

Contents

00 - Technical data	1
1 General notes	1
1.1 Running gear	1
1.2 Steering	3
1.3 Types of tyre	3
1.4 General notes on drive shaft	3
2 Safety information	4
2.1 Safety precautions when working on vehicles with start/stop system	4
2.2 Safety precautions when working on vehicles with active suspension	4
2.3 Safety precautions when working in the vicinity of high-voltage components	5
2.4 Safety precautions when using testers and measuring instruments during a road test	5
2.5 Safety precautions when working on the subframe	5
3 Repair instructions	6
3.1 Identification plates	6
3.2 Use of impact wrenches	6
3.3 Routing and attachment of pipes, hoses and wiring	7
3.4 Leaks at shock absorbers	7
3.5 Checking shock absorbers when removed	8
3.6 Checking shock absorbers on shock tester	9
3.7 Maximum values "a" in mm	10
3.8 Rules for cleanliness	10
3.9 General notes	11
3.10 General repair instructions	12
3.11 Contact corrosion	12
3.12 Steering rack	12
3.13 Gaskets, seals	12
3.14 Nuts, bolts	13
3.15 Electrical components	13
3.16 Repairing damaged threads in longitudinal member (subframe to body)	13
3.17 Lifting suspension to unladen position - vehicles with coil springs	13
3.18 Lifting suspension to normal level - vehicles with air suspension	16
3.19 Raising and lowering vehicle when air spring system has/has not been opened	19
4 Disposal	21
4.1 Releasing gas and draining front gas-filled shock absorbers	21
4.2 Releasing gas and draining rear gas-filled shock absorbers	21
4.3 Discharging front suspension strut (air suspension)	22
4.4 Discharging accumulator	23
5 Electrical components	24
5.1 Starting diagnosis	24
40 - Front suspension	29
1 Safety information	29
2 Front axle	30
2.1 Overview - front axle	30
3 Subframe	31
3.1 Assembly overview - subframe	31
3.2 Fixing subframe in position	35
3.3 Lowering subframe	38
3.4 Removing and installing subframe with steering rack	42
3.5 Removing and installing subframe cross brace	51
3.6 Removing and installing subframe shield	53
4 Anti-roll bar	55

4.1	Assembly overview - anti-roll bar	55
4.2	Removing and installing anti-roll bar	60
4.3	Removing and installing coupling rod	64
4.4	Removing and installing roll stabiliser control unit J924	66
5	Suspension strut, upper suspension links	69
5.1	Assembly overview - suspension strut, upper suspension links	69
5.2	Removing and installing suspension strut	77
5.3	Servicing suspension strut	80
5.4	Removing and installing upper suspension link	83
5.5	Renewing bush for upper suspension link	85
5.6	Renewing boot	86
5.7	Charging suspension strut	88
5.8	Removing and installing shock absorber fork	89
5.9	Removing and installing strut brace	91
6	Lower suspension links, swivel joint	97
6.1	Assembly overview - lower suspension links, swivel joint	97
6.2	Removing and installing track control link	99
6.3	Removing and installing guide link	102
6.4	Renewing bush for track control link	104
6.5	Removing and installing swivel joint	109
6.6	Removing and installing bonded rubber bush for guide link	110
7	Wheel bearing	114
7.1	Assembly overview - wheel bearing	114
7.2	Removing and installing wheel bearing housing	115
7.3	Removing and installing wheel bearing unit	117
7.4	Servicing wheel bearing unit	119
8	Drive shaft	123
8.1	Assembly overview - drive shaft	123
8.2	Removing and installing drive shaft	126
8.3	Removing and installing heat shield for drive shaft	127
8.4	Loosening and tightening nut/bolt securing drive shaft	128
8.5	Dismantling and assembling drive shaft	128
8.6	Servicing constant velocity joint	140
8.7	Checking outer constant velocity joint	141
8.8	Tightening hose clip on triple roller joint and outer joint	142
42	Rear suspension	144
1	Safety information	144
2	Rear axle	145
2.1	Overview - rear axle	145
3	Subframe	146
3.1	Assembly overview - subframe	146
3.2	Fixing position of subframe	149
3.3	Removing and installing subframe	152
3.4	Servicing subframe	155
4	Anti-roll bar	164
4.1	Assembly overview - anti-roll bar	164
4.2	Removing and installing anti-roll bar	167
4.3	Removing and installing coupling rod	170
4.4	Removing and installing roll stabiliser control unit 2 J1096	172
5	Suspension links, track rod	174
5.1	Assembly overview - transverse links	174
5.2	Removing and installing upper transverse link	178
5.3	Removing and installing lower transverse links	181

