

Contents

00 - Technical data	1
1 Technical data	1
1.1 Technical data	1
1.2 Brakes	1
2 Brake test	2
2.1 Brake test	2
2.2 General information	2
2.3 Vehicles with front-wheel drive	2
2.4 Vehicles with four-wheel drive	2
3 Brake fluid	3
3.1 Brake fluid	3
3.2 General information	3
45 - Anti-locking brake system	5
1 General information on the anti-lock brake system	5
1.1 General information on the anti-lock brake system	5
1.2 Notes for repair work on the ABS	5
2 Component overview ABS/ESP Bosch 5.3	6
2.1 Component overview ABS/ESP Bosch 5.3	6
3 Assembly overview: Hydraulic control unit	13
3.1 Assembly overview: Hydraulic control unit	13
3.2 Removing and installing control unit and hydraulic unit	15
4 Bosch ABS system 5.3 with electronic stability program (ESP)	17
4.1 Bosch ABS system 5.3 with electronic stability program (ESP)	17
4.2 Servicing ESP hydraulic unit	18
4.3 Brake pipe connections: Hydraulic control unit with ESP hydraulic pump	20
4.4 Removing and installing ESP (electronic stability program) hydraulic pump	22
5 Removing and installing components of ABS/ESP system	25
5.1 Removing and installing components of ABS/ESP system	25
5.2 Removing and installing brake light switch (rectangular housing)	25
5.3 Removing and installing brake light switch (round housing)	26
5.4 Removing and installing steering angle sensor -G85	26
5.5 Removing and installing ESP control unit -J104	29
5.6 Removing and installing lateral acceleration sender -G200 and yaw rate sender -G202 for Bosch type 5.3 system in 2.1 ltr. quattro, model year 98	30
5.7 Removing and installing lateral acceleration sender -G200 and yaw rate sender -G202 for Bosch type 5.3 system	31
5.8 Removing and installing lateral acceleration sender -G200 and yaw rate sender -G202 for Bosch type 5.7 system	33
5.9 Handbrake switch	34
6 Component overview ABS/ESP, Bosch type 5.7 system	34
6.1 Component overview ABS/ESP, Bosch type 5.7 system	34
7 Anti-lock brake system (ABS), Bosch type 5.7 system	39
7.1 Anti-lock brake system (ABS), Bosch type 5.7 system	39
7.2 Hydraulic unit and brake pipes	41
7.3 Removing and installing hydraulic control unit	43
8 Removing and installing components of ABS system on front axle	47
8.1 Removing and installing components of ABS system on front axle	47
8.2 Removing and installing speed sensor	48
8.3 Checking rotor	49
9 Removing and installing components of ABS system on rear axle, front-wheel drive models	50



9.1	Removing and installing components of ABS system on rear axle, front-wheel drive models	50
9.2	Removing and installing speed sensor	52
9.3	Checking rotor	54
9.4	Removing and installing rotor (FWD)	54
10	Removing and installing components of ABS system on rear axle, 4WD models	56
10.1	Removing and installing components of ABS system on rear axle, 4WD models	56
10.2	Removing and installing speed sensor	57
10.3	Checking rotor	58
46 - Brakes, Brake mechanics		59
1	Front brakes FN3	59
1.1	Front brakes FN3	59
1.2	Servicing front brakes	59
1.3	Removing and installing brake pads	65
2	Front brakes FNR-G60	67
2.1	Front brakes FNR-G60	67
2.2	Servicing front brakes	67
2.3	Removing and installing brake pads	73
3	Front brakes HP-2 brake caliper/aluminium	77
3.1	Front brakes HP-2 brake caliper/aluminium	77
3.2	Servicing front brakes	78
3.3	Removing and installing brake pads	80
4	Front brakes, Brembo 18"	84
4.1	Front brakes, Brembo 18"	84
4.2	Servicing front brakes	84
4.3	Installing damper bracket	90
4.4	Removing and installing brake pads	90
5	Rear brakes C38	93
5.1	Rear brakes C38	93
5.2	Servicing brake caliper	93
5.3	Removing and installing brake pads	96
6	Rear brakes C43	99
6.1	Rear brakes C43	99
6.2	Servicing brake caliper	99
6.3	Removing and installing brake pads	103
7	Removing and installing handbrake cables	107
7.1	Removing and installing handbrake cables	107
7.2	Vehicles with front-wheel drive	107
7.3	Vehicles with four-wheel drive	110
8	Removing and installing handbrake lever	114
8.1	Removing and installing handbrake lever	114
8.2	Adjusting handbrake	114
9	Assembly overview: Brake pedal	117
9.1	Assembly overview: Brake pedal	117
9.2	Removing and installing brake pedal	120
9.3	Adjusting brake light switch (F)	122
9.4	Adjusting vent valve for cruise control system	124
47 - Brakes, Brake hydraulics		125
1	Pressurised leak test	125
1.1	Pressurised leak test	125
2	Brake caliper FN3	126
2.1	Brake caliper FN3	126
2.2	Servicing brake caliper	126

2.3	Removing and installing piston for front brake caliper	128
3	Brake caliper FNR-G60	131
3.1	Brake caliper FNR-G60	131
3.2	Servicing brake caliper	131
3.3	Removing and installing piston for front brake caliper	134
4	HP-2 brake caliper/ aluminium	137
4.1	HP-2 brake caliper/ aluminium	137
4.2	Servicing brake caliper	137
4.3	Removing and installing piston for front brake caliper	140
5	Brake caliper, Brembo 18"	143
5.1	Brake caliper, Brembo 18"	143
5.2	Servicing brake caliper	143
5.3	Removing and installing piston for front brake caliper	146
6	Servicing rear brake calipers	149
6.1	Servicing rear brake calipers	149
6.2	Servicing brake caliper	149
6.3	Removing and installing rear brake caliper piston	153
7	Bleeding brake system	156
7.1	Bleeding brake system	156
7.2	General information	156
7.3	Bleeding sequence for vehicles with Electronic Stability Program (ESP 5.3)	156
7.4	Bleeding sequence for vehicles with Electronic Stability Program (ESP 5.7)	159
7.5	Changing brake fluid	160
8	Assembly overview: Servo unit/brake master cylinder	161
8.1	Assembly overview: Servo unit/brake master cylinder	161
9	Removing and installing brake master cylinder	165
9.1	Removing and installing brake master cylinder	165
10	Removing and installing brake servo	166
10.1	Removing and installing brake servo	166
11	Vacuum pump (diesel engine)	169
11.1	Vacuum pump (diesel engine)	169
11.2	Removing and installing vacuum pump	169
12	Electric vacuum pump	170
12.1	Electric vacuum pump	170
12.2	Assembly overview	170
12.3	Removing and installing electric vacuum pump	171
12.4	Removing and installing vacuum sensor	172
12.5	Removing and installing relay -J569	172
13	Electric vacuum pump	173
13.1	Electric vacuum pump	173
13.2	Description and function	173
13.3	Connecting vehicle diagnostic, testing and information system VAS 5051 or fault reader V.A.G 1551	173
13.4	Selecting functions	174
13.5	Basic setting (perform short trip)	175
13.6	Performing final control diagnosis	176
13.7	Reading measured value block	176
13.8	Fault table	177
14	Brake lines and brake pipes	177
14.1	Brake lines and brake pipes	177
14.2	Line routing	177
14.3	Tightening torques	178