

## Contents

<b>00 -</b>	<b>.....</b>	<b>1</b>
<b>1</b>	<b>Technical data</b> .....	<b>1</b>
1.1	Technical data .....	1
1.2	Running Gear .....	1
1.3	Steering .....	1
<b>2</b>	<b>Environmentally-friendly disposal of fluid-filled components</b> .....	<b>2</b>
2.1	Environmentally-friendly disposal of fluid-filled components .....	2
2.2	Releasing gas from front gas-filled shock absorber .....	2
2.3	Releasing gas in rear gas-filled shock absorber .....	4
2.4	Emptying steering damper .....	5
2.5	Draining power-assisted steering box .....	5
<b>3</b>	<b>Checking shock absorbers</b> .....	<b>6</b>
3.1	Checking shock absorbers .....	6
3.2	Leaks in shock absorbers .....	6
3.3	Noise from shock absorbers .....	7
3.4	Checking shock absorbers, removed .....	8
3.5	Checking shock absorbers on shock tester .....	8
<b>4</b>	<b>Fastening subframe to body</b> .....	<b>9</b>
4.1	Fastening subframe to body .....	9
4.2	Repairing damaged threads .....	9
<b>5</b>	<b>General information</b> .....	<b>10</b>
5.1	General information .....	10
<b>40 -</b>	<b>Front suspension</b> .....	<b>11</b>
<b>1</b>	<b>Contact corrosion</b> .....	<b>11</b>
1.1	Contact corrosion .....	11
<b>2</b>	<b>Layout of front axle components</b> .....	<b>11</b>
2.1	Layout of front axle components .....	11
2.2	Removing and installing retainer mount with crossmember .....	26
<b>3</b>	<b>Removing and installing suspension strut</b> .....	<b>27</b>
3.1	Removing and installing suspension strut .....	27
3.2	Servicing suspension strut .....	29
<b>4</b>	<b>Removing and installing steel wheel bearing housing</b> .....	<b>35</b>
4.1	Removing and installing steel wheel bearing housing .....	35
4.2	Servicing wheel bearing housing with pressed-in wheel bearing .....	39
<b>5</b>	<b>Removing and installing aluminium wheel bearing housing</b> .....	<b>42</b>
5.1	Removing and installing aluminium wheel bearing housing .....	42
5.2	Servicing wheel bearing housing with bolted wheel bearing .....	47
<b>6</b>	<b>Lightweight wheel hub</b> .....	<b>54</b>
6.1	Lightweight wheel hub .....	54
6.2	Distinguishing features .....	54
6.3	Removing/Installing .....	54
<b>7</b>	<b>Removing and installing mounting bracket</b> .....	<b>55</b>
7.1	Removing and installing mounting bracket .....	55
7.2	Removing and installing upper link .....	57
7.3	Replacing bushes for front upper link .....	60
7.4	Replacing bushes for rear upper link .....	61
<b>8</b>	<b>Removing and installing subframe</b> .....	<b>62</b>
8.1	Removing and installing subframe .....	62
8.2	Replacing subframe bushes .....	64
<b>9</b>	<b>Removing and installing track control link</b> .....	<b>67</b>



9.1	Removing and installing track control link . . . . .	67
9.2	Removing and installing headlight range control . . . . .	69
9.3	Replacing bush for track control link . . . . .	71
<b>10</b>	<b>Removing and installing track control link (aluminium wheel bearing housing) . . . . .</b>	<b>73</b>
10.1	Removing and installing track control link (aluminium wheel bearing housing) . . . . .	73
<b>11</b>	<b>Removing and installing guide link . . . . .</b>	<b>75</b>
11.1	Removing and installing guide link . . . . .	75
11.2	Replacing hydraulic bush for guide link . . . . .	77
<b>12</b>	<b>Removing and installing track control link (aluminium wheel bearing housing) . . . . .</b>	<b>78</b>
12.1	Removing and installing track control link (aluminium wheel bearing housing) . . . . .	78
<b>13</b>	<b>Removing and installing anti-roll bar . . . . .</b>	<b>80</b>
