

Contents

00 - Technical data	1
1 General notes	1
1.1 Notes for repair work on the ABS	1
2 Safety precautions	2
2.1 Safety precautions when working on high-voltage vehicles	2
2.2 Safety precautions when working on vehicles with start/stop system	3
2.3 Safety precautions when using testers and measuring instruments during a road test	4
3 Repair instructions	5
3.1 Rules for cleanliness	5
3.2 General repair instructions	5
3.3 Contact corrosion	5
3.4 Brake fluid	6
4 Technical data	7
4.1 Technical data for brakes	7
5 Brake test	9
5.1 General notes	9
5.2 Testing vehicles with front-wheel drive	9
5.3 Testing vehicles with four-wheel drive	9
5.4 Testing parking brake	10
45 - Anti-lock brake system	11
1 General notes	11
1.1 Notes for repair work on the ABS	11
2 Overview of fitting locations	12
2.1 Overview of fitting locations - ABS/ESP	12
3 Control unit and hydraulic unit	16
3.1 Exploded view - control unit and hydraulic unit	16
3.2 Removing and installing ABS control unit J104 with ABS hydraulic unit N55	18
4 Sensors	25
4.1 Exploded view - front wheel speed sensor	25
4.2 Exploded view - rear wheel speed sensor	25
4.3 Removing and installing brake light switch	26
4.4 Removing and installing ESP sensor unit G419	29
4.5 Removing and installing front wheel speed sensor G45/G47	31
4.6 Removing and installing rear wheel speed sensor G44/G46	32
5 Auto Hold	34
5.1 Description of Auto Hold function	34
46 - Brakes - mechanism	36
1 Front brakes	36
1.1 Exploded view - front brakes	36
1.2 Removing and installing brake pads	50
1.3 Removing and installing brake caliper	79
1.4 Removing and installing brake disc	88
1.5 Renew brake disc	93
1.6 Removing and installing splash plate	99
1.7 Renewing brake caliper	100
1.8 Removing and installing pad wear indicator wire	112
2 Rear brakes	114
2.1 Exploded view - rear brakes	114
2.2 Removing and installing brake pads	118

2.3	Removing and installing brake caliper	123
2.4	Removing and installing brake disc	127
2.5	Renew brake disc	129
2.6	Removing and installing splash plate	132
2.7	Removing and installing splash plate - front-wheel drive vehicles	133
2.8	Renewing brake caliper	134
3	Parking brake	139
3.1	Overview of fitting locations - parking brake	139
3.2	Removing and installing control unit for electromechanical parking brake J540	141
3.3	Removing and installing parking brake motor V282/V283	143
3.4	Releasing parking brake manually	147
4	Releasing parking brake manually	149
5	Brake pedal	151
5.1	Exploded view - brake pedal	151
5.2	Removing and installing mounting bracket	154
5.3	Removing and installing brake pedal position sender G100	164
5.4	Separating brake pedal from brake servo	165
5.5	Connecting brake pedal to brake servo	167
5.6	Removing and installing brake pedal	168
5.7	Removing and installing mounting for brake servo push rod	173
47 - Brakes - hydraulics		175
1	Front brake caliper	175
1.1	Exploded view - front brake caliper (1LA/1LJ/1ZB/1ZT)	175
1.2	Removing and installing brake caliper piston	177
1.3	Renewing protective caps and guide pins	182
2	Rear brake caliper	184
2.1	Exploded view - rear brake caliper	184
2.2	Removing and installing brake caliper piston	185
2.3	Renewing protective caps and guide pins	189
3	Brake servo / brake master cylinder	191
3.1	Exploded view - brake servo / brake master cylinder	191
3.2	Removing and installing brake servo	194
3.3	Removing and installing brake master cylinder	199
3.4	Removing and installing brake fluid reservoir	203
4	Vacuum system	208
4.1	Exploded view - electric vacuum pump	208
4.2	Exploded view - vacuum pump, vehicles with 2.0 ltr. engine	209
4.3	Exploded view - vacuum pump, vehicles with 6-cylinder engine	211
4.4	Checking non-return valve	212
4.5	Removing and installing brake servo pressure sensor	212
4.6	Checking vacuum system	213
4.7	Removing and installing electric vacuum pump	218
4.8	Removing and installing vacuum pump	219
5	Brake lines	228
5.1	Connection points	228
5.2	Routing of brake lines	229
6	Hydraulic system	231
6.1	General notes on brake fluid	231
6.2	Pre-bleeding hydraulic system	232
6.3	Bleeding hydraulic system	232
6.4	Leak test	239