantity: 2

10 - Adaptive Cruise Control Button - E357-

- ❑ Is integrated in the multifunction steering wheel.
- ❑ Removing and Installing. Refer to ➤ Communication; Rep. Gr. 91 ; Multifunction Steering Wheel; Right/ Left Multifunction Buttons On Steering Wheel -E441-/-E440- , Removing and Installing .





6.2 Control Module for Adaptive Cruise Control, Removing and Installing

⇒ ["6.2.1 Control Module for Adaptive Cruise Control, Removing and Installing, Version 1", page 53](#)

⇒ ["6.2.2 Control Module for Adaptive Cruise Control, Removing and Installing, from the Retaining Plate, Version 1", page 54](#)

⇒ ["6.2.3 Control Module for Adaptive Cruise Control, Removing and Installing, with Retaining Plate, Version 2", page 56](#)

⇒ ["6.2.4 Control Module for Adaptive Cruise Control, Removing and Installing, from the Retaining Plate, Version 2", page 56](#)

⇒ ["6.2.5 Control Module for Adaptive Cruise Control, Removing and Installing, From the Adapter Frame, Version 2", page 58](#)

6.2.1 Control Module for Adaptive Cruise Control, Removing and Installing, Version 1

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



Note

If the Distance Regulation Control Module - J428- is replaced, call up the respective function using the Vehicle Diagnostic Tester .

Removing

- Remove the bolts -arrows-.
- Remove the Distance Regulation Control Module - J428- -2-.
- Disconnect the connector -1-.

Removing Radar Sensor Trim

- Release the mounting tabs for the radar sensor trim -2- on both sides in direction of -arrow A-.
- Remove the radar sensor trim -2- from the Distance Regulation Control Module - J428- -1-.

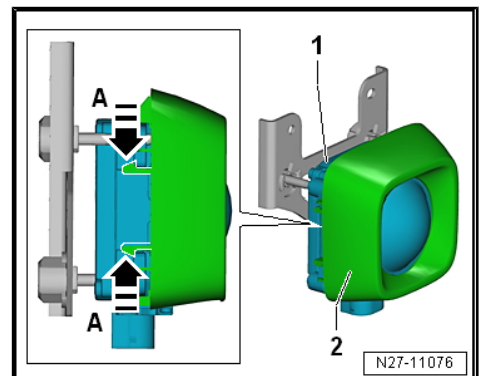
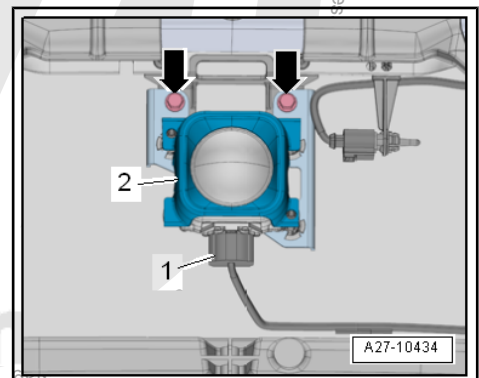
Installing

Install in the reverse order of removal. Note the following:

- Calibrate the adaptive cruise control. Refer to
⇒ ["6.3 Adaptive Cruise Control, Calibrating", page 59](#) .

Tightening Specifications

- ◆ Refer to
⇒ ["6.1.1 Component Location Overview- Adaptive Cruise Control \(ACC\), Version 1", page 50](#)





6.2.2 Control Module for Adaptive Cruise Control, Removing and Installing, from the Retaining Plate, Version 1

Special tools and workshop equipment required

- ◆ Digital Caliper - VAS6335-

Adjusting screws, adjusting. Refer to ➔ [page 54](#)

Distance Regulation Control Module - J428- Clips, Replacing.
Refer to ➔ [page 55](#)

Removing

- Remove the Distance Regulation Control Module - J428- . Refer to ➔ ["6.2.1 Control Module for Adaptive Cruise Control, Removing and Installing, Version 1", page 53](#) .
- Turn the quick-release fasteners -2- in direction of -arrow-.
- Remove the retaining plate -3- from the Distance Regulation Control Module - J428- -4-.
- Remove the quick-release fasteners -2- from the adjusting screws -1-.

Installing

Install in the reverse order of removal. Note the following:

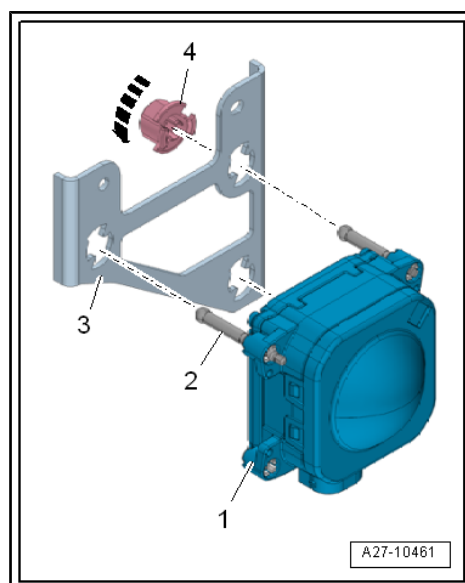
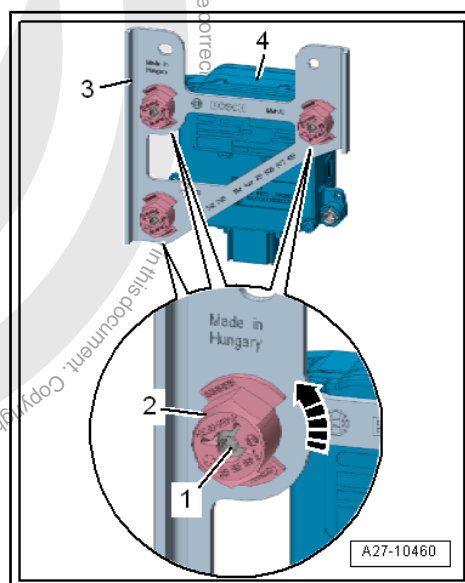


Note

- ◆ Replace the quick-release fasteners -2-.
- ◆ The adjusting screws -1- in the Distance Regulation Control Module - J428- are preset. If necessary, correct the setting. Refer to ➔ [page 54](#) .
- ◆ If the adjusting screws -1- were removed, the clips on the Distance Regulation Control Module - J428- must be replaced. Refer to ➔ [page 55](#) .

- Press the new quick-release fasteners -4- on the adjusting screws -2-.
- Attach the retaining plate -3- to the Distance Regulation Control Module - J428- -1-.
- Secure the quick-release fasteners -4- to the retaining plate -3- in direction of -arrow- all the way.
- Install the Distance Regulation Control Module - J428- . Refer to ➔ ["6.2 Control Module for Adaptive Cruise Control, Removing and Installing", page 53](#) .

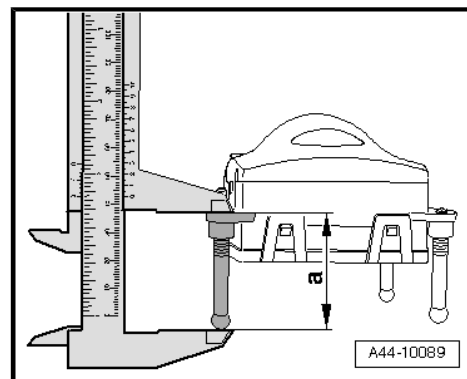
Adjusting Screws, Adjusting



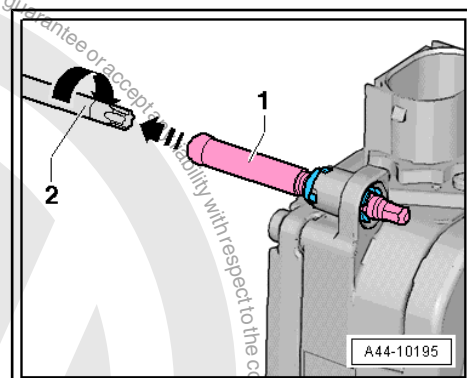


- Place the Distance Regulation Control Module - J428- on a soft and clean mat.
- Using the Digital Caliper - VAS6335- measure the adjustment dimension -a- on all adjusting screws and adjust if necessary.
- ◆ Dimension -a- = 44.3 mm.

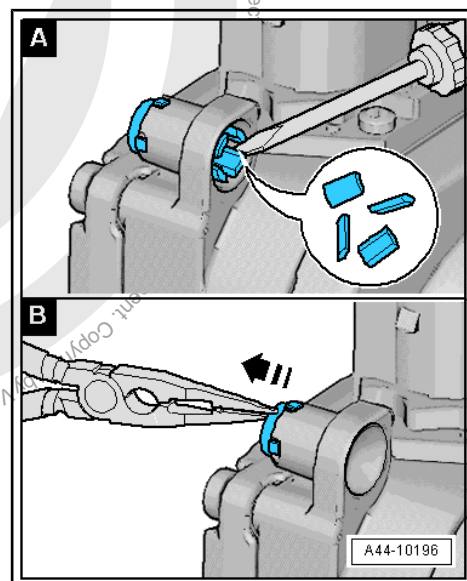
Distance Regulation Control Module - J428- Clips, Replacing



- Remove the adjusting screw -1- using a suitable tool -2-.

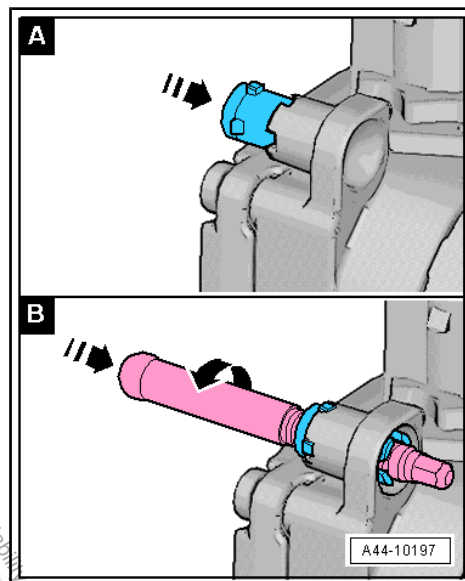


- Place a screwdriver -A- between the hook and the housing.
- Bend every hook to the center point, one after the other, with the screwdriver until it audibly breaks off.
- To prevent the broken hook from getting caught on the housing, remove it from the inside of the clip using needle nose pliers -B-.





- Insert the new clip -A- into the hole in the housing and press on by hand until it clicks into place -arrow-. The tabs on the clip must sit correctly in the recesses.
- Install the adjusting screw -B- -arrows-. The adjusting screw must be parallel to the hole and correctly aligned to the clip.
- Adjust the adjusting screw. Refer to [⇒ page 54](#) .
- Repeat this procedure on all the other clips, if necessary.
- Install the retaining plate for Distance Regulation Control Module - J428- . Refer to [⇒ page 54](#) .



6.2.3 Control Module for Adaptive Cruise Control, Removing and Installing, with Retaining Plate, Version 2

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



Note

If the Distance Regulation Control Module - J428- is replaced, call up the respective function using the Vehicle Diagnostic Tester .

Removing

- Remove the bolts -1-.
- Remove the Distance Regulation Control Module - J428- with retaining plate -3-.
- Disconnect the connector -2-.

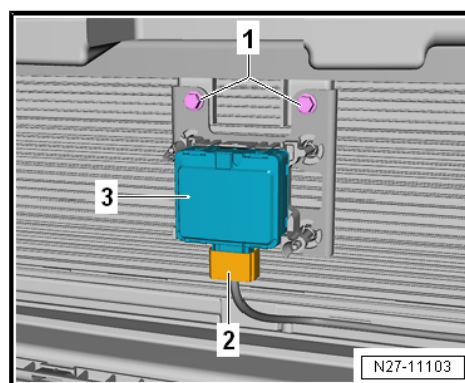
Installing

Install in the reverse order of removal. Note the following:

- Calibrate the adaptive cruise control. Refer to [⇒ "6.3 Adaptive Cruise Control, Calibrating", page 59](#) .

Tightening Specifications

- ◆ Refer to [⇒ "6.1.2 Component Location Overview- Adaptive Cruise Control \(ACC\), Version 2", page 52](#)



6.2.4 Control Module for Adaptive Cruise Control, Removing and Installing, from the Retaining Plate, Version 2

Special tools and workshop equipment required

- ◆ Digital Caliper - VAS6335-

Removing

- Remove the Distance Regulation Control Module - J428- . Refer to



⇒ "6.2.3 Control Module for Adaptive Cruise Control, Removing and Installing, with Retaining Plate, Version 2", page 56.

- Turn the quick-release fasteners -2- in direction of -arrow-.
- Remove the quick-release fasteners -2- from the adjusting screws -1-.
- Remove the retaining plate -3- from the Distance Regulation Control Module - J428- -4-.

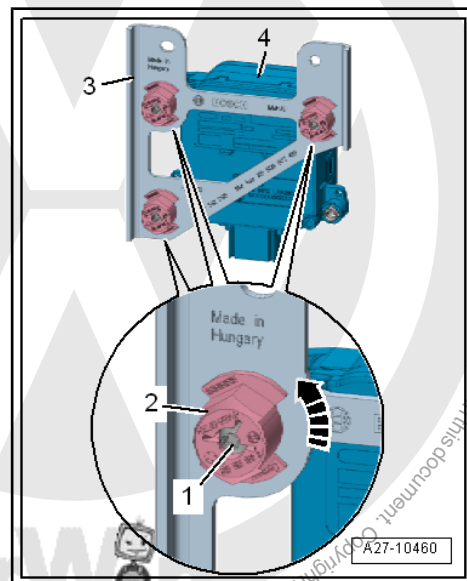
Installing

Install in the reverse order of removal. Note the following:



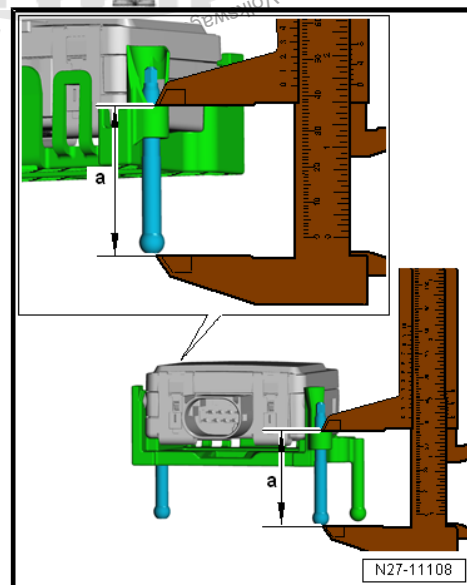
Note

- ◆ Replace the quick-release fasteners -2-.
- ◆ The adjusting screws -1- in the adapter frame are preset. If necessary, correct the setting. Refer to ⇒ Fig. "Adjusting Screws, Adjusting", page 57.



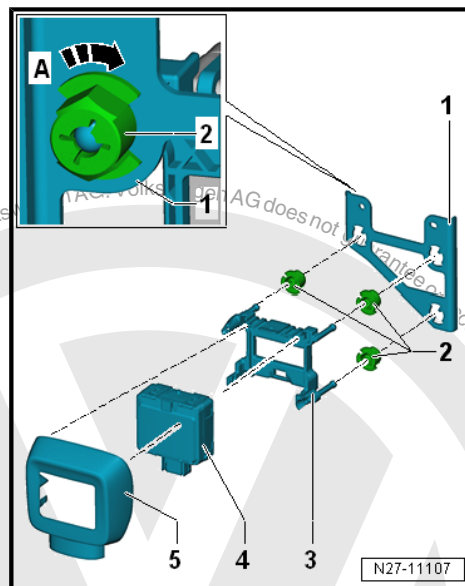
Adjusting Screws, Adjusting

- Using the Digital Caliper - VAS6335- measure the adjustment dimension -a- on all adjusting screws and adjust if necessary.
- ◆ Dimension -a- = 40.3 mm ± 0.5 mm
- Install the retaining plate -1- on the quick-release fasteners -2-.





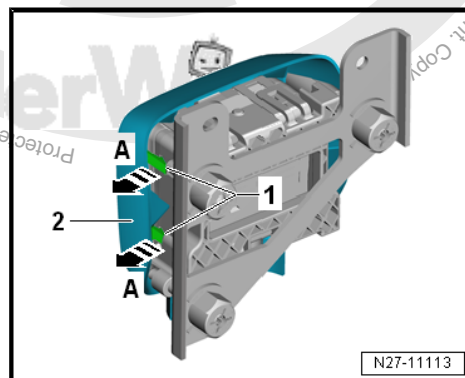
- Push in new quick-release fasteners -2- on the adjusting screws and fixed bearing on the adapter frame -3-.
- Turn the quick-release fasteners -2- on the back of the retaining plate -1- in the direction of the -arrow A- until stop.
- Install the Distance Regulation Control Module - J428- . Refer to
⇒ [“6.2.3 Control Module for Adaptive Cruise Control, Removing and Installing, with Retaining Plate, Version 2”, page 56](#)
- Calibrate the adaptive cruise control. Refer to
⇒ [“6.3 Adaptive Cruise Control, Calibrating”, page 59](#) .



6.2.5 Control Module for Adaptive Cruise Control, Removing and Installing, From the Adapter Frame, Version 2

Removing

- Remove the Distance Regulation Control Module - J428- . Refer to
⇒ [“6.2.3 Control Module for Adaptive Cruise Control, Removing and Installing, with Retaining Plate, Version 2”, page 56](#) .
- Loosen the catches -1- on both sides in the direction of the -arrow A-.
- Remove the rain sensor trim -2-.

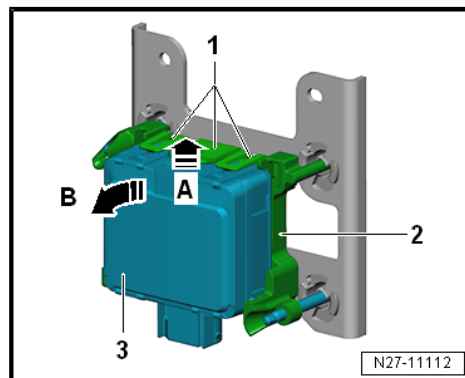


- Loosen the locking mechanisms -1- in the direction of the -arrow A-.
- Fold out the Distance Regulation Control Module - J428- -3- in the direction of the -arrow B-.
- Remove the Distance Regulation Control Module - J428- -3- from the adapter frame -2-.

Installing

Install in the reverse order of removal. Note the following:

- Calibrate the adaptive cruise control. Refer to
⇒ [“6.3 Adaptive Cruise Control, Calibrating”, page 59](#) .





6.3 Adaptive Cruise Control, Calibrating

Conditions

- The Distance Regulation Control Module - J428- must be calibrated during the following conditions:
- ◆ Distance Regulation Control Module - J428- was removed and installed or replaced.
- ◆ Bumping into the Distance Regulation Control Module - J428- when carelessly assembling the front bumper cover.
- ◆ Damage to the front bumper cover through an accident or similar.
- ◆ The front bumper carrier was remove and installed or replaced.
- ◆ Rear axle toe will be adjusted.



Note

- ◆ *To great of a horizontal adjustment of the Distance Regulation Control Module - J428- causes the function of the ACC/Front Assist to stay switched off. This is indicated by the following message in the Instrument Cluster - KX2- : Acc/Front Assist Not Available.*
- ◆ *A limited sensor view, due to a dirty sensor or inclement weather conditions (for example, heavy rain, snowfall, iced over sensor etc.) causes the ACC/Front Assist functions to be temporarily unavailable. This is indicated by the following message in the Instrument Cluster - KX2- : ACC/Front Assist: No Sensor View.*
- Calibrate the adaptive cruise control. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Adaptive Cruise Control (ACC); Adaptive Cruise Control (ACC), Calibrating .



7 Special Tools

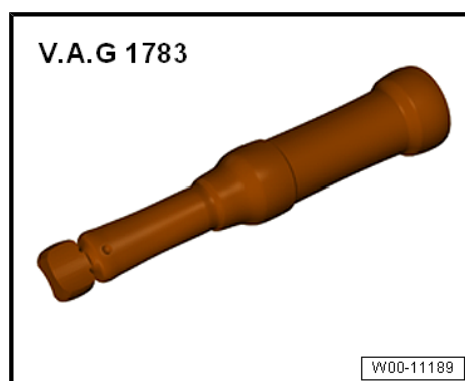
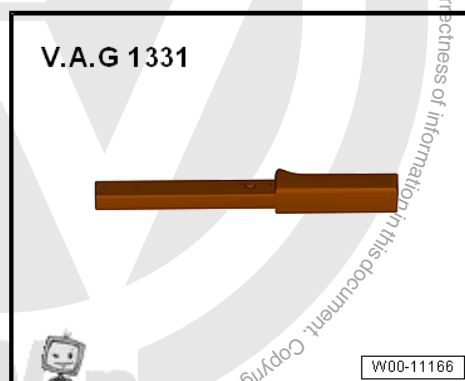
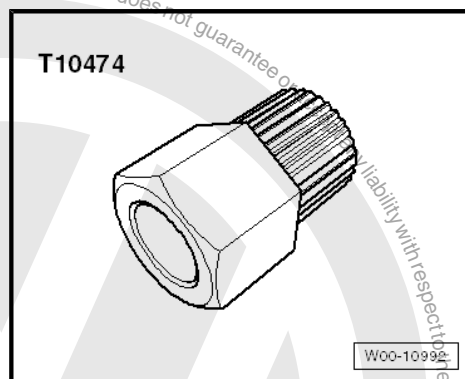
Special tools and workshop equipment required

- ◆ Socket - Torx T50 - T10470-
- ◆ Puller - Bevel Gear - T10474-

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

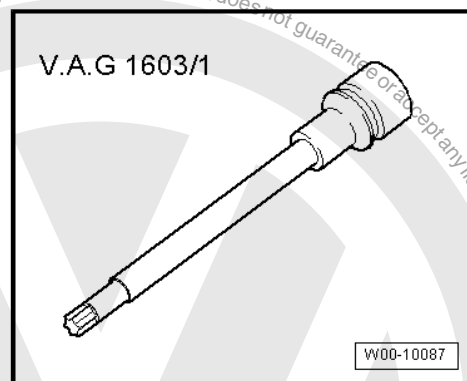
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

- ◆ Torque Wrench 1783 2-10Nm - VAG1783-

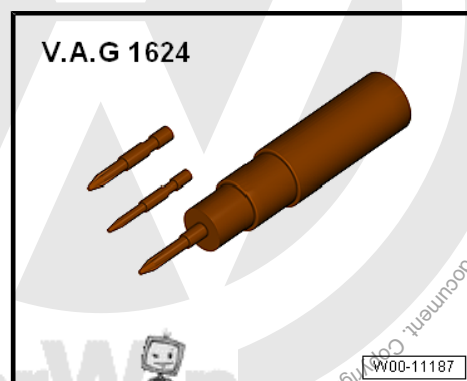




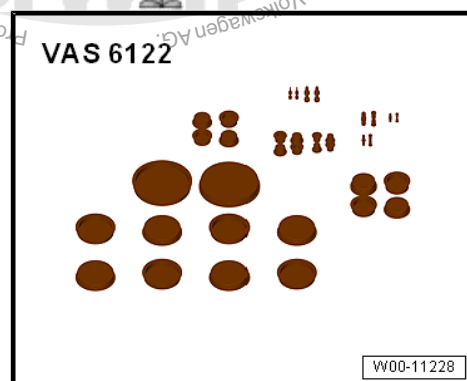
◆ Torx Key Socket Set - VAG1603A/1-



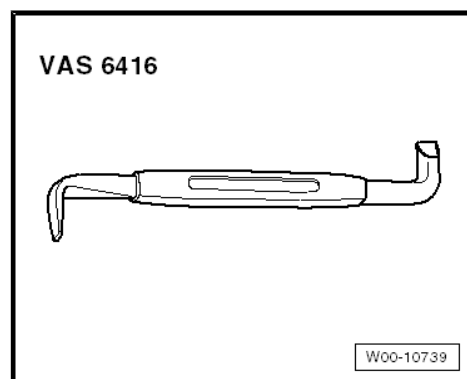
◆ Torque Screwdriver - VAG1624-



◆ Engine Bung Set - VAS6122-

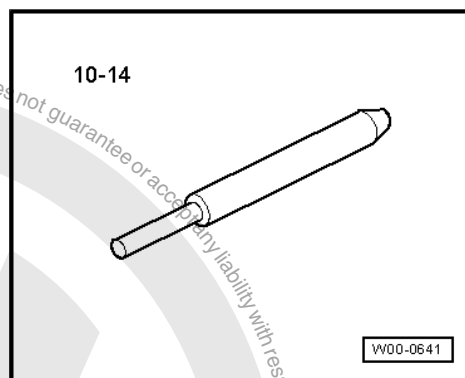


◆ Angled Screwdriver - VAS6416-

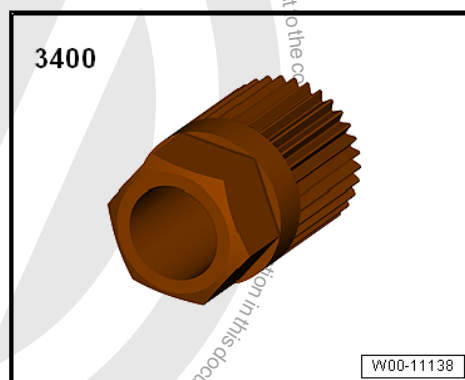




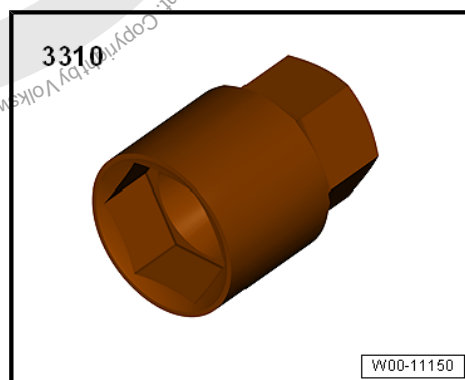
◆ Valve Guide - Lower Control Arm Drift - 10-14-



◆ Multi-Tooth Adapter - 3400-



◆ Generator Belt Socket - 3310-





90 – Instruments

1 Instrument Cluster

⇒ ["1.1 Overview - Instrument Cluster", page 63](#)

⇒ ["1.2 Instrument Cluster KX2 , Removing and Installing", page 63](#)

1.1 Overview - Instrument Cluster

1 - Connector

- ☐ For the instrument cluster

2 - Instrument Cluster - KX2-

- ☐ With Instrument Cluster Control Module - J285-
- ☐ If a LED indicator lamp or instrument cluster illumination is faulty, the instrument cluster must be replaced
- ☐ Removing and installing. Refer to ⇒ ["1.2 Instrument Cluster KX2 , Removing and Installing", page 63](#) .

3 -

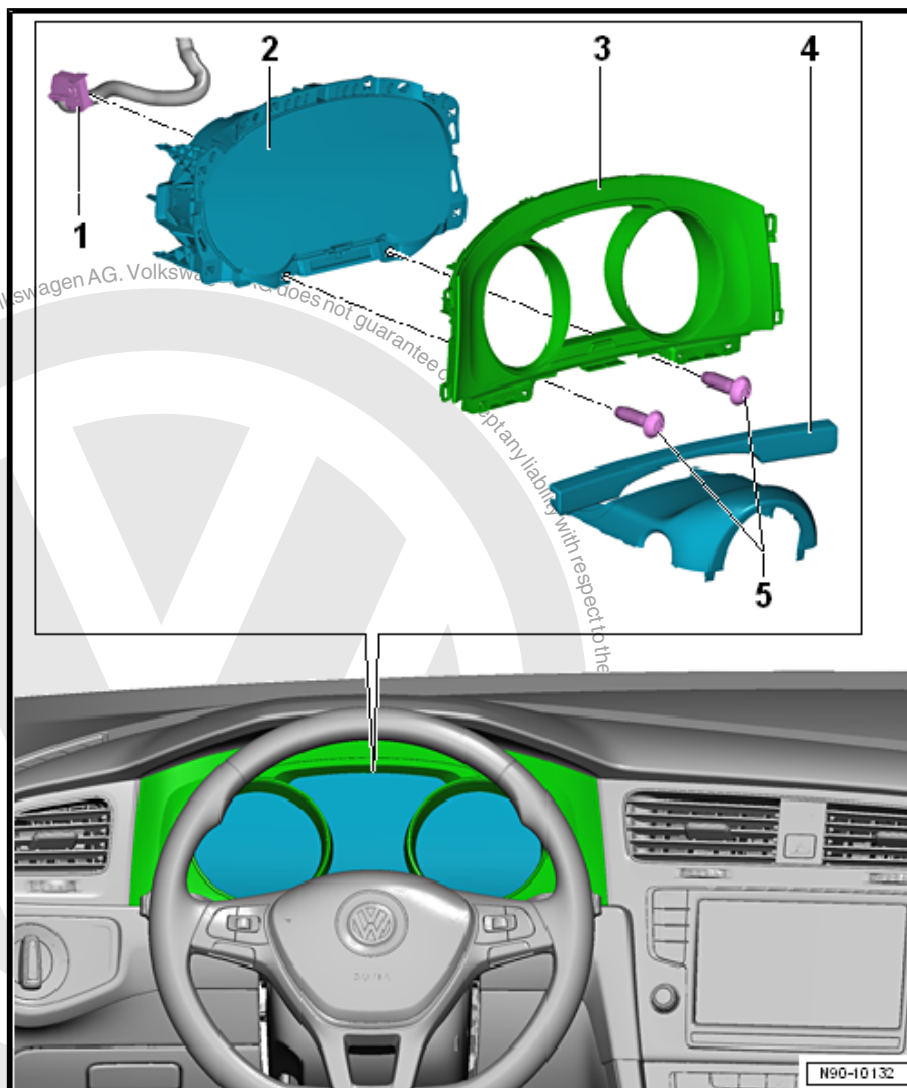
- ☐ Removing and installing. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Instrument Panel ⇒ Body Interior; Rep. Gr. 70 .

4 - Upper Steering Column Trim

- ☐ Overview. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Overview - Steering Column Trim Panel .

5 - Bolt

- ☐ Tightening Specification: 2.5 Nm
- ☐ Quantity: 2



1.2 Instrument Cluster - KX2- , Removing and Installing

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester



Note

- ◆ *All indicator lamps in the Instrument Cluster - KX2- have LEDs. LEDs cannot be replaced separately if faulty. The instrument cluster must be replaced.*
- ◆ *Do not disassemble Instrument Cluster - KX2- .*
- ◆ *For better illustration the steering wheel is not shown. It is not necessary to remove the steering wheel in order to remove the Instrument Cluster - KX2- .*
- ◆ *If the Instrument Cluster - KX2- is replaced with the Instrument Cluster Control Module - J285- call up the data using the Vehicle Diagnostic Tester .*

General Description:

The following components are integrated inside the Instrument Cluster - KX2- :

- ◆ Instrument Cluster Control Module - J285-
- ◆ Fuel Gauge - G1-
- ◆ Speedometer - G21-
- ◆ Engine Coolant Temperature Gauge - G3-
- ◆ Tachometer - G5-
- ◆ Indicator lamps

Removing

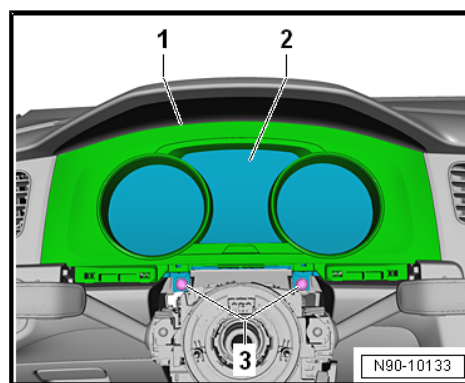
- Position the steering wheel as far back as possible. Use the entire adjustment range of the steering column adjustment for this.
- Turn off the ignition.
- Then remove the ignition key, if equipped.
- Remove the upper steering column trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Upper Steering Column Trim Panel, Removing and Installing .
- Remove the instrument cluster trim -1-. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Instrument Panel .
- Remove the bolts -3-.



Note

The Instrument Cluster - KX2- is engaged in the instrument panel. For removal greater force is necessary.

- Remove the Instrument Cluster - KX2- -2- until it contacts the steering wheel.
- Disconnect the connector.





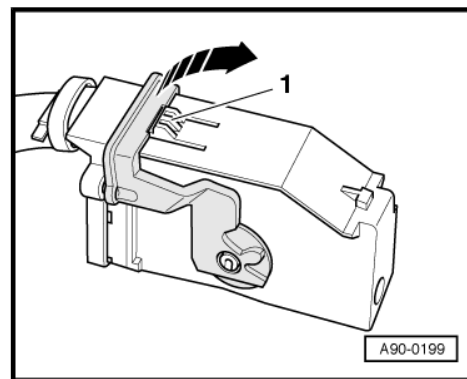
- To disconnect the connector press the circlip -1-.
- Pivot the retaining bracket in the -direction of the arrow- and remove from the connector.
- Remove the Instrument Cluster - KX2- on the front passenger side between the steering wheel and the instrument panel.

Installing

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ ⇒ ["1.1 Overview - Instrument Cluster", page 63](#)





2 Horn

⇒ "2.1 Overview - Horn", page 66

⇒ "2.2 High Tone Horn H2 / Low Tone Horn H7, Removing and Installing", page 66

2.1 Overview - Horn

1 - Bracket

- ☐ For the horn
- ☐ Removing and installing. Refer to
⇒ "2.2 High Tone Horn H2 / Low Tone Horn H7, Removing and Installing", page 66.

2 - Bolt

- ☐ Tightening Specification: 18 Nm.

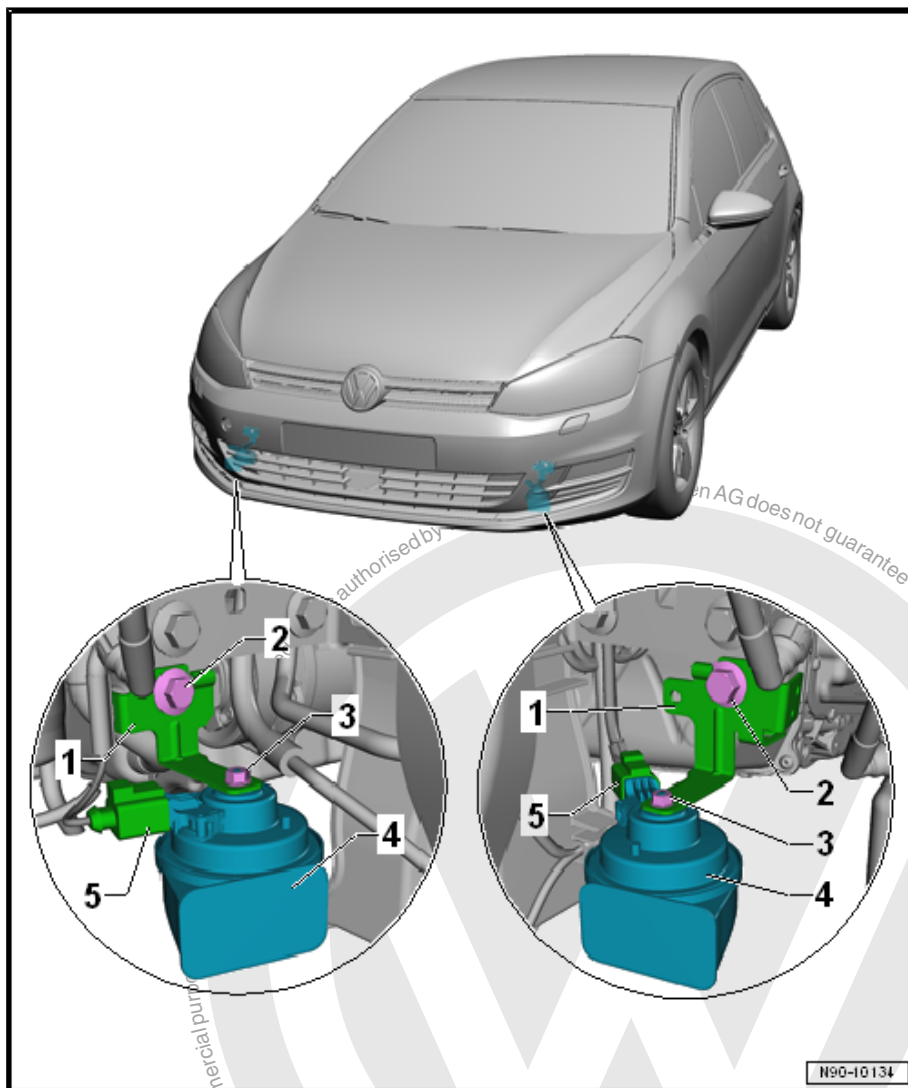
3 - Nut

- ☐ Tightening Specification: 9 Nm.

4 - Horn

- ☐ High Tone Horn - H2- is installed on the left
- ☐ Low Tone Horn - H7- in installed on the right
- ☐ Removing and installing. Refer to
⇒ "2.2 High Tone Horn H2 / Low Tone Horn H7, Removing and Installing", page 66.

5 - Connector



2.2 High Tone Horn - H2- / Low Tone Horn - H7- , Removing and Installing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.



Removing Horn

- Remove the nut -1-.
- Remove the horn -3- from the bracket.
- Disconnect the connector -2-.

Install Horn

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ ⇒ [“2.1 Overview - Horn”, page 66](#)

Removing Bracket and Horn

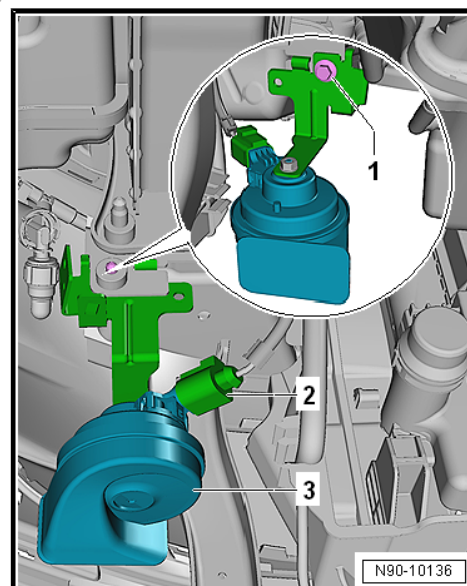
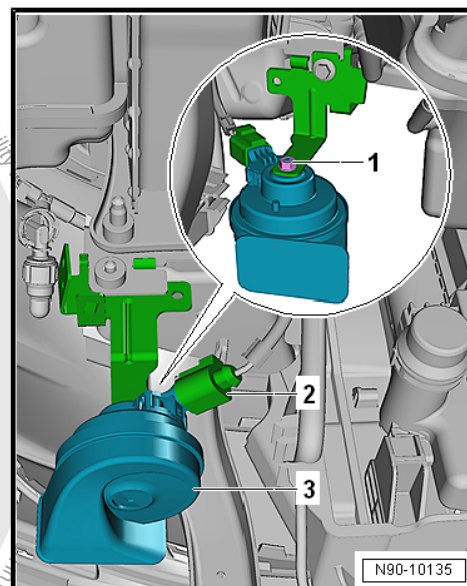
- Remove the bolt -1-.
- Remove the bracket with the horn -3-.
- Disconnect the connector -2-.

Install Bracket and Horn

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Horn”, page 66](#)





92 – Wiper/Washer Systems

1 Windshield Wiper System

⇒ [“1.1 Overview - Windshield Wiper System”, page 68](#)

⇒ [“1.2 Wiper, Moving Into Service Position”, page 71](#)

⇒ [“1.3 Wiper Blade, Removing and Installing”, page 71](#)

⇒ [“1.4 Windshield Wiper Arms, Removing and Installing”, page 72](#)

⇒ [“1.5 Windshield Wiper Arms, Adjusting”, page 73](#)

⇒ [“1.6 Windshield Wiper Motor V , Removing and Installing”, page 75](#)

⇒ [“1.7 Windshield Wiper Motor, Replacing”, page 76](#)

⇒ [“1.8 Windshield Wiper Motor, Deactivating Alternating Park Position Function”, page 77](#)

⇒ [“1.9 Rain/Light Recognition Sensor, Removing and Installing”, page 78](#)

⇒ [“1.10 Rain/Light Recognition Sensor, Servicing”, page 84](#)

1.1 Overview - Windshield Wiper System

⇒ [“1.1.1 Overview - Windshield Wiper System”, page 68](#)

⇒ [“1.1.2 Overview - Windshield Wiper Motor and Windshield Wiper Frame”, page 70](#)

1.1.1 Overview - Windshield Wiper System



1 - Driver Side Windshield Wiper Blade

- ❑ There are different lengths. Refer to the Parts Catalog.
- ❑ Removing and installing. Refer to
⇒ ["1.3 Wiper Blade, Removing and Installing", page 71](#).

2 - Passenger Side Windshield Wiper Blade

- ❑ There are different lengths. Refer to the Parts Catalog.
- ❑ Removing and installing. Refer to
⇒ ["1.3 Wiper Blade, Removing and Installing", page 71](#).

3 - Passenger Side Windshield Wiper Arm

- ❑ There are different lengths. Refer to the Parts Catalog.
- ❑ Removing and installing. Refer to
⇒ ["1.4 Windshield Wiper Arms, Removing and Installing", page 72](#).
- ❑ Adjusting. Refer to
⇒ ["1.5 Windshield Wiper Arms, Adjusting", page 73](#).

4 - Cap

5 - Nut

- ❑ Tightening Specification: 20 Nm

6 - Bolt

- ❑ Tightening sequence. Refer to
⇒ [Fig. "Tightening Specifications and Sequence for the Windshield Wiper Motor", page 70](#).

7 - Bolt

- ❑ Tightening sequence. Refer to
⇒ [Fig. "Tightening Specifications and Sequence for the Windshield Wiper Motor", page 70](#).

8 - Windshield Wiper Frame

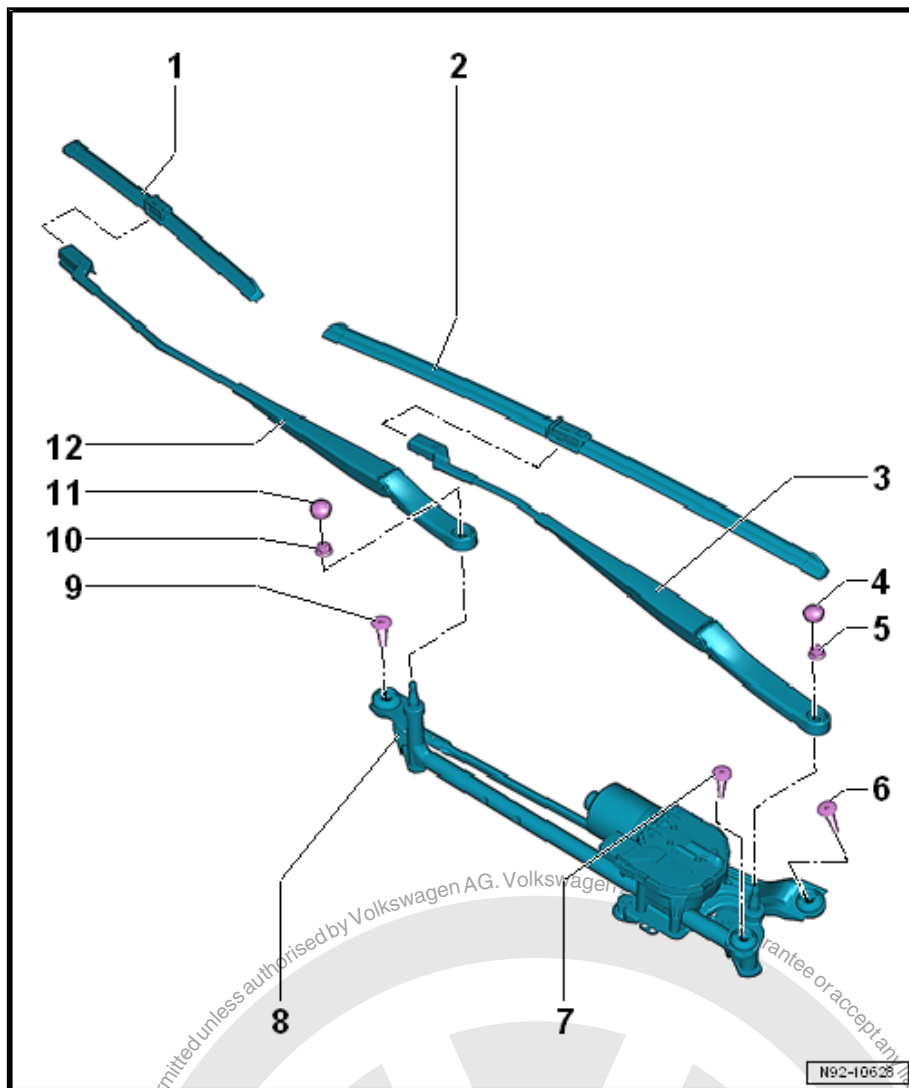
- ❑ With Windshield Wiper Motor - V-
- ❑ With Wiper Motor Control Module J400-
- ❑ Removing and installing. Refer to
⇒ ["1.6 Windshield Wiper Motor V, Removing and Installing", page 75](#).

9 - Bolt

- ❑ Tightening sequence. Refer to
⇒ [Fig. "Tightening Specifications and Sequence for the Windshield Wiper Motor", page 70](#).

10 - Nut

- ❑ Tightening Specification: 20 Nm





11 - Cap

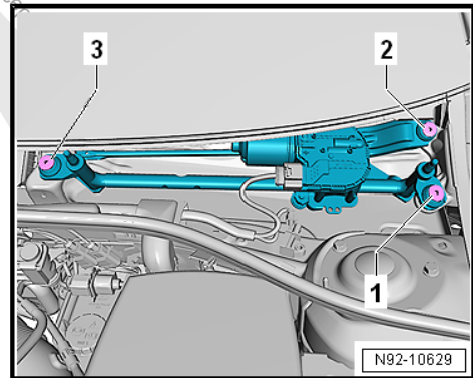
12 - Driver Side Windshield Wiper Arm

- ☐ There are different lengths. Refer to the Parts Catalog.
- ☐ Removing and installing. Refer to ➤ ["1.4 Windshield Wiper Arms, Removing and Installing", page 72](#).
- ☐ Adjusting. Refer to ➤ ["1.5 Windshield Wiper Arms, Adjusting", page 73](#).

Tightening Specifications and Sequence for the Windshield Wiper Motor

- Tighten the bolts in stages in the sequence shown:

Stage	Bolts	Tightening Specification
1.	-1 to 3-	Install by hand as far as the stop.
2.	-1 to 3-	8 Nm



1.1.2 Overview - Windshield Wiper Motor and Windshield Wiper Frame

1 - Windshield Wiper Motor

- ☐ Removing and installing. Refer to ➤ ["1.7 Windshield Wiper Motor, Replacing", page 76](#).

2 - Bolts

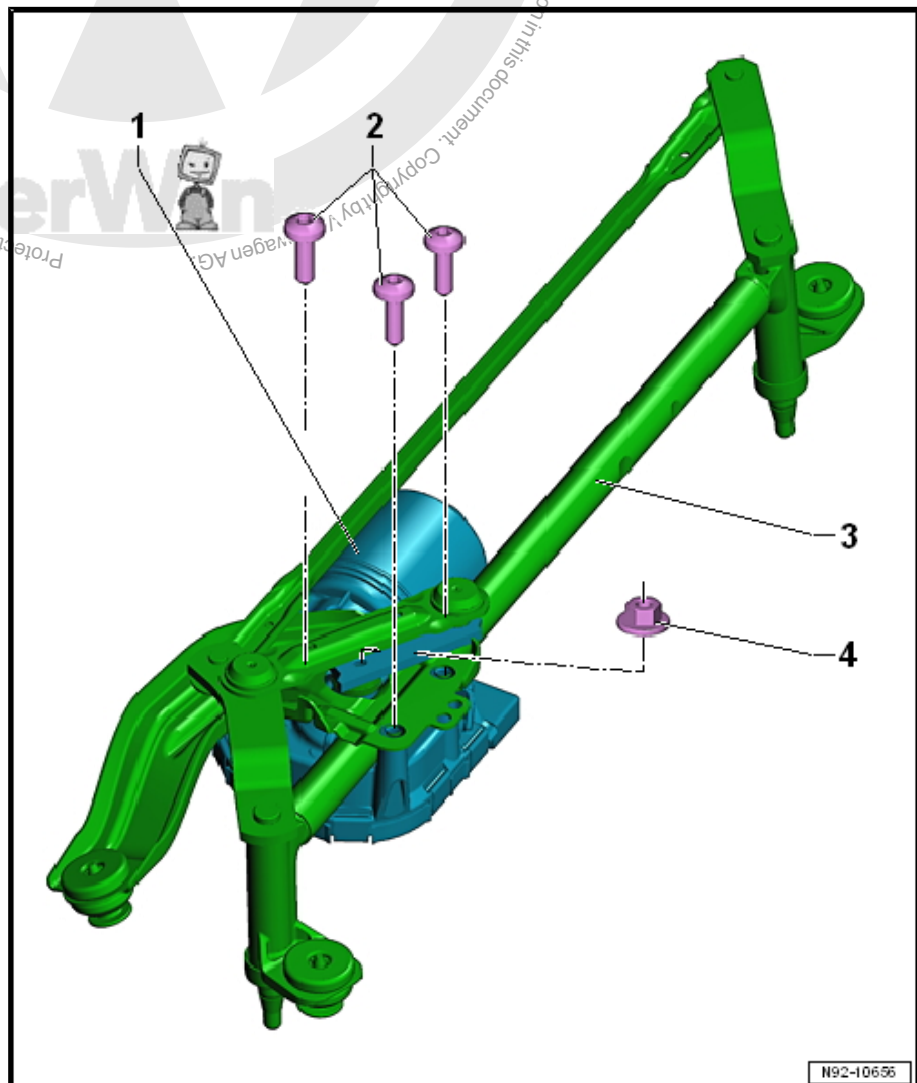
- ☐ Tightening Specification: 9 Nm -1 Nm
- ☐ Quantity: 3

3 - Windshield Wiper Frame

- ☐ Removing and installing. Refer to ➤ ["1.6 Windshield Wiper Motor V, Removing and Installing", page 75](#).

4 - Nut

- ☐ Tightening Specification: 25 Nm + 1 Nm





1.2 Wiper, Moving Into Service Position



Caution

Risk of damaging the hood by running the wipers back in basic position.

- ◆ ***Do not drive a vehicle with windshield wiper arms folded up.***
- ◆ ***The windshield wipers automatically go back into their rest position when the wiper switch is activated or when driving faster than 6 km/h.***



Caution

Danger of windshield wiper blade damage due to freezing.

- ◆ ***If frost is present, check to see if the windshield wiper blades are frozen.***



Note

If the windshield wiper motor is to be run during the work procedure, the hood must be closed, otherwise the voltage supply of the wiper motor will be interrupted.

- Quickly turn on the ignition and then turn it off again.
- Turn the windshield wiper lever in the “one-touch wiping position” within 10 seconds.
- The windshield wipers run into “Service position”.

1.3 Wiper Blade, Removing and Installing

Removing

- Bring the windshield wiper into service position. Refer to [⇒ “1.2 Wiper, Moving Into Service Position”, page 71](#).



Caution

Risk of damaging the wiper blade.

- ◆ ***Joint-free windshield wipers are very flexible. Only grasp the wiper blades in the area for the wiper blade mount to lift them away from the windshield.***

- Lift the wiper arm off the windshield.



- Press the clip -arrow A- and remove the wiper blade -1- from the wiper arm -2- -arrow B-.
- Remove the wiper blade -1-.

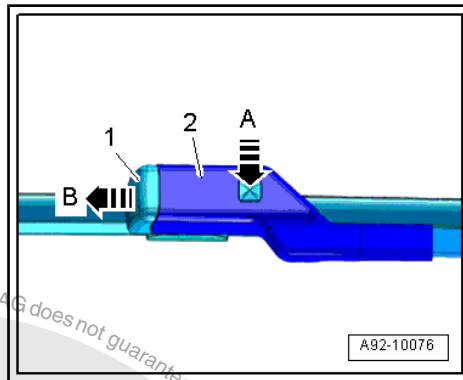
Installing



Caution

There is a risk of damaging the body.

- ♦ *The driver and passenger side wiper blades are different lengths.*

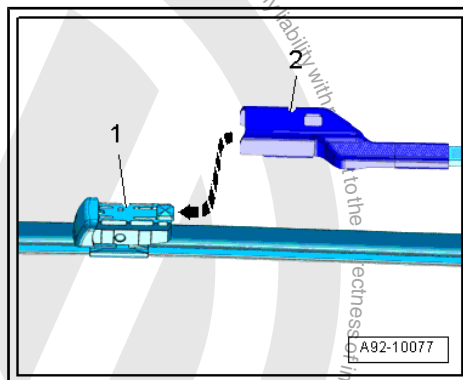


Install in the reverse order of removal. Note the following:

- Guide the wiper blade -1- parallel into the wiper arm -2- -arrow-. Slide the wiper blade -1- on until the retaining clips engage in the wiper arm -2-.

To leave the “service position:”

- Operate the windshield wiper switch. Or
- Drive faster than 6 km/h.



1.4 Windshield Wiper Arms, Removing and Installing

Special tools and workshop equipment required

- ♦ Puller - Wiper Arm Kit - T10369

Removing



Caution

Risk of damaging the wiper arm shaft.

- ♦ *The wiper arm shaft can get damaged when removing the windshield wiper arms without using the Puller - Wiper Arm Kit - Puller 1 - T10369/1- .*



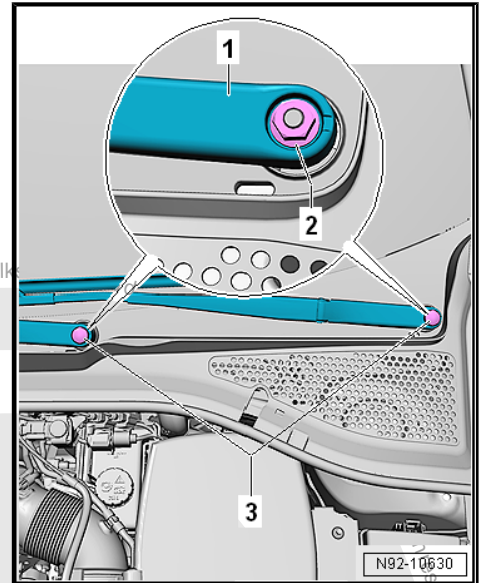
Note

If the windshield wiper motor is to be run during the work procedure, the hood must be closed. Otherwise, the voltage supply of the wiper motor will be interrupted.

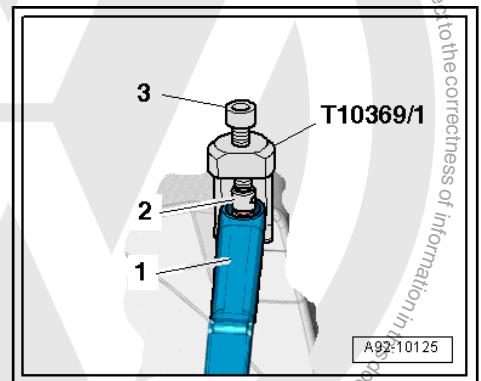
- Bring the windshield wiper into service position. Refer to [⇒ “1.2 Wiper, Moving Into Service Position”, page 71](#) .



- Pry the caps -3- off of the windshield wiper arms -1- with a screwdriver.
- Loosen the nuts -2- a few turns.



- Position the Puller - Wiper Arm Kit - Puller 1 - T10369/1- on the wiper arm -1- as illustrated.
- Position the thrust piece -2- on the wiper arm shaft.
- Rotate the bolt -3- clockwise until the wiper arm -1- is removed from the wiper arm shaft.
- Remove the nut completely and remove the windshield wiper arm -1-.



Installing

Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the body.

- ♦ *The driver and passenger side wiper arms are different lengths.*

- Adjust the windshield wiper arms. Refer to ["1.5 Windshield Wiper Arms, Adjusting", page 73](#).

1.5 Windshield Wiper Arms, Adjusting

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm - VAG1331-



Note

If the windshield wiper motor is to be run during the work procedure, the hood must be closed. Otherwise, the voltage supply of the wiper motor will be interrupted.

- Deactivate the APP function. Refer to ["1.8 Windshield Wiper Motor, Deactivating Alternating Park Position Function", page 77](#).
- Remove the windshield wiper arms. Refer to ["1.4 Windshield Wiper Arms, Removing and Installing", page 72](#).

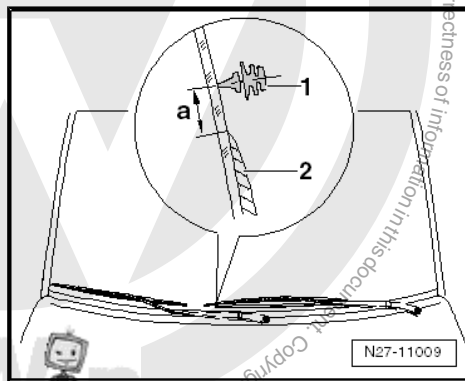


- Turn on the ignition.
- Activate “one-tap wiping” and let the wiper motor run into its end position.
- Turn off the ignition.
- Position the wiper arm with wiper blade installed at the wiper arm shaft.
- Align the wiper blade as follows on the windshield.



Note

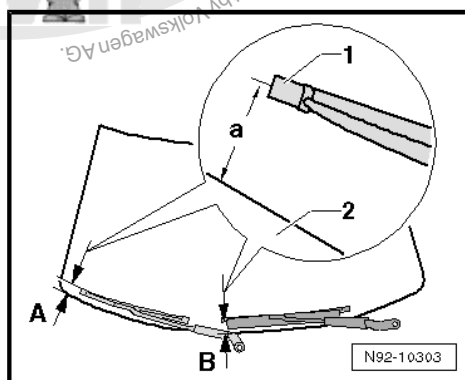
The specified adjustment dimension for the wiper blade park position -a- is measured and adjusted between the center of the wiper blade tip -1- and the lower edge of the windshield.



Driver Side

The distance -a- between the center of the wiper blade -1- and the upper edge of the plenum chamber cover -2- must be 10 ± 5 mm on the driver side -B-.

- If necessary, adjust the windshield wiper blade park position by repositioning the wiper arm.



Passenger Side

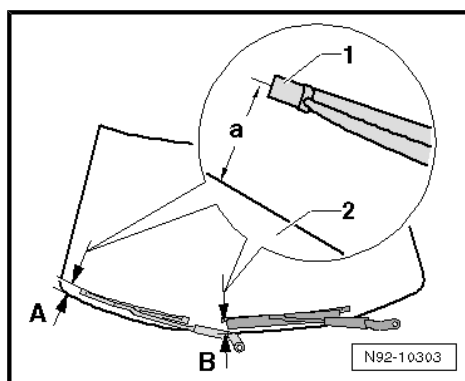
The distance -a- between the center of the wiper blade -1- and the upper edge of the plenum chamber cover -2- must be 10 ± 5 mm on the front passenger side -A-.

- If necessary, adjust the windshield wiper blade park position by repositioning the wiper arm.



Note

The dimensions give the distance of the wiper blade tips to the plenum chamber cover on the lower edge of the windshield.



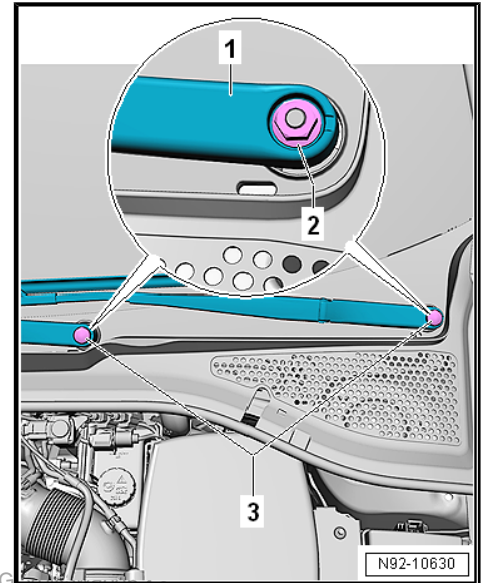
- ◆ Front passenger side dimension -A- = $10 \text{ mm} \pm 5 \text{ mm}$.
- ◆ Driver side dimension -B- = $10 \text{ mm} \pm 5 \text{ mm}$.



- Tighten the nuts -2- on the windshield wiper arms -1-.
- Turn on the ignition.
- Activate “one-tap wiping” and let the windshield wiper arms run into their end position.
- Turn off the ignition.
- Check the position of the wiper arms one more time and adjust if necessary.
- Press the caps -3- onto the wiper arms.

Tightening Specifications

- ◆ Refer to
⇒ [“1.1 Overview - Windshield Wiper System”, page 68](#)



1.6 Windshield Wiper Motor - V-, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1410 - VAG1410-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



Note

If the Windshield Wiper Motor - V- is replaced with the Wiper Motor Control Module - J400- call up the respective function. Refer to Vehicle Diagnostic Tester .

Removing

- Remove the windshield wiper arms. Refer to
⇒ [“1.4 Windshield Wiper Arms, Removing and Installing”, page 72](#) .
- Remove the left plenum chamber cover. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Bulkhead; Plenum Chamber Cover, Removing and Installing .
- Remove the bolts -1, 3 and 4-.
- Disconnect the connector -5-.
- If necessary disconnect the damping regulation connector.
- Remove the wiper frame -2- with linkage and the wiper motor from the plenum chamber.

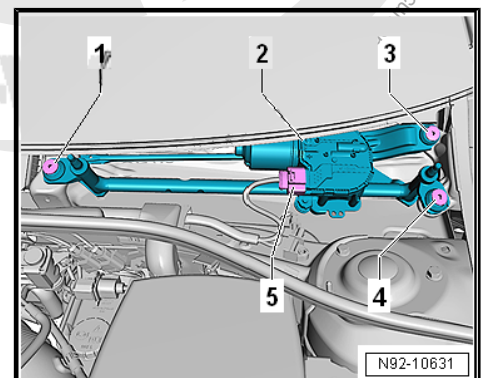
Installing

Install in the reverse order of removal. Note the following:

- Adjust the windshield wiper arms. Refer to
⇒ [“1.5 Windshield Wiper Arms, Adjusting”, page 73](#) .

Tightening Specifications

- ◆ Refer to
⇒ [Fig. “Tightening Specifications and Sequence for the Windshield Wiper Motor””, page 70](#)





1.7 Windshield Wiper Motor, Replacing

Special tools and workshop equipment required

- ◆ Pry Lever - 80-200-
- ◆ Torque Wrench 1410 - VAG1410-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



WARNING

Risk of injury.

- ◆ *When operating an uncovered windshield washer system there is a risk of pinching.*
- ◆ *The windshield washer system can only be operated when installed.*



Caution

There is a risk of damaging the hood and the windshield wiper arm.

- ◆ *By operating the windshield washer system with the hood open, pay attention that there is enough clearance to moving components.*



Note

So that the windshield washer system can be operated with the front lid open, the latch must be engaged in the »closed« position.

Removing

- Deactivate the wiper motor alternating park position. Refer to ⇒ ["1.8 Windshield Wiper Motor, Deactivating Alternating Park Position Function", page 77](#).
- Remove the windshield wiper frame. Refer to ⇒ ["1.6 Windshield Wiper Motor V, Removing and Installing", page 75](#).



- Pry the operating rod -4- on the ball joint from the motor crank -2- using the Pry Lever - 80-200- .
- Remove the hex nut -1-.
- Remove the motor crank -2- from the windshield wiper motor shaft.
- Remove the bolts -3-.
- Remove the Windshield Wiper Motor - V- from the windshield wiper frame.

Installing

Install in the reverse order of removal. Note the following:

- Connect the connector with the Windshield Wiper Motor - V-
- Turn on the ignition.
- Activate “one-tap wiping” and let the Windshield Wiper Motor - V- run into its end position.
- Turn off the ignition.
- Disconnect the connector.
- Install the Windshield Wiper Motor - V- on the windshield wiper frame.
- Install the bolts -3-.
- Install the motor crank -2- on the windshield wiper motor shaft.
- Remove the hex nut -1-.
- Align the operating rod -4- parallel on the motor crank -2-.
- Tighten the hex nut -1-.
- Connect the operating rod -4- and motor crank -2- on the ball joint.
- Install the windshield wiper frame. Refer to [“1.6 Windshield Wiper Motor V , Removing and Installing”, page 75](#) .

Tightening Specifications

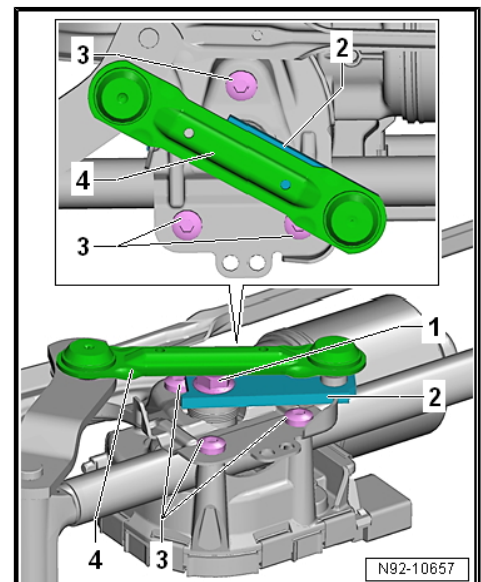
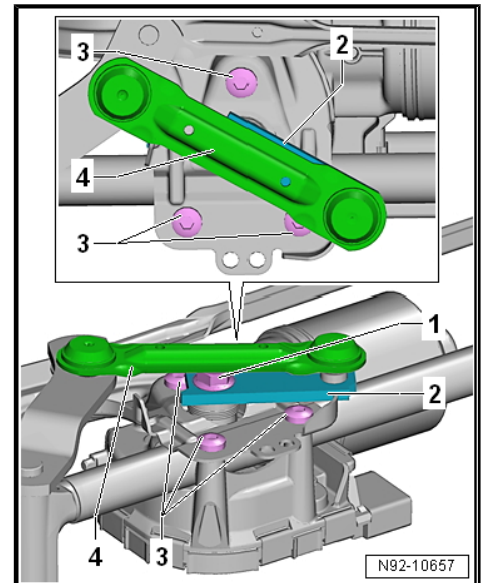
- ◆ Refer to [“1.1.2 Overview - Windshield Wiper Motor and Windshield Wiper Frame”, page 70](#)

1.8 Windshield Wiper Motor, Deactivating Alternating Park Position Function

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

The APP function causes the wiper at every second wiper shut off to move upward slightly after reaching the lowest position.

To install the motor crank on the wiper motor, it is necessary to shut off the motor in the lowest park position. APP function must be deactivated to ensure this.





Note

- ◆ *An activation of APP function is not possible.*
- ◆ *APP function is automatically activated after 100 wiping cycles. This applies to wiper motors in which the APP function was deactivated as well as for new wiper motors.*
- Connect the Vehicle Diagnostic Tester . Refer to [⇒ "7 Vehicle Diagnostic Tester ", page 346](#) .
- Deactivate the wiper motor alternating park position using the Vehicle Diagnostic Tester .



Note

After successfully completing coding/deactivating of the APP function, windshield wiper motor is located in the lower park position after the next wiper cycle.

1.9 Rain/Light Recognition Sensor, Removing and Installing

[⇒ "1.9.1 Rain/Light Recognition Sensor, Removing and Installing, Vehicles with Front Camera for Assistance Systems", page 78](#)

[⇒ "1.9.2 Rain/Light Recognition Sensor, Removing and Installing, Vehicles without Front Camera for Assistance Systems", page 81](#)

1.9.1 Rain/Light Recognition Sensor, Removing and Installing, Vehicles with Front Camera for Assistance Systems



Note

- ◆ *The rain/light recognition sensor has a silicone layer as a contact surface to the windshield.*
- ◆ *The rain/light recognition sensor is designed so that it can be used again. The only requirement to use it again is that the connecting pad must not be damaged or dirty.*
- ◆ *If a Rain/Light Recognition Sensor - G397- is replaced with a Rain/Light Recognition Sensor - G397- with a different part number, the new Rain/Light Recognition Sensor - G397- must be coded. Refer to [⇒ page 81](#) .*
- ◆ *Rain/Light Recognition Sensor - G397- cannot be optionally installed. For the correct Rain/Light Recognition Sensor - G397- . Refer to the Parts Catalog.*

Removing

- Turn off the ignition and all electrical equipment.
- If equipped, turn the key to the 0 position (pre-lock).

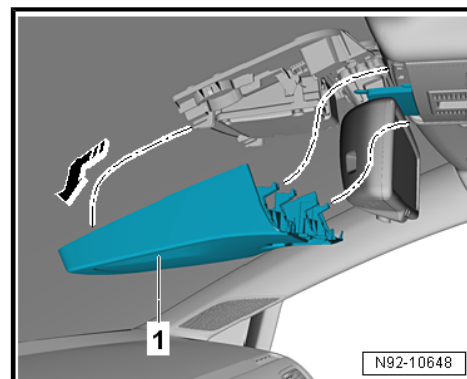


- Remove the cover -1- in direction of -arrow -.

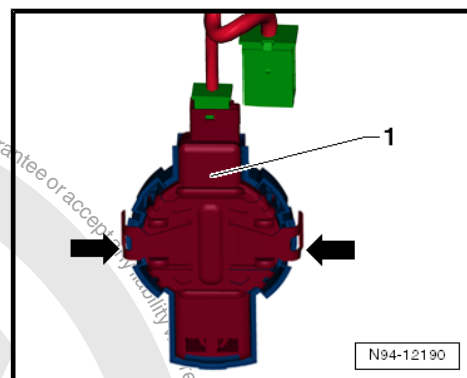


Note

After loosening the wire retainer wait at least one minute. So that the silicone layer can release the tension and is not damaged while removing.



- Release the left and right wire retainer -arrows-.
- Pry the Rain/Light Recognition Sensor - G397- -1- starting at the top carefully from the frame on the windshield.



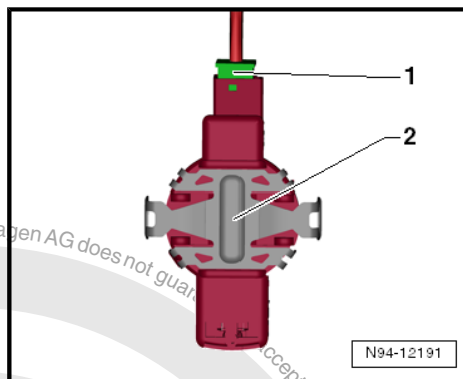


- Release the connection -1- and remove and remove the Rain/Light Recognition Sensor - G397- -2-.



Caution

Lay the removed Rain/Light Recognition Sensor - G397- until it is reinstalled so that the connecting pad is not contaminated with dust or other deposits.



Installing

Install in the reverse order of removal. Note the following:



Caution

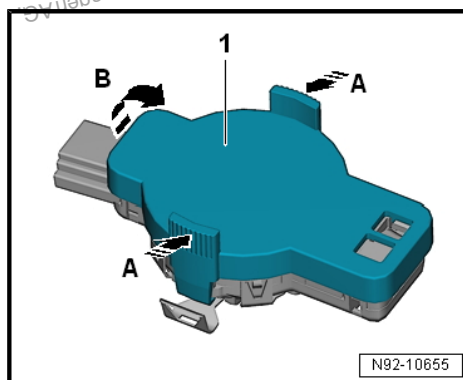
- ◆ *Always clean the windshield surface inside the Rain/Light Recognition Sensor - G397- frame before installing. Remove any traces of the connecting pad still remaining on the windshield.*
- ◆ *Surface (connecting pads) of Rain/Light Recognition Sensor - G397- must not be soiled or damaged when installing. Always replace a sensor that has a damaged connecting pad. Refer to ⇒ **"1.10 Rain/Light Recognition Sensor, Servicing", page 84**.*



Note

If the connecting pads surface of the Rain/Light Recognition Sensor - G397- is soiled, it can be potentially cleaned by "applying" and then "pulling off" one or more adhesive strips.

- Always clean the windshield inside the retaining plate.
- If necessity remove the protective cap -1- on the new Rain/Light Recognition Sensor - G397- .
- Push the handle in direction of -arrow A-.
- Remove the protective cap -1- in direction of -arrow B-.

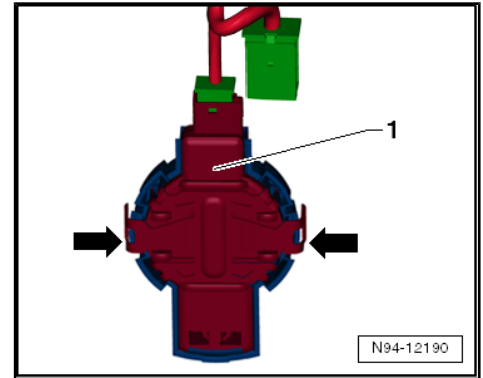




- Connect connector.
- Install the Rain/Light Recognition Sensor - G397- -1- in the frame on the windshield.
- Engage the wire retainer audibly on both sides -arrow-.

i Note

- ◆ *Even if the sensor is installed correctly, small air bubbles can form between the windshield and the connecting pad. The contact surface must be free-of-bubbles after approximately 10 minutes.*
- ◆ *If the contact surface is not free of bubbles after 10 minutes, the Rain/Light Recognition Sensor - G397- must be removed and installed again.*
- ◆ *Air bubbles between the windshield and the connecting pad cause Rain/Light Recognition Sensor - G397- malfunctions.*
- Read out the Diagnostic Trouble Code (DTC) memory and delete the sporadic rain sensor fault using the Vehicle Diagnostic Tester .



i Note

With the rain sensor disconnected the CAN-Bus can be activated by opening the door for example. A sporadic DTC memory entry in the vehicle electrical system control module must be erased after the repair.

- If the Rain/Light Recognition Sensor - G397- was replaced, perform coding. Refer to ➤ [page 81](#) .

Rain/Light Recognition Sensor - G397- , Coding

- Connect the Vehicle Diagnostic Tester . Refer to ➤ ["7 Vehicle Diagnostic Tester", page 346](#) .
- Code the Rain/Light Recognition Sensor - G397- using the Vehicle Diagnostic Tester .

1.9.2 Rain/Light Recognition Sensor, Removing and Installing, Vehicles without Front Camera for Assistance Systems

i Note

- ◆ *The rain/light recognition sensor has a silicone layer as a contact surface to the windshield.*
- ◆ *The rain/light recognition sensor is designed so that it can be used again. The only requirement to use it again is that the connecting pad must not be damaged or dirty.*
- ◆ *If a Rain/Light Recognition Sensor - G397- is replaced with a Rain/Light Recognition Sensor - G397- with a different part number, the new Rain/Light Recognition Sensor - G397- must be coded. Refer to ➤ [page 84](#) .*
- ◆ *Rain/Light Recognition Sensor - G397- cannot be optionally installed. For the correct Rain/Light Recognition Sensor - G397- . Refer to the Parts Catalog.*



Removing

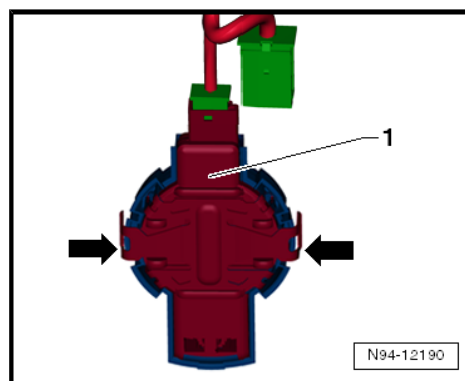
- Turn off the ignition and all electrical equipment.
- If equipped, turn the key to the 0 position (pre-lock).
- Remove the interior rearview mirror. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Interior Rearview Mirror; Interior Rearview Mirror, Removing and Installing .



Note

After loosening the wire retainer wait at least one minute. So that the silicone layer can release the tension and is not damaged while removing.

- Release the left and right wire retainer -arrows-.
- Pry the Rain/Light Recognition Sensor - G397- -1- starting at the top carefully from the frame on the windshield.



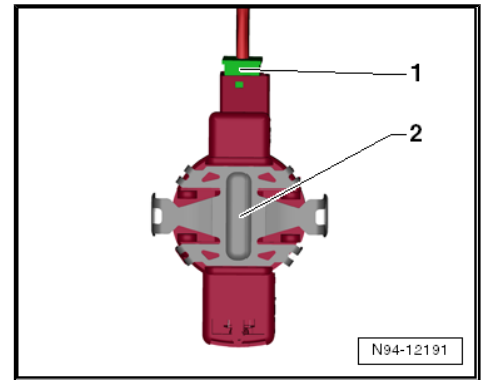


- Release the connection -1- and remove and remove the Rain/Light Recognition Sensor - G397- -2-.



Caution

Lay the removed Rain/Light Recognition Sensor - G397- until it is reinstalled so that the connecting pad is not contaminated with dust or other deposits.



Installing

Install in the reverse order of removal. Note the following:



Caution

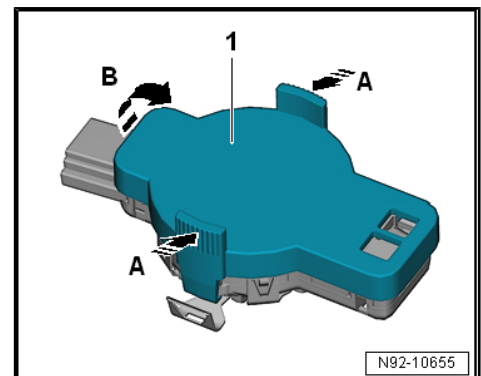
- ◆ *Always clean the windshield surface inside the Rain/Light Recognition Sensor - G397- frame before installing. Remove any traces of the connecting pad still remaining on the windshield.*
- ◆ *Surface (connecting pads) of Rain/Light Recognition Sensor - G397- must not be soiled or damaged when installing. Always replace a sensor that has a damaged connecting pad. Refer to ⇒ "1.10 Rain/Light Recognition Sensor, Servicing", page 84.*



Note

If the connecting pads surface of the Rain/Light Recognition Sensor - G397- is soiled, it can be potentially cleaned by "applying" and then "pulling off" one or more adhesive strips.

- Always clean the windshield inside the retaining plate.
- If necessity remove the protective cap -1- on the new Rain/Light Recognition Sensor - G397- .
Push the handle in direction of -arrow A-.
- Remove the protective cap -1- in direction of -arrow B-.



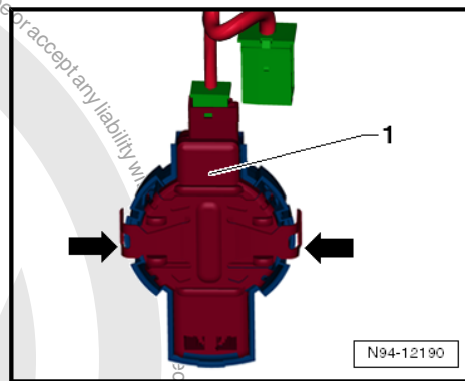


- Connect connector.
- Install the Rain/Light Recognition Sensor - G397- -1- in the frame on the windshield.
- Engage the wire retainer audibly on both sides -arrow-.



Note

- ◆ *Even if the sensor is installed correctly, small air bubbles can form between the windshield and the connecting pad. The contact surface must be free-of-bubbles after approximately 10 minutes.*
- ◆ *If the contact surface is not free of bubbles after 10 minutes, the Rain/Light Recognition Sensor - G397- must be removed and installed again.*
- ◆ *Air bubbles between the windshield and the connecting pad cause Rain/Light Recognition Sensor - G397- malfunctions.*
- Read out the DTC memory and delete the sporadic rain sensor fault using the Vehicle Diagnostic Tester .



Note

With the rain sensor disconnected the CAN-Bus can be activated by opening the door for example. A sporadic Diagnostic Trouble Code (DTC) memory entry in the vehicle electrical system control module must be erased after the repair.

- If the Rain/Light Recognition Sensor - G397- was replaced, perform coding. Refer to [⇒ page 84](#) .

Rain/Light Recognition Sensor - G397- , Coding

- Connect the Vehicle Diagnostic Tester . Refer to [⇒ "7 Vehicle Diagnostic Tester", page 346](#) .
- Code the Rain/Light Recognition Sensor - G397- using the Vehicle Diagnostic Tester .

1.10 Rain/Light Recognition Sensor, Servicing

[⇒ "1.10.1 Rain/Light Recognition Sensor, Servicing, TRW", page 84](#)

[⇒ "1.10.2 Rain/Light Recognition Sensor, Servicing, Valeo", page 85](#)

1.10.1 Rain/Light Recognition Sensor, Servicing, TRW

There are different housings for the Rain/Light Recognition Sensor - G397- from different manufacturers.

The sensor housing and optical unit are always delivered as a replacement part in individual parts with retaining clamps. Remove these clamps if they are not needed.

Perform the following:

- Remove the Rain/Light Recognition Sensor - G397- . Refer to [⇒ "1.9 Rain/Light Recognition Sensor, Removing and Installing", page 78](#) .

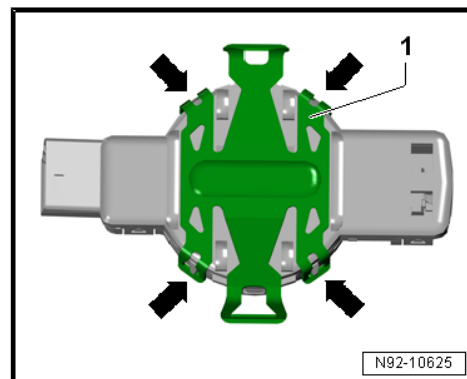


Caution

The sensor electronics may be damaged.

- ◆ *Be careful not to insert the screwdriver all the way through the housing up to the sensor electronics.*
- ◆ *Do not touch the sensor electronics.*

- Loosen the clip -1- on the four retaining tabs -arrows- with a suitable screwdriver and remove.



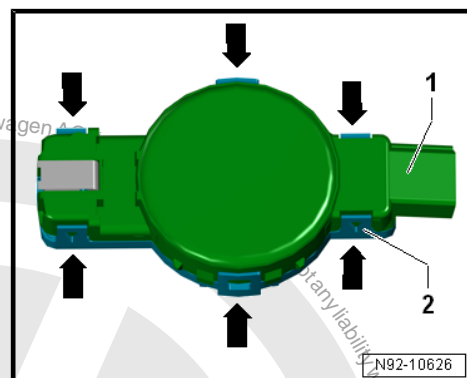
- Release the tab -arrows- on both sides and separate the housing upper section -1- with optical unit from the housing lower section -2-.



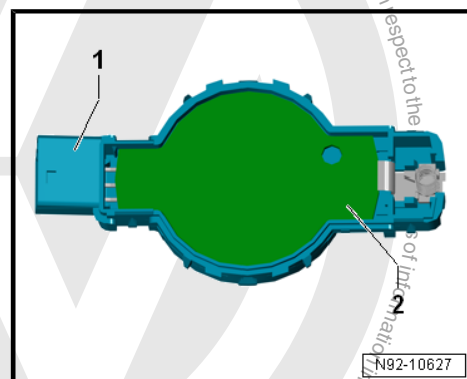
Caution

The sensor electronics may be damaged.

- ◆ *Do not touch the optical unit.*



- Remove the sensor electronics -2- from the upper section -1- install the new electronics the exact same way.
- Assemble the new upper section with optical unit and protective cover and the lower section.
- Install the Rain/Light Recognition Sensor - G397- . Refer to ["1.9 Rain/Light Recognition Sensor, Removing and Installing", page 78](#) .



1.10.2 Rain/Light Recognition Sensor, Servicing, Valeo

- Remove the Rain/Light Recognition Sensor - G397- . Refer to ["1.9 Rain/Light Recognition Sensor, Removing and Installing", page 78](#) .



- Carefully remove the sensor film -2- or remaining sensor film carefully from the Rain/Light Recognition Sensor - G397- -1-.



Caution

The surfaces on the sensor must be completely free of any remaining film.

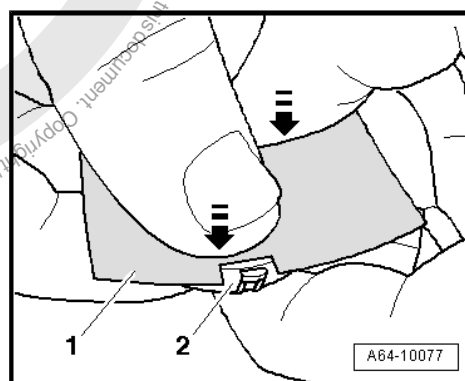
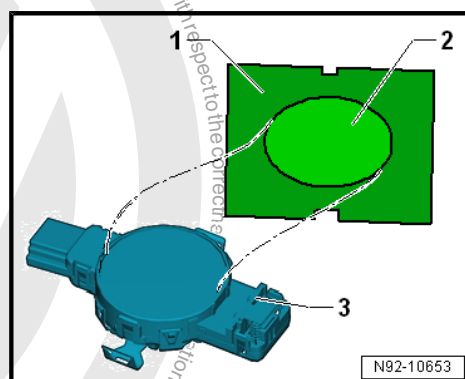
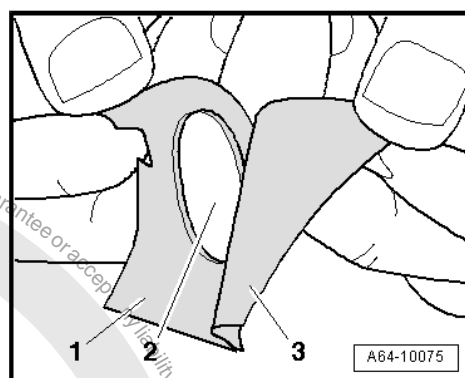
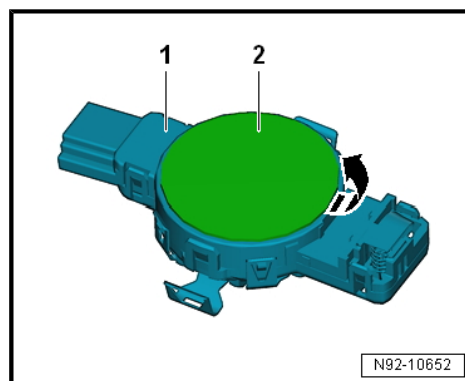
- Clean the sensor surface with Cleaning Solution - D 009 401 04- .

- Remove the silicone paper -3- from the sensor film -2-.

The see-through protective film -1- serves as an assembly aid and remains on the sensor film.

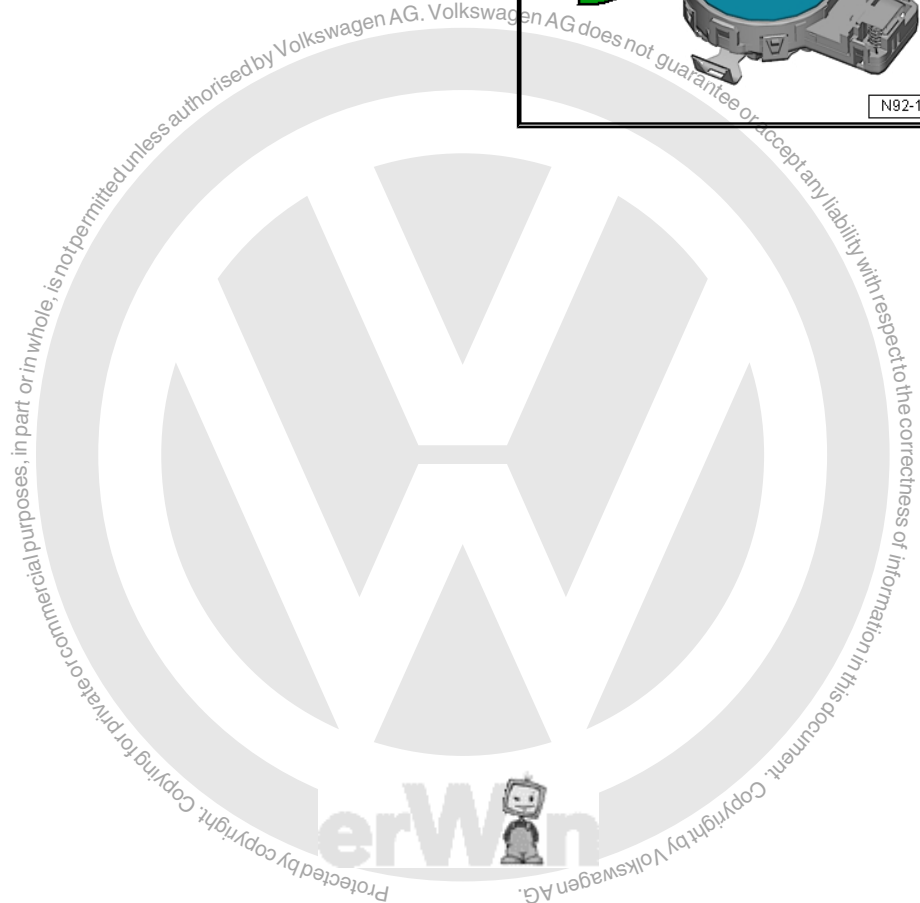
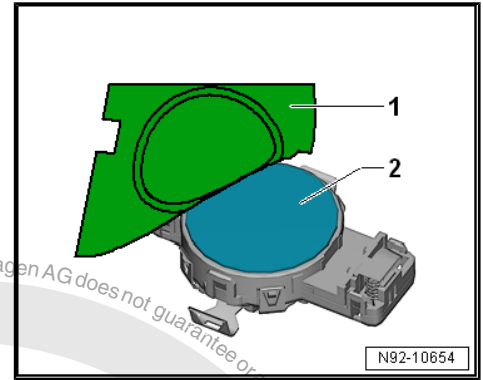
- Place the sensor film -2- using the clear protective film -1- on the Rain/Light Recognition Sensor - G397- -3-.

- Press the sensor film through the protective film -1- free of bubbles on the Rain/Light Recognition Sensor - G397- -2-.





- Remove the clear protective film -1- from the sensor film -2-.
- Install the Rain/Light Recognition Sensor - G397- . Refer to
⇒ [“1.9 Rain/Light Recognition Sensor, Removing and Installing”, page 78](#) .





2 Windshield Washer System

⇒ [“2.1 Overview - Windshield Washer System”, page 88](#)

⇒ [“2.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 93](#)

⇒ [“2.3 Windshield Washer Fluid Level Sensor, Removing and Installing”, page 96](#)

⇒ [“2.4 Windshield Washer Pump, Removing and Installing”, page 98](#)

⇒ [“2.5 Spray Nozzles, Removing and Installing”, page 99](#)

⇒ [“2.6 Spray Nozzles, Adjusting”, page 100](#)

2.1 Overview - Windshield Washer System

⇒ [“2.1.2 Overview - Windshield Washer System, with Headlamp Washer System”, page 90](#)

⇒ [“2.1.3 Overview - Windshield Washer System, without Headlamp Washer System”, page 92](#)

2.1.1 Overview - Windshield Washer System, with Headlamp Washer System

1 - Right Spray Nozzle

- ☐ Vehicle equipment version with Right Washer Nozzle Heater - Z21-
- ☐ Removing and installing. Refer to ⇒ [“2.5 Spray Nozzles, Removing and Installing”, page 99](#).
- ☐ Adjusting. Refer to ⇒ [“2.6 Spray Nozzles, Adjusting”, page 100](#).

2 - Left Spray Nozzle

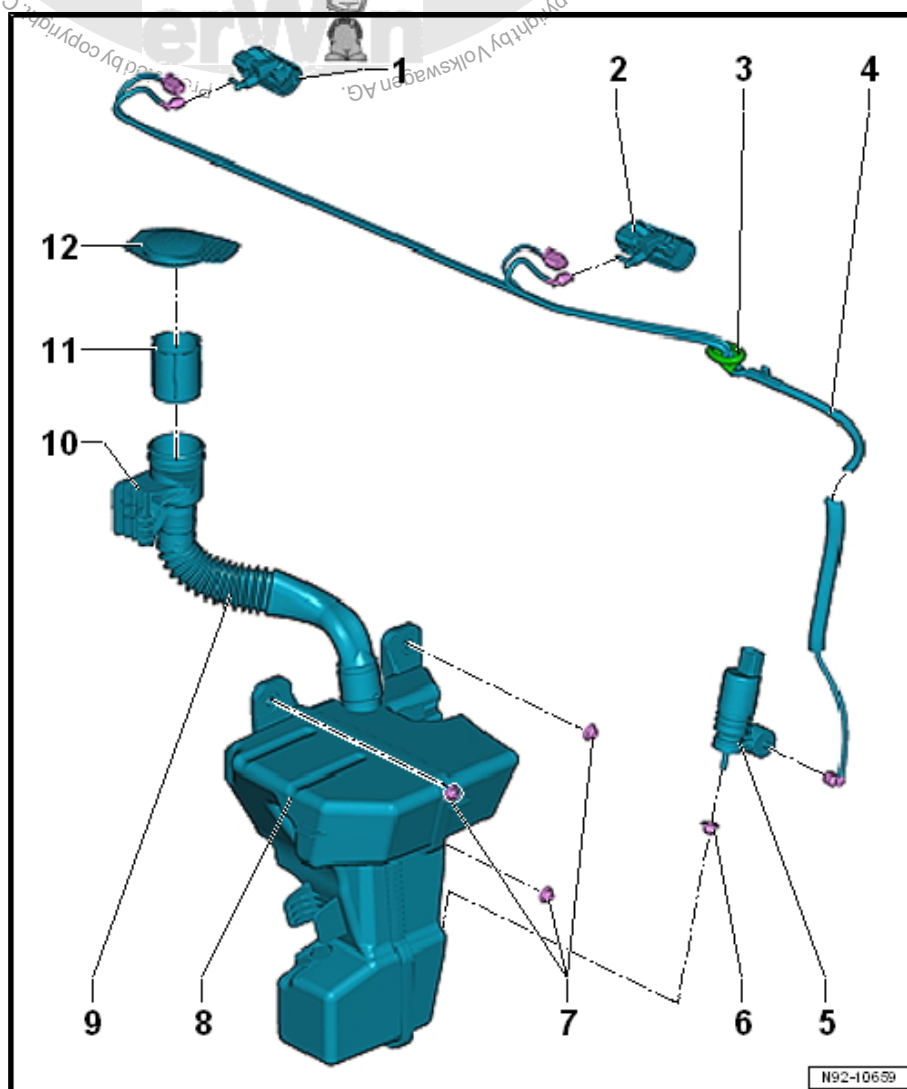
- ☐ Vehicle equipment version with Left Washer Nozzle Heater - Z20-
- ☐ Removing and installing. Refer to ⇒ [“2.5 Spray Nozzles, Removing and Installing”, page 99](#).
- ☐ Adjusting. Refer to ⇒ [“2.6 Spray Nozzles, Adjusting”, page 100](#).

3 - Grommet

- ☐ For the windshield washer fluid hose inside the hood

4 - Water Hose

- ☐ For the windshield washer system
- ☐ Black color identification





5 - Windshield And Rear Window Washer Pump - V59-

- ☐ Removing and installing. Refer to
⇒ [“2.4 Windshield Washer Pump, Removing and Installing”, page 98](#) .

6 - Grommet

- ☐ Replace if damaged.

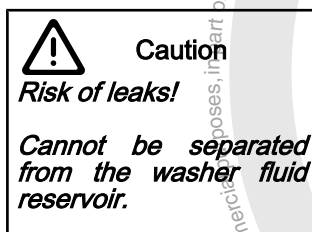
7 - Nut

- ☐ Tightening Specification: 8 Nm.
- ☐ Quantity: 3

8 - Windshield Washer Fluid Reservoir

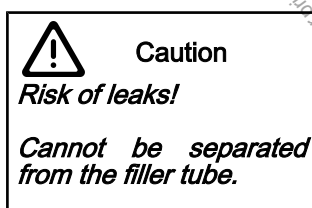
- ☐ For vehicles with a headlamp washer system
- ☐ With Windshield Washer Fluid Level Sensor - G33- Cannot be replaced separately if faulty.
- ☐ Removing and installing. Refer to
⇒ [“2.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 93](#) .

9 - Filler Tube



- ☐ For the windshield washer fluid reservoir

10 - Filler Tube



- ☐ For the windshield washer fluid reservoir

11 - Screen

12 - Cap

- ☐ For the filler neck

2.1.2 Overview - Windshield Washer System, with Headlamp Washer System

1 - Cap

- ☐ For the filler neck

2 - Screen

3 - Windshield Washer Fluid Reservoir Upper Section

- ☐ Washer fluid reservoir two-piece version
- ☐ Removing and installing. Refer to [⇒ "2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 94](#).

4 - Seal

- ☐ Seals the washer fluid reservoir-upper section with the washer fluid reservoir-lower section
- ☐ The seal is installed in the washer fluid reservoir-lower section.
- ☐ Coat the seal to connect the washer fluid reservoir-upper and lower sections with lubricant

5 - Windshield Washer Fluid Reservoir-Lower Section

- ☐ Washer fluid reservoir two-piece version
- ☐ With Windshield Washer Fluid Level Sensor - G33-
- ☐ Removing and installing. Refer to [⇒ "2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 94](#).

6 - Bolt

- ☐ Tightening Specification: 8.0 Nm
- ☐ Quantity: 4

7 - Bracket

- ☐ Washer fluid reservoir-lower section bracket
- ☐ Removing and installing. Refer to [⇒ "2.2.3 Auxiliary Component Bracket, Removing and Installing", page 96](#).

8 - Nut

- ☐ Tightening Specification: 8.0 Nm

9 - Grommet

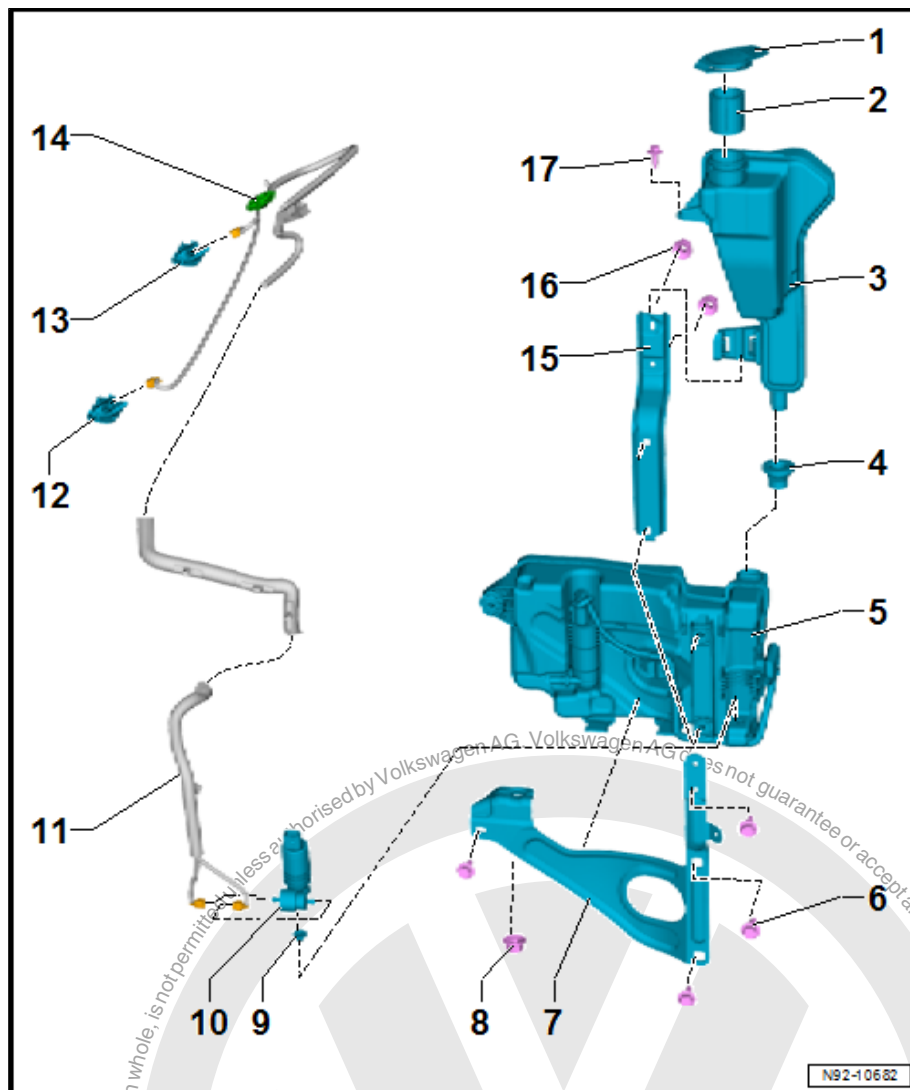
- ☐ Replace if damaged.

10 - Windshield And Rear Window Washer Pump - V59-

- ☐ Removing and installing. Refer to [⇒ "2.4.2 Windshield Washer Pump, Removing and Installing", page 98](#).

11 - Water Hose

- ☐ For the windshield washer system





- ☐ Black color identification

12 - Right Spray Nozzle

- ☐ Vehicle equipment version with Right Washer Nozzle Heater - Z21-
- ☐ Removing and installing. Refer to ⇒ ["2.5 Spray Nozzles, Removing and Installing", page 99](#) .
- ☐ Adjusting. Refer to ⇒ ["2.6 Spray Nozzles, Adjusting", page 100](#) .

13 - Left Spray Nozzle

- ☐ Vehicle equipment version with Left Washer Nozzle Heater - Z20-
- ☐ Removing and installing. Refer to ⇒ ["2.5 Spray Nozzles, Removing and Installing", page 99](#) .
- ☐ Adjusting. Refer to ⇒ ["2.6 Spray Nozzles, Adjusting", page 100](#) .