13.1	Removing and installing anti-roll bar . . . . .	80
13.2	As from model year 99, the connecting link with ball joint has been replaced by the connecting link with rubber bush . . . . .	81
<b>14</b>	<b>Removing and installing drive shaft . . . . .</b>	<b>82</b>
14.1	Removing and installing drive shaft . . . . .	82
14.2	Servicing drive shafts with triple roller joint AAR 2900 . . . . .	84
14.3	Servicing drive shaft with triple roller joint . . . . .	85
14.4	Dismantling and assembling triple roller joint . . . . .	92
<b>42 - Rear suspension . . . . .</b>		<b>97</b>
<b>1</b>	<b>Contact corrosion . . . . .</b>	<b>97</b>
1.1	Contact corrosion . . . . .	97
<b>2</b>	<b>Layout of rear axle components . . . . .</b>	<b>97</b>
2.1	Layout of rear axle components . . . . .	97
2.2	General information . . . . .	97
2.3	Component overview . . . . .	98
2.4	Removing and installing headlight range control . . . . .	114
<b>3</b>	<b>Removing and installing coil spring . . . . .</b>	<b>116</b>
3.1	Removing and installing coil spring . . . . .	116
<b>4</b>	<b>Removing and installing shock absorbers . . . . .</b>	<b>117</b>
4.1	Removing and installing shock absorbers . . . . .	117
4.2	Servicing shock absorbers . . . . .	120
<b>5</b>	<b>Removing and installing wheel bearing housing . . . . .</b>	<b>121</b>
5.1	Removing and installing wheel bearing housing . . . . .	121
5.2	Servicing wheel bearing housing with pressed-in wheel bearing . . . . .	126
5.3	Servicing wheel bearing housing with bolted wheel bearing . . . . .	131
<b>6</b>	<b>Lightweight wheel hub . . . . .</b>	<b>137</b>
6.1	Lightweight wheel hub . . . . .	137
6.2	Distinguishing features . . . . .	137
6.3	Removing/installing . . . . .	138
<b>7</b>	<b>Removing and installing transverse link . . . . .</b>	<b>138</b>
7.1	Removing and installing transverse link . . . . .	138
7.2	Replacing bushes for transverse links . . . . .	141
<b>8</b>	<b>Removing and installing trapezium link . . . . .</b>	<b>142</b>
8.1	Removing and installing trapezium link . . . . .	142
8.2	Replacing bush for trapezium link . . . . .	146
<b>9</b>	<b>Removing and installing subframe . . . . .</b>	<b>148</b>
9.1	Removing and installing subframe . . . . .	148
9.2	Replacing subframe bushes . . . . .	155
<b>10</b>	<b>Removing and installing track rod . . . . .</b>	<b>156</b>
10.1	Removing and installing track rod . . . . .	156
<b>11</b>	<b>Removing and installing anti-roll bar . . . . .</b>	<b>157</b>
11.1	Removing and installing anti-roll bar . . . . .	157

11.2	Replacing bush for anti-roll bar . . . . .	160
<b>12</b>	<b>Removing and installing drive shaft . . . . .</b>	<b>160</b>
12.1	Removing and installing drive shaft . . . . .	160
12.2	Servicing drive shaft . . . . .	165
<b>43</b>	<b>Self levelling suspension . . . . .</b>	<b>172</b>
<b>1</b>	<b>Contact corrosion . . . . .</b>	<b>172</b>
1.1	Contact corrosion . . . . .	172
<b>2</b>	<b>Servicing self-levelling suspension - (V6-petrol engine) . . . . .</b>	<b>173</b>
2.1	Servicing self-levelling suspension - (V6-petrol engine) . . . . .	173
<b>3</b>	<b>Checking self-levelling suspension . . . . .</b>	<b>191</b>
3.1	Checking self-levelling suspension . . . . .	191
3.2	Checking delivery rate of plunger pump, 6-cyl. petrol engines . . . . .	191
3.3	Checking delivery rate of plunger pump, 8-cyl. petrol and 6-cyl. TDI engines . . . . .	193
3.4	Checking function of control valve . . . . .	194
3.5	Checking control valve and spring cylinder for leaks . . . . .	194
