



Contents

00 - Technical data	1
1 Safety information	1
1.1 Safety measures when working on vehicles with start/stop system	1
1.2 Safety precautions when using testers and measuring instruments during a road test	1
1.3 Application notes and safety information for LED headlights	1
2 Repair instructions	2
2.1 Rules for cleanliness	2
2.2 Contact corrosion	2
2.3 ESD workplace	2
2.4 Routing and attachment of lines	3
27 - Starter, current supply, CCS	4
1 Battery	4
1.1 Assembly overview - battery	4
1.2 Checking battery	5
1.3 Charging battery	6
1.4 Disconnecting and connecting battery	6
1.5 Removing and installing battery	9
1.6 Removing and installing battery tray	11
1.7 Adapting battery monitor control unit J367	11
1.8 Removing and installing earth wire with battery monitor control unit J367	12
2 Alternator	13
2.1 Assembly overview - alternator	13
2.2 Checking alternator	13
2.3 Removing and installing alternator	13
2.4 Checking poly V-belt	15
2.5 Removing and installing poly V-belt pulley	15
2.6 Removing and installing voltage regulator	21
3 Starter motor	23
3.1 Assembly overview – starter	23
3.2 Checking starter	24
3.3 Removing and installing starter	24
4 Cruise control system (CCS)	30
5 Start/stop system	31
5.1 General description - start/stop system	31
90 - Gauges, instruments	32
1 Dash panel insert	32
1.1 Removing and installing dash panel insert KX2	32
2 Horn	34
2.1 Removing and installing left horn H33	34
92 - Windscreen wash/wipe system	36
1 Windscreen wiper system	36
1.1 Assembly overview - windscreen wiper system	36
1.2 Moving wipers to service position	37
1.3 Removing and installing wiper blade	38
1.4 Removing and installing wiper arms	38
1.5 Adjusting wiper arms	40
1.6 Renewing wiper motor V	42
1.7 Deactivating APP function of wiper motor	43
1.8 Removing and installing air humidity, rain and light sensor G823	43



2	Windscreen washer system	47
2.1	Assembly overview - windscreen washer system	47
2.2	Removing and installing filler pipe for washer fluid reservoir	49
2.3	Removing and installing washer fluid reservoir	49
2.4	Removing and installing windscreen washer pump	50
2.5	Removing and installing spray jets	51
2.6	Adjusting spray jets	52
3	Rear window wiper system	53
3.1	Assembly overview - rear window wiper system	53
3.2	Removing and installing wiper blade	55
3.3	Removing and installing wiper arm	56
3.4	Adjusting wiper arm	57
3.5	Removing and installing rear window wiper motor V12	59
4	Rear window washer system	61
4.1	Assembly overview - rear window washer system	61
4.2	Removing and installing washer fluid reservoir	61
4.3	Removing and installing rear window washer pump	62
4.4	Removing and installing spray jet	62
4.5	Adjusting spray jet	62
5	Washer fluid lines	63
5.1	Washer fluid line hose couplings	63
5.2	Repairing washer fluid lines	63
94	Lights, bulbs, switches - exterior	64
1	Headlights	64
1.1	Assembly overview - headlight	64
1.2	Removing and installing headlight	65
1.3	Adjusting headlights	67
1.4	Adjusting headlight installation position	67
1.5	Removing and installing front turn signal bulb M5/M7	69
1.6	Removing and installing headlight range control motor V48/V49	70
1.7	Removing and installing headlight dipped beam bulb M29/M31	70
1.8	Removing and installing headlight main beam bulb M30/M32	72
1.9	Removing and installing bulbs for cornering light L148/L149	73
1.10	Removing and installing output module 1 for LED headlight A31/A27	73
1.11	Converting headlights from driving on right to driving on left	74
2	Fog lights	75
2.1	Removing and installing fog light	75
2.2	Removing and installing fog light bulb L22/L23	76
2.3	Removing and installing static cornering light bulb	77
2.4	Adjusting fog lights	77
3	Turn signal repeater	78
3.1	Removing and installing turn signal repeater	78
4	Tail lights	79
4.1	Assembly overview - tail lights in body	79
4.2	Removing and installing bulb carrier	79
4.3	Removing and installing tail light cluster	80
4.4	Removing and installing turn signal bulb M6/M8	82
4.5	Removing and installing brake and tail light bulb M21/M22	83
4.6	Removing and installing rear left fog light bulb L46	83
4.7	Removing and installing reversing light bulb M16/M17	84
5	High-level brake light	85
5.1	Removing and installing high-level brake light	85
5.2	Removing and installing high-level brake light bulb M25	88