14 - Grommet

- ☐ Guide for the windshield washer fluid hose inside the hood

15 - Bracket

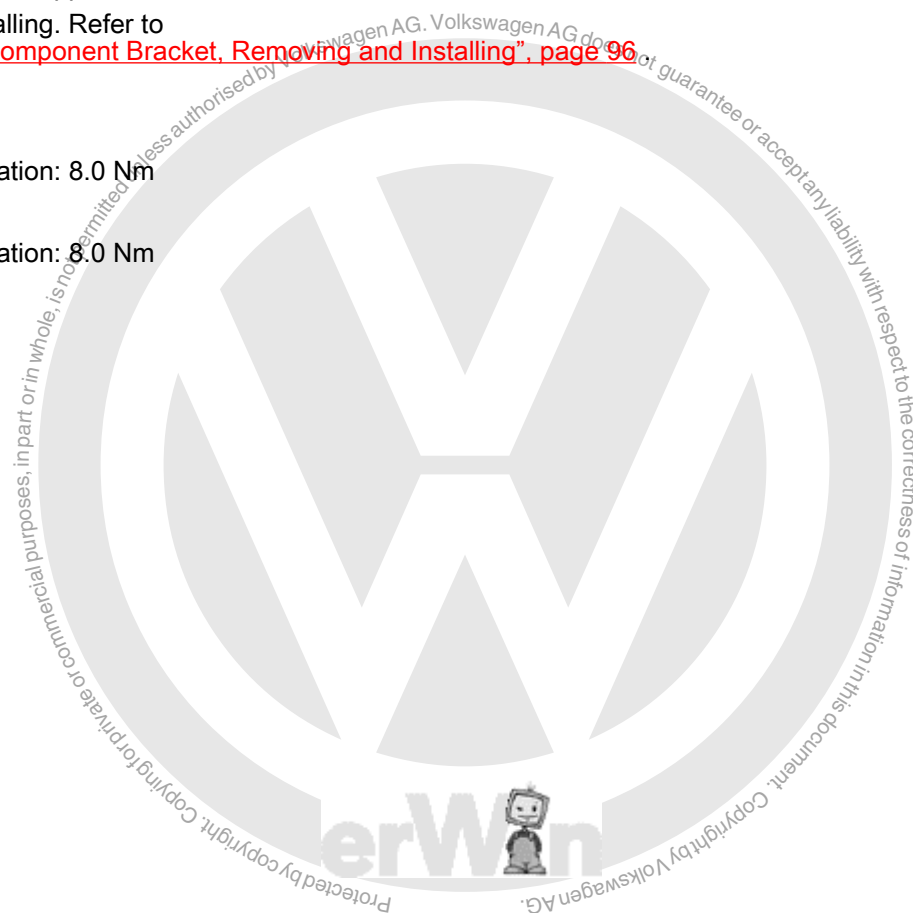
- ☐ Washer fluid reservoir-upper section bracket
- ☐ Removing and installing. Refer to
⇒ ["2.2.3 Auxiliary Component Bracket, Removing and Installing", page 96](#)

16 - Nut

- ☐ Quantity: 2
- ☐ Tightening Specification: 8.0 Nm

17 - Bolt

- ☐ Tightening Specification: 8.0 Nm



2.1.3 Overview - Windshield Washer System, without Headlamp Washer System

1 - Right Spray Nozzle

- ☐ Vehicle equipment version with Right Washer Nozzle Heater - Z21-
- ☐ Removing and installing. Refer to ⇒ ["2.5 Spray Nozzles, Removing and Installing", page 99](#).
- ☐ Adjusting. Refer to ⇒ ["2.6 Spray Nozzles, Adjusting", page 100](#).

2 - Left Spray Nozzle

- ☐ Vehicle equipment version with Left Washer Nozzle Heater - Z20-
- ☐ Removing and installing. Refer to ⇒ ["2.5 Spray Nozzles, Removing and Installing", page 99](#).
- ☐ Adjusting. Refer to ⇒ ["2.6 Spray Nozzles, Adjusting", page 100](#).

3 - Grommet

- ☐ For the windshield washer fluid hose inside the hood

4 - Water Hose

- ☐ For the windshield washer system
- ☐ Black color identification

5 - Windshield and Rear Window Washer Pump - V59-

- ☐ Removing and installing. Refer to ⇒ ["2.4 Windshield Washer Pump, Removing and Installing", page 98](#).

6 - Grommet

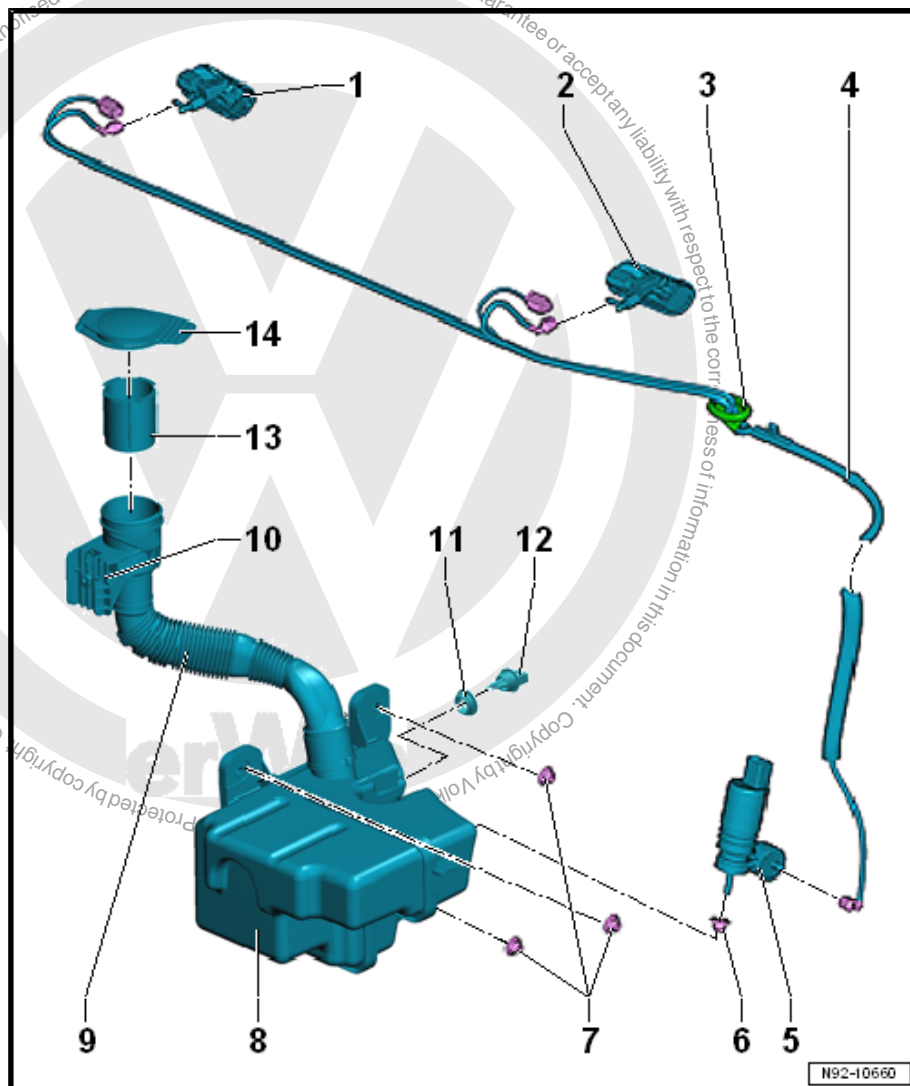
- ☐ Replace if damaged.

7 - Nut

- ☐ Quantity: 3
- ☐ Tightening Specification: 8 Nm.

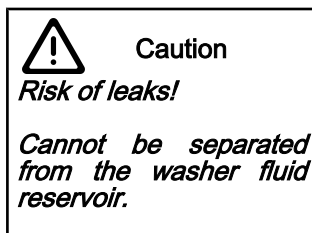
8 - Windshield Washer Fluid Reservoir

- ☐ For vehicles without a headlamp washer system
- ☐ Removing and installing. Refer to ⇒ ["2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 93](#).



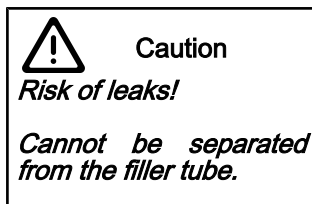


9 - Filler Tube



- ☐ For the windshield washer fluid reservoir

10 - Filler Tube



- ☐ For the windshield washer fluid reservoir

11 - Seal

12 - Windshield Washer Fluid Level Sensor - G33-

- ☐ Removing and installing. Refer to
⇒ ["2.3 Windshield Washer Fluid Level Sensor, Removing and Installing", page 96](#) .

13 - Screen

14 - Cap

- ☐ For the filler neck

2.2 Windshield Washer Fluid Reservoir, Removing and Installing

⇒ ["2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 94](#)

⇒ ["2.2.3 Auxiliary Component Bracket, Removing and Installing", page 96](#)

2.2.1 Windshield Washer Fluid Reservoir, Removing and Installing

Special tools and workshop equipment required

- ◆ Drip Tray



Note

The removal or installation of the washer fluid reservoir with headlamp washer system is described. Removing or installing a washer fluid reservoir without a headlamp washer system is identical.

Removing

- Remove the front bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63 ; Front Bumper; Bumper Cover, Removing and Installing .
- Remove the left headlamp. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#) .



- Remove the Headlamp Washer Pump - V11- if necessary.
Refer to
⇒ [“5.3 Headlamp Washer Pump V11 , Removing and Installing”, page 113](#) .
- Place a drip tray under the windshield washer fluid reservoir.
- Retain the retaining tabs -3-.

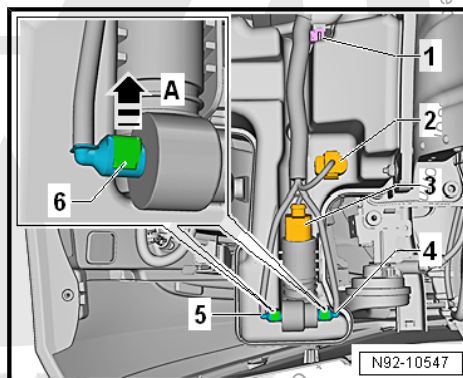
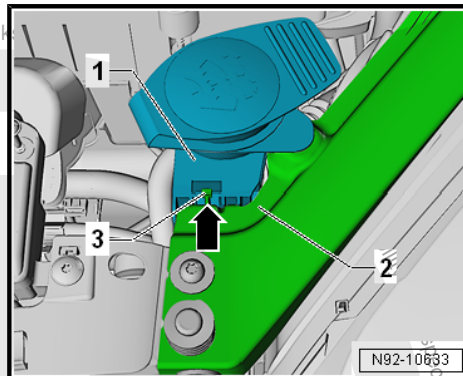


Caution

There is a danger of leaks.

- ◆ *The windshield washer fluid reservoir is one part. Separating between the washer fluid reservoir, filler tube and filler neck is not possible. If the components are separated nevertheless the connection can leak.*

- Remove the filler neck -1- upward from the lock carrier -2- bracket.
- Disconnect the connectors -2 and 3-.
- Release the clips -6- in the direction of the arrow -A-.
- Remove the washer fluid hoses -4 and 5- from the windshield washer pump.
- Loosen the wiring harness from the washer fluid reservoir -1-.



- Remove the nuts -1, 2 and 3-.
- Remove the washer fluid reservoir -4- from the threaded pins.

Installing

Install in the reverse order of removal. Note the following:

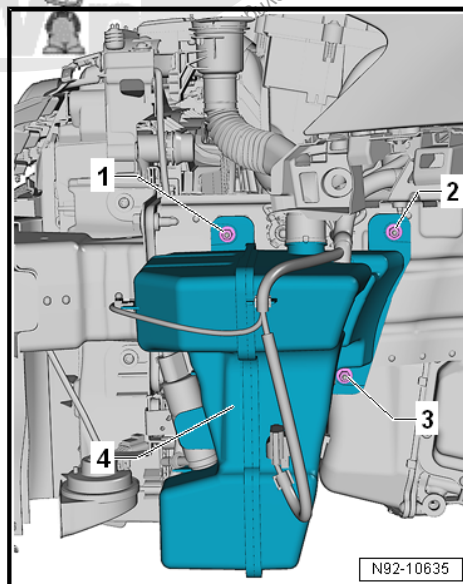


Note

In order to prevent interchanging washer fluid line connections at Windshield and Rear Window Washer Pump - V59- , connections at pump and hose lines are marked with colors. Hose connector pieces must be connected to the corresponding colored pump connections during installation.

Tightening Specifications

- ◆ Refer to
⇒ [“2.1 Overview - Windshield Washer System”, page 88](#)



2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing

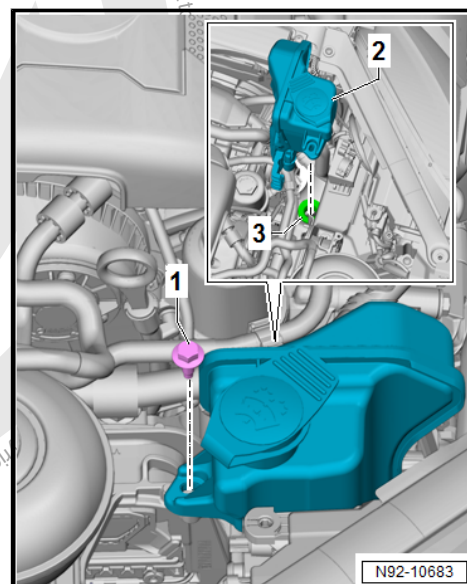
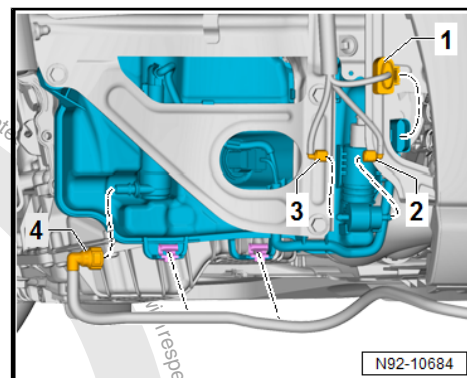
Special tools and workshop equipment required

- ◆ Drip Tray



Removing

- Remove the front right wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Wheels and Tires .
- Remove the wheel housing liner front section. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Overview - Front Wheel Housing Liner .
- Place a drip tray under the windshield washer fluid reservoir.
- Disconnect the connector -1-.
- Release the washer fluid hose clamps -2 and 3-. Remove the washer fluid hoses from the windshield washer pump.
- Release the washer fluid hose clamp -3-. Remove the washer fluid hose from the headlamp washer pump and unclip from the washer fluid reservoir.
- Catch any washer fluid with a drip tray.
- Remove the bolt -1-.
- Remove the washer fluid reservoir-upper section -2- upward from the washer fluid reservoir-lower section seal -3-.





- Remove the bolts -1-.
- Slightly lower the washer fluid reservoir lower section -3- and release the connector -2-.
- Remove the washer fluid reservoir-lower section -3- downward from the vehicle.

Installing

Install in the reverse order of removal. Note the following:

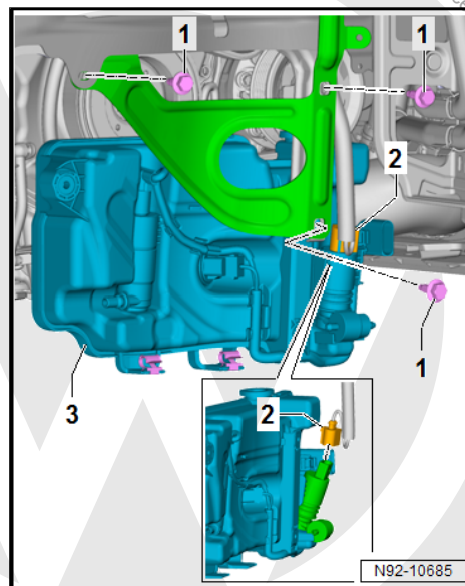


Note

In order to prevent interchanging washer fluid line connections at Windshield and Rear Window Washer Pump V59-, connections at pump and hose lines are marked with colors. Hose connector pieces must be connected to the corresponding colored pump connections during installation.

Tightening Specifications

- ◆ Refer to
⇒ [“2.1.2 Overview - Windshield Washer System, with Headlamp Washer System”, page 90](#)



2.2.3 Auxiliary Component Bracket, Removing and Installing

Removing

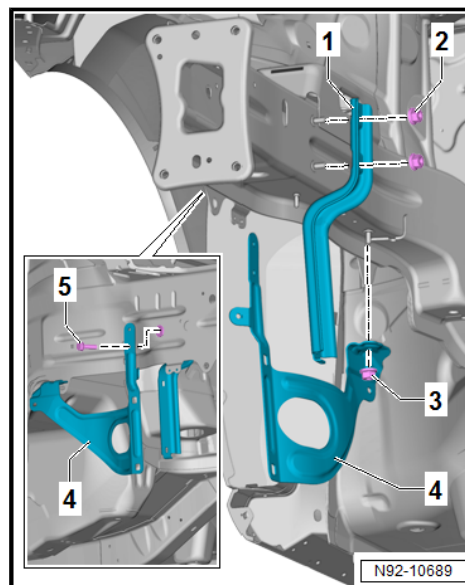
- Remove the washer fluid reservoir. Refer to
⇒ [“2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 94](#).
- Remove the nuts -2-.
- Remove the bracket -1- from the body.
- Remove the nuts -3-.
- Remove the bolt -5- and bracket -4- from the body.

Installing

Install in reverse order of removal.

Tightening Specifications

- ◆ Refer to
⇒ [“2.1.2 Overview - Windshield Washer System, with Headlamp Washer System”, page 90](#)



2.3 Windshield Washer Fluid Level Sensor, Removing and Installing

⇒ [“2.3.2 Windshield Washer Fluid Level Sensor, Removing and Installing”, page 97](#)

2.3.1 Windshield Washer Fluid Level Sensor, Removing and Installing

Special tools and workshop equipment required



◆ Drip Tray



Note

The Windshield Washer Fluid Level Sensor - G33- can depending on version be replaced individually or only with the entire container.

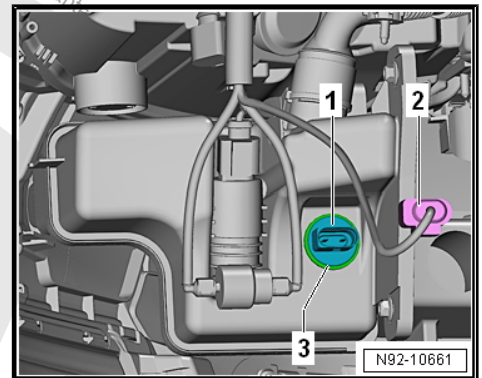
Removing

- Remove the left front wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing.
- Place a drip tray under the windshield washer fluid reservoir.
- Disconnect the connector -2-.
- Remove the Windshield Washer Fluid Level Sensor - G33-1- from the washer fluid reservoir.
- If necessary remove the seal -3- from the washer fluid reservoir.

Installing

Install in the reverse order of removal. Note the following:

- Install the seal correctly in the opening in the washer fluid reservoir.
- Coat the seals with washer fluid so that the Windshield Washer Fluid Level Sensor - G33- can be easily pushed in.



2.3.2 Windshield Washer Fluid Level Sensor, Removing and Installing

Special tools and workshop equipment required

◆ Drip Tray



Note

The Windshield Washer Fluid Level Sensor - G33- can depending on version be replaced individually or only with the entire container.

Removing

- Remove the front right wheel. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Wheels and Tires .
- Remove the front section of the right front wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Overview - Front Wheel Housing Liner .
- Place a drip tray under the windshield washer fluid reservoir.

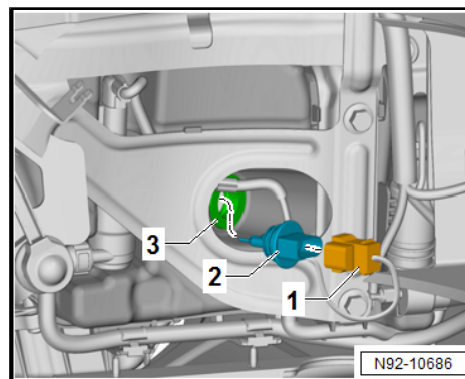


- Disconnect the connector -1-.
- Remove the Windshield Washer Fluid Level Sensor - G33- -1- from the washer fluid reservoir.
- If necessary remove the seal -3- from the washer fluid reservoir.

Installing

Install in the reverse order of removal. Note the following:

- Install the seal correctly in the opening in the washer fluid reservoir.
- Coat the seals with washer fluid so that the Windshield Washer Fluid Level Sensor - G33- can be easily pushed in.



2.4 Windshield Washer Pump, Removing and Installing

⇒ **“2.4.2 Windshield Washer Pump, Removing and Installing”, page 98**

2.4.1 Windshield Washer Pump, Removing and Installing

Special tools and workshop equipment required

- ♦ Drip Tray

Removing

- Remove the left front wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing .
- Disconnect the connector -1-.

The wiring harness -2- remains in the washer fluid reservoir.

- Place a drip tray under the windshield washer fluid reservoir.
- Release the clamps -3 and 4- in direction of the -arrow A-.
- Remove the washer fluid hose from the windshield washer pump -5-.
- Remove the windshield washer pump -5- upward in direction of -arrow B- from the washer fluid reservoir.

Installing

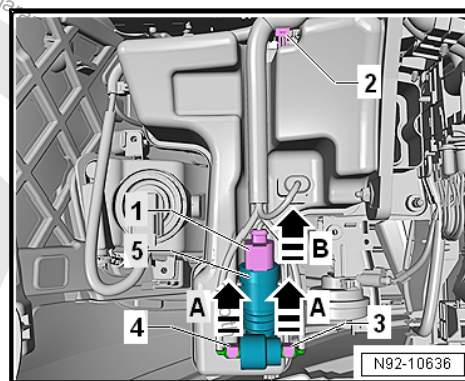
Install in the reverse order of removal. Note the following:



Note

In order to prevent interchanging washer fluid line connections at Windshield and Rear Window Washer Pump - V59- , connections at pump and hose lines are marked with colors. Hose connector pieces must be connected to the corresponding colored pump connections during installation.

- Check the sealing grommet for damage.



2.4.2 Windshield Washer Pump, Removing and Installing

Special tools and workshop equipment required



◆ Drip Tray

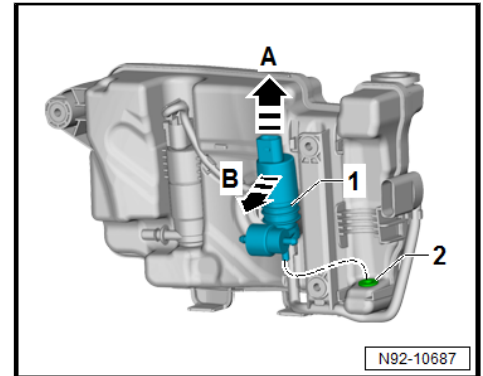
Removing

- Remove the washer fluid reservoir. Refer to
⇒ [“2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 94](#) .
- Remove the windshield washer pump -1- upward in the direction of the -arrow A- from the washer fluid reservoir.
- Remove the windshield washer pump -1- in direction of -arrow B- from the washer fluid reservoir.
- If necessary remove the seal -2- from the washer fluid reservoir.

Installing

Install in the reverse order of removal. Note the following:

- Check the sealing grommet -2- for damage.
- Install the grommet -2- correctly in the opening in the washer fluid reservoir.
- Coat the grommet -2- with washer fluid, so that the Windshield and Rear Window Washer Pump - V59- can be easily pushed in.



Note

In order to prevent interchanging washer fluid line connections at Windshield and Rear Window Washer Pump - V59-, connections at pump and hose lines are marked with colors. Hose connector pieces must be connected to the corresponding colored pump connections during installation.

2.5 Spray Nozzles, Removing and Installing

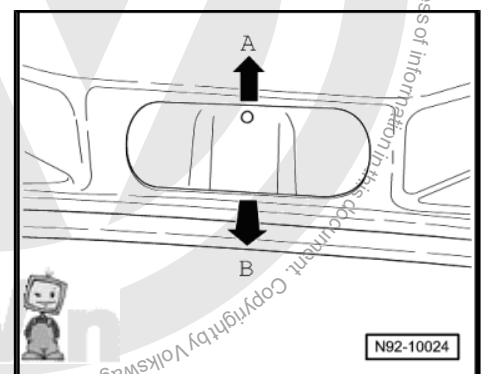
Removing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

- Open the hood.
- Push the spray nozzle upward -arrow A- and tilt it out from under the flap -arrow B-.





- Release the hose clip -1- in direction of -arrow- and remove the hose connection -2- from the spray nozzle -4-.
- Disconnect the connector -3- and remove the spray nozzle -4-.

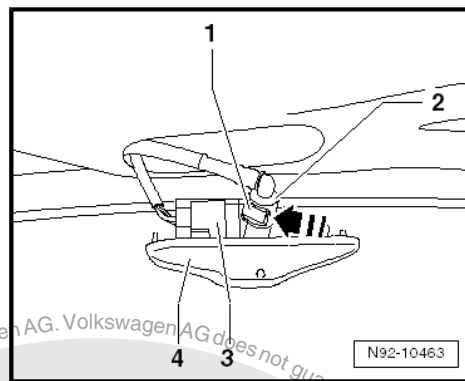
Installing

Install in the reverse order of removal. Note the following:



Note

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



- Starting at the top, slide the spray nozzle into the installation opening until it engages audibly.
- Adjust the spray nozzles. Refer to [⇒ "2.6 Spray Nozzles, Adjusting", page 100](#).

2.6 Spray Nozzles, Adjusting



Caution

Risk of damage.

- ◆ **Do not use any objects to clean the spray nozzles!**



Note

Remove the spray nozzles if the spraying field is uneven due to dirt in the nozzle, and flush out in the opposite direction of the spray. It is permissible to further blow through in opposite direction of spray with compressed air. Do not use any objects to clean the spray nozzles!

- Adjust the spray nozzles for the windshield washer system.
Refer to ⇒ Maintenance ; Booklet 36.1 .



3 Rear Window Wiper System

⇒ [“3.1 Overview - Rear Window Wiper System”, page 101](#)

⇒ [“3.2 Wiper Blade, Removing and Installing”, page 102](#)

⇒ [“3.3 Windshield Wiper Arm, Removing and Installing”, page 102](#)

⇒ [“3.4 Wiper Arm, Adjusting”, page 103](#)

⇒ [“3.5 Rear Window Wiper Motor V12, Removing and Installing”, page 103](#)

3.1 Overview - Rear Window Wiper System

1 - Cap

2 - Nut

- ☐ Tightening Specification: 12 Nm

3 - Wiper Arm with Joint-Free Windshield Wiper

- ☐ Removing and installing. Refer to
⇒ [“3.3 Windshield Wiper Arm, Removing and Installing”, page 102](#).
- ☐ Park position, adjusting. Refer to
⇒ [“3.4 Wiper Arm, Adjusting”, page 103](#).
- ☐ Joint-Free Windshield Wiper, removing and installing. Refer to
⇒ [“3.2 Wiper Blade, Removing and Installing”, page 102](#).

4 - Seal

- ☐ Inside the rear window
- ☐ Replace if damaged. Refer to
⇒ [“3.5 Rear Window Wiper Motor V12, Removing and Installing”, page 103](#).
- ☐ Removing and installing. Refer to
⇒ [“3.5 Rear Window Wiper Motor V12, Removing and Installing”, page 103](#).

5 - Rear Window Wiper Motor - V12-

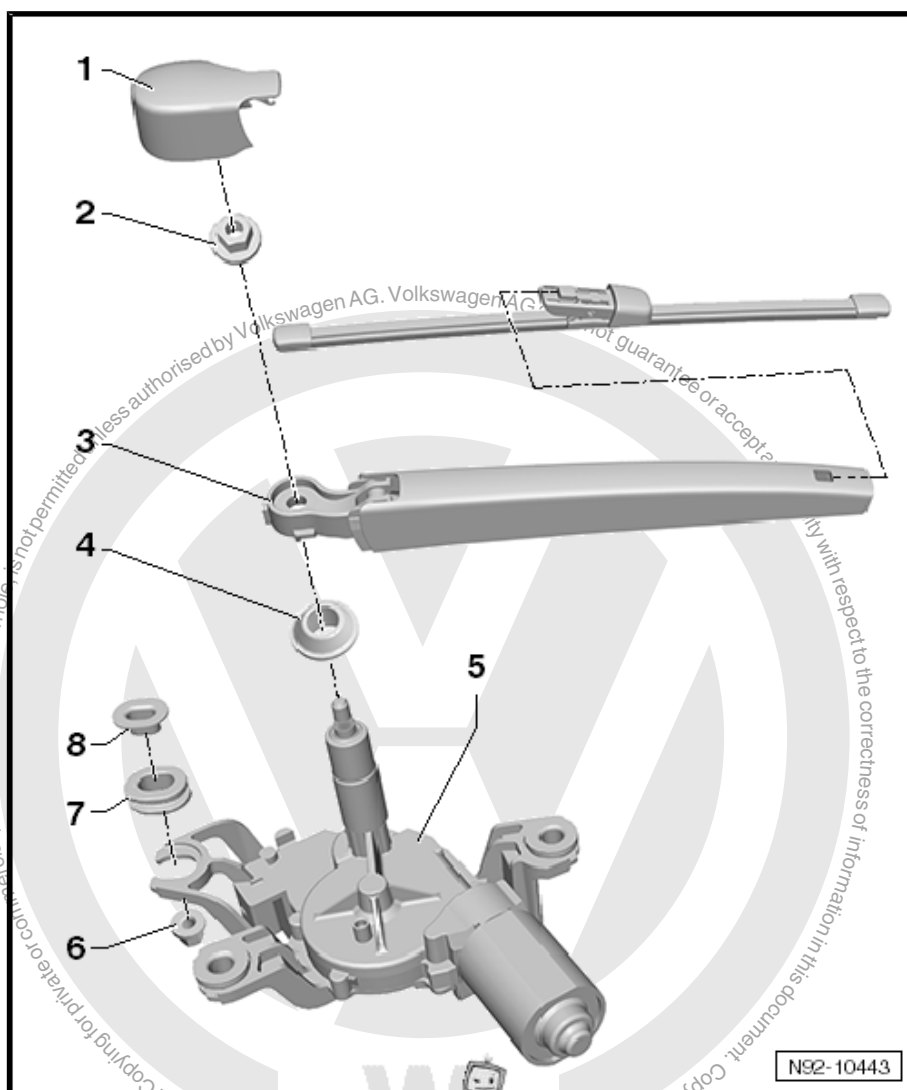
- ☐ Removing and installing. Refer to
⇒ [“3.5 Rear Window Wiper Motor V12, Removing and Installing”, page 103](#).

6 - M6 Nut with Washer

- ☐ Tightening Specification: 8 Nm.
- ☐ Quantity: 3

7 - Rubber Ring

- ☐ Quantity: 3





8 - Spacer

- Quantity: 3

3.2 Wiper Blade, Removing and Installing



Caution

Risk of damaging the wiper blade.

- ◆ *Joint-free windshield wipers are very flexible. Only grasp the wiper blades in the area for the wiper blade mount to lift them away from the windshield.*

Removing

- Remove the wiper arm from the rear window.
- Pivot the wiper blade in the direction of the -arrow A- from the windshield wiper arm.
- Push the release button -2-.
- Remove the wiper blade on the wiper blade mount -1- in the direction of the -arrow B- from the windshield wiper arm.

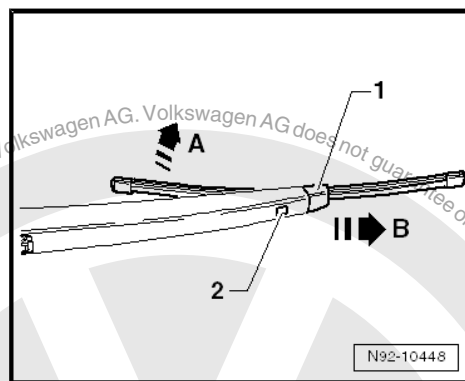
Installing

Install in the reverse order of removal. Note the following:



Note

The wiper blade must audibly engage in the wiper arm.



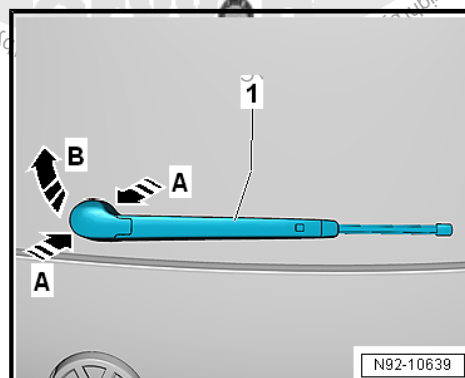
3.3 Windshield Wiper Arm, Removing and Installing

Special tools and workshop equipment required

- ◆ Puller - Wiper Arm Kit - T10369-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

Removing

- Turn on the ignition.
- Activate “rear wiper” and let the wiper arm run to end position.
- Turn off the ignition.
- Then remove the ignition key, if equipped.
- Push together the rear window wiper cap -1- in direction of -arrow A-.
- Fold the cap in direction of -arrow B- and unclip.
- Loosen the hex nut (13 mm) but do not completely remove.



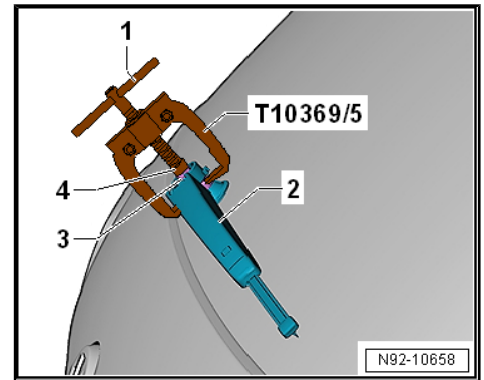


- Install the Puller - Wiper Arm Kit - Puller 5 - T10369/5- on the windshield wiper arm -2-.
- Position the thrust piece -3- on the wiper arm shaft.
- Rotate the bolt -1- clockwise until the wiper arm is removed from the wiper arm shaft.
- Completely remove the nut -4- and remove the windshield wiper arm.

Installing

Install in the reverse order of removal. Note the following:

- Adjust the wiper arm. Refer to
⇒ [“3.4 Wiper Arm, Adjusting”, page 103](#) .



3.4 Wiper Arm, Adjusting

Special tools and workshop equipment required

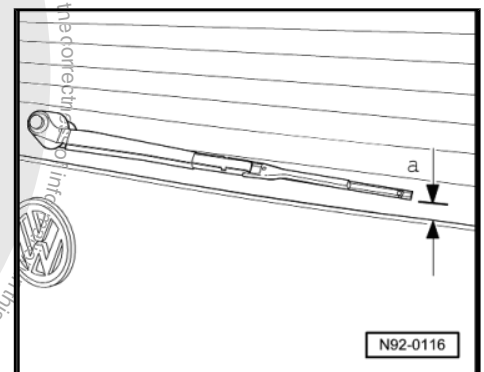
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- Remove the windshield wiper arm. Refer to
⇒ [“3.3 Windshield Wiper Arm, Removing and Installing”, page 102](#)
- Turn on the ignition.
- Activate “rear wipe” and let wiper arm shaft run to end position.
- Turn off the ignition.
- Position the wiper arm with wiper blade installed at the wiper arm shaft.
- Align the wiper blade on the rear window as follows.



Note

The dimension is the gap between tip of wiper blade and lower edge of window.

- ◆ Dimension -a- = 33 + 5 mm.
- Tighten the wiper arm nut.
- Turn on the ignition.
- Activate “rear wiper” and let the wiper arm run to end position.
- Check the adjustment of the wiper arm again and correct if necessary.



Tightening Specifications

- ◆ Refer to
⇒ [“3.1 Overview - Rear Window Wiper System”, page 101](#)

3.5 Rear Window Wiper Motor - V12- , Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

Removing

- Remove the windshield wiper arm. Refer to
⇒ [“3.3 Windshield Wiper Arm, Removing and Installing”, page 102](#) .



- Remove the lower rear lid trim panel. Refer to ➤ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Lower Rear Lid Trim Panel, Removing and Installing .
- Disconnect the connector -1-.
- Remove the nuts -2, 3 and 5-.
- Remove the Rear Window Wiper Motor - V12- -4-.

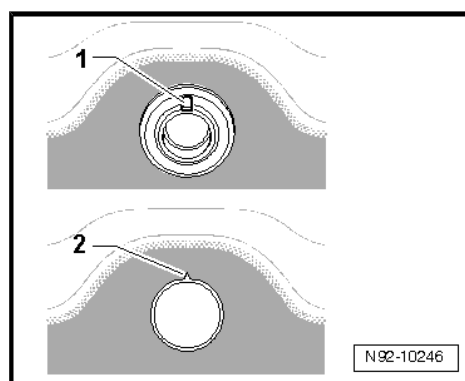
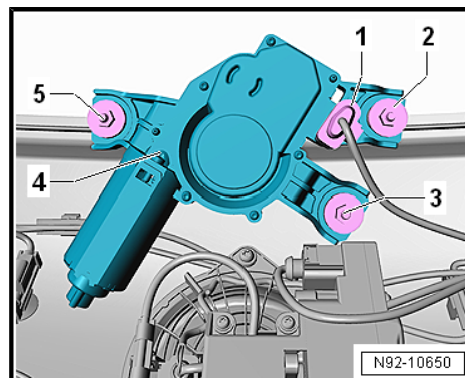
Installing

Install in the reverse order of removal. Note the following:

- Coat the inside of the seal in the rear window if necessary with a rubber- and plastic-compatible lubricant (for example polyethylene glycol).
- Make sure the seal fits correctly in the rear window opening. Marking -1- of seal must align with marking -2- on rear window.

Tightening Specifications

- ◆ Refer to
⇒ [“3.1 Overview - Rear Window Wiper System”, page 101](#)
- Adjust the wiper arm. Refer to
⇒ [“3.4 Wiper Arm, Adjusting”, page 103](#) .





4 Rear Window Washer System

⇒ [“4.1 Overview - Rear Window Washer System”, page 105](#)

⇒ [“4.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 108](#)

⇒ [“4.3 Rear Window Washer Pump, Removing and Installing”, page 108](#)

⇒ [“4.4 Spray Nozzle, Removing and Installing”, page 109](#)

⇒ [“4.5 Spray Nozzle, Adjusting”, page 110](#)

4.1 Overview - Rear Window Washer System

⇒ [“4.1.3 Overview - Rear Window Washer System”, page 107](#)

4.1.1 Overview - Rear Window Washer System, Golf

1 - High-Mounted Brake Lamp

2 - Water Hose Connection

- ☐ For the rear window washer system

3 - Spray Nozzle

- ☐ Removing and installing. Refer to
⇒ [“4.4.1 Spray Nozzle, Removing and Installing, Golf”, page 109](#).
- ☐ Adjusting. Refer to
⇒ [“4.5 Spray Nozzle, Adjusting”, page 110](#).

4 - Water Hose

- ☐ In the right side panel to the rear window washer system spray nozzle

5 - Water Hose

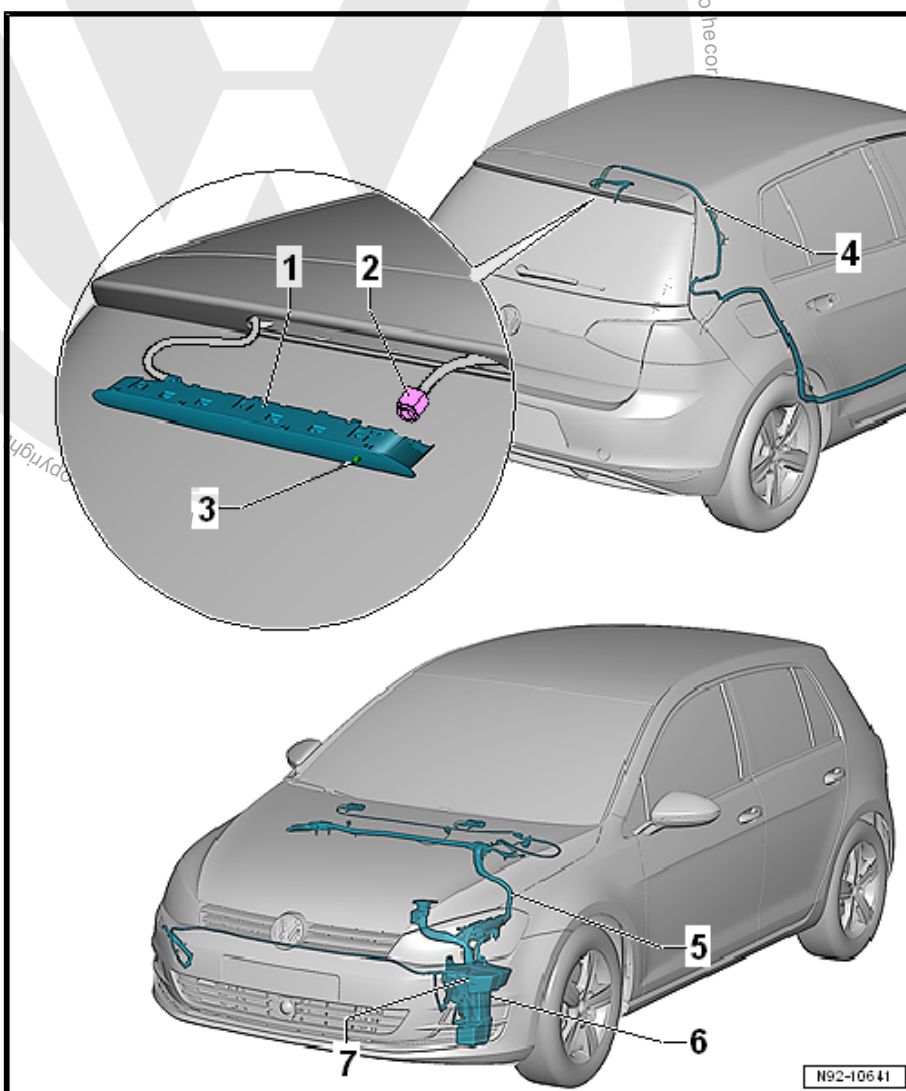
- ☐ In the engine compartment to the rear window washer system spray nozzle

6 - Windshield And Rear Window Washer Pump - V59-

- ☐ Removing and installing. Refer to
⇒ [“2.4 Windshield Washer Pump, Removing and Installing”, page 98](#).
- ☐ With grommet, replace if damaged.

7 - Windshield Washer Fluid Reservoir

- ☐ Removing and installing. Refer to
⇒ [“2.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 93](#).





4.1.2 Overview - Rear Window Washer System, GTI and GTD

1 - High-Mounted Brake Lamp Connection

2 - Water Hose Connection

- ❑ For the rear window washer system

3 - Water Hose

- ❑ In the right side panel to the rear window washer system spray nozzle

4 - Water Hose

- ❑ In the engine compartment to the rear window washer system spray nozzle

5 - Windshield Washer Fluid Reservoir

- ❑ Removing and installing. Refer to ➤ ["2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 93](#).

6 - Windshield And Rear Window Washer Pump - V59-

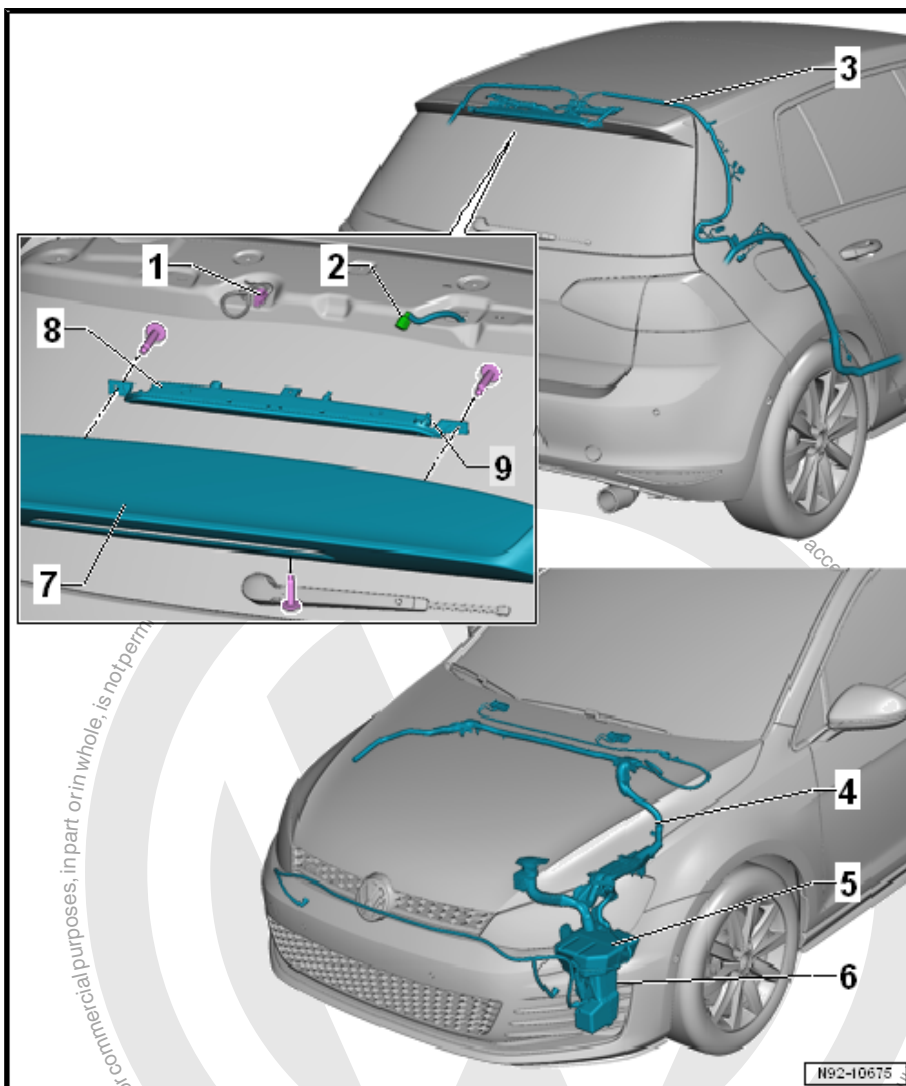
- ❑ Removing and installing. Refer to ➤ ["2.4 Windshield Washer Pump, Removing and Installing", page 98](#).
- ❑ with grommet, replace if damaged.

7 - Spoiler on the Edge of the Roof

8 - High-Mounted Brake Lamp

9 - Spray Nozzle

- ❑ Removing and installing. Refer to ➤ ["4.4.2 Spray Nozzle, Removing and Installing", page 109](#).
- ❑ Adjusting. Refer to ➤ ["4.5 Spray Nozzle, Adjusting", page 110](#).





4.1.3 Overview - Rear Window Washer System

1 - Water Hose

- ☐ Wiring routing in the right side panel to the rear window washer system spray nozzle

2 - High-Mounted Brake Lamp Connection

3 - Water Hose Connection

- ☐ Rear window washer system elbow
- ☐ Clipped with the rear lid

4 - Spray Nozzle

- ☐ Removing and installing. Refer to [⇒ "4.4.2 Spray Nozzle, Removing and Installing", page 109](#).
- ☐ Adjusting. Refer to [⇒ "4.5 Spray Nozzle, Adjusting", page 110](#).

5 - High-Mounted Brake Lamp

- ☐ Removing and installing. Refer to [⇒ "5.2 High-Mounted Brake Lamp, Removing and Installing", page 199](#).

6 - Spoiler on the Edge of the Roof

- ☐ Spoiler on the edge of the roof, removing and installing. Refer to [⇒ Body Exterior; Rep. Gr. 66 ; Spoiler](#).

7 - Water Hose

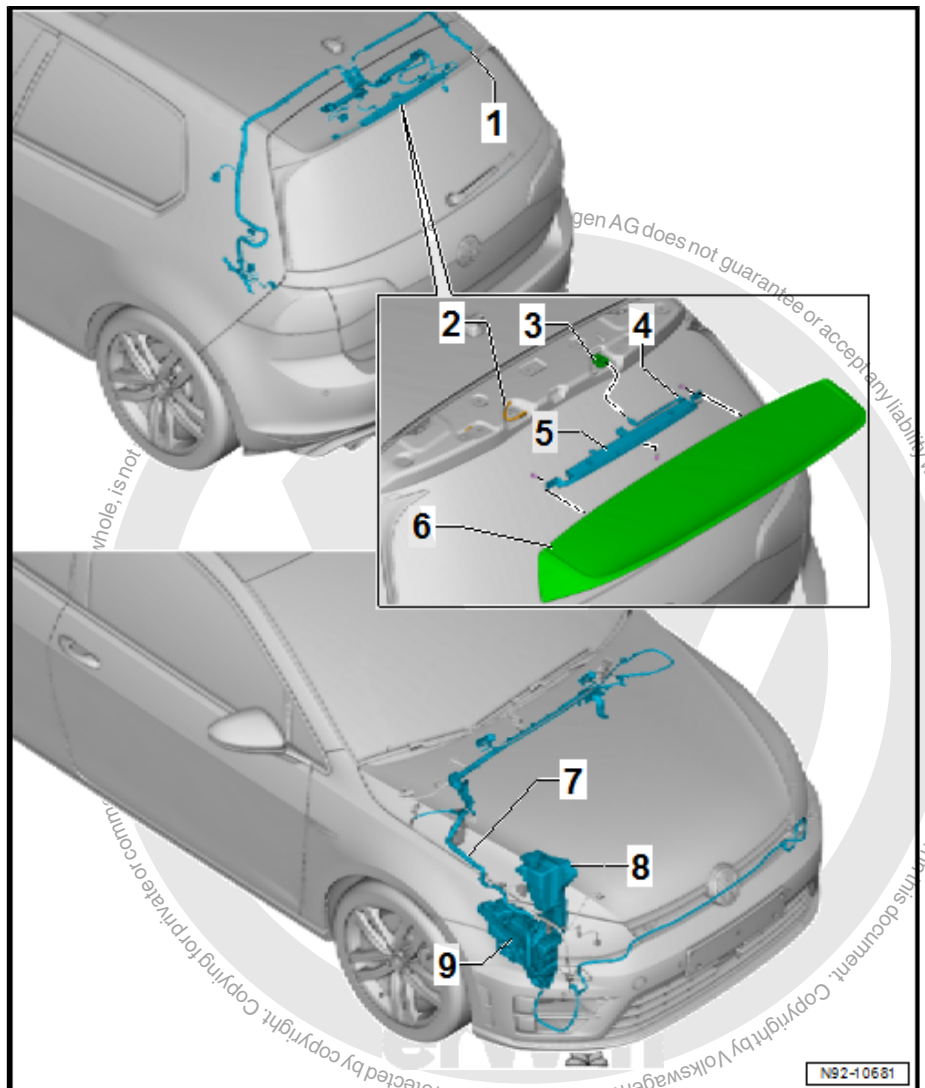
- ☐ In the right of the engine compartment to the rear window washer system spray nozzle

8 - Windshield Washer Fluid Reservoir Upper Section

- ☐ Washer fluid reservoir two-piece version
- ☐ Removing and installing. Refer to [⇒ "2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 94](#).

9 - Windshield Washer Fluid Reservoir-Lower Section

- ☐ Washer fluid reservoir two-piece version
- ☐ Removing and installing. Refer to [⇒ "2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 94](#).





4.2 Windshield Washer Fluid Reservoir, Removing and Installing

⇒ [“4.2.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 108](#)

4.2.1 Windshield Washer Fluid Reservoir, Removing and Installing



Note

The combined washer fluid reservoir for the front and back windshield washer systems is located in the front left wheel housing.

- Washer fluid reservoir, removing and installing. Refer to ⇒ [“2.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 93](#).

4.2.2 Windshield Washer Fluid Reservoir, Removing and Installing



Note

The shared windshield and headlamp washer system washer fluid reservoir is located in the right front wheel housing.

- Washer fluid reservoir, removing and installing. Refer to ⇒ [“2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 94](#).

4.3 Rear Window Washer Pump, Removing and Installing

⇒ [“4.3.2 Rear Window Washer Pump, Removing and Installing”, page 108](#)

4.3.1 Rear Window Washer Pump, Removing and Installing



Note

The washer pump for the windshield and the rear window washer system is located inside the windshield washer fluid reservoir in the left front wheel housing.

- Removing and installing the Windshield And Rear Window Washer Pump - V59- . Refer to ⇒ [“2.4 Windshield Washer Pump, Removing and Installing”, page 98](#).

4.3.2 Rear Window Washer Pump, Removing and Installing



Note

The washer pump for the windshield and the rear window washer system is located inside the windshield washer fluid reservoir in the right front wheel housing.



- Removing and installing the Windshield And Rear Window Washer Pump - V59- . Refer to
⇒ [“2.4.2 Windshield Washer Pump, Removing and Installing”, page 98](#) .

4.4 Spray Nozzle, Removing and Installing

⇒ [“4.4.2 Spray Nozzle, Removing and Installing”, page 109](#)

4.4.1 Spray Nozzle, Removing and Installing, Golf



Note

The spray nozzle is installed in the high-mounted brake lamp.

Removing

- Remove the high-mounted brake lamp. Refer to
⇒ [“5 High-Mounted Brake Lamp”, page 198](#) .
- Release both catches -arrows-.
- Remove the spray nozzle -1- toward the rear from the high-mounted brake lamp.

Installing

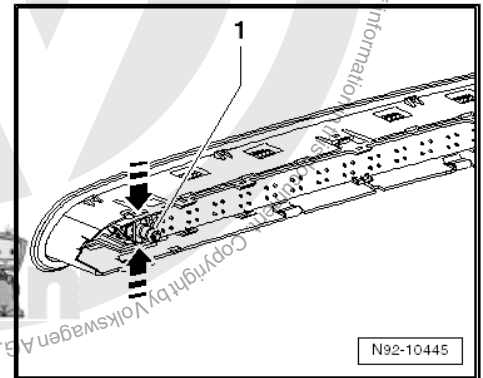
Install in the reverse order of removal. Note the following:



Note

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

- Adjust the rear window washer system spray nozzles. Refer to ⇒ Maintenance ; Booklet 36.1 .



4.4.2 Spray Nozzle, Removing and Installing



Note

The spray nozzle is installed in the high-mounted brake lamp.

Removing

- Remove the high-mounted brake lamp. Refer to
⇒ [“5 High-Mounted Brake Lamp”, page 198](#) .
- Remove the spray nozzle -1- with the hose -2- in the direction of the -arrow A- from the high-mounted brake lamp.

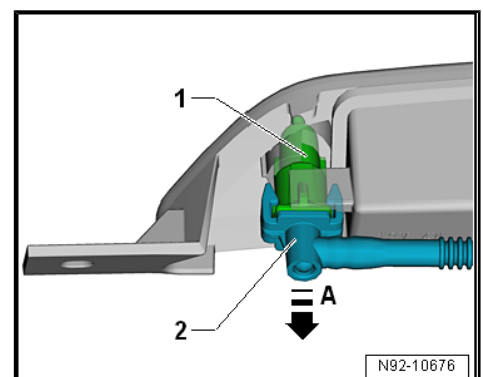
Installing

Install in the reverse order of removal. Note the following:



Note

Pay attention that the spray nozzle is pushed in the mount until it stop.





4.5 Spray Nozzle, Adjusting



Note

Only the spray nozzle on the Golf can be adjusted.

- Adjust the rear window washer system spray nozzles. Refer to ⇒ Maintenance ; Booklet 36.1 .





5 Headlamp Washer System

⇒ ["5.1 Overview - Headlamp Washer System", page 111](#)

⇒ ["5.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 113](#)

⇒ ["5.3 Headlamp Washer Pump V11, Removing and Installing", page 113](#)

⇒ ["5.4 Lift Cylinder, Removing and Installing", page 115](#)

⇒ ["5.5 Spray Nozzles, Removing and Installing", page 118](#)

⇒ ["5.6 Spray Nozzles, Adjusting", page 118](#)

5.1 Overview - Headlamp Washer System

⇒ ["5.1.2 Overview - Headlamp Washer System", page 112](#)

5.1.1 Overview - Headlamp Washer System

1 - Headlamp Washer Pump - V11-

- ☐ Removing and installing. Refer to
⇒ ["5.3 Headlamp Washer Pump V11, Removing and Installing", page 113](#).

2 - Grommet

- ☐ Replace if damaged.

3 - Windshield Washer Fluid Reservoir

- ☐ Removing and installing. Refer to
⇒ ["2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 93](#).

4 - Nut

- ☐ Tightening Specification: 8 Nm.
- ☐ Quantity: 3

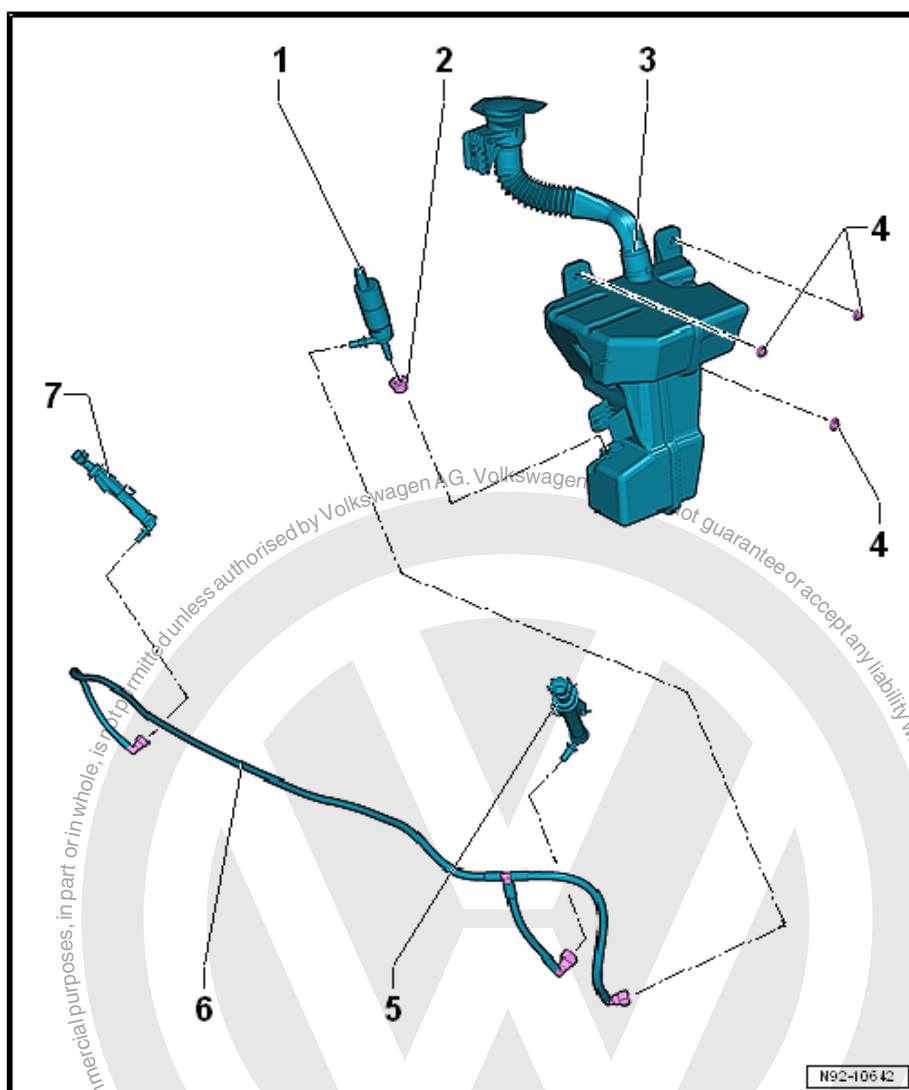
5 - Left Spray Nozzle

- ☐ Removing and installing. Refer to
⇒ ["5.4 Lift Cylinder, Removing and Installing", page 115](#).

6 - Washer Fluid Hose

7 - Right Spray Nozzle

- ☐ Removing and installing. Refer to
⇒ ["5.4 Lift Cylinder, Removing and Installing", page 115](#).





5.1.2 Overview - Headlamp Washer System

1 - Cap

- For the filler neck

2 - Screen

3 - Windshield Washer Fluid Reservoir Upper Section

- Washer fluid reservoir two-piece version
- Removing and installing. Refer to [⇒ "2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 94](#).

4 - Seal

- Seals the washer fluid reservoir-upper section with the washer fluid reservoir-lower section
- The seal is installed in the washer fluid reservoir-lower section
- Coat the seal to connect the washer fluid reservoir-upper and lower sections with lubricant

5 - Left Spray Nozzle

- Removing and installing. Refer to [⇒ "5.4 Lift Cylinder, Removing and Installing", page 115](#).

6 - Washer Fluid Hose

7 - Right Spray Nozzle

- Removing and installing. Refer to [⇒ "5.4 Lift Cylinder, Removing and Installing", page 115](#).

8 - Retaining Clip

- Quantity: 2
- Clipped in the washer fluid reservoir

9 - Bolt

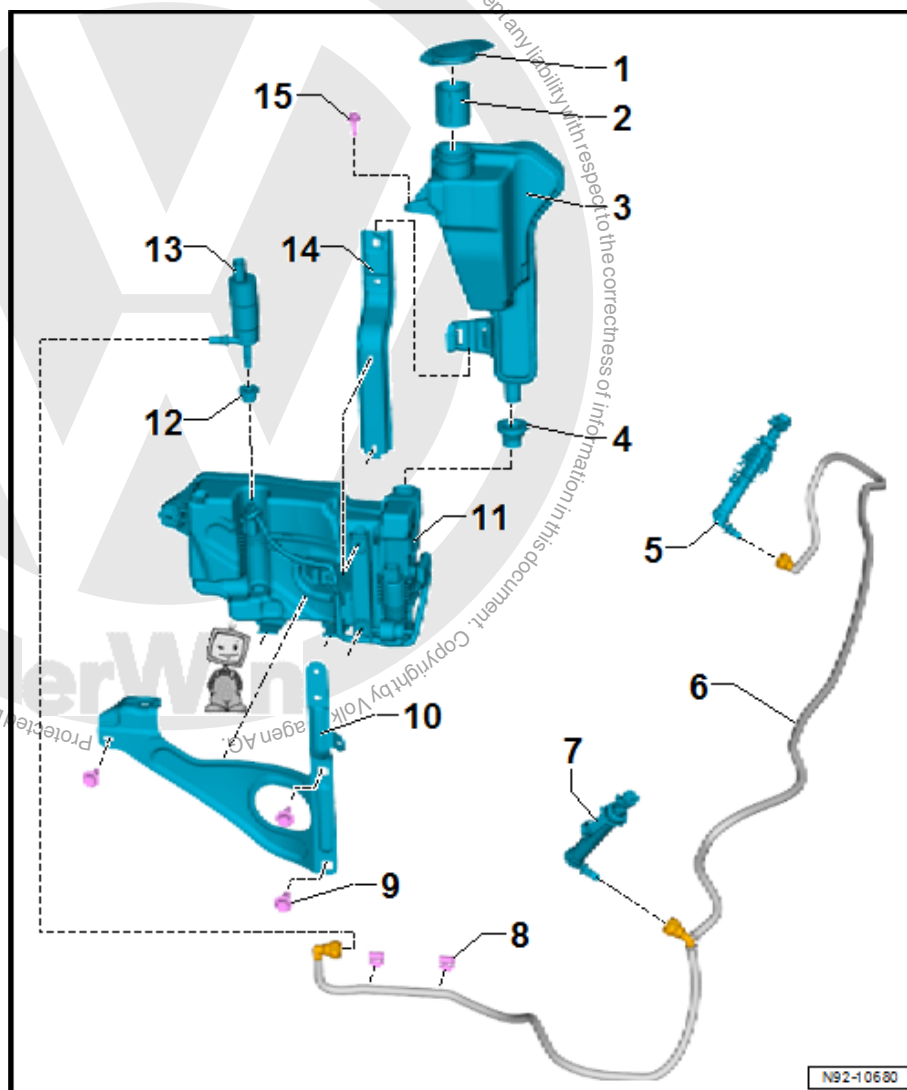
- Tightening Specification: 8.0 Nm
- Quantity: 3

10 - Bracket

- Washer fluid reservoir-lower section bracket
- Removing and installing. Refer to [⇒ "2.2.3 Auxiliary Component Bracket, Removing and Installing", page 96](#).

11 - Windshield Washer Fluid Reservoir-Lower Section

- Washer fluid reservoir two-piece version
- With Windshield Washer Fluid Level Sensor - G33-
- Removing and installing. Refer to [⇒ "2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 94](#).





12 - Grommet

- ☐ Replace if damaged.

13 - Headlamp Washer Pump - V11-

- ☐ Removing and installing. Refer to
⇒ ["5.3.2 Headlamp Washer Pump V11 , Removing and Installing", page 114](#) .

14 - Bracket

- ☐ Washer fluid reservoir-upper section bracket
- ☐ Removing and installing. Refer to
⇒ ["2.2.3 Auxiliary Component Bracket, Removing and Installing", page 96](#) .

15 - Bolt

- ☐ Tightening Specification: 8.0 Nm

5.2 Windshield Washer Fluid Reservoir, Removing and Installing

⇒ ["5.2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 113](#)

5.2.1 Windshield Washer Fluid Reservoir, Removing and Installing



Note

The shared windshield and headlamp washer system washer fluid reservoir is located in the left front wheel housing.

- Washer fluid reservoir, removing and installing. Refer to
⇒ ["2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 93](#) .

5.2.2 Windshield Washer Fluid Reservoir, Removing and Installing



Note

The shared windshield and headlamp washer system washer fluid reservoir is located in the right front wheel housing.

- Washer fluid reservoir, removing and installing. Refer to
⇒ ["2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing", page 94](#) .

5.3 Headlamp Washer Pump - V11- , Removing and Installing

⇒ ["5.3.2 Headlamp Washer Pump V11 , Removing and Installing", page 114](#)

5.3.1 Headlamp Washer Pump - V11- , Removing and Installing

Special tools and workshop equipment required

- ◆ Drip Tray



Removing

- Remove the noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Disconnect the connector -2-.
- Place a drip tray under the windshield washer fluid reservoir.
- Push the release button -3-.
- Remove the washer fluid hose -4- from the Right Center Vent Motor - V11- -1-.
- Remove the Headlamp Washer Pump - V11- -1- in direction of -arrow A- upward out of the washer fluid reservoir.

Installing

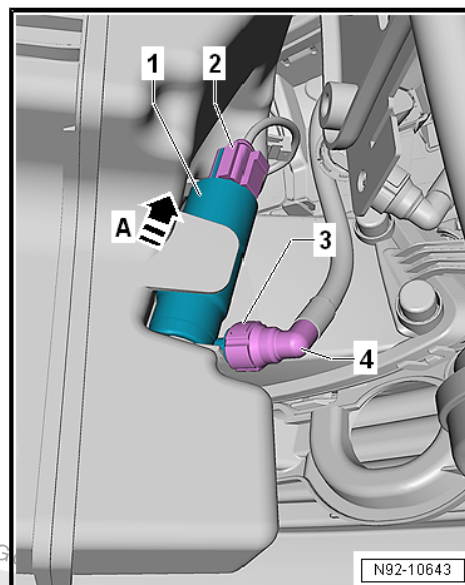
Install in the reverse order of removal. Note the following:



Note

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

- Check the sealing grommet for damage.



5.3.2 Headlamp Washer Pump - V11- , Removing and Installing

Special tools and workshop equipment required

- ♦ Drip Tray

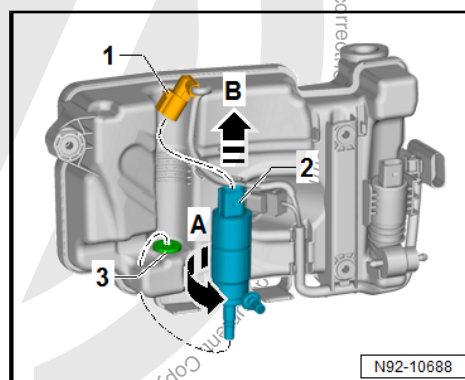
Removing

- Remove the washer fluid reservoir. Refer to ➤ [“2.2.2 Windshield Washer Fluid Reservoir, Removing and Installing”, page 94](#)
- Disconnect the connector -1- from the Headlamp Washer Pump - V11- .
- Turn the Headlamp Washer Pump - V11- -2- in direction of -arrow A- approximately 45° .
- Remove the Headlamp Washer Pump - V11- -2- in direction of -arrow B- from the washer fluid reservoir.
- If necessary remove the seal -3- from the washer fluid reservoir.

Installing

Install in the reverse order of removal. Note the following:

- Check the sealing grommet -3- for damage.
- Install the grommet -3- correctly in the opening in the washer fluid reservoir.
- Coat the grommet -3- with washer fluid, so that the Headlamp Washer Pump - V11- can be easily pushed in.



Note

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



5.4 Lift Cylinder, Removing and Installing

⇒ "5.4.2 Lift Cylinder, Removing and Installing", page 116

5.4.1 Lift Cylinder, Removing and Installing

Special tools and workshop equipment required

◆ Drip Tray

Removing



Note

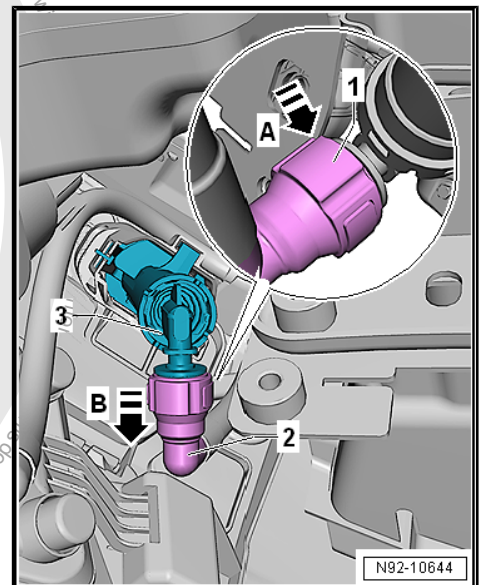
The removal and installation is described for the left side. Removing and installing on the right side is identical.

- Remove the front wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66; Noise Insulation; Overview - Noise Insulation.
- Place a drip tray under the lift cylinder.
- Push the release button -1- in direction of -arrow A-.
- Remove the washer fluid hose -2- in direction of -arrow B- from the lift cylinder -3-.

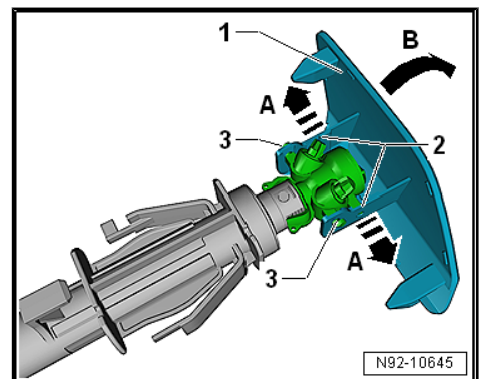


Note

A second technician is required for removing the cap.



- Move the lift cylinder with the cap -1- out of the bumper cover using pressurized air and hold.
- Push the cap -1- on both sides out of the upper mounting -2- in direction of -arrow A-.
- Pivot the cap -1- in direction of -arrow B- and unclip from the lower mounting -3-.





- Push the release buttons -1- in direction of -arrow A-.
- Remove the lift cylinder -2- downward from the bracket -3-.

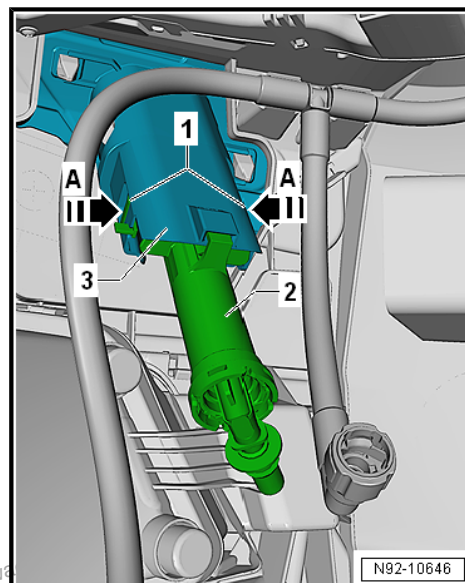
Installing

Install in the reverse order of removal. Note the following:



Note

- ♦ Pay attention to the markings on the lift cylinder for the left and right.
- ♦ The lift cylinder must engage audibly when pushing in the mount.
- ♦ When connecting the washer fluid line, ensure that the securing clip engages audibly into the connection.



5.4.2 Lift Cylinder, Removing and Installing

Special tools and workshop equipment required

- ♦ Drip Tray

Removing



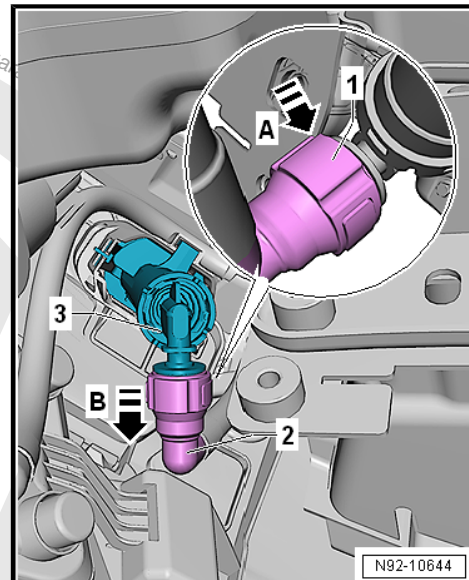
Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

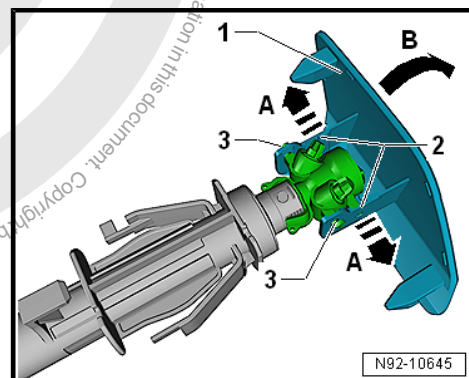
- Remove the wheel housing liner front section. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Overview - Front Wheel Housing Liner .
- Place a drip tray under the windshield washer fluid reservoir.
- Release the washer fluid hose clamp. Remove the washer fluid hose from the Headlamp Washer Pump - V11- and unclip from the washer fluid reservoir.
- Catch any washer fluid with a drip tray.
- Remove the front bumper. Refer to ⇒ Body Exterior; Rep. Gr. 63 ; Front Bumper; Bumper Cover, Removing and Installing .



- Push the release button -1- in direction of -arrow A-.
- Remove the washer fluid hose -2- in direction of -arrow B- from the lift cylinder -3-.



- Move the lift cylinder with the cap -1- out of the bumper cover using pressurized air and hold.
- Push the cap -1- on both sides out of the upper mounting -2- in direction of -arrow A-.
- Pivot the cap -1- in direction of -arrow B- and unclip from the lower mounting -3-.



- Push the release buttons -1- in direction of -arrow A-.
- Remove the lift cylinder -2- downward from the bracket -3-.

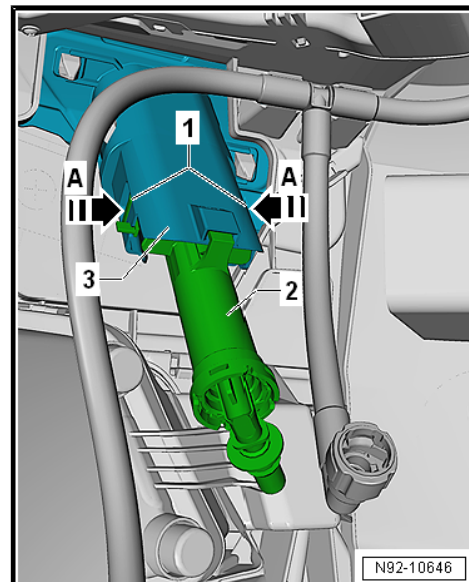
Installing

Install in the reverse order of removal. Note the following:



Note

- ◆ Pay attention to the markings on the lift cylinder for the left and right.
- ◆ The lift cylinder must engage audibly when pushing in the mount.
- ◆ When connecting the washer fluid line, ensure that the securing clip engages audibly into the connection.





5.5 Spray Nozzles, Removing and Installing

Removing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

- Remove the lift cylinder. Refer to ⇒ ["5.4 Lift Cylinder, Removing and Installing", page 115](#) .
- Push the catch in the direction of the arrow -A-.
- Remove the spray nozzle -1- from the lift cylinder -2-.

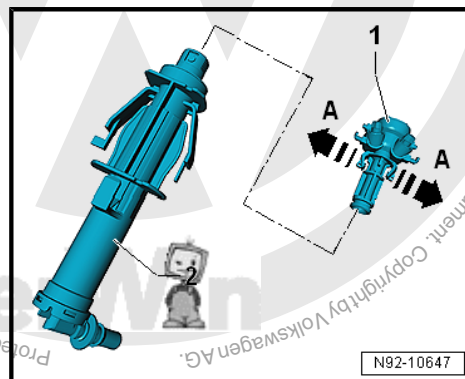
Installing

Install in the reverse order of removal. Note the following:



Note

The spray nozzle must engage audibly when pushed in the lift cylinder.



5.6 Spray Nozzles, Adjusting



Note

The nozzles are already adjusted by the manufacturer and must not be adjusted after installation.

- Check the adjustment of the spray nozzle. Refer to ⇒ Maintenance ; Booklet 36.1 .



6 Washer Fluid Hoses

⇒ **"6.1 Washer Fluid Hoses, Servicing", page 119**

6.1 Washer Fluid Hoses, Servicing



Note

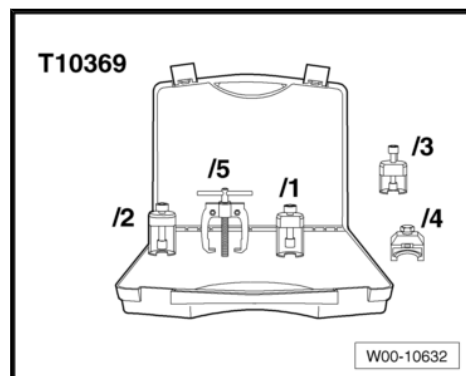
*All instructions and information on this chapter. Refer to ⇒ **Electrical Equipment General Information; Rep. Gr. 92**.*



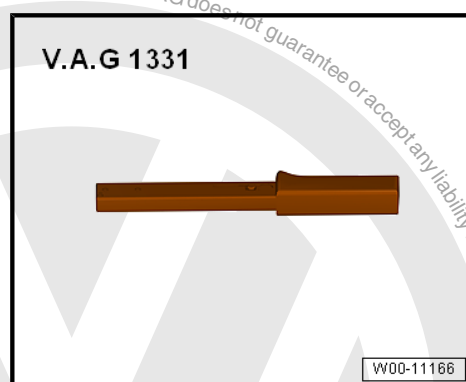
7 Special Tools

Special tools and workshop equipment required

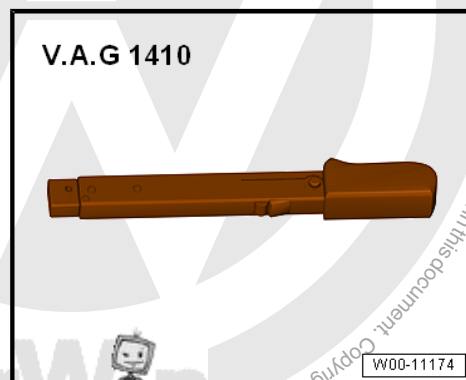
- ◆ Puller - Wiper Arm Kit - T10369-



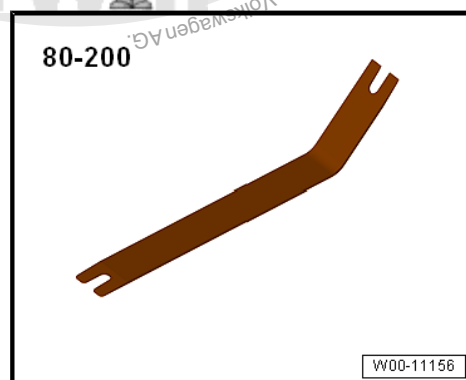
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



- ◆ Torque Wrench 1410 - VAG1410-



- ◆ Pry Lever - 80-200-





94 – Exterior Lights, Switches





1 Headlamp

- ⇒ [“1.1 Overview - Headlamp”, page 122](#)
- ⇒ [“1.2 Headlamp, Removing and Installing”, page 137](#)
- ⇒ [“1.3 Headlamp, Adjusting”, page 140](#)
- ⇒ [“1.4 Headlamp Installed Position, Correcting”, page 140](#)
- ⇒ [“1.5 Left/Right Front Turn Signal Bulb M5 / M7 , Removing and Installing”, page 142](#)
- ⇒ [“1.6 Headlamp Housing Repair Kit, Installing”, page 144](#)
- ⇒ [“1.9 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing”, page 151](#)
- ⇒ [“1.10 Low Beam Headlamp Bulb, Removing and Installing”, page 156](#)
- ⇒ [“1.11 Left/Right High Beam Headlamp Bulb M30 / M32 , Removing and Installing”, page 161](#)
- ⇒ [“1.12 Left/Right HID Headlamp Bulb L13 / L14 , Removing and Installing”, page 164](#)
- ⇒ [“1.13 Left/Right Position Lamp Bulb M1 / M3 , Removing and Installing”, page 166](#)
- ⇒ [“1.14 Left/Right Daytime Running Lamp Bulb L174 / L175 , Removing and Installing”, page 166](#)
- ⇒ [“1.15 Left/Right Daytime Running Lamp and Position Lamp LED Module L176 / L177 , Removing and Installing”, page 168](#)
- ⇒ [“1.16 Left/Right Low Beam Headlamp Reflector Motor V294 / V295 , Removing and Installing”, page 169](#)
- ⇒ [“1.17 Left/Right Cornering Lamp Bulb L148 / L149 , Removing and Installing”, page 169](#)
- ⇒ [“1.18 Left/Right HID Headlamp Control Module J343 / J344 , Removing and Installing”, page 170](#)
- ⇒ [“1.19 Left/Right Headlamp Power Output Stage J667 / J668 , Removing and Installing”, page 171](#)
- ⇒ [“1.20 Left/Right Daytime Running Lamp and Position Lamp Control Module J860 / J861 , Removing and Installing”, page 172](#)
- ⇒ [“1.21 Headlamp Power Output Stage 2, Removing and Installing”, page 173](#)
- ⇒ [“1.22 Left/Right LED Headlamp Power Output Module 1 A31 / A32 , Removing and Installing”, page 174](#)
- ⇒ [“1.23 Sensor for Left/Right Variable Headlamp Positioning Motor G695 / G696 , Removing and Installing”, page 175](#)
- ⇒ [“1.24 Left/Right Variable Headlamp Positioning Motor V446 / V447 , Removing and Installing”, page 175](#)
- ⇒ [“1.25 Left/Right Swivel Module Position Sensor G474 / G475 , Removing and Installing”, page 176](#)
- ⇒ [“1.26 Left/Right Adaptive Cornering Lamp Motor V318 / V319 , Removing and Installing”, page 176](#)

1.1 Overview - Headlamp

- ⇒ [“1.1.1 Overview - Halogen Twin Headlamp”, page 123](#)
- ⇒ [“1.1.2 Overview - HID Headlamp”, page 125](#)



⇒ [“1.1.3 Overview - HID Headlamp for Cornering Lamp and LED Daytime Running Lamp”, page 127](#)

⇒ [“1.1.5 Overview - HID Headlamp with Dynamic High Beam Control and LED-Daytime Running Lamps”, page 131](#)

⇒ [“1.1.6 Overview - LED Headlamp”, page 133](#)

⇒ [“1.1.7 Overview - Headlamp Housing Repair Kit, Excluding LED Headlamps”, page 135](#)

⇒ [“1.1.8 Overview - Headlamp Housing Repair Kit, LED Headlamps Only”, page 136](#)

⇒ [“1.1.9 Overview - Daytime Running Lamps”, page 137](#)

1.1.1 Overview - Halogen Twin Headlamp

1 - Parking Lamp Bulb/Daytime Running Lamp/High Beam Headlamp

- ❑ The lamp has three functions:
- ❑ Left Position Lamp Bulb - M1- , Right Position Lamp Bulb - M3-
- ❑ Left Daytime Running Lamp Bulb - L174- , Right Daytime Running Lamp Bulb - L175-
- ❑ Left High Beam Headlamp Bulb - M30- , Right High Beam Headlamp Bulb - M32-
- ❑ Removing and installing. Refer to
⇒ [“1.11.1 High Beam Headlamp Bulb M30 / M32 , Removing and Installing, Halogen Twin Headlamp”, page 161](#) .

2 - Socket

- ❑ For the daytime running lamp bulb/high beam headlamp

3 - Housing Cover

4 - Housing Cover

5 - Headlamp Beam Adjustment Motor

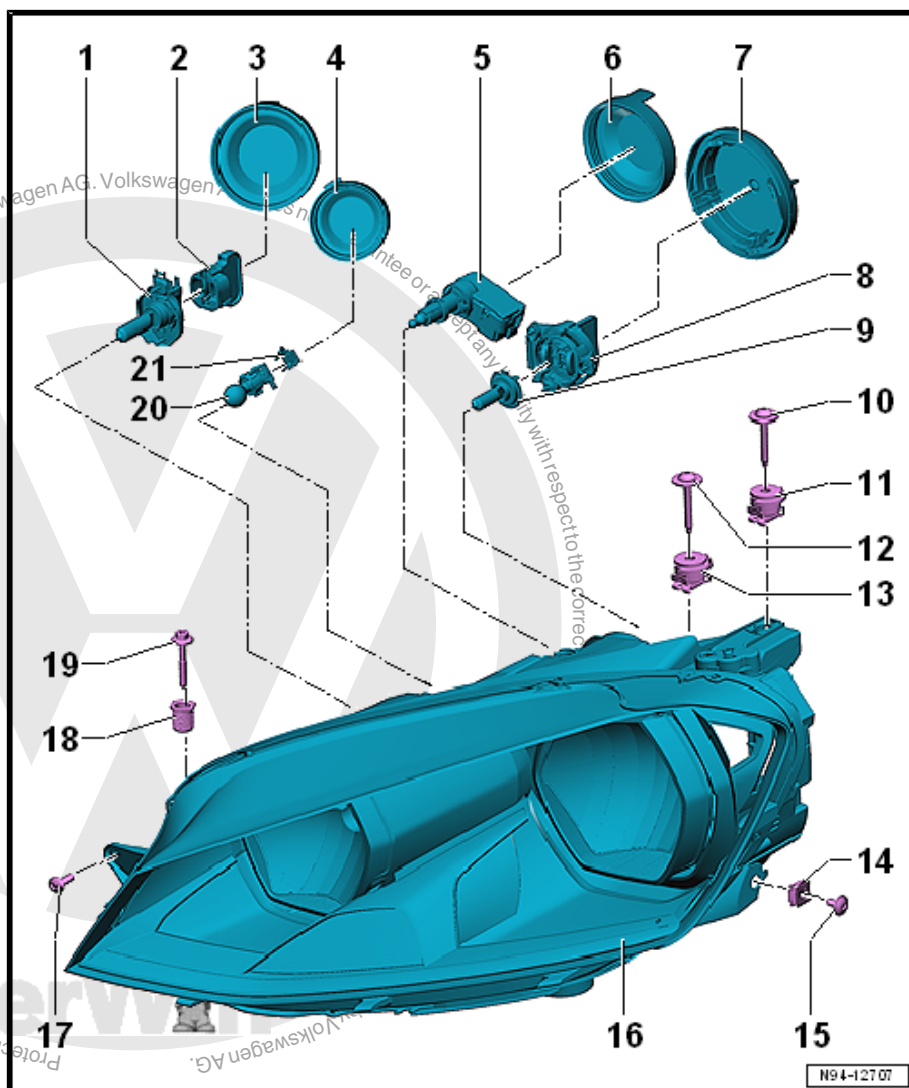
- ❑ Left Headlamp Beam Adjustment Motor - V48-
- ❑ Right Headlamp Beam Adjustment Motor - V49-
- ❑ Removing and installing. Refer to
⇒ [“1.9.1 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing, Halogen Twin Headlamps”, page 151](#) .

6 - Housing Cover

7 - Housing Cover

8 - Bulb Socket

- ❑ To the low beam headlamp bulb mount





9 - Low Beam Headlamp Bulb

- ☐ Left Low Beam Headlamp Bulb - M29-
- ☐ Right Low Beam Headlamp Bulb - M31-
- ☐ Removing and installing. Refer to
⇒ ["1.10.1 Low Beam Headlamp Bulb, Removing and Installing, Halogen Twin Headlamp", page 156](#) .

10 - Bolt

- ☐ Tightening Specification: 8 Nm.
- ☐ For attaching on the upper longitudinal member

11 - Adjusting Element

12 - Bolt

- ☐ only loosen
- ☐ Tightening Specification: 4 Nm
- ☐ For attaching to the headlamp mount

13 - Balancing Element

14 - Spring Nut

- ☐ M6

15 - Bolt

- ☐ Tightening Specification: 4 Nm
- ☐ M6
- ☐ For attaching the bumper guide

16 - Headlamp

- ☐ Removing and installing. Refer to ⇒ ["1.2 Headlamp, Removing and Installing", page 137](#) .

17 - Impact Screw

- ☐ For adjusting the headlamp parallel to the hood edge

18 - Banjo Bolt

- ☐ For the headlamp height adjustment

19 - Bolt

- ☐ For attaching to the lock carrier
- ☐ Tightening Specification: 4 Nm

20 - Front Turn Signal Bulb

- ☐ Left Front Turn Signal Bulb - M5-
- ☐ Right Front Turn Signal Bulb - M7-
- ☐ Removing and installing. Refer to
⇒ ["1.5.1 Left/Right Front Turn Signal Bulb M5 / M7 , Removing and Installing, Halogen Twin Headlamp", page 142](#) .

21 - Socket

- ☐ For the front turn signal lamp



1.1.2 Overview - HID Headlamp

1 - Headlamp

- ❑ Removing and installing. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#).

2 - Front Turn Signal Bulb

- ❑ Left Front Turn Signal Bulb - M5-
- ❑ Right Front Turn Signal Bulb - M7-
- ❑ Removing and installing. Refer to
⇒ ["1.5.2 Left/Right Front Turn Signal Bulb M5 / M7, Removing and Installing, HID Headlamps", page 143](#).

3 - Cornering Lamp Bulb

- ❑ Left Cornering Lamp Bulb - L148-
- ❑ Right Cornering Lamp Bulb - L149-
- ❑ Removing and installing. Refer to
⇒ ["1.17 Left/Right Cornering Lamp Bulb L148 / L149, Removing and Installing", page 169](#).

4 - Housing Cover

5 - HID Headlamp Bulb

- ❑ with integrated ignition coil
- ❑ Left HID Headlamp Bulb - L13-
- ❑ Right HID Headlamp Bulb - L14-
- ❑ Removing and installing. Refer to
⇒ ["1.12 Left/Right HID Headlamp Bulb L13 / L14, Removing and Installing", page 164](#).

6 - Headlamp Beam Adjustment Motor

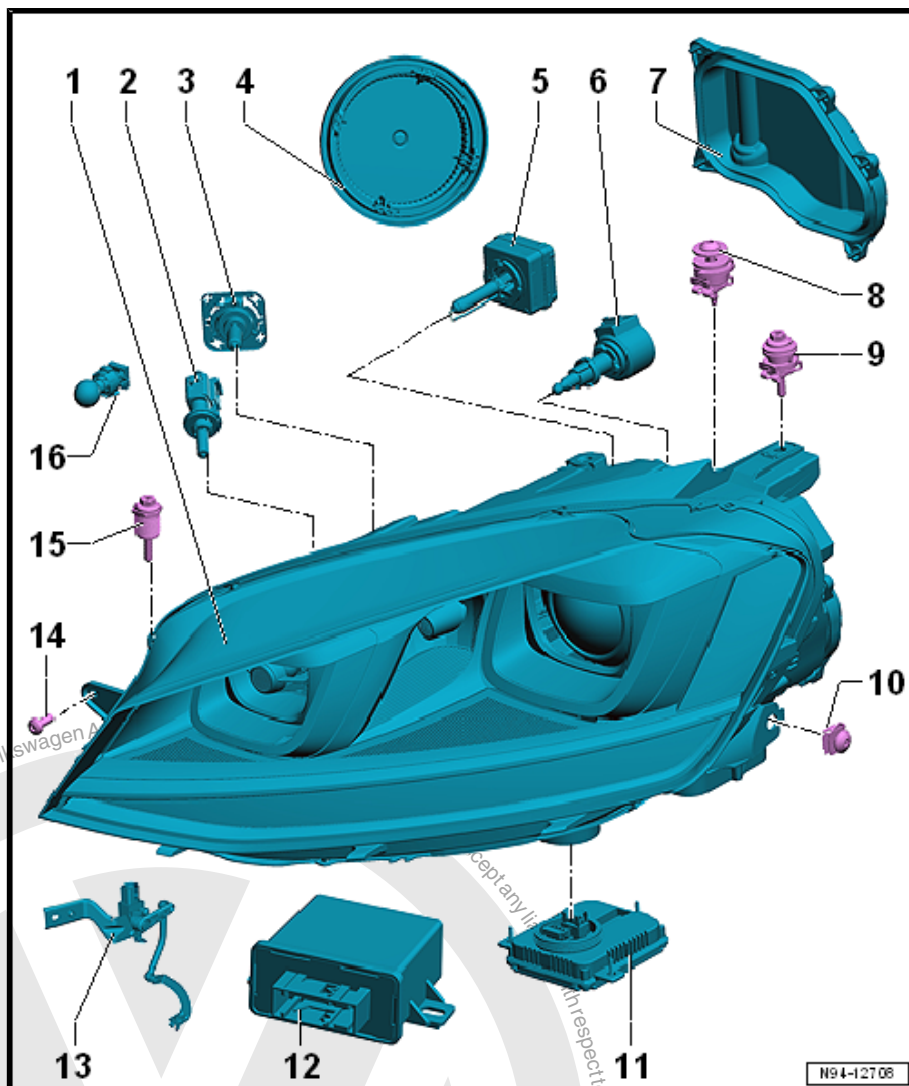
- ❑ Left Headlamp Beam Adjustment Motor - V48-
- ❑ Right Headlamp Beam Adjustment Motor - V49-
- ❑ Removing and installing. Refer to
⇒ ["1.9.2 Left/Right Headlamp Beam Adjustment Motor V48 / V49, Removing and Installing, HID Headlamps", page 153](#).

7 - Housing Cover

- ❑ With bolts
- ❑ Quantity: 5
- ❑ Tightening Specification: 1.5 Nm

8 - Bolt

- ❑ Tightening Specification: 4 Nm
- ❑ With balancing element





9 - Bolt

- ☐ Tightening Specification: 8 Nm.
- ☐ With balancing element

10 - Bolt

- ☐ Tightening Specification: 4 Nm

11 - HID Headlamp Control Module

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left HID Headlamp Control Module - J343-
- ☐ Right HID Headlamp Control Module - J344-
- ☐ Removing and installing. Refer to
⇒ ["1.18 Left/Right HID Headlamp Control Module J343 / J344 , Removing and Installing", page 170](#)

12 - Headlamp Range Control Module - J431-

- ☐ Removing and installing. Refer to
⇒ ["11.2 Headlamp Range Control Module J431 / Cornering Lamp and Headlamp Range Control Module J745 , Removing and Installing", page 249](#) .

13 - Level Control System Sensor

- ☐ Removing and installing. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 43 ; Level Control System Sensor; Left/Right Front Level Control System Sensor -G78- / -G289- , Removing and Installing .

14 - Impact Screw

- ☐ For adjusting the headlamp longitudinally

15 - Bolt

- ☐ Tightening Specification: 4 Nm
- ☐ With banjo bolt
- ☐ For the headlamp height adjustment

16 - Daytime Running Lamp Bulb

- ☐ Left Daytime Running Lamp Bulb - L174- , Right Daytime Running Lamp Bulb - L175-
- ☐ Removing and installing. Refer to
⇒ ["1.14 Left/Right Daytime Running Lamp Bulb L174 / L175 , Removing and Installing", page 166](#) .



1.1.3 Overview - HID Headlamp for Cornering Lamp and LED Daytime Running Lamp

1 - Headlamp

- ❑ Removing and installing. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#).

2 - Front Turn Signal Bulb

- ❑ Left Front Turn Signal Bulb - M5-
- ❑ Right Front Turn Signal Bulb - M7-
- ❑ Removing and installing. Refer to
⇒ ["1.5.2 Left/Right Front Turn Signal Bulb M5 / M7, Removing and Installing, HID Headlamps", page 143](#).

3 - Cornering Lamp Bulb

- ❑ Left Cornering Lamp Bulb - L148-
- ❑ Right Cornering Lamp Bulb - L149-
- ❑ Removing and installing. Refer to
⇒ ["1.17 Left/Right Cornering Lamp Bulb L148 / L149, Removing and Installing", page 169](#).

4 - Housing Cover

5 - HID Headlamp Bulb

- ❑ With integrated ignition coil
- ❑ Left HID Headlamp Bulb - L13-
- ❑ Right HID Headlamp Bulb - L14-
- ❑ Removing and installing. Refer to
⇒ ["1.12 Left/Right HID Headlamp Bulb L13 / L14, Removing and Installing", page 164](#).

6 - Headlamp Beam Adjustment Motor

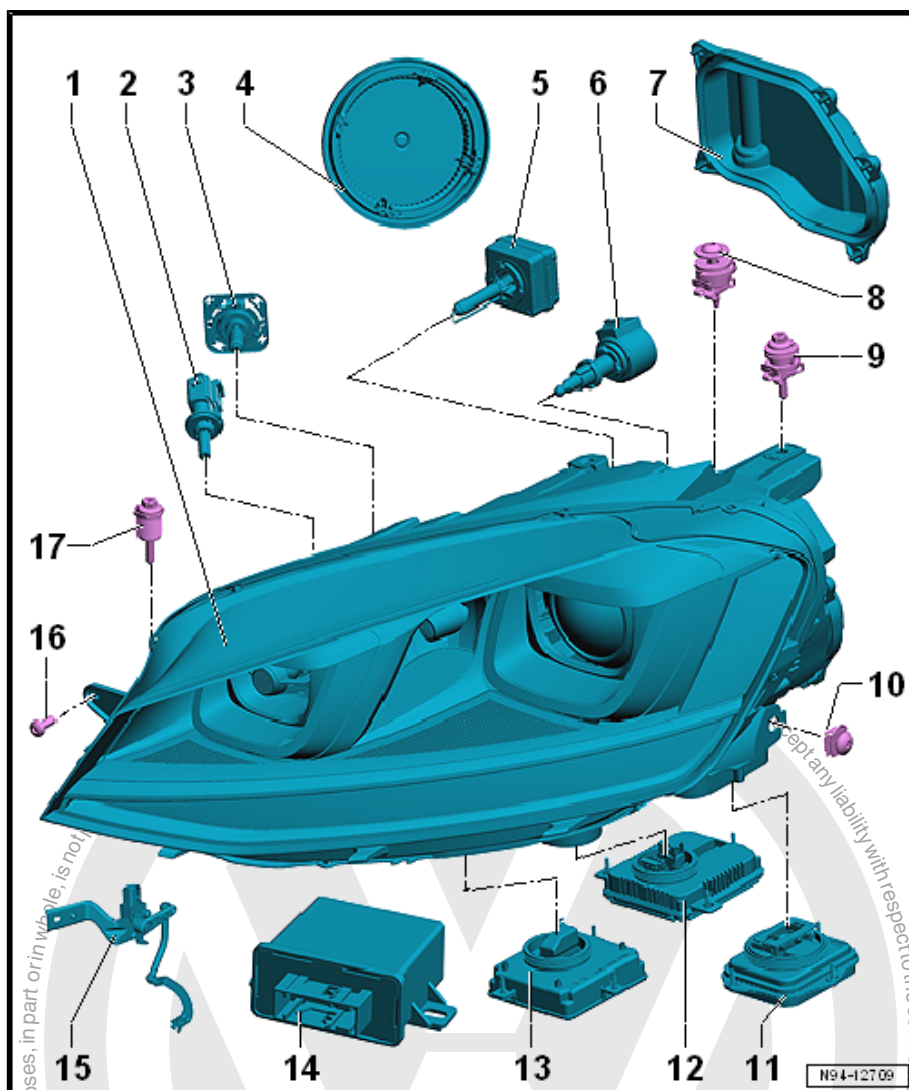
- ❑ Left Headlamp Beam Adjustment Motor - V48-
- ❑ Right Headlamp Beam Adjustment Motor - V49-
- ❑ Removing and installing. Refer to
⇒ ["1.9.2 Left/Right Headlamp Beam Adjustment Motor V48 / V49, Removing and Installing, HID Headlamps", page 153](#).

7 - Housing Cover

- ❑ Tightening Specification: 1.5 Nm
- ❑ With bolts
- ❑ Quantity: 5

8 - Bolt

- ❑ Tightening Specification: 4 Nm
- ❑ with balancing element





9 - Bolt

- ☐ Tightening Specification: 8 Nm.
- ☐ with balancing element

10 - Bolt

- ☐ Tightening Specification: 4 Nm

11 - Headlamp Power Output Stages

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left Headlamp Power Output Stage - J667-
- ☐ Right Headlamp Power Output Stage - J668-
- ☐ Removing and installing. Refer to
⇒ ["1.19 Left/Right Headlamp Power Output Stage J667 / J668 , Removing and Installing", page 171](#) .

