



Contents

00 - Technical data	1
1 Checklist for evaluating running gear of accident vehicles	1
2 General information	3
40 - Front suspension	4
1 Appraisal of accident vehicles	4
2 Servicing front suspension	5
2.1 Overview - front axle	5
2.2 Raising wheel suspension to unladen position	6
3 Subframe, anti-roll bar, suspension links	9
3.1 Assembly overview: subframe, anti-roll bar, suspension links	9
3.2 Assembly overview: front left vehicle level sender G78	13
3.3 Removing and installing front left vehicle level sender G78	13
3.4 Repairing thread in longitudinal member	14
3.5 Fixing position of subframe	15
3.6 Lowering subframe	16
3.7 Removing and installing subframe without steering rack	20
3.8 Removing and installing subframe with steering rack	24
3.9 Repairing subframe	29
3.10 Checking swivel joint	41
3.11 Removing and installing swivel joint	41
3.12 Removing and installing suspension link with mounting bracket	45
3.13 Removing and installing suspension link with mounting bracket (left side for vehicles with DSG or automatic gearboxes)	48
3.14 Renewing bonded rubber bush for suspension link	54
3.15 Renewing mounting bracket with suspension link bush	56
3.16 Removing and installing anti-roll bar	57
4 Assembly overview - wheel bearings	63
4.1 Removing and installing wheel bearing unit	65
4.2 Removing and installing wheel bearing housing	67
5 Assembly overview: suspension strut	73
5.1 Removing and installing suspension strut	74
5.2 Repairing suspension strut	81
6 Removing and installing drive shafts	84
6.1 Loosening and tightening twelve-point head bolt, with ribbing, securing drive shaft	84
6.2 Loosening and tightening twelve-point head bolt, without ribbing, securing drive shaft	85
6.3 Removing and installing drive shaft with constant velocity joint	87
6.4 Removing and installing drive shafts with triple roller joint AAR3300i (bolted on)	90
6.5 Removing and installing drive shafts with triple roller joint AAR3300i (pushed onto gearbox stub shaft)	94
7 Repairing drive shaft - overview of drive shafts	101
7.1 Heat shields for drive shafts	102
8 Assembly overview: drive shaft with VL100 constant velocity joint	103
8.1 Dismantling and assembling drive shaft with VL100 constant velocity joint	105
8.2 Checking outer constant velocity joint	109
8.3 Checking inner constant velocity joint	110
9 Assembly overview: drive shaft with VL107 constant velocity joint	113
9.1 Dismantling and assembling drive shaft with VL107 constant velocity joint	115
10 Assembly overview: drive shaft with triple roller joint AAR3300i (bolted to flange shaft) ..	120
10.1 Dismantling and assembling drive shaft with triple roller joint AAR3300i (bolted to stub shaft)	122



11	Assembly overview: drive shaft with triple roller joint AAR3300i (pushed onto stub shaft)	128
11.1	Dismantling and assembling drive shaft with triple roller joint AAR3300i (pushed onto stub shaft)	129
42	- Rear suspension	133
1	Appraisal of accident vehicles	133
2	Repairing rear suspension	134
2.1	Overview - rear axle	134
2.2	Rear axle in unladen position	135
3	Assembly overview: subframe, transverse links track rod	137
3.1	Fixing position of subframe	138
3.2	Lowering rear axle	140
3.3	Assembly overview: rear left vehicle level sender G76	143
3.4	Removing and installing rear left vehicle level sender G76	143
3.5	Removing and installing rear axle	144
3.6	Removing and installing upper transverse link	148
3.7	Removing and installing lower transverse link	150
3.8	Removing and installing track rod	151
4	Assembly overview: wheel bearing housing, trailing arm	155
4.1	Removing and installing wheel bearing housing	156
4.2	Renewing bonded rubber bush for wheel bearing housing	160
4.3	Removing and installing wheel bearing/wheel hub unit	162
4.4	Removing and installing trailing arm with mounting bracket	165
4.5	Repairing trailing arm	169
5	Assembly overview: shock absorber, coil spring	172
5.1	Removing and installing coil spring	172
5.2	Removing and installing shock absorbers	174
5.3	Repairing shock absorber	176
6	Assembly overview: anti-roll bar	178
6.1	Removing and installing anti-roll bar	178
43	- Self-levelling suspension	181
1	Appraisal of accident vehicles	181
2	Components of adaptive chassis control DCC and fitting locations	182
2.1	Shock absorber damping adjustment button E387	183
2.2	Removing and installing front left and right body acceleration senders G341/G342	183
2.3	Renewing bracket for front left/right body acceleration sender G341/G342	184
2.4	Assembly overview: front left/right vehicle level sender G78/G289 for adaptive chassis control DCC	186
2.5	Removing and installing front left/right vehicle level sender G78/G289	187
2.6	Assembly overview: rear left vehicle level sender G76 for adaptive chassis control DCC	188
2.7	Removing and installing rear left vehicle level sender G76 for adaptive chassis control DCC	189
2.8	Removing and installing electronically controlled damping control unit J250	190
2.9	Basic setting of adaptive chassis control DCC	191
2.10	Cable routing left front axle	191
2.11	Cable routing right front axle	193
2.12	Cable routing rear axle	194
3	Assembly overview: suspension strut for adaptive chassis control DCC	195
3.1	Removing and installing suspension strut for adaptive chassis control DCC	197
4	Assembly overview: shock absorber for adaptive chassis control DCC	206
4.1	Removing and installing rear body acceleration sender G343	207
4.2	Removing and installing shock absorber for adaptive chassis control DCC	208



