

Contents

00 - Technical data	1
1 General notes	1
1.1 Running gear	1
1.2 Steering	1
1.3 Types of tyre	1
1.4 General notes on drive shaft	1
2 Safety information	3
2.1 Safety precautions when working on vehicles with start/stop system	3
2.2 Safety precautions when working on the high-voltage system	3
2.3 Safety precautions when working in the vicinity of high-voltage components	4
2.4 Safety precautions when working on the subframe	4
2.5 Safety precautions when using testers and measuring instruments during a road test	5
3 Repair instructions	6
3.1 Leaks at shock absorbers	6
3.2 Noises from shock absorbers	7
3.3 Checking shock absorbers when removed	7
3.4 Checking shock absorbers on shock tester	8
3.5 Maximum values "a" in mm	9
3.6 Rules for cleanliness	9
3.7 General repair instructions	9
3.8 Contact corrosion	10
3.9 Gaskets, seals	10
3.10 Nuts, bolts	11
3.11 Routing and attachment of pipes, hoses and wiring	11
3.12 Use of impact wrenches	11
3.13 Identification plates	12
3.14 Electrical components	12
3.15 Repairing damaged threads in longitudinal member (subframe to body)	13
3.16 Lifting suspension to unladen position - vehicles with coil springs	13
4 Disposal	15
4.1 Releasing gas and draining front gas-filled shock absorbers	15
4.2 Releasing gas and draining rear gas-filled shock absorbers	16
5 Electrical components	17
5.1 Starting diagnosis	17
40 - Front suspension	19
1 Safety information	19
2 Front axle	20
2.1 Overview - front axle	20
3 Subframe	21
3.1 Assembly overview - subframe	21
3.2 Fixing subframe in position	23
3.3 Lowering subframe	26
3.4 Removing and installing subframe without steering rack	35
3.5 Removing and installing subframe with steering rack	43
3.6 Servicing subframe	54
3.7 Removing and installing anti-roll bar	71
3.8 Removing and installing coupling rod	72
4 Suspension strut, upper suspension links	73
4.1 Assembly overview - suspension strut, upper suspension links	73
4.2 Removing and installing suspension strut	75
4.3 Servicing suspension strut	79



4.4	Lowering suspension strut	81
5	Lower wishbone, swivel joint	84
5.1	Assembly overview - lower wishbone, swivel joint	84
5.2	Removing and installing lower wishbone	86
5.3	Renewing bonded rubber bushes for lower wishbone	88
5.4	Removing and installing swivel joint	94
6	Wheel bearing	97
6.1	Assembly overview - wheel bearing	97
6.2	Removing and installing wheel bearing housing	98
6.3	Removing and installing wheel bearing unit	101
7	Drive shaft	105
7.1	Assembly overview - drive shaft	105
7.2	Loosening and tightening nut/bolt securing drive shaft	115
7.3	Removing and installing heat shield for drive shaft	117
7.4	Removing and installing drive shaft	117
7.5	Dismantling and assembling drive shaft	125
7.6	Checking outer constant velocity joint	138
7.7	Checking inner constant velocity joint	139
42	Rear suspension	142
1	Safety information	142
2	Rear axle	143
2.1	Overview - rear axle	143
2.2	Removing and installing rear axle	146
3	Axle beam	161
3.1	Assembly overview - axle beam	161
3.2	Renewing bonded rubber bushes for axle beam	161
3.3	Removing and installing stone deflector for axle beam	170
4	Subframe	171
4.1	Assembly overview - subframe	171
4.2	Fixing subframe in position	172
4.3	Servicing subframe	185
5	Anti-roll bar	194
5.1	Assembly overview - anti-roll bar	194
5.2	Removing and installing anti-roll bar	195
5.3	Removing and installing coupling rod	197
6	Suspension links, track rod	199
6.1	Assembly overview - transverse links	199
6.2	Assembly overview - track rod	203
6.3	Removing and installing upper transverse link	205
6.4	Removing and installing lower transverse links	206
6.5	Removing and installing track rod	208
6.6	Removing and installing stone deflector for transverse link	209
7	Suspension strut/shock absorber, spring	211
7.1	Assembly overview - suspension strut/shock absorber, spring	211
7.2	Removing and installing shock absorber	215
7.3	Servicing shock absorber	218
7.4	Removing and installing spring	219
8	Wheel bearing, trailing arm	224
8.1	Assembly overview - wheel bearing	224
8.2	Assembly overview - trailing arm	228
8.3	Removing and installing wheel bearing housing	230
8.4	Removing and installing wheel bearing unit	237
8.5	Renewing bonded rubber bush for wheel bearing housing	244

8.6	Removing and installing trailing arm with mounting bracket	247
8.7	Servicing trailing arm	250
9	Drive shaft	254
9.1	Assembly overview - drive shaft	254
9.2	Loosening and tightening nut/bolt securing drive shaft	256
9.3	Removing and installing drive shaft	257
9.4	Dismantling and assembling drive shaft	259
9.5	Checking outer constant velocity joint	263
9.6	Checking inner constant velocity joint	264
43	Self-levelling suspension	267
1	Safety information	267
2	Electronic damping control	268
2.1	Assembly overview - electronic damping control	268
2.2	Removing and installing electronically controlled damping control unit J250	270
2.3	Removing and installing front body acceleration sender G341 / G342	270
2.4	Removing and installing rear body acceleration sender G343	271
2.5	Basic setting of electronic damper control	271
3	Vehicle level senders	273
3.1	Assembly overview - front vehicle level senders	273
3.2	Assembly overview - rear vehicle level senders	274
3.3	Removing and installing front vehicle level sender G78 / G289	276
3.4	Removing and installing rear vehicle level sender G76	277
44	Wheels, tyres, vehicle geometry	278
1	Safety information	278
2	Wheels, tyres	279
3	Wheel alignment	280
3.1	Notes on wheel alignment	280
3.2	Test requirements	281
3.3	Preparations	281
3.4	When does wheel alignment have to be checked?	283
3.5	Wheel alignment procedure	284
3.6	Explanatory notes on production control numbers (PR numbers)	285
3.7	Wheel runout compensation	285
3.8	Checking maximum steering angle	285
3.9	Checking unladen position for wheel alignment - vehicles with coil springs	286
3.10	Wheel alignment specifications	287
3.11	Adjusting camber at front wheels	288
3.12	Adjusting camber at rear wheels	289
3.13	Adjusting toe setting at rear wheels	291
3.14	Adjusting toe setting at front wheels	292
3.15	Basic setting for steering angle sender G85	293
4	Adaptive cruise control	294
5	Front camera for driver assist systems	295
48	Steering	296
1	Safety information	296
2	Steering wheel	297
2.1	Assembly overview - steering wheel	297
2.2	Removing and installing steering wheel	299
3	Steering column	300
3.1	Assembly overview - steering column	300
3.2	Handling and transporting steering column	301



3.3	Checking steering column for damage	303
3.4	Removing and installing steering column	303
3.5	Removing and installing control unit for electronic steering column lock J764	306
4	Steering rack	307
4.1	Assembly overview - steering rack	307
4.2	Handling and transporting steering rack	311
4.3	Removing and installing steering rack	312
4.4	Removing and installing boot	313
4.5	Removing and installing track rod	316
4.6	Removing and installing track rod ball joint	317