



## Contents

<b>00 - Technical data</b>	<b>1</b>
<b>1 Safety information</b>	<b>1</b>
1.1 Safety measures when working on vehicles with a start/stop system	1
1.2 Safety precautions when using testers and measuring instruments during a road test	1
<b>2 Repair notes</b>	<b>2</b>
2.1 Contact corrosion	2
2.2 Routing and attachment of lines	2
<b>3 Battery</b>	<b>3</b>
3.1 Battery - general notes	3
3.2 Types of battery	3
<b>27 - Starter, current supply, CCS</b>	<b>4</b>
<b>1 Battery</b>	<b>4</b>
1.1 Assembly overview – battery	4
1.2 Removing and installing battery	6
1.3 Disconnecting and connecting battery	9
1.4 Removing and installing battery tray	11
1.5 Checking battery	12
1.6 Charging battery	12
1.7 Removing and installing earth wire with battery monitor control unit J367	12
1.8 Adapting battery monitor control unit J367	13
<b>2 Alternator</b>	<b>14</b>
2.1 Assembly overview – alternator	14
2.2 Removing and installing alternator	15
2.3 Checking alternator	23
2.4 Removing and installing poly V-belt pulley	23
2.5 Removing and installing voltage regulator	33
<b>3 Starter</b>	<b>37</b>
3.1 Assembly overview – starter	37
3.2 Removing and installing starter	40
<b>4 Cruise control system (CCS)</b>	<b>49</b>
<b>5 Start/stop system</b>	<b>50</b>
5.1 General description - start/stop system	50
5.2 Overview of fitting locations - start/stop system	50
<b>90 - Gauges, instruments</b>	<b>51</b>
<b>1 Dash panel insert</b>	<b>51</b>
1.1 Assembly overview – dash panel insert	51
1.2 Removing and installing dash panel insert KX2	51
<b>2 Horn</b>	<b>56</b>
2.1 Assembly overview – horn (8Y1)	56
2.2 Removing and installing treble horn H2 and bass horn H7	56
<b>92 - Windscreen wash/wipe system</b>	<b>58</b>
<b>1 Windscreen wiper system</b>	<b>58</b>
1.1 Assembly overview – windscreen wiper system	58
1.2 Moving wipers to service position	60
1.3 Removing and installing wiper blade	60
1.4 Removing and installing wiper arms	61
1.5 Adjusting wiper arms	63
1.6 Removing and installing wiper motor V	64
1.7 Removing and installing rain and light sensor	66