12 - HID Headlamp Control Module

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left HID Headlamp Control Module - J343-
- ☐ Right HID Headlamp Control Module - J344-
- ☐ Removing and installing. Refer to
⇒ ["1.18 Left/Right HID Headlamp Control Module J343 / J344 , Removing and Installing", page 170](#) .

13 - Daytime Running Lamp and Position Lamp Control Module

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left Daytime Running Lamp and Position Lamp Control Module - J860-
- ☐ Right Daytime Running Lamp and Position Lamp Control Module - J861-
- ☐ Removing and installing. Refer to
⇒ ["1.20 Left/Right Daytime Running Lamp and Position Lamp Control Module J860 / J861 , Removing and Installing", page 172](#) .

14 - Cornering Lamp and Headlamp Range Control Module - J745-

- ☐ Removing and installing. Refer to
⇒ ["11.2 Headlamp Range Control Module J431 / Cornering Lamp and Headlamp Range Control Module J745 , Removing and Installing", page 249](#) .

15 - Level Control System Sensor

- ☐ Removing and installing. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 43 ; Level Control System Sensor; Left/Right Front Level Control System Sensor -G78- / -G289- , Removing and Installing .

16 - Impact Screw

- ☐ For adjusting the headlamp longitudinally

17 - Bolt

- ☐ Tightening Specification: 4 Nm
- ☐ With banjo bolt
- ☐ For the headlamp height adjustment



1.1.4 Overview - HID Headlamp with Dynamic High Beam Control and LED-Day-time Running Lamps

1 - Headlamp

- ☐ Removing and installing. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#).

2 - Front Turn Signal Bulb

- ☐ Left Front Turn Signal Bulb - M5-
- ☐ Right Front Turn Signal Bulb - M7-
- ☐ Removing and installing. Refer to
⇒ ["1.5.2 Left/Right Front Turn Signal Bulb M5 / M7, Removing and Installing, HID Headlamps", page 143](#).

3 - Cornering Lamp Bulb

- ☐ Left Cornering Lamp Bulb - L148-
- ☐ Right Cornering Lamp Bulb - L149-
- ☐ Removing and installing. Refer to
⇒ ["1.17 Left/Right Cornering Lamp Bulb L148 / L149, Removing and Installing", page 169](#).

4 - Housing Cover

5 - HID Headlamp Bulb

- ☐ With integrated ignition coil
- ☐ Left HID Headlamp Bulb - L13-
- ☐ Right HID Headlamp Bulb - L14-
- ☐ Removing and installing. Refer to
⇒ ["1.12 Left/Right HID Headlamp Bulb L13 / L14, Removing and Installing", page 164](#).

6 - Headlamp Beam Adjustment Motor

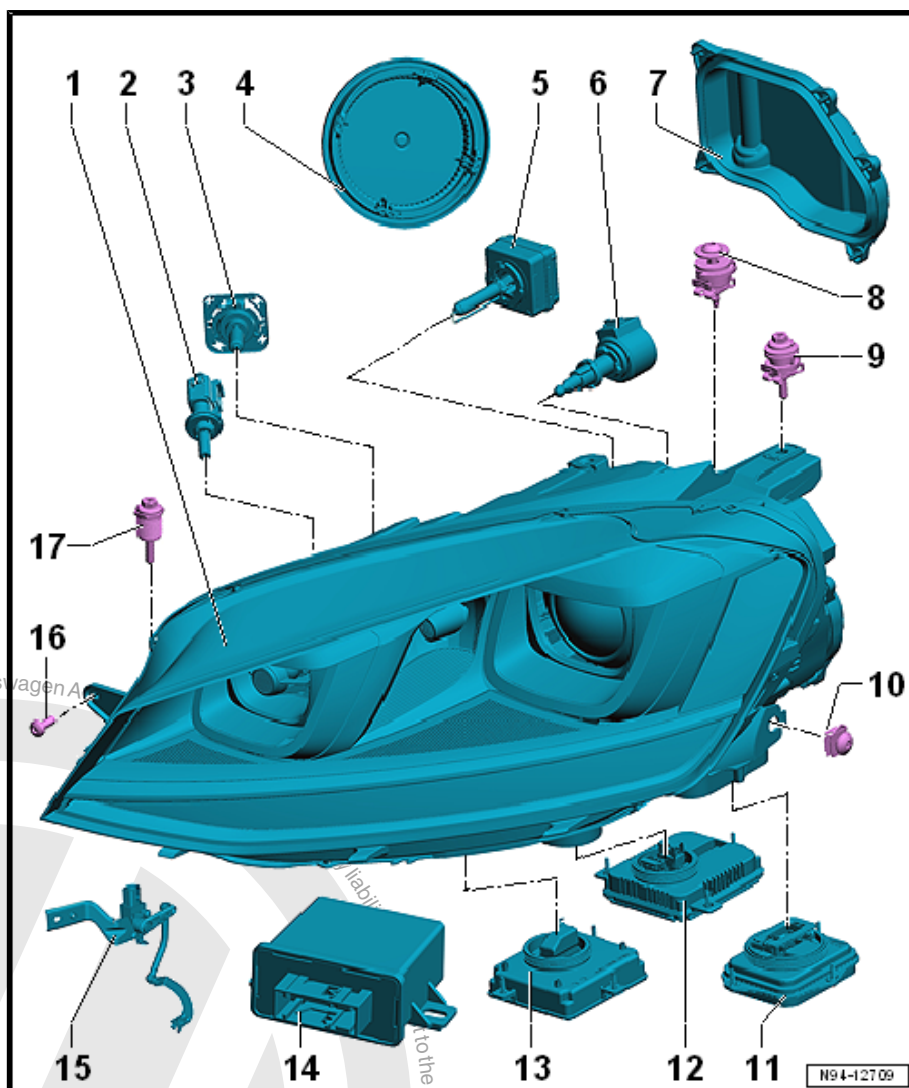
- ☐ Left Headlamp Beam Adjustment Motor - V48-
- ☐ Right Headlamp Beam Adjustment Motor - V49-
- ☐ Removing and installing. Refer to
⇒ ["1.9.2 Left/Right Headlamp Beam Adjustment Motor V48 / V49, Removing and Installing, HID Headlamps", page 153](#).

7 - Housing Cover

- ☐ Tightening Specification: 1.5 Nm
- ☐ With bolts
- ☐ Quantity: 5

8 - Bolt

- ☐ Tightening Specification: 4 Nm
- ☐ With balancing element





9 - Bolt

- ☐ Tightening Specification: 8 Nm.
- ☐ With balancing element

10 - Bolt

- ☐ Tightening Specification: 4 Nm

11 - Headlamp Power Output Stages

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left Headlamp Power Output Stage - J667-
- ☐ Right Headlamp Power Output Stage - J668-
- ☐ Removing and installing. Refer to
⇒ ["1.20 Left/Right Daytime Running Lamp and Position Lamp Control Module J860 / J861 , Removing and Installing", page 172](#) .

12 - HID Headlamp Control Module

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left HID Headlamp Control Module - J343-
- ☐ Right HID Headlamp Control Module - J344-
- ☐ Removing and installing. Refer to
⇒ ["1.18 Left/Right HID Headlamp Control Module J343 / J344 , Removing and Installing", page 170](#) .

13 - Daytime Running Lamp and Position Lamp Control Module

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left Daytime Running Lamp and Position Lamp Control Module - J860-
- ☐ Right Daytime Running Lamp and Position Lamp Control Module - J861-
- ☐ Removing and installing. Refer to
⇒ ["1.19 Left/Right Headlamp Power Output Stage J667 / J668 , Removing and Installing", page 171](#) .

14 - Cornering Lamp and Headlamp Range Control Module - J745-

- ☐ Removing and installing. Refer to
⇒ ["11.2 Headlamp Range Control Module J431 / Cornering Lamp and Headlamp Range Control Module J745 , Removing and Installing", page 249](#) .

15 - Level Control System Sensor

- ☐ Removing and installing. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 43 ; Level Control System Sensor; Left/Right Front Level Control System Sensor -G78- / -G289- , Removing and Installing .

16 - Impact Screw

- ☐ For adjusting the headlamp longitudinally

17 - Bolt

- ☐ Tightening Specification: 4 Nm
- ☐ With banjo bolt
- ☐ For the headlamp height adjustment



1.1.5 Overview - HID Headlamp with Dynamic High Beam Control and LED-Daytime Running Lamps

1 - Headlamp

- ☐ Left Front Headlamp - MX1-
- ☐ Right Front Headlamp - MX2-
- ☐ Removing and installing. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#).

2 - Position Lamp Bulb

- ☐ Left Position Lamp Bulb - M1-
- ☐ Right Position Lamp Bulb - M3-
- ☐ LED-version, not replaceable separately

3 - Left Daytime Running Lamp and Position Lamp LED Module

- ☐ Left Daytime Running Lamp and Position Lamp LED Module - L176-
- ☐ Right Daytime Running Lamp and Position Lamp LED Module - L177-
- ☐ Quantity: 2 per headlamp
- ☐ Cannot be replaced individually

4 - Cornering Lamp Bulb

- ☐ Left Cornering Lamp Bulb - L148-
- ☐ Right Cornering Lamp Bulb - L149-
- ☐ Removing and installing. Refer to
⇒ ["1.17 Left/Right Cornering Lamp Bulb L148 / L149 , Removing and Installing", page 169](#).

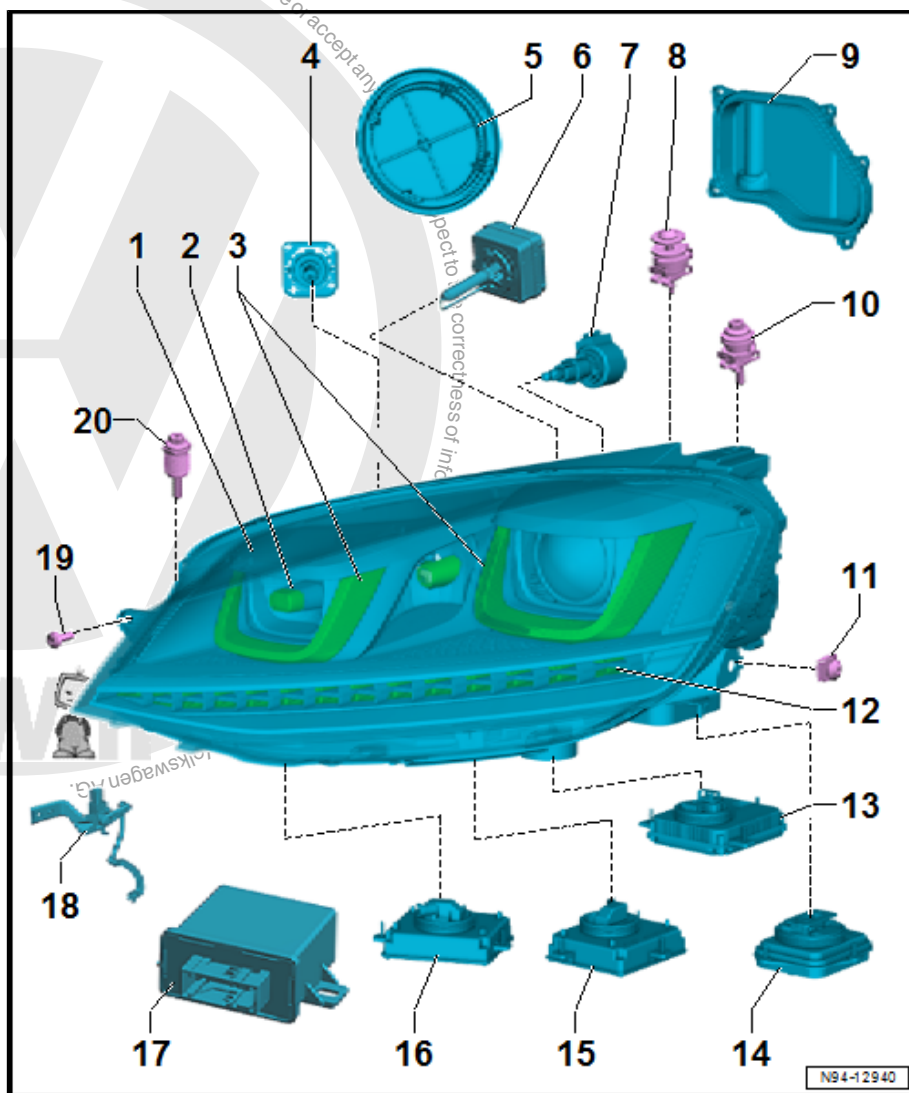
5 - Housing Cover

6 - HID Headlamp Bulb

- ☐ With integrated ignition coil
- ☐ Left HID Headlamp Bulb - L13-
- ☐ Right HID Headlamp Bulb - L14-
- ☐ Removing and installing. Refer to
⇒ ["1.12 Left/Right HID Headlamp Bulb L13 / L14 , Removing and Installing", page 164](#).

7 - Headlamp Beam Adjustment Motor

- ☐ Left Headlamp Beam Adjustment Motor - V48-
- ☐ Right Headlamp Beam Adjustment Motor - V49-
- ☐ Removing and installing. Refer to
⇒ ["1.9.2 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing, HID Headlamps", page 153](#).





8 - Bolt

- ☐ Tightening Specification: 4 Nm
- ☐ With balancing element

9 - Housing Cover

- ☐ Tightening Specification: 1.5 Nm
- ☐ Attached to the headlamp housing
- ☐ Quantity: 5

10 - Bolt

- ☐ Tightening Specification: 8 Nm.
- ☐ With balancing element

11 - Bolt

- ☐ Tightening Specification: 4 Nm

12 - Front Turn Signal Bulb

- ☐ Left Front Turn Signal Bulb - M5-
- ☐ Right Front Turn Signal Bulb - M7-
- ☐ LED-version, not replaceable separately

13 - HID Headlamp Control Module

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left HID Headlamp Control Module - J343-
- ☐ Right HID Headlamp Control Module - J344-
- ☐ Removing and installing. Refer to
⇒ ["1.18 Left/Right HID Headlamp Control Module J343 / J344 , Removing and Installing", page 170 .](#)

14 - Headlamp Power Output Stages

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left Headlamp Power Output Stage - J667-
- ☐ Right Headlamp Power Output Stage - J668-
- ☐ Removing and installing. Refer to
⇒ ["1.19 Left/Right Headlamp Power Output Stage J667 / J668 , Removing and Installing", page 171 .](#)

15 - Daytime Running Lamp and Position Lamp Control Module

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left Daytime Running Lamp and Position Lamp Control Module - J860-
- ☐ Right Daytime Running Lamp and Position Lamp Control Module - J861-
- ☐ Removing and installing. Refer to
⇒ ["1.20 Left/Right Daytime Running Lamp and Position Lamp Control Module J860 / J861 , Removing and Installing", page 172 .](#)

16 - Headlamp Power Output Stages 2

- ☐ Tightening Specification: 1.7 Nm
- ☐ Left Headlamp Power Output Stage 2 - J892-
- ☐ Right Headlamp Power Output Stage 2 - J893-
- ☐ Removing and installing. Refer to
⇒ ["1.21 Headlamp Power Output Stage 2, Removing and Installing", page 173 .](#)

17 - Cornering Lamp and Headlamp Range Control Module - J745-

- ☐ Removing and installing. Refer to
⇒ ["11.2 Headlamp Range Control Module J431 / Cornering Lamp and Headlamp Range Control Module J745 , Removing and Installing", page 249 .](#)

18 - Level Control System Sensor

- ☐ Removing and installing. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 43 ; Level Control System Sensor; Left/Right Front Level Control System Sensor -G78- / -G289- , Removing and Installing .

19 - Impact Screw

- ☐ For adjusting the headlamp longitudinally



20 - Bolt

- ☐ Tightening Specification: 4 Nm
- ☐ With banjo bolt
- ☐ For the headlamp height adjustment

1.1.6 Overview - LED Headlamp

1 - LED Module for High Beam Headlamp Bulbs

- ☐ Left High Beam Headlamp Bulb - M30-
- ☐ Right High Beam Headlamp Bulb - M32-
- ☐ Removing and installing. Refer to
⇒ ["1.11.2 Left/Right High Beam Headlamp Bulb M30 / M32, Removing and Installing, LED Headlamp", page 162](#).

2 - LED Module for High Beam Headlamp Bulbs

- ☐ Left High Beam Headlamp Bulb - M30-
- ☐ Right High Beam Headlamp Bulb - M32-
- ☐ Removing and installing. Refer to
⇒ ["1.11.2 Left/Right High Beam Headlamp Bulb M30 / M32, Removing and Installing, LED Headlamp", page 162](#).

3 - Housing Cover

- ☐ Use if a repair is required

4 - Bolt

- ☐ 1.5 Nm
- ☐ Use if a repair is required
- ☐ Quantity: 3

5 - Housing Cover

6 - LED Module for Low Beam Headlamp Bulbs

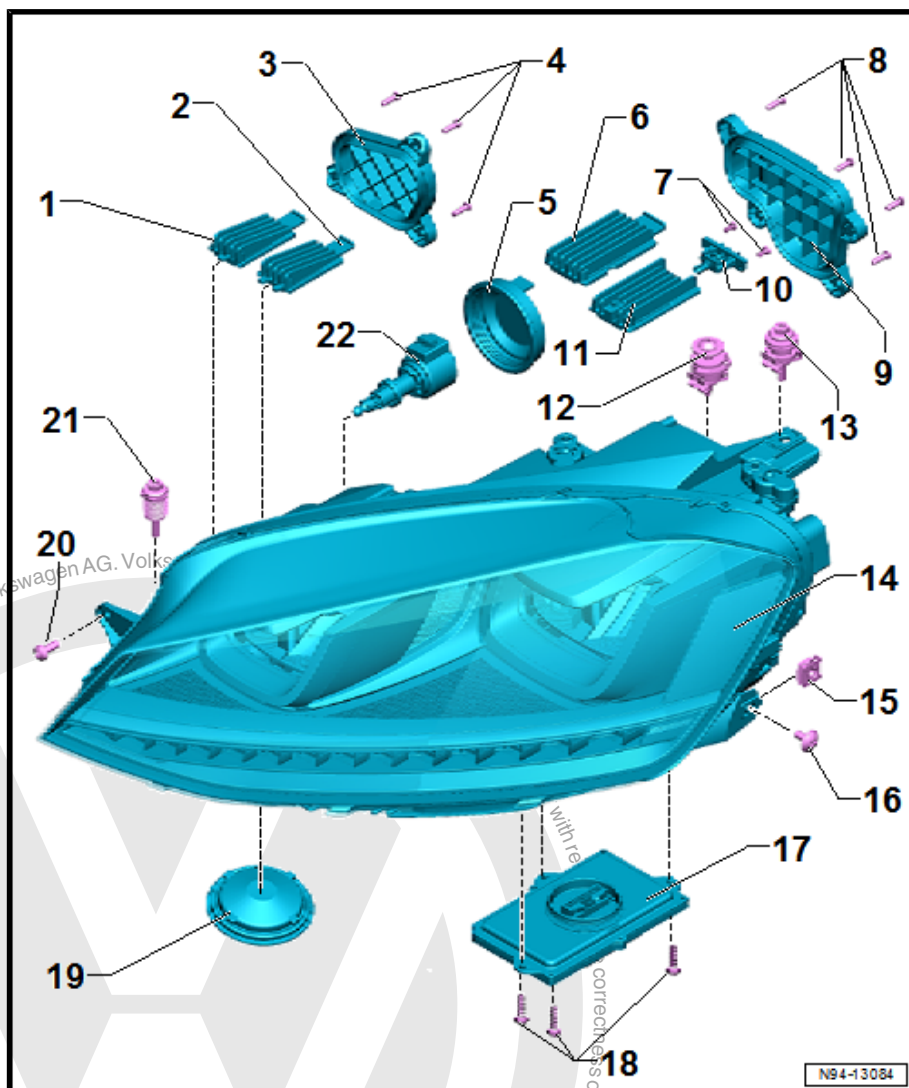
- ☐ Left Low Beam Headlamp Bulb - M29-
- ☐ Right Low Beam Headlamp Bulb - M31-
- ☐ Removing and installing. Refer to
⇒ ["1.10.2 Low Beam Headlamp Bulb, Removing and Installing, LED Headlamp", page 157](#).

7 - Bolt

- ☐ 1.5 Nm
- ☐ Quantity: 2

8 - Bolt

- ☐ 1.5 Nm





- ☐ Use if a repair is required
- ☐ Quantity: 4

9 - Housing Cover

- ☐ Use if a repair is required

10 - Bracket

- ☐ With adjusting screw for fine adjustment

11 - LED Module for Low Beam Headlamp Bulbs

- ☐ Left Low Beam Headlamp Bulb - M29-
- ☐ Right Low Beam Headlamp Bulb - M31-
- ☐ Removing and installing. Refer to
⇒ ["1.10.2 Low Beam Headlamp Bulb, Removing and Installing, LED Headlamp", page 157](#) .

12 - Bolt

- ☐ 4 Nm
- ☐ With balancing element

13 - Bolt

- ☐ 8 Nm
- ☐ With balancing element

14 - Headlamp

- ☐ Left Front Headlamp - MX1-
- ☐ Right Front Headlamp - MX2-
- ☐ Removing and installing. Refer to ⇒ ["1.2 Headlamp, Removing and Installing", page 137](#) .

15 - Spring Nut

- ☐ M6

16 - Bolt

- ☐ 4 Nm

17 - LED Headlamp Power Output Stage 1

- ☐ Left LED Headlamp Power Output Module 1 - A31-
- ☐ Right LED Headlamp Power Output Module 1 - A27-
- ☐ Removing and installing. Refer to
⇒ ["1.22 Left/Right LED Headlamp Power Output Module 1 A31 / A32 , Removing and Installing", page 174](#) .

18 - Bolt

- ☐ 1.7 Nm
- ☐ Quantity: 3

19 - Housing Cover

20 - Impact Screw

- ☐ For adjusting the headlamp longitudinally

21 - Bolt

- ☐ 4 Nm
- ☐ With banjo bolt
- ☐ For the headlamp height adjustment

22 - Headlamp Beam Adjustment Motor

- ☐ Left Headlamp Beam Adjustment Motor - V48-
- ☐ Right Headlamp Beam Adjustment Motor - V49-
- ☐ Removing and installing. Refer to
⇒ ["1.9.3 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing, LED Headlamps", page 154](#) .



1.1.7 Overview - Headlamp Housing Repair Kit, Excluding LED Headlamps

1 - Headlamp

2 - Inner Mounting Tab

- ☐ Removing and installing. Refer to
⇒ ["1.6.1 Headlamp Housing Repair Kit, Installing, Excluding LED Headlamp", page 144](#).

3 - Bolt

- ☐ Tightening Specification: 2 Nm
- ☐ Quantity: 1

4 - Rear Mounting Tab

- ☐ Removing and installing. Refer to
⇒ ["1.6.1 Headlamp Housing Repair Kit, Installing, Excluding LED Headlamp", page 144](#).

5 - Bolt

- ☐ Tightening Specification: 2 Nm
- ☐ Quantity: 3

6 - Bolt

- ☐ Quantity: 1
- ☐ Tightening Specification: 2 Nm

7 - Upper Mounting Tab

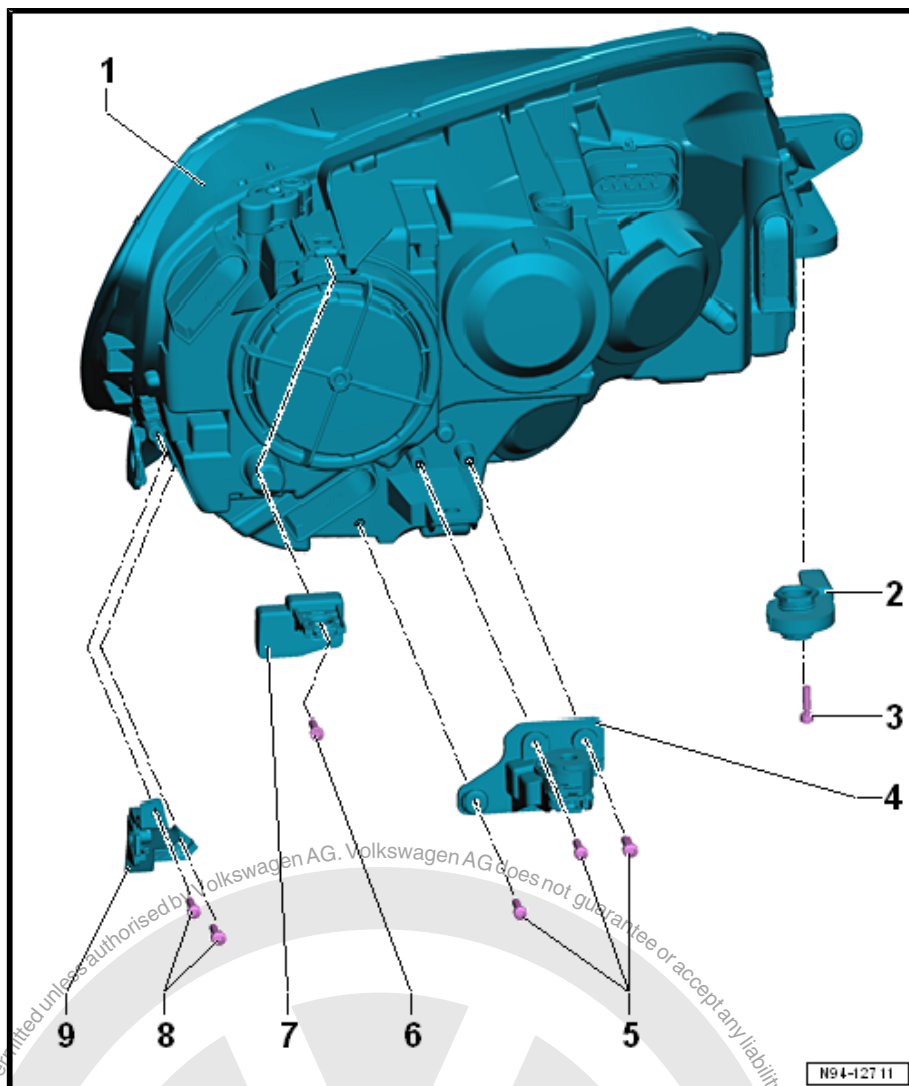
- ☐ Removing and installing. Refer to
⇒ ["1.6.1 Headlamp Housing Repair Kit, Installing, Excluding LED Headlamp", page 144](#).

8 - Bolt

- ☐ Tightening Specification: 2 Nm
- ☐ Quantity: 2

9 - Outer Mounting Tab

- ☐ Removing and installing. Refer to
⇒ ["1.6.1 Headlamp Housing Repair Kit, Installing, Excluding LED Headlamp", page 144](#).





1.1.8 Overview - Headlamp Housing Repair Kit, LED Headlamps Only

1 - Headlamp

- ❑ Removing and installing. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#).

2 - Inner Mounting Tab

- ❑ Removing and installing. Refer to
⇒ ["1.6.2 Headlamp Housing Repair Kit, Installing, LED Headlamp Only", page 146](#).

3 - Bolt

- ❑ 2 Nm
- ❑ Quantity: 2

4 - Rear Mounting Tab

- ❑ Removing and installing. Refer to
⇒ ["1.6.2 Headlamp Housing Repair Kit, Installing, LED Headlamp Only", page 146](#).

5 - Bolt

- ❑ 2 Nm
- ❑ Quantity: 2

6 - Bolt

- ❑ 2 Nm

7 - Upper Mounting Tab

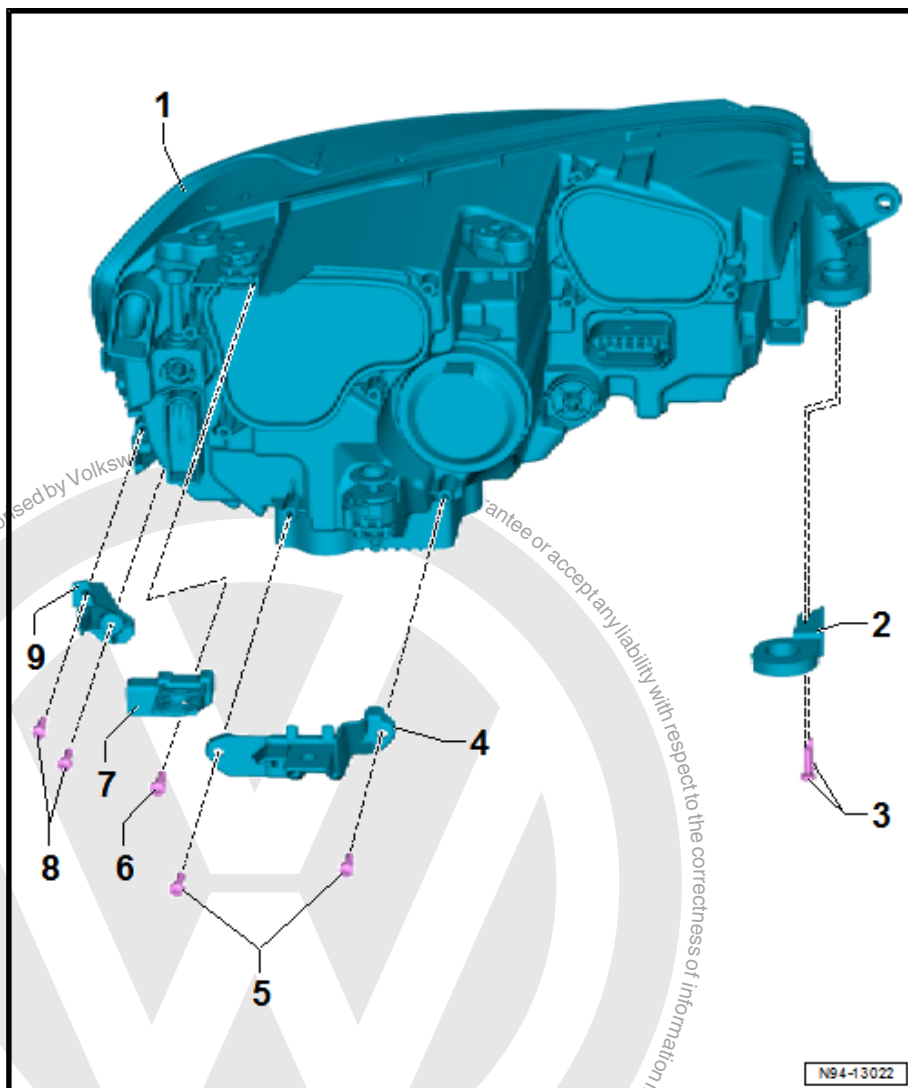
- ❑ Removing and installing. Refer to
⇒ ["1.6.2 Headlamp Housing Repair Kit, Installing, LED Headlamp Only", page 146](#).

8 - Bolt

- ❑ 2 Nm
- ❑ Quantity: 2

9 - Outer Mounting Tab

- ❑ Removing and installing. Refer to
⇒ ["1.6.2 Headlamp Housing Repair Kit, Installing, LED Headlamp Only", page 146](#).





1.1.9 Overview - Daytime Running Lamps

1 - Daytime Running Lamp and Position Lamp LED Module

- ❑ Left Daytime Running Lamp and Position Lamp LED Module - L176-
- ❑ Right Daytime Running Lamp and Position Lamp LED Module - L177-
- ❑ Removing and installing. Refer to
⇒ ["1.15.2 Left/Right Daytime Running Lamp and Position Lamp LED Module L176 / L177, Removing and Installing, GTE Only", page 168](#).

2 - Bolt

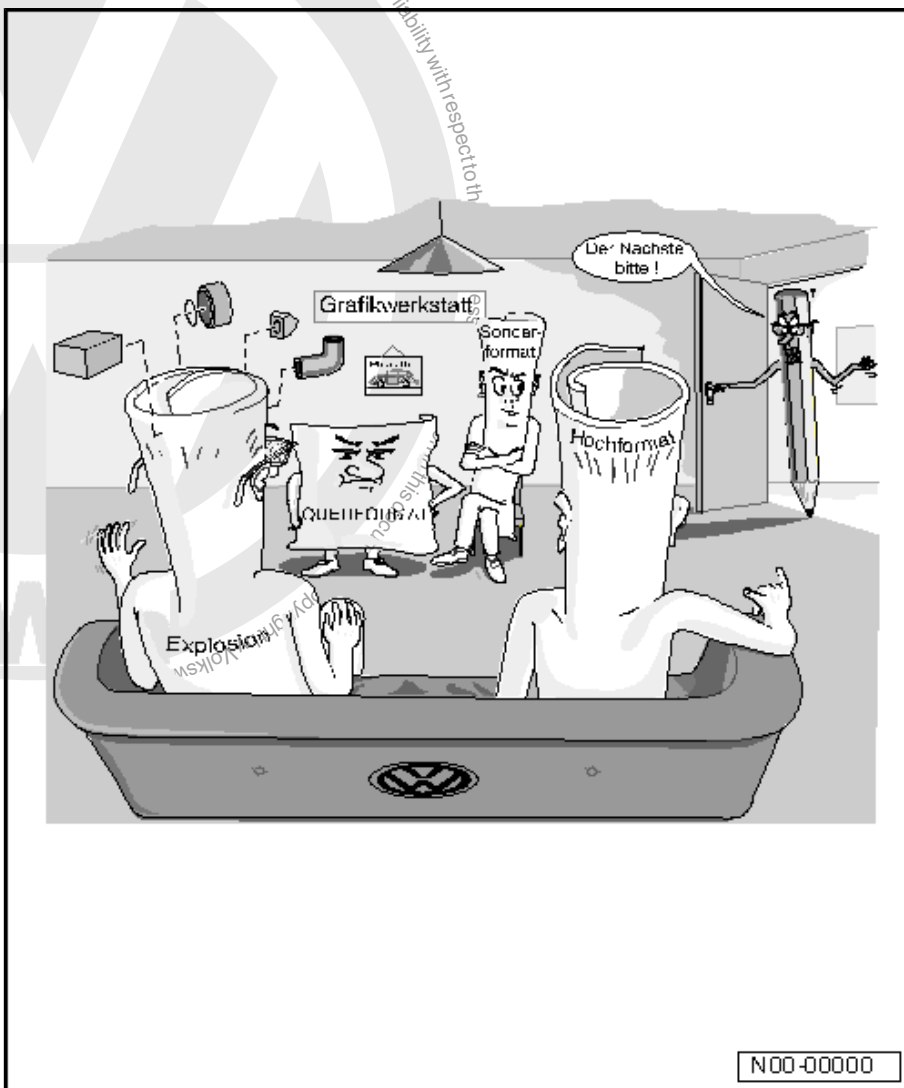
- ❑ 2 Nm
- ❑ Quantity: 8

3 - Breather Line

4 - Bolt

- ❑ 1.4 Nm
- ❑ Quantity: 3

5 - Led Lamps with Heat Sink



1.2 Headlamp, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Torque Screwdriver - VAS6494-



WARNING

Danger to life due to high voltage.

- ◆ *Observe usage and safety information for gas discharge lamps. Refer to
⇒ ["1.5 HID Headlamp Usage and Safety Precautions", page 2](#).*



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

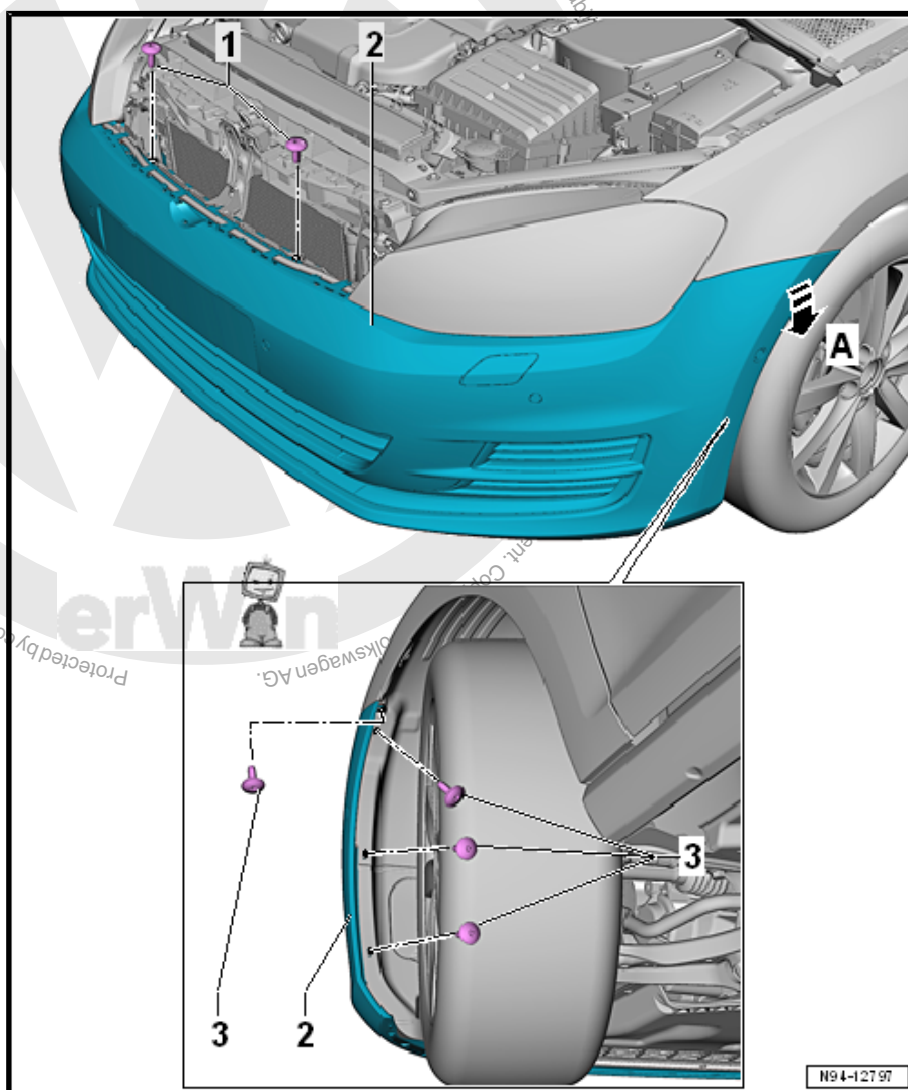
- Remove the radiator grille. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Radiator Grille/Front Trim; Radiator Grille, Removing and Installing .



Caution

There is a risk of damaging the components.

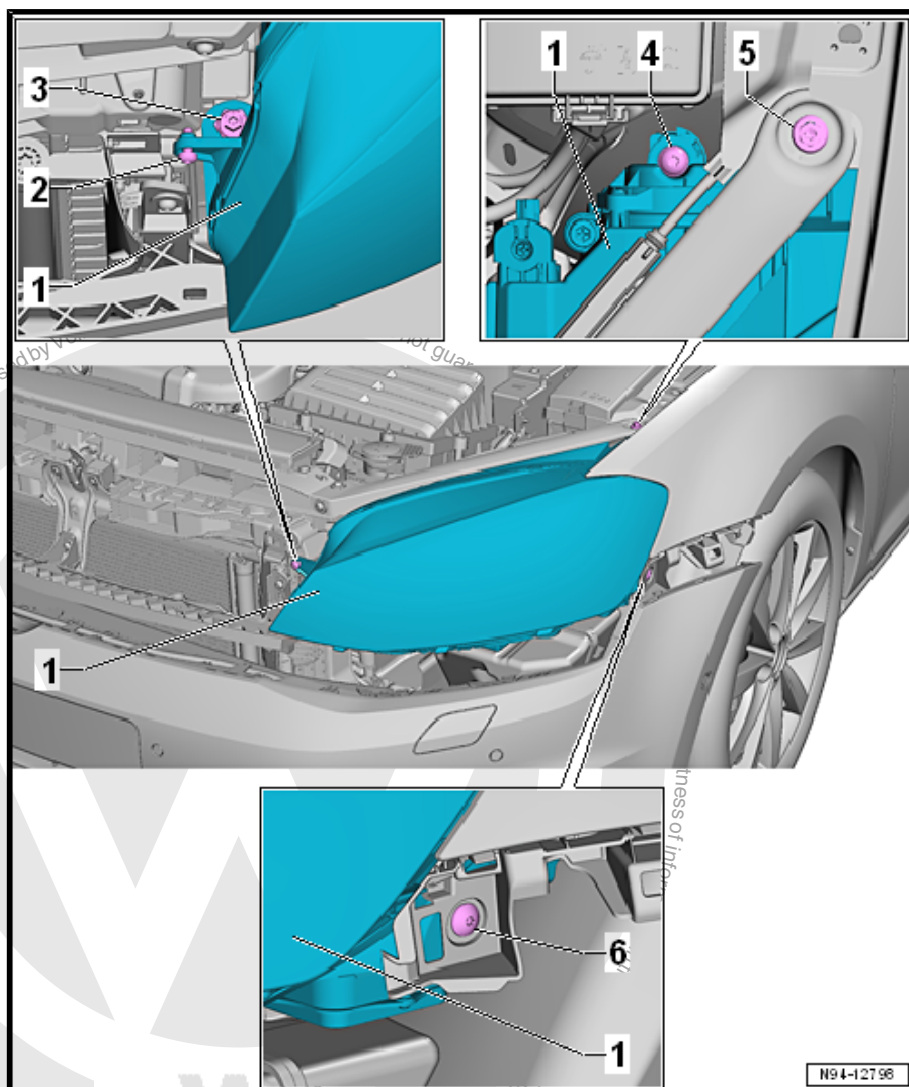
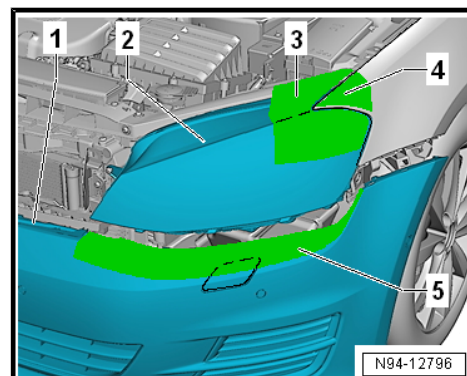
- ◆ *Carefully remove the bumper. Pay attention that the bumper is not deformed or ripped.*
- ◆ *When removing the headlamp the surface can be scratched. Tape up those components which could be damaged.*



- Remove the bolts -3- from the front wheel housing liner.



- If equipped, remove the bolts -1-.
- Loosen the bumper -2- from the fender and remove in direction of -arrow A-.
- Tape off the marked areas -3- on the headlamp -2-.
- Tape off the bottom of the fender brace -4-.
- Tap of the marked areas -5- on the bumper -1-.



- Remove the bolts -3, 5 and 6-.
- Loosen the bolt -4-.
- Disconnect the connector.
- Remove the headlamp -1- forward.



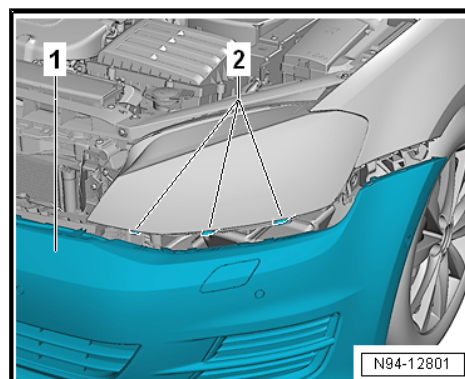
Installing

Install in the reverse order of removal. Note the following:

- Push the headlamp in the bumper guide.
- Uniformly adjust the headlamp gap distribution. Refer to ⇒ [“1.4 Headlamp Installed Position, Correcting”, page 140](#).
- Push on the bumper -1-. Pay attention that it is pushed in the mounts -2- under the headlamp.
- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .

Tightening Specifications

- ◆ Refer to ⇒ [“1.1 Overview - Headlamp”, page 122](#)



1.3 Headlamp, Adjusting

⇒ [“1.3.1 Halogen Twin Headlamp, Adjusting”, page 140](#)

⇒ [“1.3.2 HID Headlamp, Adjusting”, page 140](#)

⇒ [“1.3.3 LED Headlamp, Adjusting”, page 140](#)

⇒ [“1.3.4 Fog Lamp, Adjusting”, page 140](#)

⇒ [“1.3.5 Auxiliary Headlamps, Adjusting”, page 140](#)

1.3.1 Halogen Twin Headlamp, Adjusting

Halogen twin headlamp adjusting. Refer to ⇒ Maintenance ; Booklet 36.1 .

1.3.2 HID Headlamp, Adjusting

HID headlamp, adjusting. Refer to ⇒ Maintenance ; Booklet 36.1 .

1.3.3 LED Headlamp, Adjusting

Adjusting the LED headlamp. Refer to ⇒ Maintenance ; Booklet 36.1 .

1.3.4 Fog Lamp, Adjusting

Adjust the fog lamps. Refer to ⇒ Maintenance ; Booklet 36.1 .

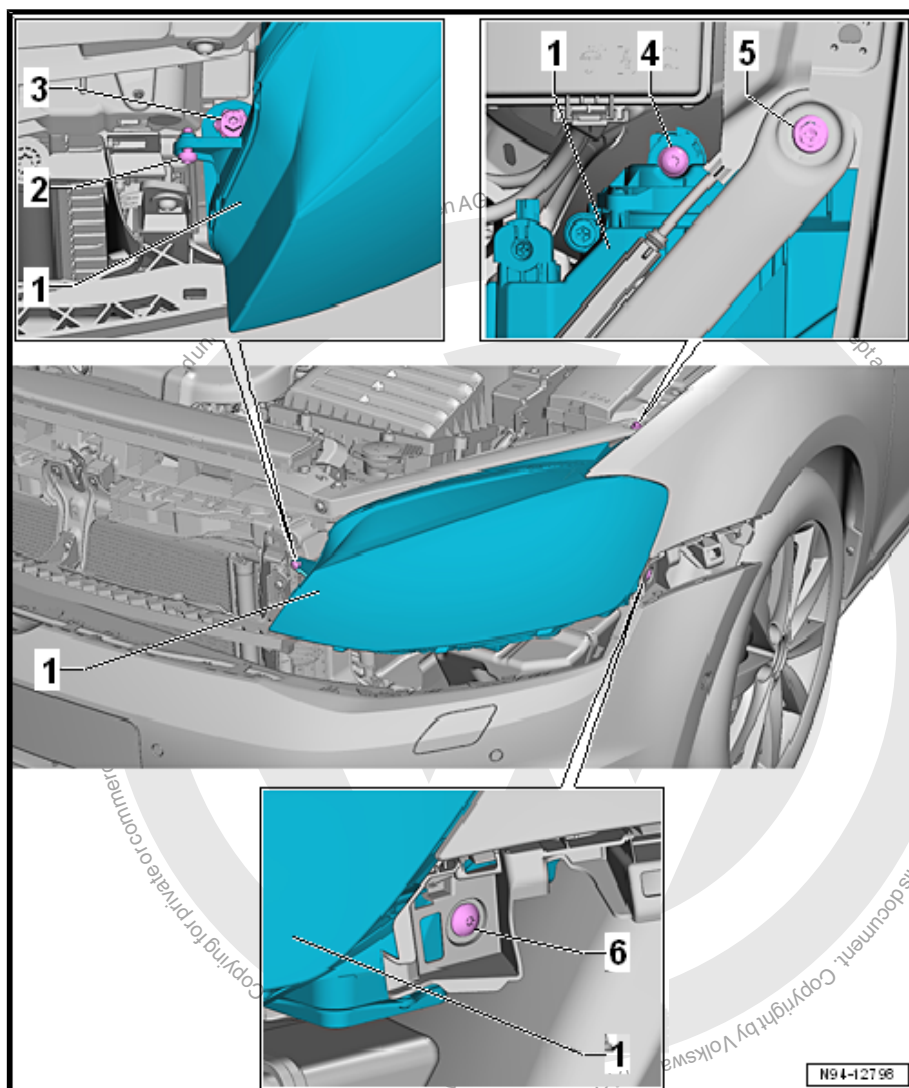
1.3.5 Auxiliary Headlamps, Adjusting

Retrofitted auxiliary headlamps must be checked and adjusted according to the guidelines used for other systems.

1.4 Headlamp Installed Position, Correcting

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Torque Screwdriver - VAS6494-



- Loosen the bolts -3, 4, 5 and 6-.
- Uniformly adjust the gap distribution of the headlamp -1- to the fender.
- Tighten the bolts -5 and 6-.
- Close the hood.
- Uniformly adjust the gap distribution of the banjo bolt for the bolt -3- and the impact screw -2-.
- Open the hood.
- Tighten the bolt -3- in the bolt.
- Tighten the bolt -4-.
- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .



Tightening Specifications

1.5 Left/Right Front Turn Signal Bulb -M5- / -M7- , Removing and Installing

⇒ "1.5.1 Left/Right Front Turn Signal Bulb M5 / M7 , Removing and Installing, Halogen Twin Headlamp", page 142

⇒ "1.5.2 Left/Right Front Turn Signal Bulb M5 / M7 , Removing and Installing, HID Headlamps", page 143

1.5.1 Left/Right Front Turn Signal Bulb -M5- / -M7- , Removing and Installing, Halogen Twin Headlamp

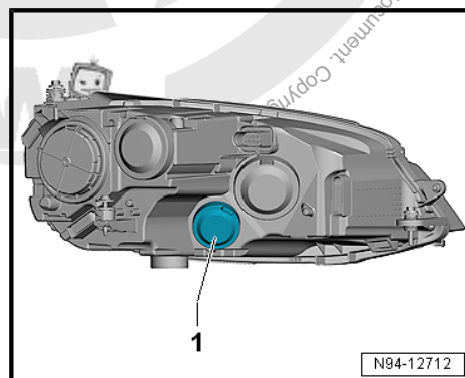


Note

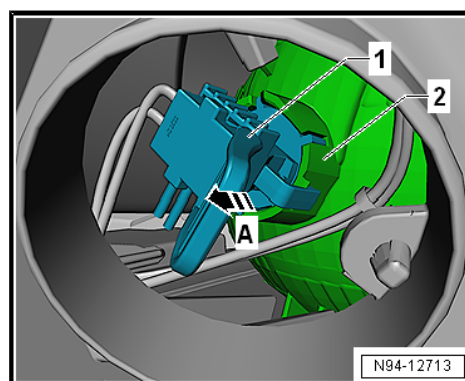
The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Remove the housing cover -1- from the headlamp.



- Remove the socket with bulb socket -1- from the reflector -2- in direction of -arrow A-.





- Remove the Left Front Turn Signal Bulb - M5- -2- from the socket -1-.

Installing

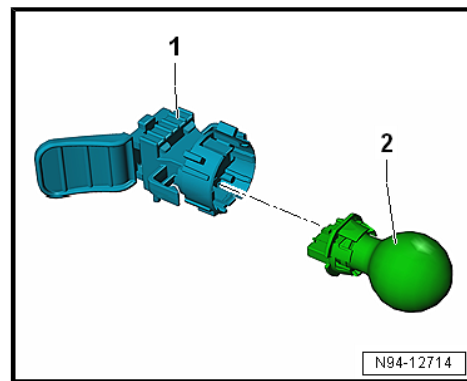
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ **Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.**
- ◆ **Use clean gloves for example to insert the bulbs.**
- ◆ **During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.**



- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .

1.5.2 Left/Right Front Turn Signal Bulb -M5- / -M7- , Removing and Installing, HID Headlamps

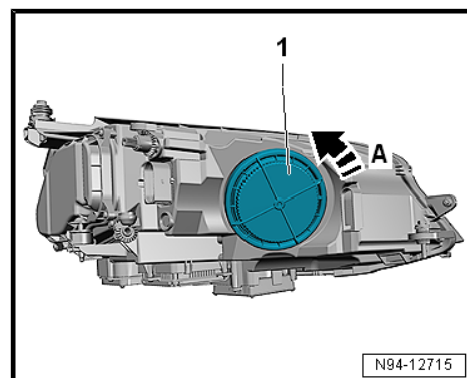


Note

- ◆ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*
- ◆ *If the left turn signal bulb on vehicles with a TDI engine cannot be removed as described then the air filter housing must be removed. Refer to ⇒ Engine Mechanical, Fuel Injection and Glow Plug; Rep. Gr. 23 ; Air Filter; Air Filter Housing, Removing and Installing .*
- ◆ *If the right turn signal bulb cannot be removed on vehicle with a TDI engine as described, then the fuel filter must be loosened. The fuel filter is set aside with the wires connected. Refer to ⇒ Engine Mechanical, Fuel Injection and Glow Plug; Rep. Gr. 20 ; Fuel Filter, Removing and Installing .*

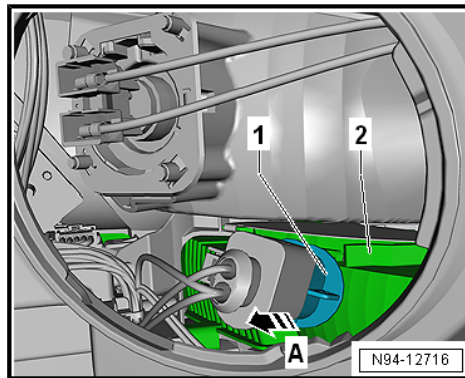
Removing

- Turn the housing cover -1- in direction of -arrow A- and remove from the headlamp.





- Turn the bulb socket -1- counter-clockwise until stop.
- Remove the bulb socket -1- in direction of -arrow A- out of the reflector -2-.



- Disconnect the connector -1- from the Left Front Turn Signal Bulb - M5- with the bulb socket -2-.

Installing

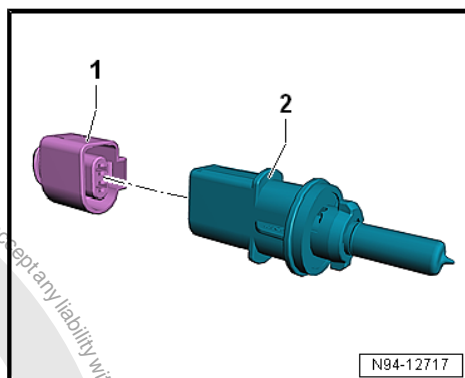
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*
- ◆ *During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.*



- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .

1.6 Headlamp Housing Repair Kit, Installing

⇒ [“1.6.1 Headlamp Housing Repair Kit, Installing, Excluding LED Headlamp”, page 144](#)

⇒ [“1.6.2 Headlamp Housing Repair Kit, Installing, LED Headlamp Only”, page 146](#)

1.6.1 Headlamp Housing Repair Kit, Installing, Excluding LED Headlamp

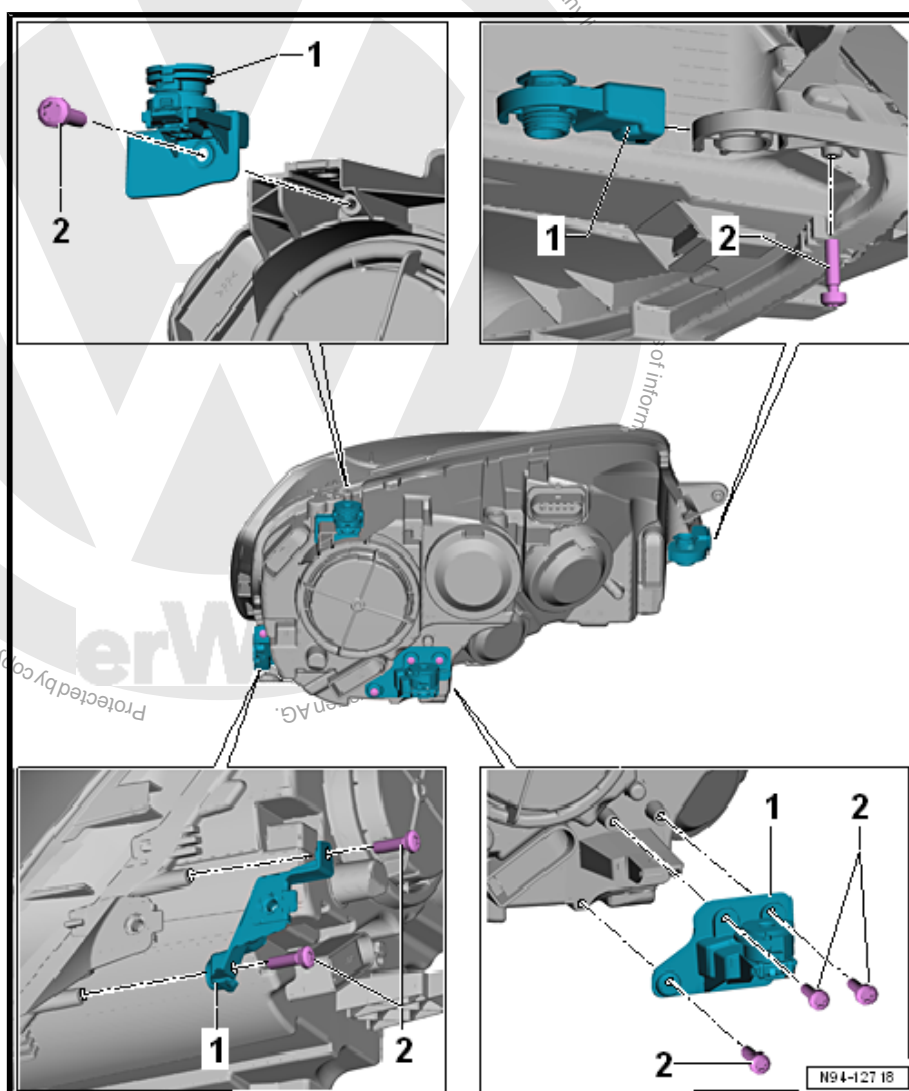
Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Torque Screwdriver - VAS6494-



Note

- ◆ *Headlamp mounting tabs that have broken off can be replaced by installing the repair set. Completely replacing the headlamp is not necessary.*
- ◆ *There are different repair kits for left and right headlamps. Refer to the Parts Catalog.*
- ◆ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*
- Remove the headlamp with the broken tabs. Refer to ["1.2 Headlamp, Removing and Installing", page 137](#).
- Remove the rest of the broken tab on the headlamp housing.



- Place the mounting tabs -1- from the repair kit on the headlamp and secure them with the bolts -2-.
- Install the headlamp and align to the body contour.
- Perform a functionality test.



- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1.

Tightening Specifications

1.6.2 Headlamp Housing Repair Kit, Installing, LED Headlamp Only

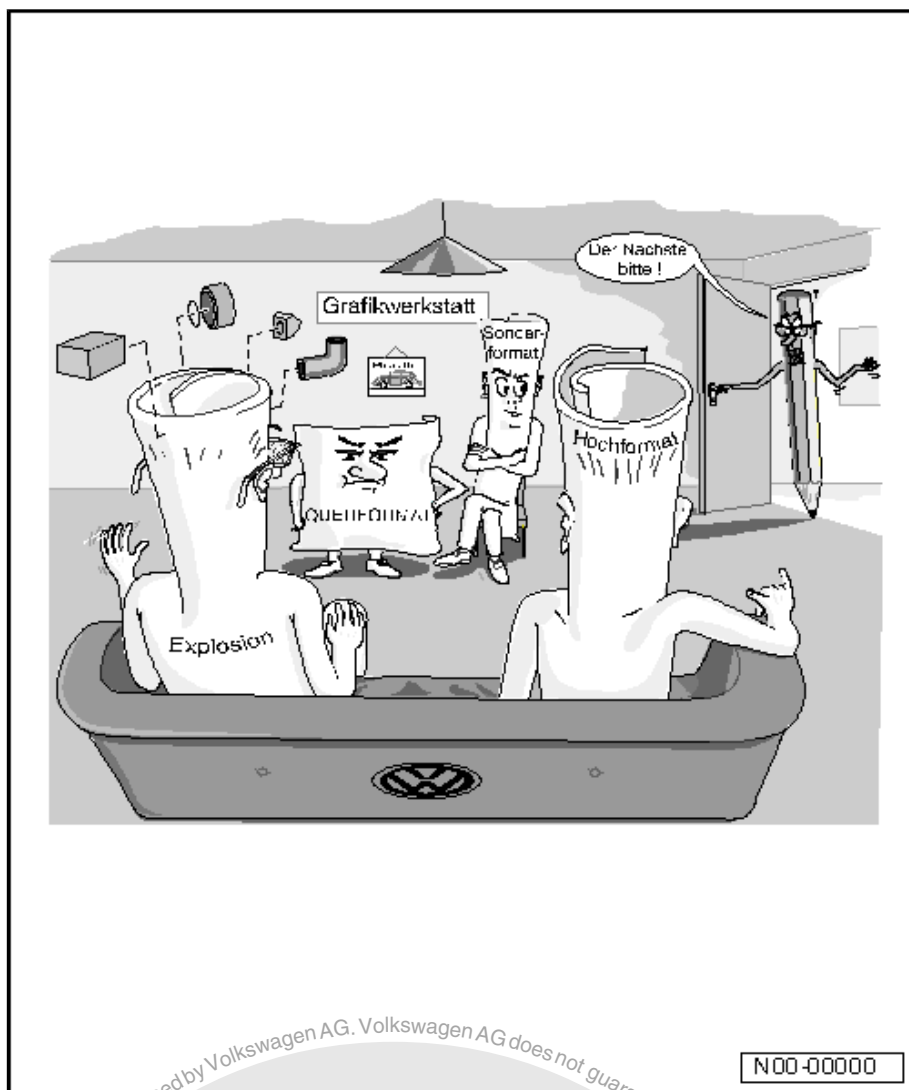
Special tools and workshop equipment required

- ◆ Torque Wrench 1783 2-10Nm - VAG1783-
- ◆ Torque Screwdriver, VAS6494-



Note

- ◆ *Headlamp mounting tabs that have broken off can be replaced by installing the repair set. Completely replacing the headlamp is not necessary.*
- ◆ *There are different repair kits for left and right headlamps. Refer to the Parts Catalog.*
- ◆ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*
- Remove the headlamp with the broken tabs. Refer to ⇒ [“1.2 Headlamp, Removing and Installing”, page 137](#) .
- Remove the rest of the broken tab on the headlamp housing.



- Install the repair kit mounting tab -1- on the headlamp.
- Install the bolts -2-.
- Install the headlamp and align to the body contour.
- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .

Tightening Specifications

1.7 Headlamp, Changing from RHD to LHD

1.7.1 Headlamp, Changing from RHD to LHD, Halogen Twin Headlamp

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, no actions whatsoever must be performed.



1.7.2 Headlamp, Changing from RHD to LHD, HID Headlamps

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, both headlamps must be adjusted. To prevent the asymmetrical low beam from blinding.



Note

- ◆ *Converting between right and left hand traffic or vice-versa takes place via the Infotainment system.*
- ◆ *The use of travel mode is only permitted, when it is used only short period of time. For longer use country-specific headlamps must be installed.*
- Push the button **CAR** on the Front Information Display Control Head - J685- .
- Push the functional surface **Setup** and **Lamp**.
- Enter the adaptation in the “Lamp Settings” menu.

1.7.3 Front Right Headlamp Adjusting to LHD Traffic, HID Headlamp for Cornering light and LED-Daytime Running Lamps

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, both headlamps must be adjusted. To prevent the asymmetrical low beam from blinding.



Note

- ◆ *Converting between right and left hand traffic or vice-versa takes place via the Infotainment system.*
- ◆ *The use of travel mode is only permitted, when it is used only short period of time. For longer use country-specific headlamps must be installed.*
- Push the button **CAR** on the Front Information Display Control Head - J685- .
- Push the functional surface **Setup** and **Lamp**.
- Enter the adaptation in the “Lamp Settings” menu.

1.7.4 Front Right Headlamp Adjusting to LHD Traffic, HID Headlamp with Dynamic High Beam Control and LED-Daytime Running Lamps

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, both headlamps must be adjusted. To prevent the asymmetrical low beam from blinding.



Note

- ◆ *Converting between right and left hand traffic or vice-versa takes place via the Infotainment system.*
- ◆ *The use of travel mode is only permitted, when it is used only short period of time. For longer use country-specific headlamps must be installed.*
- Push the button **CAR** on the Front Information Display Control Head - J685- .
- Push the functional surface **Setup** and **Lamp**.
- Enter the adaptation in the “Lamp Settings” menu.

1.7.5 Headlamp, Changing from RHD to LHD, LED Headlamps

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, both headlamps must be adjusted. To prevent the asymmetrical low beam from blinding.



Note

- ◆ *Converting between right and left hand traffic or vice-versa takes place via the Infotainment system.*
- ◆ *The use of travel mode is only permitted, when it is used only short period of time. For longer use country-specific headlamps must be installed.*
- Push the button **CAR** on the Front Information Display Control Head - J685- .
- Push the functional surface **Setup** and **Lamp**.
- Enter the adaptation in the “Lamp Settings” menu.

1.8 Headlamp, Changing from LHD to RHD

1.8.1 Headlamp, Changing from LHD to RHD, Halogen Twin Headlamp

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, no actions whatsoever must be performed.

1.8.2 Headlamp, Changing from LHD to RHD, HID Headlamps

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, both headlamps must be adjusted. To prevent the asymmetrical low beam from blinding.



Note

- ◆ *Converting between left and right hand traffic or vice-versa takes place via the Infotainment system.*
- ◆ *The use of travel mode is only permitted, when it is used only short period of time. For longer use country-specific headlamps must be installed.*
- Push the button **CAR** on the Front Information Display Control Head - J685- .
- Push the functional surface **Setup** and **Lamp**.
- Enter the adaptation in the “Lamp Settings” menu.

1.8.3 Front Left Headlamp Adjusting to RHD Traffic, HID Headlamp for Cornering light and LED-Daytime Running Lamps

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, both headlamps must be adjusted. To prevent the asymmetrical low beam from blinding.



Note

- ◆ *Converting between left and right hand traffic or vice-versa takes place via the Infotainment system.*
- ◆ *The use of travel mode is only permitted, when it is used only short period of time. For longer use country-specific headlamps must be installed.*
- Push the button **CAR** on the Front Information Display Control Head - J685- .
- Push the functional surface **Setup** and **Lamp**.
- Enter the adaptation in the “Lamp Settings” menu.

1.8.4 Front Left Headlamp Adjusting to RHD Traffic, HID Headlamp with Dynamic High Beam Control and LED-Daytime Running Lamps

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, both headlamps must be adjusted. To prevent the asymmetrical low beam from blinding.



Note

- ◆ *Converting between left and right hand traffic or vice-versa takes place via the Infotainment system.*
- ◆ *The use of travel mode is only permitted, when it is used only short period of time. For longer use country-specific headlamps must be installed.*
- Push the button **CAR** on the Front Information Display Control Head - J685- .



- Push the functional surface **Setup** and **Lamp**.
- Enter the adaptation in the “Lamp Settings” menu.

1.8.5 Headlamp, Changing from LHD to RHD, LED Headlamps

If the vehicle is driven in countries where the traffic drives on the other side of the road (either right-hand or left-hand traffic) than where it is normally driven, both headlamps must be adjusted. To prevent the asymmetrical low beam from blinding.



Note

- ◆ *Converting between left and right hand traffic or vice-versa takes place via the Infotainment system.*
- ◆ *The use of travel mode is only permitted, when it is used only short period of time. For longer use country-specific headlamps must be installed.*
- Push the button **CAR** on the Front Information Display Control Head - J685- .
- Push the functional surface **Setup** and **Lamp**.
- Enter the adaptation in the “Lamp Settings” menu.

1.9 Left/Right Headlamp Beam Adjustment Motor -V48- / -V49- , Removing and Installing

⇒ [“1.9.1 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing, Halogen Twin Headlamps”, page 151](#)

⇒ [“1.9.2 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing, HID Headlamps”, page 153](#)

⇒ [“1.9.3 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing, LED Headlamps”, page 154](#)

1.9.1 Left/Right Headlamp Beam Adjustment Motor -V48- / -V49- , Removing and Installing, Halogen Twin Headlamps



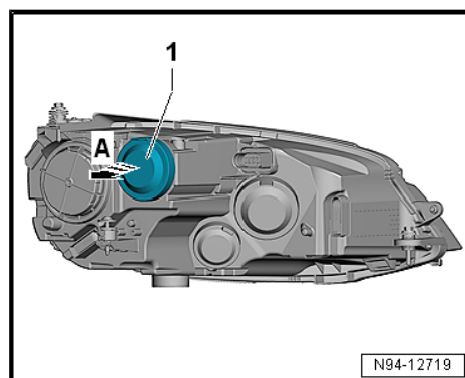
Note

- ◆ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*
- ◆ *If the headlamp beam adjustment motor cannot be removed as described, then the headlamp must be removed. Refer to ⇒ [“1.2 Headlamp, Removing and Installing”, page 137](#) .*

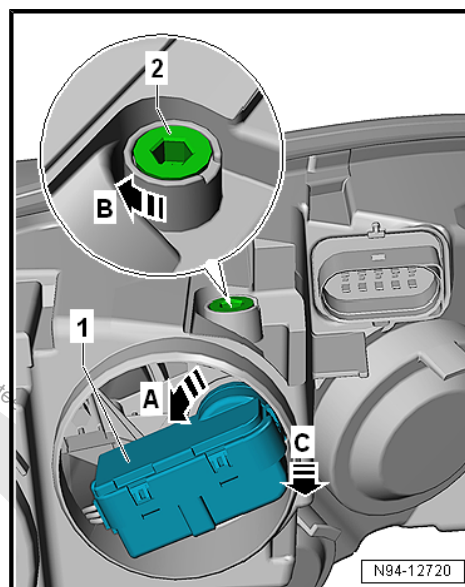


Removing

- Remove the housing cover -1- from the headlamp in direction of -arrow A-.



- Release the Left Headlamp Beam Adjustment Motor - V48- -1-:
- ◆ Turn on left headlamp in the opposite direction of -arrow A-.
- ◆ Turn on right headlamp in direction of -arrow A-.
- Pull the Left Headlamp Beam Adjustment Motor - V48- -1- in direction of -arrow C-.
- Turn the height adjustment -2- in direction of -arrow B- (lower the reflector). While doing so hold the Left Headlamp Beam Adjustment Motor - V48- -1- tensioned.
- Remove the Left Headlamp Beam Adjustment Motor - V48- -1- from the headlamp-height adjustment in direction of -arrow C-.
- Disconnect the connector.



Installing

Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ ***During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.***

- Connect the connector when pushing in the Left Headlamp Beam Adjustment Motor - V48- .
- Pull the reflector rearward and push the Left Headlamp Beam Adjustment Motor - V48- in the headlamp-height adjustment, until it engages audibly.
- Secure the Left Headlamp Beam Adjustment Motor - V48- -1- in direction of -arrow A-.
- Turn the height adjustment -2- opposite of direction of -arrow B-. The reflector must be moveable.
- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .



1.9.2 Left/Right Headlamp Beam Adjustment Motor -V48- / -V49-, Removing and In- stalling, HID Headlamps

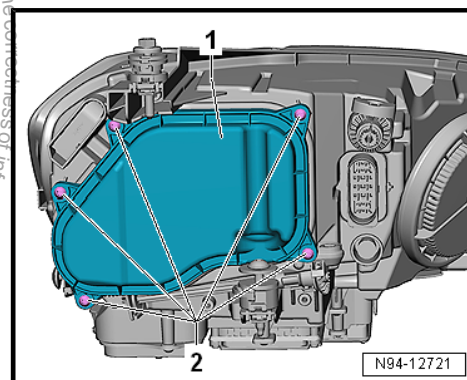


Note

*The removal and installation is described for the left side. Re-
moving and installing on the right side is identical.*

Removing

- Remove the headlamp. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#) .
- Remove the housing cover -1- bolts -2-.
- Remove the housing cover -1-.





- Release the Left Headlamp Beam Adjustment Motor - V48- -1-: On the left headlamp, turn in direction of -arrow A-; on the right headlamp, turn in opposite direction of -arrow A-.
- Pull the Left Headlamp Beam Adjustment Motor - V48- -1- in direction of -arrow C-.
- Turn the height adjustment -2- in direction of -arrow B- (lower the reflector). While doing so hold the Left Headlamp Beam Adjustment Motor - V48- -1- tensioned.
- Remove the Left Headlamp Beam Adjustment Motor - V48- -1- from the headlamp-height adjustment in direction of -arrow C-.
- Disconnect the connector.

Installing

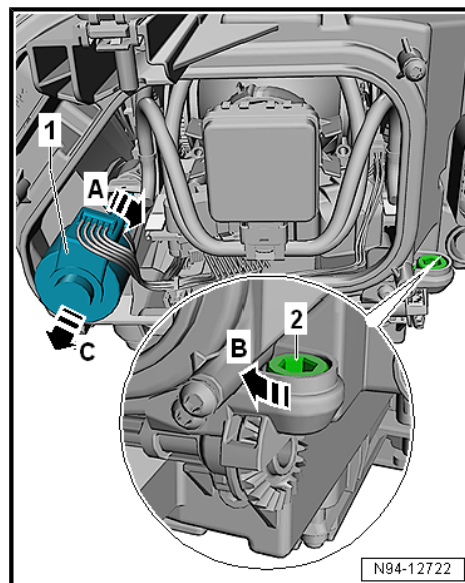
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ *During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.*



- Connect the connector when pushing in the Left Headlamp Beam Adjustment Motor - V48- .
- Pull the reflector rearward and push the Left Headlamp Beam Adjustment Motor - V48- in the headlamp-height adjustment, until it engages audibly.
- Secure the Left Headlamp Beam Adjustment Motor - V48- -1- opposite direction of -arrow A-.
- Turn the height adjustment -2- opposite of the direction of the arrow -B-. The reflector must be moveable.
- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .

1.9.3 Left/Right Headlamp Beam Adjustment Motor -V48- / -V49- , Removing and Installing, LED Headlamps

Special tools and workshop equipment required

- ◆ Torque Screwdriver - VAS6494-



Note

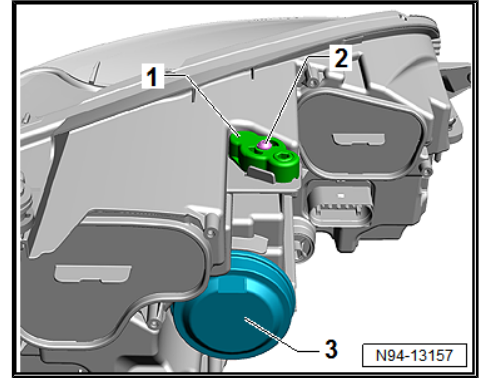
The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

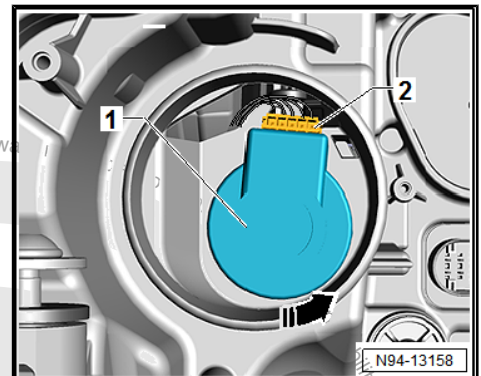
- Remove the headlamp. Refer to ⇒ ["1.2 Headlamp, Removing and Installing", page 137](#) .
- Turn the adjusting screw for the height adjustment on the top of the headlamp to the left until it stops (counter-clockwise).



- Remove the housing cover -3- from the headlamp.
- Remove the bolt -2-.
- Remove the adjusting mechanism for height adjustment -2- upward.
- Remove the adjusting shaft fitted underneath upward out of the headlamp.



- Release the Left Headlamp Beam Adjustment Motor - V48- -1-: On the left headlamp, turn in the direction of the -arrow-; on the right headlamp, turn in the opposite direction of the -arrow-.
- Tilt the Left Headlamp Beam Adjustment Motor - V48- -1- upward so that the ball head is pushed downward and out of the ball head mount in the headlamp.



Note

If necessary, carefully push the ball head on the Left Headlamp Beam Adjustment Motor - V48- downward through the adjusting shaft opening out of the ball head mount in the headlamp.

- Remove the Left Headlamp Beam Adjustment Motor - V48- -1- toward the rear out of the headlamp until the connector is accessible.
- Release and disconnect the connector -2-.
- Remove the Left Headlamp Beam Adjustment Motor - V48- -1-.

Installing

Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ ***During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.***

- Pull the reflector on the ball head mount toward the rear.
- Engage the ball head on the Left Headlamp Beam Adjustment Motor - V48- in the ball head mount in the headlamp.
- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 ; Procedure Description .

Tightening Specifications

Component	Tightening specification
Adjusting mechanism for height adjustment to headlamp	1.7 Nm



1.10 Low Beam Headlamp Bulb, Removing and Installing

⇒ ["1.10.1 Low Beam Headlamp Bulb, Removing and Installing, Halogen Twin Headlamp", page 156](#)

⇒ ["1.10.2 Low Beam Headlamp Bulb, Removing and Installing, LED Headlamp", page 157](#)

1.10.1 Low Beam Headlamp Bulb, Removing and Installing, Halogen Twin Headlamp

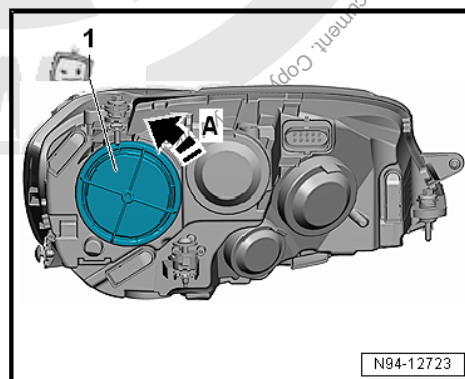


Note

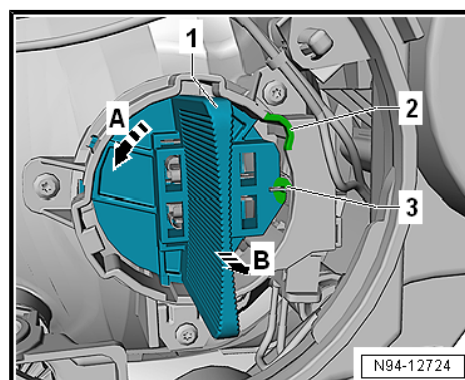
- ◆ The Left Low Beam Headlamp Bulb - M29- / Right Low Beam Headlamp Bulb - M31- is only installed with halogen twin headlamps.
- ◆ The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Turn the housing cover -1- in direction of -arrow A-.
- Remove the housing cover -1-.



- Turn the bulb socket -1- in direction of -arrow A-, until the retaining tab -3- is in the opening -2-.
- Remove the bulb socket -1- in direction of -arrow B-.





- Remove bulb -1- from socket -2-.

Installing

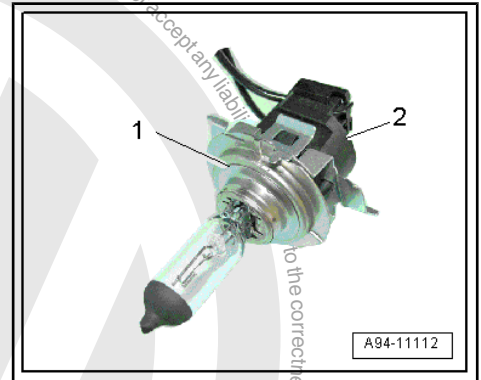
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*
- ◆ *During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.*



- Install new bulb in the bulb socket.
- Install the bulb socket in the reflector so that the retaining tab points upward and fits in the opening.
- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance Booklet 36.1.

1.10.2 Low Beam Headlamp Bulb, Removing and Installing, LED Headlamp

Special tools and workshop equipment required

- ◆ Backrest Panel Tool - 3370-
- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Torque Screwdriver - VAS6494-
- ◆ ESD Work Surface - VAS6613-



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.



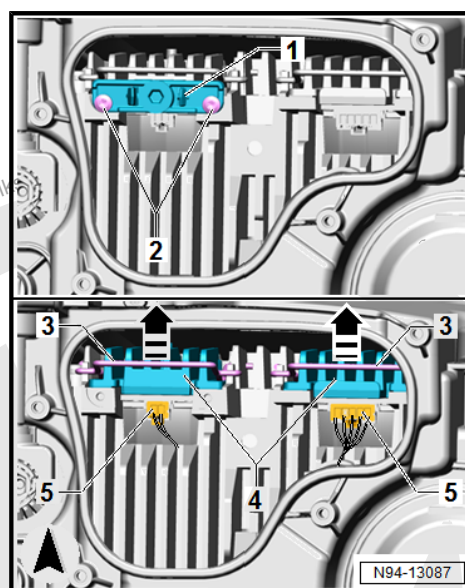
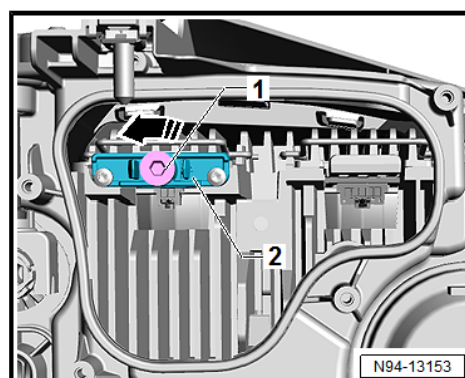
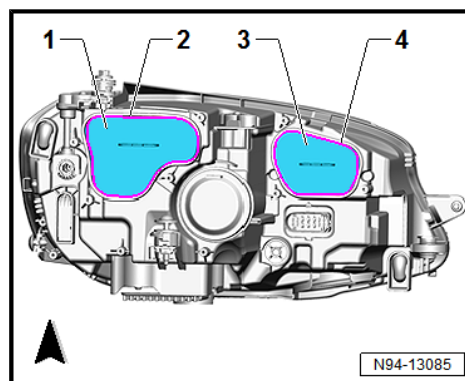
Caution

Perform work on the LED modules only on the Electro-Static Discharge (ESD) work surface.



Removing

- Remove the headlamp. Refer to
⇒ [“1.2 Headlamp, Removing and Installing”, page 137](#) .
- Carefully loosen the housing cover -1- along the break line
-2- with a hammer.
- Remove the housing cover -1- from the headlamp.
- Completely remove the screw -1- for fine adjustment on the
bracket -2- -arrow-.
- Remove the screws -2-.
- Remove the bracket -1-.
- Release and disconnect the connectors -5-.
- Pull the retaining bracket -3- slightly toward the rear and re-
lease using the Backrest Panel Tool - 3370- .
- At the same time, tilt the retaining bracket -3- upward
-arrows-.
- Remove the low beam LED module -4- from the headlamp
toward the rear.





Installing

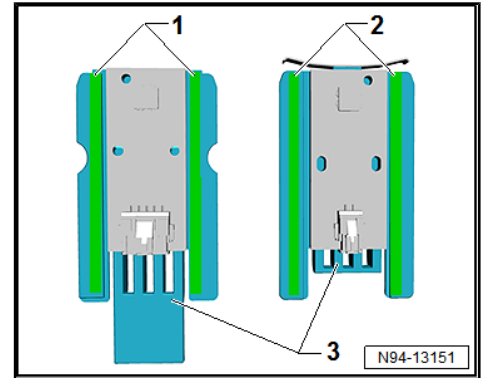


WARNING

Avoid contact of thermal compound with the skin.

If the thermal compound does contact the skin, then thoroughly clean the contacted area with, for example, soapy water.

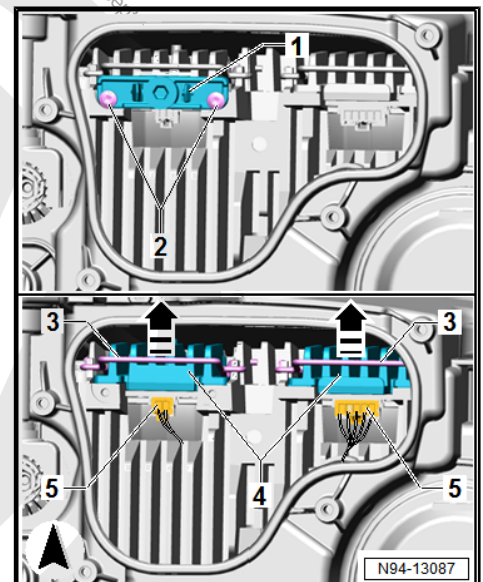
- Apply a thin layer of thermal compound -1- and -2- (refer to the Parts Catalog) to the side contact surfaces on the LED module -3-.



Note

Do not interchange the LED modules. Because of the LED module design, installation is only possible at the given position.

- Insert the low beam LED module -4- in the headlamp and set in the installation position.
- Tilt the retaining bracket -3- opposite the -arrows- downward and click it into place.
- Attach the connectors -5-.
- Install the bracket -1- and tighten the bolts -2-.

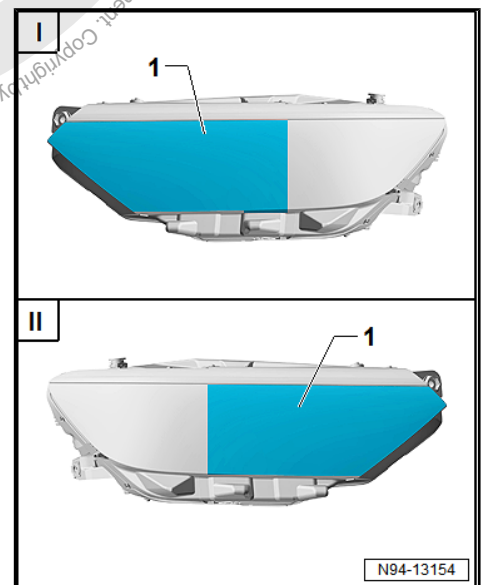


- Position the template -1- (refer to the Parts Catalog) according to the contour on the headlamp glass and secure it.

I - Template Position -1- on Left Front Headlamp - MX1-

II - Template Position -1- on Right Front Headlamp - MX2-

- Position the headlamp horizontally with a distance of 3 to 5 m in front of a white wall.
- Turn the adjusting screws for lateral adjustment on the top of the headlamp to the outer side until it stops:
 - ◆ Turn Left Front Headlamp - MX1- toward the right (clockwise)
 - ◆ Turn Right Front Headlamp - MX2- toward the left (counter-clockwise)
- Connect the headlamp connector in the vehicle and connector on the removed headlamp to the adapter cable.
- Switch on the light on the Rotary Light Switch - EX1- .



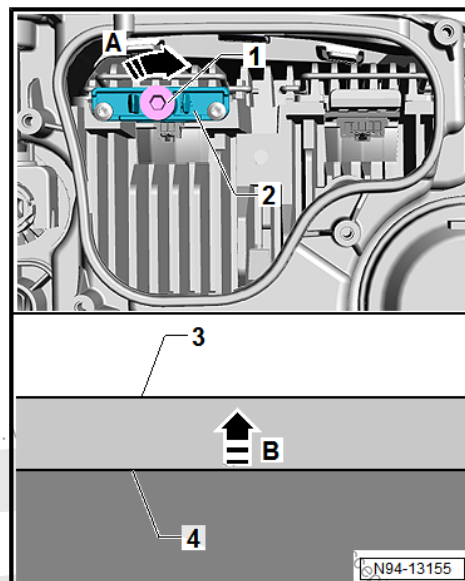


Fine Adjustment on Left Front Headlamp - MX1-

- Slowly install the screw -1- for fine adjustment on the bracket -2- -arrow A-.

Through this action it moves the lighter area of light at the bottom -4- slowly toward the top -arrow B-.

- Slowly install the screw -1- further -arrow A-, until the upper edge -4- of the lighter area of light is congruent with the upper edge -3- of the darker area of light.



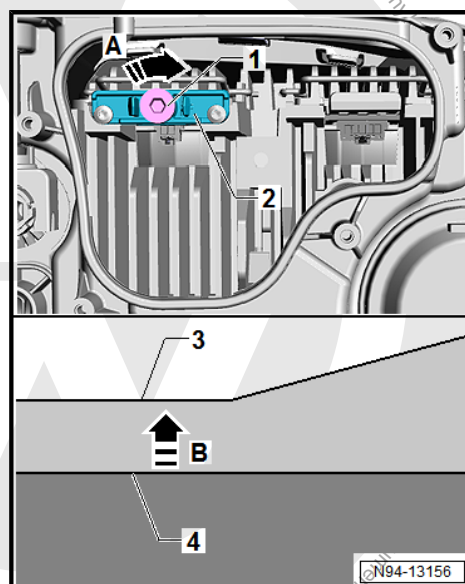
Fine Adjustment on Right Front Headlamp - MX2-

- Slowly install the screw -1- for fine adjustment on the bracket -2- -arrow A-.

Through this action it moves the lighter area of light at the bottom -4- slowly toward the top -arrow B-.

- Slowly install the screw -1- further -arrow A-, until the upper edge -4- of the lighter area of light is congruent with the horizontal edge -3- of the darker area of light.

The darker, rising area of light from the bend point toward the right must remain visible from now on.



Continuation for Both Headlamps



Caution

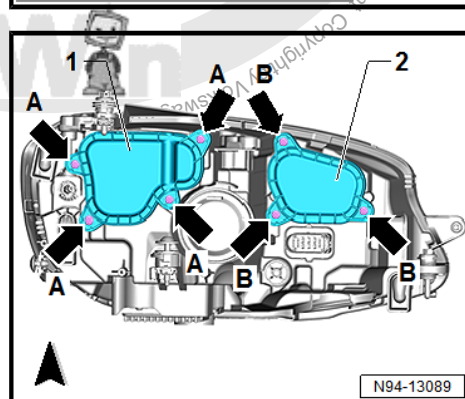
There is a risk of damaging the headlamp.

- ◆ *During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.*

- Mount the new housing cover -1- on the headlamp.
- Install and tighten the bolts -A arrows-.
- Install the headlamp. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#) .
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 ; Procedure Description .

Tightening Specifications

- ◆ Refer to ⇒ ["1.1.6 Overview - LED Headlamp", page 133](#)





1.11 Left/Right High Beam Headlamp Bulb - M30- / -M32- , Removing and Installing

⇒ "1.11.1 High Beam Headlamp Bulb M30 / M32 , Removing and Installing, Halogen Twin Headlamp", page 161

⇒ "1.11.2 Left/Right High Beam Headlamp Bulb M30 / M32 , Removing and Installing, LED Headlamp", page 162

1.11.1 High Beam Headlamp Bulb -M30- / -M32- , Removing and Installing, Halogen Twin Headlamp

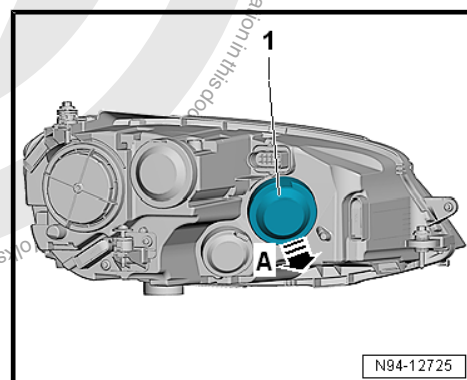


Note

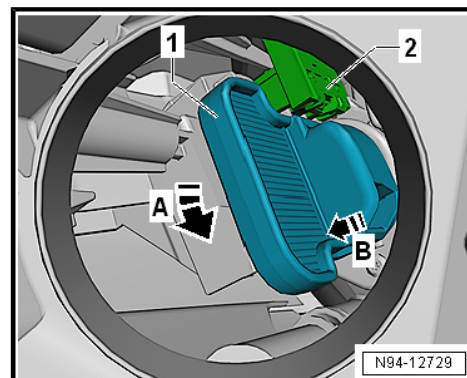
The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Remove the housing cover -1- in direction of -arrow A-.



- Turn the socket -1- in direction of -arrow A-, until the contacts are turned out of the contact housing -2-.
- Remove the socket -1- in direction of -arrow B-.





- Remove the lamp -2- from the socket -1-.

Installing

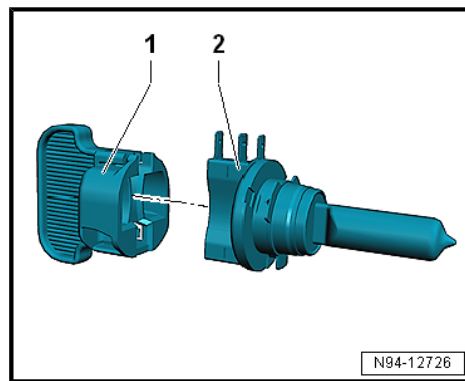
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*
- ◆ *During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.*



- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .

1.11.2 Left/Right High Beam Headlamp Bulb - M30- / -M32- , Removing and Installing, LED Headlamp

Special tools and workshop equipment required

- ◆ Backrest Panel Tool - 3370-
- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Torque Screwdriver - VAS6494-
- ◆ ESD Work Surface - VAS6613-



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

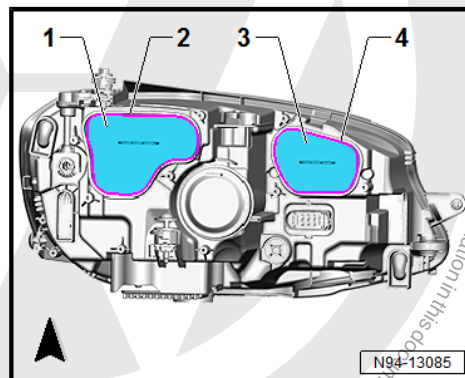


Caution

Perform work on the LED modules only on the Electro-Static Discharge (ESD) work surface.

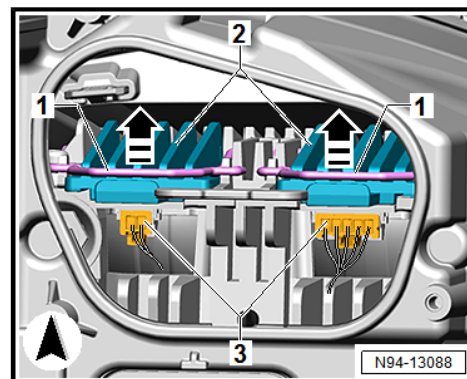
Removing

- Remove the headlamp. Refer to [⇒ "1.2 Headlamp, Removing and Installing", page 137](#) .
- Carefully loosen the housing cover -3- along the break line -4- with a hammer.
- Remove the housing cover -3- from the headlamp.





- Release and disconnect the connectors -3-.
- Pull the retaining bracket -1- slightly toward the rear and release using the Backrest Panel Tool - 3370- .
- At the same time, tilt the retaining bracket -1- upward -arrows-.
- Remove the high beam LED module -2- from the headlamp toward the rear.



Installing

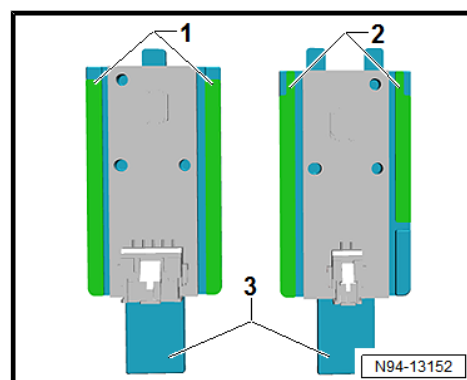


WARNING

Avoid contact of thermal compound with the skin.

If the thermal compound does contact the skin, then thoroughly clean the contacted area with, for example, soapy water.

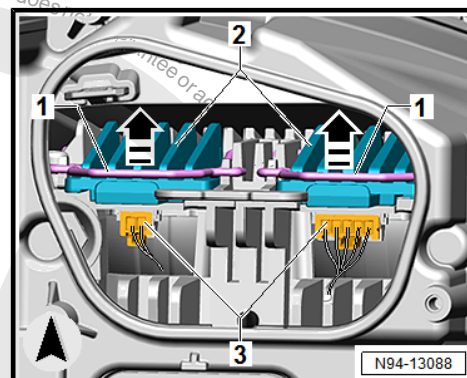
- Apply a thin layer of thermal compound -1- and -2- (refer to the Parts Catalog) to the side contact surfaces on the LED module -3-.



Note

Do not interchange the LED modules. Because of the LED module design, installation is only possible at the given position.

- Insert the high beam LED module -2- in the headlamp and set in the installation position.
- Tilt the retaining bracket -1- opposite the -arrows- downward and click it into place.
- Connect the connectors -3-.





Caution

There is a risk of damaging the headlamp.

- ◆ *During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.*

- Mount the new housing cover -2- on the headlamp.
- Install and tighten the bolts -B arrows-.
- Install the headlamp. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#) .
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 ; Procedure Description .

Tightening Specifications

- ◆ Refer to ⇒ ["1.1.6 Overview - LED Headlamp", page 133](#)

1.12 Left/Right HID Headlamp Bulb -L13- / -L14- , Removing and Installing



WARNING

Risk of death due to high voltage, injury risk and environmental hazard.

- ◆ *Observe usage and safety information for gas discharge lamps. Refer to
⇒ ["1.5 HID Headlamp Usage and Safety Precautions", page 2](#) .*

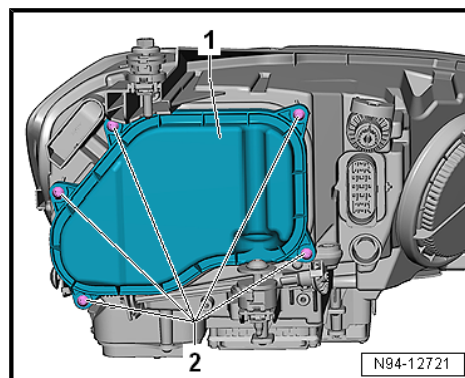
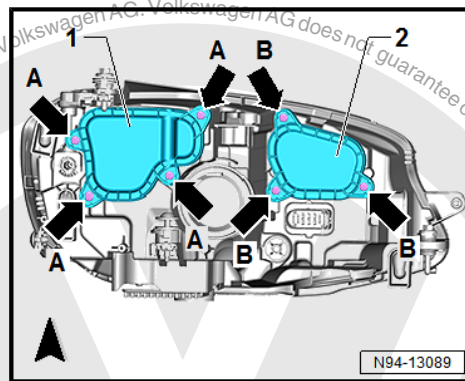


Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

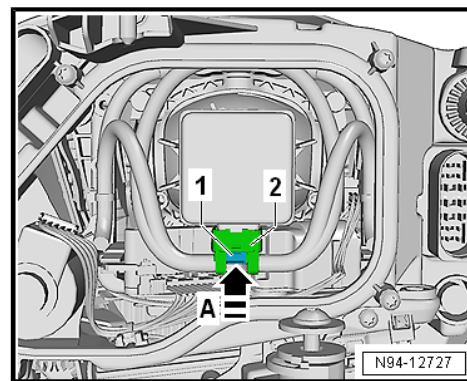
Removing

- Remove the headlamp. Refer to
⇒ ["1.2 Headlamp, Removing and Installing", page 137](#) .
- Remove the housing cover -1- bolts -2-.
- Remove the housing cover -1-.





- Turn the securing tab -1- in direction of -arrow A- to disconnect the connector -2-.



- Turn the locking mechanism -1- in direction of -arrow A-.
- Remove the HID headlamp bulb -2- in direction of -arrow B- from the housing.

Installing

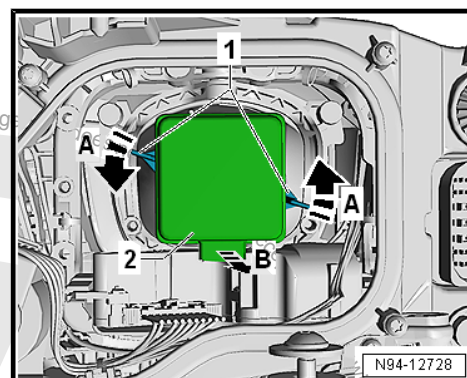
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*
- ◆ *During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.*



Note

Installation position: the electrical connection faces down.

- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .

Tightening Specifications

- ◆ Refer to ⇒ [“1.1 Overview - Headlamp”, page 122](#)



1.13 Left/Right Position Lamp Bulb -M1- / -M3- , Removing and Installing

⇒ ["1.13.1 Left/Right Position Lamp Bulb M1 / M3 , Removing and Installing, Halogen Twin Headlamp", page 166](#)

⇒ ["1.13.2 Left/Right Position Lamp Bulb M1 / M3 , Removing and Installing, HID Headlamp", page 166](#)

1.13.1 Left/Right Position Lamp Bulb -M1- / -M3- , Removing and Installing, Halogen Twin Headlamp



Note

The Left Position Lamp Bulb - M1- and the Right Position Lamp Bulb - M3- is integrated in the Left High Beam Headlamp Bulb - M30- and in the Right High Beam Headlamp Bulb - M32- .

- Left Position Lamp Bulb - M1- / Right Position Lamp Bulb - M3- , removing and installing. Refer to
⇒ ["1.11.1 High Beam Headlamp Bulb M30 / M32 , Removing and Installing, Halogen Twin Headlamp", page 161](#) .

1.13.2 Left/Right Position Lamp Bulb -M1- / -M3- , Removing and Installing, HID Headlamp

The Left Position Lamp Bulb - M1- and the Right Position Lamp Bulb - M3- is integrated in the Left Daytime Running Lamp Bulb - L174- and in the Right Daytime Running Lamp Bulb - L175- respectively.

- Left Position Lamp Bulb - M1- / Right Position Lamp Bulb - M3- , removing and installing. Refer to
⇒ ["1.14.2 Left/Right Daytime Running Lamp Bulb L174 / L175 , Removing and Installing, HID Headlamp", page 167](#) .

1.14 Left/Right Daytime Running Lamp Bulb -L174- / -L175- , Removing and Installing

⇒ ["1.14.1 Left/Right Daytime Running Lamp Bulb L174 / L175 , Removing and Installing, Halogen Twin Headlamp", page 166](#)

⇒ ["1.14.2 Left/Right Daytime Running Lamp Bulb L174 / L175 , Removing and Installing, HID Headlamp", page 167](#)

1.14.1 Left/Right Daytime Running Lamp Bulb -L174- / -L175- , Removing and Installing, Halogen Twin Headlamp



Note

The Left Daytime Running Lamp Bulb - L174- and the Right Daytime Running Lamp Bulb - L175- is integrated in the Left High Beam Headlamp Bulb - M30- and in the Right High Beam Headlamp Bulb - M32- respectively.