3.6	Checking pressure accumulator . . . . .	195
<b>4</b>	<b>Adjusting self-levelling suspension . . . . .</b>	<b>195</b>
4.1	Adjusting self-levelling suspension . . . . .	195
<b>44</b>	<b>Wheels, Tyres, Wheel alignment . . . . .</b>	<b>197</b>
<b>1</b>	<b>Contact corrosion . . . . .</b>	<b>197</b>
1.1	Contact corrosion . . . . .	197
<b>2</b>	<b>Wheels and tyres . . . . .</b>	<b>197</b>
2.1	Wheels and tyres . . . . .	197
2.2	Balancing wheels on the vehicle . . . . .	200
2.3	Instructions for changing/fitting wheels . . . . .	200
<b>3</b>	<b>Tyre pressure control system . . . . .</b>	<b>202</b>
3.1	Tyre pressure control system . . . . .	202
3.2	Component overview of tyre pressure control system . . . . .	202
3.3	Servicing tyre pressure control system . . . . .	203
3.4	Assembly overview - wheels/tyres . . . . .	204
3.5	Switching system on and off . . . . .	210
3.6	Function . . . . .	211
<b>4</b>	<b>Wheel alignment . . . . .</b>	<b>212</b>
4.1	Wheel alignment . . . . .	212
4.2	General information . . . . .	212
4.3	Specified values for wheel alignment . . . . .	212
4.4	Test requirements: . . . . .	215
4.5	Special tools and workshop equipment required . . . . .	217
4.6	Measuring procedure . . . . .	218
4.7	Adapter allocation . . . . .	218
4.8	Toe constant "S" . . . . .	219
4.9	Bringing vehicle into starting position for alignment check . . . . .	219
4.10	Crash-damaged vehicles . . . . .	220
4.11	Setting rear axle camber . . . . .	221
4.12	Adjusting rear axle toe . . . . .	222
4.13	Centring front axle camber . . . . .	222
4.14	Setting toe constant "S" . . . . .	225
4.15	Adjusting toe at front axle . . . . .	226
<b>48</b>	<b>Steering . . . . .</b>	<b>227</b>
<b>1</b>	<b>Contact corrosion . . . . .</b>	<b>227</b>
1.1	Contact corrosion . . . . .	227
<b>2</b>	<b>Airbag . . . . .</b>	<b>227</b>



2.1	Airbag	227
2.2	Safety precautions when working on airbag	227
2.3	Necessary measures after servicing	227
2.4	Removing and installing driver's airbag unit on standard steering wheel	228
2.5	Removing driver's airbag unit on sport steering wheel	228
<b>3</b>	<b>Airbag steering wheel</b>	<b>228</b>
3.1	Airbag steering wheel	228
3.2	Assembly overview: Airbag steering wheel	229
3.3	Removing and installing steering wheel and steering column switch	230
<b>4</b>	<b>Assembly overview: Steering column</b>	<b>233</b>
4.1	Assembly overview: Steering column	233
4.2	Checking steering column for damage	238
4.3	Removing and installing steering column	238
4.4	Removing and installing ignition lock housing	245
<b>5</b>	<b>Electrically adjustable steering column</b>	<b>246</b>
5.1	Electrically adjustable steering column	246
5.2	Description of function:	246
5.3	Steering column and belt height adjustment control unit -J352	247
5.4	Electrical adjustment	247
<b>6</b>	<b>Assembly overview: Power assisted steering box, LHD vehicles</b>	<b>249</b>
6.1	Assembly overview: Power assisted steering box, LHD vehicles	249
6.2	Removing and installing power-assisted steering box for LHD vehicles with petrol engine	255
6.3	Overview of heat shields for V6 TDI engine	261
6.4	Removing and installing power-assisted steering box for LHD vehicles with V6 TDI engine	264
6.5	Removing and installing power-assisted steering box for LHD vehicles with V8 TDI engine	271
6.6	Power-assisted steering box for LHD vehicles with 12-cyl. petrol engine, removing and installing	284
6.7	Servicing power-assisted steering	293