1.8	Repairing rain and light sensor	68
<b>2</b>	<b>Windscreen washer system</b>	<b>72</b>
2.1	Assembly overview – windscreen washer system	72
2.2	Removing and installing washer fluid reservoir	73
2.3	Removing and installing windscreen washer fluid level sender	75
2.4	Removing and installing windscreen washer pump	76
2.5	Removing and installing spray jets	77
2.6	Adjusting spray jets	78
<b>3</b>	<b>Washer fluid lines</b>	<b>79</b>
3.1	Repairing washer fluid lines	79
<b>94</b>	<b>Lights, bulbs, switches - exterior</b>	<b>80</b>
<b>1</b>	<b>Headlights</b>	<b>80</b>
1.1	Assembly overview – headlight	80
1.2	Assembly overview - daytime running lights	81
1.3	Removing and installing headlight	82
1.4	Adjusting headlights	87
1.5	Adjusting headlight installation position	87
1.6	Removing and installing front turn signal bulb M5/M7	88
1.7	Removing and installing headlight range control motor V48/V49	90
1.8	Removing and installing headlight dipped beam bulb	90
1.9	Removing and installing headlight main beam bulb M30/M32	90
1.10	Removing and installing side light bulb M1/M3	90
1.11	Removing and installing LED modules for daytime running light and side light L176/L177	90
1.12	Removing and installing output module for headlight J667/J668	91
1.13	Removing and installing output module 1 for LED headlight A31/A27	91
1.14	Removing and installing daytime running light	91
<b>2</b>	<b>Lights in exterior mirror</b>	<b>93</b>
2.1	Assembly overview - lights in exterior mirror	93
2.2	Removing and installing turn signal	94
<b>3</b>	<b>Tail light cluster</b>	<b>97</b>
3.1	Assembly overview – tail light cluster in body	97
3.2	Assembly overview – tail light clusters in rear lid	98
3.3	Removing and installing tail light in rear lid	100
3.4	Adjusting installation position of tail light	101
3.5	Removing and installing tail light cluster	102
3.6	Removing and installing tail light bulb M2/M4	103
3.7	Removing and installing rear fog light bulb L46/L47	103
3.8	Removing and installing brake and tail light bulb M21/M22	103
3.9	Removing and installing reversing light bulb	103
3.10	Removing and installing turn signal bulb	103
<b>4</b>	<b>High-level brake light</b>	<b>105</b>
4.1	Assembly overview – high-level brake light	105
4.2	Removing and installing high-level brake light	105
4.3	Removing and installing high-level brake light	106
<b>5</b>	<b>Number plate light</b>	<b>107</b>
5.1	Removing and installing number plate light X4/X5	107
5.2	Removing and installing bulb for number plate light X4/X5	108
<b>6</b>	<b>Entry and start authorisation system</b>	<b>109</b>
6.1	Overview of fitting locations – entry and start authorisation system	109
6.2	Overview of fitting locations – keyless entry system	111
6.3	Removing and installing interface for entry and start system J965	114
6.4	Removing and installing door exterior handle contact sensor G415/G416	117
6.5	Removing and installing driver side aerial for entry and start system R134	117
6.6	Removing and installing front passenger side aerial for entry and start system R135	117



6.7	Removing and installing rear bumper aerial for entry and start system R136	117
6.8	Removing and installing interior aerial 1 for entry and start system R138	118
6.9	Removing and installing interior aerial 2 for entry and start system R139	118
<b>7</b>	<b>Steering column switch module</b>	<b>120</b>
7.1	Assembly overview – steering column switch module	120
7.2	Removing and installing lock cylinder	122
7.3	Removing and installing ignition key withdrawal lock solenoid N376	124
7.4	Removing and installing ignition/starter switch	125
7.5	Removing and installing steering column switch module	127
7.6	Removing and installing steering column electronics control unit J527	133
7.7	Removing and installing turn signal switch E2	139
7.8	Removing and installing cruise control system switch E45	141
7.9	Removing and installing intermittent wiper switch E22	141
7.10	Removing and installing immobiliser reader coil D2	141
7.11	Removing and installing base for steering column combination switch	142
7.12	Removing and installing steering lock housing	142
<b>96</b>	<b>Lights, bulbs, switches - interior</b>	<b>144</b>
<b>1</b>	<b>Lights</b>	<b>144</b>
1.1	Overview of fitting locations – lights in dash panel	144
1.2	Overview of fitting locations – lights in front doors	145
1.3	Overview of fitting locations - lights in centre console	146
1.4	Overview of fitting locations – lights in luggage compartment	147
1.5	Overview of fitting locations – lights in roof trim	148
1.6	Removing and installing front footwell light K268/K269	150
1.7	Removing and installing light 1 for dash panel contour lighting L243/light 3 for dash panel contour lighting L245	152
1.8	Removing and installing storage compartment illumination bulb L120	152
1.9	Removing and installing Central locking SAFELOCK function warning lamp K133	152
1.10	Removing and installing reflectors in door	153
1.11	Removing and installing entry light W92/W93	154
1.12	Removing and installing light for door ambient lighting W86/W87	154
1.13	Removing and installing selector lever position display Y26	154
1.14	Removing and installing luggage compartment light W3	155
1.15	Removing and installing illuminated vanity mirror W20/W14	155
1.16	Removing and installing bulb for illuminated vanity mirror W20/W14	156
1.17	Removing and installing bulb for front interior light W1	157
1.18	Rear interior light	159
1.19	Removing and installing bulb for rear interior light W43 with panoramic tilting sunroof	161
1.20	Removing and installing bulb for rear reading light W11/W12	162
1.21	Renewing bulb of rear interior light W47/W48	162
<b>2</b>	<b>Controls</b>	<b>163</b>
2.1	Overview of fitting locations – controls in dash panel	163
2.2	Overview of fitting locations – controls in front doors	164
2.3	Overview of fitting locations – controls in rear doors	165
2.4	Overview of fitting locations - controls in centre console	166
2.5	Overview of fitting locations – controls in luggage compartment	167
2.6	Overview of fitting locations – controls in roof trim	168
2.7	Removing and installing rotary light switch EX1	170
2.8	Removing and installing TCS and ESP button E256	171
2.9	Removing and installing parking aid button E266	171
2.10	Removing and installing park assist steering button E581	172
2.11	Removing and installing Start/Stop operation button E693	172
2.12	Removing and installing driving mode selection button E735	172
2.13	Removing and installing centre console switch module	172
2.14	Removing and installing hazard warning light switch EX3	174