- Left Daytime Running Lamp Bulb - L174- / Right Daytime Running Lamp Bulb - L175- , removing and installing. Refer to



⇒ "1.11.1 High Beam Headlamp Bulb M30 / M32, Removing and Installing, Halogen Twin Headlamp", page 161.

1.14.2 Left/Right Daytime Running Lamp Bulb -L174- / -L175-, Removing and Installing, HID Headlamp

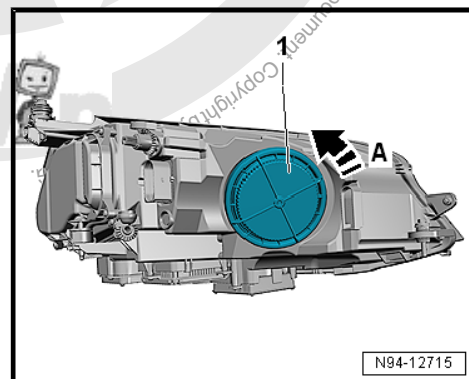


Note

- ◆ The removal and installation is described for the left side. Removing and installing on the right side is identical.
- ◆ The Left Daytime Running Lamp Bulb - L174- and the Right Daytime Running Lamp Bulb - L175- has the function of the Left Position Lamp Bulb - M1- and the Right Position Lamp Bulb - M3-.

Removing

- Turn the housing cover -1- in direction of -arrow A- and remove from the headlamp.



- Remove the Left Daytime Running Lamp Bulb - L174- on the handle -1- in direction of -arrow A- rearward from the reflector.
- Remove the Left Daytime Running Lamp Bulb - L174- from the handle.

Installing

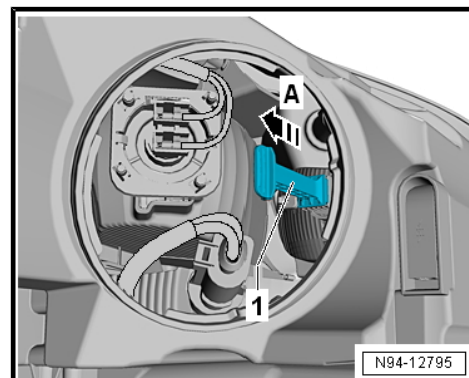
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.
- ◆ Use clean gloves for example to insert the bulbs.
- ◆ During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.



- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1.



1.15 Left/Right Daytime Running Lamp and Position Lamp LED Module -L176- / - L177- , Removing and Installing

⇒ [“1.15.1 Left/Right Daytime Running Lamp and Position Lamp LED Module L176 / L177 , Removing and Installing”, page 168](#)

1.15.1 Left/Right Daytime Running Lamp and Position Lamp LED Module -L176- / - L177- , Removing and Installing



Note

- ◆ *The Left Daytime Running Lamp and Position Lamp LED Module - L176- / Right Daytime Running Lamp and Position Lamp LED Module - L177- is only installed with HID headlamps.*
- ◆ *The daytime running lamp and position lamp bulbs are LED lamps and are integrated in the headlamp. Changing the LEDs is not possible. The headlamp must be completely replaced.*
- Headlamps, removing and installing. Refer to [⇒ “1.2 Headlamp, Removing and Installing”, page 137](#) .

1.15.2 Left/Right Daytime Running Lamp and Position Lamp LED Module -L176- / - L177- , Removing and Installing, “GTE” Only

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Torque Screwdriver - VAS6494-



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the wheel housing liner front section. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Overview - Front Wheel Housing Liner .



- Release and disconnect the connector -2-.
- Remove the bolts -3-.
- Remove the Left Daytime Running Lamp and Position Lamp LED Module - L176- -1- toward the rear.

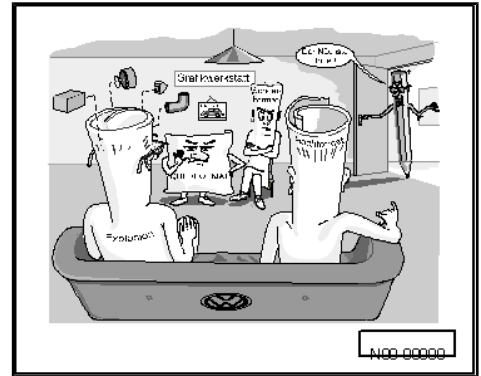
Installing

Install in the reverse order of removal. Note the following:

- Guide the Left Daytime Running Lamp and Position Lamp LED Module - L176- -1- with both tips in the bumper opening.

Tightening Specifications

- ◆ Refer to
⇒ [“1.1.9 Overview - Daytime Running Lamps”, page 137](#)



1.16 Left/Right Low Beam Headlamp Reflector Motor -V294- / -V295- , Removing and Installing



Note

- ◆ *The Left Low Beam Headlamp Reflector Motor - V294- / Right Low Beam Headlamp Reflector Motor - V295- is only installed with HID headlamps without cornering lamps.*
- ◆ *The low beam headlamp reflector motor sits in the headlamp and cannot be replaced separately if it is faulty.*
- Headlamps, removing and installing. Refer to
⇒ [“1.2 Headlamp, Removing and Installing”, page 137](#) .

1.17 Left/Right Cornering Lamp Bulb -L148- / -L149- , Removing and Installing

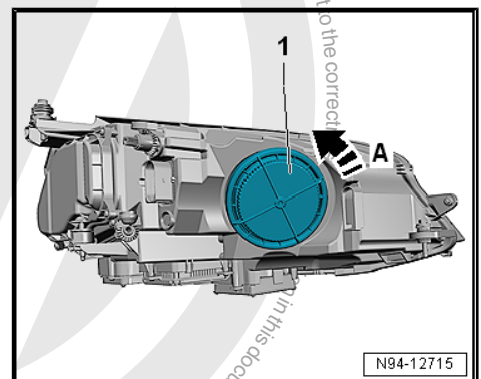


Note

- ◆ *The Left Cornering Lamp Bulb - L 148- / Right Cornering Lamp Bulb - L 149- is only installed with HID headlamps.*
- ◆ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*

Removing

- Turn the housing cover -1- in direction of -arrow A- and remove from the headlamp.





- Push upward in direction of -arrow A- on the bulb socket -1-.
- Remove the bulb socket -1- from the reflector -2-.
- Disconnect the connector.

Installing

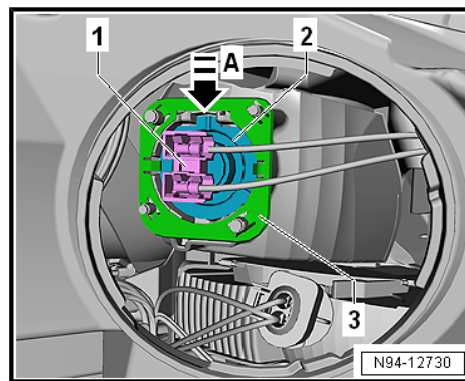
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*
- ◆ *During installation, ensure proper seating of the housing cover. Water getting in the headlamp will cause damage.*



- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .

1.18 Left/Right HID Headlamp Control Module -J343- / -J344- , Removing and Installing



WARNING

Risk of death due to high voltage, injury risk and environmental hazard.

- ◆ *Observe usage and safety information for gas discharge lamps. Refer to ⇒ **"1.5 HID Headlamp Usage and Safety Precautions", page 2**.*
- ◆ *It is necessary to disconnect the battery wire strap before working on gas-discharge headlamp components. These parts are marked with yellow high voltage symbols.*



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Remove the headlamp. Refer to ⇒ **"1.2 Headlamp, Removing and Installing", page 137**.



- Remove the screws -2-.
- Remove the Left Hid Headlamp Control Module - J343- -1- from the headlamp.
- Push the release buttons -4 and 6-.
- Disconnect the connector -3 and 5-

Installing

Install in the reverse order of removal. Note the following:



Caution

Make sure the seal fits correctly when installing the HID headlamp control module. Water getting in the headlamp will cause damage.

- Make sure the seal between the control module and the headlamp is not damaged.

Tightening Specifications

- ◆ Refer to ⇒ [“1.1 Overview - Headlamp”, page 122](#)

1.19 Left/Right Headlamp Power Output Stage -J667- / -J668- , Removing and Installing



WARNING

Risk of death due to high voltage, injury risk and environmental hazard.

- ◆ **Observe usage and safety information for gas discharge lamps. Refer to ⇒ [“1.5 HID Headlamp Usage and Safety Precautions”, page 2](#) .**
- ◆ **It is necessary to disconnect the battery wire strap before working on gas-discharge headlamp components. These parts are marked with yellow high voltage symbols.**

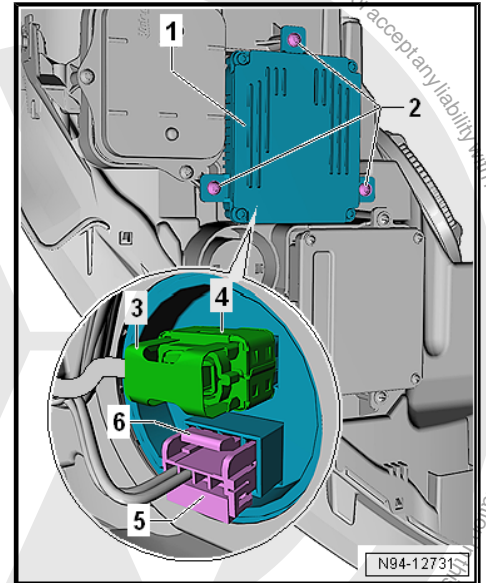


Note

- ◆ **The Left Headlamp Power Output Stage - J667- / Right Headlamp Power Output Stage - J668- is only installed with HID headlamps with cornering lamps.**
- ◆ **The removal and installation is described for the left side. Removing and installing on the right side is identical.**

Removing

- Remove the headlamp. Refer to ⇒ [“1.2 Headlamp, Removing and Installing”, page 137](#) .





- Remove the screws -2-.
- Remove the Left Headlamp Power Output Stage - J667- -1- from the headlamp.
- Press the release button -4-.
- Disconnect the connector -3-.

Installing

Install in the reverse order of removal. Note the following:



Caution

Make sure the seal fits correctly when installing the HID headlamp control module. Water getting in the headlamp will cause damage.

- Make sure the seal between the control module and the headlamp is not damaged.

Tightening Specifications

- ◆ Refer to ⇒ ["1.1 Overview - Headlamp", page 122](#)

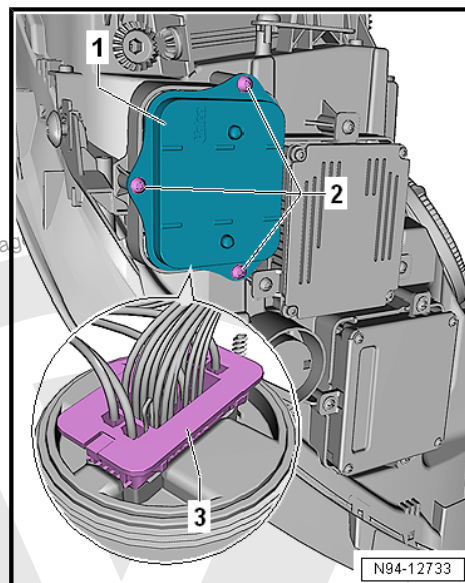
1.20 Left/Right Daytime Running Lamp and Position Lamp Control Module -J860- / -J861- , Removing and Installing



WARNING

Risk of death due to high voltage, injury risk and environmental hazard.

- ◆ **Observe usage and safety information for gas discharge lamps. Refer to ⇒ ["1.5 HID Headlamp Usage and Safety Precautions", page 2](#).**
- ◆ **It is necessary to disconnect the battery wire strap before working on gas-discharge headlamp components. These parts are marked with yellow high voltage symbols.**



Note

- ◆ **The Left Daytime Running Lamp and Position Lamp Control Module - J860- / Right Daytime Running Lamp and Position Lamp Control Module - J861- is only installed with HID headlamps.**
- ◆ **The removal and installation is described for the left side. Removing and installing on the right side is identical.**

Removing

- Remove the headlamp. Refer to ⇒ ["1.2 Headlamp, Removing and Installing", page 137](#).



- Remove the screws -2-.
- Remove the Left Daytime Running Lamp and Position Lamp Control Module - J860- -1- from the headlamp.
- Disconnect the connector -3-.
- Remove the control module.

Installing

Install in the reverse order of removal. Note the following:



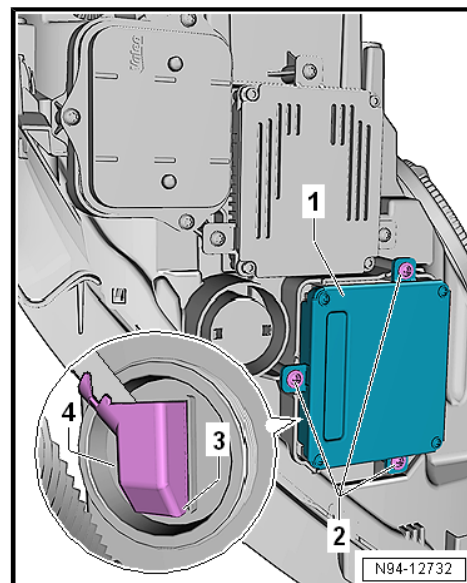
Caution

Make sure the seal fits correctly when installing the HID headlamp control module. Water getting in the headlamp will cause damage.

- Make sure the seal between the control module and the headlamp is not damaged.

Tightening Specifications

- ◆ Refer to ⇒ [“1.1 Overview - Headlamp”, page 122](#)



1.21 Headlamp Power Output Stage 2, Removing and Installing



WARNING

Risk of death due to high voltage, injury risk and environmental hazard.

- ◆ **Observe usage and safety information for gas discharge lamps. Refer to ⇒ [“1.5 HID Headlamp Usage and Safety Precautions”, page 2](#).**
- ◆ **It is necessary to disconnect the battery wire strap before working on gas-discharge headlamp components. These parts are marked with yellow high voltage symbols.**



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Remove the headlamp. Refer to ⇒ [“1.2 Headlamp, Removing and Installing”, page 137](#).



- Remove the screws -2-.
- Remove the Left Headlamp Power Output Stage 2 - J892-1- from the headlamp.
- Disconnect the connector -3-.
- Remove the control module.

Installing

Install in the reverse order of removal. Note the following:



Caution

Make sure the seal fits correctly when installing the HID headlamp control module. Water getting in the headlamp will cause damage.

- Make sure the seal between the control module and the headlamp is not damaged.

Tightening Specifications

- ◆ Refer to
⇒ [“1.1.5 Overview - HID Headlamp with Dynamic High Beam Control and LED-Daytime Running Lamps”, page 131](#)

1.22 Left/Right LED Headlamp Power Output Module 1 -A31- / -A32- , Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Torque Screwdriver - VAS6494-

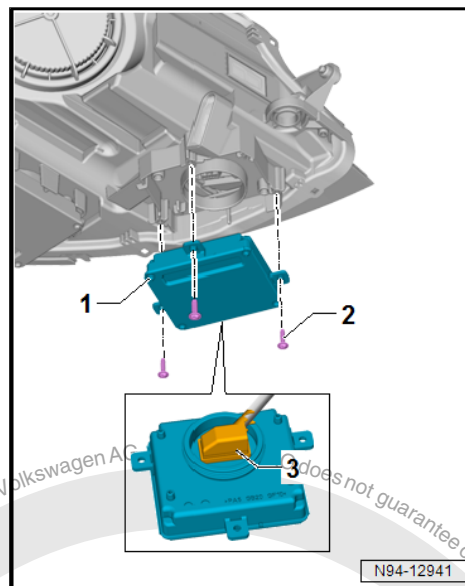


Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Remove the headlamp. Refer to
⇒ [“1.2 Headlamp, Removing and Installing”, page 137](#) .





- Remove the screws -2-.
- Remove the Left LED Headlamp Power Output Module 1 - A31- -1- from the headlamp.
- Push the release button -4- in direction of -arrow A-.
- Disconnect the connector -3-.

Installing

Install in the reverse order of removal. Note the following:



Caution

Make sure the seal fits correctly when installing the Left LED Headlamp Power Output Module 1 - A31-. Water getting in the headlamp will cause damage.

- Check the seal between the Left LED Headlamp Power Output Module 1 - A31- and the headlamp for damage.

Tightening Specifications

- ◆ Refer to ➔ [“1.1.6 Overview - LED Headlamp” page 133](#)

1.23 Sensor for Left/Right Variable Headlamp Positioning Motor -G695- / -G696- , Removing and Installing



Note

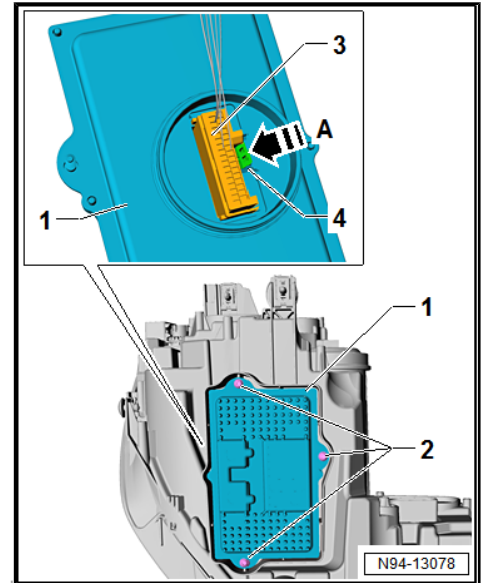
- ◆ *The Sensor for Left Variable Headlamp Positioning Motor - G695- / Sensor for Right Variable Headlamp Positioning Motor - G696- is only installed with HID headlamps.*
- ◆ *The sensor for variable headlamp positioning motor is inside the headlamp housing and cannot be replaced separately if it is faulty.*
- Headlamps, Removing and installing. Refer to ➔ [“1.2 Headlamp, Removing and Installing”, page 137](#) .

1.24 Left/Right Variable Headlamp Positioning Motor -V446- / -V447- , Removing and Installing



Note

- ◆ *The Left Variable Headlamp Positioning Motor - V446- / Right Variable Headlamp Positioning Motor - V447- is only installed with HID headlamps.*
- ◆ *The variable headlamp positioning motor sits in the headlamp housing and cannot be replaced separately if it is faulty.*
- Headlamps, Removing and installing. Refer to ➔ [“1.2 Headlamp, Removing and Installing”, page 137](#) .





1.25 Left/Right Swivel Module Position Sensor -G474- / -G475- , Removing and Installing



Note

- ◆ *The Left Swivel Module Position Sensor - G474- / Right Swivel Module Position Sensor - G475- is only installed with HID headlamps.*
- ◆ *The swivel module position sensor sits in the headlamp housing and cannot be replaced separately if it is faulty.*
- Headlamps, Removing and installing. Refer to [⇒ "1.2 Headlamp, Removing and Installing", page 137](#) .

1.26 Left/Right Adaptive Cornering Lamp Motor -V318- / -V319- , Removing and Installing



Note

- ◆ *The Left Adaptive Cornering Lamp Motor - V318- / Right Adaptive Cornering Lamp Motor - V319- is installed only with HID headlamps.*
- ◆ *The adaptive cornering lamp motor sits in the headlamp housing and cannot be replaced separately if it is faulty.*
- Headlamps, Removing and installing. Refer to [⇒ "1.2 Headlamp, Removing and Installing", page 137](#) .



2 Fog Lamp

⇒ ["2.1 Overview - Fog Lamps", page 177](#)

⇒ ["2.2 Fog Lamp, Removing and Installing", page 178](#)

⇒ ["2.3 Left/Right Front Fog Lamp Bulb L22 / L23, Removing and Installing", page 180](#)

2.1 Overview - Fog Lamps

⇒ ["2.1.1 Overview - Fog Lamps, Golf", page 177](#)

⇒ ["2.1.2 Overview - Fog Lamp, GTI and GTD", page 178](#)

2.1.1 Overview - Fog Lamps, Golf

1 - Fog Lamp

- ☐ There are different versions. Refer to the Parts Catalog.
- ☐ Removing and installing. Refer to
⇒ ["2.2.1 Fog Lamp, Removing and Installing, Golf", page 178](#).

2 - Cap

3 - Fog Lamp Bulb

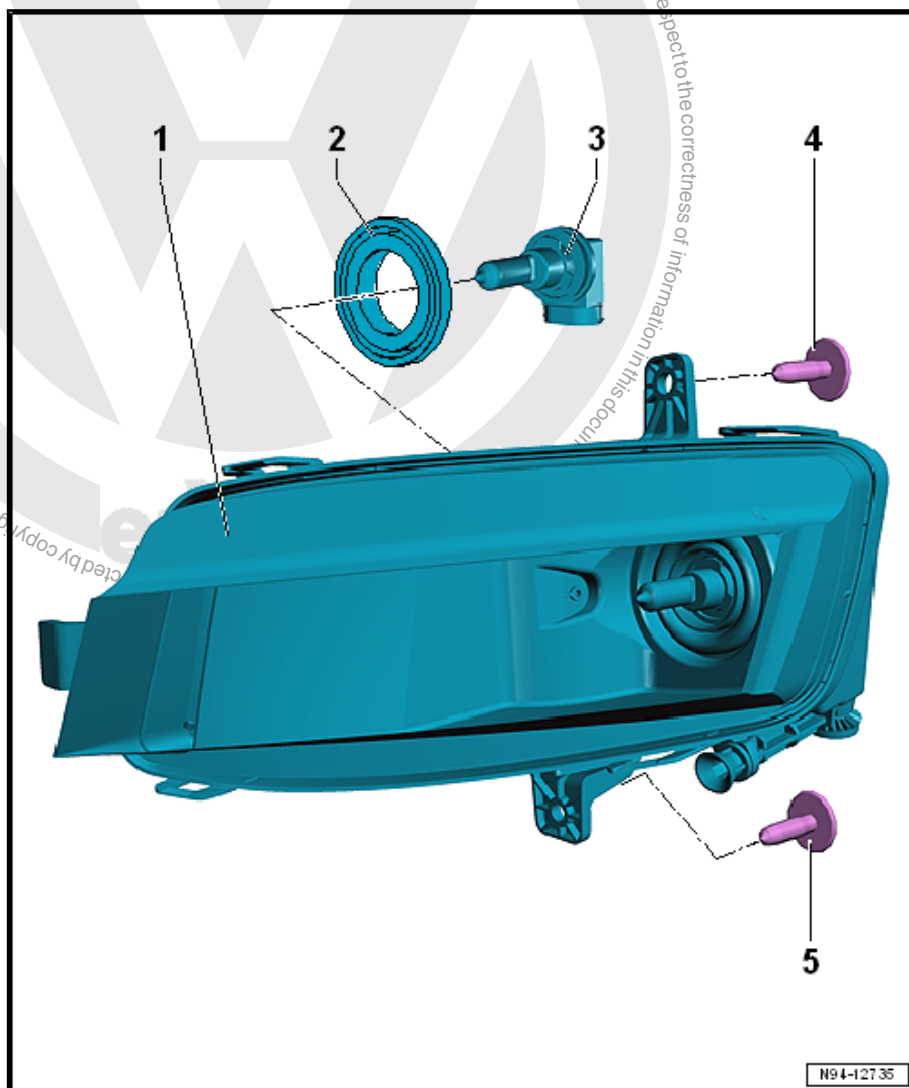
- ☐ Left Front Fog Lamp Bulb - L22-
- ☐ Right Front Fog Lamp Bulb - L23-
- ☐ Removing and installing. Refer to
⇒ ["2.3 Left/Right Front Fog Lamp Bulb L22 / L23, Removing and Installing", page 180](#).

4 - Bolt

- ☐ Tightening Specification: 2 Nm

5 - Bolt

- ☐ Tightening Specification: 2 Nm





2.1.2 Overview - Fog Lamp, GTI and GTD

1 - Bolt

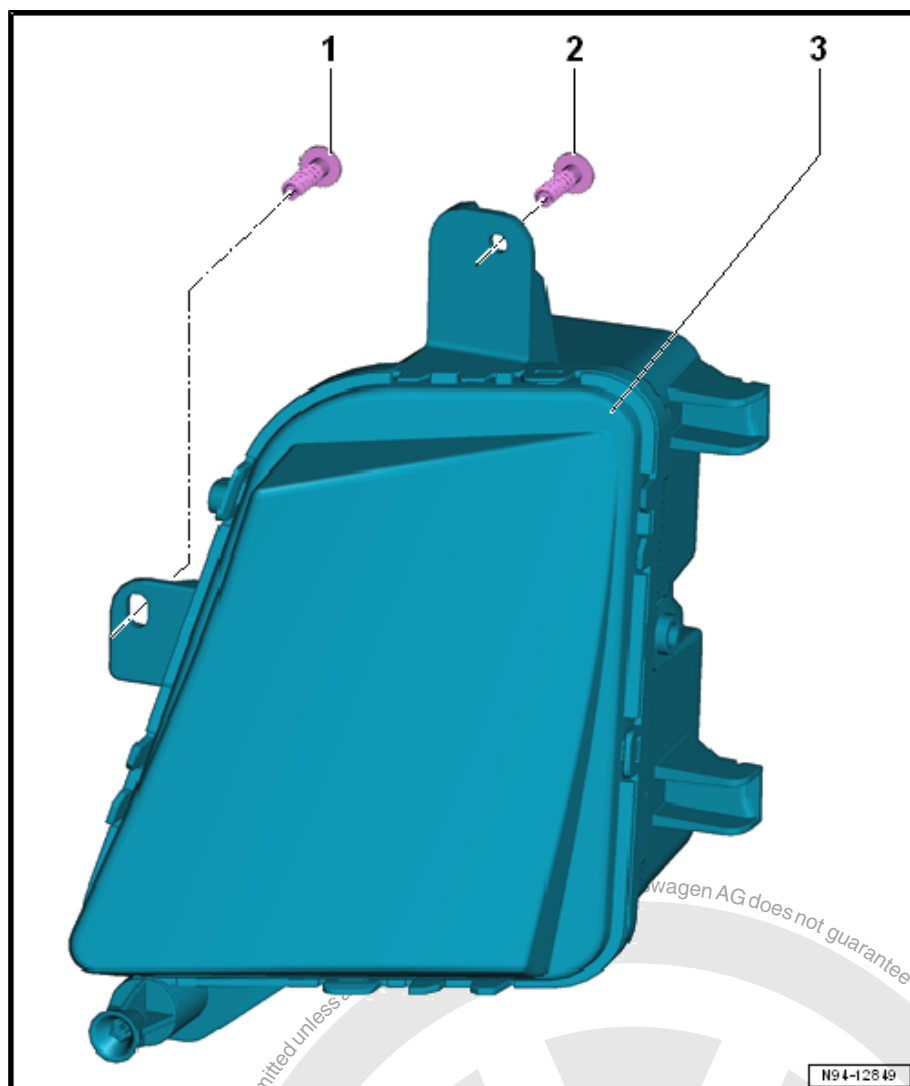
- ❑ Tightening Specification: 2 Nm

2 - Bolt

- ❑ Tightening Specification: 2 Nm

3 - Fog Lamp

- ❑ Changing the LEDs is not possible. The fog lamp must be completely replaced.
- ❑ Removing and installing. Refer to ⇒ ["2.2.2 Fog Lamp, Removing and Installing, GTI and GTD"](#), page 179.



2.2 Fog Lamp, Removing and Installing

⇒ ["2.2.1 Fog Lamp, Removing and Installing, Golf"](#), page 178

⇒ ["2.2.2 Fog Lamp, Removing and Installing, GTI and GTD"](#), page 179

2.2.1 Fog Lamp, Removing and Installing, Golf



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Turn off the ignition.
- Then remove the ignition key, if equipped.
- Turn the light switch to position "0".



- Remove the wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing .
- Remove the bolts -1-.
- Pivot the fog lamp -2- in direction of -arrow A-.
- Remove the fog lamp -2- in direction of -arrow B- from the bumper cover.
- Disconnect the connector.

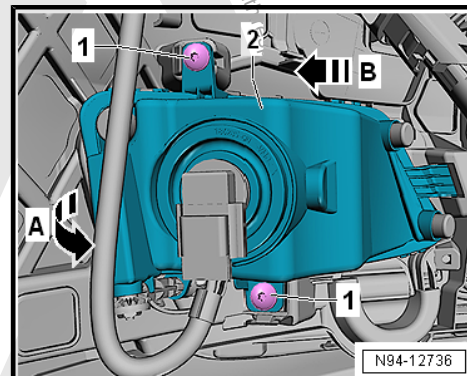
Installing

Install in the reverse order of removal. Note the following:

- Adjust the fog lamps. Refer to ⇒ Maintenance ; Booklet 36.1 .

Tightening Specifications

- ◆ Refer to ⇒ [“2.1.1 Overview - Fog Lamps, Golf”, page 177](#)



2.2.2 Fog Lamp, Removing and Installing, GTI and GTD



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Turn off the ignition.
- Then remove the ignition key, if equipped.
- Turn the light switch to position “0”.
- Remove the wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing .
- Remove the bolts -1- and -3-.
- Lift the fog lamp -4- in the direction of the arrow -A-.
- Remove the fog lamp -4- from the bumper cover.
- Disconnect the connector -2-.

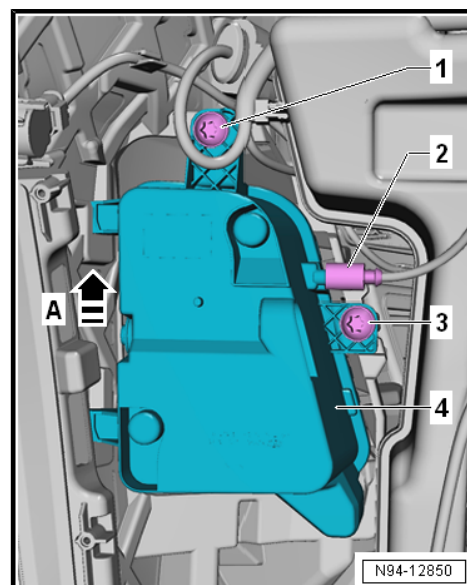
Installing

Install in the reverse order of removal. Note the following:

- Adjust the fog lamps. Refer to ⇒ Maintenance ; Booklet 36.1 .

Tightening Specifications

- ◆ ⇒ [“2.1.2 Overview - Fog Lamp, GTI and GTD”, page 178](#)





2.3 Left/Right Front Fog Lamp Bulb -L22- / -L23- , Removing and Installing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Turn the steering to the right.
- Pry the cover -1- in the wheel housing liner in direction of -arrow A-.
- Disconnect the connector -4-.
- Remove the cap -3- from the fog lamp housing -5-.
- Turn the Left Front Fog Lamp Bulb - L22- -2- in direction of -arrow B- and remove from the fog lamp housing -5-.
- Remove the cap -3- from the Left Front Fog Lamp Bulb - L22- -2-.

Installing

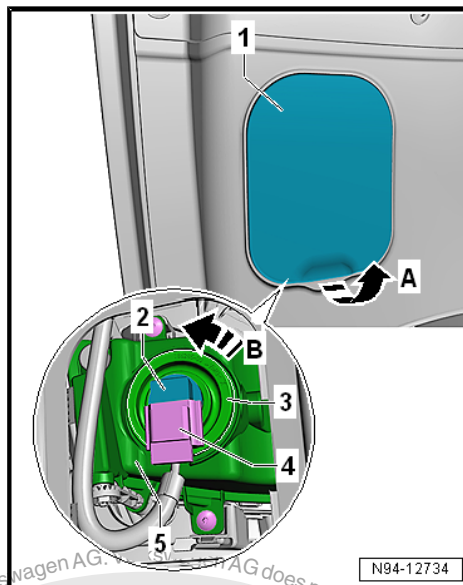
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the headlamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*
- ◆ *During installation, ensure proper seating of the cap. Water getting in the headlamp will cause damage.*



- Push the cap -3- on the Left Front Fog Lamp Bulb - L22- -2-.
- Push the Left Front Fog Lamp Bulb - L22- -2- in the fog lamp housing.
- Turn the Left Front Fog Lamp Bulb - L22- -2- clockwise until stop.
- Perform a functionality test.
- Check the headlamp adjustment and adjust the headlamp if necessary. Refer to ⇒ Maintenance ; Booklet 36.1 .



3 Exterior Rearview Mirror Lamps

⇒ ["3.1 Overview - Exterior Rearview Mirror Lamps", page 181](#)

⇒ ["3.2 Turn Signal, Removing and Installing", page 182](#)

⇒ ["3.3 Entry Lamp in Exterior Rearview Mirror, Removing and Installing", page 183](#)

3.1 Overview - Exterior Rearview Mirror Lamps

1 - Mirror Cap

- ☐ Material: ABS
- ☐ Removing and Installing. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Exterior Rearview Mirror; Mirror Cap, Removing and Installing .

2 - Bolt

- ☐ Tightening Specification: 1.0 Nm
- ☐ Quantity: 2

3 - Turn Signal

- ☐ Removing and installing. Refer to ⇒ ["3.2 Turn Signal, Removing and Installing", page 182](#) .

4 - Bolt

- ☐ Tightening Specification: 9.0 Nm

5 - Bolt

- ☐ Tightening Specification: 9.0 Nm

6 - Clip

7 - Cap

8 - Mirror Glass

- ☐ Removing and Installing. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Exterior Rearview Mirror; Mirror Glass, Removing and Installing .

9 - Bolt

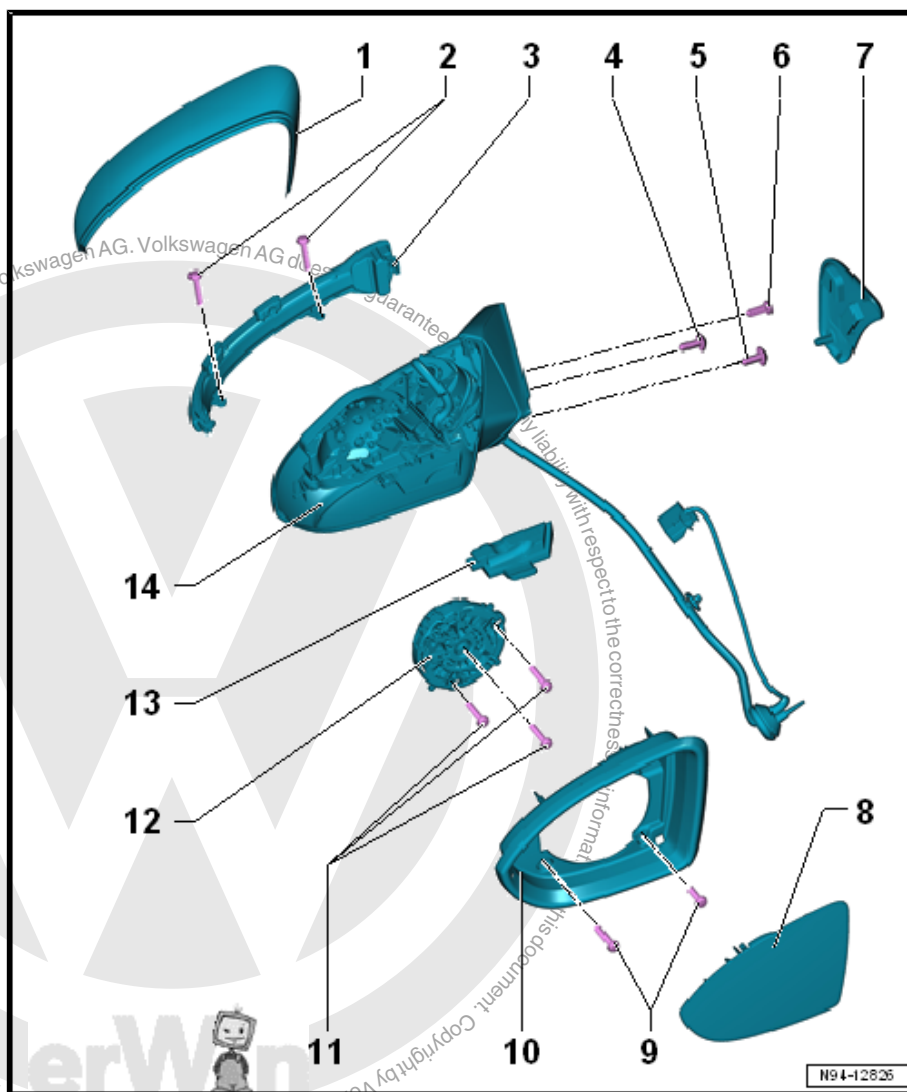
- ☐ Tightening Specification: 1.0 Nm
- ☐ Quantity: 2

10 - Mirror Frame

- ☐ Removing and Installing. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Exterior Rearview Mirror; Mirror Trim, Removing and Installing .

11 - Bolt

- ☐ Tightening Specification: 1.0 Nm
- ☐ Quantity: 3





12 - Adjusting Unit

- ❑ Removing and Installing. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Exterior Rearview Mirror; Mirror Adjusting Unit, Removing and Installing .

13 - Entry Lamp In Exterior Rearview Mirror

- ❑ Driver Entry Lamp in Exterior Rearview Mirror - W52-
- ❑ Front Passenger Entry Lamp in Exterior Rearview Mirror - W53-
- ❑ Exterior rearview mirror entry lamp, removing and installing. Refer to ⇒ ["3.3 Entry Lamp in Exterior Rearview Mirror, Removing and Installing", page 183](#) .

14 - Mirror Base

- ❑ Removing and installing. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Exterior Rearview Mirror; Exterior Rearview Mirror, Removing and Installing .

3.2 Turn Signal, Removing and Installing

Special tools and workshop equipment required

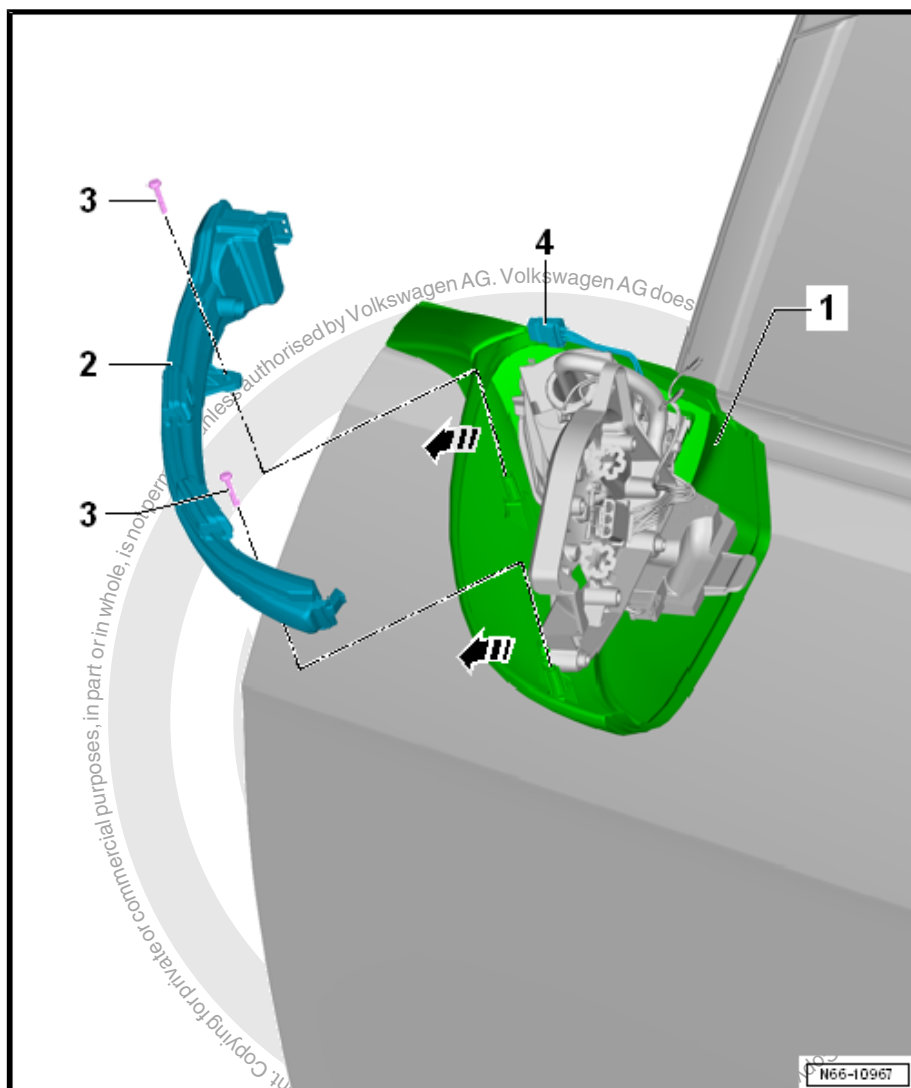
- ◆ Torque Wrench 1783- 2-10Nm - VAG1783-



Note

- ◆ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*
- ◆ *The entire exterior mirror turn signal must be replaced if an LED is faulty.*

Removing



- Remove the mirror cap. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Exterior Rearview Mirror; Mirror Cap, Removing and Installing .
- Disconnect the connector -4-.
- Remove the bolts -3-.
- If necessary release the mounting tab.
- Remove the turn signal -2- from the mirror base -1- upward.

Installing

Install in the reverse order of removal. Note the following:

- Perform a functionality test.

Tightening Specifications

- ◆ Bolts -item 9- ⇒ [Item 9 \(page 181\)](#)

3.3 Entry Lamp in Exterior Rearview Mirror, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-



Note

- ♦ The removal and installation is described for the left side. Removing and installing on the right side is identical.
- ♦ Entire entry light in exterior mirror must be replaced if LED is faulty.

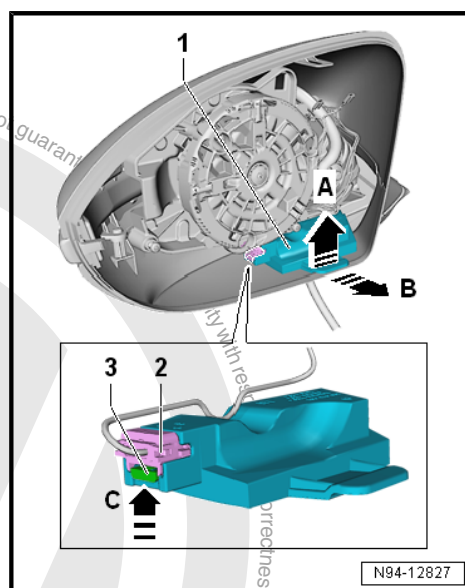
Removing

- Mirror trim removing and installing. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Exterior Rearview Mirror; Mirror Trim, Removing and Installing .
- Pry the Driver Entry Lamp in Exterior Rearview Mirror - W52- -1- in direction of -arrow A-.
- Remove the Driver Entry Lamp in Exterior Rearview Mirror W52- -1- in direction of -arrow B- from the mirror housing.
- Push the catches -3- in direction of -arrow C-.
- Disconnect the connector -2-.

Installing

Install in the reverse order of removal. Note the following:

- Perform a functionality test.





4 Tail Lamps

⇒ [“4.1 Overview - Body Tail Lamps”, page 185](#)

⇒ [“4.2 Overview - Rear Lid Tail Lamps”, page 188](#)

⇒ [“4.3 Rear Lid Tail Lamp, Removing and Installing”, page 189](#)

⇒ [“4.4 Tail Lamp, Correcting Installed Position”, page 190](#)

⇒ [“4.5 Tail Lamp, Removing and Installing”, page 191](#)

⇒ [“4.6 Right/Left Tail Lamp Bulb M2 / M4 , Removing and Installing”, page 192](#)

⇒ [“4.7 Left/Right Rear Fog Lamp Bulb L46 / L47 , Removing and Installing”, page 193](#)

⇒ [“4.8 Left/Right Brake/Tail Lamp Bulb M21 / M22 , Removing and Installing”, page 194](#)

⇒ [“4.9 Back-Up Lamp, Removing and Installing”, page 195](#)

⇒ [“4.10 Turn Signal Bulb, Removing and Installing”, page 196](#)

4.1 Overview - Body Tail Lamps

⇒ [“4.1.1 Overview - Body Tail Lamps, with Bulbs”, page 185](#)

⇒ [“4.1.2 Overview - Body Tail Lamps, with LED”, page 187](#)

4.1.1 Overview - Body Tail Lamps, with Bulbs



**1 - Left Tail Lamp - MX3- /
Right Tail Lamp - MX4-**

- ☐ Body Tail Lamps
- ☐ Removing and installing. Refer to
⇒ ["4.5 Tail Lamp, Removing and Installing", page 191](#).

2 - Brake and Tail Lamp Bulb

- ☐ Left Brake/Tail Lamp Bulb - M21-
- ☐ Right Brake/Tail Lamp Bulb - M22-
- ☐ Removing and installing. Refer to
⇒ ["4.8 Left/Right Brake/Tail Lamp Bulb M21 / M22, Removing and Installing", page 194](#).

3 - Bulb Socket

4 - Cover with Seal

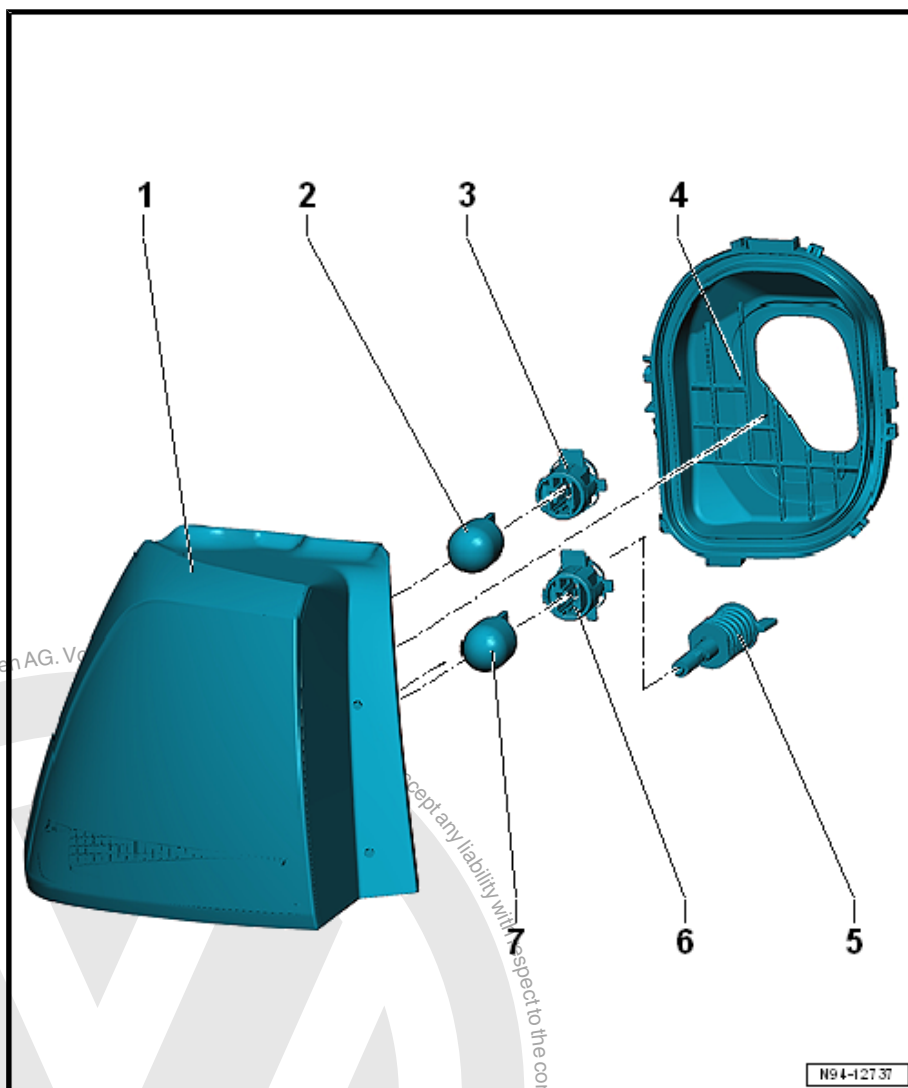
5 - Fastening Element

- ☐ Tightening Specification: 2 Nm

6 - Bulb Socket

7 - Rear Turn Signal Bulb

- ☐ Left Rear Turn Signal Bulb - M6-
- ☒ Right Rear Turn Signal Bulb - M8-
- ☐ Removing and installing. Refer to
⇒ ["4.10 Turn Signal Bulb, Removing and Installing", page 196](#).





4.1.2 Overview - Body Tail Lamps, with LED

1 - Fastening Element

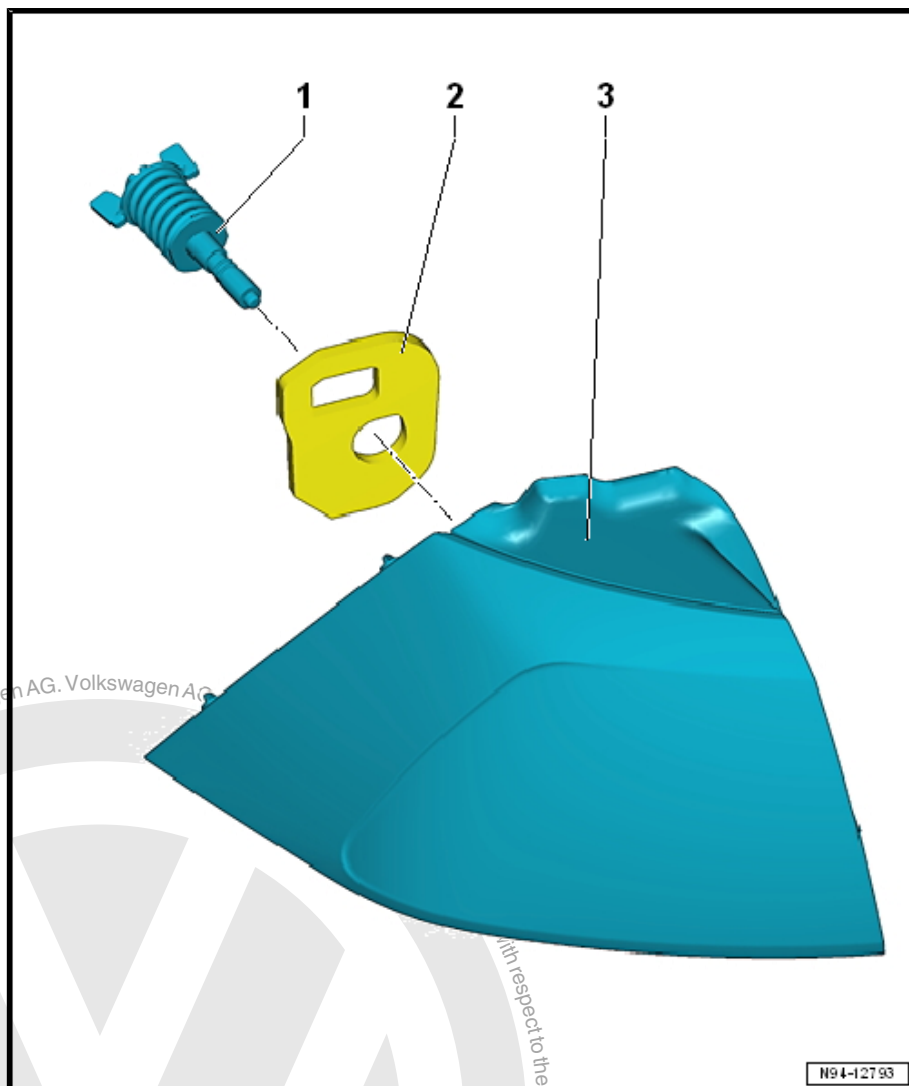
- ☐ Tightening Specification: 2 Nm

2 - Seal

- ☐ Self-adhesive
- ☐ Replace if damaged.

3 - Left Tail Lamp - MX3- / Right Tail Lamp - MX4-

- ☐ Body tail lamps
- ☐ Removing and installing. Refer to
⇒ ["4.5 Tail Lamp, Removing and Installing", page 191](#).





4.2 Overview - Rear Lid Tail Lamps

⇒ [“4.2.1 Overview - Rear Lid Tail Lamps, with Bulbs”, page 188](#)

⇒ [“4.2.2 Overview - Rear Lid Tail Lamps, with LED”, page 189](#)

4.2.1 Overview - Rear Lid Tail Lamps, with Bulbs

1 - Bulb Socket

- ☐ For Left Back-Up Lamp Bulb - M16- / Right Back-Up Lamp Bulb - M17-
- ☐ Removing and installing. Refer to [⇒ “4.9 Back-Up Lamp, Removing and Installing”, page 195](#).

2 - Bulb holder

3 - Rear Fog Lamp Bulb

- ☐ Left Rear Fog Lamp Bulb - L46-
- ☐ Right Rear Fog Lamp Bulb - L47-
- ☐ Removing and installing. Refer to [⇒ “4.7 Left/Right Rear Fog Lamp Bulb L46 / L47, Removing and Installing”, page 193](#).

4 - Left Tail Lamp 2 - MX5- / Right Tail Lamp 2 - MX6-

- ☐ tail lamp assembly inside the rear lid
- ☐ Removing and installing. Refer to [⇒ “4.3 Rear Lid Tail Lamp, Removing and Installing”, page 189](#).

5 - Seal

- ☐ Self-adhesive
- ☐ Replace if damaged.

6 - Nut

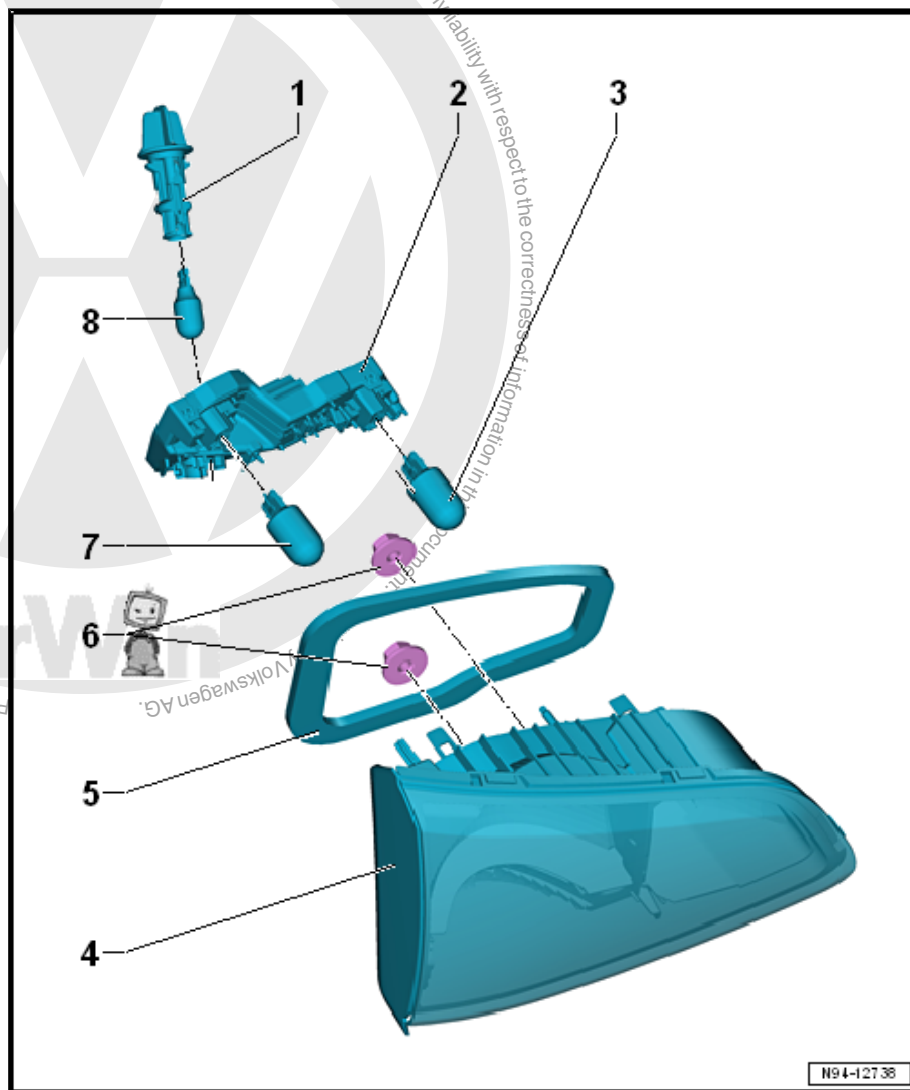
- ☐ Tightening Specification: 3 Nm
- ☐ Quantity: 2

7 - Tail Lamp Bulb

- ☐ Right Tail Lamp Bulb - M2-
- ☐ Left Tail Lamp Bulb - M4-
- ☐ Removing and installing. Refer to [⇒ “4.6 Right/Left Tail Lamp Bulb M2 / M4, Removing and Installing”, page 192](#).

8 - Back-Up Lamp Bulb

- ☐ Left Back-Up Lamp Bulb - M16-
- ☐ Right Back-Up Lamp Bulb - M17-
- ☐ Removing and installing. Refer to [⇒ “4.9 Back-Up Lamp, Removing and Installing”, page 195](#).





4.2.2 Overview - Rear Lid Tail Lamps, with LED

1 - Bulb Socket

- ☐ For Left Back-Up Lamp Bulb - M16- / Right Back-Up Lamp Bulb - M17-
- ☐ Removing and installing. Refer to
⇒ ["4.9 Back-Up Lamp, Removing and Installing", page 195](#).

2 - Back-Up Lamp Bulb

- ☐ Left Back-Up Lamp Bulb - M16-
- ☐ Right Back-Up Lamp Bulb - M17-
- ☐ Removing and installing. Refer to
⇒ ["4.9 Back-Up Lamp, Removing and Installing", page 195](#).

3 - Seal

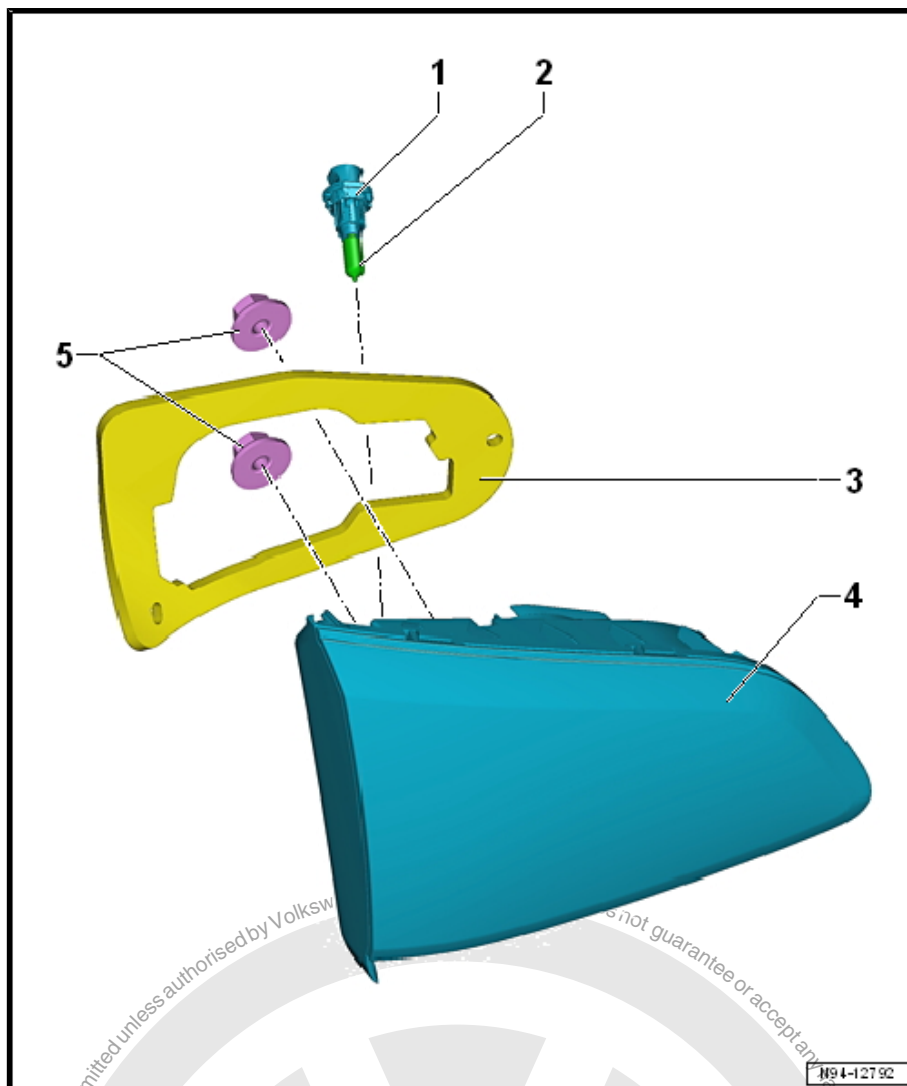
- ☐ Self-adhesive
- ☐ Replace if damaged.

4 - Left Tail Lamp 2 - MX5- / Right Tail Lamp 2 - MX6-

- ☐ Tail lamp assembly inside the rear lid
- ☐ Removing and installing. Refer to
⇒ ["4.3 Rear Lid Tail Lamp, Removing and Installing", page 189](#).

5 - Nut

- ☐ Tightening Specification: 3 Nm
- ☐ Quantity: 2



4.3 Rear Lid Tail Lamp, Removing and Installing



Note

- ◆ The removal and installation is described for the left side. Removing and installing on the right side is identical.
- ◆ If the LED is faulty, the tail lamp must be completely replaced.

Removing

- Turn the light switch to position "0".

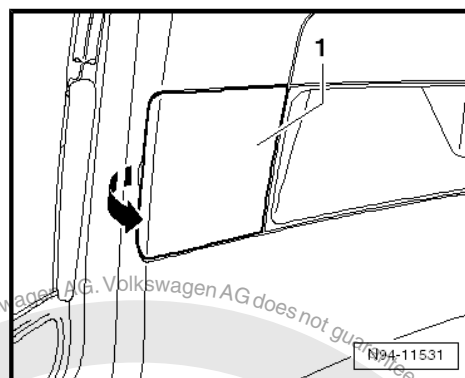


Caution

Risk of damaging the component surfaces.

- ◆ *When positioning a prying tool, put for example commercially available adhesive tape over the component in the visible area.*

- If necessity insert a narrow screwdriver in the opening on the side.
- Pry up the cover -1- in direction of -arrow-.



- Remove the nuts -1-.
- Disconnect the connector -2-.
- Remove the Left Tail Lamp 2 - MX5- -3- outward.

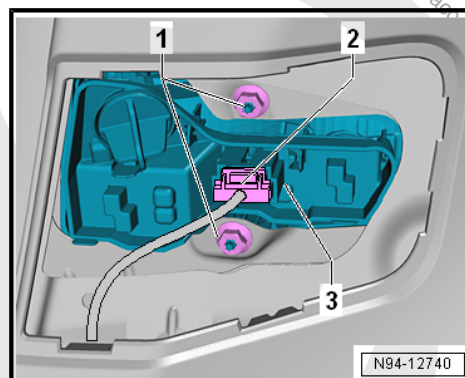
Installing

Install in the reverse order of removal. Note the following:



Note

- ◆ *Make sure seal between body and tail lamp housing seals properly.*
- ◆ *The connector must lock into place.*
- Pivot the Left Tail Lamp 2 - MX5- from the outside in the rear lid opening.
- Align at the top and center.
- Starting at the top and then the bottom install the nuts on the Left Tail Lamp 2 - MX5- and tighten.
- Perform a functionality test.



Tightening Specifications

- ◆ Refer to
⇒ ["4.2.1 Overview - Rear Lid Tail Lamps, with Bulbs", page 188](#)

4.4 Tail Lamp, Correcting Installed Position



Note

- ◆ *The installed position can only be corrected on the body tail lamp.*
- ◆ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*



- Turn the light switch to position “0”.
- Open the cover in the luggage compartment side trim panel.
- Loosen the fastening element -1- two turns.
- Insert a T10 screwdriver in the trim openings -2-.



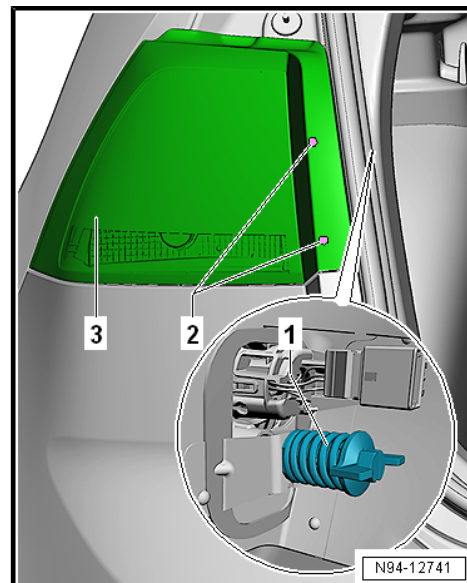
Note

The tail lamp -3- must be flush with the neighboring components.

- Adjust the installation position of the tail lamp by tightening or loosening the adjuster.
- Tighten the fastening element -1-.
- Close the cover in the luggage compartment side trim panel.

Tightening Specifications

- ◆ Refer to
⇒ [“4.2.1 Overview - Rear Lid Tail Lamps, with Bulbs”, page 188](#)



4.5 Tail Lamp, Removing and Installing



Note

- ◆ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*
- ◆ *If the LED is faulty, the tail lamp must be completely replaced.*

Removing

- Turn the light switch to position “0”.
- Open the cover in the luggage compartment side trim panel.
- Remove the fastening element -1-.
- Disconnect the connector.
- Remove the tail lamp -2- in direction of -arrow A-.

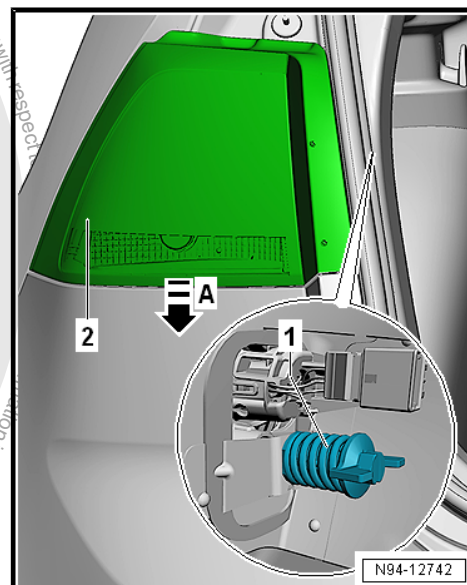
Installing

Install in the reverse order of removal. Note the following:

- Perform a functionality test.

Tightening Specifications

- ◆ Refer to
⇒ [“4.1.1 Overview - Body Tail Lamps, with Bulbs”, page 185](#)





4.6 Right/Left Tail Lamp Bulb -M2- / -M4- , Removing and Installing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Turn the light switch to position “0”.

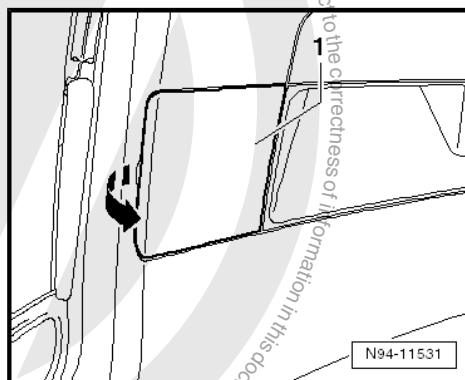


Caution

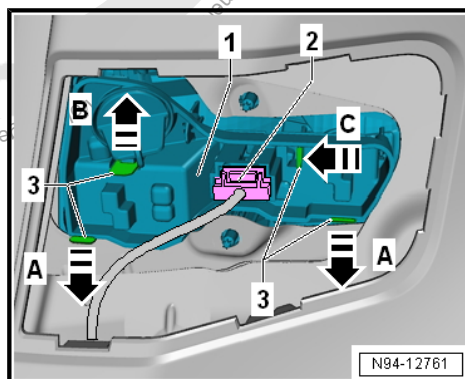
Risk of damaging the component surfaces.

- ◆ When positioning a prying tool, put for example commercially available adhesive tape over the component in the visible area.

- If necessity insert a narrow screwdriver in the opening on the side.
- Pry up the cover -1- in direction of -arrow-.



- Disconnect the connector -2-.
- Push the locking mechanisms -3- in direction of -arrows A, B and C-.
- Remove the bulb holder -1- from the tail lamp.





- Remove the tail lamp bulb -1- from the bulb holder -2-.

Installing

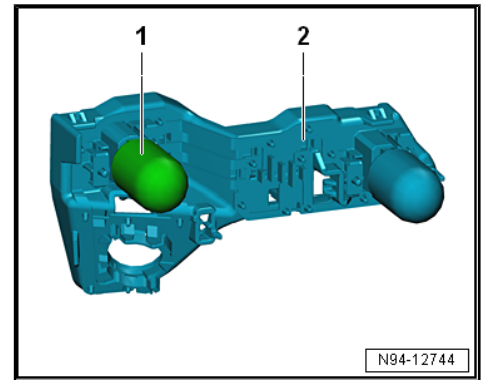
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the lamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*



- Perform a functionality test.

4.7 Left/Right Rear Fog Lamp Bulb -L46- / -L47- , Removing and Installing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Turn the light switch to position "0".

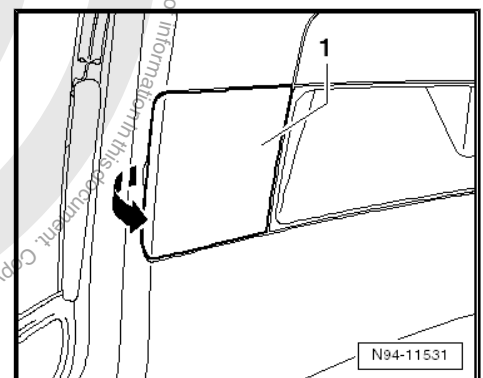


Caution

Risk of damaging the component surfaces.

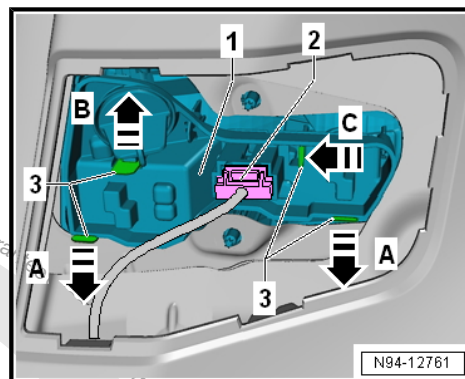
- ◆ *When positioning a prying tool, put for example commercially available adhesive tape over the component in the visible area.*

- If necessary insert a narrow screwdriver in the opening on the side.
- Pry up the cover -1- in direction of -arrow-.





- Disconnect the connector -2-.
- Push the locking mechanisms -3- in direction of -arrows A, B and C-.
- Remove the bulb holder -1- from the tail lamp.



- Remove the rear fog lamp bulb -2- from the bulb holder -1-.

Installing

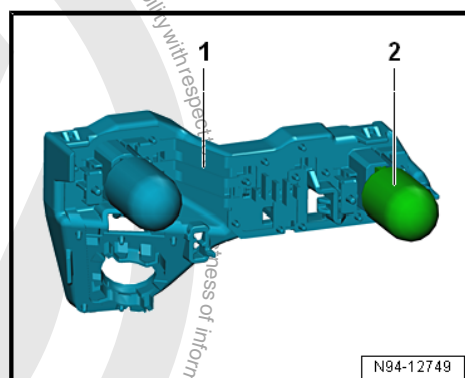
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the lamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*



- Perform a functionality test.

4.8 Left/Right Brake/Tail Lamp Bulb -M21- / -M22- , Removing and Installing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Remove the tail lamp assembly from the body. Refer to ⇒ ["4.5 Tail Lamp, Removing and Installing", page 191](#) .



Caution

Do not turn the bulb socket.

Otherwise the bulb socket will be damaged.

Pull the bulb socket straight rearward and, if necessary, carefully release the retaining tab with a suitable screwdriver.



- Pull the bulb socket -1- straight in direction of -arrow A- out of the housing.
- Remove the brake/tail lamp bulb from the bulb socket.

Installing

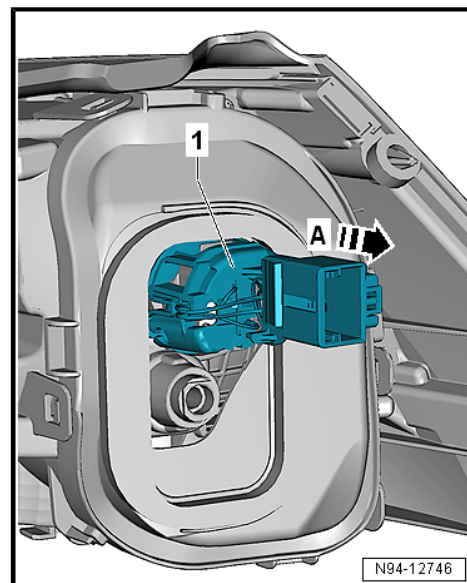
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the lamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*



- Perform a functionality test.

4.9 Back-Up Lamp, Removing and Installing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Turn the light switch to position "0".

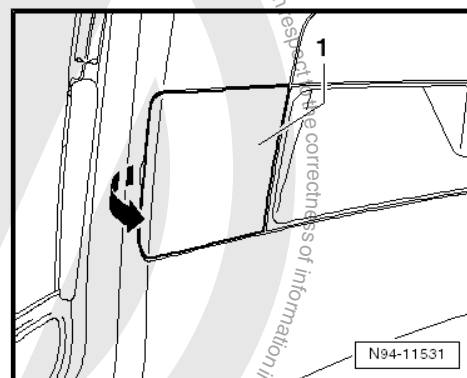


Caution

Risk of damaging the component surfaces.

- ◆ *When positioning a prying tool, put for example commercially available adhesive tape over the component in the visible area.*

- If necessity insert a narrow screwdriver in the opening on the side.
- Pry up the cover 1- in direction of -arrow-.





- Turn the bulb socket -1- in direction of -arrow A-.
- Remove the bulb socket in direction of -arrow B- from the tail lamp.
- Remove the bulb for the backup lamp.

Installing

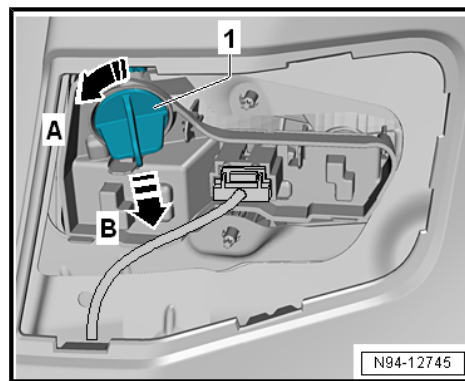
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the lamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*



- Perform a functionality test.

4.10 Turn Signal Bulb, Removing and Installing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Remove the tail lamp assembly from the body. Refer to [⇒ "4.5 Tail Lamp, Removing and Installing", page 191](#).





- Push the mounting tabs -2, 3 and 4- in direction of -arrow A-.
- Remove the cover -1- from the tail lamp.



Caution

Do not turn the bulb socket.

Otherwise the bulb socket will be damaged.

Pull the bulb socket straight rearward and, if necessary, carefully release the retaining tab with a suitable screwdriver.

- Pull the bulb socket -5- straight in direction of -arrow B- out of the housing.
- Remove the turn signal bulb from the bulb socket.

Installing

Install in the reverse order of removal. Note the following:

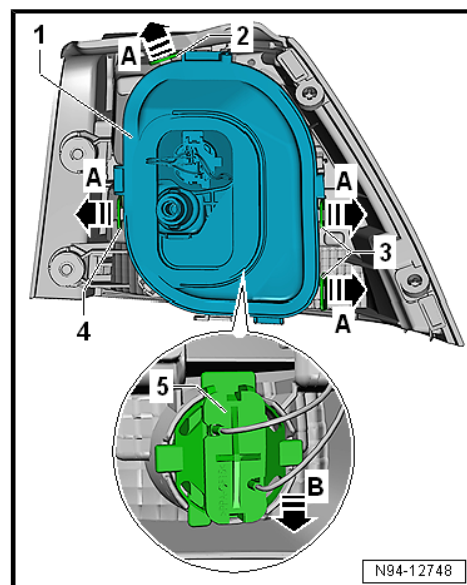


Caution

There is a risk of damaging the lamp.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*

- Perform a functionality test.





5 High-Mounted Brake Lamp

⇒ ["5.1 Overview - High-Mounted Brake Lamp", page 198](#)

⇒ ["5.2 High-Mounted Brake Lamp, Removing and Installing", page 199](#)

5.1 Overview - High-Mounted Brake Lamp

⇒ ["5.1.2 Overview - High-Mounted Brake Lamp", page 199](#)

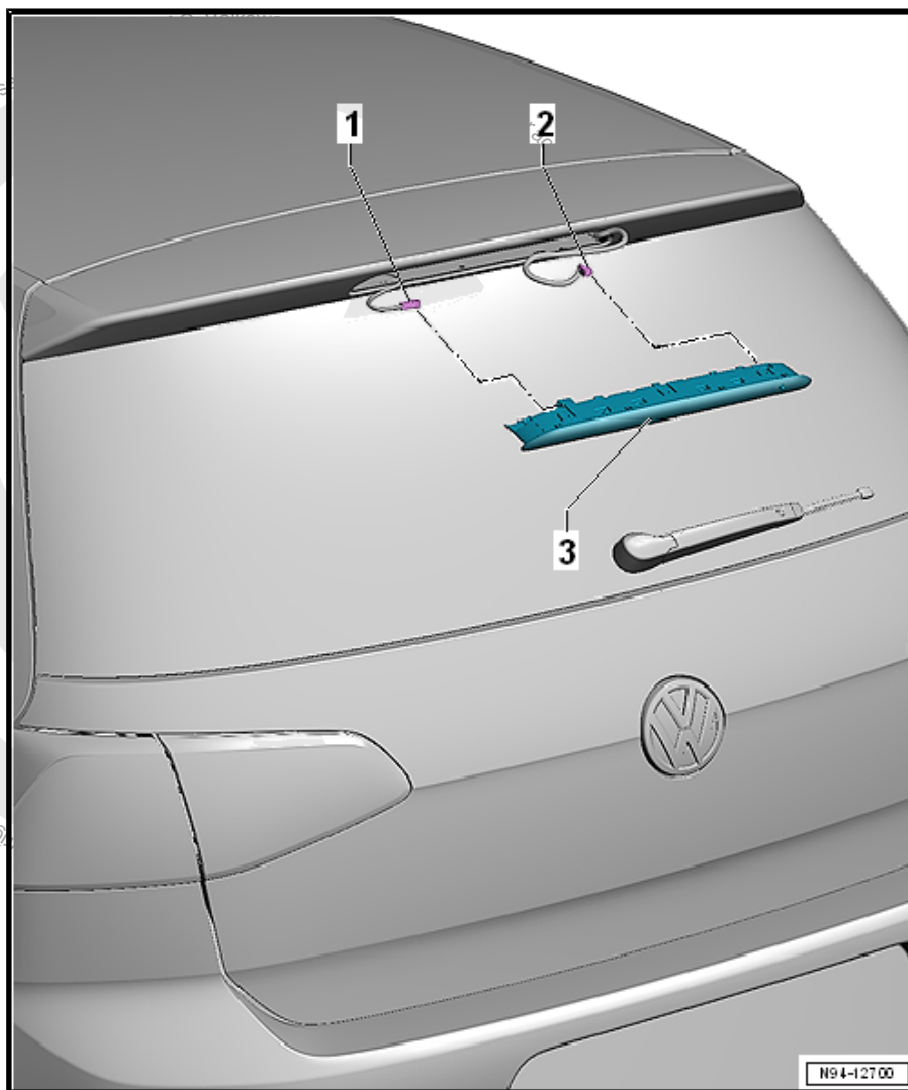
5.1.1 Overview - High-Mounted Brake Lamp, Golf

1 - Brake Lamp Connector

2 - Windshield Washer Fluid Hose

3 - High-Mounted Brake Lamp

- ☐ With High-Mounted Brake Lamp Bulb - M25-
- ☐ Removing and installing. Refer to
⇒ ["5.2.1 High-Mounted Brake Lamp, Removing and Installing, Golf", page 199](#).





5.1.2 Overview - High-Mounted Brake Lamp

1 - Bolt

- ☐ Tightening Specification
2 Nm

2 - Brake Lamp Connector

3 - High-Mounted Brake Lamp

- ☐ With High-Mounted
Brake Lamp Bulb - M25-
- ☐ Removing and instal-
ling. Refer to
⇒ ["5.2.2 High-Mounted
Brake Lamp, Removing
and Installing"](#),
page 201 .

4 - Washer Fluid Hose Con- nection

5 - Bolt

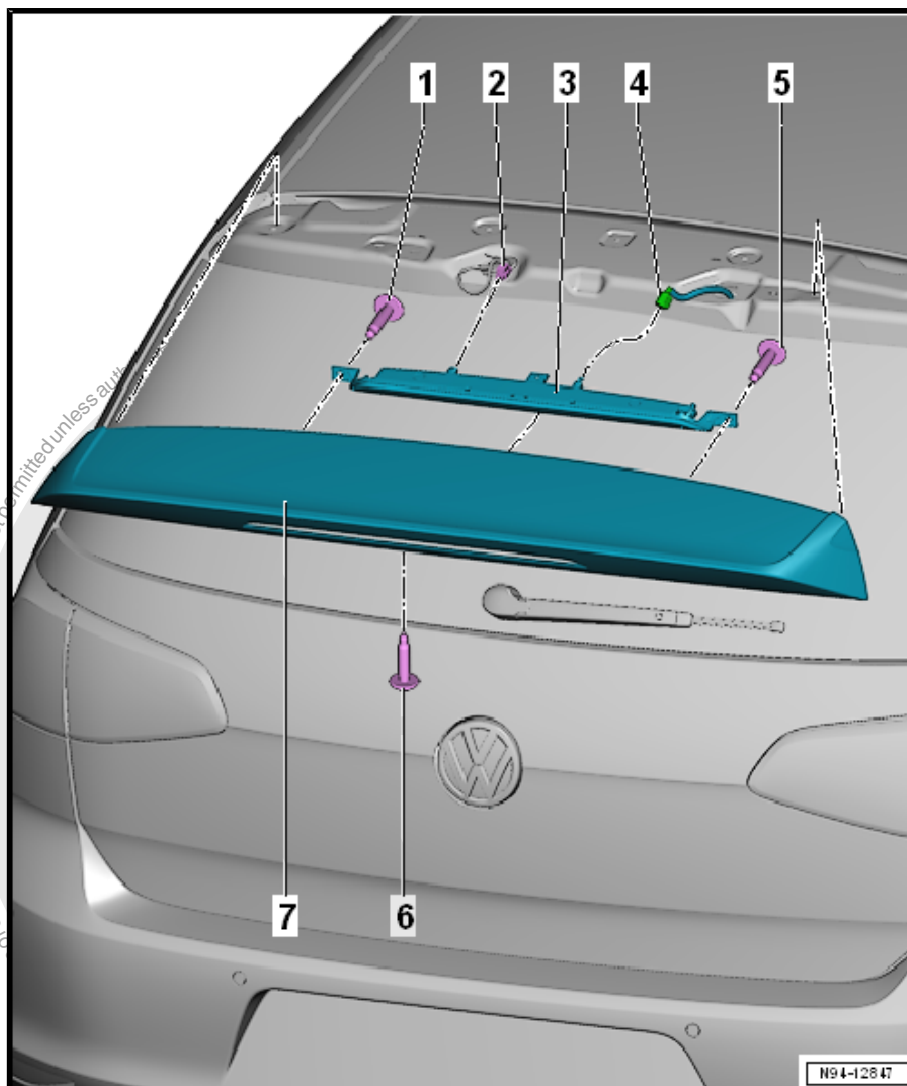
- ☐ Tightening Specification
2 Nm

6 - Bolt

- ☐ Tightening Specification
2 Nm

7 - Spoiler on the Edge of the Roof

- ☐ Spoiler on the edge of
the roof, removing and
installing. Refer to ⇒
Body Exterior; Rep. Gr.
66 ; Spoiler .



5.2 High-Mounted Brake Lamp, Removing and Installing

⇒ ["5.2.2 High-Mounted Brake Lamp, Removing and Installing"](#),
page 201

5.2.1 High-Mounted Brake Lamp, Removing and Installing, Golf

Special tools and workshop equipment required

- ◆ Trim Release Lever - Wedge - T10039/1-

Removing

- Turn off the ignition and all electrical consumers and remove the key.



Caution

Risk of damaging the component surfaces.

- ◆ **When positioning a prying tool, put for example commercially available adhesive tape over the component in the visible area.**

- Cover the area of the rear lid above the brake light with a strip of adhesive tape -1-.



Caution

When removing the high-mounted brake lamp, ensure seal is not damaged.

- Install the Trim Release Lever - T10039/1- -1- on top between the high-mounted brake lamp -2- and the rear lid.
- Push the high-mounted brake lamp -2- downward using the Trim Release Lever - T10039/1- -1-.
- Pivot out the high-mounted brake lamp -2- from the rear lid.

- Remove the hose clip -arrow-.
- Remove the hose connection -1- from the high-mounted brake lamp.
- Disconnect the connector -2-.
- Remove the high-mounted brake lamp.

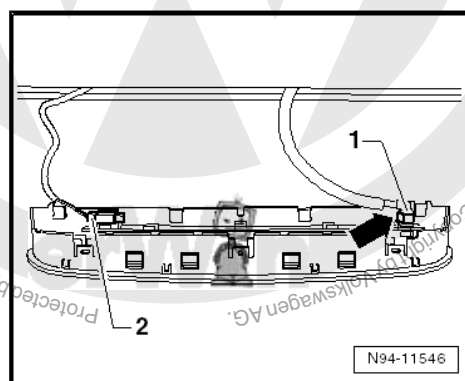
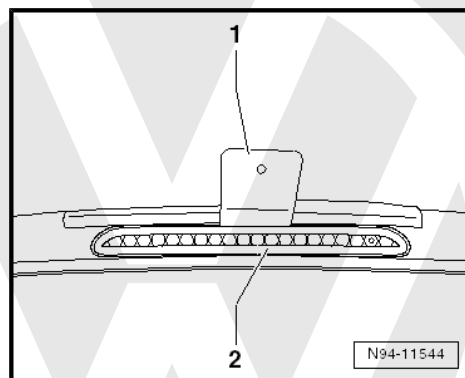
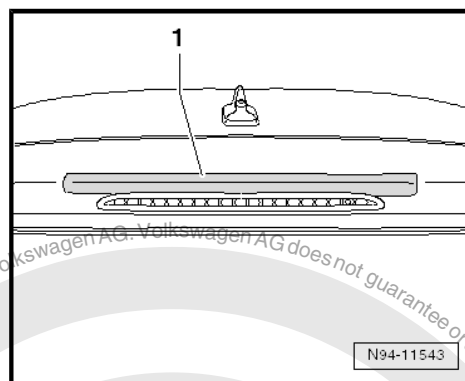
Installing



Note

During installation of the high-mounted brake lamp, ensure proper seating of the seal. Seal must not have any bulges and must not be damaged.

- Install the hose and connectors.
- Push the high-mounted brake lamp in the rear lid.
- Engage the upper hook.
- Engage the lower springs.
- Check the high-mounted brake lamp and the rear window washer system for correct function.





5.2.2 High-Mounted Brake Lamp, Removing and Installing

Removing:

- Remove the spoiler on the edge of the roof. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Spoiler
- Remove the bolts -1, 5 and 6- from the high-mounted brake lamp -7-.
- Lift up the catches -2 and 4- to carefully loosen.
- Slightly lift the support bracket -3-.
- Remove the high-mounted brake lamp -7- from the spoiler on the edge of the roof.

Installing

Installation is performed in the reverse order of removal, noting the following:



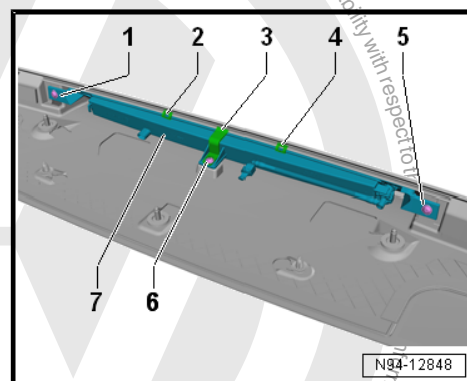
Note

During installation of the high-mounted brake lamp, ensure proper seating of the seal. Seal must not have any bulges and must not be damaged.

- Make sure the High-Mounted Brake Lamp Bulb - M25- and the rear window washer system are working correctly.

Tightening Specifications

- ◆ Refer to
⇒ ["5.1.2 Overview - High-Mounted Brake Lamp", page 199](#)





6 License Plate Lamp

⇒ ["6.1 Left/Right License Plate Lamp X4 / X5 , Removing and Installing", page 202](#)

⇒ ["6.2 Left/Right License Plate Lamp Bulb X4 / X5 , Removing and Installing", page 202](#)

6.1 Left/Right License Plate Lamp -X4- / -X5- , Removing and Installing

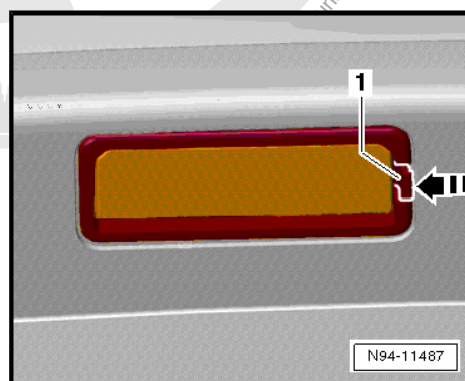


Note

The entire license plate lamp must be replaced if a license plate lamp LED is faulty.

Removing

- Turn the light switch to position "0"
- Press the tab -item 1- in direction of -arrow- and remove the license plate lamp downward from the bumper cover.



- Disconnect the connector -arrow-.

Installing

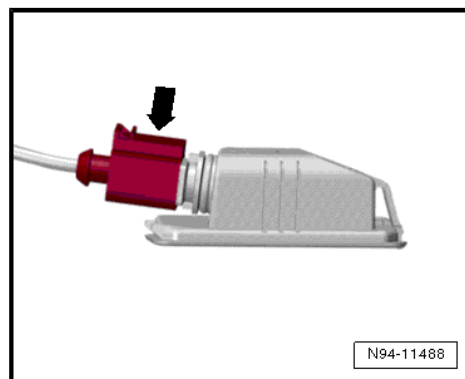
Install in the reverse order of removal. Note the following:



Note

Insert the license plate lamp into the bumper cover so that the connector is facing toward the left side of the vehicle.

- Perform a functionality test.



6.2 Left/Right License Plate Lamp Bulb -X4- / -X5- , Removing and Installing



Note

The entire license plate lamp must be replaced if a license plate lamp LED is faulty.

Removing

- Turn off the ignition and all electrical equipment.
- If equipped, turn the key to the 0 position (pre-lock).

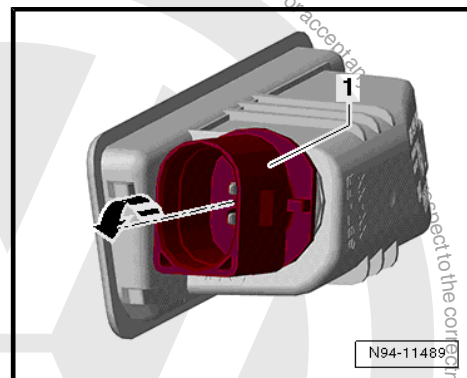


- Remove the license plate lamp. Refer to
⇒ [“6.1 Left/Right License Plate Lamp X4 / X5 , Removing and Installing”, page 202](#) .
- Turn the lamp socket -1- in direction of -arrow- to release it and pull it out of the license plate lamp.

Installing

Installation is performed in the reverse order of removal, noting the following:

- Perform a functionality test.





7 Access/Start Authorization

⇒ ["7.1 Overview - Access/Start Authorization System", page 204](#)

⇒ ["7.2 Overview - Keyless Access Authorization System", page 207](#)

⇒ ["7.3 Access/Start System Interface J965 , Removing and Installing", page 210](#)

⇒ ["7.4 Driver Exterior/Front Passenger Exterior Door Handle Touch Sensor G415 / G416 , Removing and Installing", page 211](#)

⇒ ["7.5 Access/Start System Antenna 1 in Vehicle Interior R138 , Removing and Installing", page 212](#)

⇒ ["7.6 Driver Access/Start System Antenna R134 , Removing and Installing", page 212](#)

⇒ ["7.7 Front Passenger Access/Start System Antenna R135 , Removing and Installing", page 212](#)

⇒ ["7.8 Access/Start System Antenna in Luggage Compartment R137 , Removing and Installing", page 212](#)

⇒ ["7.9 Access/Start System Antenna in Rear Bumper R136 , Removing and Installing", page 213](#)

7.1 Overview - Access/Start Authorization System

⇒ ["7.1.1 Overview - Access/Start Authorization System", page 204](#)

7.1.1 Overview - Access/Start Authorization System



1 - Anti-Theft Immobilizer Reader Coil - D2-

- ❑ Removing and installing. Refer to ⇒ ["8.10.2 Anti-Theft Immobilizer Reader Coil D2 , Removing and Installing, Vehicle with Keyless Access", page 233](#) .

2 - Electronic Steering Column Lock Control Module - J764-

- ❑ Removing and installing. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48 ; Steering Column .

3 - Start System Button - E378-

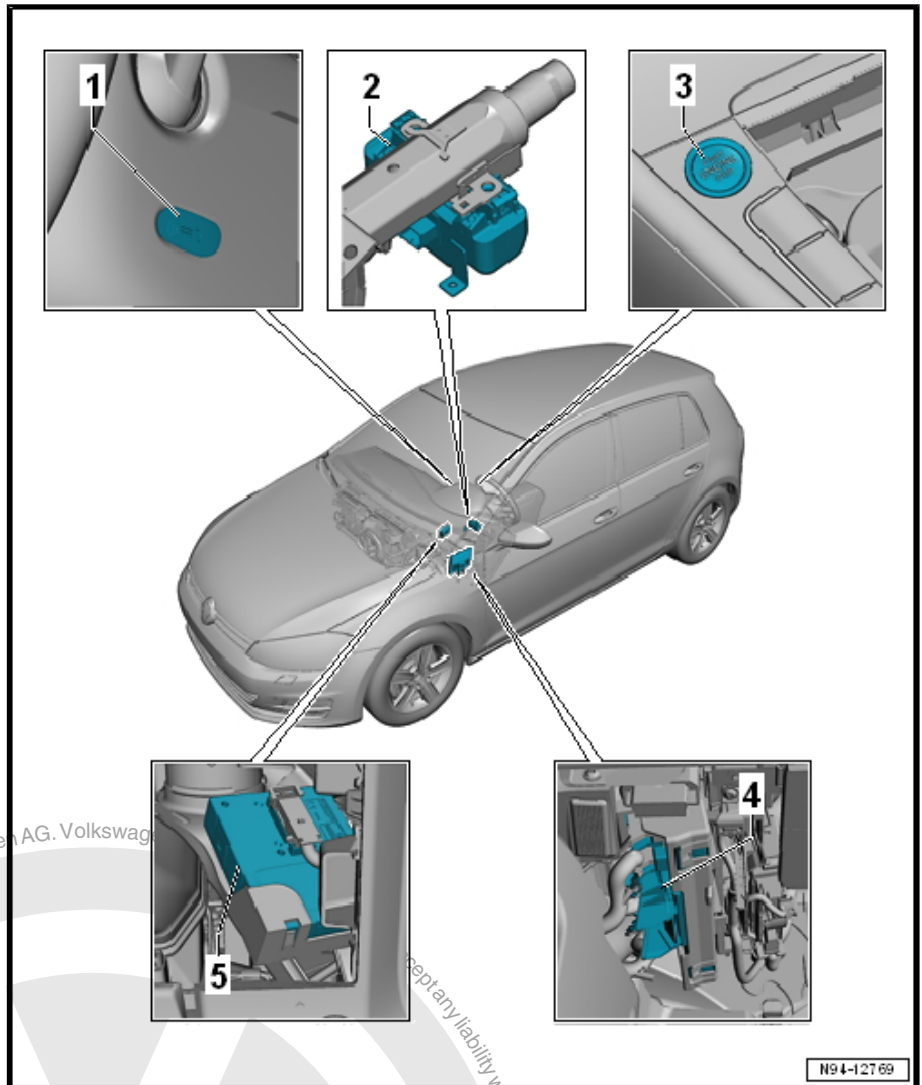
- ❑ Removing and installing. Refer to ⇒ ["2.29 Start System Button E378 , Removing and Installing", page 304](#) .

4 - Vehicle Electrical System Control Module - J519-

- ❑ With Central Locking and Anti-Theft Alarm System Antenna - R47-
- ❑ Overview. Refer to ⇒ ["2.2 Overview - Control Modules", page 332](#) .

5 - Access/Start System Interface - J965-

- ❑ Removing and installing. Refer to ⇒ ["7.3 Access/Start System Interface J965 , Removing and Installing", page 210](#) .





7.1.2 Component Location Overview - Access/Start Authorization System, RHD

1 - Anti-Theft Immobilizer Reader Coil - D2-

- ❑ Removing and installing. Refer to ➤ ["8.10.2 Anti-Theft Immobilizer Reader Coil D2, Removing and Installing, Vehicle with Keyless Access", page 233](#).

2 - Electronic Steering Column Lock Control Module - J764-

- ❑ Removing and installing. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 48; Steering Column.

3 - Vehicle Electrical System Control Module - J519-

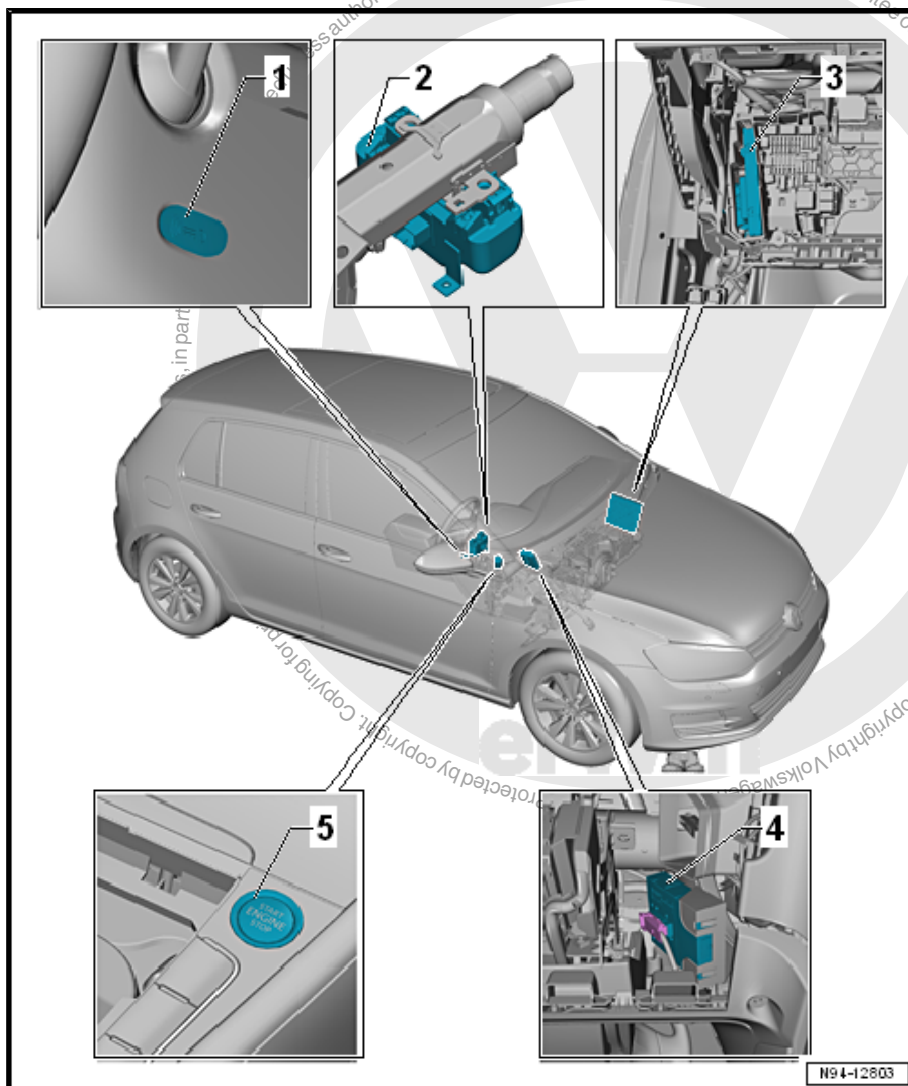
- ❑ With Central Locking and Anti-Theft Alarm System Antenna - R47-
- ❑ Overview. Refer to ➤ ["2.2 Overview - Control Modules", page 332](#).

4 - Access/Start System Interface - J965-

- ❑ Removing and installing. Refer to ➤ ["7.3 Access/Start System Interface J965, Removing and Installing", page 210](#).

5 - Start System Button - E378-

- ❑ Removing and installing. Refer to ➤ ["2.29 Start System Button E378, Removing and Installing", page 304](#).





