

Contents

00 - Technical data	1
1 Safety information	1
1.1 Safety precautions when working on the high-voltage system	1
1.2 Safety precautions when working in the vicinity of high-voltage components	2
1.3 Safety precautions when working on vehicles with start/stop system	2
1.4 Safety precautions when using testers and measuring instruments during a road test	2
1.5 Notes on use and safety for LED headlights and Audi laser lights	3
2 Repair instructions	4
2.1 Rules for cleanliness	4
2.2 General notes	4
2.3 Contact corrosion	4
2.4 ESD (electrostatic discharge) workplace	5
2.5 Routing and attachment of pipes, hoses and wiring	5
2.6 Identification plates	5
2.7 Use of impact wrenches	6
2.8 Cleaning engine	6
3 Battery	7
3.1 Battery - general notes	7
3.2 Battery types	7
27 - Starter, current supply, CCS	8
1 Safety information	8
2 Battery	9
2.1 Assembly overview - battery	9
2.2 Disconnecting and connecting battery	13
2.3 Removing and installing earth cable with battery monitor control unit J367	15
2.4 Removing and installing battery	16
2.5 Removing and installing battery fan V457	24
2.6 Inspecting and classifying battery, 48 V A6	24
2.7 Checking battery	25
2.8 Charging battery	26
2.9 Removing and installing battery cut-off relay/battery isolation igniter	27
2.10 Removing and installing tray for battery, 48 V A6 , 48-volt system	27
3 Voltage converter	28
3.1 Assembly overview - voltage converter	28
3.2 Removing and installing voltage converter (48 V/12 V) A7	29
4 Storage capacitor	31
4.1 Assembly overview - storage capacitor	31
4.2 Removing and installing storage capacitor for 48 V electrical system C31	33
4.3 Removing and installing carrier for storage capacitor	40
4.4 Inspecting and classifying storage capacitor for 48 V electrical system C31	41
5 Jump-start connection point	43
5.1 Assembly overview - jump-start connection point	43
6 Alternator	44
6.1 Assembly overview - alternator	44
6.2 Removing and installing alternator	49
6.3 Checking alternator	68
7 Starter	70
7.1 Assembly overview - starter	70
7.2 Removing and installing starter	71
8 Adaptive cruise control	77

90 - Gauges, instruments	78
1 Safety information	78
2 Dash panel insert	79
2.1 Assembly overview - dash panel insert	79
2.2 Assembly overview - head-up display	81
2.3 Removing and installing dash panel insert with control unit in dash panel insert J285	82
2.4 Removing and installing control unit for head-up display	84
3 Horn	87
3.1 Assembly overview - horn	87
3.2 Removing and installing treble horn H2 / bass horn H7	88
92 - Windscreen wash/wipe system	89
1 Safety information	89
2 Windscreen wiper system	90
2.1 Overview of fitting locations - windscreen wiper system	90
2.2 Assembly overview - windscreen wiper system	91
2.3 Moving wipers to service position	93
2.4 Removing and installing wiper blade	94
2.5 Removing and installing wiper arms	95
2.6 Adjusting wiper arms	98
2.7 Removing and installing wiper motor V	99
2.8 Removing and installing rain and light sensor	100
3 Windscreen washer system	105
3.1 Assembly overview - windscreen washer system	105
3.2 Removing and installing washer fluid reservoir	109
3.3 Removing and installing windscreen washer fluid level sender	111
3.4 Removing and installing washer pump	111
3.5 Removing and installing windscreen washer pump control unit J1100	111
3.6 Removing and installing washer jets	112
3.7 Adjusting washer jets	112
4 Rear window wiper system	114
4.1 Overview of fitting locations - rear window wiper system	114
4.2 Assembly overview - rear window wiper system	114
4.3 Removing and installing wiper blade	116
4.4 Removing and installing wiper arm	116
4.5 Adjusting wiper arm	117
4.6 Removing and installing rear window wiper motor V12	118
5 Rear window washer system	120
5.1 Assembly overview - rear window washer system	120
5.2 Removing and installing washer fluid reservoir	122
5.3 Removing and installing rear window washer pump	122
5.4 Removing and installing washer jet	122
5.5 Removing and installing washer jet for reversing camera R189 / rear overhead view camera R246	123
5.6 Adjusting washer jet	123
6 Headlight washer system	125
6.1 Assembly overview - headlight washer system	125
6.2 Removing and installing headlight washer system pump V11	127
6.3 Removing and installing washer jets	127
7 Washer fluid hoses	130
94 - Lights, bulbs, switches - exterior	131
1 Safety information	131