6	Number plate light	89
6.1	Removing and installing number plate light X4/X5	89
7	Steering column switch module	91
7.1	Assembly overview - steering column switch module	91
7.2	Removing and installing steering column switch module	92
7.3	Removing and installing turn signal switch E2	95
7.4	Removing and installing cruise control system switch E45	96
7.5	Removing and installing intermittent wiper switch E22	96
8	Towing bracket	97
8.1	Removing and installing trailer socket U10	97
8.2	Removing and installing trailer detector control unit J345	98
96	- Lights, bulbs, switches - interior	100
1	Lights	100
1.1	Removing and installing luggage compartment light W3	100
1.2	Removing and installing front roof module WX3	101
1.3	Removing and installing rear interior light/reading light	101
1.4	Removing and installing Central locking SAFELOCK function warning lamp K133	102
1.5	Removing and installing surround lighting W61/W62 in rear lid	102
2	Controls	104
2.1	Overview of fitting locations - controls in dash panel	104
2.2	Overview of fitting locations - controls in front doors	105
2.3	Overview of fitting locations - controls in centre console	106
2.4	Removing and installing mirror adjustment switch E43/E168	107
2.5	Removing and installing operating unit for window regulator in driver door E512	108
2.6	Removing and installing driver side interior locking button for central locking system E308	109
2.7	Removing and installing door contact switch F2/F3	110
2.8	Removing and installing rear door contact switches F10/F11	110
2.9	Removing and installing contact strip in sliding door F353/F352	111
2.10	Removing and installing rear lid release switch E165	112
2.11	Removing and installing central locking switch in left wing door F213	112
2.12	Removing and installing rear lid contact switch	113
2.13	Removing and installing wing door contact switch	113
2.14	Removing and installing vanity mirror contact switch F147/F148	113
2.15	Removing and installing centre switch module in dash panel EX22	113
2.16	Removing and installing operating unit for lighting EX59	114
2.17	Removing and installing starter button E378	114
2.18	Removing and installing electromechanical parking brake button E538/auto-hold button E540	115
3	Immobiliser	117
3.1	Removing and installing immobiliser control unit J362	117
3.2	Removing and installing immobiliser reader coil D2	117
4	Cigarette lighter, socket	118
4.1	Removing and installing cigarette lighter U1	118
4.2	Removing and installing socket illumination bulb L42	118
4.3	Removing and installing rear cigarette lighter illumination bulb L32	118
4.4	Removing and installing electric socket U	118
4.5	Removing and installing interior socket, 230 V, 110 V U11	118
5	Anti-theft alarm	120
5.1	Overview of fitting locations – interior monitoring	120
5.2	Removing and installing alarm horn H12	120
5.3	Removing and installing anti-theft alarm sensor G578	121
97	- Wiring	123
1	Relay carriers, fuse holders, electronics boxes	123



1.1	Overview of fitting locations - relay carriers, fuse holders, E-boxes	123
1.2	Removing and installing electronics box (E-box)	124
2	Select Control units	127
2.1	Overview of fitting locations - control units	127
2.2	Removing and installing onboard supply control unit J519	128
2.3	Removing and installing data bus diagnostic interface J533	130
2.4	Removing and installing special vehicle control unit J608	130
2.5	Coding special vehicle control unit	131
3	Connectors	132
3.1	Repairing electrical wiring harnesses and plug-in connections	132
4	Releasing and dismantling connector housings	133
5	Cleaning contact surfaces	134
6	Repairing aerial wires	135
7	Fibre optic cables	136
8	Vehicle diagnosis, testing and information systems	137