7.2 Overview - Keyless Access Authorization System

⇒ ["7.2.1 Overview - Front Keyless Access Authorization System", page 207](#)

⇒ ["7.2.2 Overview - Rear Keyless Access Authorization System", page 208](#)

7.2.1 Overview - Front Keyless Access Authorization System

1 - Front Passenger Exterior Door Handle

- ❑ With Front Passenger Exterior Door Handle Touch Sensor - G416- removing and installing. Refer to
⇒ ["7.4 Driver Exterior/ Front Passenger Exterior Door Handle Touch Sensor G415 / G416, Removing and Installing", page 211](#) .
- ❑ With Front Passenger Access/Start System Antenna - R135- , removing and installing. Refer to
⇒ ["7.7 Front Passenger Access/Start System Antenna R135, Removing and Installing", page 212](#) .

2 - Access/Start System Antenna 1 in Vehicle Interior - R138-

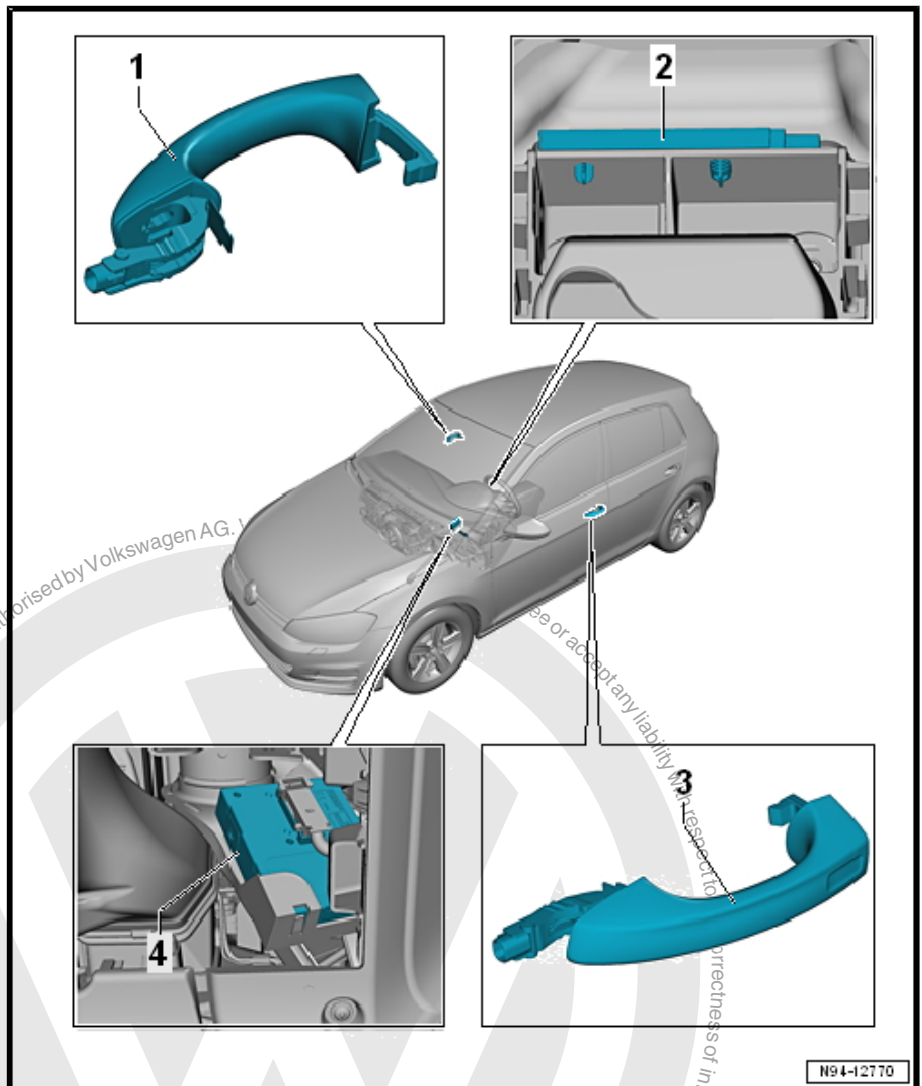
- ❑ Removing and installing. Refer to
⇒ ["7.5 Access/Start System Antenna 1 in Vehicle Interior R138, Removing and Installing", page 212](#) .

3 - Driver Side Exterior Door Handle

- ❑ With Driver Exterior Door Handle Touch Sensor - G415- removing and installing. Refer to
⇒ ["7.4 Driver Exterior/Front Passenger Exterior Door Handle Touch Sensor G415 / G416, Removing and Installing", page 211](#) .
- ❑ With Driver Access/Start System Antenna - R134- , removing and installing. Refer to
⇒ ["7.6 Driver Access/Start System Antenna R134, Removing and Installing", page 212](#) .

4 - Access/Start System Interface - J965-

- ❑ Removing and installing. Refer to
⇒ ["7.3 Access/Start System Interface J965, Removing and Installing", page 210](#) .





7.2.2 Overview - Rear Keyless Access Authorization System

1 - Access/Start System Antenna In Luggage Compartment - R137-

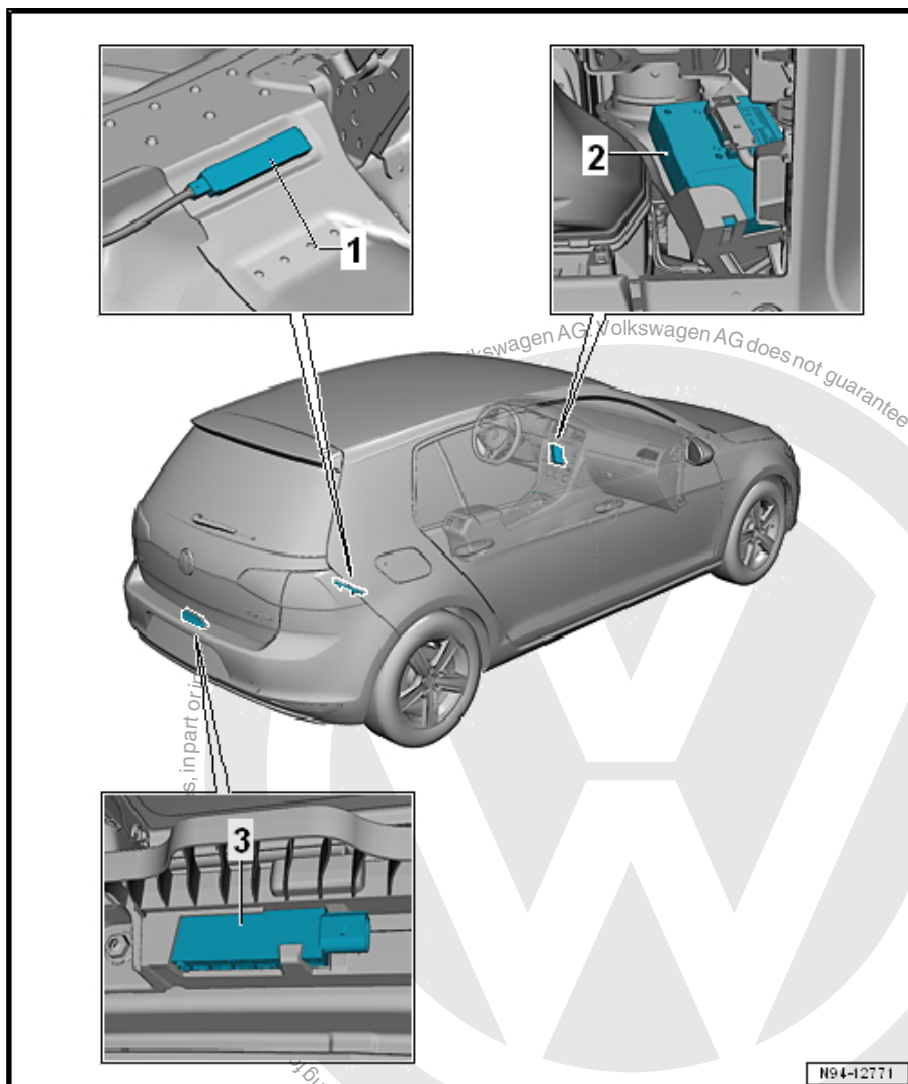
- ❑ Removing and installing. Refer to
⇒ ["7.8 Access/Start System Antenna in Luggage Compartment R137, Removing and Installing", page 212](#).

2 - Access/Start System Interface - J965-

- ❑ Removing and installing. Refer to
⇒ ["7.3 Access/Start System Interface J965, Removing and Installing", page 210](#).

3 - Access/Start System Antenna in Rear Bumper - R136-

- ❑ Removing and installing. Refer to
⇒ ["7.9 Access/Start System Antenna in Rear Bumper R136, Removing and Installing", page 213](#).





7.2.3 Component Location Overview - Front Keyless Access Authorization System, RHD

1 - Front Passenger Exterior Door Handle

- ❑ With Front Passenger Exterior Door Handle Touch Sensor - G416- removing and installing. Refer to
⇒ [“7.4 Driver Exterior/ Front Passenger Exterior Door Handle Touch Sensor G415 / G416 , Removing and Installing” , page 211](#) .
- ❑ With Front Passenger Access/Start System Antenna - R135- , removing and installing. Refer to
⇒ [“7.7 Front Passenger Access/Start System Antenna R135 , Removing and Installing” , page 212](#) .

2 - Access/Start System Interface - J965-

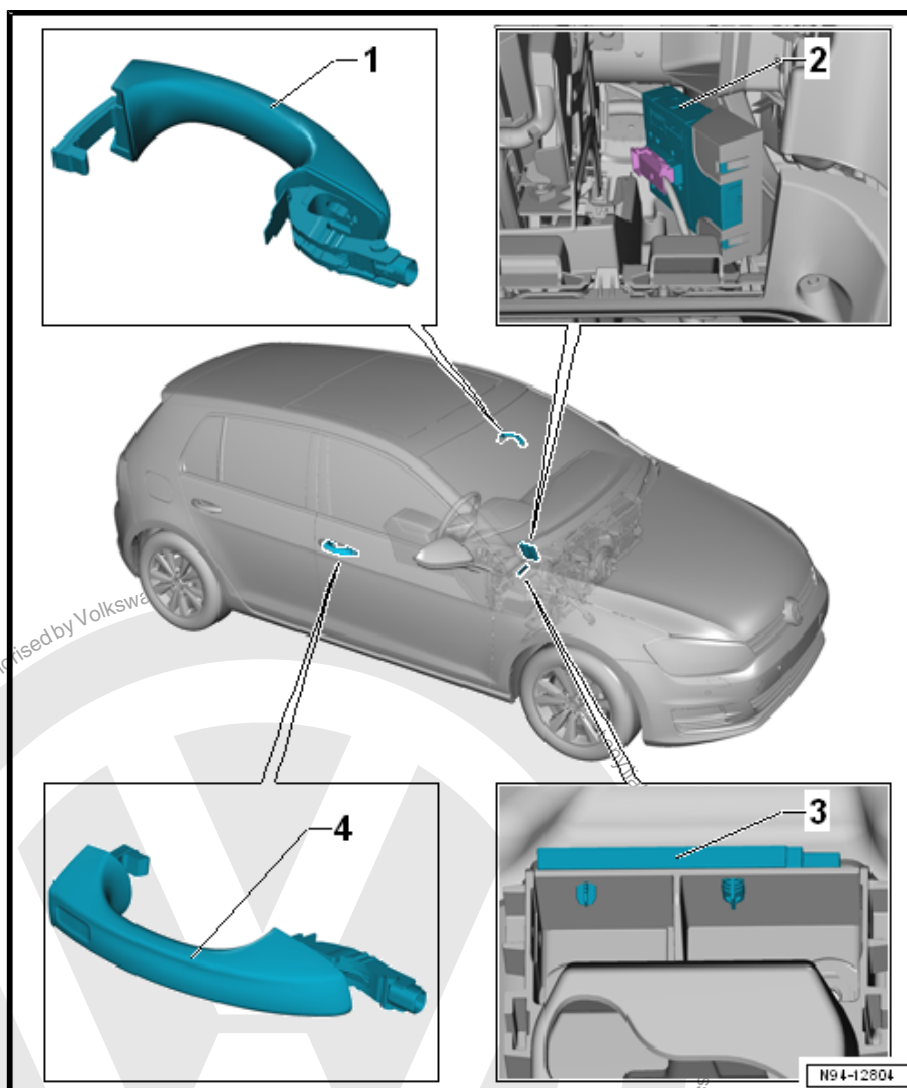
- ❑ Removing and installing. Refer to
⇒ [“7.3 Access/Start System Interface J965 , Removing and Installing” , page 210](#) .

3 - Access/Start System Antenna 1 in Vehicle Interior - R138-

- ❑ Removing and installing. Refer to
⇒ [“7.5 Access/Start System Antenna 1 in Vehicle Interior R138 , Removing and Installing” , page 212](#) .

4 - Driver Side Exterior Door Handle

- ❑ With Driver Exterior Door Handle Touch Sensor - G415- removing and installing. Refer to
⇒ [“7.4 Driver Exterior/ Front Passenger Exterior Door Handle Touch Sensor G415 / G416 , Removing and Installing” , page 211](#) .
- ❑ With Driver Access/Start System Antenna - R134- , removing and installing. Refer to
⇒ [“7.6 Driver Access/Start System Antenna R134 , Removing and Installing” , page 212](#) .





7.2.4 Component Location Overview - Rear Keyless Access Authorization System, RHD

1 - Access/Start System Antenna In Luggage Compartment - R137-

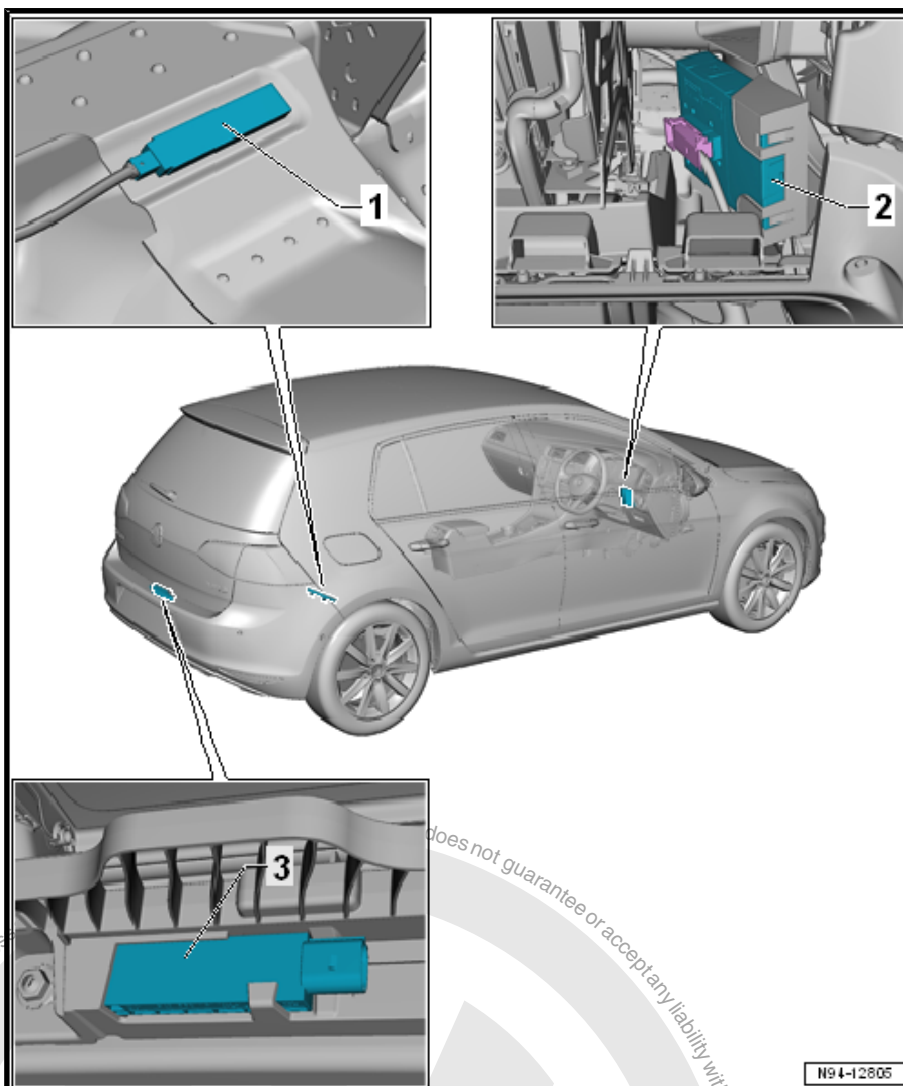
- ❑ Removing and installing. Refer to
⇒ ["7.8 Access/Start System Antenna in Luggage Compartment R137, Removing and Installing", page 212](#).

2 - Access/Start System Interface - J965-

- ❑ Removing and installing. Refer to
⇒ ["7.3 Access/Start System Interface J965, Removing and Installing", page 210](#).

3 - Access/Start System Antenna in Rear Bumper - R136-

- ❑ Removing and installing. Refer to
⇒ ["7.9 Access/Start System Antenna in Rear Bumper R136, Removing and Installing", page 213](#).



7.3 Access/Start System Interface - J965- , Removing and Installing



Note

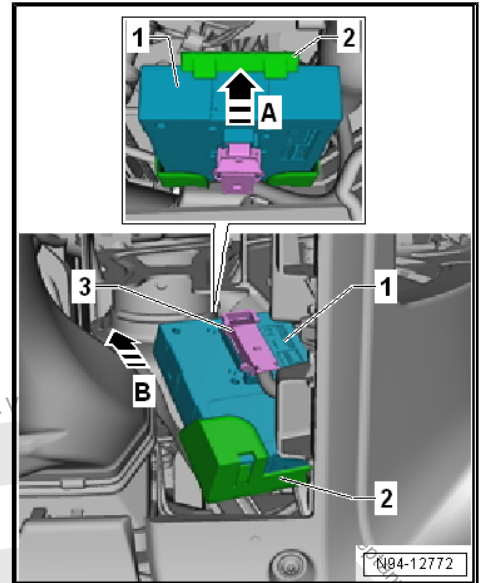
If the control module is replaced, select the **Replace** function for the respective control module in **Guided Fault Finding** or **Guided Functions** using the Vehicle Diagnostic Tester.

Removing

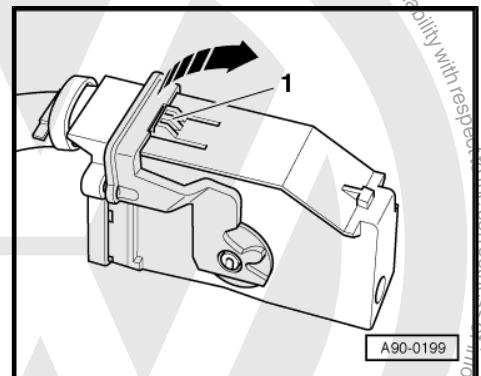
- Remove the footwell cover on the driver side. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers .
- Remove the knee airbag with igniter. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Knee Airbags; Overview - Knee Airbag .



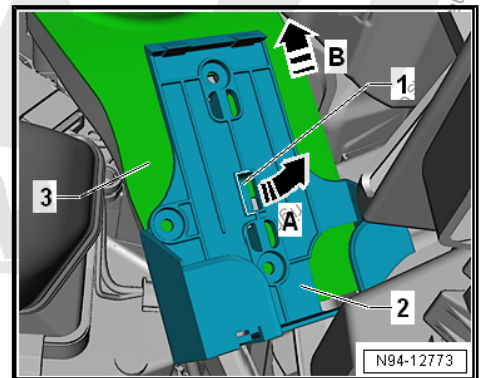
- Push the bracket -2- upward in the direction of -arrow A- from the Access/Start System Interface - J965- -1-.
- Remove the Access/Start System Interface - J965- -1- in direction of -arrow B- from the bracket -2-.
- Disconnect the connector -3-.



- To disconnect the connector press the circlip -1-.
- Pivot the retaining bracket in direction of -arrow- and remove from the connector.



- Pry up the catches -1- if necessary using a small screwdriver in direction of -arrow A-.
- Remove the bracket -2- in direction of -arrow B- from the brace -3-.



Installing

Install in the reverse order of removal. Note the following:

- The bracket for the Access/Start System Interface - J965- must engage audibly.
- The Access/Start System Interface - J965- must engage audibly in the bracket.

7.4 Driver Exterior/Front Passenger Exterior Door Handle Touch Sensor -G415- / -G416- , Removing and Installing



Note

The Driver Exterior Door Handle Touch Sensor - G415- or the Front Passenger Exterior Door Handle Touch Sensor - G416- is integrated in the exterior door handle and cannot be replaced individually if faulty.

- Door handle removing and installing. Refer to ⇒ Body Exterior; Rep. Gr. 57 ; Door Components; Door Handle, Removing and Installing .



7.5 Access/Start System Antenna 1 in Vehicle Interior - R138-, Removing and Installing

Special tools and workshop equipment required

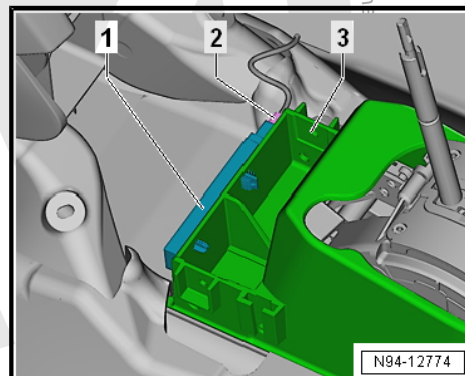
- ◆ Pry Lever - 80-200-

Removing

- Remove the center console insert. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console; Center Console Insert, Removing and Installing
- Pry up the antenna -1- with the Pry Lever - 80-200- from the bracket -3-.
- Disconnect the connector -2-.

Installing

Install in reverse order of removal.



7.6 Driver Access/Start System Antenna - R134- , Removing and Installing



Note

The Driver Access/Start System Antenna - R134- is integrated into the exterior door handle and cannot be replaced separately if faulty.

- Door handle removing and installing. Refer to ⇒ Body Exterior; Rep. Gr. 57 ; Door Components; Door Handle, Removing and Installing .

7.7 Front Passenger Access/Start System Antenna - R135- , Removing and Installing



Note

The Front Passenger Access/Start System Antenna - R135- is integrated into the exterior door handle and cannot be replaced separately if faulty.

- Door handle removing and installing. Refer to ⇒ Body Exterior; Rep. Gr. 57 ; Door Components; Door Handle, Removing and Installing .

7.8 Access/Start System Antenna in Luggage Compartment - R137- , Removing and Installing

Special tools and workshop equipment required

- ◆ Pry Lever - 80-200-

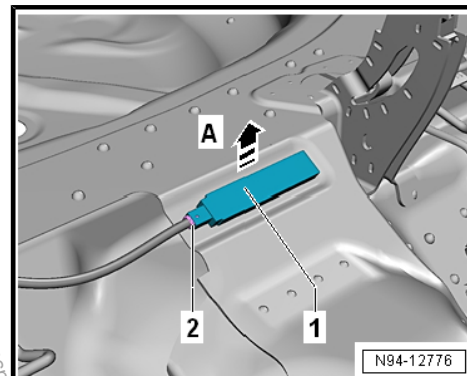


Removing

- Remove the rear bench seat. Refer to ⇒ Body Interior; Rep. Gr. 72 ; Rear Seats .
- Fold back the carpet.
- Pry out the antenna -1- with the Pry Lever - 80-200- in direction of -arrow A- from the body.
- Disconnect the connector -2-.

Installing

Install in reverse order of removal.



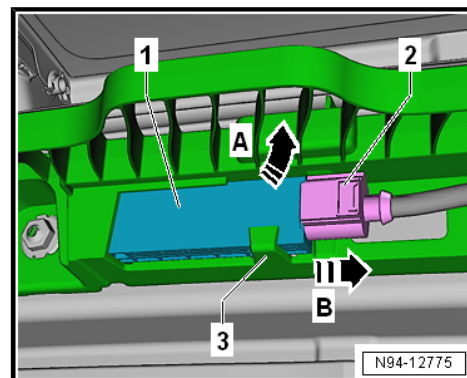
7.9 Access/Start System Antenna in Rear Bumper - R136- , Removing and Installing

Removing

- Remove the bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63 ; Rear Bumper; Bumper Cover, Removing and Installing .
- Pry up the antenna -1- slightly in direction of -arrow A-.
- Remove the antenna -1- in direction of -arrow B- from the mount -3-.
- Disconnect the connector -2-.

Installing

Install in reverse order of removal.





8 Steering Column Switch Module

- ⇒ ["8.1 Overview - Steering Column Switch Module", page 214](#)
- ⇒ ["8.2 Lock Cylinder, Removing and Installing", page 217](#)
- ⇒ ["8.3 Ignition Switch Key Lock Solenoid N376 , Removing and Installing", page 218](#)
- ⇒ ["8.4 Ignition/Starter Switch, Removing and Installing", page 219](#)
- ⇒ ["8.5 Steering Column Switch Module, Removing and Installing", page 220](#)
- ⇒ ["8.6 Steering Column Electronics Control Module J527 , Removing and Installing", page 225](#)
- ⇒ ["8.7 Turn Signal Switch E2 , Removing and Installing", page 230](#)
- ⇒ ["8.8 Cruise Control Switch E45 , Removing and Installing", page 232](#)
- ⇒ ["8.9 Windshield Wiper Intermittent Mode Switch E22 , Removing and Installing", page 232](#)
- ⇒ ["8.10 Anti-Theft Immobilizer Reader Coil D2 , Removing and Installing", page 233](#)
- ⇒ ["8.11 Steering Lock Housing, Removing and Installing", page 233](#)

8.1 Overview - Steering Column Switch Module

- ⇒ ["8.1.1 Overview - Steering Column Switch Module, with Mechanical Ignition Switch", page 214](#)
- ⇒ ["8.1.2 Overview - Steering Column Switch Module, with Electronic Ignition Switch", page 216](#)

8.1.1 Overview - Steering Column Switch Module, with Mechanical Ignition Switch



1 - Ignition Key

2 - Lock Cylinder

- ❑ Removing and installing. Refer to
⇒ ["8.2 Lock Cylinder, Removing and Installing", page 217](#).

3 - Anti-Theft Immobilizer Reader Coil - D2-

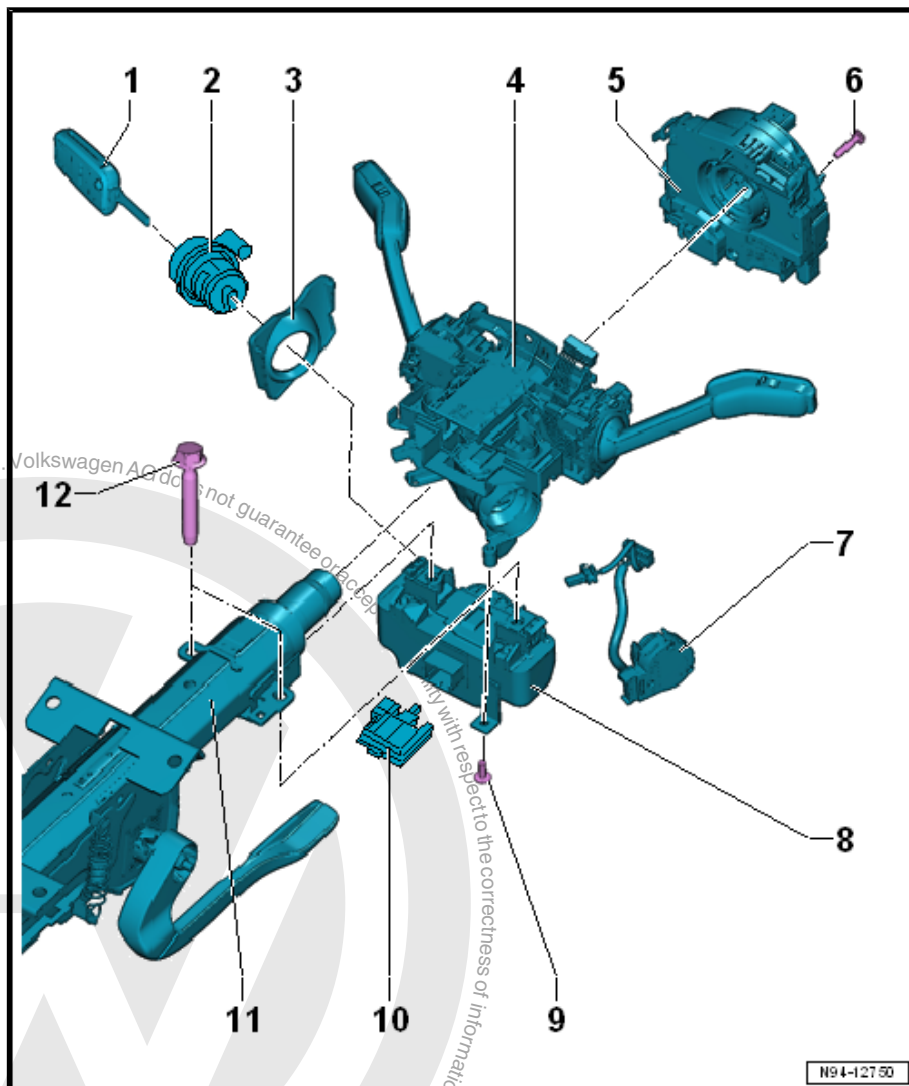
- ❑ Removing and installing. Refer to
⇒ ["8.10 Anti-Theft Immobilizer Reader Coil D2, Removing and Installing", page 233](#).

4 - Mount

- ❑ With Turn Signal Switch - E2-, Windshield Wiper Intermittent Mode Switch - E22-
- ❑ Vehicle equipment version with cruise control system: with Cruise Control Switch - E45-
- ❑ Removing and installing. Refer to
⇒ ["8.7 Turn Signal Switch E2, Removing and Installing", page 230](#).

5 - Steering Column Electronics Control Module - J527-

- ❑ With Airbag Spiral Spring/Return Spring with Slip Ring - F138-
- ❑ Removing and installing. Refer to
⇒ ["8.6 Steering Column Electronics Control Module J527, Removing and Installing", page 225](#).



Caution

Risk of damaging coil connector.
Coil connector with slip ring is not to be turned following removal.

6 - Bolt

- ❑ Tightening Specification: 1.1 Nm
- ❑ Quantity: 3

7 - Ignition/Starter Switch - D-

- ❑ Removing and installing. Refer to ⇒ ["8.4 Ignition/Starter Switch, Removing and Installing", page 219](#).

8 - Steering Lock Housing

- ❑ Removing and installing. Refer to
⇒ ["8.11 Steering Lock Housing, Removing and Installing", page 233](#).

9 - Bolt

- ❑ Tightening Specification: 1.1 Nm



10 - Ignition Switch Key Lock Solenoid - N376-

- ☐ Vehicle equipment version with DSG® transmission
- ☐ Removing and installing. Refer to
⇒ [“8.3 Ignition Switch Key Lock Solenoid N376 , Removing and Installing”, page 218 .](#)

11 - Steering Column

12 - Bolt

- ☐ Quantity: 2
- ☐ For steering lock housing (shear bolt)

8.1.2 Overview - Steering Column Switch Module, with Electronic Ignition Switch

1 - Start System Button - E378-

- ☐ Component location overview. Refer to
⇒ [“2.4 Overview - Center Console Controls”, page 291 .](#)

2 - Steering Column Electronics Control Module - J527-

- ☐ With Airbag Spiral Spring/Return Spring with Slip Ring F138-
- ☐ Removing and installing. Refer to
⇒ [“8.6 Steering Column Electronics Control Module J527 , Removing and Installing”, page 225 .](#)



Caution

*Risk of damaging coil connector.
Coil connector with slip ring is not to be turned following removal.*

3 - Bolt

- ☐ Tightening Specification: 1.1 Nm
- ☐ Quantity: 3

4 - Mount

- ☐ With Turn Signal Switch - E2- , Windshield Wiper Intermittent Mode Switch - E22-

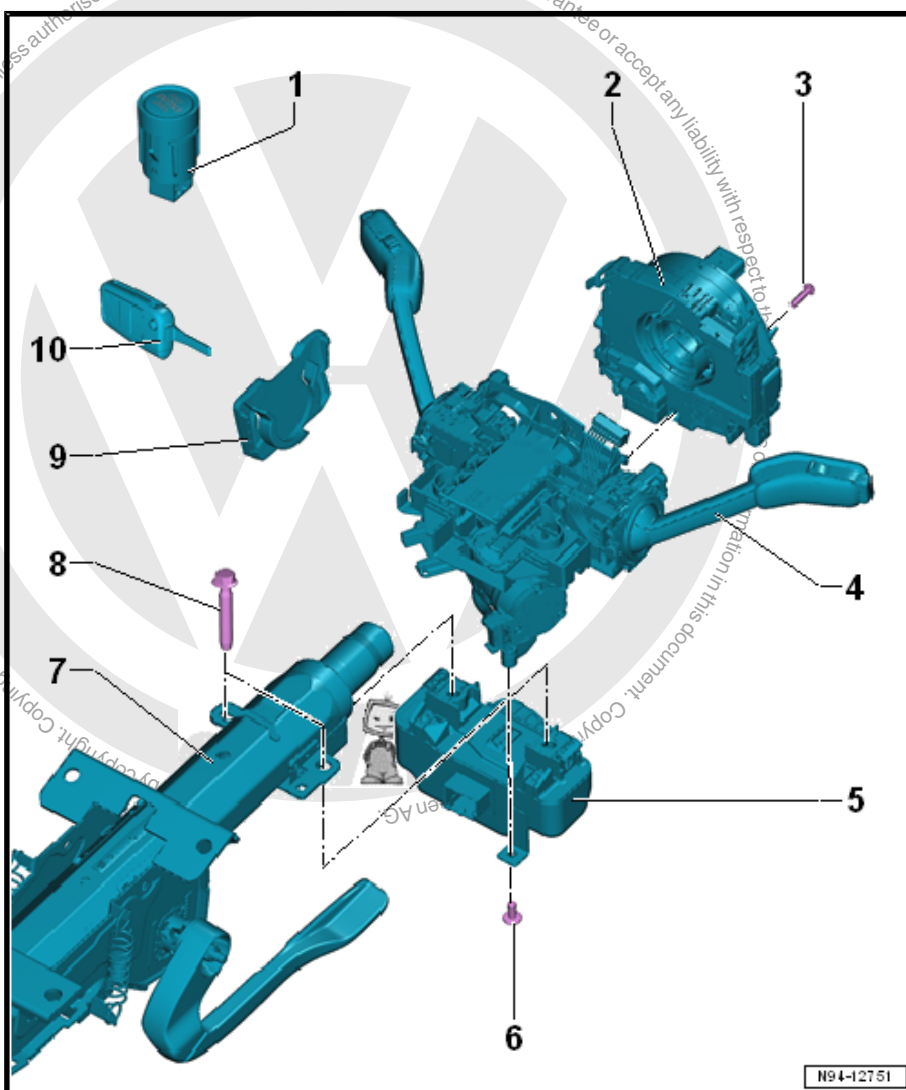
- ☐ Vehicle equipment version with cruise control system: with Cruise Control Switch - E45-
- ☐ Removing and installing. Refer to ⇒ [“8.7 Turn Signal Switch E2 , Removing and Installing”, page 230 .](#)

5 - Electronic Steering Column Lock Control Module - J764-

- ☐ Removing and installing. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48 ; Steering Column .

6 - Bolt

- ☐ Tightening Specification: 1.1 Nm





7 - Steering Column

8 - Bolt

- ☐ Quantity: 2
- ☐ For steering lock housing (shear bolt)

9 - Anti-Theft Immobilizer Reader Coil - D2-

- ☐ Removing and installing. Refer to
⇒ ["8.10 Anti-Theft Immobilizer Reader Coil D2 , Removing and Installing", page 233](#) .

10 - Ignition Key

8.2 Lock Cylinder, Removing and Installing

Special tools and workshop equipment required

- ◆ Locking Pin (3 pc.) - T40011- or
- ◆ Suitable Welding Wire

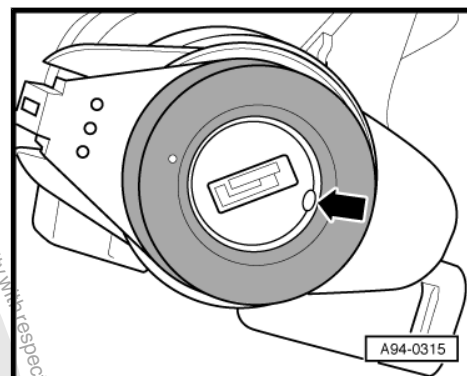
Removing

- Remove the lower steering column trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .



Note

- ◆ *For removing the lock cylinder, fold in the ignition key if necessary.*
- ◆ *Right lock position is shown without ignition lock to provide a better illustration.*
- Turn the ignition key in the ignition "on" position. While doing so the cut out in the trim -arrow- aligns with the hole in the ignition lock.





- Fold the ignition key as far as it possible.
- Push in Locking Pin (3 pc.) - T40011- or if necessary a suitable welding wire until stop in the hole -2-.
- Remove the lock cylinder -1- from the steering lock housing.



WARNING

Risk of steering lock seizing.

- ◆ **Steering lock must not be operated without lock cylinder.**



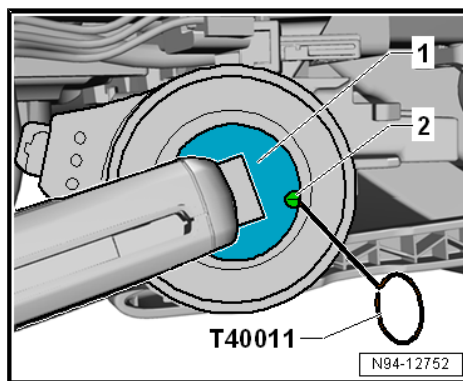
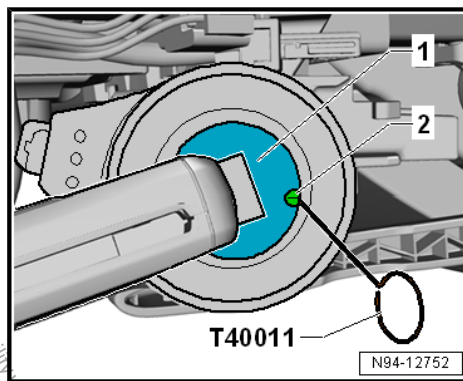
Note

- ◆ *A blocked steering lock must be replaced.*
 - ◆ *The induction coil is integrated in the lock cylinder and cannot be replaced separately.*
 - ◆ *If the induction coil is faulty, the entire lock cylinder must be replaced.*
 - ◆ *With the vehicle-specific lock number, a new lock cylinder is ordered through the distributor or importer using the VIN.*
- Disconnect the connector from the reader coil.

Installing

Install in the reverse order of removal. Note the following:

- Insert the ignition key into the lock cylinder and turn it to the ignition "on" position.
- Push the Locking Pin (3 pc.) - T40011- or if necessary a suitable welding wire back in the front side hole until stop.
- Connect the connector to the anti-theft immobilizer reader coil.
- Insert the lock cylinder -1- with the reader coil into the steering lock housing -3-.
- Remove the Locking Pin (3 pc.) - T40011- from the hole -2-.
- Push the lock cylinder in securely until the locking mechanism engages audibly.



8.3 Ignition Switch Key Lock Solenoid - N376- , Removing and Installing

Removing

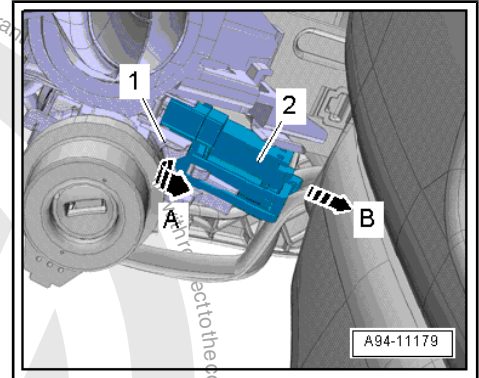
- Remove the lower steering column trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .



- Release the retainer -arrow A- and remove the Ignition Switch Key Lock Solenoid - N376- -2- from the steering lock housing -1- -arrow B-.

Installing

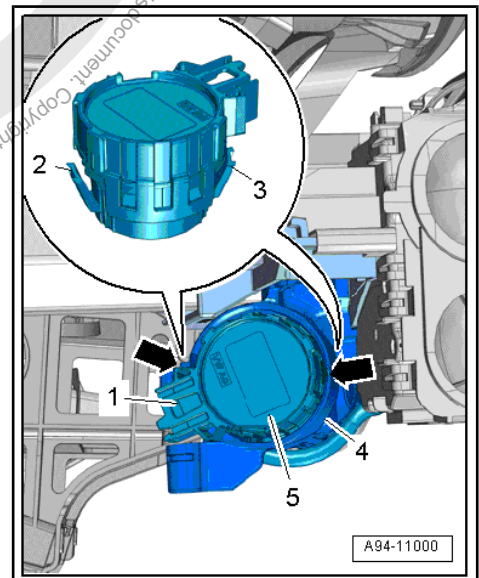
Install in reverse order of removal.



8.4 Ignition/Starter Switch, Removing and Installing

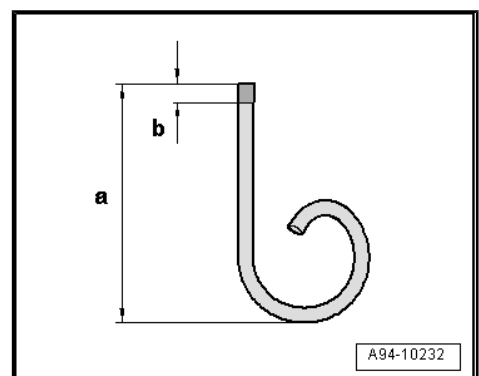
Removing

- Remove the lower steering column trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .
- Disconnect the connector -1-.
- Release the retainers -2 and 3- at the openings -arrows- in the steering lock housing -4- by inserting jeweler's screwdrivers.



If the procedure is not possible because there is not enough space, create an assisting tool from two wire hooks as follows.

- Bend the one end of a welding wire to form a 1 mm eye.
- Cut the welding wire down to the length -a-.
- ♦ Dimension -a- = approximately 50 mm.
- File the end of the wire hook into a point.
- ♦ Dimension -b- = 5 mm.



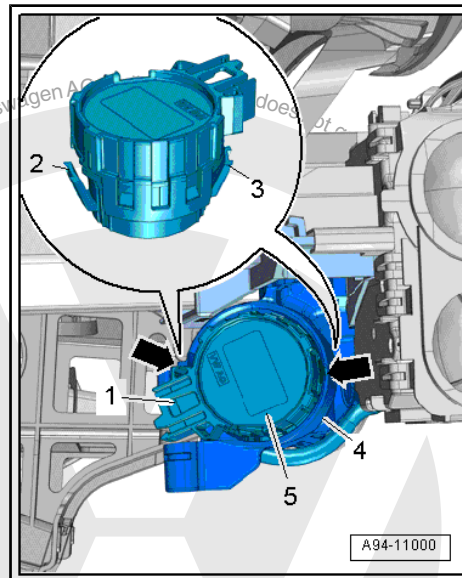


- Remove the Ignition/Starter Switch - D- -5- from the steering lock housing. The jeweler's screwdriver or wire hooks must remain inserted.

Installing

Install in the reverse order of removal. Note the following:

- Insert the Ignition/Starter Switch - D- into the steering lock housing until it audibly engages.



8.5 Steering Column Switch Module, Removing and Installing

⇒ ["8.5.1 Steering Column Switch Module, Removing and Installing, Kostal", page 220](#)

⇒ ["8.5.2 Steering Column Switch Module, Removing and Installing, Valeo", page 222](#)

8.5.1 Steering Column Switch Module, Removing and Installing, Kostal

Removing

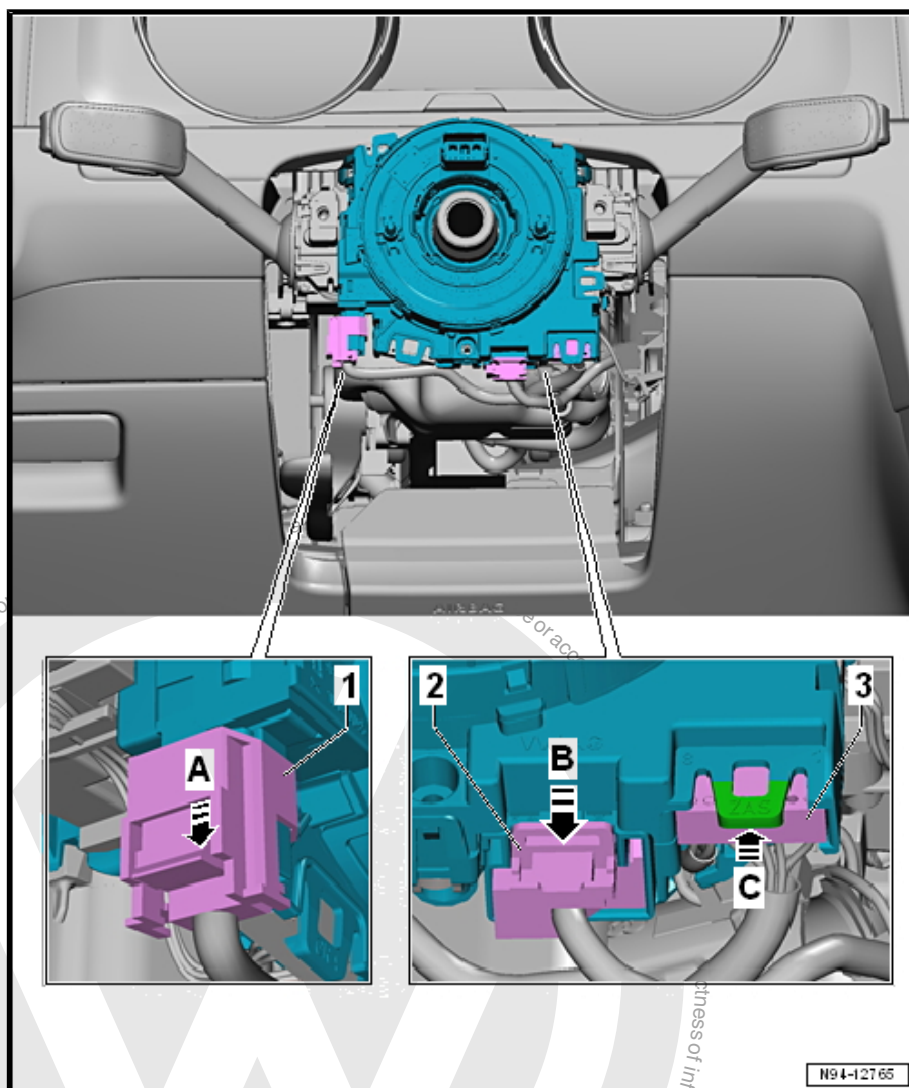
- Position the steering wheel as far back as possible. Use the entire adjustment range of the steering column adjustment for this.
- Removing the steering wheel. Refer to ⇒ Suspension, Axles, Steering; Rep. Gr. 48 ; Steering Wheel; Steering Wheel, Removing and Installing .
- Remove the lower steering column trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .



WARNING

Risk of destroying electronic components with static discharge.

- ◆ *Before disconnecting connector, discharge static electricity from your body by touching an electrically grounded vehicle component such as the door latch striker pin.*



- Remove the connector lock in direction of -arrow A- and press down.
- Disconnect the connector -1-.
- Remove the connector lock in direction of -arrow B- and press down.
- Disconnect the connector -2-.
- Push the connector lock in direction of -arrow C- and disconnect the connector -3-.



- Remove the bolt -2- on the bottom.
- Remove the steering column switch module -1-.

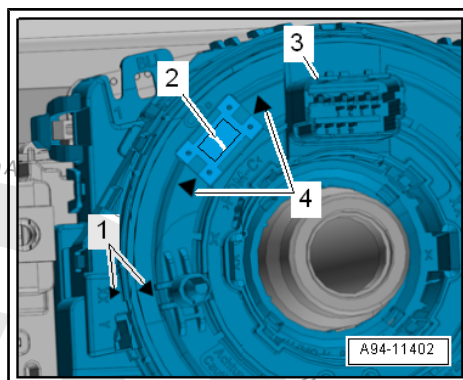
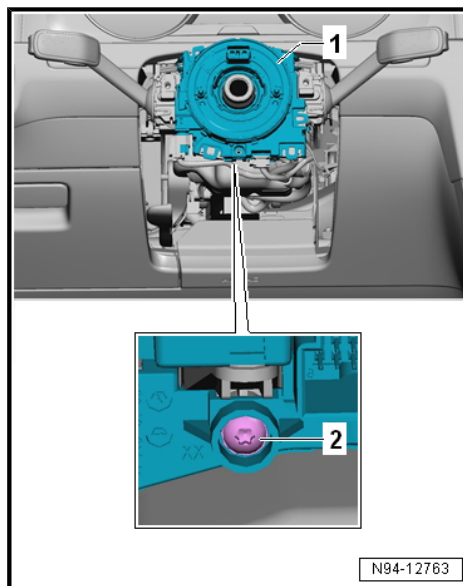
Installing

Install in the reverse order of removal. Note the following:

- The following must be checked on the Steering Column Electronics Control Module - J527- -3- before sliding on the steering column switch module:
 - ◆ The “arrows” -1- must align.
 - ◆ The spiral spring -2- must be seen in the window between the “arrows” -4-.

Tightening Specifications

- ◆ Refer to
⇒ [“8.1 Overview - Steering Column Switch Module”, page 214](#)



8.5.2 Steering Column Switch Module, Removing and Installing, Valeo

Removing

- Position the steering wheel as far back as possible. Use the entire adjustment range of the steering column adjustment for this.
- Removing the steering wheel. Refer to ⇒ Suspension, Axles, Steering; Rep. Gr. 48; Steering Wheel; Steering Wheel, Removing and Installing .
- Remove the lower steering column trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .

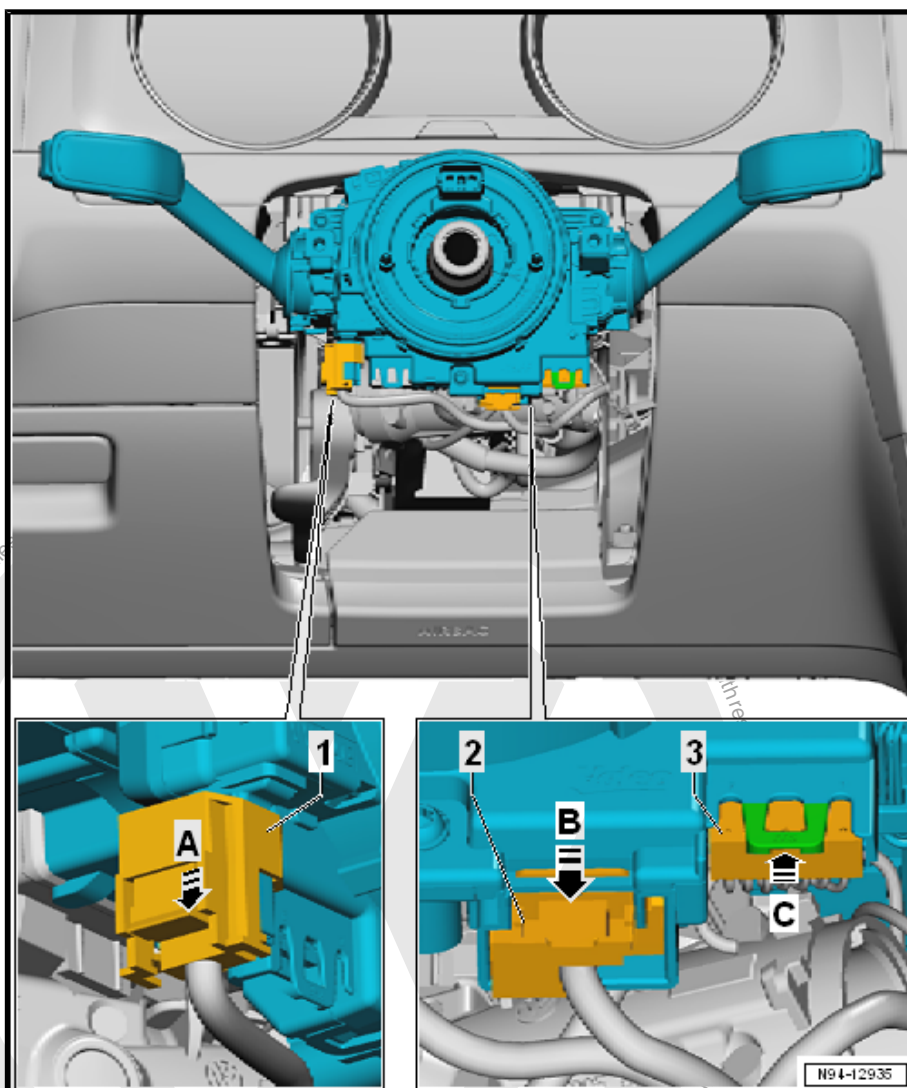


WARNING

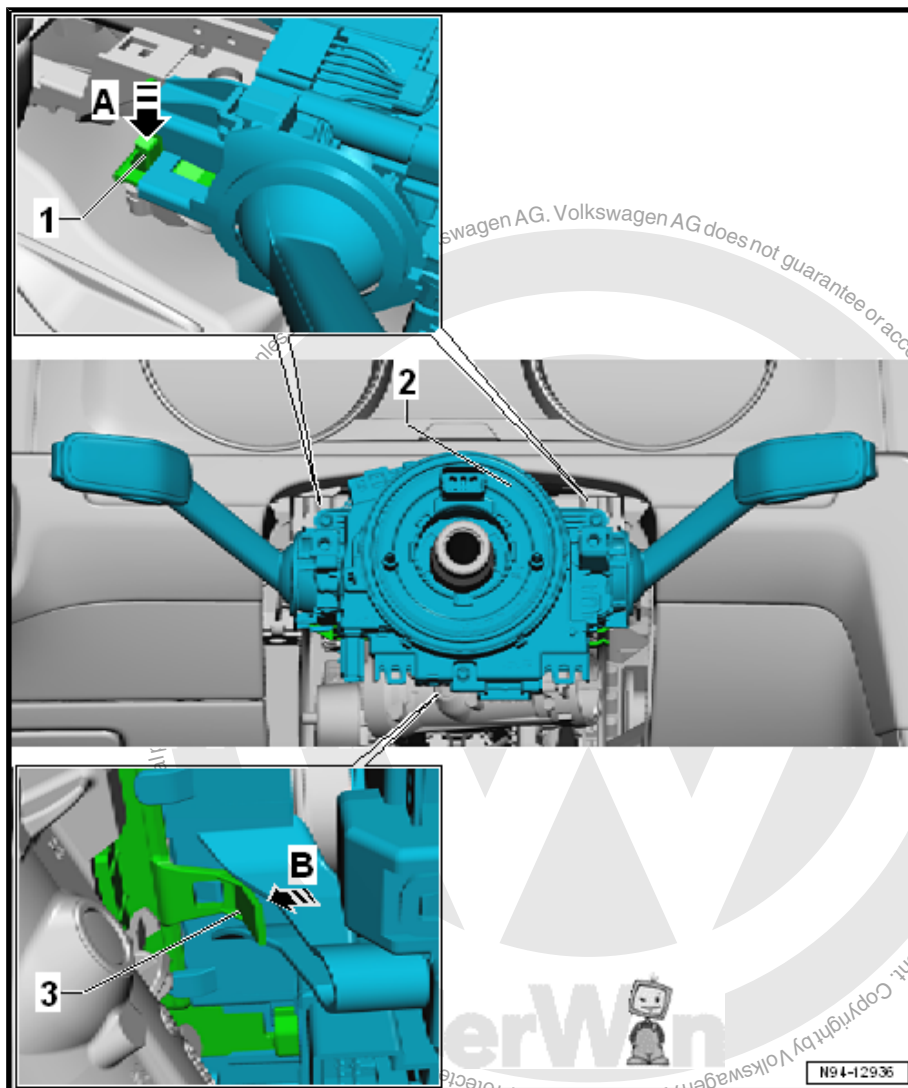
Risk of destroying electronic components with static discharge.

- ◆ **Before disconnecting connector, discharge static electricity from your body by touching an electrically grounded vehicle component such as the door latch striker pin.**





- Remove the connector lock in direction of -arrow A- and press down.
- Disconnect the connector -1-.
- Remove the connector lock in direction of -arrow B- and press down.
- Disconnect the connector -2-.
- Push the connector lock in direction of -arrow C- and disconnect the connector -3-.



- Push the release -1- on both sides in direction of -arrow A-.
- Slightly remove the steering column switch module -2-.
- Push the release -3- in direction of -arrow B-.
- Remove the steering column switch module -2-.

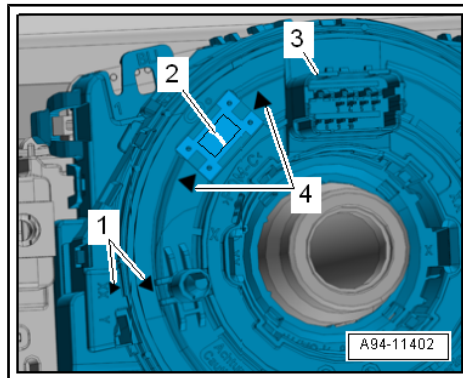
Installing

Install in the reverse order of removal. Note the following:

- The following must be checked on the Steering Column Electronics Control Module - J527- -3- before sliding on the steering column switch module:
 - ◆ The “arrows” -1- must align.
 - ◆ The spiral spring -2- must be seen in the window between the “arrows” -4-.

Tightening Specifications

- ◆ Refer to
⇒ [“8.1 Overview - Steering Column Switch Module”, page 214](#)





8.6 Steering Column Electronics Control Module - J527- , Removing and Installing

⇒ "8.6.1 Steering Column Electronics Control Module J527 , Removing and Installing, Kostal", page 225

⇒ "8.6.2 Steering Column Electronics Control Module J527 , Removing and Installing, Valeo", page 227

8.6.1 Steering Column Electronics Control Module - J527- , Removing and Installing, Kostal



Note

- ◆ *The Airbag Spiral Spring/Return Spring with Slip Ring - F138- is integrated into the Steering Column Electronics Control Module - J527- .*
- ◆ *If the control module is replaced, select the "Replace" function for the respective control module in "Guided Fault Finding" or "Guided Functions" using the Vehicle Diagnostic Tester .*

Removing

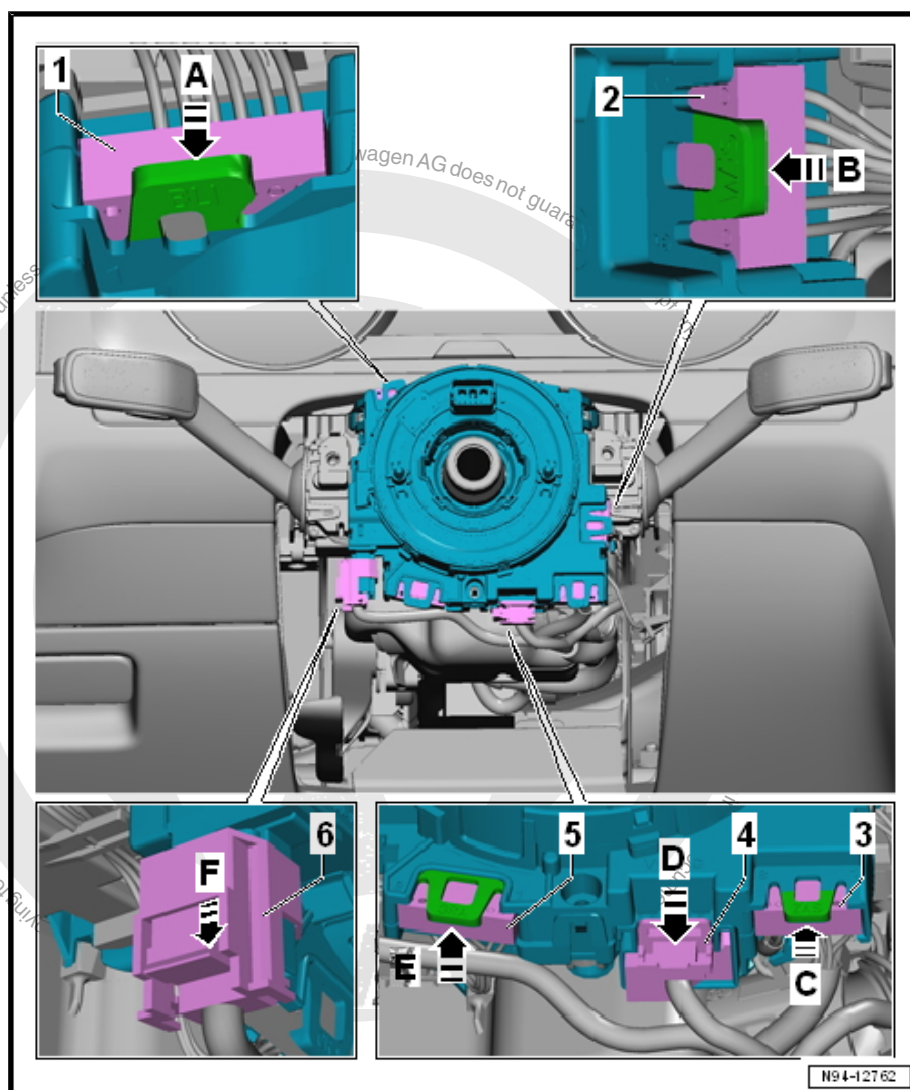
- Place the front wheels in a straight-ahead position - steering wheel in 0 position.
- Position the steering wheel as far back as possible. Use the entire adjustment range of the steering column adjustment for this.
- Removing the steering wheel. Refer to ⇒ Suspension, Axles, Steering; Rep. Gr. 48 ; Steering Wheel; Steering Wheel, Removing and Installing .
- Remove the lower steering column trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .



WARNING

Risk of destroying electronic components with static discharge.

- ◆ ***Before disconnecting connector, discharge static electricity from your body by touching an electrically grounded vehicle component such as the door latch striker pin.***



- Push the connector lock in direction of -arrow A- and disconnect the connector -1-.
- Push the connector lock in direction of -arrow B- and disconnect the connector -2-.
- Push the connector lock in direction of -arrow C- and disconnect the connector -3-.
- Remove the connector lock in direction of -arrow D- and press down.
- Disconnect the connector -4-.
- Push the connector lock in direction of -arrow E- and disconnect the connector -5-.
- Remove the connector lock in direction of -arrow F- and press down.
- Disconnect the connector -6-.



- Remove the bolt -1-.
- Release the mounting tabs in direction of -arrows A- and -B-.
- Remove the Steering Column Electronics Control Module - J527- -2- from the Steering Column Combination Switch E595-

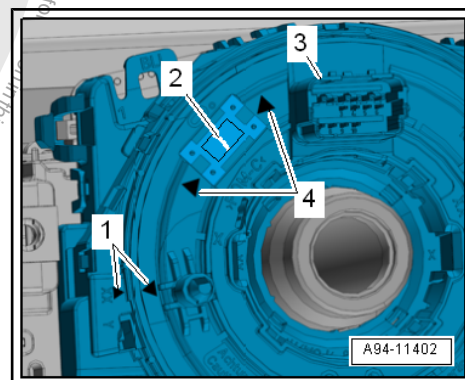
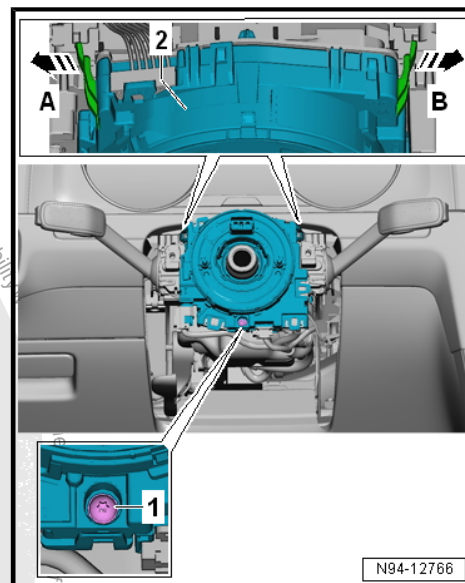
Installing

Install in the reverse order of removal. Note the following:

- Before sliding the Steering Column Electronics Control Module - J527- -3- the following must be checked.
- ◆ The “arrows” -1- must align.
 - ◆ The spiral spring -2- must be seen in the window between the “arrows” -4-.
 - Make sure that all connectors are installed securely.

Tightening Specifications

- ◆ Refer to
⇒ [“8.1 Overview - Steering Column Switch Module”, page 214](#)



8.6.2 Steering Column Electronics Control Module - J527- , Removing and Installing, Valeo



Note

- ◆ The Airbag Spiral Spring/Return Spring with Slip Ring - F138- is integrated into the Steering Column Electronics Control Module - J527- .
- ◆ If the control module is replaced, select the “Replace” function for the respective control module in “Guided Fault Finding” or “Guided Functions” using the Vehicle Diagnostic Tester .

Removing

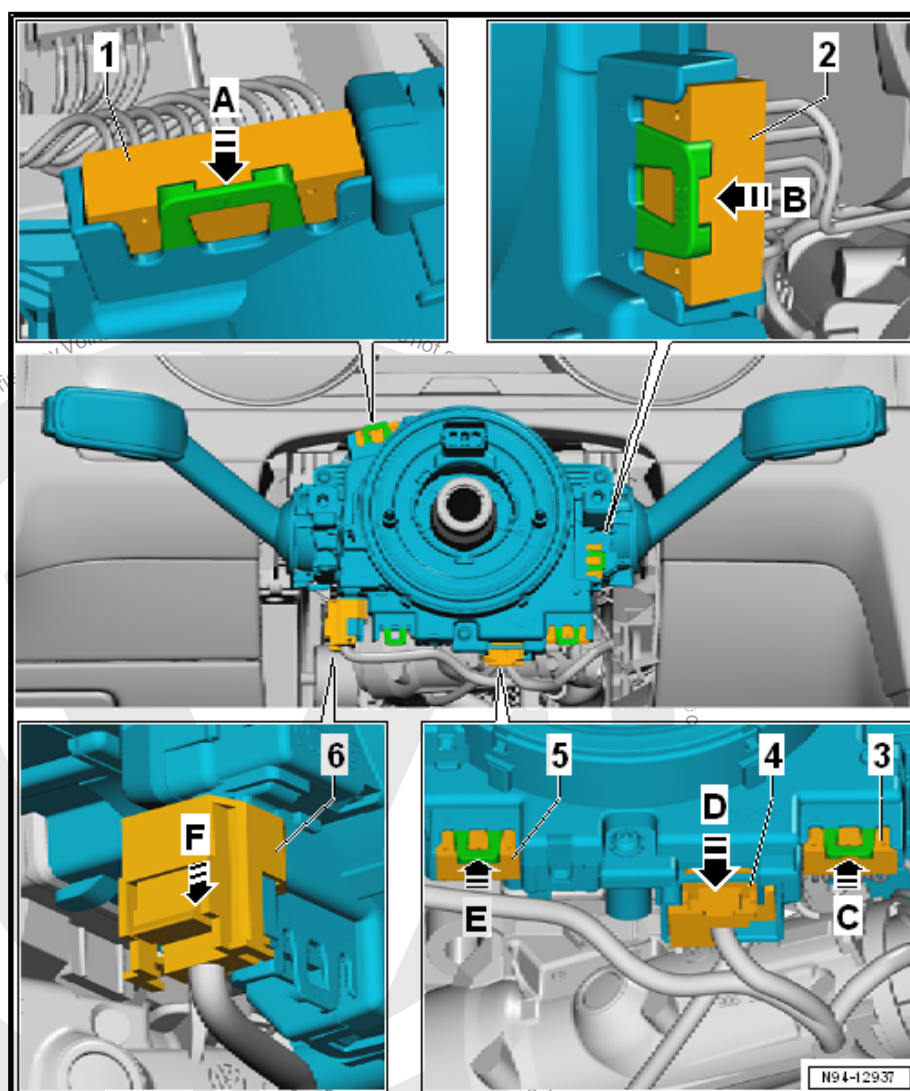
- Place the front wheels in a straight-ahead position - steering wheel in 0 position.
- Position the steering wheel as far back as possible. Use the entire adjustment range of the steering column adjustment for this.
- Removing the steering wheel. Refer to ⇒ Suspension, Axles, Steering; Rep. Gr. 48 ; Steering Wheel; Steering Wheel, Removing and Installing .
- Remove the lower steering column trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .



WARNING

Risk of destroying electronic components with static discharge.

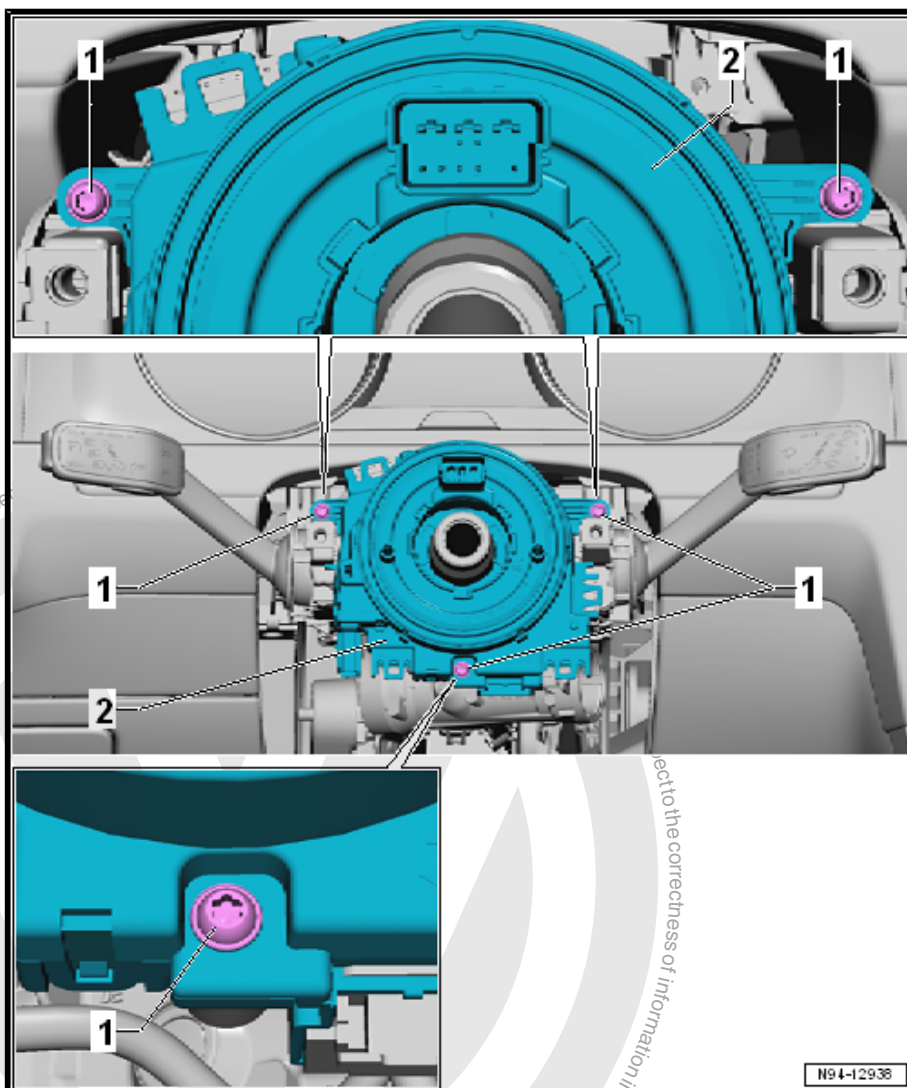
- ◆ *Before disconnecting connector, discharge static electricity from your body by touching an electrically grounded vehicle component such as the door latch striker pin.*



- Push the connector lock in direction of -arrow A- and disconnect the connector -1-.
- Push the connector lock in direction of -arrow B- and disconnect the connector -2-.
- Push the connector lock in direction of -arrow C- and disconnect the connector -3-.
- Remove the connector lock in direction of -arrow D- and press down.
- Disconnect the connector -4-.
- Push the connector lock in direction of -arrow E- and disconnect the connector -5-.



- Remove the connector lock in direction of -arrow F- and press down.
- Disconnect the connector -6-.



- Remove the bolts -4-.
- Remove the Steering Column Electronics Control Module - J527- -2- from the Steering Column Combination Switch - E595-.

Installing

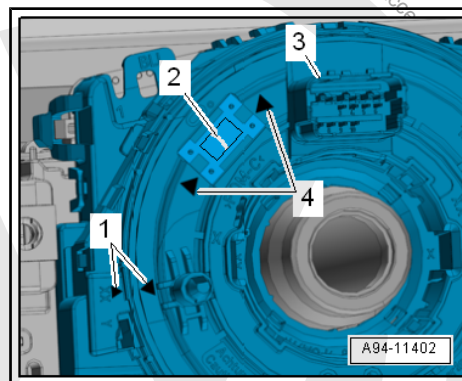
Install in the reverse order of removal. Note the following:



- Before sliding the Steering Column Electronics Control Module - J527- -3- the following must be checked.
- ◆ The “arrows” -1- must align.
- ◆ The spiral spring -2- must be seen in the window between the “arrows” -4-.
- Make sure that all connectors are installed securely.

Tightening Specifications

- ◆ Refer to
⇒ [“8.1 Overview - Steering Column Switch Module”, page 214](#)



8.7 Turn Signal Switch - E2- , Removing and Installing

⇒ [“8.7.1 Turn Signal Switch E2 , Removing and Installing, Kostal”, page 230](#)

⇒ [“8.7.2 Turn Signal Switch E2 , Removing and Installing, Valeo”, page 231](#)

8.7.1 Turn Signal Switch - E2- , Removing and Installing, Kostal



Note

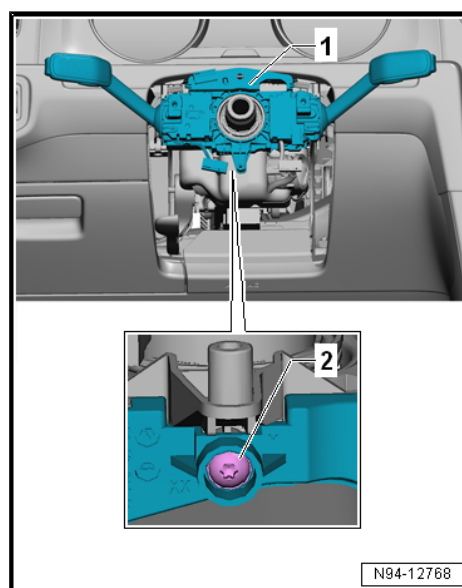
- ◆ *Turn Signal Switch - E2- , Cruise Control Switch - E45- and the Windshield Wiper Intermittent Mode Switch - E22- together make up the Steering Column Combination Switch - E595- .*
- ◆ *The switch cannot be separated.*
- ◆ *If an individual switch is faulty the Steering Column Combination Switch - E595- must be replaced.*

Removing

- Remove the Steering Column Electronics Control Module - J527- . Refer to
⇒ [“8.6 Steering Column Electronics Control Module J527 , Removing and Installing”, page 225](#) .
- Remove the bolt -2- on the bottom.
- Remove the Steering Column Combination Switch - E595- -1-.

Installing

Install in reverse order of removal.





8.7.2 Turn Signal Switch - E2- , Removing and Installing, Valeo

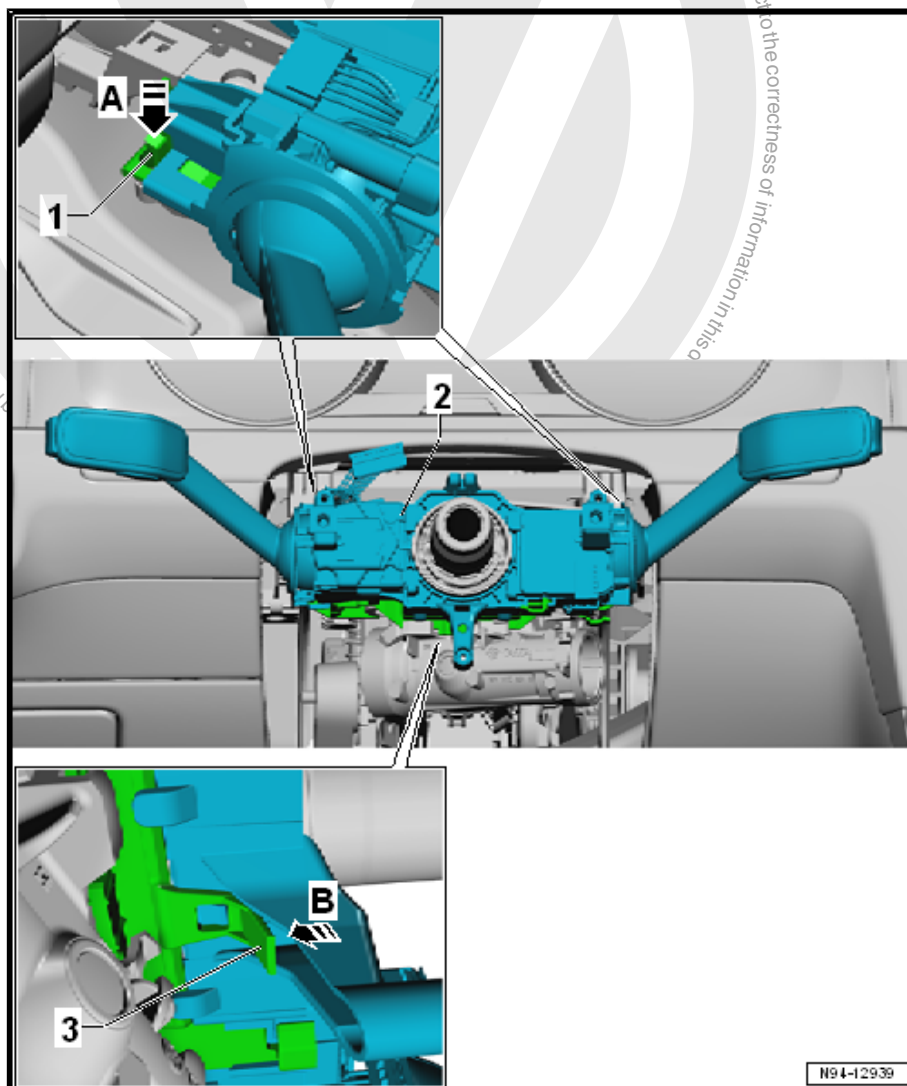


Note

- ◆ Turn Signal Switch - E2- , Cruise Control Switch - E45- and the Windshield Wiper Intermittent Mode Switch - E22- together make up the Steering Column Combination Switch - E595- .
- ◆ The switch cannot be separated.
- ◆ If an individual switch is faulty the Steering Column Combination Switch - E595- must be replaced.

Removing

- Remove the Steering Column Electronics Control Module - J527- . Refer to
⇒ ["8.6 Steering Column Electronics Control Module J527 , Removing and Installing", page 225](#) .



- Push the release -1- on both sides in the direction of the arrow -A-.



- Slightly remove the Steering Column Combination Switch - E595- -2-.
- Push the release -3- in direction of -arrow B-.
- Remove the Steering Column Combination Switch - E595- -2-.

Installing

Install in reverse order of removal.

8.8 Cruise Control Switch - E45- , Removing and Installing



Note

- ◆ *Turn Signal Switch - E2- , Cruise Control Switch - E45- and the Windshield Wiper Intermittent Mode Switch - E22- together make up the Steering Column Combination Switch - E595- .*
- ◆ *The switch cannot be separated.*
- ◆ *If an individual switch is faulty the Steering Column Combination Switch - E595- must be replaced.*
- Cruise Control Switch - E45- , removing and installing. Refer to
⇒ ["8.7 Turn Signal Switch E2 , Removing and Installing", page 230](#) .

8.9 Windshield Wiper Intermittent Mode Switch - E22- , Removing and Installing



Note

- ◆ *Turn Signal Switch - E2- , Cruise Control Switch - E45- and the Windshield Wiper Intermittent Mode Switch - E22- together make up the Steering Column Combination Switch - E595- .*
- ◆ *The switch cannot be separated.*
- ◆ *If an individual switch is faulty the Steering Column Combination Switch - E595- must be replaced.*
- Windshield Wiper Intermittent Mode Switch - E22- , removing and installing. Refer to
⇒ ["8.7 Turn Signal Switch E2 , Removing and Installing", page 230](#) .



8.10 Anti-Theft Immobilizer Reader Coil - D2- , Removing and Installing

⇒ ["8.10.1 Anti-Theft Immobilizer Reader Coil D2 , Removing and Installing, Vehicle with Ignition Key", page 233](#)

⇒ ["8.10.2 Anti-Theft Immobilizer Reader Coil D2 , Removing and Installing, Vehicle with Keyless Access", page 233](#)

8.10.1 Anti-Theft Immobilizer Reader Coil - D2- , Removing and Installing, Vehicle with Ignition Key



Note

The Anti-Theft Immobilizer Reader Coil - D2- is integrated in the lock cylinder and cannot be replaced separately.

- Lock cylinder, removing and installing. Refer to ⇒ ["8.2 Lock Cylinder, Removing and Installing", page 217](#) .

8.10.2 Anti-Theft Immobilizer Reader Coil - D2- , Removing and Installing, Vehicle with Keyless Access

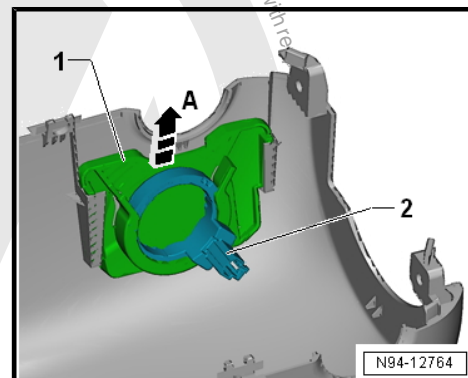
Removing

- Position the steering wheel as far back as possible. Use the entire adjustment range of the steering column adjustment for this.
- Remove the lower steering column trim. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .
- Pry out the induction coil -2- in direction of -arrow A- from the mount -1-.

Installing

Install in the reverse order of removal. Note the following:

- Press the reader coil into the mount until it engages audibly.



8.11 Steering Lock Housing, Removing and Installing

Special tools and workshop equipment required

- ◆ 7/16 Inch Extractor - T10424US

Removing

- Remove the steering column switch module. Refer to ⇒ ["8.5 Steering Column Switch Module, Removing and Installing", page 220](#) .



- Disconnect the connectors -1 and 4-.



Note

If the shear bolt cannot be removed using the 7/16 Inch Extractor - T10424US- , use an angled hand drill and 8.5 mm diameter bit to drill it out.

- Remove the shear bolt -2- using the 7/16 Inch Extractor - T10424US- .
- Remove the steering lock housing -3-.

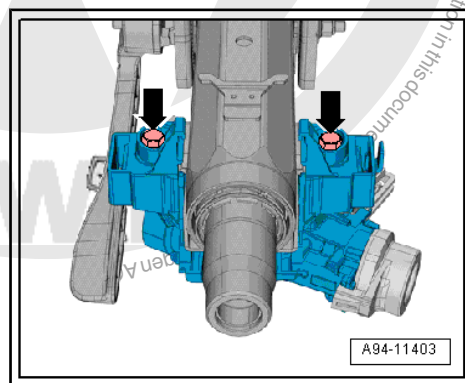
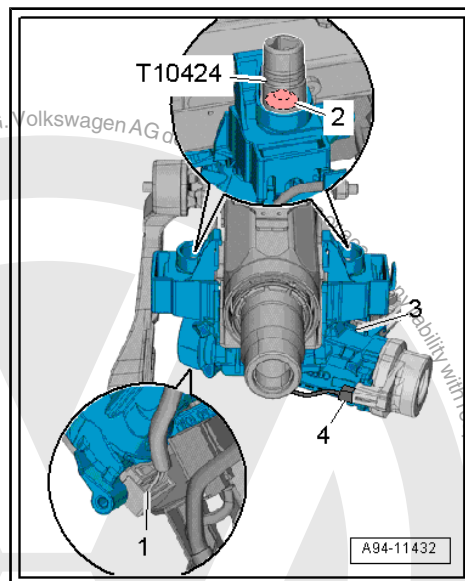
To replace the steering lock housing the ignition/starter switch and lock cylinder must be removed.

- To remove the ignition/starter switch. Refer to [⇒ "8.4 Ignition/Starter Switch, Removing and Installing", page 219](#) .
- To remove the lock cylinder. Refer to [⇒ "8.2 Lock Cylinder, Removing and Installing", page 217](#) .

Installing

Install in the reverse order of removal. Note the following:

- Tighten the new bolts -arrows- until the head shears off.





9 Parking Aid

⇒ ["9.1 Overview - Parking Aid", page 235](#)

⇒ ["9.2 Parking Aid Control Module J446 , Removing and Installing", page 239](#)

⇒ ["9.3 Front Parking Aid Warning Buzzer H22 , Removing and Installing", page 240](#)

⇒ ["9.4 Rear Parking Aid Warning Buzzer H15 , Removing and Installing", page 241](#)

⇒ ["9.5 Front Parking Aid Sensor, Removing and Installing", page 242](#)

⇒ ["9.6 Rear Parking Aid Sensor, Removing and Installing", page 243](#)

9.1 Overview - Parking Aid

⇒ ["9.1.1 Overview - Front Parking Aid", page 235](#)

⇒ ["9.1.2 Overview - Rear Parking Aid", page 236](#)

9.1.1 Overview - Front Parking Aid

1 - Front Parking Aid Warning Buzzer - H22-

- ☐ Only for 8-channel parking aid
- ☐ Removing and installing. Refer to
⇒ ["9.3 Front Parking Aid Warning Buzzer H22 , Removing and Installing", page 240](#) .

2 - Parking Aid Button - E266-

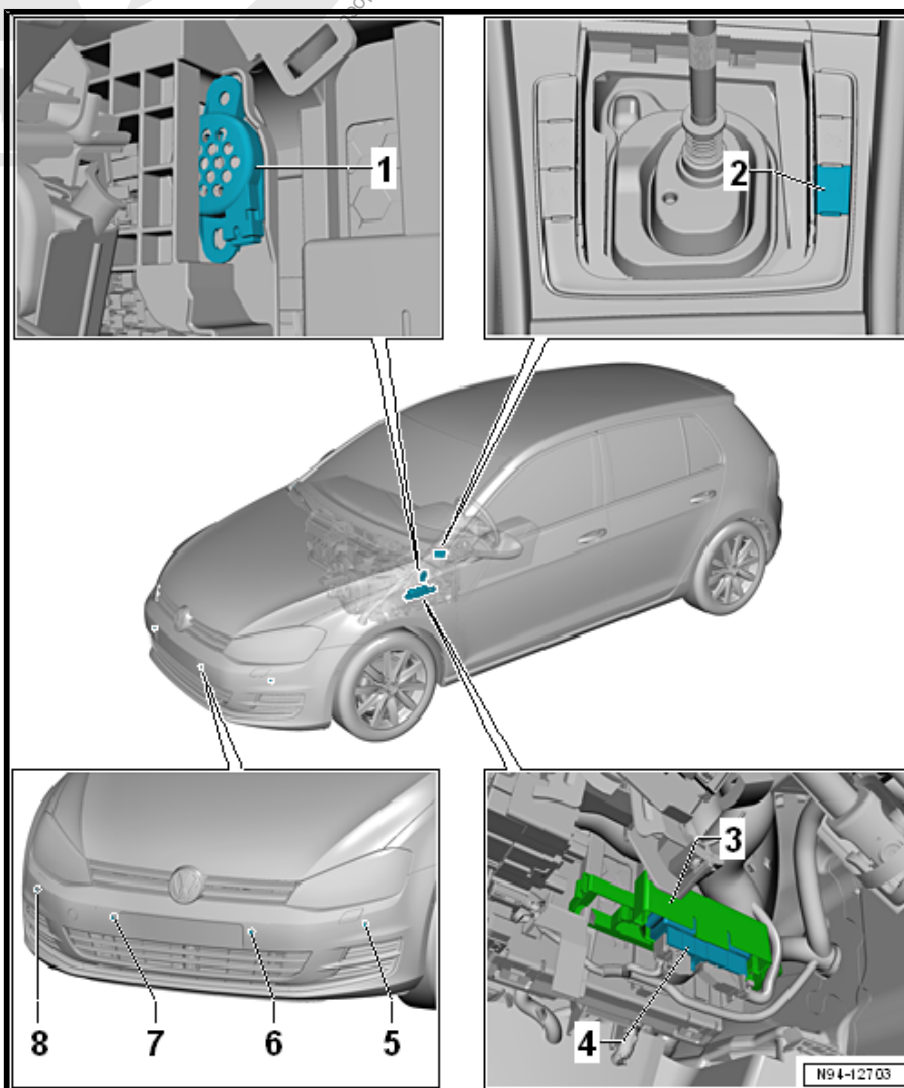
- ☐ Removing and installing. Refer to
⇒ ["2.12 Parking Aid Button E266 , Removing and Installing", page 295](#) .

3 - Bracket

- ☐ For the Parking Aid Control Module - J446-
- ☐ Removing and installing. Refer to
⇒ ["2.8 Parking Aid Control Module J446 / Parallel Parking Assistance Control Module J791 Bracket, Removing and Installing", page 341](#) .

4 - Parking Aid Control Module - J446-

- ☐ Removing and installing. Refer to
⇒ ["9.2 Parking Aid Control Module J446 , Removing and Installing", page 239](#) .





5 - Left Front Parking Aid Sensor - G255-

- ❑ Removing and installing. Refer to
⇒ ["9.5 Front Parking Aid Sensor, Removing and Installing", page 242](#) .

6 - Left Front Center Parking Aid Sensor - G254-

- ❑ Removing and installing. Refer to
⇒ ["9.5 Front Parking Aid Sensor, Removing and Installing", page 242](#) .

7 - Right Front Center Parking Aid Sensor - G253-

- ❑ Removing and installing. Refer to
⇒ ["9.5 Front Parking Aid Sensor, Removing and Installing", page 242](#) .

8 - Right Front Parking Aid Sensor - G252-

- ❑ Removing and installing. Refer to
⇒ ["9.5 Front Parking Aid Sensor, Removing and Installing", page 242](#) .

9.1.2 Overview - Rear Parking Aid

1 - Connector

2 - Expanding Clip

3 - Rear Parking Aid Warning Buzzer - H15-

- ❑ Removing and installing. Refer to
⇒ ["9.4 Rear Parking Aid Warning Buzzer H15, Removing and Installing", page 241](#) .

4 - Expanding Clip

5 - Right Rear Parking Aid Sensor - G206-

- ❑ Removing and installing. Refer to
⇒ ["9.6 Rear Parking Aid Sensor, Removing and Installing", page 243](#) .

6 - Right Rear Center Parking Aid Sensor - G205-

- ❑ Removing and installing. Refer to
⇒ ["9.6 Rear Parking Aid Sensor, Removing and Installing", page 243](#) .

7 - Left Rear Center Parking Aid Sensor - G204-

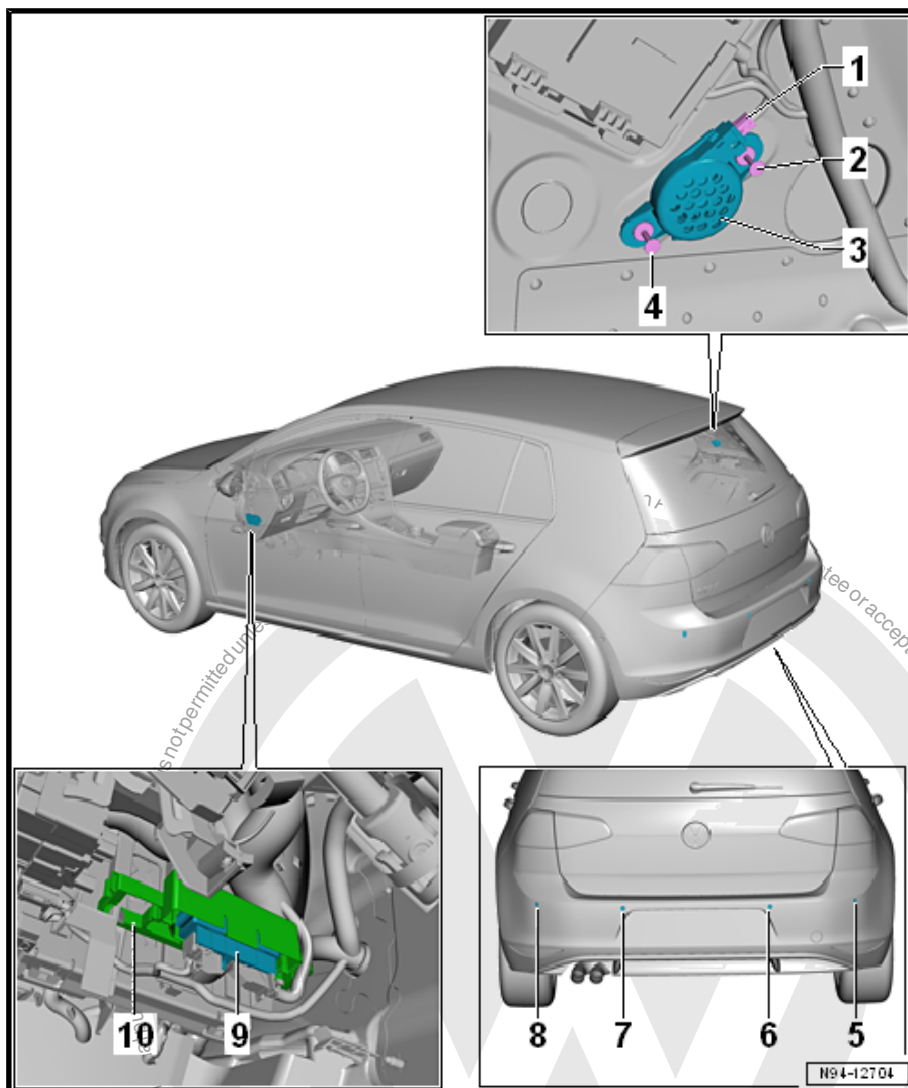
- ❑ Removing and installing. Refer to
⇒ ["9.6 Rear Parking Aid Sensor, Removing and Installing", page 243](#) .

8 - Left Rear Parking Aid Sensor - G203-

- ❑ Removing and installing. Refer to
⇒ ["9.6 Rear Parking Aid Sensor, Removing and Installing", page 243](#) .

9 - Parking Aid Control Module - J446-

- ❑ Removing and installing. Refer to
⇒ ["9.2 Parking Aid Control Module J446, Removing and Installing", page 239](#) .





10 - Bracket

- ❑ For the Parking Aid Control Module - J446-
- ❑ Removing and installing. Refer to
⇒ ["2.8 Parking Aid Control Module J446 / Parallel Parking Assistance Control Module J791 Bracket, Removing and Installing", page 341](#).

9.1.3 Overview - Front Parking Aid, RHD

1 - Parking Aid Button - E266-

- ❑ Removing and installing. Refer to
⇒ ["2.12 Parking Aid Button E266, Removing and Installing", page 295](#).

2 - Front Parking Aid Warning Buzzer - H22-

- ❑ Only for 8-channel parking aid
- ❑ Removing and installing. Refer to
⇒ ["9.3 Front Parking Aid Warning Buzzer H22, Removing and Installing", page 240](#).

3 - Left Front Parking Aid Sensor - G255-

- ❑ Removing and installing. Refer to
⇒ ["9.5 Front Parking Aid Sensor, Removing and Installing", page 242](#).

4 - Left Front Center Parking Aid Sensor - G254-

- ❑ Removing and installing. Refer to
⇒ ["9.5 Front Parking Aid Sensor, Removing and Installing", page 242](#).

5 - Right Front Center Parking Aid Sensor - G253-

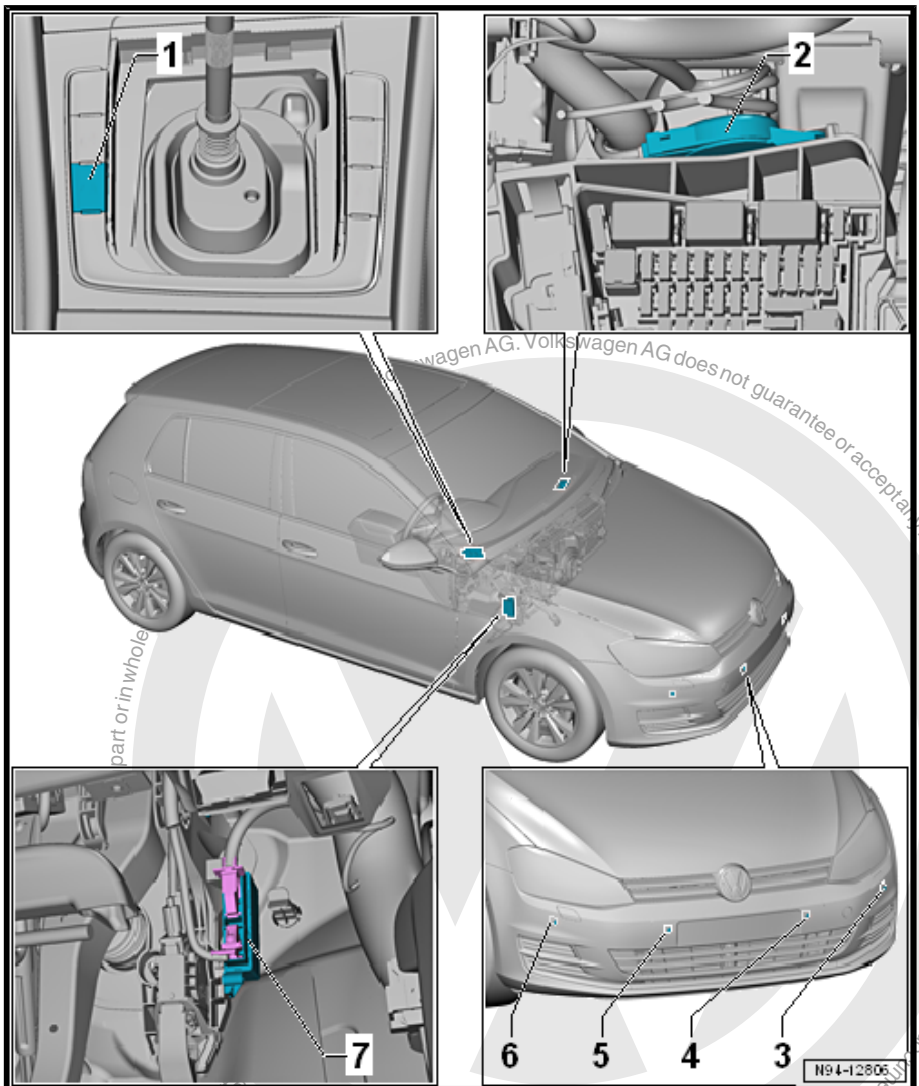
- ❑ Removing and installing. Refer to
⇒ ["9.5 Front Parking Aid Sensor, Removing and Installing", page 242](#).

6 - Right Front Parking Aid Sensor - G252-

- ❑ Removing and installing. Refer to
⇒ ["9.5 Front Parking Aid Sensor, Removing and Installing", page 242](#).

7 - Parking Aid Control Module - J446-

- ❑ Removing and installing. Refer to
⇒ ["9.2 Parking Aid Control Module J446, Removing and Installing", page 239](#).





9.1.4 Overview - Rear Parking Aid, RHD

1 - Connector

2 - Expanding clip

3 - Rear Parking Aid Warning Buzzer - H15-

- ❑ Removing and installing. Refer to
⇒ ["9.4 Rear Parking Aid Warning Buzzer H15, Removing and Installing", page 241](#).

4 - Expanding clip

5 - Parking Aid Control Module - J446-

- ❑ Removing and installing. Refer to
⇒ ["9.2 Parking Aid Control Module J446, Removing and Installing", page 239](#).

6 - Right Rear Parking Aid Sensor - G206-

- ❑ Removing and installing. Refer to
⇒ ["9.6 Rear Parking Aid Sensor, Removing and Installing", page 243](#).