4.3	Repairing shock absorber for adaptive chassis control DCC	210
44	Wheels, tyres, vehicle geometry	213
1	Appraisal of accident vehicles	213
2	Specified torque for wheel bolts	214
3	Fitting wheel and tyre	215
3.1	General information	215
3.2	Fittings instructions	215
3.3	Fitting tyre	216
4	Removing and fitting tyres (wheels with tyre pressure monitoring)	217
4.1	Notes on safety and conditions for removing and fitting tyres (wheels with tyre pressure monitoring system)	217
4.2	Wheel change	217
4.3	Pressing tyre off wheel rim	218
4.4	Removing tyre from wheel	219
4.5	Fitting tyre to wheel rim	219
5	Removing and fitting tyres with run-flat properties to wheel rims	221
5.1	Safety information	221
5.2	Pressing tyre off wheel rim	221
5.3	Removing tyre from wheel	222
5.4	Fitting tyre to wheel rim	223
6	Tyre pressure monitor display	226
6.1	General information	226
6.2	System fault in the ABS system	227
6.3	Performing basic setting	227
7	Tyre pressure monitoring system (TPMS)	228
7.1	Button behaviour	228
7.2	Assembly overview: tyre pressure sensor	229
7.3	Removing and installing tyre pressure sensor	230
8	Vehicle alignment check	232
8.1	General information	232
8.2	Prerequisites for testing	234
8.3	Test preparations	234
8.4	Wheel alignment specifications	235
8.5	Overview - wheel alignment procedure	236
8.6	Correcting front axle camber	237
8.7	Adjusting camber on rear axle	239
8.8	Adjusting toe at rear axle	241
8.9	Adjusting front axle toe	241
8.10	Basic setting of steering angle sensor G85	243
8.11	Vehicle data sticker	243
9	Wheels, tyres	244
9.1	Models with breakdown set	244
9.2	Tyre sealant	244
9.3	Removing a tyre	244
9.4	Fitting a new tyre	245
9.5	Tyre sealant disposal	245
10	Instructions for changing or fitting wheels	246
10.1	Fitting wheels	247
11	Protecting wheel centring seat against corrosion	248
12	Vibration due to wheels/tyres - causes and rectification	249
12.1	Causes of rough running	249
12.2	Balancing wheels	249
12.3	Conducting a road test before balancing wheels	249



12.4	Balancing wheels on stationary wheel balancing machine	250
12.5	Vibration control system VAS 6230 A	253
12.6	Finish balancer	253
12.7	Radial and lateral runout of wheels and tyres	254
12.8	Checking radial and lateral runout on wheels and tyres with tyre gauge V.A.G 1435	254
12.9	Checking radial and lateral run-out on wheel rim	255
12.10	Matching	256
12.11	Flat spots caused by storage or handling	257
48	- Steering	259
1	Appraisal of accident vehicles	259
2	General repair instructions	260
2.1	Steering rack	260
2.2	Gaskets and seals	260
2.3	Nuts and bolts	260
2.4	Electrical components	261
2.5	Guided Fault Finding, vehicle self-diagnosis and Test Instruments	261
3	Steering wheel, steering column	262
3.1	Removing and installing steering wheel	262
3.2	Assembly overview: steering column	265
3.3	Removing and installing steering column, left-hand drive vehicle	265
3.4	Assembly overview: steering column, right-hand drive	272
3.5	Removing and installing steering column, right-hand drive vehicle	273
3.6	Basic setting for steering angle sender G85 must be checked after the following procedures:	278
3.7	Handling and transporting steering column	279
3.8	Checking steering column for damage	280
4	Electromechanical steering rack	281
4.1	Assembly overview - electromechanical steering rack, left-hand drive	281
4.2	Assembly overview - electromechanical steering rack, right-hand drive	283
4.3	Removing and installing steering rack, left-hand drive vehicle	284
4.4	Removing and installing steering rack, right-hand drive vehicle	291
5	Repairing electromechanical steering rack	300
5.1	Assembly overview: electromechanical steering rack	300
5.2	Removing and installing boot	301
5.3	Removing and installing track rod	303