2	Headlights	132
2.1	Assembly overview - headlight	132
2.2	Removing and installing headlights	141
2.3	Adjusting headlights	147
2.4	Removing and installing LED module for daytime running light and side light L176 / L177	170
2.5	Removing and installing output module 1 for LED headlight A27 / A31	173
2.6	Removing and installing headlight fan	175
2.7	Removing and installing headlight range control motor V48 / V49	176
2.8	Adapting headlights for driving on the left side of the road	179
2.9	Adapting headlights for driving on the right side of the road	179
3	Lights in exterior mirror	180
3.1	Assembly overview - lights in exterior mirror	180
3.2	Removing and installing turn signal	180
4	Lights in exterior door handle	182
4.1	Assembly overview - lights in exterior door handle	182
4.2	Removing and installing exterior door handle illumination bulb	182
5	Lights in sill panel moulding	184
5.1	Assembly overview - entry light	184
6	Tail light clusters	185
6.1	Assembly overview - tail light cluster on body	185
6.2	Assembly overview - tail light cluster on rear lid	186
6.3	Removing and installing tail light cluster	187
6.4	Removing and installing rear fog light	188
6.5	Removing and installing tail light cluster on rear lid	189
6.6	Correcting installation position of tail light cluster	191
7	High-level brake light	193
7.1	Assembly overview - high-level brake light	193
7.2	Removing and installing high-level brake light bulb	193
8	Number plate light	195
8.1	Removing and installing number plate light X4 / X5	195
9	Entry and start authorisation	196
9.1	Overview of fitting locations - entry and start authorisation system	196
9.2	Overview of fitting locations - keyless entry system	197
9.3	Assembly overview - exterior door handle for keyless entry system	199
9.4	Removing and installing front exterior door handle switches	201
9.5	Removing and installing rear exterior door handle switches	201
9.6	Removing and installing interior aerial 1 for entry and start system R138	202
9.7	Removing and installing front aerial for entry and start authorisation R376	202
9.8	Removing and installing luggage compartment aerial for entry and start system R137	203
9.9	Removing and installing aerial for entry and start authorisation R200 / R201	203
9.10	Removing and installing near field communication aerial 2 R351	203
9.11	Removing and installing near field communication control unit 2 J1170	204
9.12	Alcohol interlock	204
10	Steering column switch module	215
10.1	Assembly overview - steering column switch module	215
10.2	Removing and installing steering column switch module	215
11	Parking aid	217
12	Park assist steering	218
13	Automatic headlight range control	219
13.1	Assembly overview - automatic headlight range control	219
96 - Lights, bulbs, switches - interior	220	
1	Safety information	220