5.4	Removing and installing track rod	185
5.5	Removing and installing wind deflector	187
6	Suspension strut/shock absorber, spring	189
6.1	Assembly overview - suspension strut/shock absorber, spring	189
6.2	Removing and installing shock absorber	193
6.3	Servicing shock absorber	196
6.4	Removing and installing spring	197
7	Wheel bearing, trailing arm	206
7.1	Assembly overview - wheel bearing	206
7.2	Removing and installing wheel bearing housing	207
7.3	Removing and installing wheel bearing unit	210
7.4	Servicing wheel bearing unit	211
8	Drive shaft	215
8.1	Assembly overview - drive shaft	215
8.2	Removing and installing drive shaft	218
8.3	Loosening and tightening nut/bolt securing drive shaft	219
8.4	Dismantling and assembling drive shaft	220
8.5	Checking outer constant velocity joint	226
8.6	Checking inner constant velocity joint	227
43	Self-levelling suspension	229
1	Safety information	229
2	Vehicle level senders	230
2.1	Assembly overview - front vehicle level senders	230
2.2	Assembly overview - rear vehicle level senders	230
2.3	Removing and installing front vehicle level sender G78 / G289	231
2.4	Removing and installing rear vehicle level sender G76 / G77	232
3	Air suspension	233
3.1	Overview of fitting locations - electrical components	233
3.2	Overview of fitting locations - air suspension	235
3.3	Assembly overview - air pipes	236
3.4	Assembly overview - air supply unit	239
3.5	Setting normal level and permanently disabling control	241
3.6	Re-adapting normal level	241
3.7	Bleeding and charging air spring system	242
3.8	Removing and installing running gear control unit J775	242
3.9	Removing and installing adaptive suspension compressor electronics J1135	243
3.10	Checking air suspension for leaks	243
3.11	Servicing air pipe	245
3.12	Renewing connection piece	248
3.13	Removing and installing air supply unit	250
3.14	Removing and installing filter	252
3.15	Removing and installing solenoid valve block	252
3.16	Removing and installing accumulator	254
44	Wheels, tyres, vehicle geometry	255
1	Safety information	255
2	Wheels, tyres	256
3	Tyre Pressure Monitoring System	257
3.1	Removing and installing Tyre Pressure Monitoring System control unit J502	257
4	Wheel alignment	258
4.1	Notes on wheel alignment	258
4.2	Test requirements	258
4.3	Preparations	260



4.4	When does wheel alignment have to be checked?	262
4.5	Wheel alignment procedure	264
4.6	Explanatory notes on production control numbers (PR numbers)	266
4.7	Wheel runout compensation	266
4.8	Checking maximum steering angle	266
4.9	Checking unladen position for wheel alignment - vehicles with coil springs	267
4.10	Checking normal level for wheel alignment - vehicles with air suspension	269
4.11	Wheel alignment specifications	274
4.12	Adjusting camber at rear wheels	277
4.13	Adjusting toe setting at rear wheels	277
4.14	Centralising camber at front wheels	278
4.15	Adjusting toe setting at front wheels	280
4.16	Basic setting for steering angle sender G85	280
5	Adaptive cruise control	282
5.1	Adjusting adaptive cruise control	282
6	Front camera for driver assist systems	289
6.1	Calibrating front camera for driver assist systems	289
7	Night vision system	296
7.1	Calibrating night vision system	296
48 - Steering		303
1	Safety information	303
2	Steering wheel	304
2.1	Assembly overview - steering wheel	304
2.2	Removing and installing steering wheel	308
3	Steering column	309
3.1	Assembly overview - steering column	309
3.2	Checking steering column for damage	313
3.3	Handling and transporting steering column	313
3.4	Removing and installing steering column	314
3.5	Removing and installing intermediate steering shaft	316
3.6	Removing and installing control unit for electrically adjustable steering column J866	317
3.7	Removing and installing control unit for electronic steering column lock J764	318
4	Steering rack	320
4.1	Assembly overview - steering rack	320
4.2	Handling and transporting steering rack	324
4.3	Removing and installing steering rack	325
4.4	Removing and installing boot	328
4.5	Removing and installing track rod	330
4.6	Removing and installing track rod ball joint	331
4.7	Re-adapting end stops of steering rack	333
5	Rear wheel steering rack	334
5.1	Assembly overview - rear wheel steering	334
5.2	Removing and installing rear wheel steering rack	335
5.3	Aligning rear wheel steering rack	340
5.4	Bringing rear wheel steering rack into zero position	344