7 - Right Rear Center Parking Aid Sensor - G205-

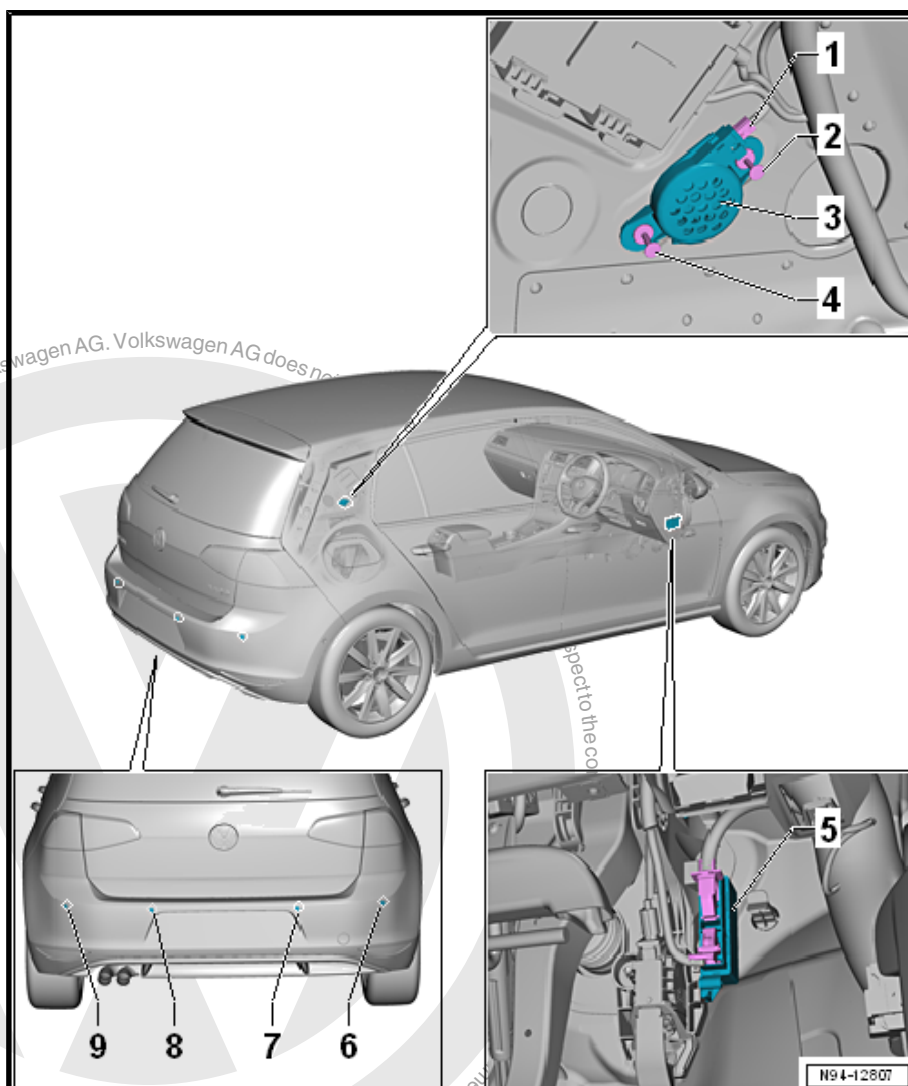
- ❑ Removing and installing. Refer to
⇒ ["9.6 Rear Parking Aid Sensor, Removing and Installing", page 243](#).

8 - Left Rear Center Parking Aid Sensor - G204-

- ❑ Removing and installing. Refer to
⇒ ["9.6 Rear Parking Aid Sensor, Removing and Installing", page 243](#).

9 - Left Rear Parking Aid Sensor - G203-

- ❑ Removing and installing. Refer to
⇒ ["9.6 Rear Parking Aid Sensor, Removing and Installing", page 243](#).





9.2 Parking Aid Control Module - J446- , Removing and Installing

⇒ "9.2.1 Parking Aid Control Module J446 Removing and Installing", page 239

9.2.1 Parking Aid Control Module - J446- Removing and Installing

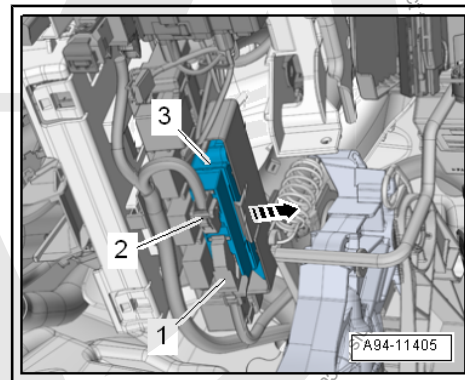


Note

If the control module is replaced, select the **Replace** function for the respective control module in **Guided Fault Finding** or **Guided Functions** using the **Vehicle Diagnostic Tester**.

Removing

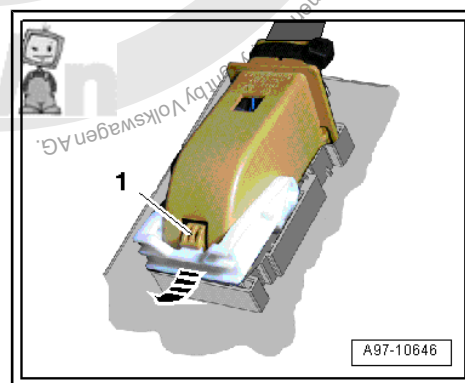
- Remove the trim panel under the instrument panel. Refer to ⇒ Body Interior; Rep. Gr. 68; Storage Compartments and Covers; Driver Side Instrument Panel Cover, Removing and Installing.
- Disconnect the connectors -1 and 2-.



- To do this push the tab -1-, pivot the retaining bracket in direction of -arrow- and remove the connector.
- Release the tab -arrow- and remove the control module -3- downward from the bracket.

Installing

Install in reverse order of removal.



9.2.2 Parking Aid Control Module - J446- Removing and Installing, RHD



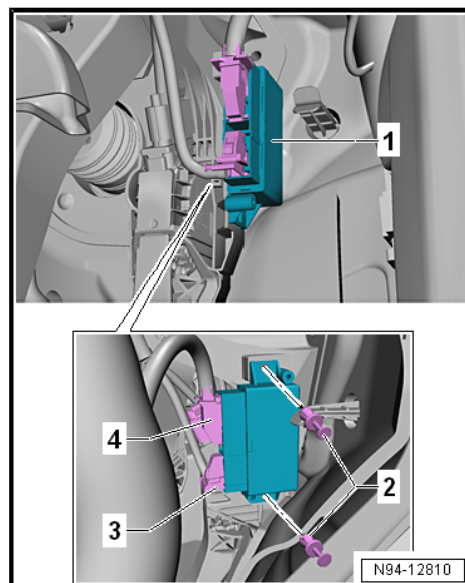
Note

If the control module is replaced, select the **Replace** function for the respective control module in **Guided Fault Finding** or **Guided Functions** using the ⇒ **Vehicle diagnostic tester**.



Removing

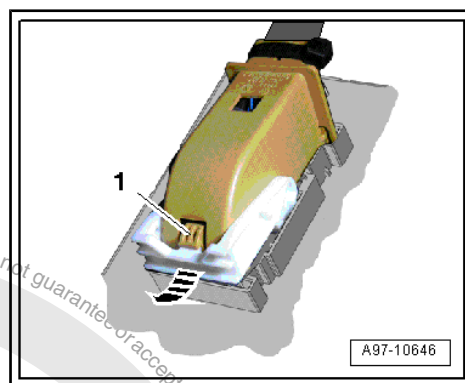
- Remove the footwell cover on the driver side. Refer to ➔ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers .
- Loosen the expanding rivet -2- and remove.
- Remove the control module -1-.
- Disconnect the connectors -3 and 4-.



- To do this push the tab -1-, pivot the retaining bracket in the -direction of the arrow- and remove the connector.

Installing

Install in reverse order of removal.



9.3 Front Parking Aid Warning Buzzer - H22- , Removing and Installing

⇒ ["9.3.1 Front Parking Aid Warning Buzzer H22 , Removing and Installing", page 240](#)

9.3.1 Front Parking Aid Warning Buzzer - H22- , Removing and Installing

Removing

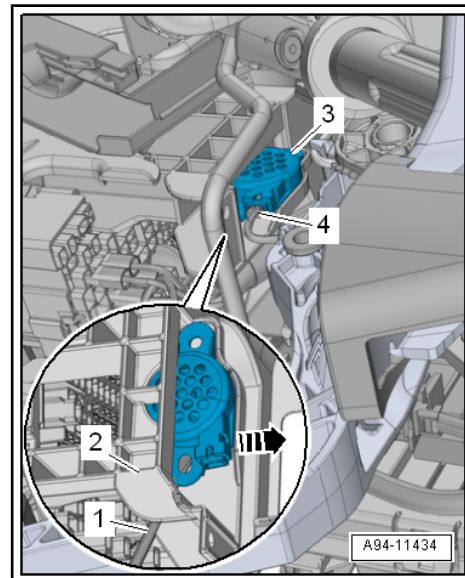
- Remove the trim panel under the instrument panel. Refer to ➔ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Driver Side Instrument Panel Cover, Removing and Installing .



- Remove the Front Parking Aid Warning Buzzer - H22- -3- with a narrow screwdriver -1- from the mount -2- -arrows-.
- Remove the Front Parking Aid Warning Buzzer - H22- .
- Disconnect the connector -4-.

Installing

Install in reverse order of removal.



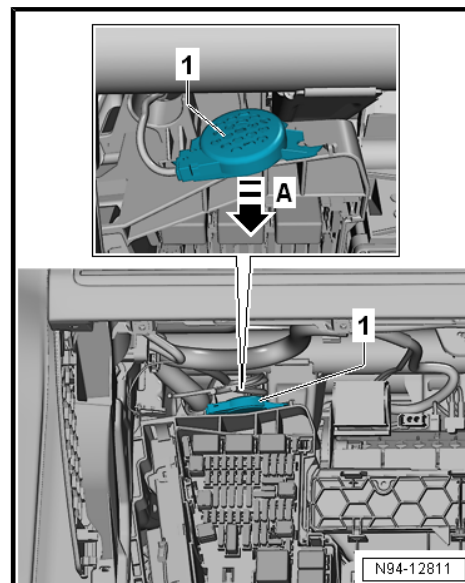
9.3.2 Front Parking Aid Warning Buzzer - H22- , Removing and Installing, RHD

Removing

- Remove the glove compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Glove Compartment, Removing and Installing .
- Remove the Front Parking Aid Warning Buzzer - H22- -1- using a narrow screwdriver in the direction of the arrow -A- from the mount.
- Remove the Front Parking Aid Warning Buzzer - H22- -1-.
- Disconnect the connector.

Installing

Install in reverse order of removal.



9.4 Rear Parking Aid Warning Buzzer - H15- , Removing and Installing

Removing

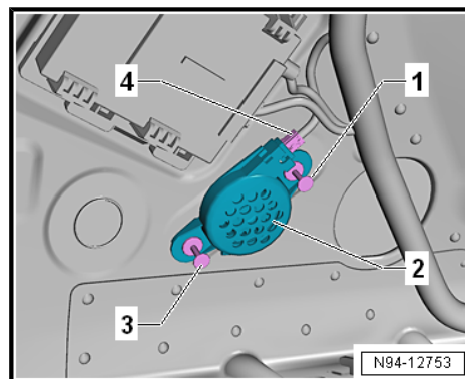
- Remove the C-pillar trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Passenger Compartment Trim; C-Pillar Trim Panel, Removing and Installing .



- Pry of the expanding clip -1 and 3-.
- Remove the Rear Parking Aid Warning Buzzer - H15- -2-.
- Disconnect the connector -4-.

Installing

Install in reverse order of removal.



9.5 Front Parking Aid Sensor, Removing and Installing

Removing

- Remove the radiator grille. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Radiator Grille/Front Trim; Radiator Grille, Removing and Installing .

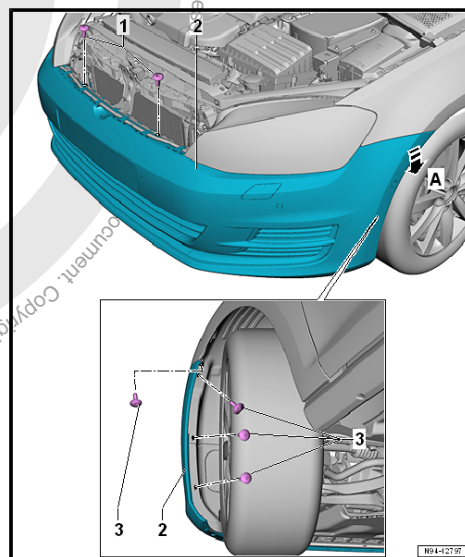


Caution

There is a risk of damaging the components.

- ◆ *Carefully remove the bumper. Pay attention that the bumper is not deformed or ripped.*
- ◆ *When removing the headlamp the surface can be scratched. Tape up those components which could be damaged.*

- Remove the bolts -3- from the front wheel housing liner.
- If equipped, remove the bolts -1-.
- Loosen the bumper -2- from the fender and remove in direction of -arrow A-.





- Press both catches in direction of -arrow A- and at the same time press sensor -1- inward from outside.
- Disconnect the connector -2-.

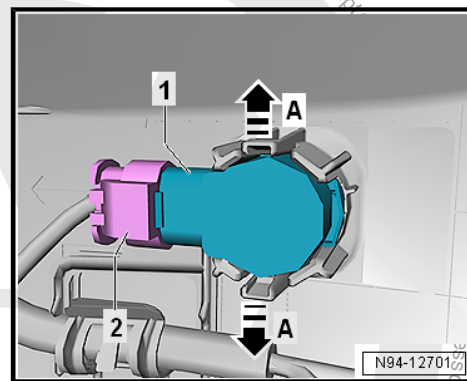
Installing

Install in the reverse order of removal. Note the following:



Note

- ◆ When inserting sensor into sensor bracket, make sure that decoupling ring (black silicone ring) has proper fit on the sensor head.
- ◆ Both sensor mount retaining clips must engage audibly when installing the sensor.



9.6 Rear Parking Aid Sensor, Removing and Installing

Removing

Outer Sensors



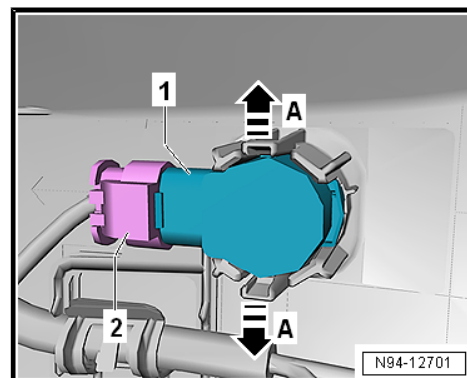
Note

The outer rear parking aid sensor can be remove and installed without removing the rear bumper.

- Press both catches in the direction of the -arrow A- and at the same time press sensor -1- inward from outside.
- Disconnect the connector -2-.

Inner Sensor

- Remove the rear bumper cover. Refer to ⇒ Body Exterior; Rep. Gr. 63 ; Rear Bumper; Bumper Cover, Removing and Installing .



- Press both catches in direction of -arrow A- and at the same time press sensor -1- inward from outside.
- Disconnect the connector -2-.

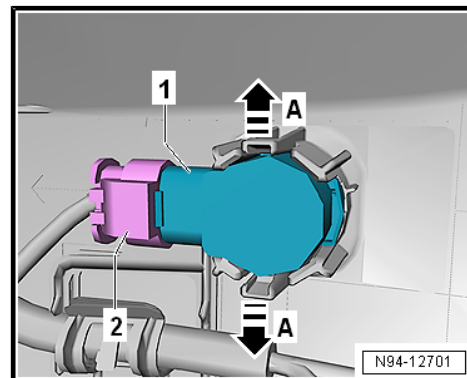
Installing

Install in the reverse order of removal. Note the following:



Note

- ◆ When inserting sensor into sensor bracket, make sure that decoupling ring (black silicone ring) has proper fit on the sensor head.
- ◆ Both sensor mount retaining clips must engage audibly when installing the sensor.



10 Parallel Parking Assist

⇒ ["10.1 Overview - Parallel Parking Assist", page 244](#)

⇒ ["10.2 Control Module, Removing and Installing", page 245](#)

⇒ ["10.3 Front Sensor, Removing and Installing", page 245](#)

⇒ ["10.4 Rear Sensor, Removing and Installing", page 246](#)

10.1 Overview - Parallel Parking Assist

⇒ ["10.1.1 Overview - Parallel Parking Assist", page 244](#)

10.1.1 Overview - Parallel Parking Assist

1 - Parallel Parking Assistance Button - E581-

- ❑ Removing and installing. Refer to
⇒ ["2.13 Parallel Parking Assistance Button E581, Removing and Installing", page 295](#).

2 - Rear Parallel Parking Assist Sensor

- ❑ Left Rear Parallel Parking Assistance Sensor - G716-
- ❑ Right Rear Parallel Parking Assistance Sensor - G717-
- ❑ Removing and installing. Refer to
⇒ ["10.4 Rear Sensor, Removing and Installing", page 246](#).

3 - Bracket

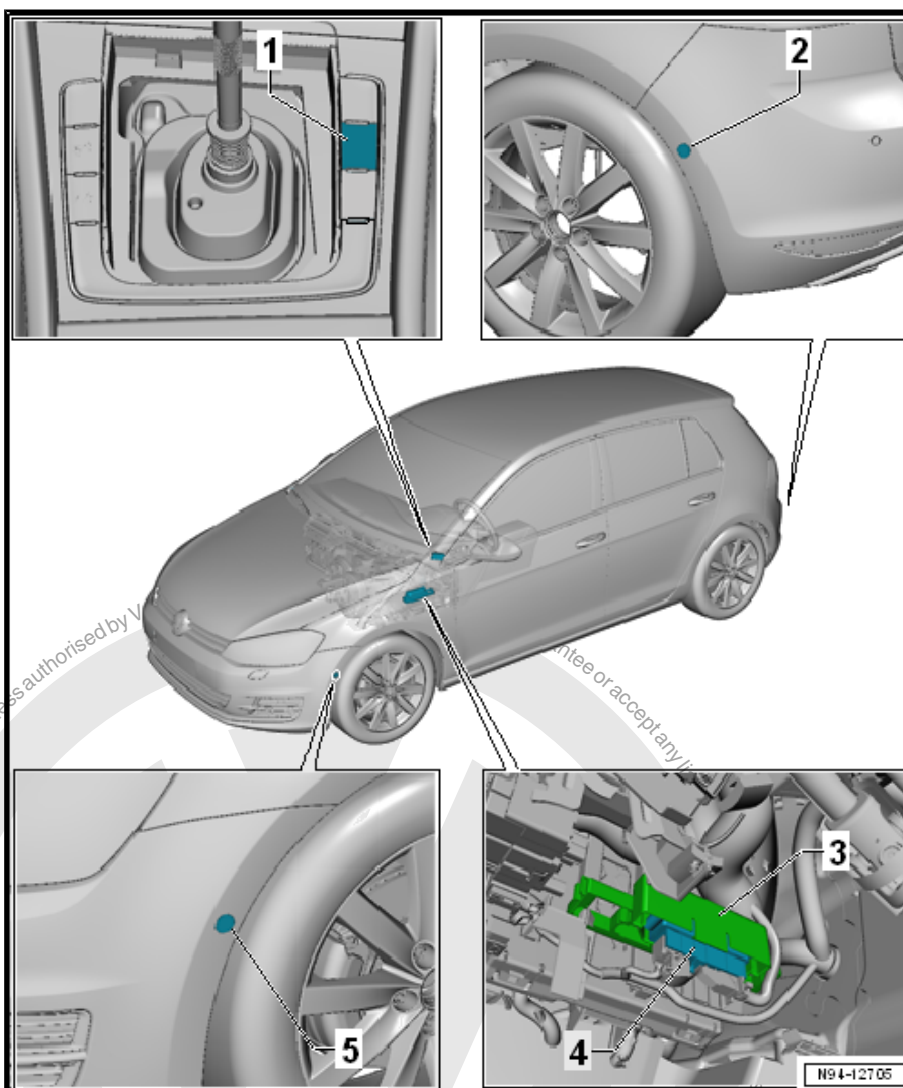
- ❑ For the Parking Aid Control Module - J446-
- ❑ Removing and installing. Refer to
⇒ ["2.8 Parking Aid Control Module J446/ Parallel Parking Assistance Control Module J791 Bracket, Removing and Installing", page 341](#).

4 - Parallel Parking Assistance Control Module - J791-

- ❑ Removing and installing. Refer to
⇒ ["9.2 Parking Aid Control Module J446, Removing and Installing", page 239](#).

5 - Parallel Parking Assist Front Sensor

- ❑ Left Front Parallel Parking Assistance Sensor - G568-
- ❑ Right Front Parallel Parking Assistance Sensor - G569-
- ❑ Removing and installing. Refer to ⇒ ["10.3 Front Sensor, Removing and Installing", page 245](#).





10.1.2 Overview - Parallel Parking Assist, RHD

1 - Rear Parallel Parking Assist Sensor

- ❑ Left Rear Parallel Parking Assistance Sensor - G716-
- ❑ Right Rear Parallel Parking Assistance Sensor - G717-
- ❑ Removing and installing. Refer to
⇒ ["10.4 Rear Sensor, Removing and Installing", page 246](#) .

2 - Parallel Parking Assistance Button - E581-

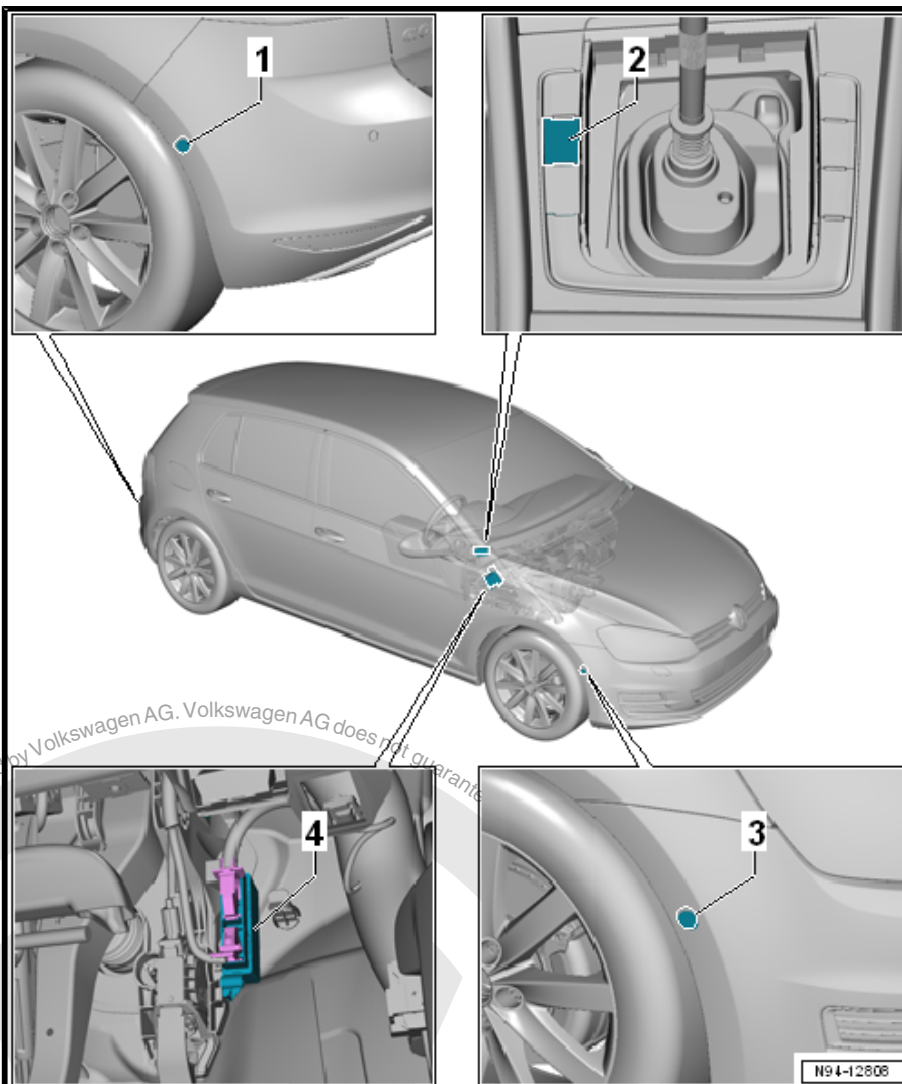
- ❑ Removing and installing. Refer to
⇒ ["2.13 Parallel Parking Assistance Button E581, Removing and Installing", page 295](#) .

3 - Parallel parking assist front sensor

- ❑ Left Front Parallel Parking Assistance Sensor - G568-
- ❑ Right Front Parallel Parking Assistance Sensor - G569-
- ❑ Removing and installing. Refer to
⇒ ["10.3 Front Sensor, Removing and Installing", page 245](#) .

4 - Parallel Parking Assistance Control Module - J791-

- ❑ Removing and installing. Refer to
⇒ ["9.2 Parking Aid Control Module J446, Removing and Installing", page 239](#) .



10.2 Control Module, Removing and Installing

- Parallel Parking Assistance Control Module - J791-, removing and installing. Refer to
⇒ ["9.2 Parking Aid Control Module J446, Removing and Installing", page 239](#) .

10.3 Front Sensor, Removing and Installing

Removing

- Remove the wheel housing liner. Refer to ⇒ Body Exterior, Rep. Gr. 66; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing .



- Press both catches in direction of -arrow A- and at the same time press sensor -1- inward from outside.
- Disconnect the connector -2-.

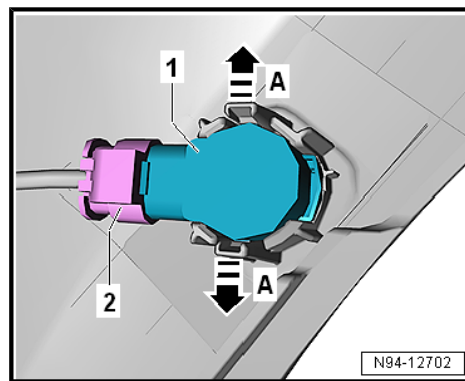
Installing

Install in the reverse order of removal. Note the following:



Note

- ♦ *When inserting sensor into sensor bracket, make sure that decoupling ring (black silicone ring) has proper fit on the sensor head.*
- ♦ *Both sensor mount retaining clips must engage audibly when installing the sensor.*



10.4 Rear Sensor, Removing and Installing

Removing

- Remove the rear wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Rear Wheel Housing Liner, Removing and Installing .
- Press both catches in direction of -arrow A- and at the same time press sensor -1- inward from outside.
- Disconnect the connector -2-.

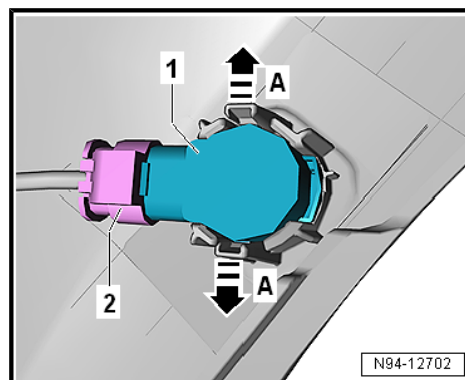
Installing

Install in the reverse order of removal. Note the following:



Note

- ♦ *When inserting sensor into sensor bracket, make sure that decoupling ring (black silicone ring) has proper fit on the sensor head.*
- ♦ *Both sensor mount retaining clips must engage audibly when installing the sensor.*





11 Automatic Headlamp Range Control

⇒ "11.1 Overview - Automatic Head Lamp Range Control",
page 247

⇒ "11.2 Headlamp Range Control Module J431 / Cornering Lamp
and Headlamp Range Control Module J745, Removing and In-
stalling", page 249

11.1 Overview - Automatic Head Lamp Range Control

⇒ "11.1.1 Overview - Automatic Head Lamp Range Control", page
247

11.1.1 Overview - Automatic Head Lamp Range Control

1 - Expanding Clip

- Quantity: 2

2 - Control Module

- Removing and instal-
ling. Refer to
⇒ "11.2 Headlamp
Range Control Module
J431 / Cornering Lamp
and Headlamp Range
Control Module J745,
Removing and Instal-
ling", page 249 .

Vehicle equipment versions without cornering lamps:

- Headlamp Range Con-
trol Module - J431-

Vehicle equipment versions with cornering lamps:

- Cornering Lamp and
Headlamp Range Con-
trol Module - J745-

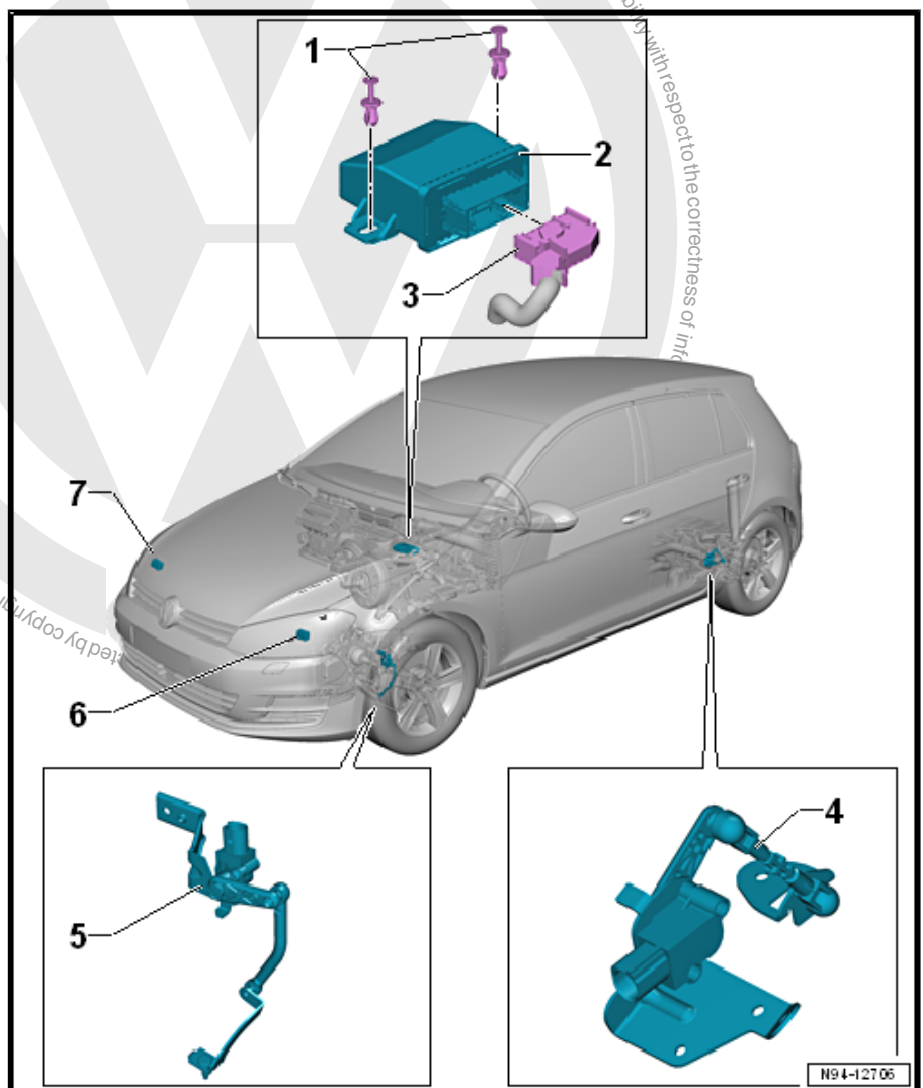
3 - Connector

4 - Left Rear Level Control Sys- tem Sensor - G76-

- Component location: on
the rear control arm
- Overview. Refer to ⇒
Suspension, Wheels,
Steering; Rep. Gr. 43 ;
Level Control System
Sensor; Overview -
Rear Level Control Sys-
tem Sensor .

5 - Left Front Level Control System Sensor - G78-

- Component location: on the front control arm
- For vehicle equipment versions: HID headlamps with cornering lamps
- Overview. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 43 ; Level Control System Sensor; Over-
view - Front Level Control System Sensor .





6 - Left Headlamp Beam Adjustment Motor - V48-

- ❑ Removing and installing. Refer to
⇒ ["1.9 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing", page 151 .](#)

7 - Right Headlamp Beam Adjustment Motor - V49-

- ❑ Removing and installing. Refer to
⇒ ["1.9 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing", page 151 .](#)

11.1.2 Overview - Automatic Head Lamp Range Control, RHD

1 - Control Module

- ❑ Removing and installing. Refer to
⇒ ["11.2 Headlamp Range Control Module J431 / Cornering Lamp and Headlamp Range Control Module J745, Removing and Installing", page 249 .](#)

Vehicle equipment versions without cornering lamps:

- ❑ Headlamp Range Control Module - J431-

Vehicle equipment versions with cornering lamps:

- ❑ Cornering Lamp and Headlamp Range Control Module - J745-

2 - Left Rear Level Control System Sensor - G76-

- ❑ Component location: on the rear control arm
- ❑ Overview. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 43 ; Level Control System Sensor; Overview - Rear Level Control System Sensor .

3 - Left Front Level Control System Sensor - G78-

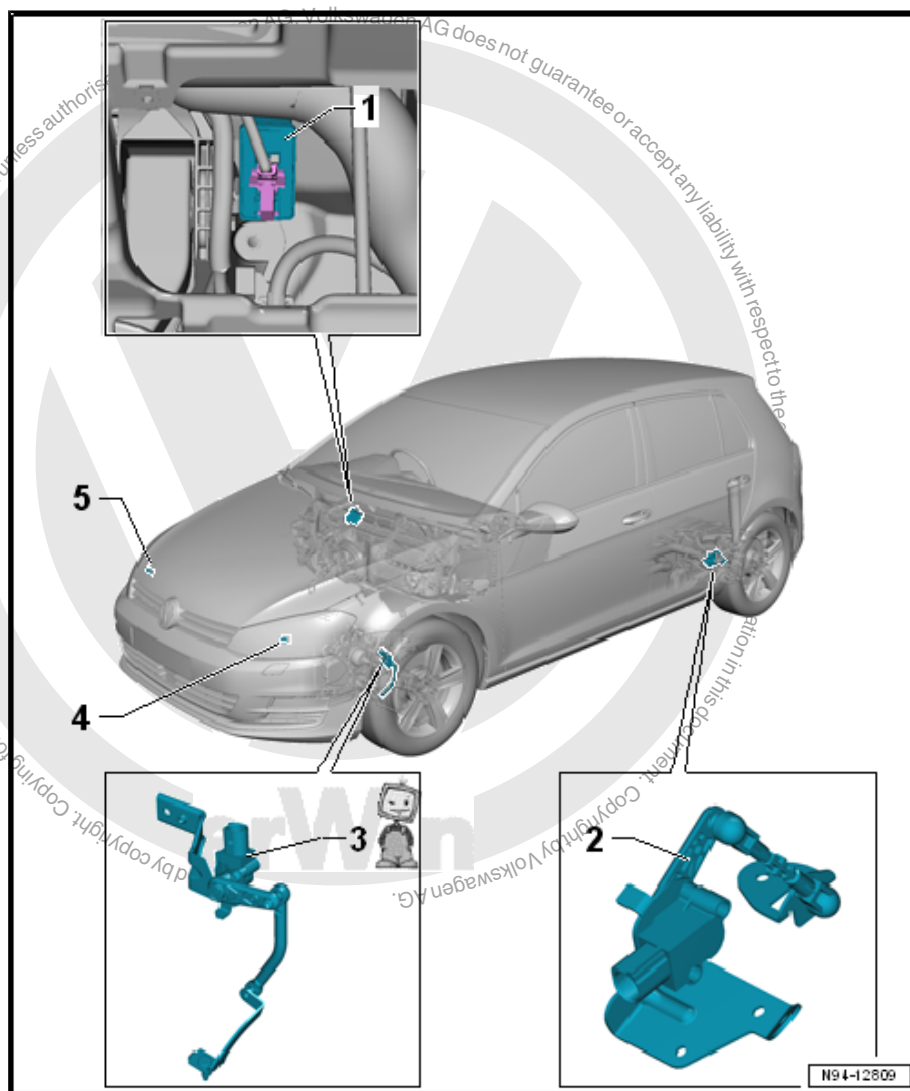
- ❑ Component location: on the front control arm
- ❑ For vehicle equipment versions: HID headlamps with cornering lamps
- ❑ Overview. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 43 ; Level Control System Sensor; Overview - Front Level Control System Sensor .

4 - Left Headlamp Beam Adjustment Motor - V48-

- ❑ Removing and installing. Refer to
⇒ ["1.9 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing", page 151 .](#)

5 - Right Headlamp Beam Adjustment Motor - V49-

- ❑ Removing and installing. Refer to
⇒ ["1.9 Left/Right Headlamp Beam Adjustment Motor V48 / V49 , Removing and Installing", page 151 .](#)





11.2 Headlamp Range Control Module - J431- / Cornering Lamp and Headlamp Range Control Module - J745- , Removing and Installing

⇒ **"11.2.1 Headlamp Range Control Module J431 / Cornering Lamp and Headlamp Range Control Module J745 , Removing and Installing", page 249**

11.2.1 Headlamp Range Control Module - J431- / Cornering Lamp and Headlamp Range Control Module - J745- , Removing and Installing

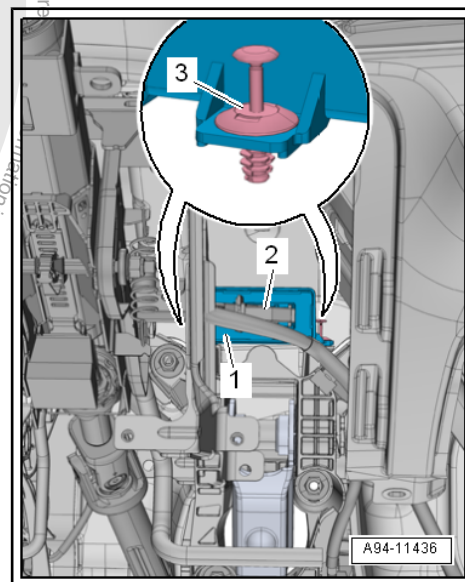


Note

If the control module is replaced, select the **Replace** function for the respective control module in **Guided Fault Finding** or **Guided Functions** using the Vehicle Diagnostic Tester .

Removing

- Remove the driver side instrument panel cover. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Driver Side Instrument Panel Cover, Removing and Installing .
- Remove the driver side knee airbag. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Knee Airbags; Overview - Knee Airbag .
- Release and remove the expanding clip -3-.
- Remove the headlamp range control module -1- toward the rear.
- Disconnect the connector -2-.



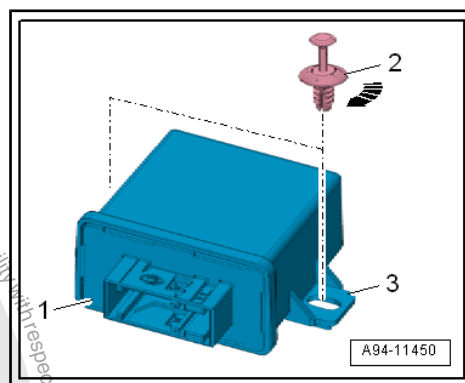
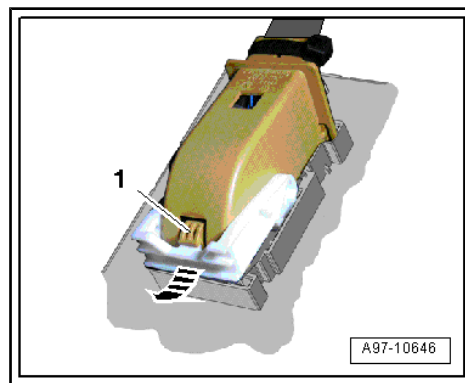


- To do this push the tab -1-, pivot the retaining bracket in direction of -arrow- and remove the connector.

Installing

Install in the reverse order of removal. Note the following:

- Push the expanding clip -2- in the opening -3- on the control module -1-.
- Lock the expanding clip by turning 90° -arrow-.



11.2.2 Headlamp Range Control Module - J431- / Cornering Lamp and Headlamp Range Control Module - J745- , Removing and Installing, RHD



Note

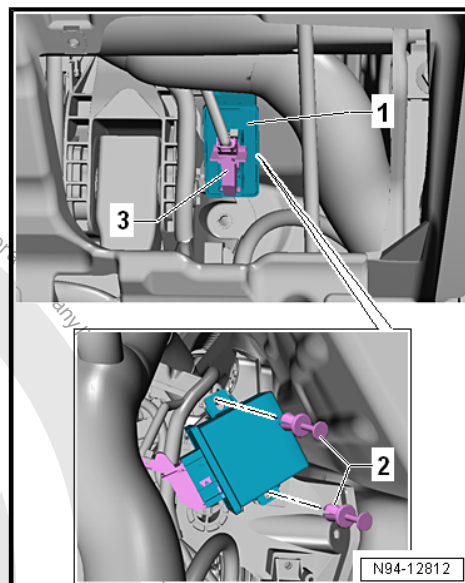
If the control module is replaced, select the Replace function for the respective control module in Guided Fault Finding or Guided Functions using the ⇒ *Vehicle diagnostic tester*.

Removing

- Remove the driver side instrument panel cover. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Driver Side Instrument Panel Cover, Removing and Installing .



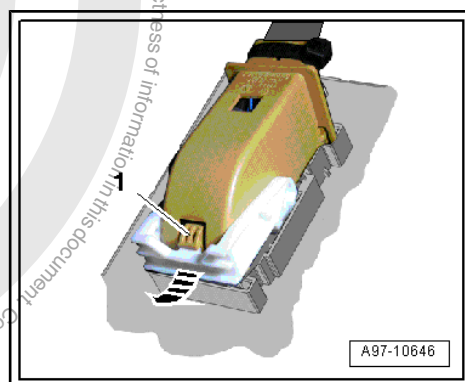
- Release and remove the expanding clip -2-.
- Remove the headlamp range control module -1- toward the rear.
- Disconnect the connector -3-.



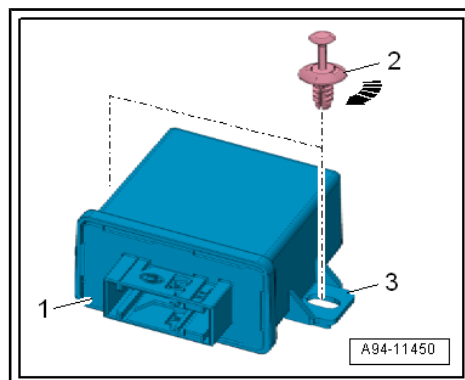
- To do this push the tab -1-, pivot the retaining bracket in the -direction of the arrow- and remove the connector.

Installing

Install in the reverse order of removal. Note the following:



- Push the expanding clip -2- in the opening -3- on the control module -1-.
- Lock the expanding clip by turning 90° -arrow-.





12 Trailer Hitch

⇒ "12.1 Overview - Trailer Hitch Socket", page 252

⇒ "12.2 Trailer Socket U10 ", page 252

⇒ "12.3 Towing Recognition Control Module J345 , Removing and Installing", page 253

12.1 Overview - Trailer Hitch Socket

1 - Towing Recognition Control Module - J345-

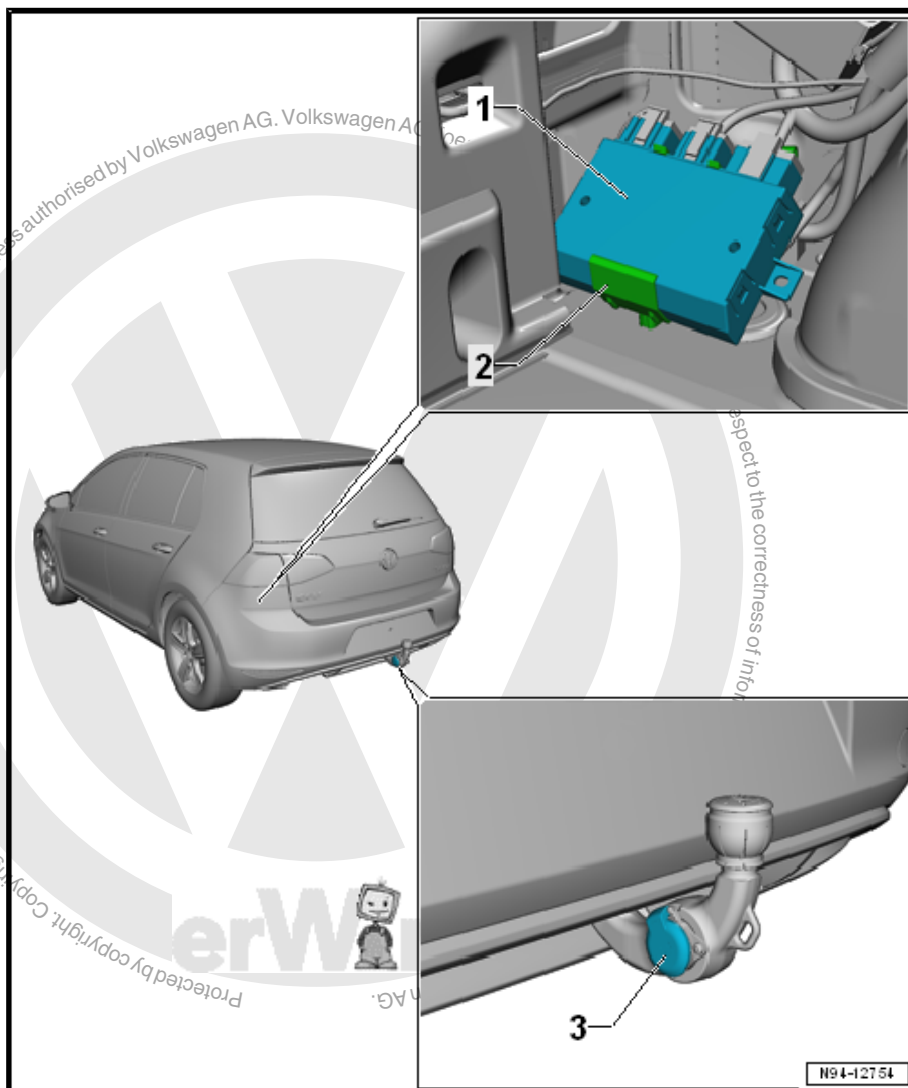
- ❑ Removing and installing. Refer to
⇒ "12.3 Towing Recognition Control Module J345 , Removing and Installing", page 253 .

2 - Frame

- ❑ For Towing Recognition Control Module - J345-

3 - Trailer Socket - U10-

- ❑ Connector assignment. Refer to
⇒ "12.2 Trailer Socket U10 ", page 252 .



12.2 Trailer Socket - U10-

Characteristics of pin 9

- ◆ Pin 9, continuous positive, supplies the trailer with positive from the battery.
- ◆ The continuous positive is always connected directly to the battery.
- ◆ Only low voltage is permitted, approximately 7.5 - 10 A.



Trailer Socket - U10- connector assignment.

The exact connector assignment can be found the applicable wiring diagram. Refer to ➔ Wiring diagrams, Troubleshooting & Component locations.

12.3 Towing Recognition Control Module - J345- , Removing and Installing



Note

If the control module is replaced, select the **Replace** function for the respective control module in **Guided Fault Finding** or **Guided Functions** using the **Vehicle Diagnostic Tester**.

Removing

- Turn off the ignition and all electrical equipment.
- If equipped, turn the key to the 0 position (pre-lock).
- Remove the luggage compartment left trim panel. Refer to ➔ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Luggage Compartment Side Trim Panel, Removing and Installing .
- Push the clips -1- together in direction of -arrow A-.
- Remove the Towing Recognition Control Module - J345- -3-.
- Disconnect the connectors -2-.

Installing

Install in the reverse order of removal. Note the following:

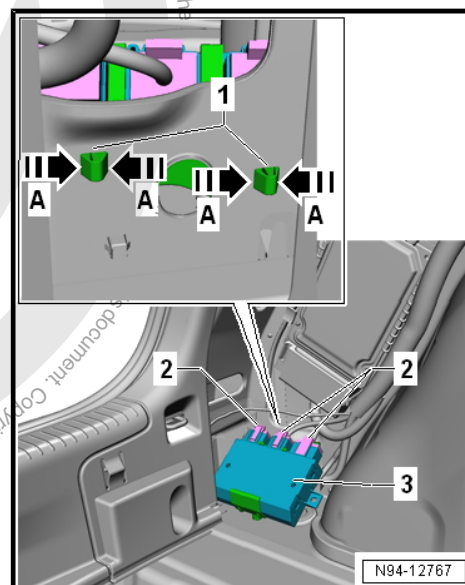


Note

After installing a new Towing Recognition Control Module - J345- , it must be coded. Refer to ➔ [page 253](#) .

Towing Recognition Control Module, Coding

- Connect the Vehicle Diagnostic Tester .
- Code the towing recognition control module using the Vehicle Diagnostic Tester .





13 Blind Spot Detection

⇒ "13.1 Overview - Blind Spot Detection", page 254

⇒ "13.2 Blind Spot Detection Warning Lamp in Left/Right Exterior Mirror K303 / K304 , Removing and Installing", page 255

⇒ "13.3 Blind Spot Detection Control Module J1086 / Blind Spot Detection Control Module 2 J1087 , Removing and Installing", page 255

⇒ "13.4 Blind Spot Detection, Calibrating", page 256

13.1 Overview - Blind Spot Detection

1 - Blind Spot Detection Warning Lamp in Left Exterior Mirror - K303-

- ❑ Removing and installing. Refer to
⇒ "13.2 Blind Spot Detection Warning Lamp in Left/Right Exterior Mirror K303 / K304 , Removing and Installing", page 255 .

2 - Blind Spot Detection Warning Lamp in Right Exterior Mirror - K304-

- ❑ Removing and installing. Refer to
⇒ "13.2 Blind Spot Detection Warning Lamp in Left/Right Exterior Mirror K303 / K304 , Removing and Installing", page 255 .

3 - Bracket

4 - Nut

- ❑ 6 Nm

5 - Connector

6 - Blind Spot Detection Control Module - J1086-

- ❑ Master
- ❑ Removing and installing. Refer to
⇒ "13.3 Blind Spot Detection Control Module J1086 / Blind Spot Detection Control Module 2 J1087 , Removing and Installing", page 255 .

7 - Bracket

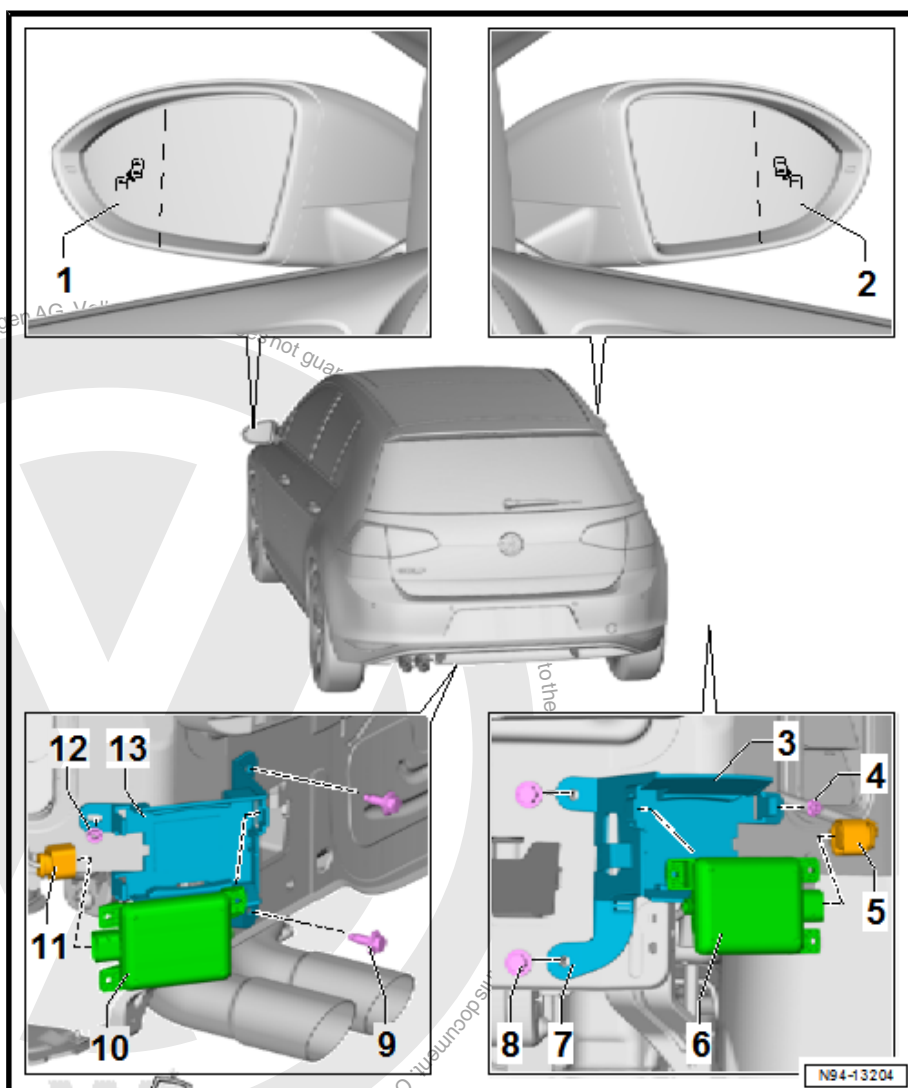
- ❑ Lower attachment point

8 - Screw

- ❑ 2 Nm

9 - Screw

- ❑ 2 Nm





10 - Blind Spot Detection Control Module 2 - J1087-

- ☐ Slave
- ☐ Removing and installing. Refer to
⇒ ["13.3 Blind Spot Detection Control Module J1086 / Blind Spot Detection Control Module 2 J1087, Removing and Installing", page 255](#) .

11 - Connector

12 - Nut

- ☐ 2 Nm

13 - Bracket

13.2 Blind Spot Detection Warning Lamp in Left/Right Exterior Mirror -K303- / - K304- , Removing and Installing

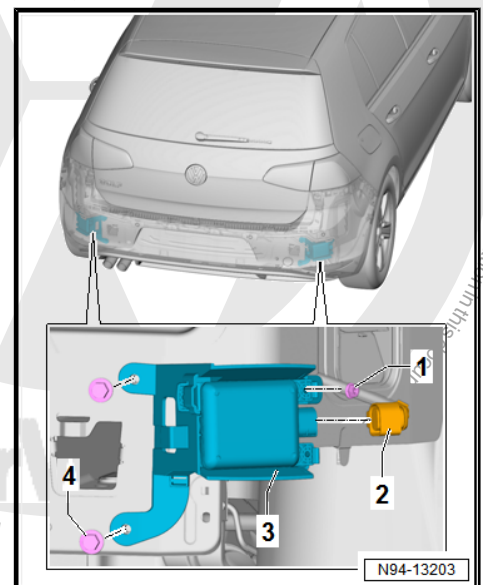
The Blind Spot Detection Warning Lamp in Left Exterior Mirror - K303- / Blind Spot Detection Warning Lamp in Right Exterior Mirror - K304- is located in the mirror glass and cannot be replaced separately.

- Mirror glass, removing and installing. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Exterior Mirror; Mirror Glass, Removing and Installing .

13.3 Blind Spot Detection Control Module - J1086- / Blind Spot Detection Control Module 2 - J1087- , Removing and Installing

Removing

- Disconnect the connector -2-.
- Remove the nut -1- and the screws -4- for the bracket.





- Remove the Blind Spot Detection Control Module - J1086- / Blind Spot Detection Control Module 2 - J1087- with the bracket -1-.
- Remove the Blind Spot Detection Control Module - J1086- / Blind Spot Detection Control Module 2 - J1087- -2- from the bracket -1-.

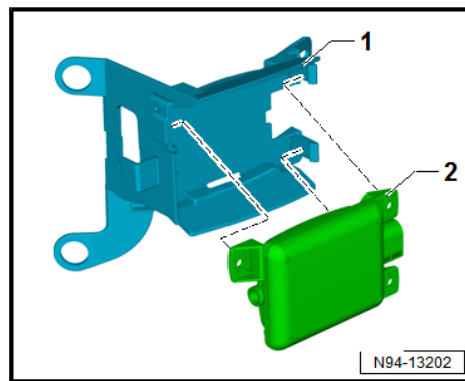
Installing

Install in the reverse order of removal while paying attention to the following:



Note

- ♦ *The blind spot detection calibration normally occurs automatically.*
- ♦ *Static calibration is only required when there is a DTC memory entry.*



Tightening Specifications

- ♦ Refer to ⇒ [“13.1 Overview - Blind Spot Detection”, page 254](#)

13.4 Blind Spot Detection, Calibrating

⇒ [“13.4.1 Preparing for Calibration”, page 256](#)

⇒ [“13.4.2 Preparing for Calibration”, page 257](#)

⇒ [“13.4.3 Blind Spot Detection Control Module J1086 / Blind Spot Detection Control Module 2 J1087 , Calibrating”, page 261](#)

13.4.1 Preparing for Calibration



Note

The vehicle in the illustration is only a basic outline.



1 - Volkswagen Logo

- ☐ The laser pointer is aligned on the center of the Volkswagen logo

2 - Calibration Tool - Wheel Center Mountings - VAS6350/1-

- ☐ With 17 mm wheel bolt adapter and measure paddle

3 - Catch Bracket

- ☐ To mount the Calibration Tool - Spacing Laser - VAS6350/2- for the distance measurement
- ☐ Distance to the Calibration Tool - Wheel Center Mountings VAS6350/1- on the rear wheels: dimension -a- = 1700 ± 2 mm

4 - Level

- ☐ On the Calibration Unit - VAS6350A-
- ☐ To check the horizontal position of the Calibration Unit - VAS6350A-

5 - Calibration Tool - Spacing Laser - VAS6350/2-

- ☐ For distance measurement
- ☐ Usage information. Refer to the Operating Instructions.

6 - Plastic Foot

- ☐ Quantity: 3
- ☐ Can be adjusted when setting the horizontal position of the Calibration Unit - VAS6350A-

7 - Calibration Tool - Linear Laser - VAS6350/3-

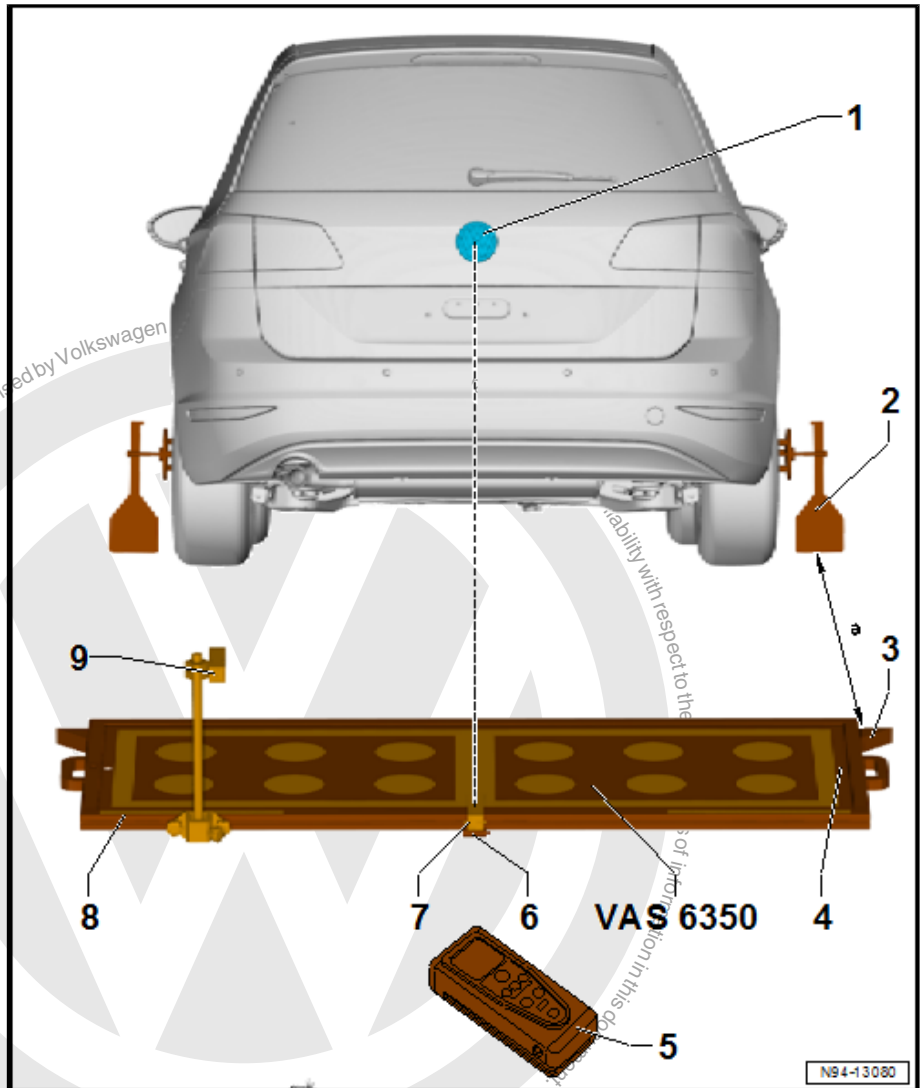
- ☐ With "laser protective eyewear"
- ☐ On the Calibration Unit - VAS6350A-
- ☐ Turning on and off. Refer to the Operating Instructions.

8 - Measurement Scale

- ☐ For positioning the Calibration Tool - Lane Change Calibration Tool - VAS6350/4-
- ☐ Dimension to be adjusted measuring point on steel ruler = 621 mm

9 - Calibration Tool - Lane Change Calibration Tool - VAS6350/4-

- ☐ Is moved from the left to the right side of measuring field during calibration
- ☐ When installed correctly, vehicle electrical system voltage line must be connected at bottom left of calibration tool (as seen in direction of travel)
- ☐ Height of the upper edge of the calibration device to the floor: approximately 606 mm



13.4.2 Preparing for Calibration

Special tools and workshop equipment required

- ◆ Calibration Unit - VAS6350A-



◆ Vehicle Diagnostic Tester

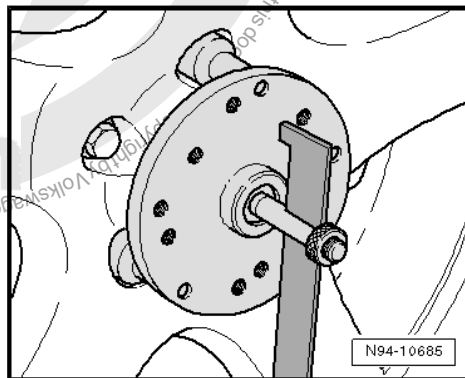
Various preparation work procedures must be performed before the actual calibration procedure using the Vehicle Diagnostic Tester .

Requirements:

- Move the vehicle onto a secure flat surface.
- Apply the parking brake - the vehicle must not move during the measurement.
- Place the front wheels in a straight-ahead position - steering wheel in 0 position.
- No persons may be in the vehicle interior during the measurement.
- Do not open and close the vehicle doors during calibration.

Procedure

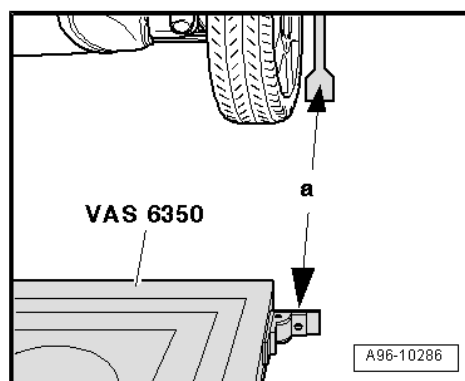
- Connect the Vehicle Diagnostic Tester .
- Turn on the ignition.
- Tighten three wheel bolt adapters (17 mm) for the wheel bolts on each Calibration Tool - Wheel Center Mountings - VAS6350/1- .
- Insert the measuring paddle on both Calibration Tool - Wheel Center Mountings - VAS6350/1- and secure it with the locking nut.
- Place the Calibration Tool - Wheel Center Mountings - VAS6350/1- onto the wheel bolts on both rear wheels.
- The wheel center sensor rotation center must be in wheel rotation center.



Note

Place the Calibration Tool - Wheel Center Mountings - VAS6350/1- on the wheels so that the "anti-theft wheel bolts" are not connected with wheel center mounting.

- Adjust the measuring paddle using the lock nuts so that they move freely just above the floor.
- The measuring paddles must move easily.
- The measuring paddles must be vertical.
- Position the Calibration Unit - VAS6350A- at distance -a- to the rear wheels.
- Dimension -a- = 1700 ± 2 mm





- Switch on the Calibration Tool - Spacing Laser - VAS6350/2- with the **ON** button.

Display on the Calibration Tool - Spacing Laser - VAS6350/2- :

- “- - - m”



Note

The laser is switched on at same time.

- Hold the Calibration Tool - Spacing Laser - VAS6350/2- -2- flush against the catch bracket, as shown in the illustration, for the distance measurement.
- The Calibration Tool - Spacing Laser - VAS6350/2- must lie firmly against the catch bracket.
- Make sure the “laser beam” for the distance measurement contacts the paddle on lower enlarged part -1-.

If that is not the case, correct the measuring paddle height using the locking nuts on the Calibration Tool - Wheel Center Mountings - VAS6350/1- .

- Briefly press **ON** button for distance measurement.

Display on the Calibration Tool - Spacing Laser - VAS6350/2- :

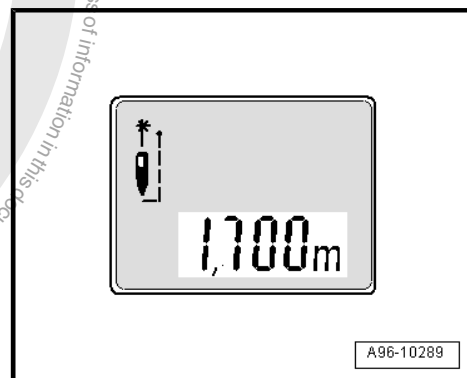
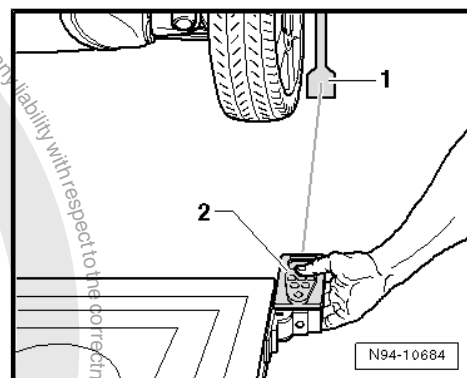
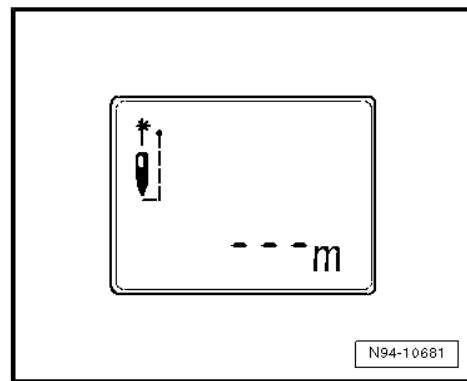
- “1.700 m” (specified value: 1700 ± 2 mm).
- Repeat the measurement procedure from the left catch bracket to measuring paddle on left rear wheel.
- The distance value must be the same on both sides.

If both measured values are not the same, adjust the Calibration Unit - VAS6350A- accordingly.



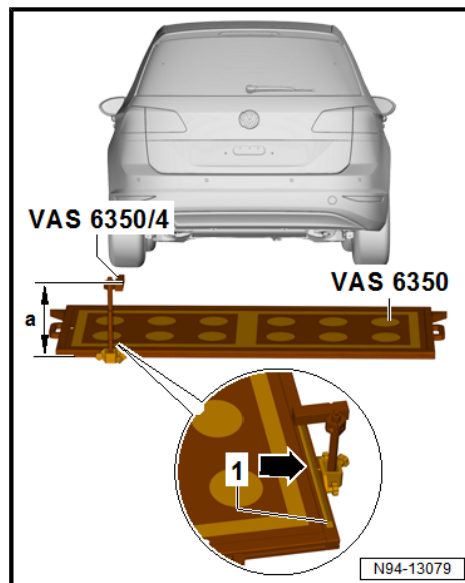
Note

The vehicle in the illustration is only a basic outline.

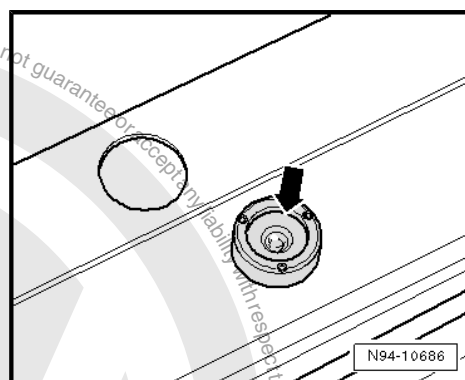




- Secure the Calibration Tool - Lane Change Calibration Tool - VAS6350/4- to the Calibration Unit - VAS6350A- mount on the rear left side.
- When installed correctly, vehicle electrical system voltage line must be connected at bottom left of calibration device (as seen in direction of travel).
- Dimension -a- = 606 mm (measured from the upper edge of calibration device to workshop floor).
- The adjustment dimension is set with the measuring point -arrow- on the base of the calibration device on the scale of the steel ruler -1-.
- Left setting = 621 mm (read on measurement scale -1-).
- Connect the Calibration Tool - Lane Change Calibration Tool - VAS6350/4- to the vehicle electrical system voltage.



- Using the bubble level (level indicator) -arrow-, bring the Calibration Unit - VAS6350A- into a horizontal position by turning the plastic bases.



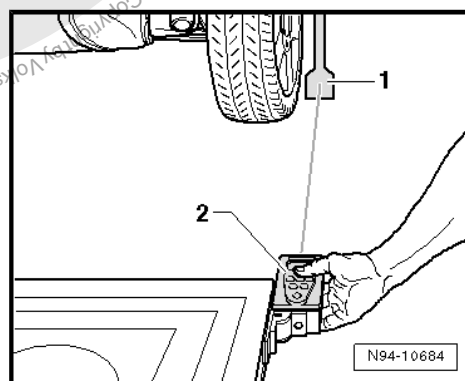
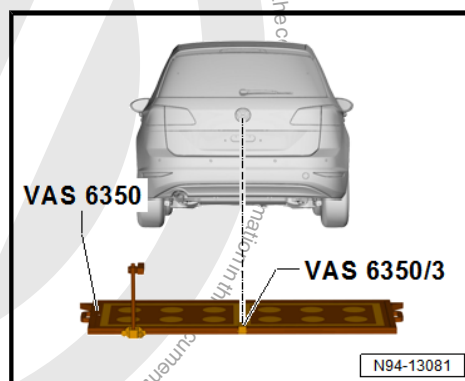
- Wear laser protective eyewear.



Note

The vehicle in the illustration is only a basic outline.

- Turn on the Calibration Tool - Linear Laser - VAS6350/3- on the Calibration Unit - VAS6350A- .
- Align the entire Calibration Unit - VAS6350A- so that the laser beam shines on the center of the vehicle rear above the VW logo.
- Check right and left distance between catch bracket on Calibration Unit - VAS6350A- and measuring paddle -1- on wheel mountings again.
- Specified value: 1700 ± 2 mm



Lane change assistance control module, calibrating. Refer to
⇒ ["13.4.3 Blind Spot Detection Control Module J1086 / Blind Spot Detection Control Module 2 J1087 , Calibrating", page 261](#) .



13.4.3 Blind Spot Detection Control Module - J1086- / Blind Spot Detection Control Module 2 - J1087- , Calibrating

Special tools and workshop equipment required

- ◆ Calibration Unit - VAS6350A-
- ◆ Vehicle Diagnostic Tester



Note

Before the actual calibration procedure for the control modules, the Calibration Unit - VAS6350A- must be set up as described in the chapter.

The following should not occur during the calibration procedure:

- Vehicle doors must not be opened or closed.
- People must not sit in the vehicle.
- People must not go between the vehicle and the Calibration Tool - Lane Change Calibration Tool - VAS6350/4- .

Procedure:

- Turn on the Calibration Tool - Lane Change Calibration Tool - VAS6350/4- at the power switch -3-.
- The green LED -1- must light up.



Note

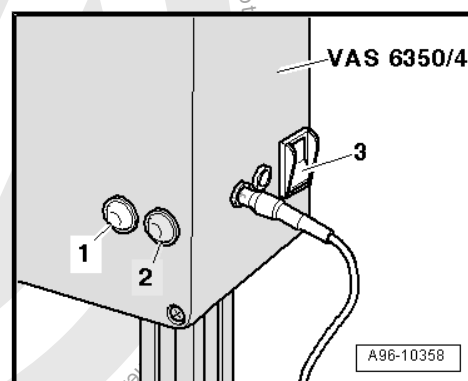
If the red LED -2- lights up: Check the Calibration Tool - Lane Change Calibration Tool - VAS6350/4- .

- Connect the Vehicle Diagnostic Tester .
- Select calibration.
- Follow the instructions in the Vehicle Diagnostic Tester display.



Note

The vehicle in the illustration is only a basic outline.

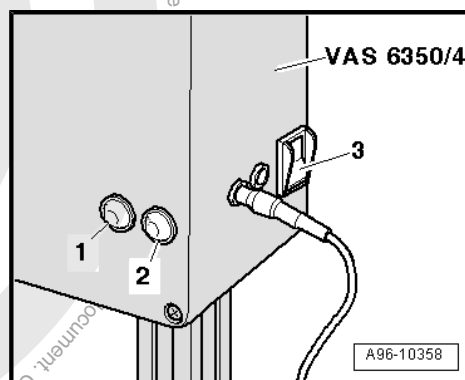
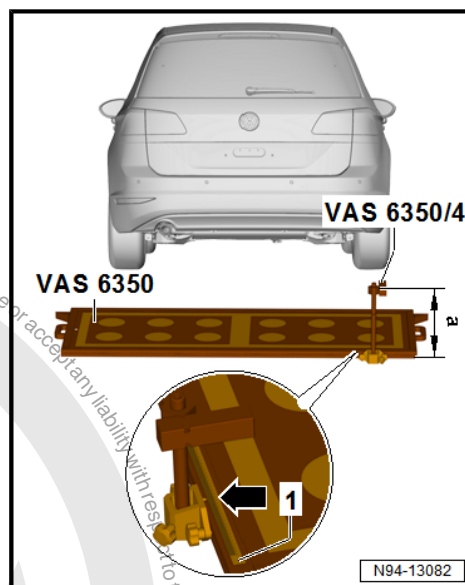




During the program sequence, there is a prompt to switch the Calibration Tool - Lane Change Calibration Tool - VAS6350/4- from the left to the right side of the Calibration Unit - VAS6350A- .

- Turn off the Calibration Tool - Lane Change Calibration Tool - VAS6350/4- and remove the calibration tool.
 - When installed correctly, vehicle electrical system voltage line must be connected at bottom left of calibration device (as seen in direction of travel).
 - Dimension -a- = 606 mm (measured from the upper edge of calibration device to floor).
 - Right adjustment dimension = 621 mm (read on measuring scale -1-).
-
- Turn on the Calibration Tool - Lane Change Calibration Tool - VAS6350/4- at the power switch -3-.
 - The green LED -1- must light up.
 - Follow the instructions in the Vehicle Diagnostic Tester display.

After a successfully calibrating the lane change assist, switch off the ignition and disconnect the diagnostic connector.

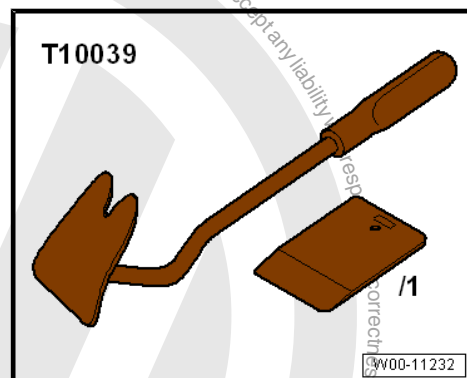




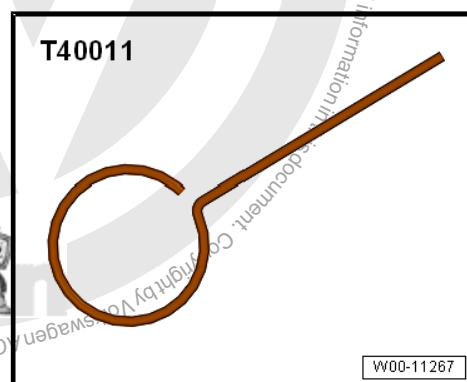
14 Special Tools

Special tools and workshop equipment required

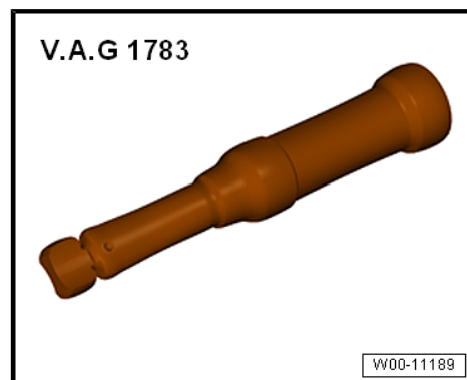
- ◆ Trim Release Lever - Wedge - T10039/1-



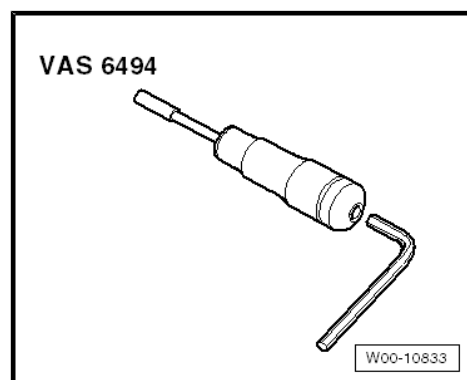
- ◆ Locking Pin (3 pc.) - T40011-



- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-

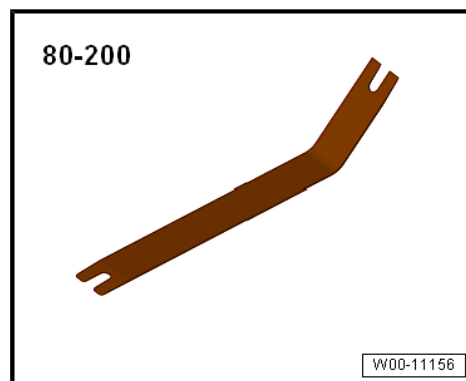


- ◆ Torque Screwdriver - VAS6494-

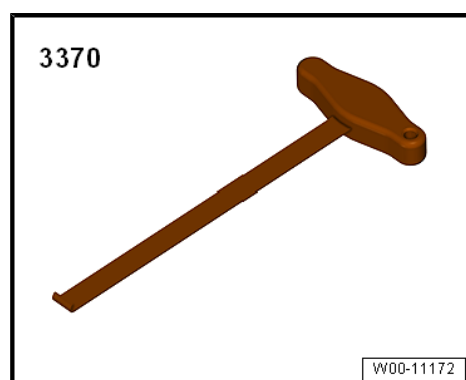




◆ Pry Lever - 80-200-

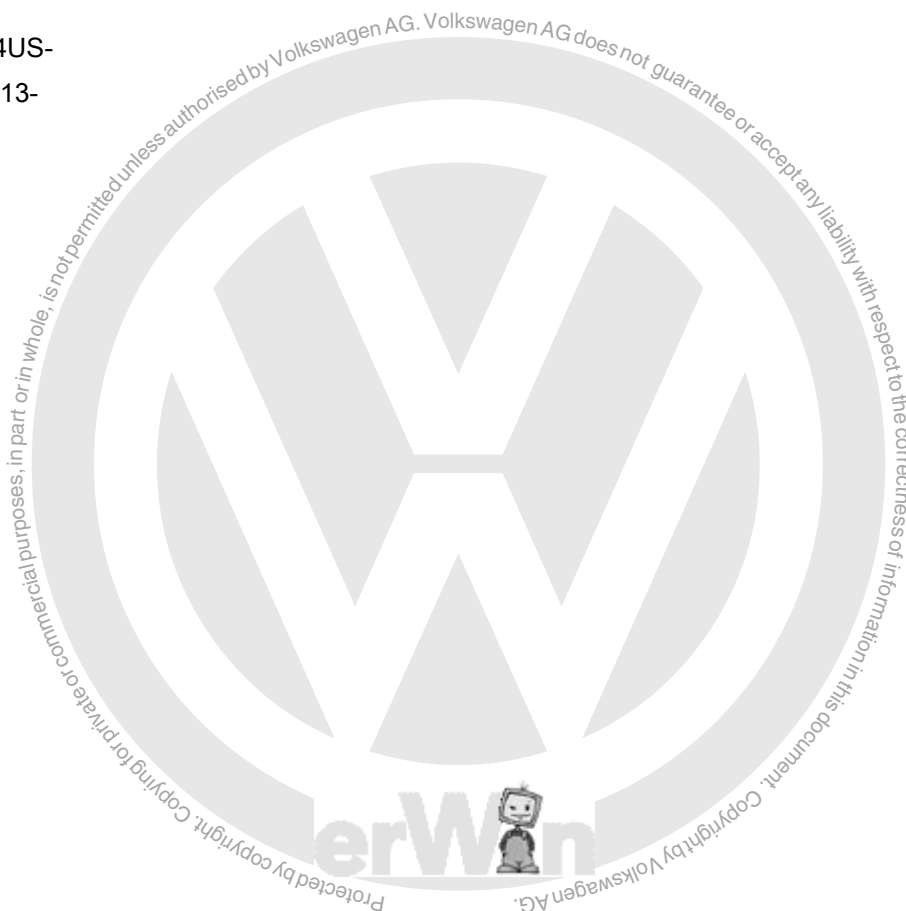


◆ Backrest Panel Tool - 3370-



◆ 7/16 Inch Extractor - T10424US-

◆ ESD Work Surface - VAS6613-





96 – Interior Lights, Switches

1 Lamps

- ⇒ ["1.1 Overview - Instrument Panel Lamps", page 265](#)
- ⇒ ["1.2 Overview - Front Door Lamps", page 267](#)
- ⇒ ["1.3 Overview - Rear Door Lamps", page 268](#)
- ⇒ ["1.4 Overview - Center Console Lamps", page 269](#)
- ⇒ ["1.5 Overview - Luggage Compartment Lamps", page 270](#)
- ⇒ ["1.6 Overview - Roof Trim Panel Lamps", page 271](#)
- ⇒ ["1.7 Glove Compartment Lamp W6 Removing and Installing", page 272](#)
- ⇒ ["1.8 Glove Compartment Lamp W6 Bulb, Replacing", page 272](#)
- ⇒ ["1.9 Left/Right Front Footwell Lamp K268 / K269 , Removing and Installing", page 273](#)
- ⇒ ["1.10 Left/Right Front Footwell Illumination Bulb L151 / L152 , Removing and Installing", page 274](#)
- ⇒ ["1.11 Central Locking -SAFE- Indicator Lamp K133 , Removing and Installing", page 275](#)
- ⇒ ["1.12 Left/Right Front Entry Lamp W31 / W32 , Removing and Installing", page 275](#)
- ⇒ ["1.13 Driver/Front Passenger Door Warning Lamp W30 / W36 , Removing and Installing", page 277](#)
- ⇒ ["1.14 Driver/Front Passenger Door Opener Illumination Bulb L108 / L109 , Removing and Installing", page 277](#)
- ⇒ ["1.15 Left/Right Front Door Ambient Lighting Bulb 2 L203 / L204 , Removing and Installing", page 278](#)
- ⇒ ["1.16 Left/Right Rear Entry Lamp W33 / W34 , Removing and Installing", page 278](#)
- ⇒ ["1.17 Left/Right Rear Door Warning Lamp W37 / W38 , Removing and Installing", page 279](#)
- ⇒ ["1.18 Selector Lever Transmission Range Position Display Unit Y26 , Removing and Installing", page 279](#)
- ⇒ ["1.19 Luggage Compartment Lamp W3 , Removing and Installing", page 279](#)
- ⇒ ["1.20 Driver/Front Passenger Vanity Mirror Lamp W20 / W14 , Removing and Installing", page 280](#)
- ⇒ ["1.21 Front Interior Lamp W1 Bulb, Removing and Installing", page 281](#)
- ⇒ ["1.22 Rear Interior Lamp W43 Bulb Removing and Installing", page 283](#)
- ⇒ ["1.23 Left/Right Rear Reading Lamp W11 / W12 Removing and Installing", page 284](#)
- ⇒ ["1.24 Ambient Lighting LED, Removing and Installing", page 284](#)

1.1 Overview - Instrument Panel Lamps



1 - Front Passenger Airbag - Disabled- Indicator Lamp - K145-

- ❑ The Front Passenger Airbag -Disabled- Indicator Lamp - K145- is removed together with the Emergency Flasher Switch - EX3- . Refer to ➔ ["2.16 Emergency Flasher Switch EX3, Removing and Installing", page 297](#) .
- ❑ Overview. Refer to ➔ Body Interior; Rep. Gr. 69 ; Front Passenger Airbag; Overview - Front Passenger Airbag .

2 - Glove Compartment Lamp - W6-

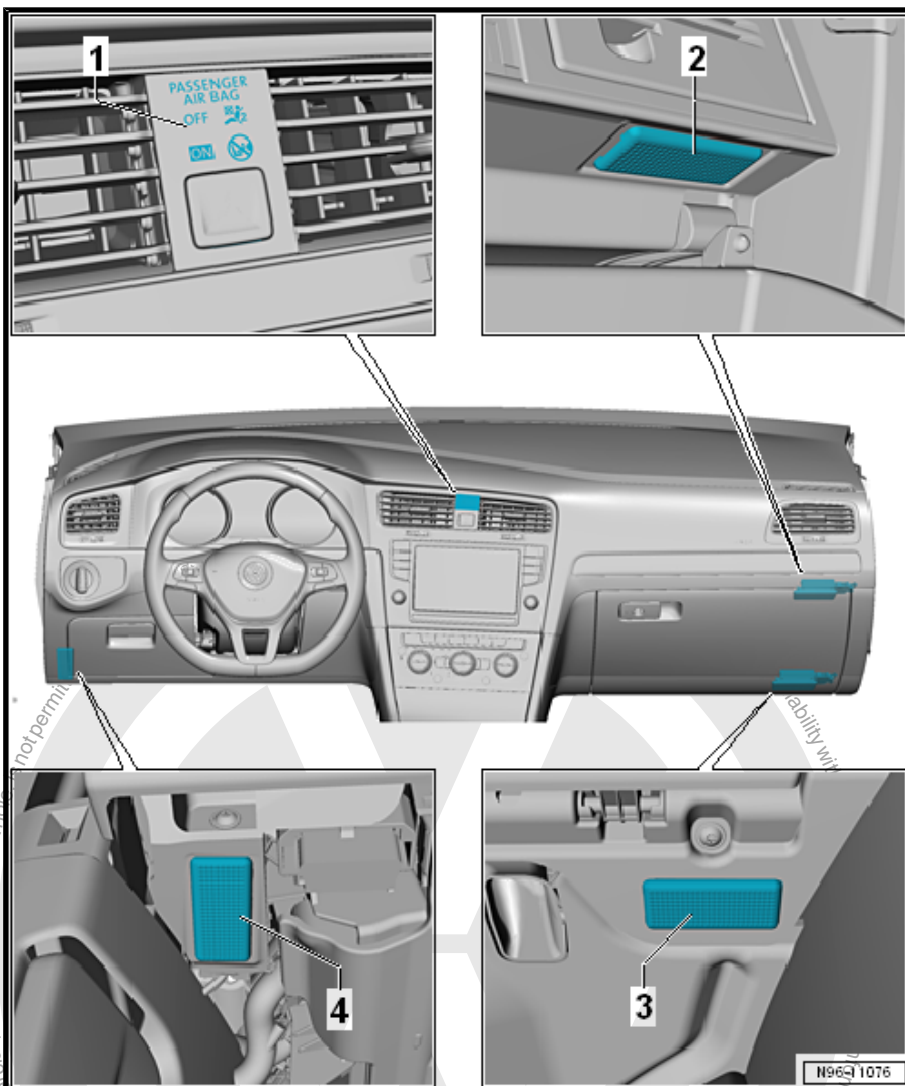
- ❑ Removing and installing. Refer to ➔ ["1.7 Glove Compartment Lamp W6, Removing and Installing", page 272](#) .

3 - Right Front Footwell Lamp - K269-

- ❑ Removing and installing. Refer to ➔ ["1.9 Left/Right Front Footwell Lamp K268 / K269, Removing and Installing", page 273](#) .

4 - Left Front Footwell Lamp - K268-

- ❑ Removing and installing. Refer to ➔ ["1.9 Left/Right Front Footwell Lamp K268 / K269, Removing and Installing", page 273](#) .





1.2 Overview - Front Door Lamps

1 - Driver Door Opener Illumination Bulb - L108-

- ❑ Removing and installing. Refer to
⇒ ["1.14 Driver/Front Passenger Door Opener Illumination Bulb L108 / L109 , Removing and Installing"](#), page 277 .

2 - Central Locking -SAFE- Indicator Lamp - K133-

- ❑ Removing and installing. Refer to
⇒ ["1.11 Central Locking -SAFE- Indicator Lamp K133 , Removing and Installing"](#), page 275 .

3 - Driver Side Interior Door Handle Illumination Lamp - L219-

4 - Front Passenger Door Opener Illumination Bulb - L109-

- ❑ Removing and installing. Refer to
⇒ ["1.14 Driver/Front Passenger Door Opener Illumination Bulb L108 / L109 , Removing and Installing"](#), page 277 .

5 - Right Front Door Ambient Lighting Bulb 2 - L204-

- ❑ Removing and installing. Refer to
⇒ ["1.15 Left/Right Front Door Ambient Lighting Bulb 2 L203 / L204 , Removing and Installing"](#), page 278 .

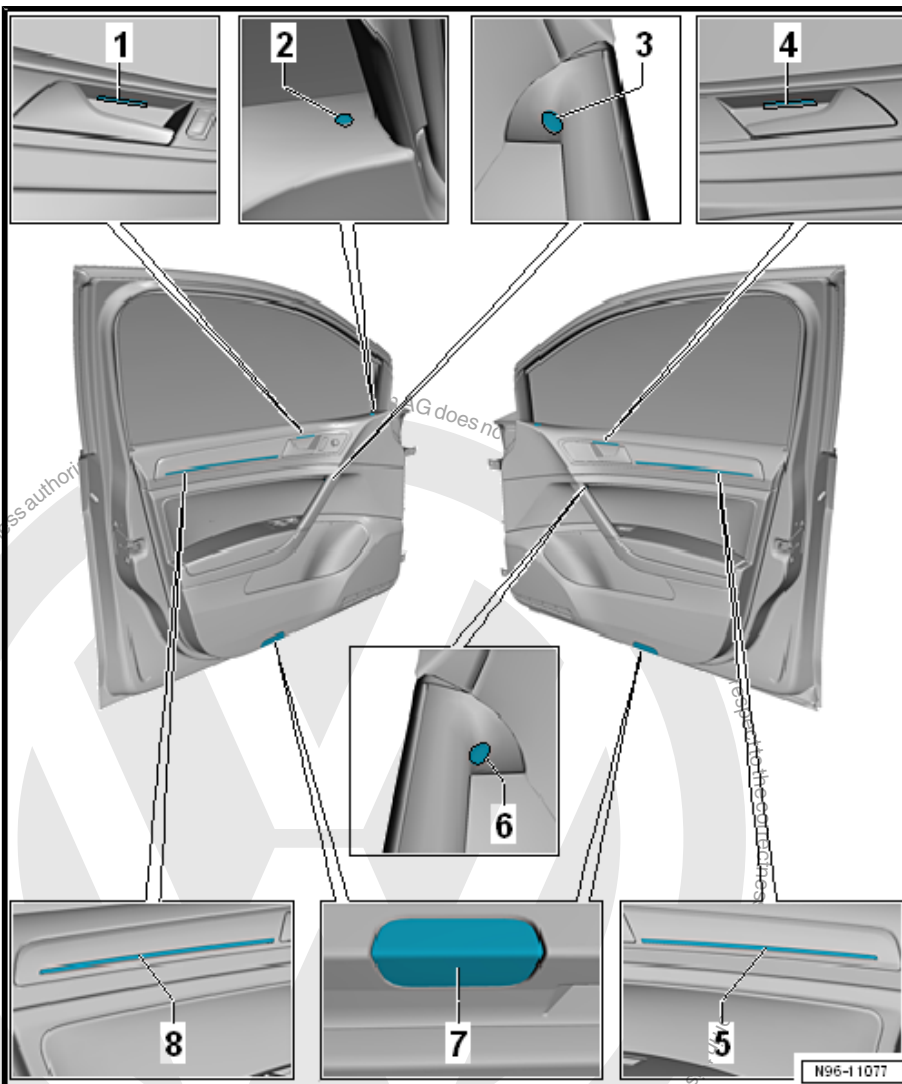
6 - Passenger Side Interior Door Handle Illumination Lamp - L220-

7 - Door Warning Lamp and Entry Lamp

- ❑ Driver Door Warning Lamp - W30- and Driver Side Entry Lamp - W92-
- ❑ Front Passenger Door Warning Lamp - W36- and Passenger Side Entry Lamp - W93-
- ❑ Removing and installing. Refer to
⇒ ["1.12 Left/Right Front Entry Lamp W31 / W32 , Removing and Installing"](#), page 275 .

8 - Left Front Door Ambient Lighting Bulb 2 - L203-

- ❑ Removing and installing. Refer to
⇒ ["1.15 Left/Right Front Door Ambient Lighting Bulb 2 L203 / L204 , Removing and Installing"](#), page 278 .

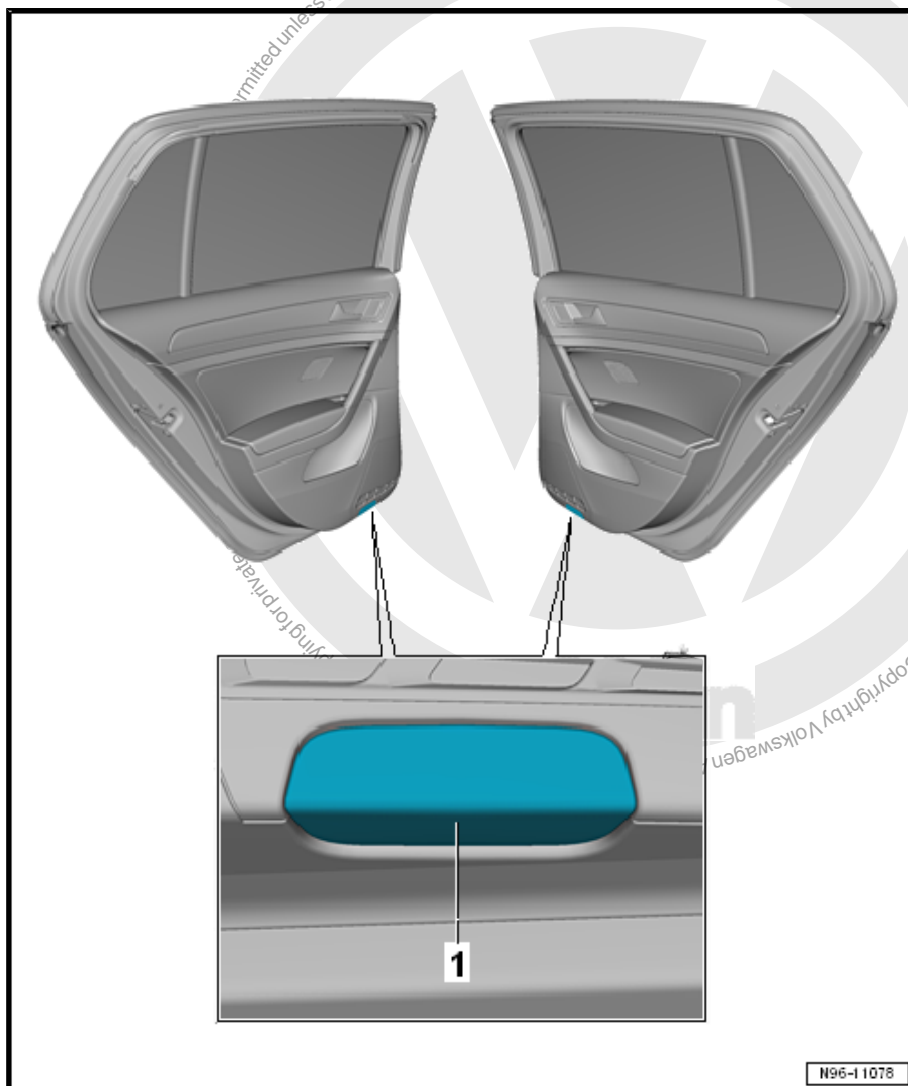




1.3 Overview - Rear Door Lamps

1 - Door Warning Lamp and Entry Lamp

- ❑ Driver Door Warning Lamp - W30- and Passenger Side Entry Lamp - W93-
- ❑ Front Passenger Door Warning Lamp - W36- and Driver Side Entry Lamp - W92-
- ❑ Removing and installing. Refer to [⇒ "1.12 Left/Right Front Entry Lamp W31 / W32, Removing and Installing", page 275](#).

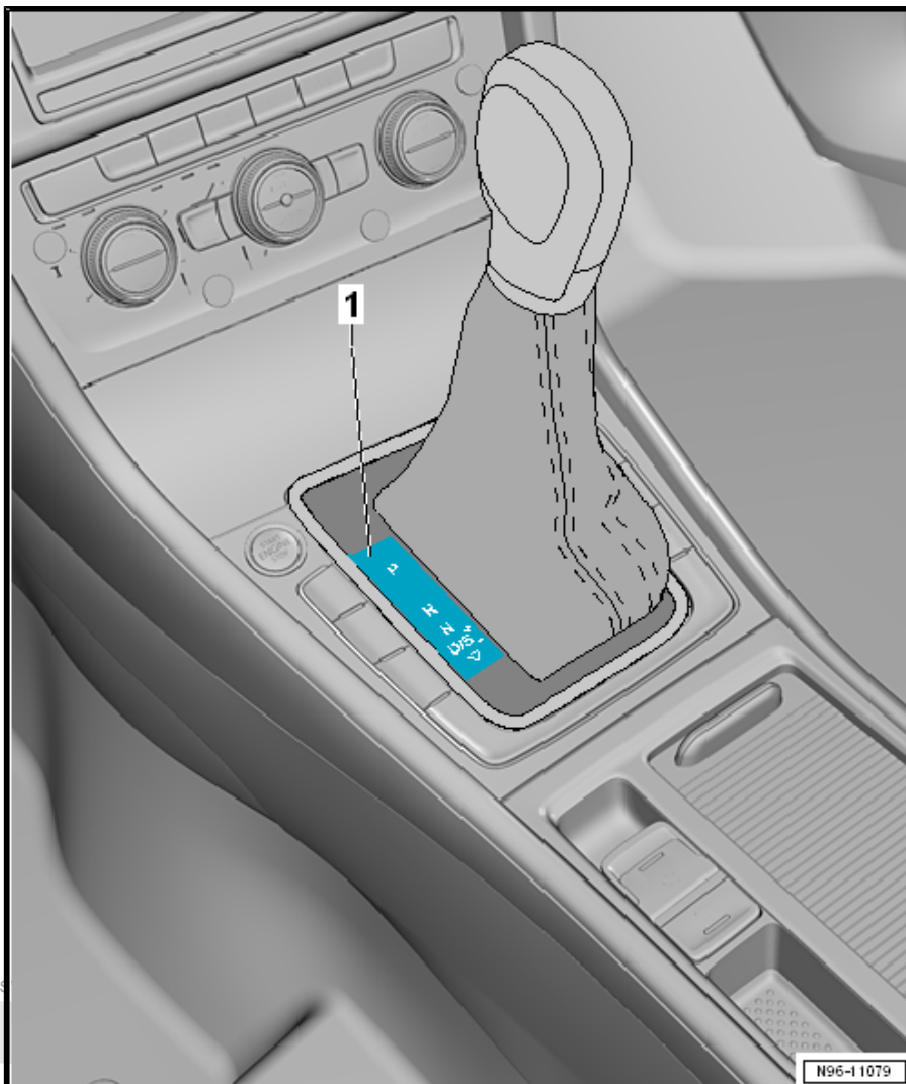




1.4 Overview - Center Console Lamps

1 - Selector Lever Transmission Range Position Display Unit - Y26-

- ❑ Removing and installing. Refer to
⇒ ["1.18 Selector Lever Transmission Range Position Display Unit Y26 , Removing and Installing", page 279](#) .

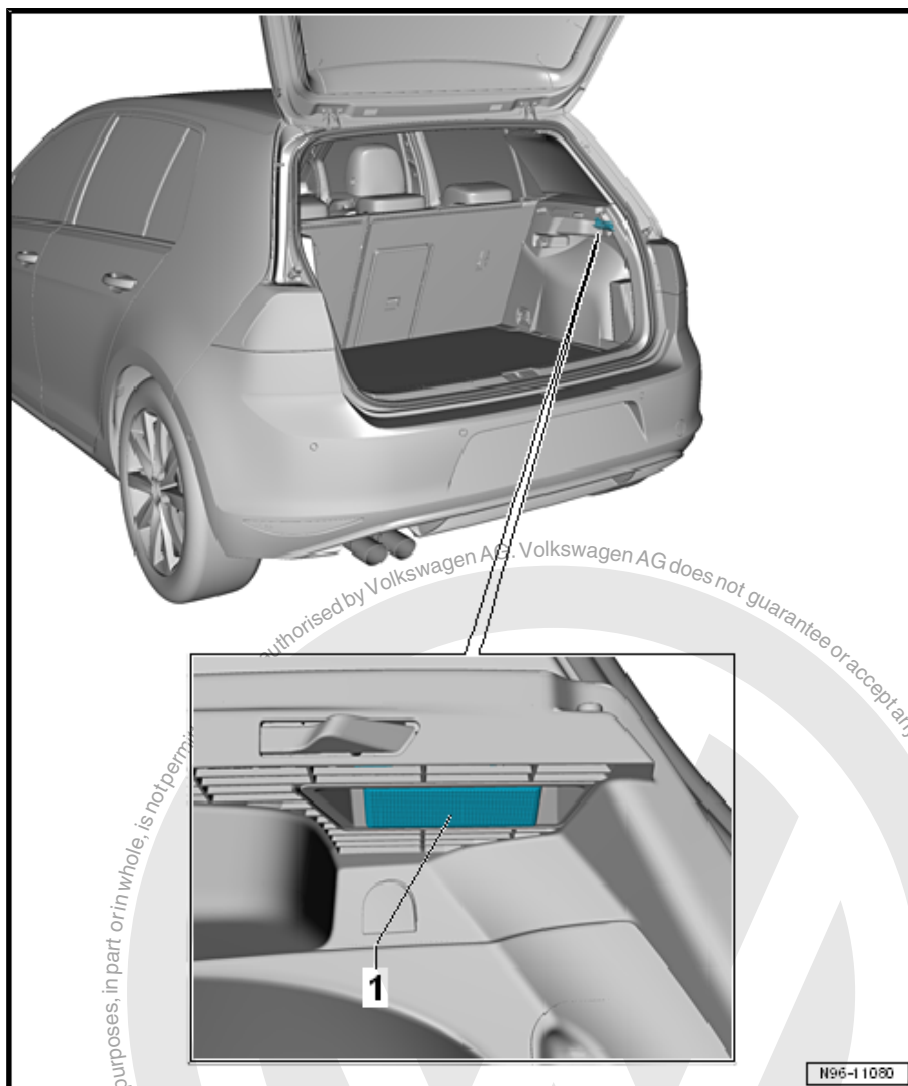




1.5 Overview - Luggage Compartment Lamps

1 - Luggage Compartment Lamp - W3-

- ❑ In the right luggage compartment side trim panel
- ❑ Removing and installing. Refer to [⇒ "1.19 Luggage Compartment Lamp W3, Removing and Installing", page 279](#).