2	Lights	221
2.1	Overview of fitting locations - lights in dash panel	221
2.2	Overview of fitting locations - lights in front doors	223
2.3	Overview of fitting locations - lights in rear doors	224
2.4	Overview of fitting locations - background lighting in doors	224
2.5	Overview of fitting locations - lights in centre console	227
2.6	Overview of fitting locations - lights in seats and B-pillars	228
2.7	Overview of fitting locations - lights in luggage compartment	229
2.8	Overview of fitting locations - lights in roof trim	230
2.9	Removing and installing glove compartment light W6	232
2.10	Removing and installing front footwell illumination bulb L151 / L152	232
2.11	Removing and installing central locking SAFELOCK function warning lamp K133	232
2.12	Removing and installing light for front interior door handle illumination	233
2.13	Removing and installing entry light W92 / W93	233
2.14	Removing and installing light for rear interior door handle illumination	233
2.15	Removing and installing rear entry light W83 / W84	234
2.16	Removing and installing bulb for dash panel background lighting	234
2.17	Removing and installing front door background lighting bulb	238
2.18	Removing and installing rear door background lighting bulb	240
2.19	Removing and installing light for front centre console background lighting L193 / L195	241
2.20	Removing and installing selector lever position display Y5	242
2.21	Removing and installing rear left footwell light W45 / rear right footwell light W46	243
2.22	Removing and installing luggage compartment light	243
2.23	Removing and installing illuminated vanity mirror W20 / W14	244
3	Controls	246
3.1	Overview of fitting locations - controls in dash panel	247
3.2	Overview of fitting locations - controls in front doors	248
3.3	Overview of fitting locations - controls in rear doors	250
3.4	Overview of fitting locations - controls in centre console	251
3.5	Overview of fitting locations - controls in luggage compartment	253
3.6	Overview of fitting locations - controls in roof trim	255
3.7	Assembly overview - front interior light	256
3.8	Removing and installing light switch E1	257
3.9	Removing and installing steering column adjustment switch E167	258
3.10	Removing and installing buttons/switches in dash panel	258
3.11	Removing and installing glove compartment light switch E26	259
3.12	Removing and installing exterior mirror adjuster EX11	260
3.13	Removing and installing operating unit for window regulator in driver door EX36	260
3.14	Removing and installing window regulator switch in front passenger door EX27	260
3.15	Removing and installing interior locking button for central locking system E308 / E309	261
3.16	Removing and installing operating unit for memory settings E464 / E465	261
3.17	Removing and installing rear lid remote release button E233	262
3.18	Removing and installing fuel tank flap release button E319	262
3.19	Removing and installing button for deactivating interior monitoring and vehicle inclination sensor E616	263
3.20	Removing and installing operating unit in rear door EX60 / EX61	263
3.21	Removing and installing rear interior locking button for central locking system E717 / E718	263
3.22	Removing and installing electromechanical parking brake button E540 / auto hold button E538	264
3.23	Removing and installing entry and start authorisation button E408	264
3.24	Removing and installing operating unit for lowering load sill and for towing bracket EX52	264
3.25	Removing and installing rear lid handle release button E234	265
3.26	Removing and installing operating unit for rear lid control EX58	266
3.27	Removing and installing rear lid warning buzzer H32	266
3.28	Removing and installing sunroof button E325	266

3.29	Removing and installing front interior light/reading light	266
3.30	Dismantling and assembling front interior light/reading light	268
3.31	Removing and installing rear interior light/reading light	271
3.32	Removing and installing garage door operating unit E284	271
4	Anti-theft alarm system	272
4.1	Assembly overview - interior monitoring	272
4.2	Removing and installing alarm horn H12	273
4.3	Removing and installing anti-theft alarm sensor G578	273
5	Lane change assist	274
6	Front camera for driver assist systems	275
7	Towing bracket	276
7.1	Assembly overview - trailer socket, trailer detector control unit	276
7.2	Trailer socket	276
8	Cigarette lighter, socket	277
8.1	Assembly overview - cigarette lighter, 12 V socket	277
8.2	Removing and installing cigarette lighter U1 / 12 V socket U5	279
8.3	Removing and installing cigarette lighter illumination bulb L28	281
8.4	Removing and installing socket illumination bulb L42	281
8.5	Removing and installing rear cigarette lighter U9 / 12 V socket 2 U18	281
8.6	Removing and installing 12 V socket 3 U19	283
8.7	Renewing 12 V socket 3 U19	283
97 - Wiring	285	
1	Safety information	285
2	Relay carriers, fuse carriers, electronics boxes	286
2.1	Overview of fitting locations - relay carriers, fuse carriers, electronics boxes	286
2.2	Removing and installing relay and fuse carrier 2 SR2	296
2.3	Removing and installing suppression capacitor C24	302
2.4	Removing and installing wiring junction	303
2.5	Removing and installing fuse holder F SF	309
2.6	Removing and installing relay and fuse holders in luggage compartment (left-side)	310
3	Control units	314
3.1	Overview of fitting locations - control units	314
3.2	Assembly overview - data bus diagnostic interface	314
3.3	Removing and installing onboard supply control unit J519	316
3.4	Removing and installing garage door operation control unit	317
3.5	Removing and installing data bus diagnostic interface J533	317
4	Connectors	320
4.1	Overview of fitting locations - connectors	320
4.2	Unplugging door coupling point	321
4.3	Removing and installing coupling station on bulkhead (right-side)	321
4.4	Repairing electrical wiring harnesses and electrical connectors	321
5	Connector housings	322
6	Cleaning contact surfaces	323
7	Wiring	324
8	Fibre optic cables	325
9	Vehicle diagnostic, testing and information systems	326