2.15	Removing and installing buttons for seat heating E653/E654	175
2.16	Removing and installing exterior mirror adjuster EX11	175
2.17	Removing and installing operating unit for window regulator in driver door E512	176
2.18	Removing and installing front passenger side window regulator button E716	176
2.19	Removing and installing driver side interior locking button for central locking system E308	177
2.20	Removing and installing rear lid remote release button E233/remote release button for fuel filler flap and rear lid E463	178
2.21	Removing and installing door contact switch F2/F3	178
2.22	Removing and installing rear window regulator button E711/E713	179
2.23	Removing and installing rear door contact switches F10/F11	179
2.24	Removing and installing electromechanical parking brake button E538/auto-hold button E540	180
2.25	Removing and installing starter button E378	180
2.26	Removing and installing rear lid contact switch	181
2.27	Removing and installing vanity mirror contact switch F147/F148	181
2.28	Removing and installing sunroof button E325	181
2.29	Removing and installing front interior light/reading light	182
2.30	Removing and installing front reading light button E633/E634	183
<b>3</b>	<b>Anti-theft alarm</b>	<b>184</b>
3.1	Assembly overview – interior monitor	184
3.2	Removing and installing alarm horn/signal horn for anti-theft alarm system	186
3.3	Removing and installing anti-theft alarm sensor G578	188
<b>4</b>	<b>Cigarette lighter, socket</b>	<b>190</b>
4.1	Removing and installing cigarette lighter U1	190
4.2	Removing and installing socket illumination bulb L42	190
4.3	Removing and installing rear cigarette lighter illumination bulb L32	190
4.4	Removing and installing 12 V socket U5	190
<b>97 - Wiring</b>		<b>191</b>
<b>1</b>	<b>Relay carriers, fuse holders, electronics boxes</b>	<b>191</b>
1.1	Overview of fitting locations - relay carriers, fuse holders, electronics boxes	191
1.2	Removing and installing electronics box (E-box)	193
1.3	Removing and installing relay and fuse holder in electronics box	195
1.4	Removing and installing relay and fuse holder behind dash panel on driver side	198
<b>2</b>	<b>Select Control units</b>	<b>199</b>
2.1	Overview of fitting locations - control units	199
2.2	Removing and installing onboard supply control unit J519	199
2.3	Removing and installing data bus diagnostic interface J533	201
2.4	Removing and installing bracket for onboard supply control unit J519	202
<b>3</b>	<b>Connectors</b>	<b>204</b>
3.1	Repairing electrical wiring harnesses and plug-in connections	204
<b>4</b>	<b>Releasing and dismantling connector housings</b>	<b>205</b>
<b>5</b>	<b>Repairing aerial wires</b>	<b>206</b>
<b>6</b>	<b>Fibre optic cables</b>	<b>207</b>
<b>7</b>	<b>Vehicle diagnosis, testing and information systems</b>	<b>208</b>