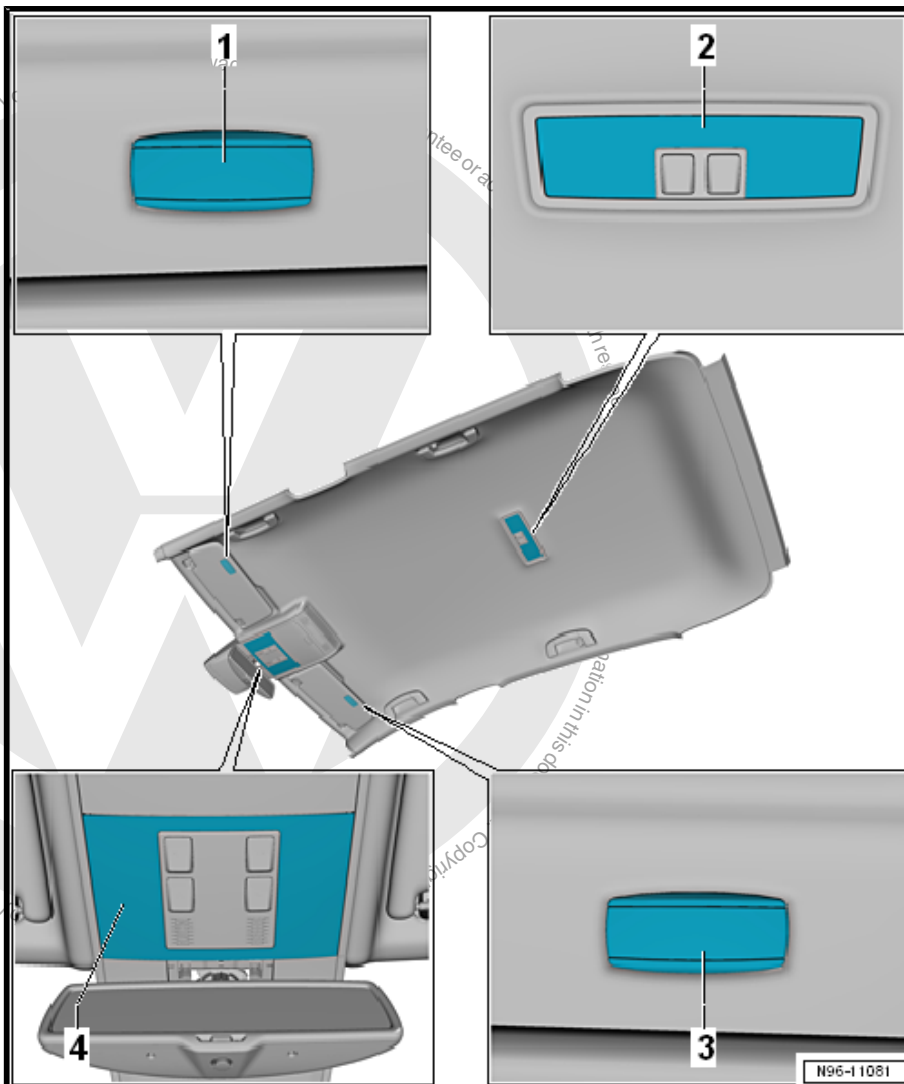
1.6 Overview - Roof Trim Panel Lamps

1 - Driver Vanity Mirror Lamp - W20-

- ❑ For the vanity mirror illumination with LED the lamp must be replaced if faulty.
- ❑ Removing and installing. Refer to
⇒ ["1.20 Driver/Front Passenger Vanity Mirror Lamp W20 / W14 , Removing and Installing", page 280](#) .

2 - Rear Interior Lamp - WX2-

- ❑ With Left Rear Reading Lamp - W11- / Right Rear Reading Lamp - W12-
- ❑ Removing and installing. Refer to
⇒ ["2.34 Rear Interior/Reading Lamp, Removing and Installing", page 306](#) .
- ❑ Rear Interior Lamp - W43- bulb removing and installing. Refer to
⇒ ["1.22 Rear Interior Lamp W43 Bulb Removing and Installing", page 283](#) .
- ❑ Left Rear Reading Lamp - W11- / Right Rear Reading Lamp - W12- bulb removing and installing. Refer to
⇒ ["1.22 Rear Interior Lamp W43 Bulb Removing and Installing", page 283](#) .



3 - Front Passenger Vanity Mirror Lamp - W14-

- ❑ For the vanity mirror illumination with LED the lamp must be replaced if faulty.
- ❑ Removing and installing. Refer to
⇒ ["1.20 Driver/Front Passenger Vanity Mirror Lamp W20 / W14 , Removing and Installing", page 280](#) .

4 - Front Interior Lamp - WX1-

- ❑ With Driver Reading Lamp - W19- and Front Passenger Reading Lamp - W13-
- ❑ Removing and installing. Refer to
⇒ ["2.33 Front Interior Lamp/Reading Lamp, Removing and Installing", page 305](#) .
- ❑ Front Interior Lamp - WX1- bulb removing and installing. Refer to
⇒ ["1.21 Front Interior Lamp W1 Bulb, Removing and Installing", page 281](#) .
- ❑ Front Passenger Reading Lamp - W13- bulb removing and installing. Refer to
⇒ ["1.21 Front Interior Lamp W1 Bulb, Removing and Installing", page 281](#) .
- ❑ For a Front Interior Lamp - WX1- the lamp must be replaced if there is a faulty LED



1.7 Glove Compartment Lamp - W6- , Removing and Installing

Removing

- Turn the light switch to position “0”.
- Push the retaining tab -1- with a flat-head screwdriver and pry up the glove compartment lamp -2-.
- Disconnect the connector -3-.

Installing

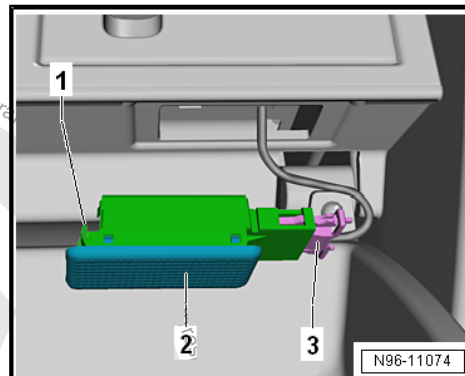
Install in the reverse order of removal. Note the following:



Note

For a Glove Compartment Lamp - W6- the lamp must be replaced if there is a faulty LED

- Insert the glove compartment lamp into opening and engage on the opposite side.
- Perform a functionality test.



1.8 Glove Compartment Lamp - W6- Bulb, Replacing

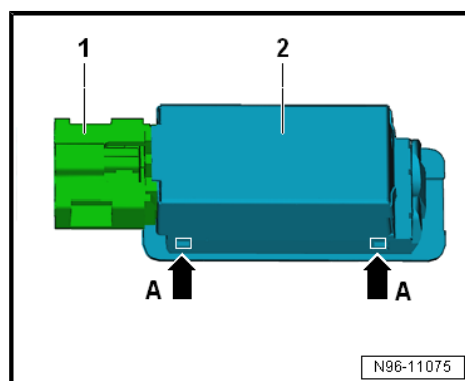


Note

For a Glove Compartment Lamp - W6- the lamp must be replaced if there is a faulty LED

Removing

- Remove the Glove Compartment Lamp - W6- . Refer to [⇒ “1.7 Glove Compartment Lamp W6- , Removing and Installing”, page 272](#) .
- Pry up the heat shield -2- if necessary on both sides -arrows A-.
- Remove the heat shield -2- from the Glove Compartment Lamp - W6- -1-.



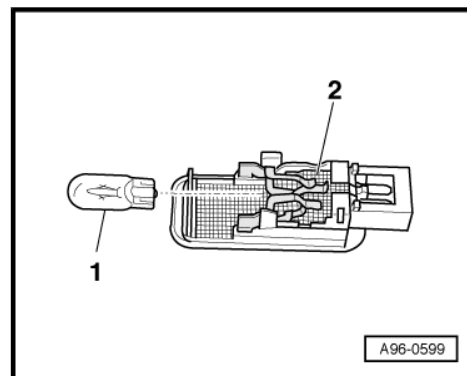


- Remove the bulb -1- from the bulb socket on the back of the glove compartment lamp -2-.

Installing

Install in reverse order of removal.

- Perform a functionality test.



1.9 Left/Right Front Footwell Lamp -K268- / -K269- , Removing and Installing

⇒ [“1.9.1 Left Front Footwell Lamp K268 , Removing and Installing, Driver Side”, page 273](#)

⇒ [“1.9.2 Right Front Footwell Lamp K269 , Removing and Installing, Front Passenger Side”, page 274](#)

1.9.1 Left Front Footwell Lamp - K268- , Removing and Installing, Driver Side

Removing

- Press the retaining tab -1- in the area of the -arrow A- with a flat-head screwdriver.
- Pry up the footwell lamp -2-.
- Disconnect the connector.

Installing

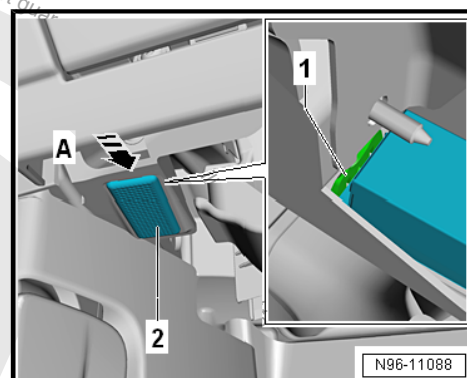
Install in reverse order of removal.



Note

For a footwell lamp the lamp must be replaced if there is a faulty LED.

- Perform a functionality test.





1.9.2 Right Front Footwell Lamp - K269- , Removing and Installing, Front Passenger Side

Removing

- Press the retaining tab -1- in the area of the -arrow A- with a flat-head screwdriver.
- Pry up the footwell lamp -2-.
- Disconnect the connector.

Installing

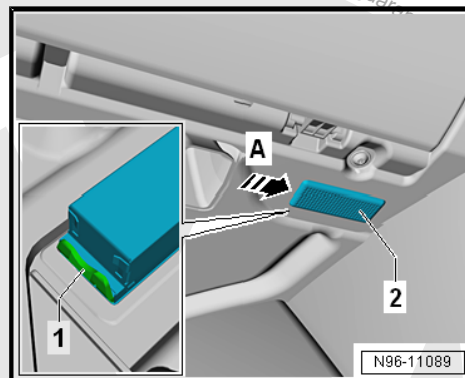
Install in reverse order of removal.



Note

For a footwell lamp the lamp must be replaced if there is a faulty LED.

- Perform a functionality test.



1.10 Left/Right Front Footwell Illumination Bulb -L151- / -L152- , Removing and Installing

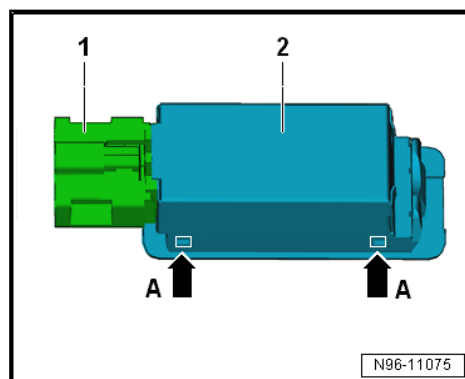


Note

For a front footwell lamp the lamp must be replaced if there is a faulty LED.

Removing

- Remove the Left Front Footwell Lamp - K268- / Right Front Footwell Lamp - K269- . Refer to [⇒ "1.9 Left/Right Front Footwell Lamp K268 / K269 , Removing and Installing", page 273](#) .
- Pry up the heat shield -2- if necessary on both sides -arrows A-.
- Remove the heat shield -2- from the footwell lamp -1-.



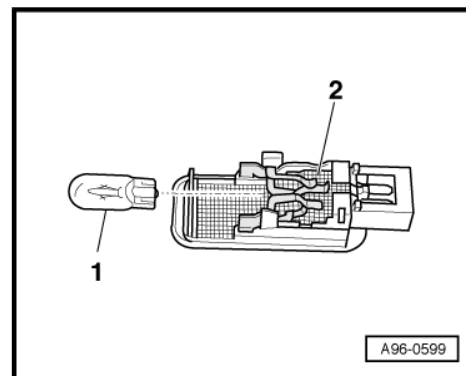


- Remove the bulb -1- from the bulb socket on the back of the glove compartment lamp -2-.

Installing

Install in reverse order of removal.

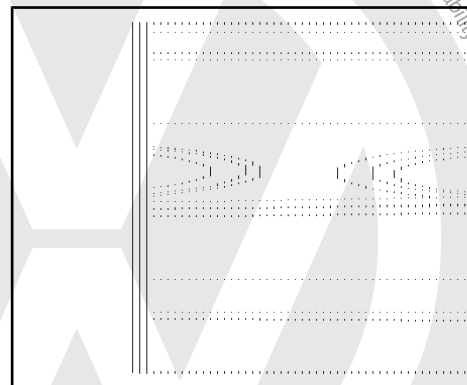
- Perform a functionality test.



1.11 Central Locking -SAFE- Indicator Lamp - K133- , Removing and Installing

Removing

- Remove the front door trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Front Door Trim Panels; Front Door Trim Panel, Removing and Installing .
- Press the tabs -arrows- and remove the Central Locking -SAFE- Indicator Lamp - K133- -1- from the door trim panel.

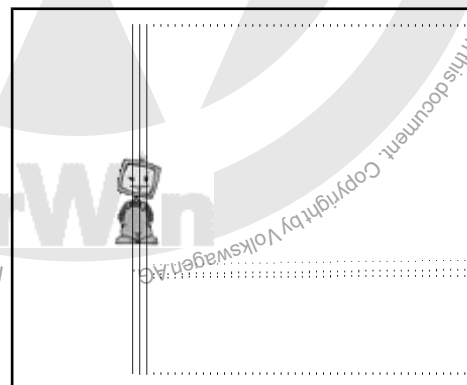


- Remove the -1- Central Locking -SAFE- Indicator Lamp - K133- -2- connector.

Installing

Install in reverse order of removal.

- Perform a functionality test.



1.12 Left/Right Front Entry Lamp -W31- / - W32- , Removing and Installing



Caution

Risk of damaging the component surfaces.

- ◆ *When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.*



Note

- ♦ *Removal and installation for all entry lamps is performed in the same way and is only described for one lamp.*
- ♦ *Check the entry lamps using the output diagnostic test mode on each door control module.*
- ♦ Left Front Entry Lamp - W31-
- ♦ Right Front Entry Lamp - W32-
- ♦ Left Rear Entry Lamp - W33-
- ♦ Right Rear Entry Lamp - W34-

Removing. Refer to ⇒ [page 276](#) .

Installing. Refer to ⇒ [page 276](#) .

Entry lamp bulb, replacing. Refer to ⇒ [page 276](#)

Special tools and workshop equipment required

- ♦ Trim Removal Wedge - 3409-

Removing

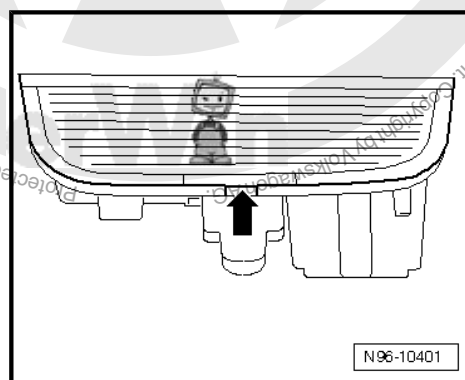
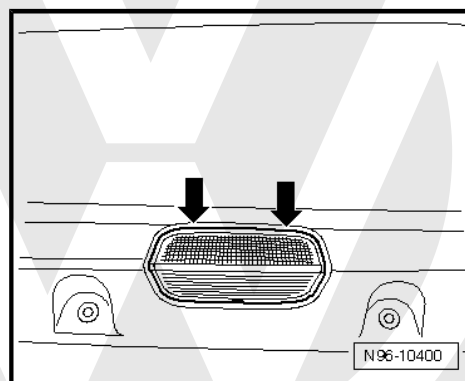
- Turn off the ignition and all electrical equipment.
- Pry out the lamp carefully using Trim Removal Wedge - 3409- or a screwdriver.
- Disconnect the connector and remove the lamp.

Installing

Install in reverse order of removal.

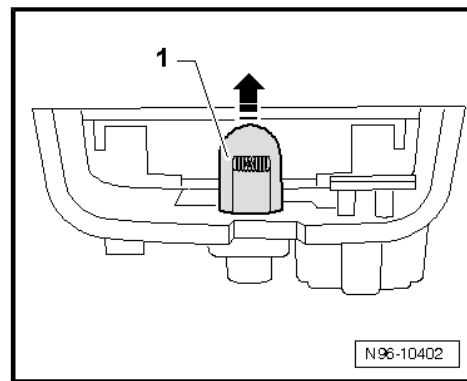
Entry Lamp Bulb, Replacing

- Remove the front entry lamp. Refer to ⇒ [page 276](#) .
- Pry the diffusion lens carefully out of the housing.





- Remove the bulb -1- straight out of the socket.
- Install in reverse order of removal.



1.13 Driver/Front Passenger Door Warning Lamp -W30- / -W36- , Removing and Installing



Note

The door warning lamp and the entry lamp make up one component. They can be removed and installed together.

- Door warning lights, removing and installing. Refer to ➤ ["1.12 Left/Right Front Entry Lamp W31 / W32 , Removing and Installing", page 275](#) .

1.14 Driver/Front Passenger Door Opener Illumination Bulb -L108- / -L109- , Removing and Installing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Remove the front door trim panel. Refer to ➤ Body Interior; Rep. Gr. 70 ; Front Door Trim Panels; Front Door Trim Panel, Removing and Installing .



Caution

There is a risk of damaging the fiber-optic cable.

- ◆ ***Only touch the fiber-optic cable on the light fittings in the area of the interior door mechanism.***



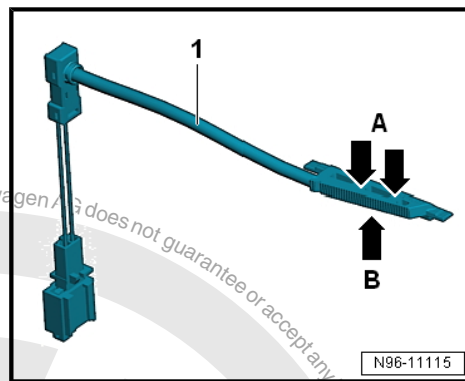
Finger Position On the Fiber-Optic Cable

1 - Fiber-optic cable

A - Index and middle fingers

B - Thumb

- Disconnect the connector.

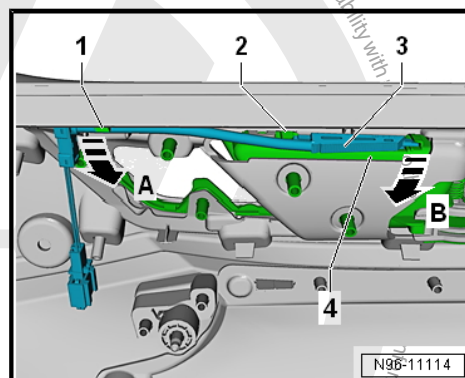


- Disengage the fiber-optic cable on the front bracket -1- in direction of -arrow A-.
- Carefully lift the fiber-optic cable -3- in direction of -arrow B- and pivot from the interior door mechanism -4-.
- Remove the fiber-optic cable from the mount -2-.

Installing

Install in reverse order of removal.

- Perform a functionality test.



1.15 Left/Right Front Door Ambient Lighting Bulb 2 -L203- / -L204- , Removing and Installing



Note

The Left Front Door Ambient Lighting Bulb 2 - L203- and the Right Front Door Ambient Lighting Bulb 2 - L204- are integrated in the door trim panel decorative strip and cannot be replaced individually.

- Remove the trim molding for the front door trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Front Door Trim Panels; Trim Molding, Removing and Installing .

1.16 Left/Right Rear Entry Lamp -W33- / -W34- , Removing and Installing



Note

- ♦ *Removal and installation for all entry lamps is performed in the same way and is only described for one lamp.*
- ♦ *The door warning lamp and the entry lamp make up one component. The can be remove and installed together.*
- Entry lights, removing and installing. Refer to ⇒ ["1.12 Left/Right Front Entry Lamp W31 / W32 , Removing and Installing", page 275](#) .



1.17 Left/Right Rear Door Warning Lamp - W37- / -W38- , Removing and Installing



Note

The door warning lamp and the entry lamp make up one component. The can be remove and installed together.

- Door warning lights, removing and installing. Refer to ⇒ ["1.12 Left/Right Front Entry Lamp W31 / W32 , Removing and Installing", page 275](#) .

1.18 Selector Lever Transmission Range Position Display Unit - Y26- , Removing and Installing

Removing



Note

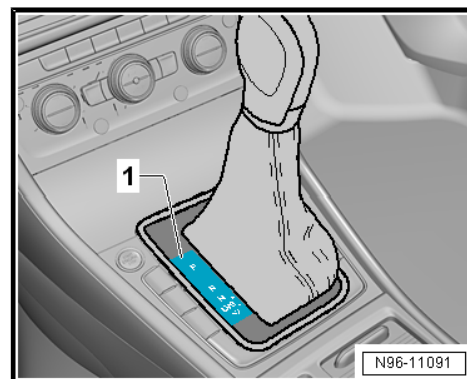
The Selector Lever Transmission Range Position Display Unit - Y26- -1- is integrated in the selector lever boot and cannot be replaced individually.

- Remove the selector lever boot. Refer to ⇒ Rep. Gr. 34 ; Selector Mechanism; Selector Lever Handle, Removing and Installing .

Installing

Install in reverse order of removal.

- Perform a functionality test.



1.19 Luggage Compartment Lamp - W3- , Removing and Installing

Removing

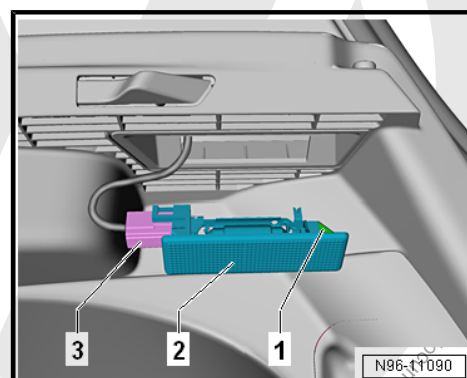


Caution

Risk of damaging the component surfaces.

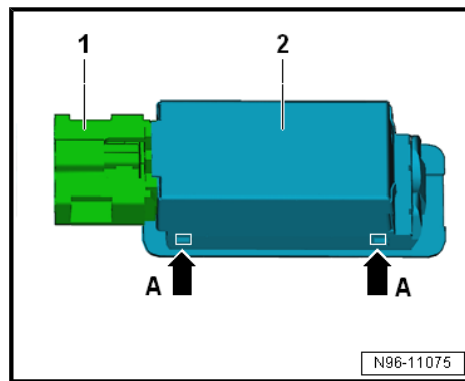
- ◆ **When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.**

- Push the retaining tab -1- with a flat-head screwdriver and pry up the Luggage Compartment Lamp - W3- -2-.
- Disconnect the connector -3-.





- Pry up the heat shield -2- if necessary on both sides at both arrows -A-.
- Remove the heat shield -2- from the Luggage Compartment Lamp - W3- -1-.

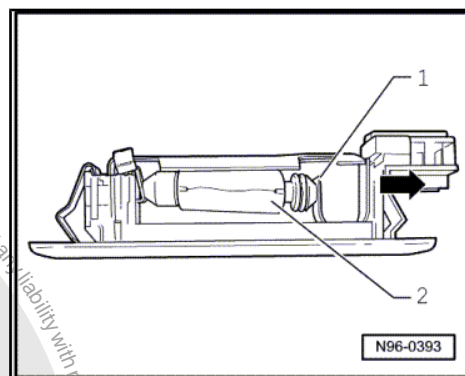


- Push the contact plate -1- in the lamp in the direction of the arrow.
- Remove the tubular bulb -2- out of the bulb socket.

Installing

Install in the reverse order of removal. Note the following:

- If necessary install the heat shield on the luggage compartment lamp.
- Insert the luggage compartment lamp into the opening and engage on the opposite side.
- Perform a functionality test.



120 Driver/Front Passenger Vanity Mirror Lamp -W20- / -W14- , Removing and Installing



Note

- ◆ For the vanity mirror illumination the lamp must be completely replaced if there is a faulty LED.
- ◆ The removal and installation is described for the left side. Removing and installing on the right side is identical.

Removing

- Swivel the sun visor forward.



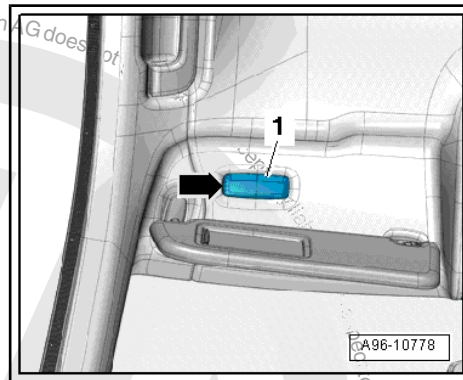
Caution

Risk of damaging the component surfaces.

- ◆ When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.



- Pry out the vanity mirror illumination -1- at the cut-out -arrow B- using a flat-blade screwdriver.
- Disconnect the connector.

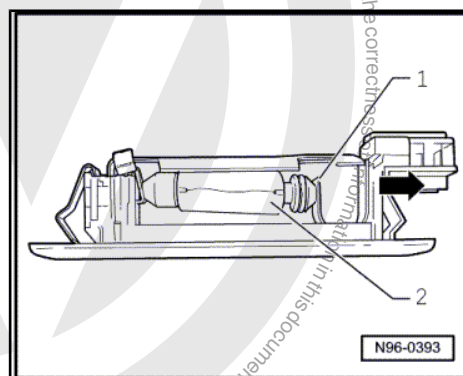


- Push the contact plate -1- in the lamp in direction of -arrow-.
- Remove the tubular bulb -2- out of the bulb socket.

Installing

Install in the reverse order of removal. Note the following:

- Insert the vanity mirror illumination into the opening and lock on the opposite side.
- Perform a functionality test.



1.21 Front Interior Lamp - W1- Bulb, Removing and Installing

⇒ [“1.21.1 Front Interior Lamp W1 Bulb, Removing and Installing, with LED-Technology”, page 281](#)

⇒ [“1.21.2 Front Interior Lamp W1 Bulb, Removing and Installing, with Bulbs”, page 282](#)

1.21.1 Front Interior Lamp - W1- Bulb, Removing and Installing, with LED-Technology

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-



Note

- ◆ *The Front Interior Lamp - WX1- bulb and the Front Passenger Reading Lamp - W13- bulb are one component.*
- ◆ *For a faulty Front Interior Lamp - WX1- or Front Passenger Reading Lamp - W13- the diffusion lens must be replaced.*

Removing



Caution

Risk of damaging the component surfaces.

- ◆ *When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.*

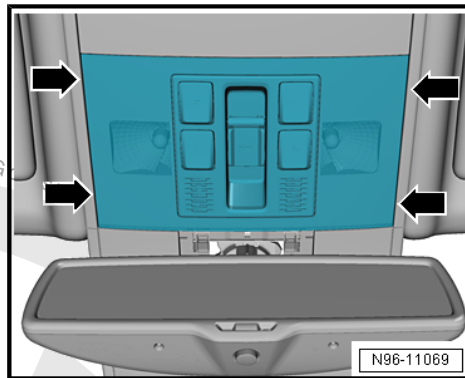


- Pry the diffusion lens in the marked areas -arrows- using the Trim Removal Wedge - 3409- from the Front Interior Lamp - W1- .
- Disconnect the connectors.

Installing

Install in reverse order of removal.

- Perform a functionality test.



1.21.2 Front Interior Lamp - W1- Bulb, Removing and Installing, with Bulbs

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-



Note

The Front Interior Lamp - WX1- bulb and the Front Passenger Reading Lamp - W13- bulb are one component.

Removing

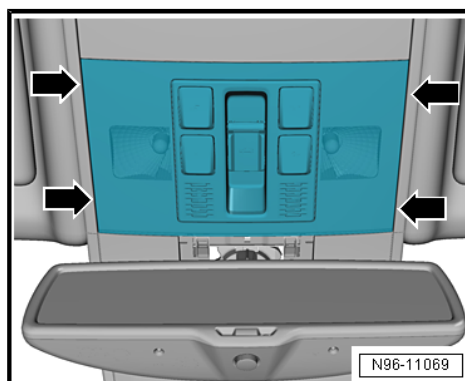


Caution

Risk of damaging the component surfaces.

- ◆ ***When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.***

- Pry the diffusion lens in the marked areas -arrows- using the Trim Removal Wedge - 3409- from the Front Interior Lamp - W1- .





- Remove the bulb -1- in direction of -arrow A- from the bulb socket.

Installing

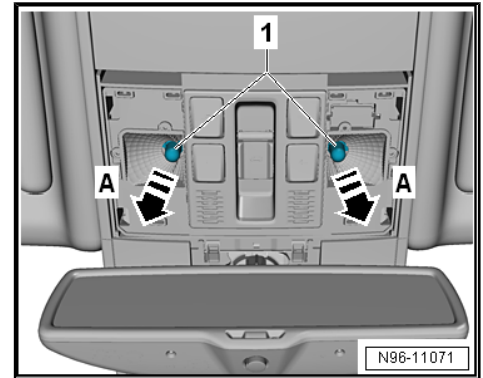
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the bulb.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*



- Perform a functionality test.

1.22 Rear Interior Lamp - W43- Bulb Removing and Installing

⇒ ["1.22.1 Rear Interior Lamp W43 Bulb Removing and Installing, with Bulbs", page 283](#)

⇒ ["1.22.2 Rear Interior Lamp W43 Bulb Removing and Installing, with LED-Technology", page 284](#)

1.22.1 Rear Interior Lamp - W43- Bulb Removing and Installing, with Bulbs

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-



Note

The Rear Interior Lamp - W43- bulb and the Left Rear Reading Lamp - W11- and Right Rear Reading Lamp - W12- bulb are one component.

Removing

- Pry up the diffusion lens -3- for the Rear Interior Lamp - W43- using the Trim Removal Wedge - 3409- .
- Remove the bulb -1- in direction of -arrow A- from the bulb socket -2-.

Installing

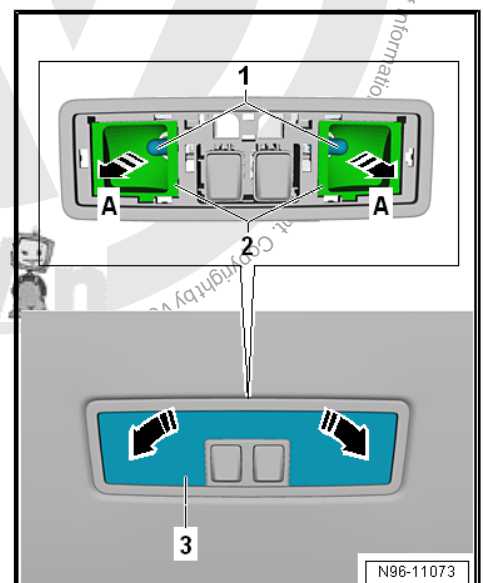
Install in the reverse order of removal. Note the following:



Caution

There is a risk of damaging the bulb.

- ◆ *Do not touch glass cone of bulb with bare fingers. Fingers will leave traces of grease on the glass which, when the bulb is switched on, will evaporate and cloud the glass.*
- ◆ *Use clean gloves for example to insert the bulbs.*



- Perform a functionality test.



1.22.2 Rear Interior Lamp - W43- Bulb Removing and Installing, with LED-Technology



Note

- ◆ *The Rear Interior Lamp - W43- bulb and the Left Rear Reading Lamp - W11- and Right Rear Reading Lamp - W12- bulb are one component.*
- ◆ *The entire interior lamp must be replaced if the Rear Interior Lamp - W43- is faulty.*
- Rear Interior Lamp - W43- removing and installing. Refer to [⇒ "2.34 Rear Interior/Reading Lamp, Removing and Installing", page 306](#).
- Perform a functionality test.

1.23 Left/Right Rear Reading Lamp -W11- / - W12- Removing and Installing



Note

The Left Rear Reading Lamp - W11- bulb and the Rear Interior Lamp - W43- bulb are one component.

- Left Rear Reading Lamp - W11- / Right Rear Reading Lamp - W12- bulb removing and installing. Refer to [⇒ "1.22 Rear Interior Lamp W43, Bulb Removing and Installing", page 283](#).

1.24 Ambient Lighting LED, Removing and Installing

[⇒ "1.24.1 Fiber Optic Cable for Left Front Sill Panel Ambient Lighting W67 / Fiber Optic Cable for Right Front Sill Panel Ambient Lighting W68 , Removing and Installing", page 284](#)

1.24.1 Fiber Optic Cable for Left Front Sill Panel Ambient Lighting - W67- / Fiber Optic Cable for Right Front Sill Panel Ambient Lighting - W68- , Removing and Installing



Note

- ◆ *The Fiber Optic Cable for Left Front Sill Panel Ambient Lighting - W67- / Fiber Optic Cable for Right Front Sill Panel Ambient Lighting - W68- are integrated in the sill panels and cannot be replaced separately.*
- ◆ *If the Fiber Optic Cable for Left Front Sill Panel Ambient Lighting - W67- / Fiber Optic Cable for Right Front Sill Panel Ambient Lighting - W68- is faulty, then the entire sill panel must be replaced.*

Removing

- Remove the Fiber Optic Cable for Left Front Sill Panel Ambient Lighting - W67- / Fiber Optic Cable for Right Front Sill Panel



Ambient Lighting - W68- . Refer to ⇒ Body Interior; Rep. Gr.
70 ; Interior Trim Panels; Sill Panel, Removing and Installing .

Installing

Install in reverse order of removal.







2 Controls

- ⇒ [“2.1 Overview - Instrument Panel Controls”, page 288](#)
- ⇒ [“2.2 Overview - Front Door Controls”, page 289](#)
- ⇒ [“2.3 Overview - Rear Door Controls”, page 290](#)
- ⇒ [“2.4 Overview - Center Console Controls”, page 291](#)
- ⇒ [“2.5 Overview - Luggage Compartment Controls”, page 292](#)
- ⇒ [“2.6 Overview - Roof Trim Panel Controls”, page 293](#)
- ⇒ [“2.7 Rotary Light Switch EX1 , Removing and Installing”, page 294](#)
- ⇒ [“2.8 Headlamp Range Control Adjuster E102 , Removing and Installing”, page 294](#)
- ⇒ [“2.9 Driving Profile Selection Button E735 , Removing and Installing”, page 295](#)
- ⇒ [“2.10 Start/Stop Mode Button E693 , Removing and Installing”, page 295](#)
- ⇒ [“2.11 ASR/ESP Button E256 , Removing and Installing”, page 295](#)
- ⇒ [“2.12 Parking Aid Button E266 , Removing and Installing”, page 295](#)
- ⇒ [“2.13 Parallel Parking Assistance Button E581 , Removing and Installing”, page 295](#)
- ⇒ [“2.14 Driving Profile Selection Button E735 , Removing and Installing”, page 296](#)
- ⇒ [“2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing”, page 296](#)
- ⇒ [“2.16 Emergency Flasher Switch EX3 , Removing and Installing”, page 297](#)
- ⇒ [“2.17 Left/Right Seat Heating Button E653 / E654 , Removing and Installing”, page 298](#)
- ⇒ [“2.18 Glove Compartment Lamp Switch E26 , Removing and Installing”, page 298](#)
- ⇒ [“2.19 Exterior Rearview Mirror Adjuster EX11 , Removing and Installing”, page 299](#)
- ⇒ [“2.20 Power Window Control Head In Driver Door E512 , Removing and Installing”, page 299](#)
- ⇒ [“2.21 Front Passenger Power Window Button E716 , Removing and Installing”, page 300](#)
- ⇒ [“2.22 Driver Interior Locking Button E308 , Removing and Installing”, page 300](#)
- ⇒ [“2.23 Fuel Filler Door Release Button E319 , Removing and Installing”, page 301](#)
- ⇒ [“2.24 Interior Monitoring And Vehicle Inclination Deactivation Button E616 , Removing and Installing”, page 301](#)
- ⇒ [“2.25 Driver/Front Passenger Door Contact Switch F2 / F3 , Removing and Installing”, page 302](#)
- ⇒ [“2.26 Left/Right Rear Power Window Switch in Left Rear Door E52 / E54 , Removing and Installing”, page 302](#)
- ⇒ [“2.27 Left/Right Rear Door Contact Switch F10 / F11 , Removing and Installing”, page 303](#)



⇒ **"2.28 Electromechanical Parking Brake Button E538 / -AUTO HOLD- Button E540 , Removing and Installing", page 303**

⇒ **"2.29 Start System Button E378 , Removing and Installing", page 304**

⇒ **"2.30 Rear Lid Alarm Switch F123 , Removing and Installing", page 304**

⇒ **"2.31 Driver/Front Passenger Vanity Mirror Lamp Contact Switch F147 / F148 , Removing and Installing", page 304**

⇒ **"2.32 Sunroof Button E325 , Removing and Installing", page 305**

⇒ **"2.33 Front Interior Lamp/Reading Lamp, Removing and Installing", page 305**

⇒ **"2.34 Rear Interior/Reading Lamp, Removing and Installing", page 306**

⇒ **"2.35 Right Front Reading Lamp Button E634 , Removing and Installing", page 307**

2.1 Overview - Instrument Panel Controls

1 - Emergency Flasher Switch - EX3-

- ❑ Removing and installing. Refer to ⇒ **"2.16 Emergency Flasher Switch EX3 , Removing and Installing", page 297** .

2 - Glove Compartment Lamp Switch - E26-

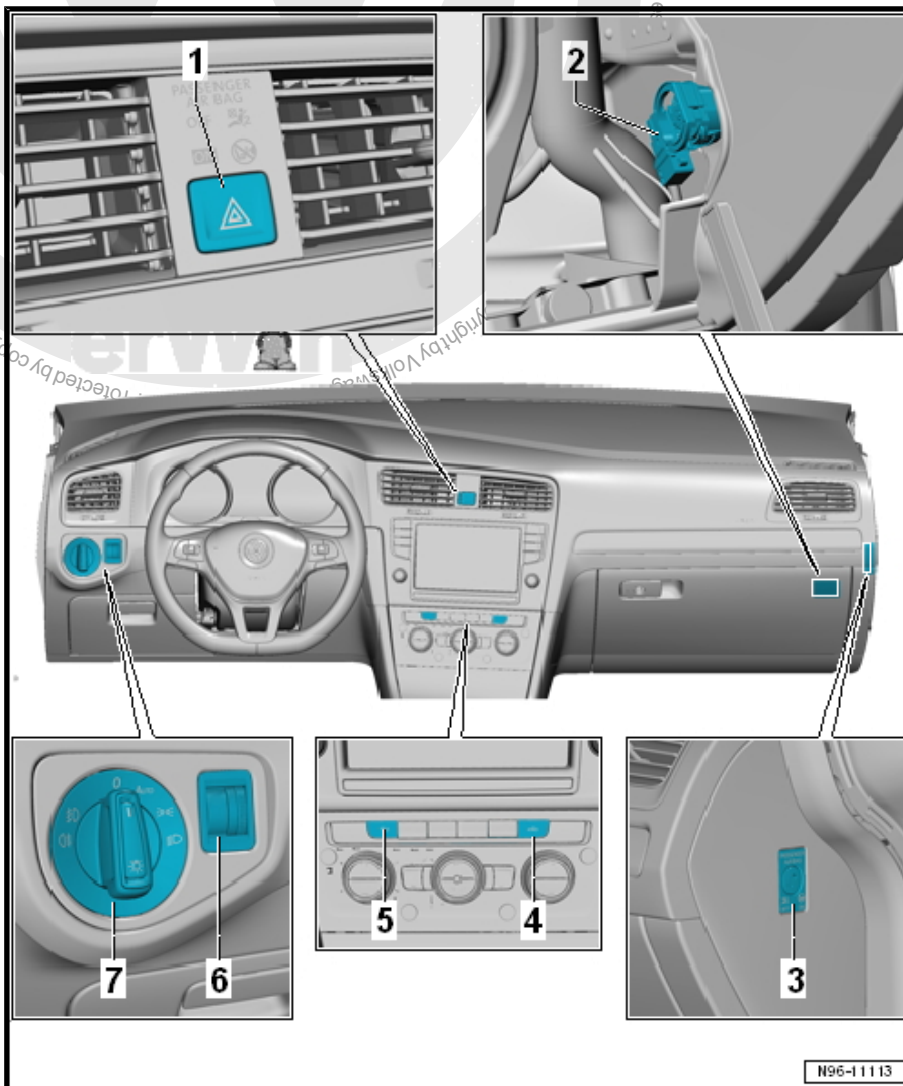
- ❑ Removing and installing. Refer to ⇒ **"2.18 Glove Compartment Lamp Switch E26 , Removing and Installing", page 298** .

3 - Front Passenger Airbag Deactivation Key Switch - E224-

- ❑ Overview. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Front Passenger Airbag; Overview - Front Passenger Airbag .

4 - Right Seat Heating Button - E654-

- ❑ Integrated in the display control head:
- ◆ Heater Control Module - J65- or
- ◆ A/C Control Module - J301- or
- ◆ Climatronic Control Module - J255-
- ❑ Cannot be replaced separately if faulty.
- ❑ Heater Control Module - J65- / A/C Control Module - J301- / Climatronic Control Module - J255- removing and installing. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Display and Control Head; Component Location Overview - Display and Control Head .





5 - Left Seat Heating Button - E653-

- ☐ Integrated in the display control head:
- ◆ Heater Control Module - J65- or
- ◆ A/C Control Module - J301- or
- ◆ Climatronic Control Module - J255-
 - ☐ Cannot be replaced separately if faulty.
 - ☐ Heater Control Module - J65- / A/C Control Module - J301- / Climatronic Control Module - J255- removing and installing. Refer to ⇒ [Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Display and Control Head; Component Location Overview - Display and Control Head](#) .

6 - Headlamp Range Control Adjuster - E102-

- ☐ Depending on the vehicle equipment level
- ☐ Removing and installing. Refer to ⇒ ["2.8 Headlamp Range Control Adjuster E102 , Removing and Installing", page 294](#) .

7 - Rotary Light Switch - EX1-

- ☐ Removing and installing. Refer to ⇒ ["2.7 Rotary Light Switch EX1 , Removing and Installing", page 294](#) .

2.2 Overview - Front Door Controls

1 - Driver Interior Locking Button - E308-

- ☐ Removing and installing. Refer to ⇒ ["2.22 Driver Interior Locking Button E308 , Removing and Installing", page 300](#) .

2 - Exterior Rearview Mirror Adjuster - EX11-

- ☐ Removing and installing. Refer to ⇒ ["2.19 Exterior Rearview Mirror Adjuster EX11 , Removing and Installing", page 299](#) .

3 - Fuel Filler Door Release Button - E319-

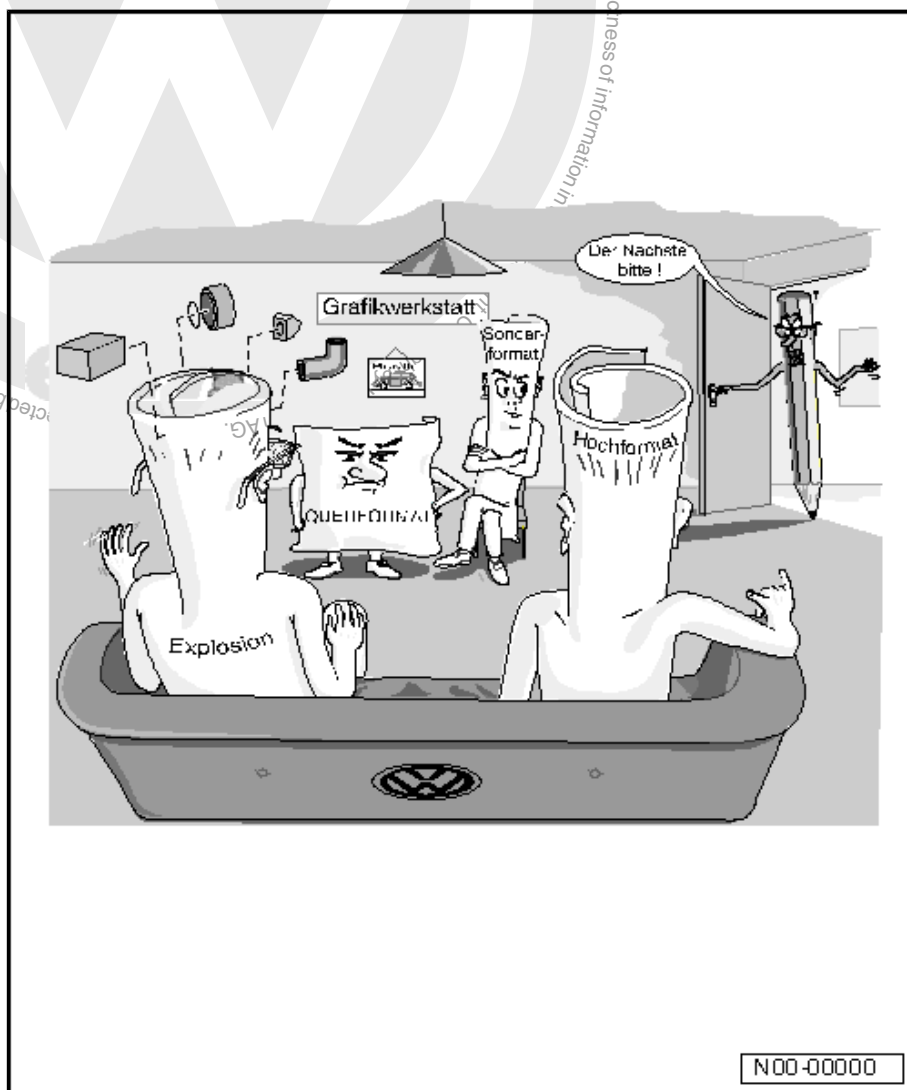
- ☐ Removing and installing. Refer to ⇒ ["2.23 Fuel Filler Door Release Button E319 , Removing and Installing", page 301](#) .

4 - Front Passenger Power Window Button - E716-

- ☐ Removing and installing. Refer to ⇒ ["2.21 Front Passenger Power Window Button E716 , Removing and Installing", page 300](#) .

5 - Power Window Control Head In Driver Door - E512-

- ☐ with:





- ◆ Driver Power Window Button - E710-
- ◆ Front Passenger Power Window Button - E716-
- ◆ Driver Side Rear Power Window Button - E711-
- ◆ Passenger Side Rear Power Window Button - E713-
- ◆ Central Window Regulator Switch in Driver Door - E189-
 - Removing and installing. Refer to
⇒ ["2.20 Power Window Control Head In Driver Door E512 , Removing and Installing", page 299](#) .

No illustration

- ◆ Interior Monitoring and Vehicle Inclination Deactivation Button - E616- . Refer to
⇒ ["3.1 Overview - Interior Monitoring", page 308](#) .
- ◆ Driver Door Contact Switch - F2- and Front Passenger Door Contact Switch - F3- . Refer to
⇒ ["2.25 Driver/Front Passenger Door Contact Switch F2 / F3 , Removing and Installing", page 302](#) .

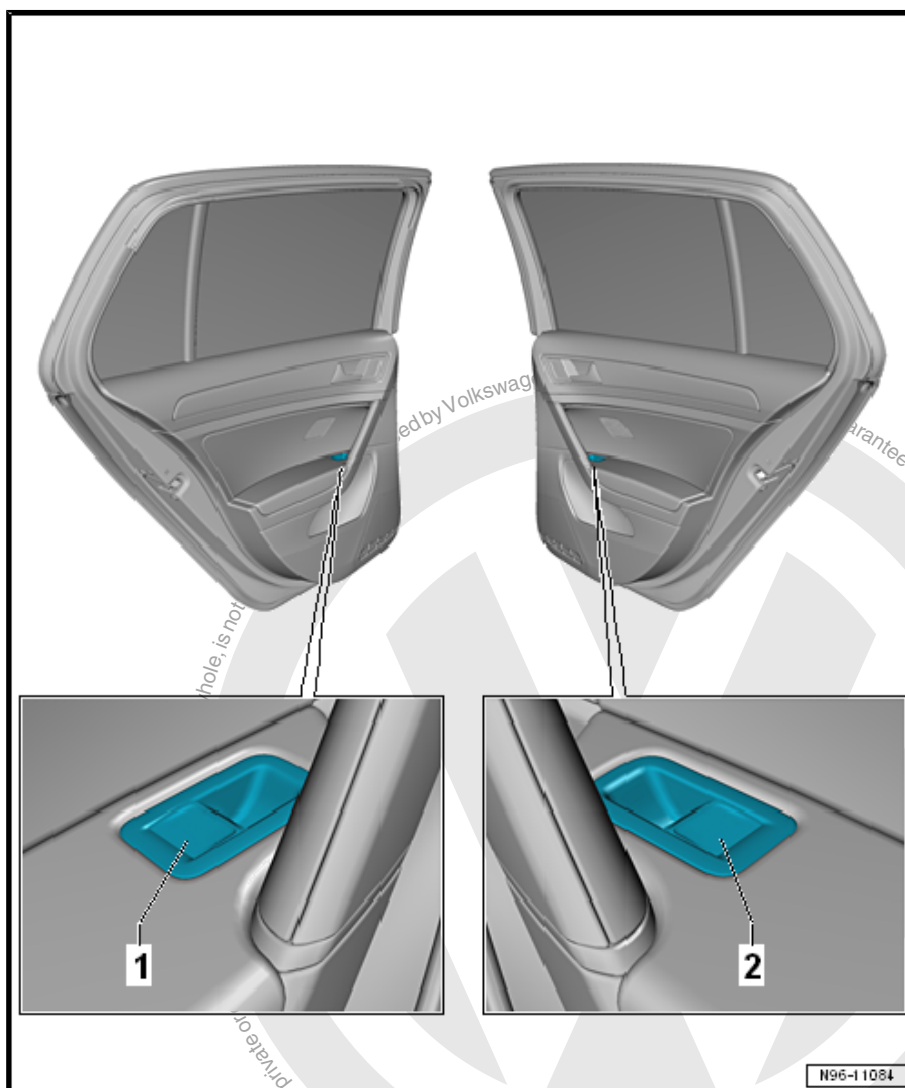
2.3 Overview - Rear Door Controls

1 - Driver Side Rear Power Window Button - E711-

- Removing and installing. Refer to
⇒ ["2.26 Left/Right Rear Power Window Switch in Left Rear Door E52 / E54 , Removing and Installing", page 302](#) .

2 - Passenger Side Rear Power Window Button - E713-

- Removing and installing. Refer to
⇒ ["2.26 Left/Right Rear Power Window Switch in Left Rear Door E52 / E54 , Removing and Installing", page 302](#) .





No illustration

- ◆ Left Rear Door Contact Switch - F10- and Right Rear Door Contact Switch - F11- . Refer to
⇒ ["2.27 Left/Right Rear Door Contact Switch F10 / F11 , Removing and Installing", page 303](#) .

2.4 Overview - Center Console Controls

1 - Start System Button - E378-

- ❑ Removing and installing. Refer to
⇒ ["2.29 Start System Button E378 , Removing and Installing", page 304](#) .

2 - Center Console Switch Module 2 - EX30-

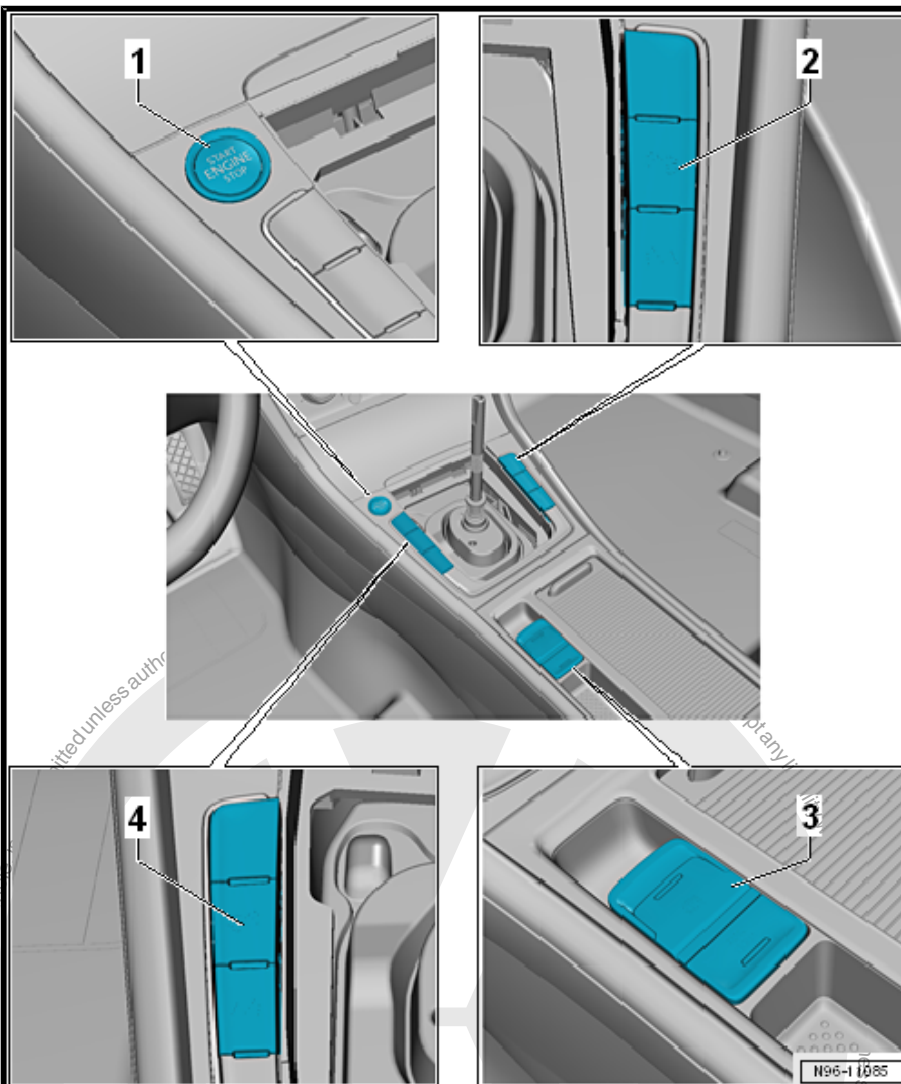
- ❑ The following buttons could be installed depending on vehicle equipment:
- ◆ Parking Aid Button - E266-
- ◆ Parallel Parking Assistance Button - E581-
- ❑ The individual buttons are installed in the switch module can cannot be replaced separately.
- ❑ Removing and installing. Refer to
⇒ ["2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing", page 296](#) .

3 - Electromechanical Parking Brake Button - E538- and -Auto Hold- Button - E540-

- ❑ Equipment level
- ❑ Removing and installing. Refer to
⇒ ["2.28 Electromechanical Parking Brake Button E538 / -AUTO HOLD- Button E540 , Removing and Installing", page 303](#) .

4 - Center Console Switch Module 1 - EX23-

- ❑ The following buttons could be installed depending on vehicle equipment:
- ◆ ASR/ESP Button - E256-
- ◆ Driving Program Button - E598-
- ◆ Start/Stop Mode Button - E693-
- ◆ Driving Profile Selection Button - E735-
- ❑ The individual buttons are installed in the switch module can cannot be replaced separately.
- ❑ Removing and installing. Refer to
⇒ ["2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing", page 296](#) .

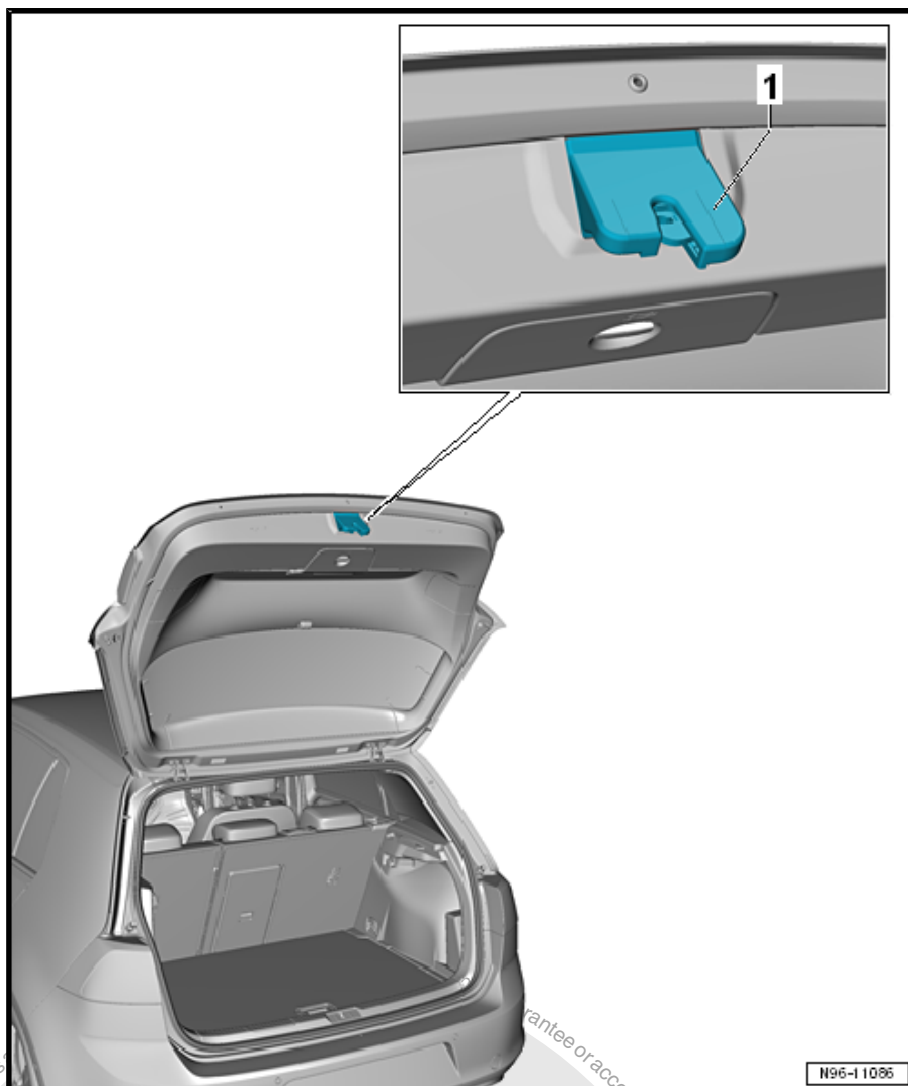




2.5 Overview - Luggage Compartment Controls

1 - Rear Lid Contact Switch

- ❑ Rear Lid Alarm Switch - F123-
- ❑ Removing and installing. Refer to
⇒ ["2.30 Rear Lid Alarm Switch F123, Removing and Installing"](#),
[page 304](#).





2.6 Overview - Roof Trim Panel Controls

1 - Driver Vanity Mirror Lamp Contact Switch - F147-

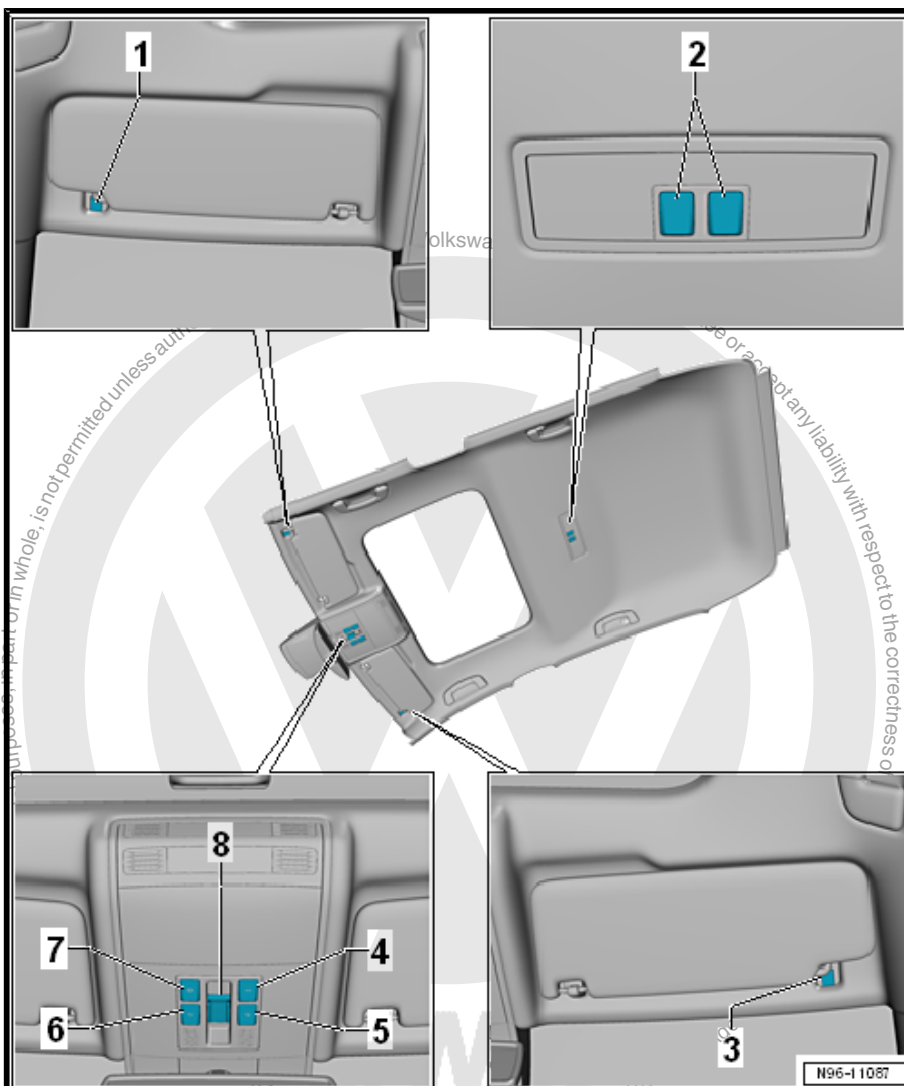
- ❑ The vanity mirror contact switch is located in the sun visor mount and cannot be replaced separately if faulty.
- ❑ Removing and installing. Refer to ➔ ["2.31 Driver/Front Passenger Vanity Mirror Lamp Contact Switch F147 / F148, Removing and Installing", page 304](#).

2 - Rear Interior Lamp - W43- Button

- ❑ Installed in the Rear Interior Lamp - WX2-
- ❑ Removing and installing. Refer to ➔ ["2.34 Rear Interior/Reading Lamp, Removing and Installing", page 306](#).

3 - Front Passenger Vanity Mirror Lamp Contact Switch - F148-

- ❑ The vanity mirror contact switch is located in the sun visor mount and cannot be replaced separately if faulty.
- ❑ Removing and installing. Refer to ➔ ["2.31 Driver/Front Passenger Vanity Mirror Lamp Contact Switch F147 / F148, Removing and Installing", page 304](#).



4 - Rear Interior Lamp - W43- Button

- ❑ Installed in the Front Interior Lamp - WX1-
- ❑ Removing and installing. Refer to ➔ ["2.34 Rear Interior/Reading Lamp, Removing and Installing", page 306](#).

5 - Right Front Reading Lamp Button - E634-

- ❑ Installed in the Front Interior Lamp - WX1-
- ❑ Removing and installing. Refer to ➔ ["2.35 Right Front Reading Lamp Button E634, Removing and Installing", page 307](#).

6 - Front Interior Lamp - W1- Button

- ❑ To turn on and off the Front Interior Lamp - W1-
- ❑ Removing and installing. Refer to ➔ ["2.33 Front Interior Lamp/Reading Lamp, Removing and Installing", page 305](#).

7 - Front Interior Lamp - W1- Button

- ❑ To turn on and off the Front Interior Lamp - W1- with the door contact switch
- ❑ Installed in the Front Interior Lamp - WX1-
- ❑ Removing and installing. Refer to ➔ ["2.33 Front Interior Lamp/Reading Lamp, Removing and Installing", page 305](#).



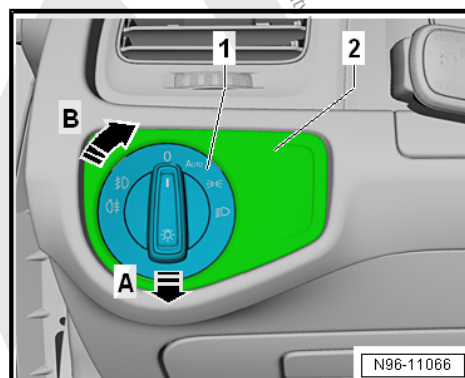
8 - Sunroof Button - E325-

- ❑ Tightening Specification for screws: 0.65 Nm.
- ❑ Installed in the Front Interior Lamp - WX1-
- ❑ Removing and installing. Refer to ⇒ ["2.32 Sunroof Button E325 , Removing and Installing", page 305](#) .

2.7 Rotary Light Switch - EX1- , Removing and Installing

Removing

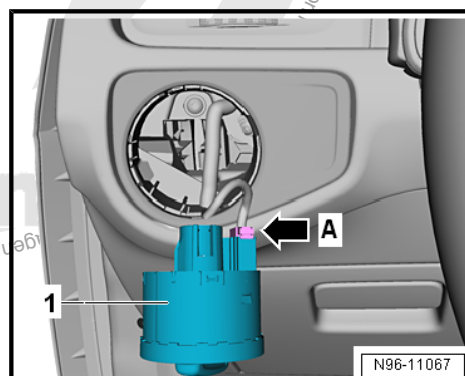
- Turn the light switch to position "0".
- Push in the Rotary Light Switch - EX1- rotary handle -1- opposite direction of -arrow A- and turn in direction of -arrow B-.
- Hold the rotary handle -1- in this position.
- Remove the entire Rotary Light Switch - EX1- in the direction of the -arrow A- from the instrument panel.



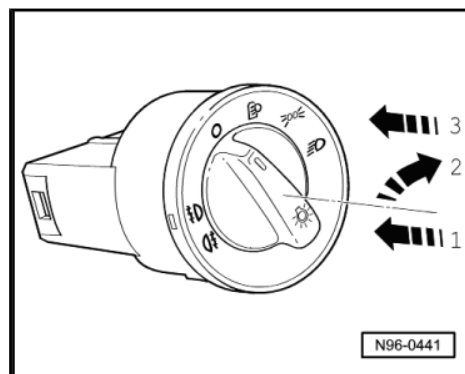
- Disconnect the connector -arrow A- and remove the Rotary Light Switch - EX1- -1-.

Installing

Install in the reverse order of removal. Note the following:



- Tighten the Rotary Light Switch - EX1- and push in the light switch rotary handle -1- and at the same time turn to the right -2-.
- Hold the rotary handle in this position and install the Rotary Light Switch - EX1- in the instrument panel -3-.
- Turn the rotary handle to "0" to lock the switch in the instrument panel.
- Perform a functionality test.



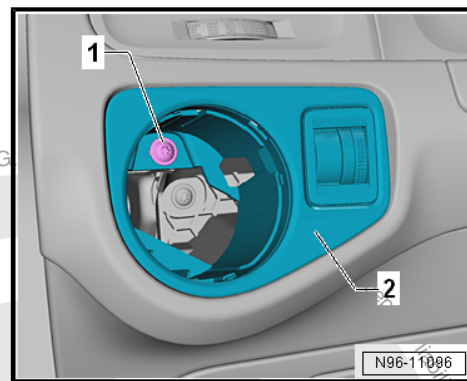
2.8 Headlamp Range Control Adjuster - E102- , Removing and Installing

Removing

- Remove the Rotary Light Switch - EX1- . Refer to ⇒ ["2.7 Rotary Light Switch EX1 , Removing and Installing", page 294](#) .



- Remove the bolt -1-.
- Remove the trim -2- using the Headlamp Range Control Adjuster - E102- from the instrument panel.
- Disconnect the connectors.

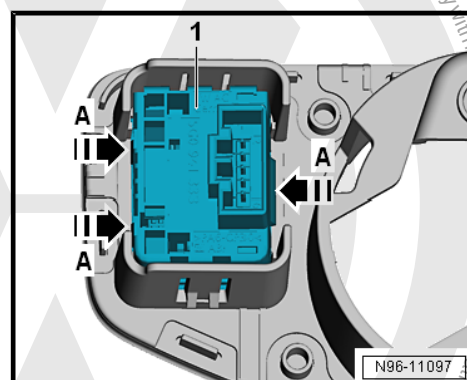


- Push the catches on the Headlamp Range Control Adjuster - E102- -1- in direction of -arrow A-.
- Push the Headlamp Range Control Adjuster - E102- -1-.

Installing

Install in reverse order of removal.

- Perform a functionality test.



2.9 Driving Profile Selection Button - E735- , Removing and Installing

Removing and installing. Refer to

⇒ [“2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing”, page 296](#) .

2.10 Start/Stop Mode Button - E693- , Removing and Installing

Removing and installing. Refer to

⇒ [“2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing”, page 296](#) .

2.11 ASR/ESP Button - E256- , Removing and Installing

Removing and installing. Refer to

⇒ [“2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing”, page 296](#) .

2.12 Parking Aid Button - E266- , Removing and Installing

Removing and installing. Refer to

⇒ [“2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing”, page 296](#) .

2.13 Parallel Parking Assistance Button - E581- , Removing and Installing

Removing and installing. Refer to

⇒ [“2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing”, page 296](#) .



2.14 Driving Profile Selection Button - E735- , Removing and Installing

Removing and installing. Refer to
⇒ ["2.15 Center Console Switch Module 1 EX23 / Center Console Switch Module 2 EX30 , Removing and Installing", page 296](#) .

2.15 Center Console Switch Module 1 - EX23- / Center Console Switch Module 2 - EX30- , Removing and Installing

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-



Caution

Risk of damaging the component surfaces.

- ◆ *When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.*



Note

- ◆ *The following buttons are installed on the left and right sides of the selector lever, depending on the vehicle equipment, in two button modules. The same procedure is used to remove and install the following components. The procedure is only described for one button module. A removed button module cannot be disassembled.*
- ◆ *The removal and installation is described for the left side. Removing and installing on the right side is identical.*

Depending on vehicle equipment, the following buttons could be installed in the Center Console Switch Module 1 - EX23- :

- ◆ ASR/ESP Button - E256-
- ◆ Driving Program Button - E598-
- ◆ Start/Stop Mode Button - E693-
- ◆ Driving Profile Selection Button - E735-

Depending on vehicle equipment, the following buttons could be installed in the Center Console Switch Module 2 - EX30- :

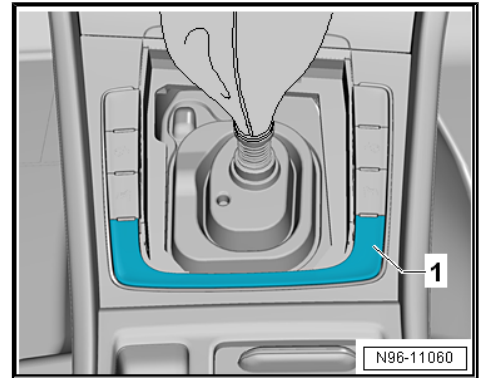
- ◆ Parking Aid Button - E266-
- ◆ Parallel Parking Assistance Button - E581-

Removing

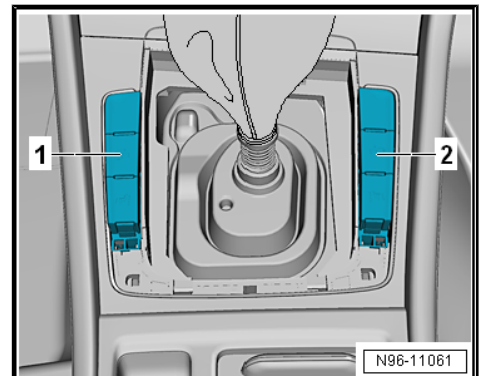
- Turn off the ignition and all electrical equipment.
- Unclip the shift lever boot upward from the center console.
Refer to ⇒ Rep. Gr.34 ; Selector Mechanism; Gearshift Knob, Removing and Installing .



- Pry the trim -1- up using the Trim Removal Wedge - 3409- .



- Lift the driver side button module -1- or the front passenger side button module -2- upward from the center console.

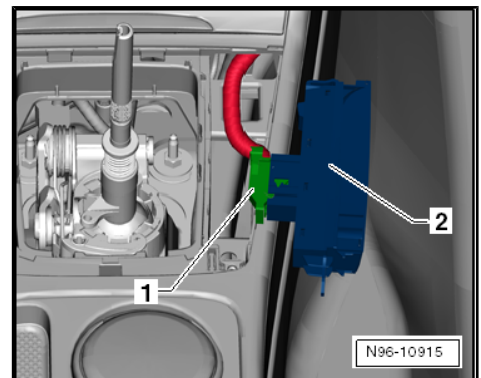


- Disconnect the connector -1- and remove the button module -2-.

Installing

Install in reverse order of removal.

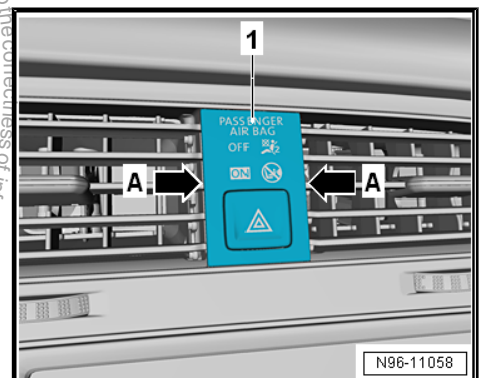
- Perform a functionality test.



2.16 Emergency Flasher Switch - EX3- , Removing and Installing

Removing

- Grasp the Passenger Airbag Indicator Lamp - K145- -1- at the side -A arrows- and remove from the instrument panel.
- Disconnect the connectors.



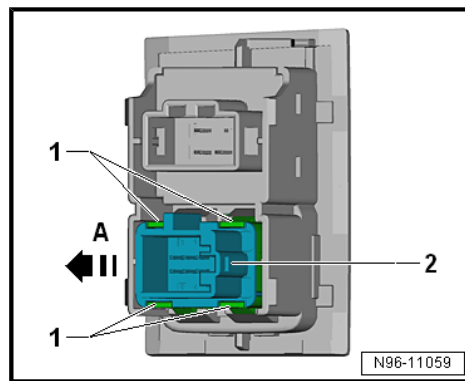


- Loosen the catches -1-.
- Push the Emergency Flasher Switch - EX3- -2- out of the Front Passenger Airbag -Disabled- Indicator Lamp - K145- in the direction of the -arrow A-.

Installing

Install in reverse order of removal.

- Perform a functionality test.



2.17 Left/Right Seat Heating Button -E653- / -E654- , Removing and Installing



Note

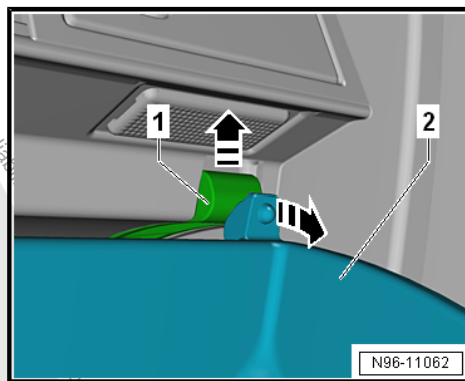
The seat heating buttons are integrated in the Heater Control Module - J65- / A/C Control Module - J301- / Climatronic Control Module - J255- display control head. Components cannot be replaced separately if faulty.

- Heater Control Module - J65- / A/C Control Module - J301- / Climatronic Control Module - J255- removing and installing. Refer to ➔ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Display and Control Head; Component Location Overview - Display and Control Head .

2.18 Glove Compartment Lamp Switch - E26- , Removing and Installing

Removing

- Open the glove compartment.
- Push the left and right glove compartment stop -1- in the upward direction of the -arrows-.
- Open the glove compartment lid -2-.



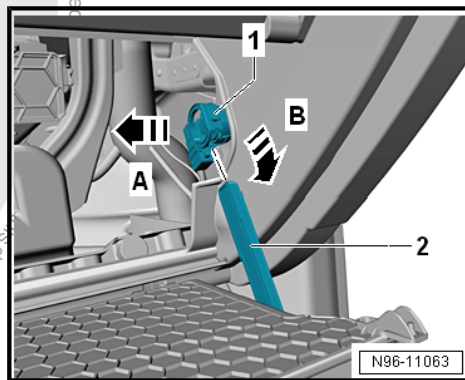
Open the glove compartment lid completely in direction of -arrow B- so that the steering rack -2- is removed from the damper -1-.

- Remove the Glove Compartment Lamp Switch - E26- in the damper -1- from the mount in direction of -arrow A-.

Installing

Install in reverse order of removal.

- Perform a functionality test.





2.19 Exterior Rearview Mirror Adjuster - EX11- , Removing and Installing

Removing

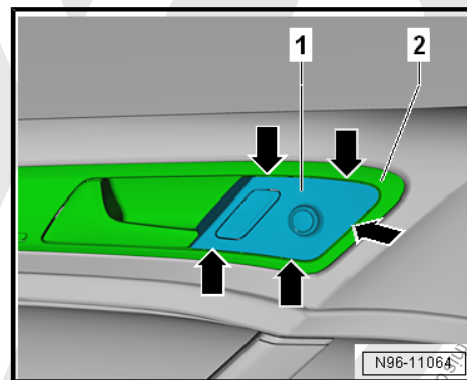


Caution

Risk of damaging the component surfaces:

- ◆ **When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.**

- Carefully release the retainers using a small screwdriver -arrows-.
- Remove the Exterior Rearview Mirror Adjuster - EX11- -1- from the Exterior rearview mirror adjuster trim -2-.
- Disconnect the connectors.
- If necessity remove the Driver Interior Locking Button - E308- . Refer to
⇒ ["2.22 Driver Interior Locking Button E308 , Removing and Installing", page 300](#) .



Installing

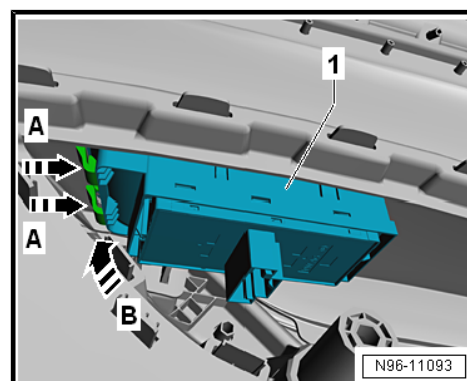
Install in the reverse order of removal. Note the following:

- If necessity install the Driver Interior Locking Button - E308- . Refer to
⇒ ["2.22 Driver Interior Locking Button E308 , Removing and Installing", page 300](#) .
- Perform a functionality test.

2.20 Power Window Control Head In Driver Door - E512- , Removing and Installing

Removing

- Remove the front door trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Front Door Trim Panels; Front Door Trim Panel, Removing and Installing .
- Push the catches on the trim -1- for the Power Window Control Head in Driver Door - E512- in direction of -arrow A-.
- remove the trim -1- for the Power Window Control Head in Driver Door - E512- in direction of -arrow B- from the door trim panel.



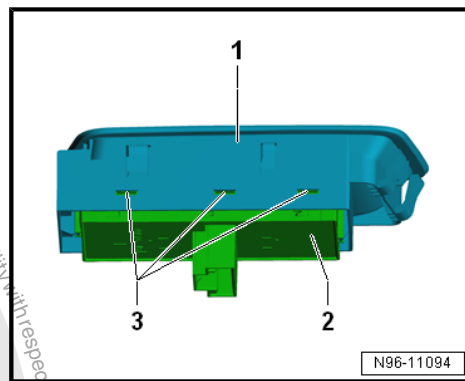


- Release the hook -3- on both sides with a small screwdriver.
- Remove the Power Window Control Head in Driver Door - E512- -2- from the trim -1-.

Installing

Install in reverse order of removal.

- Perform a functionality test.



2.21 Front Passenger Power Window Button - E716- , Removing and Installing

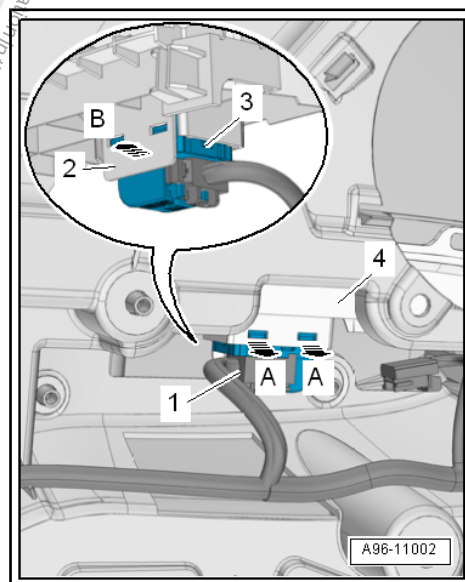
Removing

- Remove the front door trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Front Door Trim Panels; Front Door Trim Panel, Removing and Installing .
- Release the hook in direction of -arrow A- with a small screwdriver.
- Release the mounting tab -2- in direction of -arrow B-.
- Remove the window regulator switch -3- from the switch mount and remove it to the rear.
- Disconnect the connector -1-.

Installing

Install in reverse order of removal.

- Perform a functionality test.



2.22 Driver Interior Locking Button - E308- , Removing and Installing

Removing

- Remove the Exterior Rearview Mirror Adjuster - EX11- . Refer to
⇒ [“2.19 Exterior Rearview Mirror Adjuster EX11 , Removing and Installing”](#), page 299 .

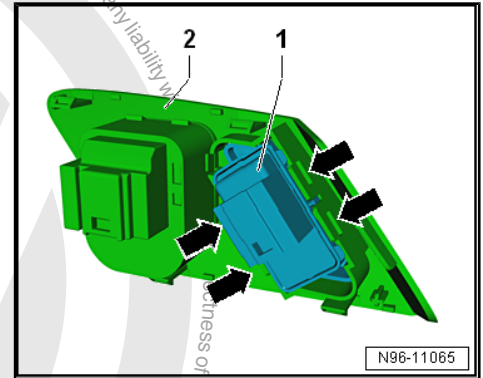


- Release the retainers -arrows-.
- Remove the Driver Interior Locking Button - E308- -1- from the Exterior Rearview Mirror Adjuster - EX11- -2- trim.

Installing

Install in the reverse order of removal. Note the following:

- The Driver Interior Locking Button - E308- -1- must engage audibly in the Exterior Rearview Mirror Adjuster - EX11- -2- trim.
- Install the Exterior Rearview Mirror Adjuster - EX11- -2-. Refer to ["2.19 Exterior Rearview Mirror Adjuster EX11 , Removing and Installing", page 299](#) .
- Perform a functionality test.



2.23 Fuel Filler Door Release Button - E319- , Removing and Installing

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-

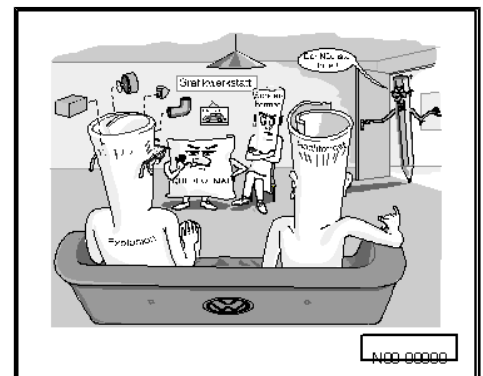
Removing

- Unclip the Fuel Filler Door Release Button - E319- -1- from the door trim panel using the Trim Removal Wedge - 3409- .
- Pull the Fuel Filler Door Release Button - E319- -1- out of the door trim panel just until the connector is accessible.
- Disconnect and remove the connector and then remove the Fuel Filler Door Release Button - E319- .

Installing

Install in the reverse order of removal. Note the following:

- The Fuel Filler Door Release Button - E319- -1- must audibly engage in the door trim panel.
- Perform a functionality test.



2.24 Interior Monitoring And Vehicle Inclination Deactivation Button - E616- , Removing and Installing

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-

Removing



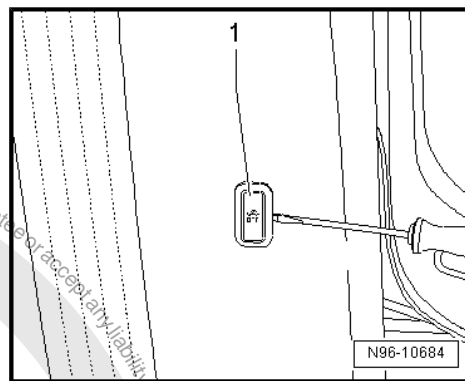
Caution

Risk of damaging the component surfaces.

- ◆ *When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.*



- Pry up the Interior Monitoring and Vehicle Inclination Deactivation Button - E616- using the Trim Removal Wedge - VAS3409- or a screwdriver at the lower edge.
- Remove the button from the B-pillar trim panel.

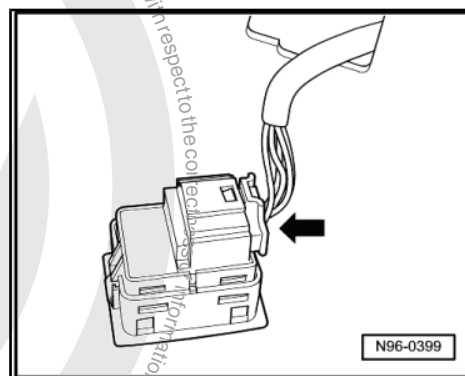


- Disconnect the connector -arrow-.

Installing

Install in reverse order of removal.

- Perform a functionality test.



2.25 Driver/Front Passenger Door Contact Switch -F2- / -F3- , Removing and Installing



Note

The door contact switch is installed in the door lock and cannot be replaced individually when faulty.

- To remove and install the front door lock. Refer to ⇒ Body Exterior; Rep. Gr. 57 ; Door Components; Door Lock, Removing and Installing .

2.26 Left/Right Rear Power Window Switch in Left Rear Door -E52- / -E54- , Removing and Installing



Note

The removal and installation is described for the left side. Removing and installing on the right side is identical.

- Remove the rear door trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Rear Door Trim Panels; Rear Door Trim Panel, Removing and Installing .

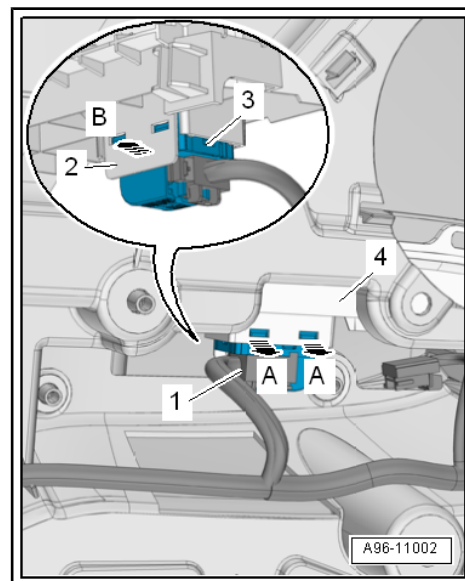


- Release the hook in the direction of the -arrow A- with a small screwdriver.
- Release the mounting tab -2- in the direction of the -arrow B-.
- Remove the window regulator switch -3- from the switch mount and remove it to the rear.
- Disconnect the connector -1-.

Installing

Install in reverse order of removal.

- Perform a functionality test.



2.27 Left/Right Rear Door Contact Switch - F10- / -F11- , Removing and Installing



Note

The door contact switch is installed in the door lock and cannot be replaced individually when faulty.

- To remove and install the rear door lock. Refer to ⇒ Body Exterior; Rep. Gr. 58 ; Door Components; Door Lock, Removing and Installing .

2.28 Electromechanical Parking Brake Button - E538- / -AUTO HOLD- Button - E540- , Removing and Installing



Note

The Electromechanical Parking Brake Button - E538- and the T-Auto Hold- Button - E540- are one component and cannot be replaced individually.

Removing

- Remove the center console insert. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console; Center Console Insert, Removing and Installing .

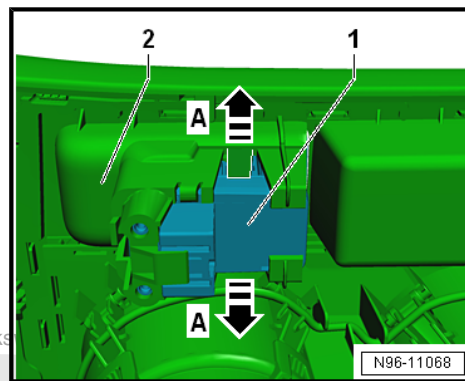


- Push the catch in direction of -arrow A-.
- Remove the Electromechanical Parking Brake Button - E538-
-1- upward from the center console insert -2-.

Installing

Install in reverse order of removal.

- Perform a functionality test.



2.29 Start System Button - E378- , Removing and Installing

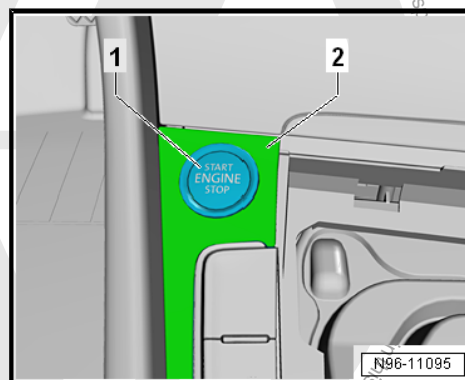
Removing

- Unclip the shift lever boot upward from the center console. Refer to ⇒ Rep. Gr. 34 ; Selector Mechanism; Gearshift Knob, Removing and Installing .
- Remove the Start System Button - E378- -1- from below out of the center console -2-. The clips are opened at the same time.
- Disconnect the connectors.

Installing

Install in reverse order of removal.

- Perform a functionality test.



2.30 Rear Lid Alarm Switch - F123- , Removing and Installing



Note

The rear Lid Contact Switch is installed in the rear lid latch and cannot be replaced separately.

- Rear lid lock, removing and installing. Refer to ⇒ Body Exterior; Rep. Gr. 55 ; Rear Lid; Hood Latch, Removing and Installing .

2.31 Driver/Front Passenger Vanity Mirror Lamp Contact Switch -F147- / -F148- , Removing and Installing



Note

The vanity mirror contact switch is installed in the sun visor mount and cannot be replaced separately if faulty.

- Sun visor, removing and installing. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Equipment; Sun Visor, Removing and Installing .



2.32 Sunroof Button - E325- , Removing and Installing

Removing

- Remove the Front Interior Lamp - WX1- . Refer to
⇒ [“2.33 Front Interior Lamp/Reading Lamp, Removing and Installing”, page 305](#) .
- Remove the bolts -arrows-.
- Remove the button -1- from the interior lamp.

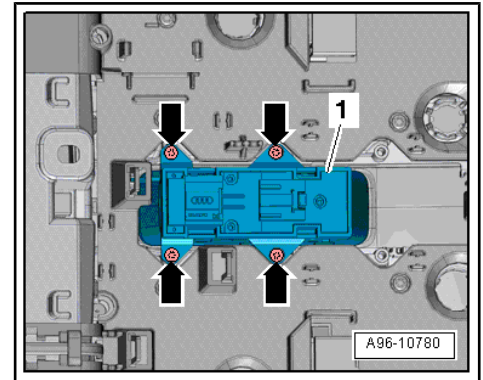
Installing

Install in reverse order of removal.

- Perform a functionality test.

Tightening Specifications

- ◆ Refer to
⇒ [“2.6 Overview - Roof Trim Panel Controls”, page 293](#)



2.33 Front Interior Lamp/Reading Lamp, Removing and Installing

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-

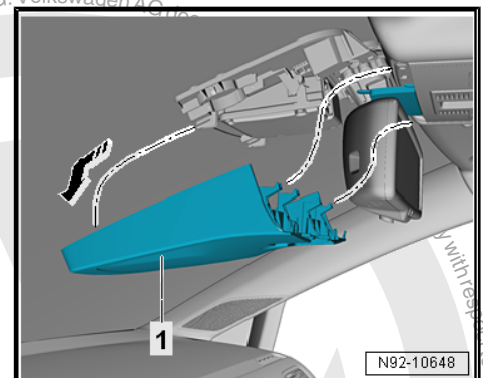


Note

The switch module is a component of the Front Interior Lamp - WX1- and cannot be removed separately.

Removing

- If necessary remove the cover -1- in direction of -arrow A-.

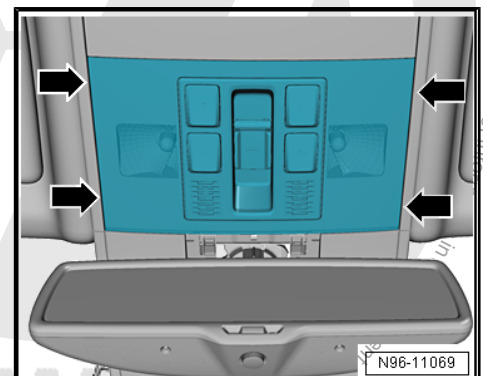


- Pry the diffusion lens in the marked areas -arrows- using the Trim Removal Wedge - 3409- from the Front Interior Lamp - WX1- .

Only Front Interior Lamp - WX1- with LED-Technology

- Disconnect the connectors.

All Versions



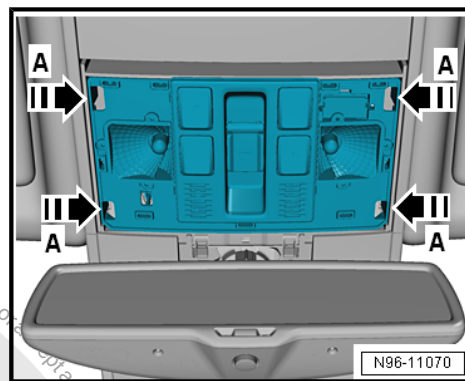


- Push the catches in the direction of the arrow -A- and remove the Front Interior Lamp - WX1- .
- Disconnect the connectors.

Installing

Install in the reverse order of removal. Note the following:

- Install the Front Interior Lamp - WX1- in the roof opening.
- Install the diffusion lens in the Front Interior Lamp - WX1- .
- Perform a functionality test.



2.34 Rear Interior/Reading Lamp, Removing and Installing

Removing



Caution

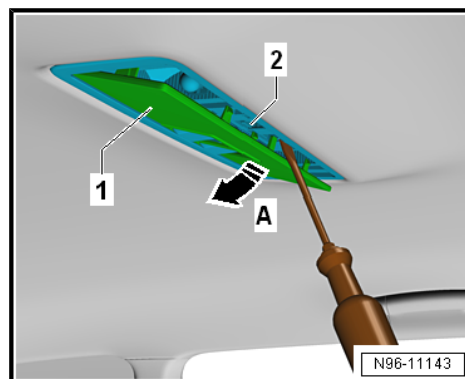
Risk of damaging the component surfaces.

- ◆ **When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.**

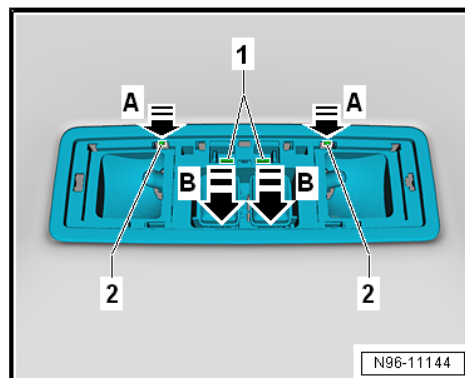


Note

- ◆ *The button is a permanent component of the Front Interior Lamp - WX2- and cannot be removed separately.*
- ◆ *The Rear Interior Lamp - WX2- is held in place by a dual-stage locking mechanism.*
- Pry the diffusion lens -1- for example with a narrow screwdriver in direction of -arrow A-.
- Remove the diffusion lens -1- from the Rear Interior Lamp - WX2- -2-.



- Release the catches -2- for example with a narrow screwdriver in the direction of the -arrow A-.
- Push the locking mechanism -1- in direction of -arrow B-.





- Remove the Rear Interior Lamp - WX2- -1- out of the roof opening in direction of -arrow A-.
- Release the connector safety catch in direction of -arrow B- and disconnect the connector in direction of -arrow C-.

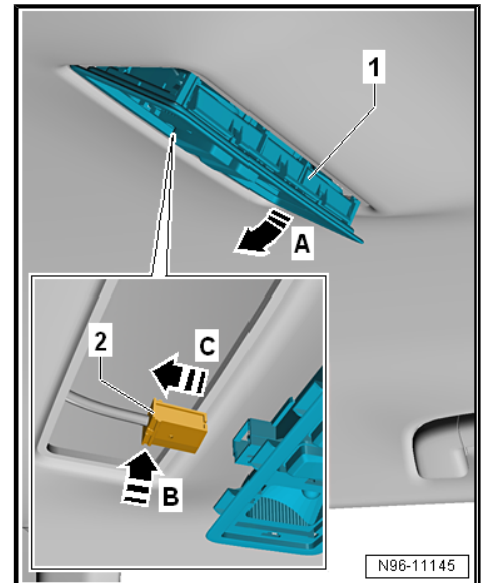
Installing

Install in the reverse order of removal. Note the following:

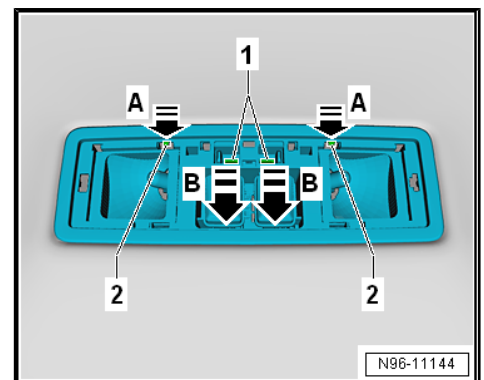


Note

The connector must point in the direction of travel.



- Push the locking mechanism -1- opposite direction of -arrow B-. The catches -2- must engage securely.
- Perform a functionality test.



2.35 Right Front Reading Lamp Button - E634- , Removing and Installing



Note

The Front Reading Lamp Button - E634- is a component of the Front Interior Lamp - WX1- and cannot be removed separately.

Removing

- Remove the Front Interior Lamp - WX1- . Refer to ["2.33 Front Interior Lamp/Reading Lamp, Removing and Installing", page 305](#).

Installing

Install in reverse order of removal.



3 Anti-Theft Alarm System

⇒ [“3.1 Overview - Interior Monitoring”, page 308](#)

⇒ [“3.2 Alarm Horn H12 , Removing and Installing”, page 310](#)

⇒ [“3.3 Anti-Theft Alarm System Sensor G578 , Removing and Installing”, page 311](#)

3.1 Overview - Interior Monitoring

⇒ [“3.1.1 Overview - Interior Monitoring”, page 308](#)

3.1.1 Overview - Interior Monitoring

1 - Anti-Theft Alarm System Sensor - G578-

- ❑ Removing and installing. Refer to
⇒ [“3.3 Anti-Theft Alarm System Sensor G578 , Removing and Installing”, page 311](#) .
- ❑ Must be parameterized after removal. Refer to
⇒ [“3.3 Anti-Theft Alarm System Sensor G578 , Removing and Installing”, page 311](#) .

2 - Bolt

- ❑ Tightening Specification: 1 Nm.
- ❑ Quantity: 4

3 - Cover

- ❑ Removing and installing. Refer to
⇒ [“3.3.2 Anti-Theft Alarm System Sensor G578 , Removing and Installing Versions with Four Bolts”, page 312](#) .

4 - Interior Monitoring And Vehicle Inclination Deactivation Button - E616-

- ❑ Removing and installing. Refer to
⇒ [“2.24 Interior Monitoring And Vehicle Inclination Deactivation Button E616 , Removing and Installing”, page 301](#) .