<b>7</b>	<b>Assembly overview: Power-assisted steering box, RHD vehicles</b>	<b>297</b>
7.1	Assembly overview: Power-assisted steering box, RHD vehicles	297
7.2	Removing and installing power-assisted steering box, RHD vehicles	302
7.3	Servicing power-assisted steering, RHD vehicles	308
<b>8</b>	<b>Adjusting power-assisted steering box</b>	<b>308</b>
8.1	Adjusting power-assisted steering box	308
<b>9</b>	<b>Removing and installing track rod end</b>	<b>309</b>
9.1	Removing and installing track rod end	309
<b>10</b>	<b>Removing and installing track rod</b>	<b>310</b>
10.1	Removing and installing track rod	310
<b>11</b>	<b>Assembly overview: Servotronic</b>	<b>312</b>
11.1	Assembly overview: Servotronic	312
11.2	Servicing Servotronic	314
11.3	Checking voltage supply for Servotronic	315
11.4	Checking Servotronic valve	315
11.5	Checking speed signal	316
<b>12</b>	<b>Checking fluid level, bleeding steering system and checking for leaks</b>	<b>316</b>
12.1	Checking fluid level, bleeding steering system and checking for leaks	316
12.2	Checking fluid level of power-assisted steering	316
12.3	Steering system, bleeding after conversion	317
12.4	Checking steering system for leaks	318
<b>13</b>	<b>Assembly overview: Power steering/fluid circuit for 6-cylinder, 2-valve petrol engine</b>	<b>318</b>
13.1	Assembly overview: Power steering/fluid circuit for 6-cylinder, 2-valve petrol engine	318
13.2	Checking supply pressure of vane pump	324
13.3	Assembly overview of vane pump	326

13.4	Removing and installing vane pump . . . . .	329
<b>14</b>	<b>Assembly overview: Power steering/fluid circuit for 6-cylinder, 5-valve petrol engine . . . . .</b>	<b>331</b>
14.1	Assembly overview: Power steering/fluid circuit for 6-cylinder, 5-valve petrol engine . . . . .	331
14.2	Checking vane pump supply pressure . . . . .	338
14.3	Assembly overview of vane pump . . . . .	340
14.4	Removing and installing vane pump . . . . .	344
<b>15</b>	<b>Assembly overview: Power steering/oil circuit for 6-cylinder TDI engine . . . . .</b>	<b>348</b>
15.1	Assembly overview: Power steering/oil circuit for 6-cylinder TDI engine . . . . .	348
15.2	Checking supply pressure of vane pump . . . . .	356
15.3	Assembly overview of vane pump . . . . .	358
15.4	Removing and installing vane pump . . . . .	361
<b>16</b>	<b>Assembly overview: Power steering/fluid circuit for 8-cylinder petrol engine . . . . .</b>	<b>368</b>
16.1	Assembly overview: Power steering/fluid circuit for 8-cylinder petrol engine . . . . .	368
16.2	Checking supply pressure of vane pump . . . . .	373
16.3	Assembly overview of vane pump . . . . .	375
16.4	Removing and installing vane pump . . . . .	378
<b>17</b>	<b>Assembly overview: Power steering/fluid circuit for 8-cylinder petrol engine . . . . .</b>	<b>381</b>
17.1	Assembly overview: Power steering/fluid circuit for 8-cylinder petrol engine . . . . .	381
17.2	Checking supply pressure of vane pump . . . . .	386
17.3	Assembly overview of vane pump . . . . .	389
17.4	Removing and installing vane pump for power assisted steering and hydraulic cooler . . . . .	392
<b>18</b>	<b>Assembly overview: Power steering/fluid circuit for 12-cylinder petrol engine . . . . .</b>	<b>397</b>
18.1	Assembly overview: Power steering/fluid circuit for 12-cylinder petrol engine . . . . .	397
18.2	Checking supply pressure of vane pump . . . . .	402
18.3	Assembly overview of vane pump . . . . .	404
18.4	Removing and installing vane pump for power assisted steering and hydraulic cooler . . . . .	406