5 - Vehicle Electrical System Control Module - J519-

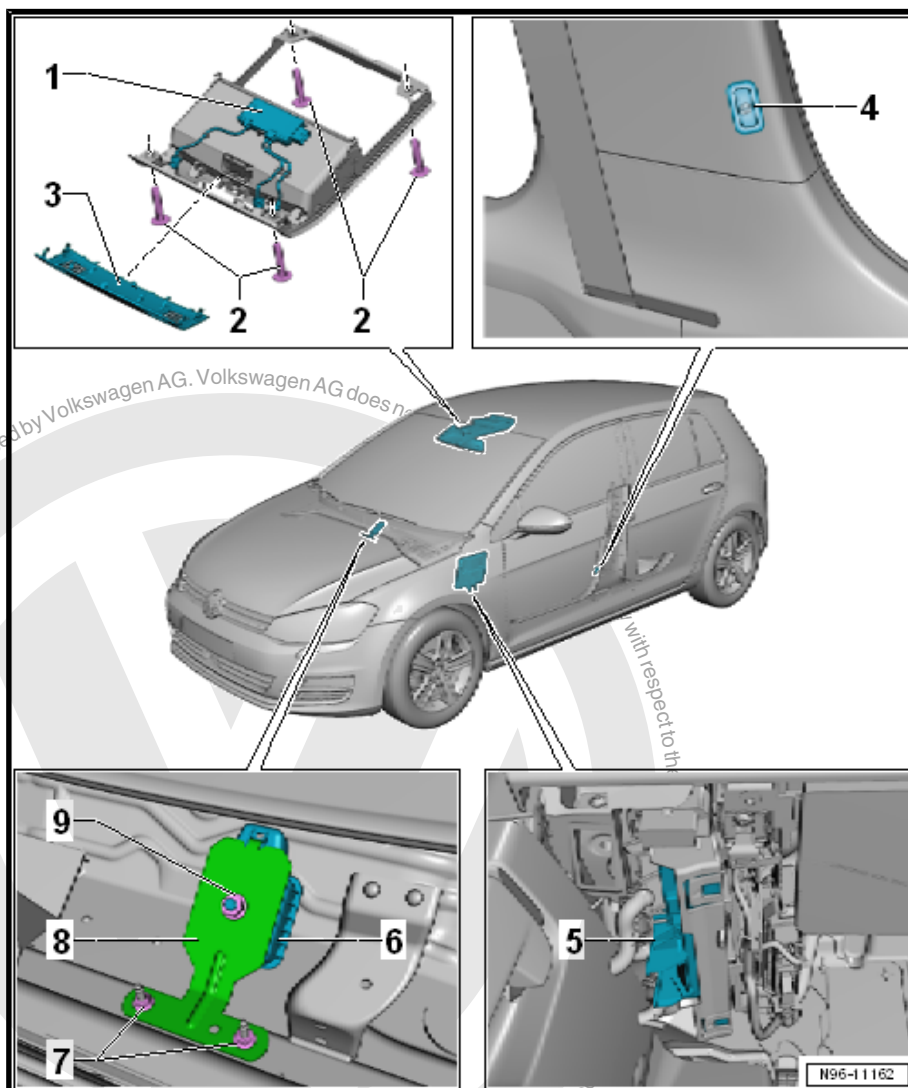
- ❑ With Central Locking and Anti-Theft Alarm System Antenna - R47-
- ❑ Component location overview. Refer to
⇒ [“2.1.1 Component Location Overview - Front Control Module”, page 328](#) .

6 - Alarm Horn - H12-

- ❑ Removing and installing. Refer to ⇒ [“3.2 Alarm Horn H12 , Removing and Installing”, page 310](#) .

7 - Nut

- ❑ Tightening Specification: 9 Nm.





- ❑ Quantity: 2

8 - Bracket

- ❑ Removing and installing. Refer to ➤ [“3.2 Alarm Horn H12 , Removing and Installing”, page 310](#) .

9 - Nut

- ❑ Tightening Specification: 6 Nm

3.1.2 Overview - Interior Monitoring, RHD

1 - Interior Monitoring And Vehicle Inclination Deactivation Button - E616-

- ❑ Removing and installing. Refer to ➤ [“2.24 Interior Monitoring And Vehicle Inclination Deactivation Button E616 , Removing and Installing”, page 301](#) .

2 - Anti-Theft Alarm System Sensor - G578-

- ❑ Removing and installing. Refer to ➤ [“3.3 Anti-Theft Alarm System Sensor G578 , Removing and Installing”, page 311](#) .
- ❑ Must be parameterized after removal. Refer to ➤ [“3.3 Anti-Theft Alarm System Sensor G578 , Removing and Installing”, page 311](#) .

3 - Cover

- ❑ Removing and installing. Refer to ➤ [“3.3.2 Anti-Theft Alarm System Sensor G578 , Removing and Installing Versions with Four Bolts”, page 312](#) .

4 - Bolt

- ❑ Quantity: 4
- ❑ Tightening Specification: 1 Nm.

5 - Vehicle Electrical System Control Module - J519-

- ❑ With Central Locking and Anti-Theft Alarm System Antenna - R47-
- ❑ Component location overview. Refer to ➤ [“2.1.2 Component Location Overview - Front Control Module, RHD”, page 330](#) .

6 - Bracket

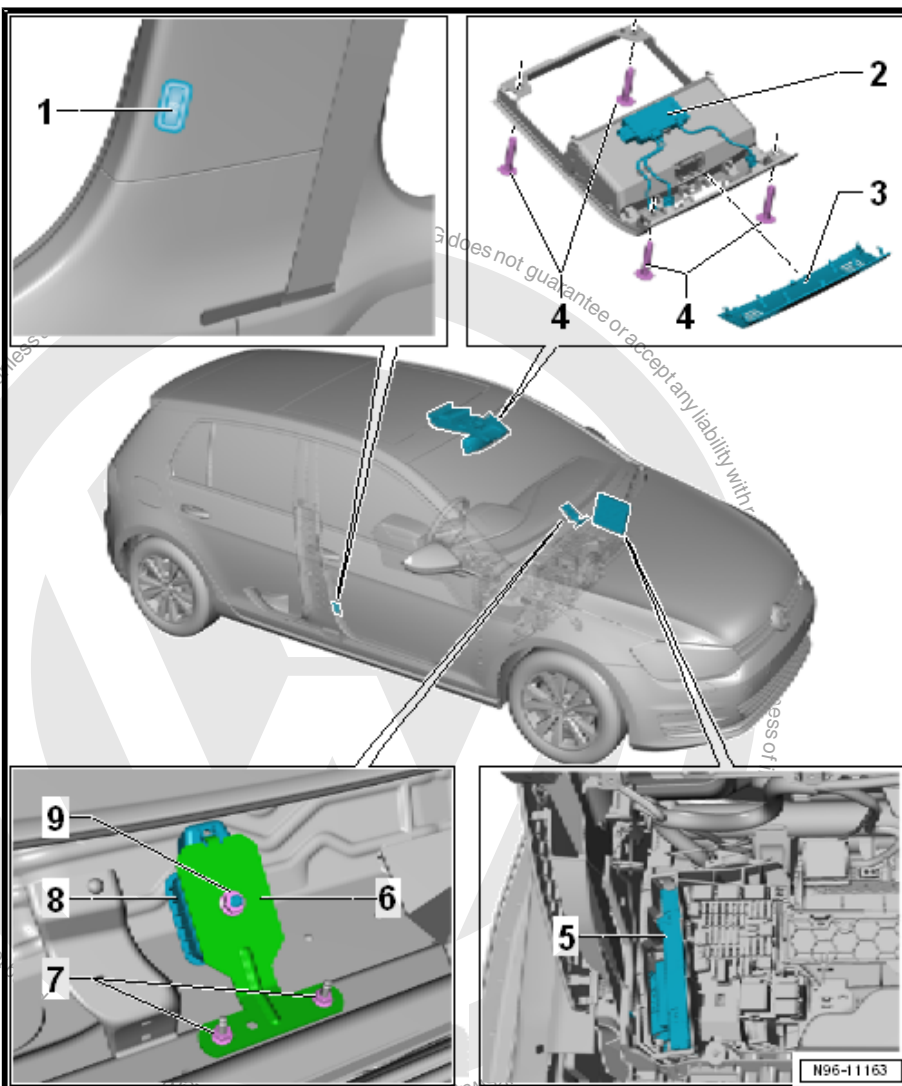
- ❑ Removing and installing. Refer to ➤ [“3.2 Alarm Horn H12 , Removing and Installing”, page 310](#) .

7 - Nut

- ❑ Quantity: 2
- ❑ Tightening Specification: 9 Nm.

8 - Alarm Horn - H12-

- ❑ Removing and installing. Refer to ➤ [“3.2 Alarm Horn H12 , Removing and Installing”, page 310](#) .





9 - Nut

- Tightening Specification: 6 Nm

3.2 Alarm Horn - H12- , Removing and Installing

Removing

- Remove the plenum chamber cover. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Bulkhead; Plenum Chamber Cover, Removing and Installing .
- Remove the nuts -3-.
- Remove the alarm horn -1- with the bracket -4- from the plenum chamber.
- Disconnect the connector -5-.
- if necessary remove the nut -2-.
- Remove the alarm horn -1- from the bracket -4-.

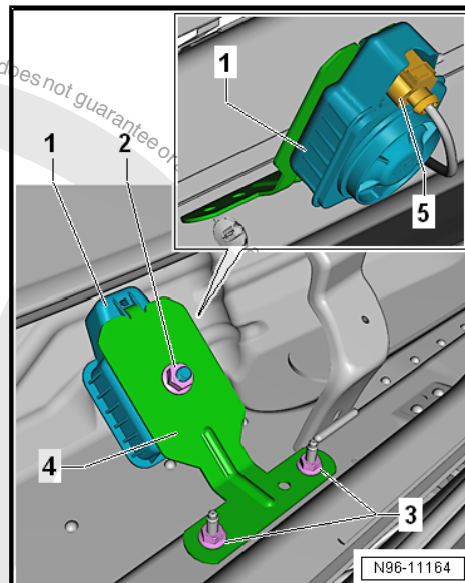
Installing

Install in the reverse order of removal. Note the following:

- Perform a functionality test.

Tightening Specifications

- ◆ Refer to ⇒ [“3.1 Overview - Interior Monitoring”, page 308](#)





3.3 Anti-Theft Alarm System Sensor - G578- , Removing and Installing

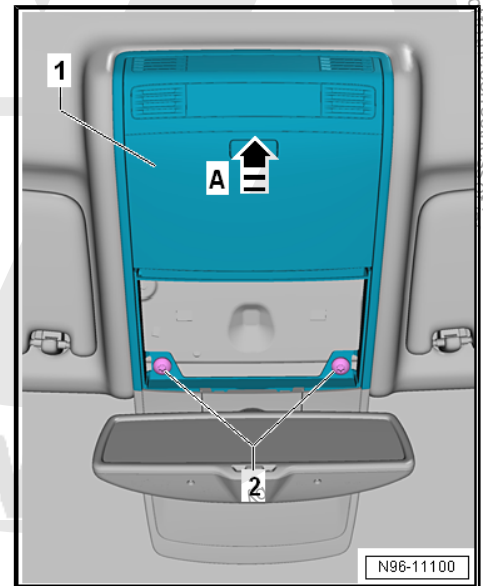
⇒ ["3.3.1 Anti-Theft Alarm System Sensor G578 , Removing and Installing Versions with Two Bolts", page 311](#)

⇒ ["3.3.2 Anti-Theft Alarm System Sensor G578, Removing and Installing Versions with Four Bolts", page 312](#)

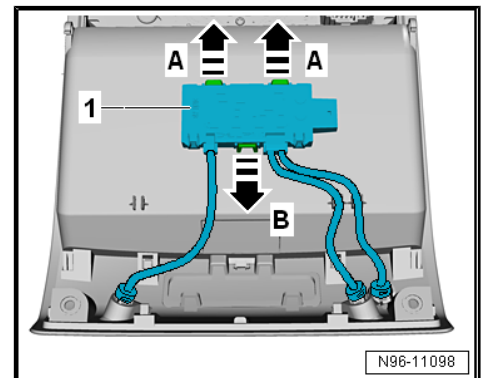
3.3.1 Anti-Theft Alarm System Sensor - G578- , Removing and Installing Versions with Two Bolts

Removing

- Remove the Front Interior Lamp - WX1- . Refer to [⇒ "2.33 Front Interior Lamp/Reading Lamp, Removing and Installing", page 305](#) .
- Remove the screws -2-.
- Remove the roof module -1- in the direction of the -arrow A-.
- Disconnect the connector.



- Release the mounting tabs in the direction of the -arrows A and B-.
- Remove the Anti-Theft Alarm System Sensor - G578- -1- from the roof module.





- Release the mounting tabs in direction of -arrows A and B-.
- Remove the individual sensor -1- from the roof module.

Installing

Install in the reverse order of removal. Note the following:



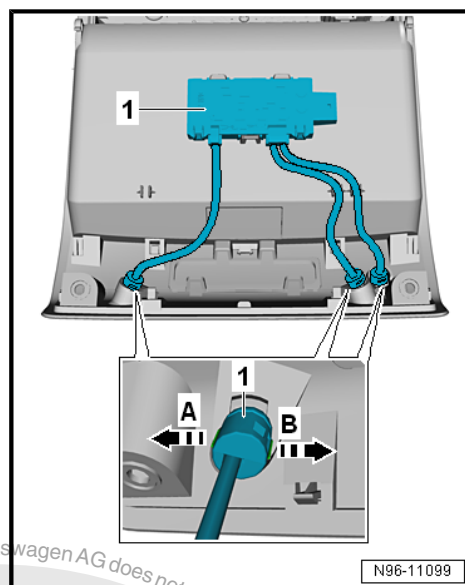
Note

If the Anti-Theft Alarm System Sensor - G578- is replaced then it must be parameterized.

- Parameterize the Anti-Theft Alarm System Sensor - G578- . Refer to Vehicle Diagnostic Tester .
- Perform a functionality test.

Tightening Specifications

- ◆ Refer to ➔ [“3.1 Overview - Interior Monitoring”, page 308](#)



3.3.2 Anti-Theft Alarm System Sensor - G578- , Removing and Installing Versions with Four Bolts

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-

Removing

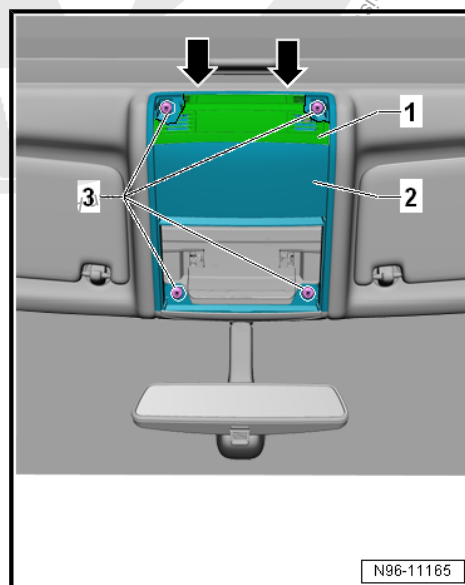


Caution

Risk of damaging the component surfaces.

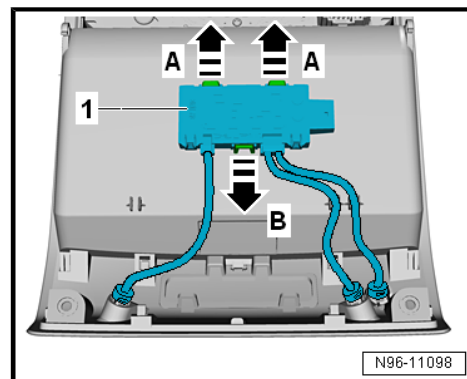
- ◆ *When positioning a prying tool, put commercially available adhesive tape over the component in the visible area.*

- Remove the Front Interior Lamp - WX1- . Refer to ➔ [“2.33 Front Interior Lamp/Reading Lamp, Removing and Installing”, page 305](#) .
- Using the Trim Removal Wedge - 3409- pry the cover -1- in the area of the -arrows-.
- Remove the bolts -3-.
- Remove the roof module -2-.
- Disconnect the connector.





- Release the mounting tabs in direction of -arrows A and B-.
- Remove the Anti-Theft Alarm System Sensor - G578- -1- from the roof module.



- Release the mounting tabs in direction of -arrows A and B-.
- Remove the individual sensor -1- from the roof module.

Installing

Install in the reverse order of removal. Note the following:



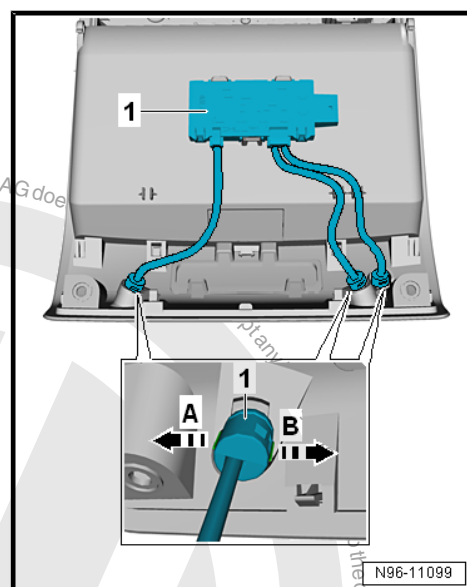
Note

If the Anti-Theft Alarm System Sensor - G578- is replaced then it must be parameterized.

- Parameterize the Anti-Theft Alarm System Sensor - G578- . Refer to Vehicle Diagnostic Tester .
- Perform a functionality test.

Tightening Specifications

- ◆ Refer to ➔ [“3.1 Overview - Interior Monitoring”, page 308](#)





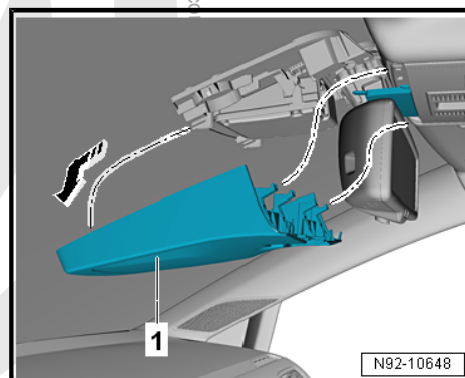
4 Driver Assistance Systems Front Camera

⇒ "4.1 Driver Assistance Systems Front Camera, Removing and Installing", page 314

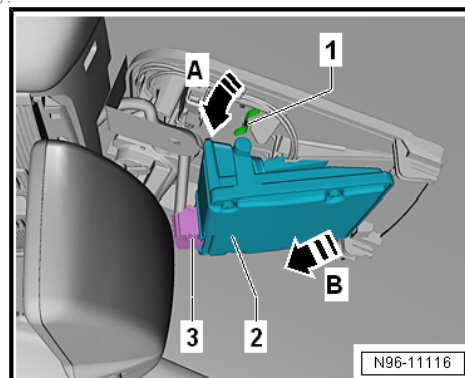
4.1 Driver Assistance Systems Front Camera, Removing and Installing

Removing

- Turn off the ignition and all electrical equipment.
- If equipped, turn the key to the 0 position (pre-lock).
- Remove the cover -1-. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Interior Rearview Mirror; Interior Rearview Mirror, Removing and Installing .



- Unclip the Driver Assistance Systems Front Camera - R242- -2- in the direction of the -arrow A- from the clamps -1-.
- Remove the Driver Assistance Systems Front Camera - R242- -1- in direction of -arrow B- from the bracket.
- Disconnect the connector -3-.



Installing

Install in the reverse order of removal. Note the following:

- Calibrate the Driver Assistance Systems Front Camera - R242- . Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Driver Assistance Systems Front Camera; Driver Assistance Systems Front Camera, Calibrating .



5 Cigarette Lighter and Socket

⇒ **"5.1 Cigarette Lighter U1 , Removing and Installing", page 315**

⇒ **"5.2 Socket Illumination Bulb L42 , Removing and Installing", page 315**

⇒ **"5.3 Rear Cigarette Lighter Illumination Bulb L32 , Removing and Installing", page 315**

⇒ **"5.4 Socket U , Removing and Installing", page 315**

5.1 Cigarette Lighter - U1- , Removing and Installing



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 96 ; Cigarette Lighter - U1- .

5.2 Socket Illumination Bulb - L42- , Removing and Installing



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 96 ; 12 V Socket ; 12 V Socket , Removing and Installing .

5.3 Rear Cigarette Lighter Illumination Bulb - L32- , Removing and Installing



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 96 ; Cigarette Lighter - U1- .

5.4 Socket - U- , Removing and Installing



Note

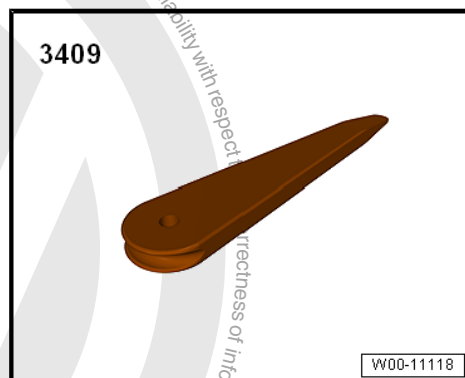
All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 96 ; 12 V Socket ; 12 V Socket , Removing and Installing .



6 Special Tools

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-





97 – Wiring

1 Relay Carriers, Fuse Panels and E-Boxes

⇒ [“1.1 Overview - Relay Carriers, Fuse Panels and E-Boxes”, page 317](#)

⇒ [“1.2 E-Box, Removing and Installing”, page 321](#)

⇒ [“1.3 E-Box Relay and Fuse Panels, Removing and Installing”, page 323](#)

⇒ [“1.4 Relay and Fuse Panels Behind Instrument Panel, Removing and Installing”, page 325](#)

⇒ [“1.5 Battery Fuse Panel, Removing and Installing”, page 327](#)

1.1 Overview - Relay Carriers, Fuse Panels and E-Boxes

⇒ [“1.1.1 Relay Panels, Fuse Panels and E-Boxes”, page 317](#)

⇒ [“1.1.2 Relay Carrier, Fuse Panel Instrument Panel/A-Pillar”, page 319](#)

1.1.1 Relay Panels, Fuse Panels and E-Boxes





1 - Front Cover

- ☐ for engine compartment E-box

2 - Nut

- ☐ Tightening Specification: 9 Nm.

3 - Nut

- ☐ Tightening Specification: 9 Nm.

4 - Wire

- ☐ Tightening Specification: 4.5 Nm.

- ☐ For coolant fan

5 - Wire

- ☐ Tightening Specification: 4.5 Nm.

- ☐ For the terminal 30

6 - Wire

- ☐ Tightening Specification: 4.5 Nm.

- ☐ For electromechanical power steering

7 - Wire

- ☐ Tightening Specification: 6 Nm

- ☐ For battery B+

8 - Wire

- ☐ Tightening Specification: 4.5 Nm.

- ☐ For the terminal 30

9 - Wire

- ☐ Tightening Specification: 6 Nm

- ☐ For generator

10 - Fuse Panel A - SA-

- ☐ Removing and installing. Refer to [⇒ "1.3.2 Fuse Panel A SA , Removing and Installing", page 325](#) .

11 - Mounting Bracket

- ☐ Removing and installing. Refer to [⇒ "1.3.2 Fuse Panel A SA , Removing and Installing", page 325](#) .

12 - Cover

- ☐ for engine compartment E-box

13 - Relay and Fuse Panel B - SB-

- ☐ With connecting bracket for fuse panel A

- ☐ Removing and installing. Refer to [⇒ "1.3 E-Box Relay and Fuse Panels, Removing and Installing", page 323](#) .

14 - Wire

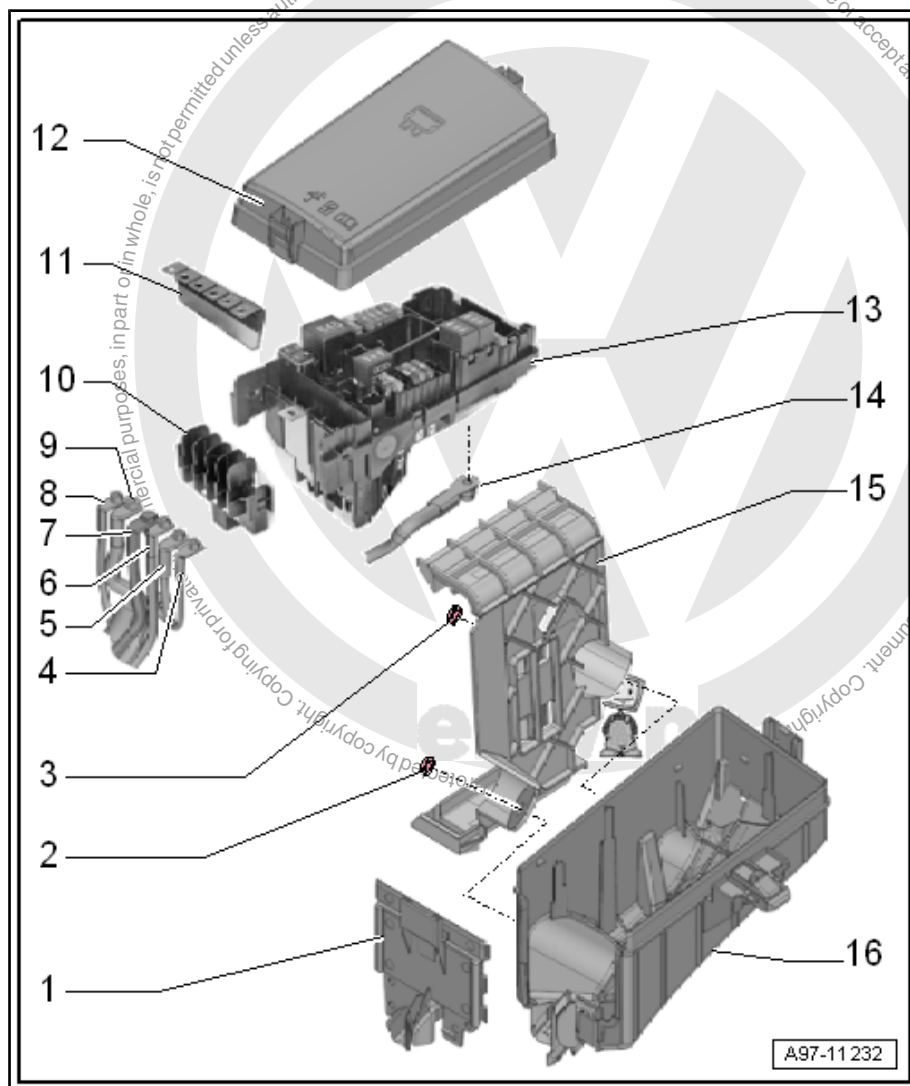
- ☐ Tightening Specification: 6 Nm

15 - Bracket

- ☐ For engine control module

16 - Engine Compartment E-Box

- ☐ Removing and installing. Refer to [⇒ "1.2 E-Box, Removing and Installing", page 321](#) .





1.1.2 Relay Carrier, Fuse Panel Instrument Panel/A-Pillar

1 - Bracket

- ❑ For Parking Aid Control Module - J446- / Parallel Parking Assistance Control Module - J791-
- ❑ Removing and installing. Refer to
⇒ ["2.8 Parking Aid Control Module J446 / Parallel Parking Assistance Control Module J791 Bracket, Removing and Installing", page 341](#) .

2 - Bracket

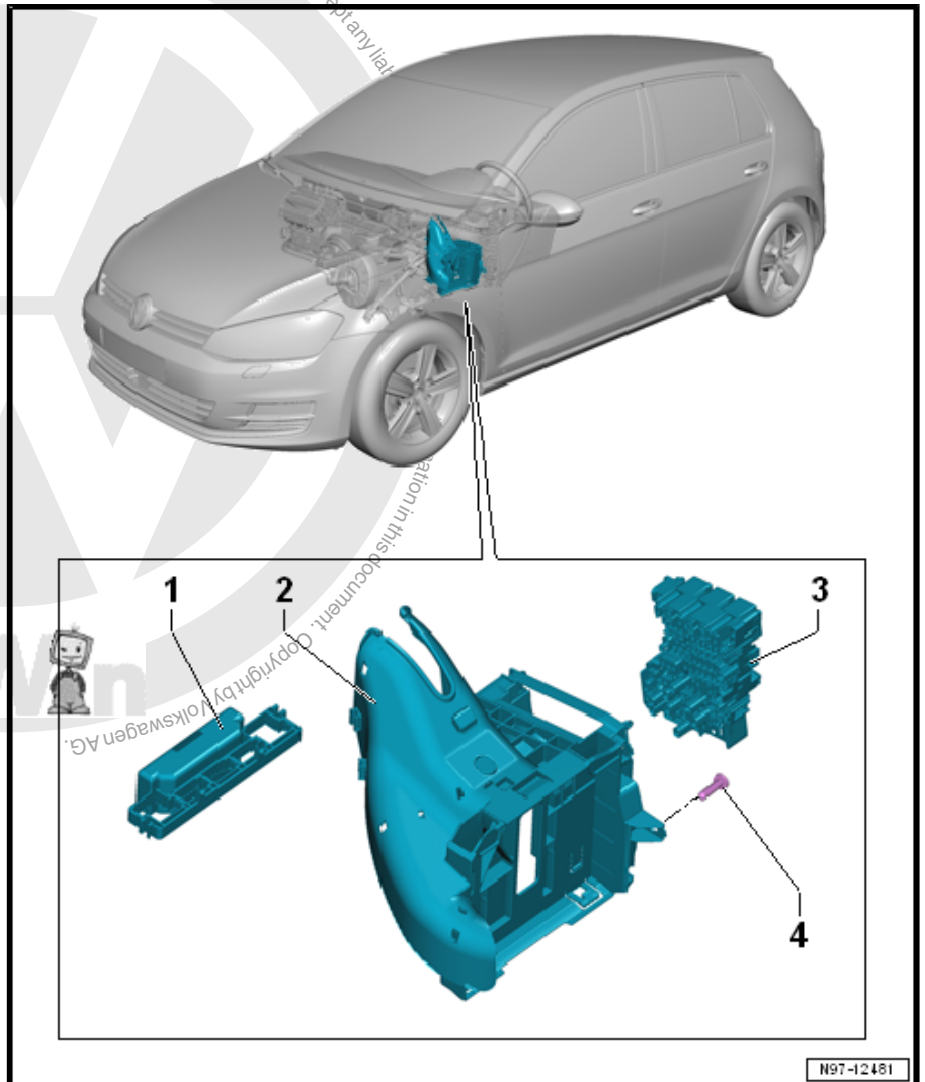
- ❑ For Vehicle Electrical System Control Module - J519-
- ❑ Removing and installing. Refer to
⇒ ["2.6.1 Vehicle Electrical System Control Module J519 Bracket, Removing and Installing", page 338](#) .

3 - Fuse Panel C - SC-

- ❑ Removing and installing. Refer to
⇒ ["1.4.1 Relay and Fuse Panels Behind Instrument Panel, Removing and Installing", page 325](#) .

4 - Bolt

- ❑ Tightening Specification: 3 Nm
- ❑ Quantity: 3





1.1.3 Relay Carrier, Fuse Panel Instrument Panel/A-Pillar, RHD

1 - Bracket

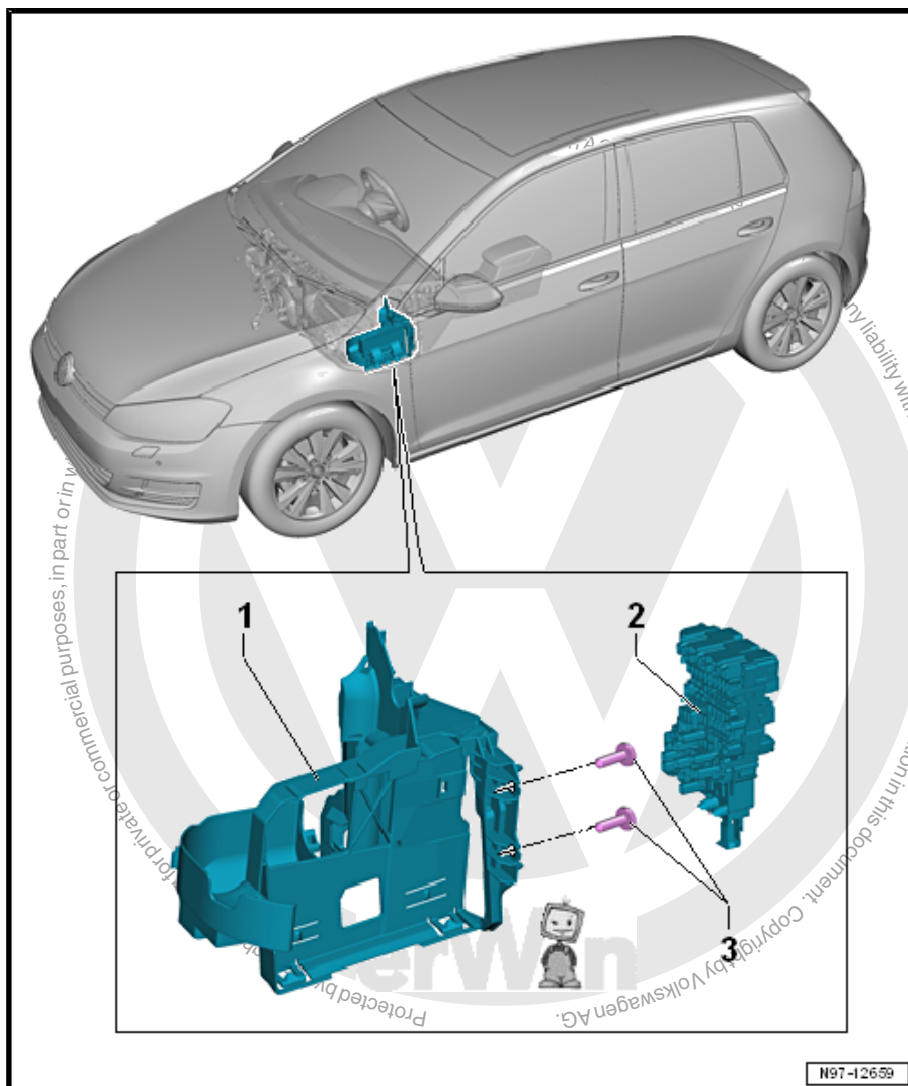
- ❑ for Vehicle Electrical System Control Module - J519-
- ❑ Removing and installing. Refer to ⇒ ["2.6.2 Vehicle Electrical System Control Module J519 Bracket, Removing and Installing, RHD", page 339](#).

2 - Fuse Panel C - SC-

- ❑ Removing and installing. Refer to ⇒ ["1.4.2 Relay and Fuse Panels Behind Instrument Panel, Removing and Installing, RHD", page 326](#).

3 - Bolt

- ❑ Quantity: 3
- ❑ Tightening Specification: 3 Nm



N97-12659



1.1.4 Component Location Overview - Battery Fuse Panel, Vehicles with High Voltage System

1 - Battery - A-

- ☐ Removing and installing. Refer to
⇒ ["1.2.2 Battery, Removing and Installing, Vehicles with High Voltage System", page 12](#).
- ☐ Disconnecting and connecting. Refer to
⇒ ["1.3.2 Battery, Disconnecting and Connecting, High Voltage System", page 17](#).

2 - Bolt

- ☐ 3.5 Nm

3 - Nut

- ☐ 7.5 Nm

4 - Positive Cable

- ☐ With wiring harness
- ☐ Disconnecting and connecting. Refer to
⇒ ["1.3.2 Battery, Disconnecting and Connecting, High Voltage System", page 17](#).

5 - Nut

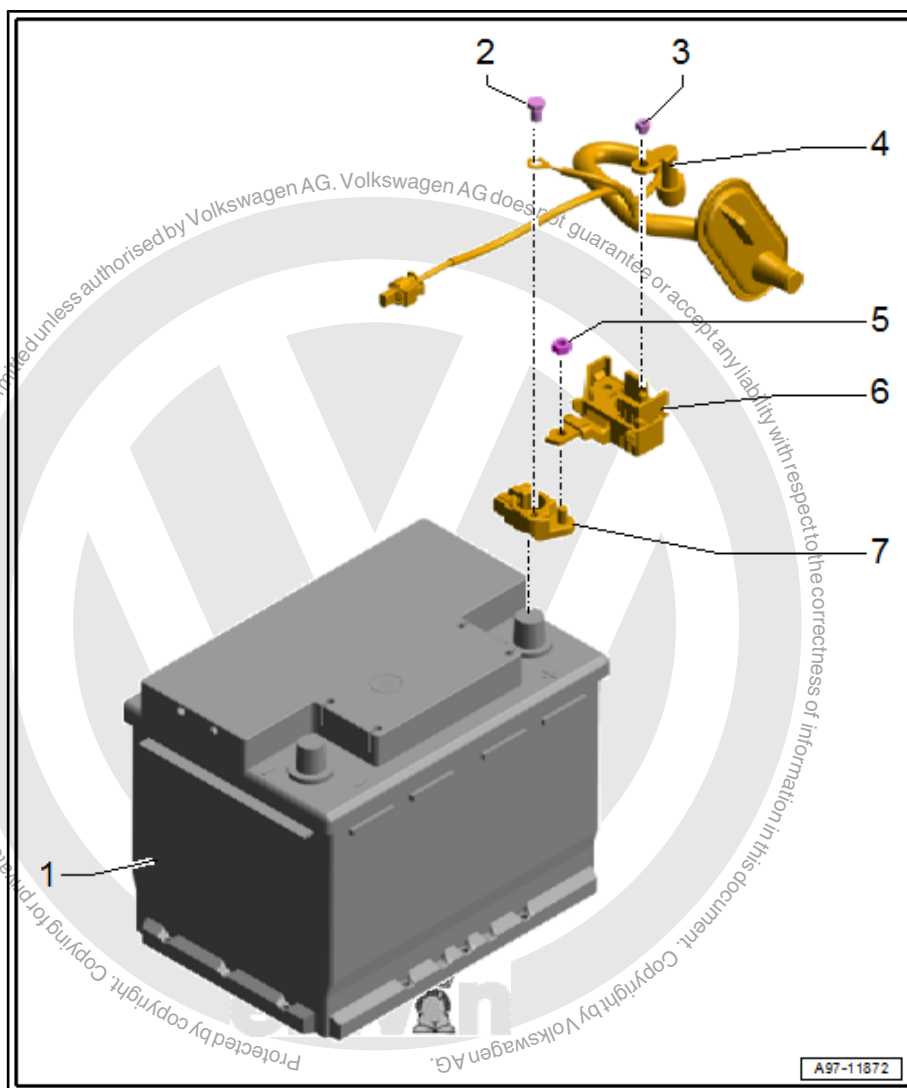
- ☐ 6 Nm

6 - Battery Fuse Panel

- ☐ Removing and installing. Refer to
⇒ ["1.5 Battery Fuse Panel, Removing and Installing", page 327](#).

7 - Battery Terminal

- ☐ For positive wire



1.2 E-Box, Removing and Installing

Removing

- With the ignition switched off, disconnect the Ground (GND) cable from the battery. Refer to
⇒ ["1.3 Battery, Disconnecting and Connecting", page 16](#).

Diesel Engine

- Remove the Engine Control Module (ECM) and set aside with the connectors still attached. Refer to ⇒ Engine Mechanical, Fuel Injection and Glow Plug; Rep. Gr. 23 ; Engine Control Module; Engine Control Module - J623- , Removing and Installing .

Gasoline Engine

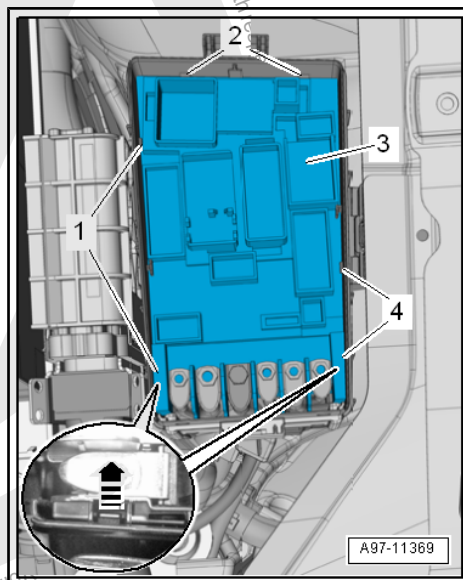
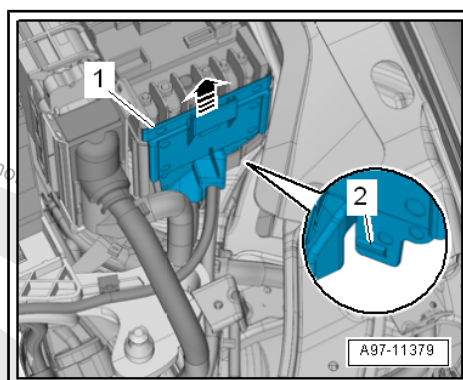
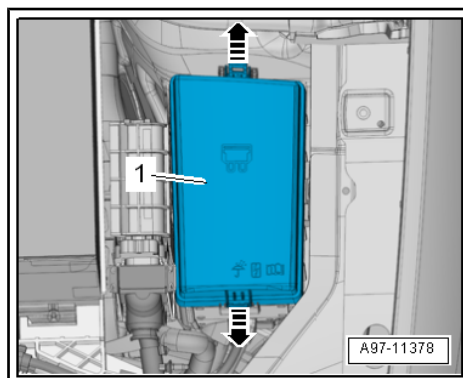
- Remove the ECM and set aside with the connectors still attached. Refer to ⇒ Engine Mechanical, Fuel Injection and



Ignition; Rep. Gr. 24 ; Engine Control Module; Engine Control Module - J623- , Removing and Installing .

Continuation for All Vehicles

- Push the release button -arrows-.
- Remove the engine compartment E-box cover -1-.
- Release the mounting tab -2- with a screwdriver, and remove the front cover -1- upward -arrow-.
- Cut the lower cable ties on the wiring harness.
- Release the catches -1, 2 and 4- -arrow-, and remove the Fuse Panel B -3- and set aside.





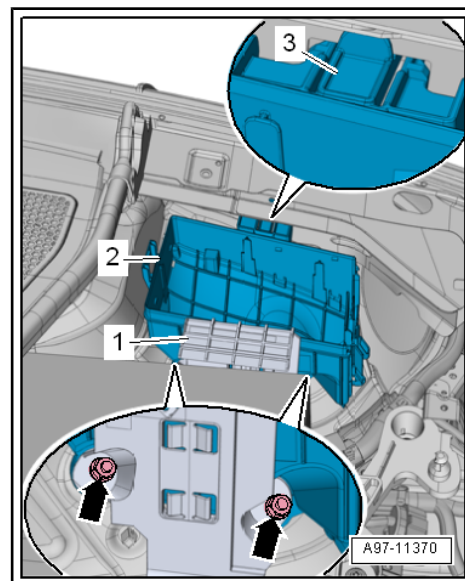
- Remove the nuts -arrows-, and remove the ECM bracket -1-.
- Release the mounting tab -3- and disengage the engine compartment E-box -2- from the threaded pin.
- Remove the engine compartment E-box upward.

Installing

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ Refer to
⇒ [“1.1 Overview - Relay Carriers, Fuse Panels and E-Boxes”, page 317](#)
- Connect the battery. Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#).



1.3 E-Box Relay and Fuse Panels, Removing and Installing

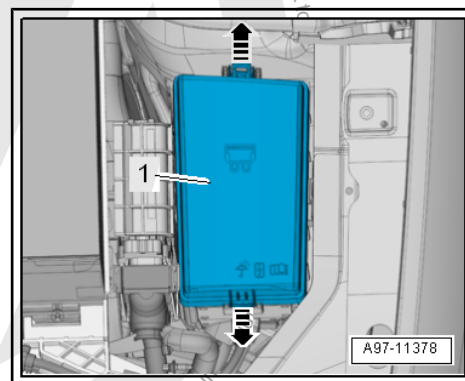
⇒ [“1.3.1 Fuse Panel B SB, Removing and Installing”, page 323](#)

⇒ [“1.3.2 Fuse Panel A SA, Removing and Installing”, page 325](#)

1.3.1 Fuse Panel B - SB-, Removing and Installing

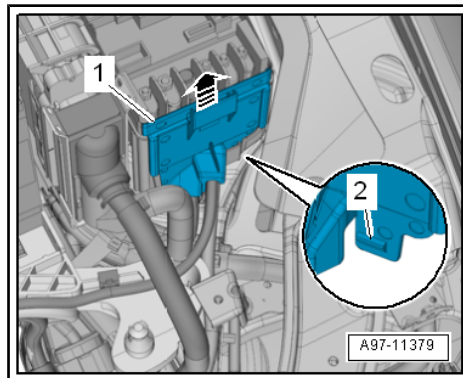
Removing

- With the ignition switched off, disconnect the Ground (GND) cable from the battery. Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#).
- Press the release buttons -arrow- and remove the cover -1- for the engine compartment E-box.

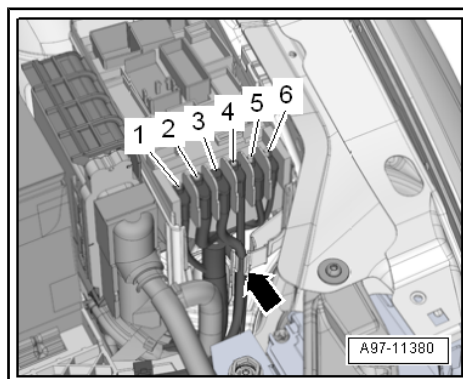




- Release the mounting tab -2- with a screwdriver, and remove the front cover -1- upward in direction of -arrow-.



- When installing, identify the wires on the threaded connectors.
- Remove the nuts -1, 2, 4, 5 and 6-.
- Remove the bolt -3-.
- Free up the wire -arrow-.



- Cut the lower cable ties on the wiring harness.
- Release the catches -1, 2 and 4- -arrow-, and remove the Fuse Panel B -3- and set aside.

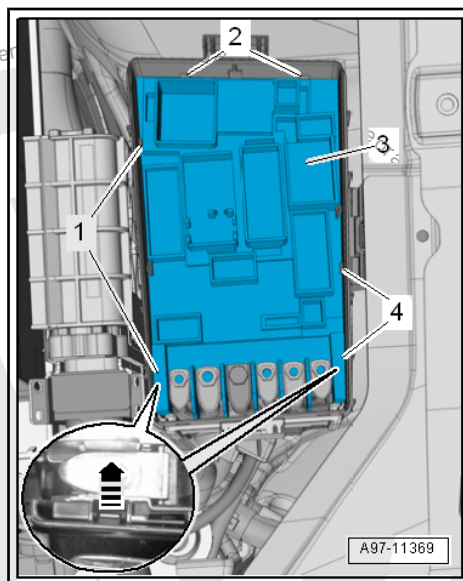
Installing

Install in the reverse order of removal. Note the following:

- Attach and tighten the wires according to the markings on fuse panel A.
- Connect the battery. Refer to [⇒ "1.3 Battery, Disconnecting and Connecting", page 16](#).

Tightening Specifications

- ◆ Refer to [⇒ "1.1 Overview - Relay Carriers, Fuse Panels and E-Boxes", page 317](#)





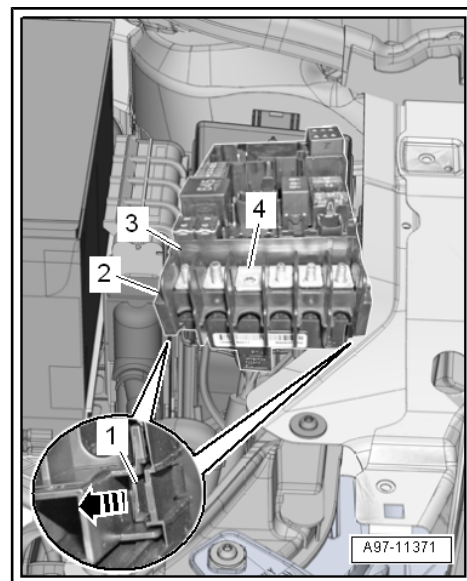
1.3.2 Fuse Panel A - SA-, Removing and Installing

Removing

- Remove fuse panel B. Refer to
⇒ [“1.3 E-Box Relay and Fuse Panels, Removing and Installing”, page 323](#).
- Remove the mounting bracket -4- upward from the fuse panel B.
- Release the mounting tab -1- in direction of -arrow- and fuse panel A -2- downward from the fuse panel B -3-.

Installing

Install in reverse order of removal.



1.4 Relay and Fuse Panels Behind Instrument Panel, Removing and Installing

⇒ [“1.4.1 Relay and Fuse Panels Behind Instrument Panel, Removing and Installing”, page 325](#)

1.4.1 Relay and Fuse Panels Behind Instrument Panel, Removing and Installing

Removing

- With the ignition switched off, disconnect the Ground (GND) cable from the battery. Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#).
- Remove the instrument panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Instrument Panel; Instrument Panel, Removing and Installing.
- Release the mounting tab -2 and 4- in direction of -A arrows-.
- Remove fuse panel C -3- to the rear from the bracket -1- in direction of -arrow B-.
- Remove the wires.

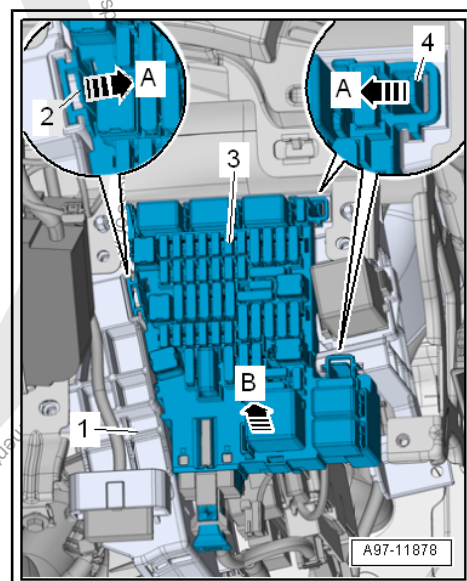


Note

- ◆ The exact assignment can be found the applicable wiring diagram. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.
- ◆ If necessary take photos of the alignment.

Installing

Install in reverse order of removal.

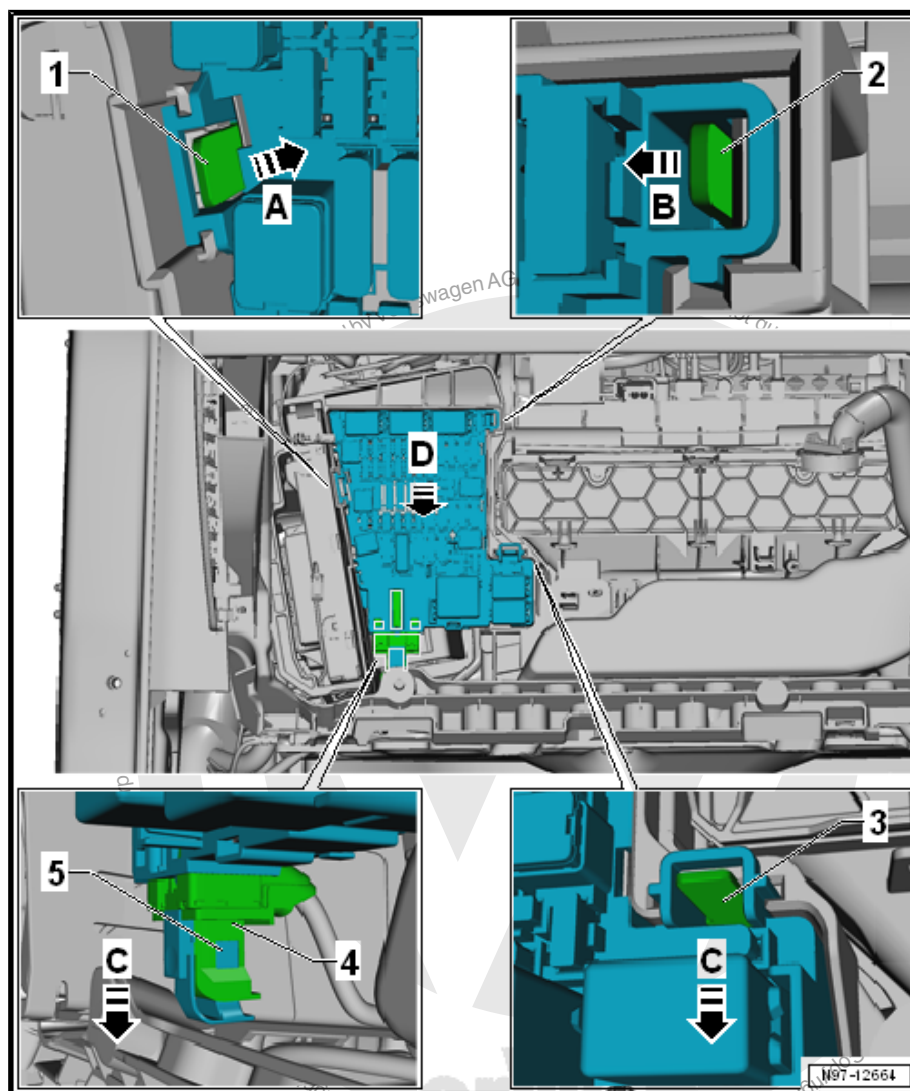




1.4.2 Relay and Fuse Panels Behind Instrument Panel, Removing and Installing, RHD

Removing

- With the ignition switched off, disconnect the ground cable from the battery. Refer to ➔ ["1.3 Battery, Disconnecting and Connecting", page 16](#) .
- Remove the instrument panel. Refer to ➔ Body Interior; Rep. Gr. 70 ; Instrument Panel; Instrument Panel, Removing and Installing .



Note

- ♦ The exact assignment can be found in the applicable wiring diagram. Refer to ➔ Wiring diagrams, Troubleshooting & Component locations.
- ♦ If necessary take photos of the alignment.
- Push the locking mechanism on both sides -5- and pull in the direction of the arrow -C-.



- Remove the connector -4- in the direction of the arrow -C-.
- Release the mounting tab -1- in the direction of the arrow -A-.
- Release the mounting tab -2- in the direction of the arrow -B-.
- Release the mounting tab -3- in the direction of the arrow -C-.
- Remove the Fuse Panel C - SC- toward the rear from the bracket in the direction of the arrow -D-.
- Remove the wires.

Installing

Install in reverse order of removal.

1.5 Battery Fuse Panel, Removing and Installing

Removing

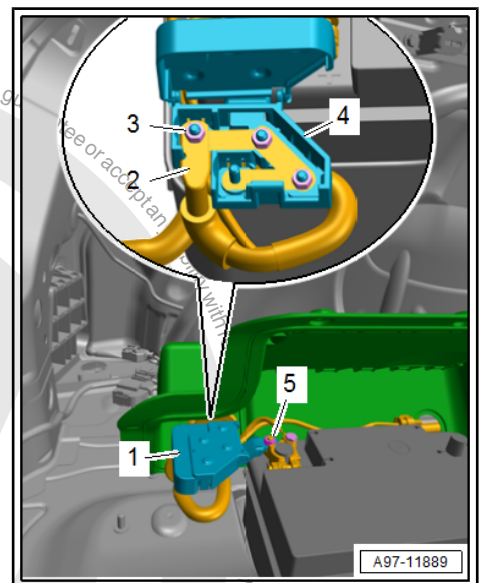
- With the ignition switched off, disconnect the ground cable from the battery. Refer to [⇒ "1.3.2 Battery, Disconnecting and Connecting, High Voltage System", page 17](#).
- Open cover -1-.
- Remove the nut -3-.
- Set the positive cable -2- to the side.
- Remove the nut -5-.
- Remove the fuse panel -4- from the battery terminal.

Installing

Install in reverse order of removal.

Tightening Specifications

- ◆ Refer to [⇒ "1.1.4 Component Location Overview - Battery Fuse Panel, Vehicles with High Voltage System", page 321](#)





2 Control Modules

⇒ [“2.1 Component Location Overview - Control Modules”, page 328](#)

⇒ [“2.2 Overview - Control Modules”, page 332](#)

⇒ [“2.3 Overview - Data Bus On Board Diagnostic Interface”, page 334](#)

⇒ [“2.4 Vehicle Electrical System Control Module J519, Removing and Installing”, page 334](#)

⇒ [“2.5 Data Bus On Board Diagnostic Interface J533, Removing and Installing”, page 337](#)

⇒ [“2.6 Vehicle Electrical System Control Module J519 Bracket, Removing and Installing”, page 338](#)

⇒ [“2.7 Vehicle Electrical System Control Module J519 Bracket, Replacing”, page 340](#)

⇒ [“2.8 Parking Aid Control Module J446 / Parallel Parking Assistance Control Module J791 Bracket, Removing and Installing”, page 341](#)

2.1 Component Location Overview - Control Modules

⇒ [“2.1.1 Component Location Overview - Front Control Module”, page 328](#)

⇒ [“2.1.3 Component Location Overview - Rear Control Module”, page 331](#)

2.1.1 Component Location Overview - Front Control Module

- ❑ Overview. Refer to ⇒ “11.1.1 Overview - Automatic Head Lamp Range Control”, page 247.

2 - Bracket

- ❑ Overview. Refer to ⇒ “2.3 Overview - Data Bus On Board Diagnostic Interface”, page 334.

3 - Vehicle Electrical System Control Module - J519-

- Overview. Refer to
⇒ “2.2.1 Overview -
Control Modules”,
page 332

4 - Bracket

- Overview. Refer to ⇒ “9.1.1 Overview - Front Parking Aid”, page 235.

5 - Parking Aid Control Module - J446- or Parallel Parking Assistance Control Module - J791-

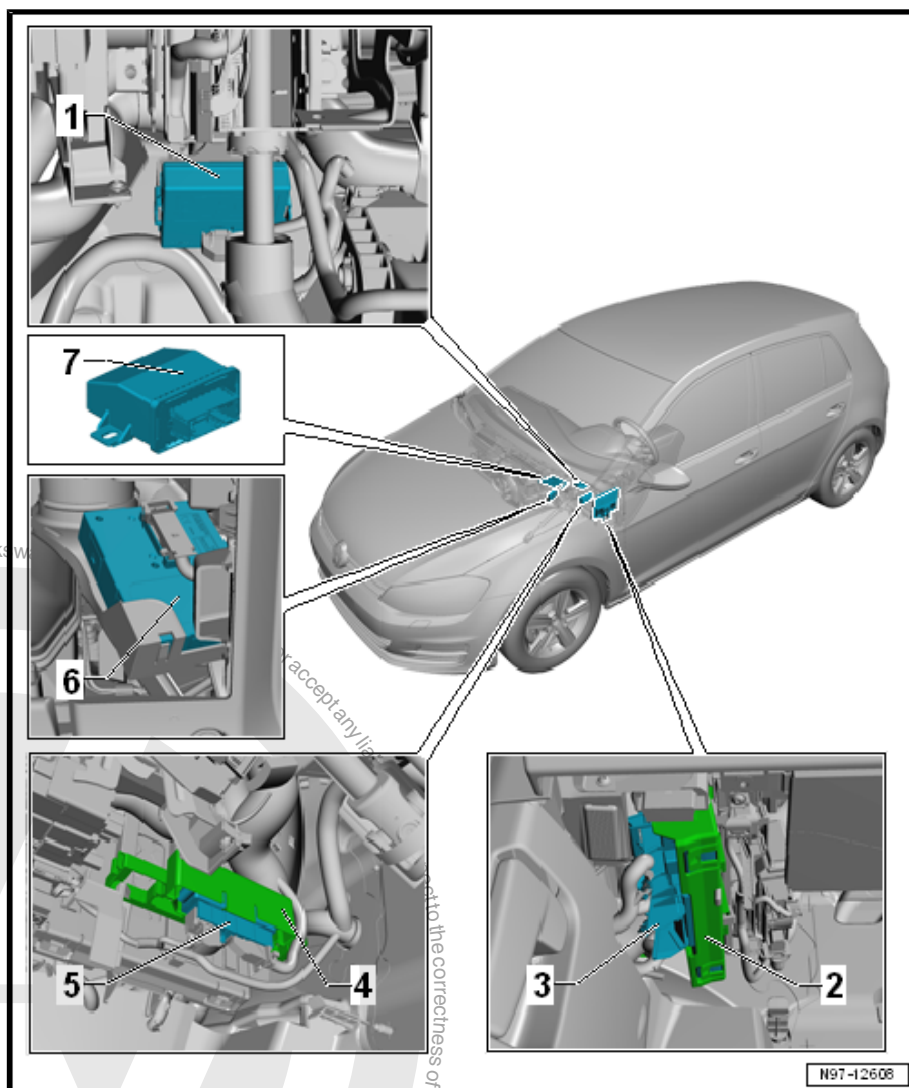
- Overview. Refer to ⇒ “9.1.1 Overview - Front Parking Aid”, page 235.

6 - Access/Start System Interface - J965-

- ❑ Overview. Refer to
⇒ “7.1.1 Overview - Access/Start Authorization System”, page 204.

7 - Headlamp Range Control Module - J431- / Cornering Lamp and Headlamp Range Control Module - J745-

- ❑ Overview. Refer to ⇒ [“11.1.1 Overview - Automatic Head Lamp Range Control”, page 247](#).





2.1.2 Component Location Overview - Front Control Module, RHD

1 - Headlamp Range Control Module - J431- / Cornering Lamp and Headlamp Range Control Module - J745-

- ❑ Overview. Refer to ➤ ["11.1.2 Overview - Automatic Head Lamp Range Control, RHD", page 248](#).

2 - Access/Start System Interface - J965-

- ❑ Overview. Refer to ➤ ["7.1.2 Component Location Overview - Access/Start Authorization System, RHD", page 206](#).

3 - Vehicle Electrical System Control Module - J519-

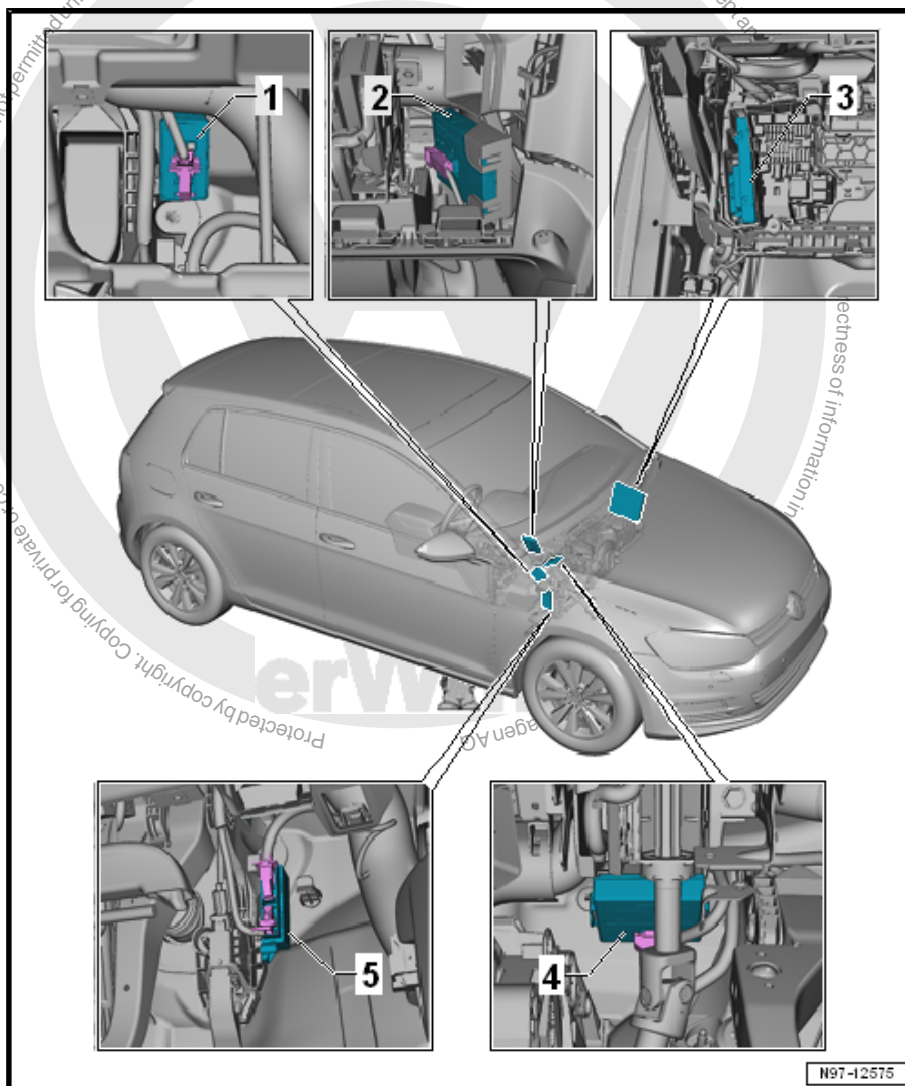
- ❑ Overview. Refer to ➤ ["2.2.2 Overview - Control Modules, RHD", page 333](#).

4 - Data Bus On Board Diagnostic Interface - J533-

- ❑ Overview. Refer to ➤ ["2.3 Overview - Data Bus On Board Diagnostic Interface", page 334](#).

5 - Parking Aid Control Module - J446- or Parallel Parking Assistance Control Module - J791-

- ❑ Overview. Refer to ➤ ["9.1.3 Overview - Front Parking Aid, RHD", page 237](#).





2.1.3 Component Location Overview - Rear Control Module

1 - Auxiliary Engine Coolant Heater Radio Frequency Receiver - R149-

- ❑ Auxiliary Engine Coolant Heater Radio Frequency Receiver - R149- , Removing and installing. Refer to ➤ Heating, Ventilation and Air Conditioning; Rep. Gr. 82 ; Additional Components for Control and Regulation; Auxiliary Engine Coolant Heater Radio Frequency Receiver - R149- , Removing and Installing

2 - Mobile Communication 2-Way Signal Amplifier - J984-

- ❑ Overview. Refer to ➤ Communication; Rep. Gr. 91 ; Telephone System; Component Location Overview - Telephone System .

3 - Engine Sound Generator Control Module - J943-

- ❑ Removing and installing. Refer to ➤ ["2.9 Engine Sound Generator Control Module J943 Removing and Installing, Vehicles with Active Sound, Golf GTD", page 341](#) .

4 - Bolt

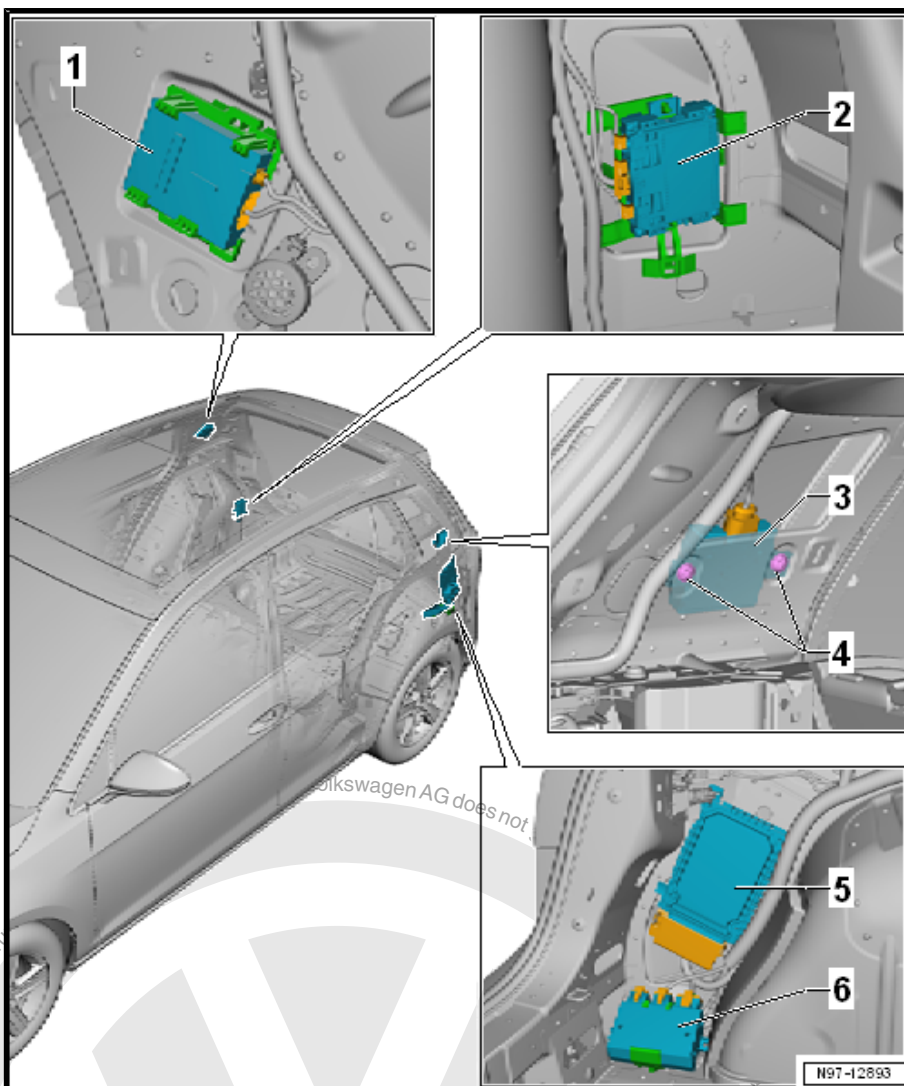
- ❑ Tightening Specification: 2 Nm
- ❑ Quantity: 2

5 - Electronic Damping Control Module - J250-

- ❑ Overview. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 43 ; Electronic Damping; Overview - Electronic Damping .

6 - Towing Recognition Control Module - J345-

- ❑ Overview. Refer to ➤ ["12.1 Overview - Trailer Hitch Socket", page 252](#)





2.2 Overview - Control Modules

⇒ [“2.2.1 Overview - Control Modules”, page 332](#)

2.2.1 Overview - Control Modules

1 - Control Module

Vehicle equipment version
with parking aid:

- ☐ Parking Aid Control Module - J446-
- ☐ Overview. Refer to
⇒ [“9.1 Overview - Parking Aid”, page 235](#) .

Vehicle equipment version
with parallel parking assistance:

- ☐ Parallel Parking Assistance Control Module - J791-
- ☐ Overview. Refer to
⇒ [“10.1 Overview - Parallel Parking Assist”, page 244](#) .

2 - Bracket

- ☐ for Parking Aid Control Module - J446- / Parallel Parking Assistance Control Module - J791-
- ☐ Removing and installing. Refer to
⇒ [“2.8 Parking Aid Control Module J446 / Parallel Parking Assistance Control Module J791 Bracket, Removing and Installing”, page 341](#) .

3 - Bracket

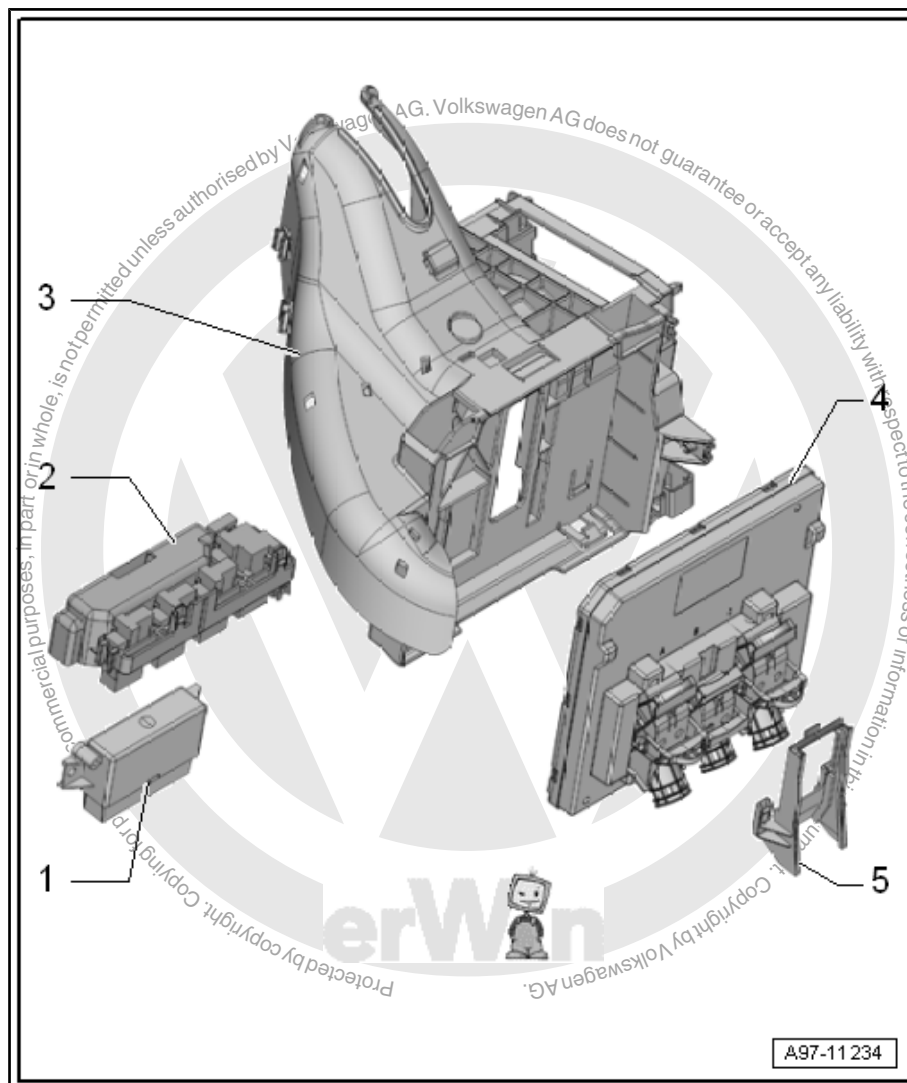
- ☐ For Vehicle Electrical System Control Module - J519-
- ☐ Removing and installing. Refer to
⇒ [“2.6 Vehicle Electrical System Control Module J519 Bracket, Removing and Installing”, page 338](#) .

4 - Vehicle Electrical System Control Module - J519-

- ☐ Removing and installing. Refer to
⇒ [“2.4 Vehicle Electrical System Control Module J519 , Removing and Installing”, page 334](#) .

5 - Guide

- ☐ For the center connector





2.2.2 Overview - Control Modules, RHD

1 - Bracket

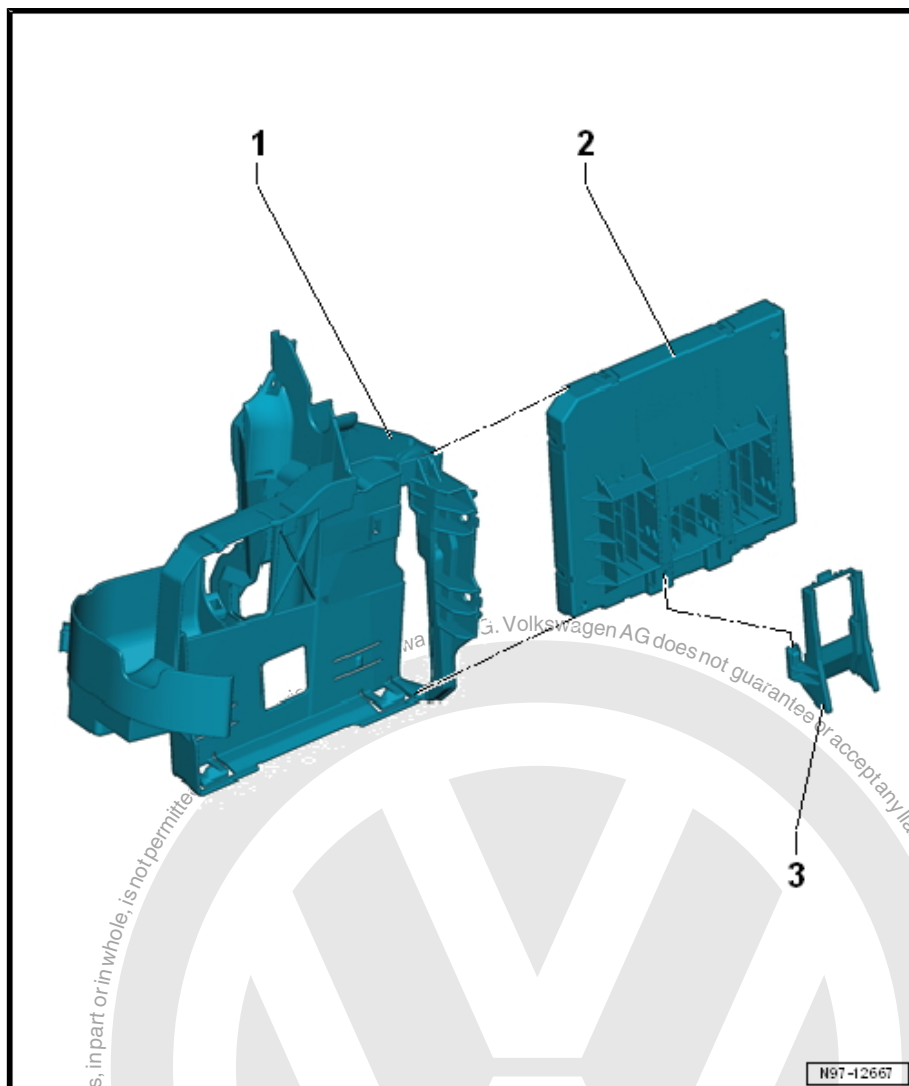
- ☐ for Vehicle Electrical System Control Module - J519-
- ☐ Removing and installing. Refer to
⇒ ["2.6 Vehicle Electrical System Control Module J519 Bracket, Removing and Installing", page 338](#) .

2 - Vehicle Electrical System Control Module - J519-

- ☐ Removing and installing. Refer to
⇒ ["2.4 Vehicle Electrical System Control Module J519, Removing and Installing", page 334](#) .

3 - Guide

- ☐ For the center connector
- ☐ Depending on the vehicle equipment level





2.3 Overview - Data Bus On Board Diagnostic Interface

1 - Connector

- ❑ For Data Bus On Board Diagnostic Interface - J533-

2 - Data Bus On Board Diagnostic Interface - J533-

- ❑ Removing and installing. Refer to ➤ ["2.5 Data Bus On Board Diagnostic Interface J533, Removing and Installing", page 337](#).

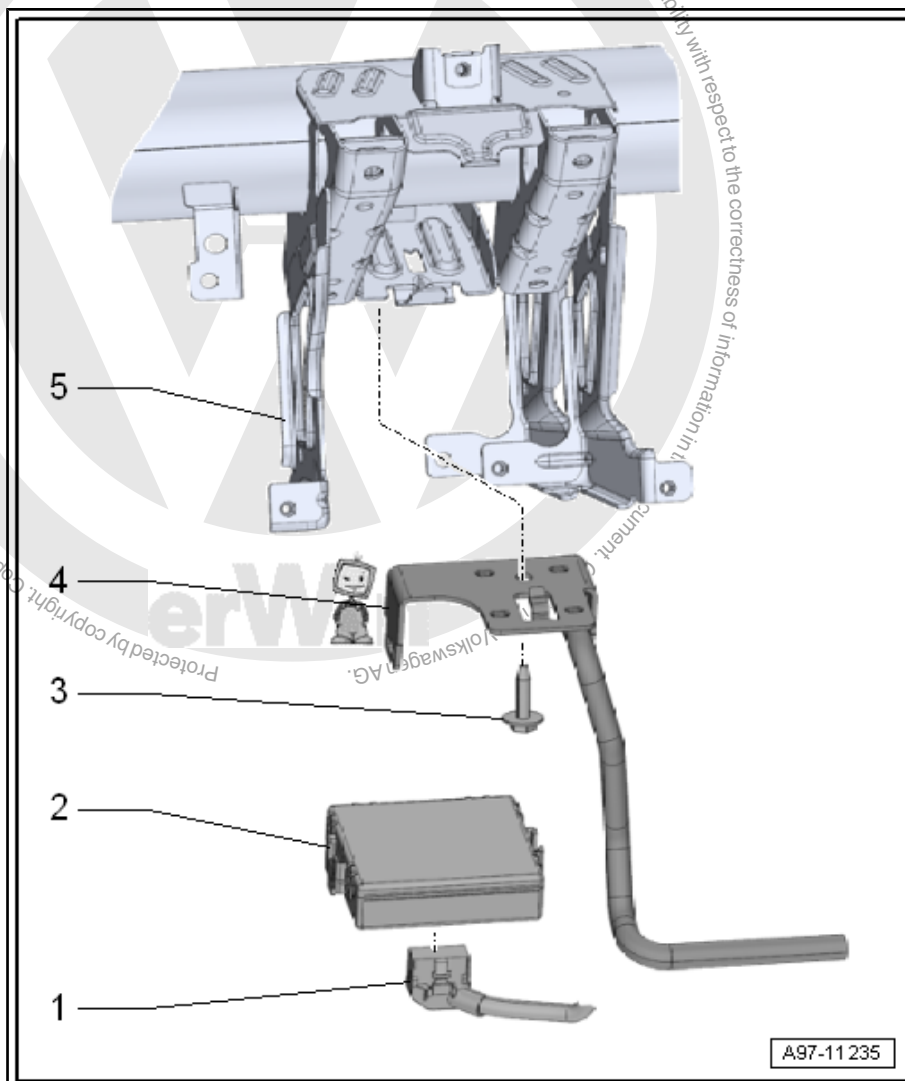
3 - Bolt

- ❑ Tightening Specification. Refer to ➤ Body Interior; Rep. Gr. 70; Instrument Panel Central Tube; Overview - Instrument Panel Central Tube.

4 - Crash Bracket

- ❑ Overview. Refer to ➤ Body Interior; Rep. Gr. 70; Instrument Panel Central Tube; Overview - Instrument Panel Central Tube.

5 - Instrument Panel Central Tube



2.4 Vehicle Electrical System Control Module - J519- , Removing and Installing

➤ ["2.4.1 Vehicle Electrical System Control Module J519, Removing and Installing", page 334](#)

2.4.1 Vehicle Electrical System Control Module - J519- , Removing and Installing



Note

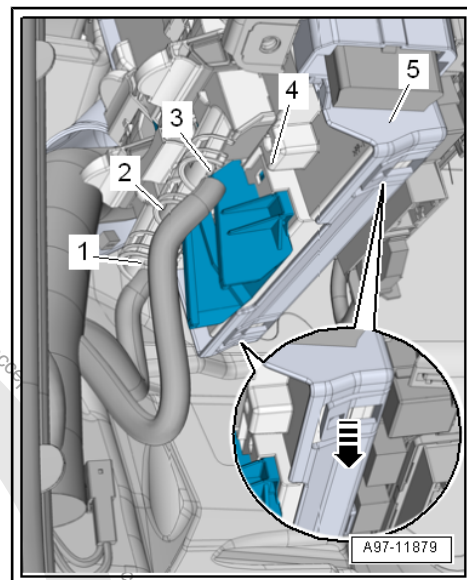
If the control module is replaced, select the Replace function for the respective control module in Guided Fault Finding or Guided Functions using the Vehicle Diagnostic Tester.

Removing

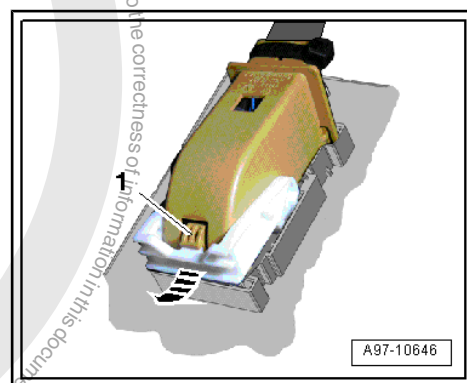
- Turn off the ignition.
- Then remove the ignition key, if equipped.



- Remove the footwell cover on the driver side. Refer to ➤ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers .
- Remove the lower A-pillar trim panel. Refer to ➤ Body Interior; Rep. Gr. 70 ; Passenger Compartment Trim; A-Pillar Trim Panel, Removing and Installing .
- Remove the foot rest. Refer to ➤ Body Interior; Rep. Gr. 70 ; Passenger Compartment Trim; Foot Rest, Removing and Installing .
- Disconnect the connectors -1, 2 and 3-.



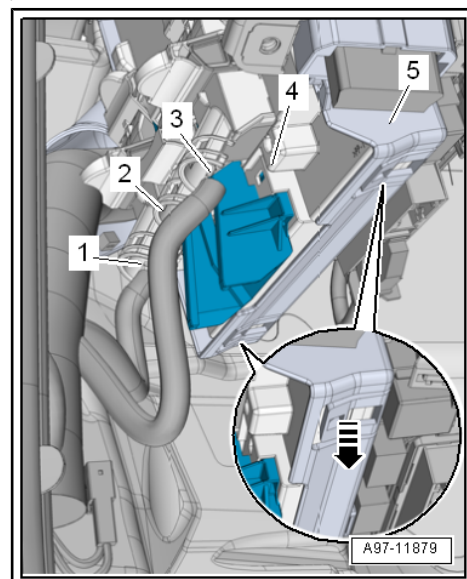
- To disconnect the connector press the circlip -1-.
- Pivot the retaining bracket -arrow- and remove the connector.



- Release the springs -arrow-, pivot the vehicle electrical system control module -4- out of the bracket -5- and remove downward.

Installing

Install in reverse order of removal.





2.4.2 Vehicle Electrical System Control Module - J519- , Removing and Installing, RHD

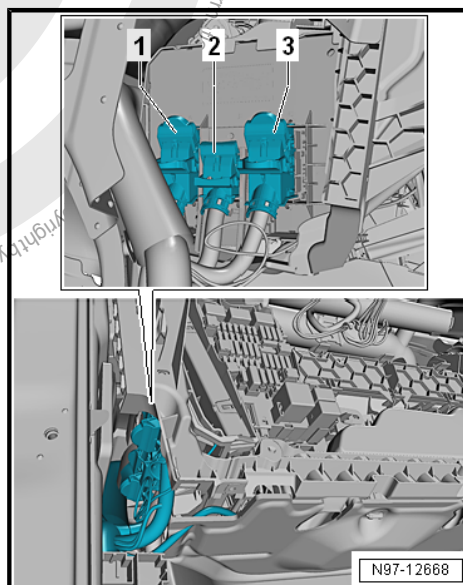


Note

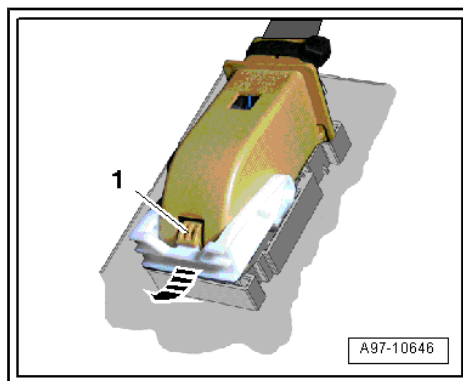
If the control module is replaced, select the **Replace** function for the respective control module in **Guided Fault Finding** or **Guided Functions** using the ⇒ **Vehicle diagnostic tester**.

Removing

- Turn off the ignition.
- Then remove the ignition key, if equipped.
- Remove the glove compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Glove Compartment, Removing and Installing .
- Disconnect the connectors -1, 2 and 3-.

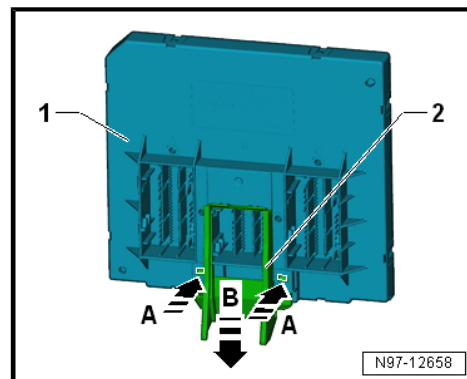


- To disconnect the connector press the circlip -1-.
- Pivot the retaining bracket -arrow- and remove the connector.





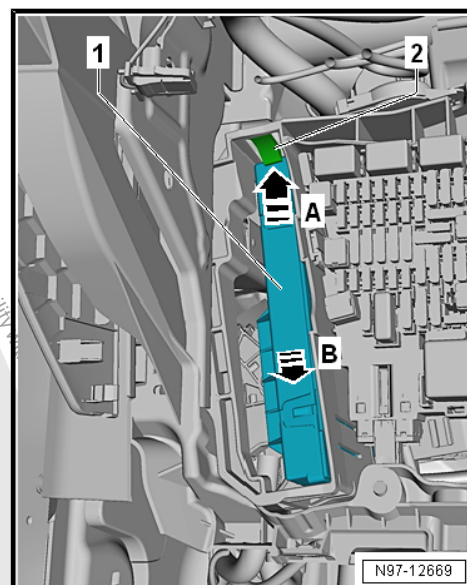
- If equipped, remove the guide -2-. Release the catches on the guide in the direction of the arrow -A-.
- remove the guide -2- in the direction of the arrow -B- from the Vehicle Electrical System Control Module - J519- -1-.



- Release the upper spring -2- in the direction of the arrow -A-.
- Remove the Vehicle Electrical System Control Module - J519- -1- rearward in the direction of the arrow -B- from the bracket.

Installing

Install in reverse order of removal.



2.5 Data Bus On Board Diagnostic Interface - J533- , Removing and Installing



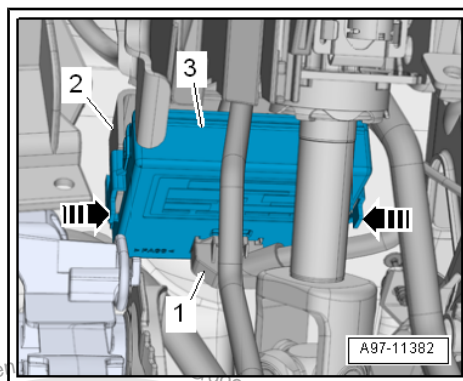
Note

If the control module is replaced, select the **Replace** function for the respective control module in **Guided Fault Finding** or **Guided Functions** using the Vehicle Diagnostic Tester.



Removing

- Reach upward behind the pedal bracket to disconnect the connector -1-.
- To disconnect the connector press the circlip and remove the connector.
- Release the retainers -arrows-.
- Remove the Data Bus On Board Diagnostic Interface - J533-3- downward from the bracket -2-.



Installing

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ Refer to
⇒ [“2.3 Overview - Data Bus On Board Diagnostic Interface”, page 334](#)

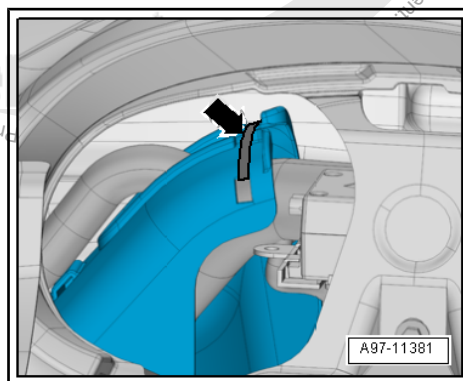
2.6 Vehicle Electrical System Control Module - J519- Bracket, Removing and Installing

⇒ [“2.6.1 Vehicle Electrical System Control Module J519 Bracket, Removing and Installing”, page 338](#)

2.6.1 Vehicle Electrical System Control Module - J519- Bracket, Removing and Installing

Removing

- With the ignition switched off, disconnect the Ground (GND) cable from the battery. Refer to
⇒ [“1.3 Battery, Disconnecting and Connecting”, page 16](#) .
- Remove the instrument panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Instrument Panel; Instrument Panel, Removing and Installing .
- Cut the cable tie -arrow-.
- Disengage fuse panel C and press aside. Refer to
⇒ [“1.4 Relay and Fuse Panels Behind Instrument Panel, Removing and Installing”, page 325](#) .
- Disconnect the Front Parking Aid Warning Buzzer - H22- connector. Refer to
⇒ [“9.3 Front Parking Aid Warning Buzzer H22 , Removing and Installing”, page 240](#) .
- Disconnect the Vehicle Electrical System Control Module - J519- connector. Refer to
⇒ [“2.4 Vehicle Electrical System Control Module J519 , Removing and Installing”, page 334](#) .
- Disconnect the Parking Aid Control Module - J446- / Parallel Parking Assistance Control Module - J791- connector. Refer to
⇒ [“9.2 Parking Aid Control Module J446 , Removing and Installing”, page 239](#) .
- Remove the diagnostic connector, to do this release the locking mechanism on the bracket and remove the bracket outward.

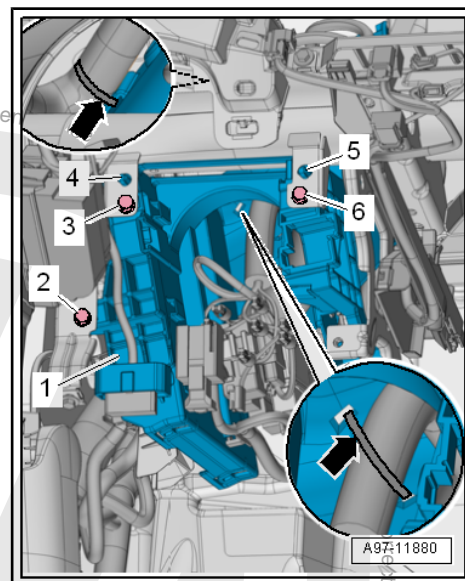




- Remove the bolts -2, 3 and 6-.
- Push the bracket -1- forward from the central tube until the centering pins -4 and 5- are disengaged.
- Cut the cable ties -arrows-.
- Free up the wiring harness on the mount.
- Remove the bracket to the vehicle interior.

Installing

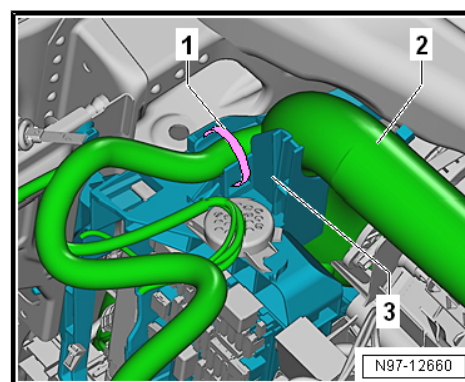
Install in reverse order of removal.



2.6.2 Vehicle Electrical System Control Module - J519- Bracket, Removing and Installing, RHD

Removing

- With the ignition switched off, disconnect the ground cable from the battery. Refer to [⇒ "1.3 Battery, Disconnecting and Connecting", page 16](#).
- Remove the instrument panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Instrument Panel; Instrument Panel, Removing and Installing .
- Remove the central tube instrument panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Instrument Panel Central Tube; Instrument Panel Central Tube, Removing and Installing .
- Cut the cable tie -1-.
- Remove the wiring harness -2- from the vehicle electrical system control module bracket -3-.
- Remove fuse panel C. Refer to [⇒ "1.4 Relay and Fuse Panels Behind Instrument Panel, Removing and Installing", page 325](#).
- Disconnect the Front Parking Aid Warning Buzzer - H22- connector. Refer to [⇒ "9.3 Front Parking Aid Warning Buzzer H22 , Removing and Installing", page 240](#).
- Disconnect the Vehicle Electrical System Control Module - J519- connector. Refer to [⇒ "2.4 Vehicle Electrical System Control Module J519 , Removing and Installing", page 334](#).

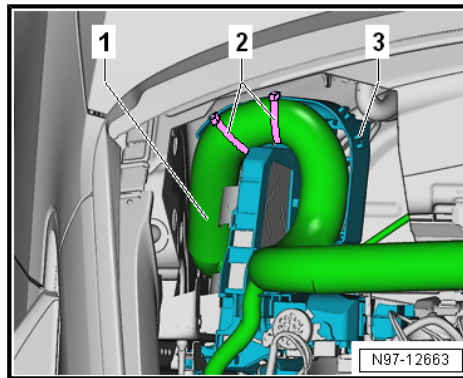




- Cut through the cable tie -2-.
- Remove the wiring harness -1- from the vehicle electrical system control module bracket -3-.
- Free up the wiring harness on the mount.
- Remove the bracket to the vehicle interior.

Installing

Install in reverse order of removal.



2.7 Vehicle Electrical System Control Module - J519- Bracket, Replacing

⇒ [“2.7.1 Vehicle Electrical System Control Module J519 Bracket, Replacing”, page 340](#)

2.7.1 Vehicle Electrical System Control Module - J519- Bracket, Replacing

Removing

- Remove the Vehicle Electrical System Control Module - J519- bracket. Refer to
⇒ [“2.6 Vehicle Electrical System Control Module J519 Bracket, Removing and Installing”, page 338](#) .
- Remove the Vehicle Electrical System Control Module - J519- . Refer to
⇒ [“2.4 Vehicle Electrical System Control Module J519 , Removing and Installing”, page 334](#) .
- Remove the Parking Aid Control Module - J446- / Parallel Parking Assistance Control Module - J791- . Refer to
⇒ [“9.2 Parking Aid Control Module J446 , Removing and Installing”, page 239](#) .
- Remove the Front Parking Aid Warning Buzzer - H22- . Refer to
⇒ [“9.3 Front Parking Aid Warning Buzzer H22 , Removing and Installing”, page 240](#) .

Installing

Install in reverse order of removal.

2.7.2 Vehicle Electrical System Control Module - J519- Bracket, Replacing, RHD

Removing

- Remove the Vehicle Electrical System Control Module - J519- bracket. Refer to
⇒ [“2.6 Vehicle Electrical System Control Module J519 Bracket, Removing and Installing”, page 338](#) .
- Remove the Vehicle Electrical System Control Module - J519- . Refer to
⇒ [“2.4 Vehicle Electrical System Control Module J519 , Removing and Installing”, page 334](#) .
- Remove the Front Parking Aid Warning Buzzer - H22- . Refer to
⇒ [“9.3 Front Parking Aid Warning Buzzer H22 , Removing and Installing”, page 240](#) .



Installing

Install in reverse order of removal.

2.8 Parking Aid Control Module - J446- / Parallel Parking Assistance Control Module - J791- Bracket, Removing and Installing

Special tools and workshop equipment required

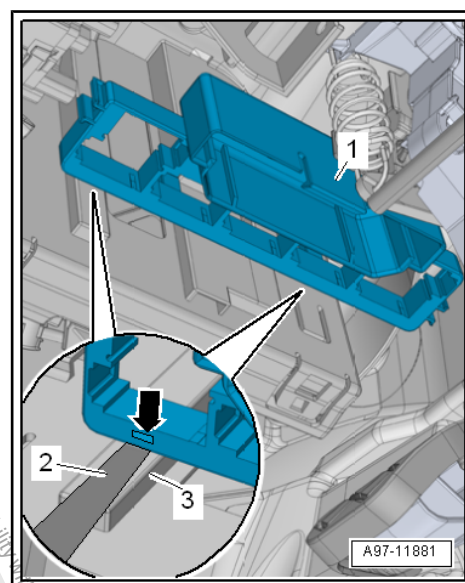
- ◆ Feeler Gauge

Removing

- If installed: Remove the parking aid control module/parallel parking assistance control module. Refer to ➤ [“9.2 Parking Aid Control Module J446 , Removing and Installing”, page 239](#) .
- To loosen the retainers, insert a 0.9 mm feeler gauge -2- behind the opening -arrow- as illustrated.
- Remove the bracket -1- from below from the vehicle electrical system control module -3- bracket.

Installing

Install in reverse order of removal.



2.9 Engine Sound Generator Control Module - J943- Removing and Installing, Vehicles with Active Sound, Golf GTD

Removing

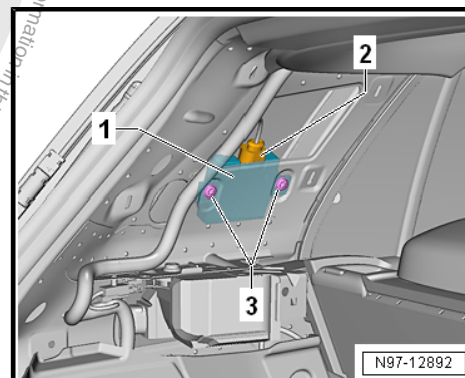
- Remove the C-pillar trim panel. Refer to ➤ Body Interior; Rep. Gr. 70 ; Passenger Compartment Trim; C-Pillar Trim Panel, Removing and Installing .
- Remove the bolts -3-.
- Remove the Engine Sound Generator Control Module - J943-1- from the side panel.
- Release and disconnect the connector -2-.

Installing

Install in the reverse order of removal. Note the following:

Tightening Specifications

- ◆ Refer to ➤ [“2.1.3 Component Location Overview - Rear Control Module”, page 331](#)





3 Connectors

⇒ **"3.1 Wiring Harnesses and Connectors, Repairing",
page 342**

3.1 Wiring Harnesses and Connectors, Repairing

⇒ **"3.1.1 Electric Wiring Harnesses and Connectors, Repairing",
page 342**

⇒ **"3.1.2 Connector Housings and Connectors, Repairing",
page 342**

3.1.1 Electric Wiring Harnesses and Connectors, Repairing



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Wiring Harnesses, Repairing .

3.1.2 Connector Housings and Connectors, Repairing



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Contact Housings and Connectors, Repairing .



4 Connector Housings, Releasing and Disassembling



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Contact Housings, Releasing and Disassembling .





5 Antenna Wires, Repairing



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Wiring Harness and Connector Repairs; Antenna Wires, Repairing .





6 Fiber-Optic Cable



Note

All instructions and information on this chapter. Refer to ➔ Electrical Equipment General Information; Rep. Gr. 97; Wiring Harness and Connector Repairs; Fiber-Optic Cables, Repairing.





7 Vehicle Diagnostic Tester



Note

All instructions and information on this chapter. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 97 ; Vehicle Diagnostic Tester .

Edition: K0058895321 FU - 03/16/2015 – TMP



8 Revision History

Re- vi- sion	Date	Job Type	Feedback #	Notes	Editor
5	03/16/2015	Factory Update			Tom Perry
4	01/13/2015	Factory Update			Tom Perry
3	12/15/2014	Factory Update			Tom Perry
2	11/19/2014	Link Checking			Jim Harder
1	11/3/2014	Launch New	N/A	This book applies ONLY to Golf R for North America	Jim Harder

Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Volkswagen retailer or other qualified shop. We especially urge you to consult an authorized Volkswagen retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Volkswagen.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Volkswagen is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Volkswagen retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the VAG 1551 Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.
- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

Cautions & Warnings

- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly; do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Volkswagen specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.
- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Volkswagen Service technicians should test, disassemble or service the airbag system.

Cautions & Warnings

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Volkswagen Service technicians using the VAG 1551 Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.

