



Contents

00 - Technical data	1
1 Technical data, running gear	1
1.1 Technical data, running gear	1
1.2 Wheels, tyres	1
40 - Rear suspension	2
1 Connecting VAS 5051 and selecting	2
1.1 Connecting VAS 5051 and selecting	2
2 Servicing front suspension, Lupo 3L	4
2.1 Servicing front suspension, Lupo 3L	4
2.2 I - Assembly overview, sub-frame, anti-roll bar and wishbone	5
2.3 Checking swivel joint	9
2.4 Removing and installing wishbone with swivel joint	10
2.5 Replacing wishbone bonded rubber mounting	14
2.6 Removing and installing subframe	16
2.7 II - Servicing wheel bearing	19
2.8 Pressing front wheel hub with wheel bearing out and in	23
2.9 III - Servicing front suspension strut	27
3 Servicing front suspension, Lupo FSI	31
3.1 Servicing front suspension, Lupo FSI	31
3.2 I - Assembly overview, sub-frame, anti-roll bar and wishbone	32
3.3 Checking swivel joint	36
3.4 Removing and installing wishbone with swivel joint	37
3.5 Replacing wishbone bonded rubber mounting	40
3.6 Removing and installing subframe	42
3.7 II - Servicing wheel bearing	45
3.8 Pressing front wheel bearing out and in	48
3.9 III - Servicing front suspension strut	54
4 Servicing front suspension, Lupo GTI	58
4.1 Servicing front suspension, Lupo GTI	58
4.2 I - Assembly overview, sub-frame, anti-roll bar and wishbone	59
4.3 Checking swivel joint	65
4.4 Removing and installing swivel joint	66
4.5 Swivel joint installation position	69
4.6 Removing and installing wishbone	69
4.7 Replacing wishbone bonded rubber bush	71
4.8 Removing and installing subframe	75
4.9 II - Servicing wheel bearing	78
4.10 Pressing front wheel bearing out and in	82
4.11 III - Servicing front suspension strut	88
5 Servicing drive shafts, Lupo 3L	92
5.1 Servicing drive shafts, Lupo 3L	92
5.2 Removing and installing drive shafts	93
5.3 IV - Servicing drive shaft	96
5.4 Checking outer constant velocity joint	103
6 Servicing drive shafts, Lupo FSI	106
6.1 Servicing drive shafts, Lupo FSI	106
6.2 Removing and installing drive shafts	106
6.3 IV - Servicing drive shaft	110
6.4 Checking outer constant velocity joint	119
6.5 Checking inner constant velocity joint	122
7 Servicing drive shafts, Lupo GTI	126
7.1 Servicing drive shafts, Lupo GTI	126



7.2	Removing and installing drive shafts	126
7.3	IV - Servicing drive shaft	130
7.4	Checking outer constant velocity joint	139
7.5	Checking inner constant velocity joint	142
42	- Rear suspension	147
1	Servicing rear axle, Lupo 3L	147
1.1	Servicing rear axle, Lupo 3L	147
1.2	Removing and installing rear axle	147
1.3	Assembly overview, rear axle beam	152
1.4	Removing and installing bonded rubber bush	158
1.5	Removing and installing spring	164
1.6	Removing and installing shock absorbers	165
1.7	Assembly overview for shock absorbers on vehicles with front wheel drive	170
2	Servicing rear axle, Lupo FSI	172
2.1	Servicing rear axle, Lupo FSI	172
2.2	Removing and installing rear axle	172
2.3	Assembly overview, rear axle beam	177
2.4	Removing and installing bonded rubber mounting	183
2.5	Removing and installing spring	189
2.6	Removing and installing shock absorbers	191
2.7	Assembly overview for shock absorbers on vehicles with front wheel drive	196
3	Servicing rear axle, Lupo GTI	198
3.1	Servicing rear axle, Lupo GTI	198
3.2	Removing and installing rear axle	198
3.3	Assembly overview, rear axle beam	203
3.4	Vehicle "level" sender in vehicles with automatic headlight range control	209
3.5	Removing and installing bonded rubber mounting	210
3.6	Removing and installing spring	216
3.7	Removing and installing shock absorbers	218
3.8	Assembly overview for shock absorbers on vehicles with front wheel drive	223
4	Servicing wheel bearings, Lupo 3L	225
4.1	Servicing wheel bearings, Lupo 3L	225
4.2	Servicing wheel bearings	225
4.3	Removing and installing wheel bearing/wheel hub unit, vehicles with brake drums	228
5	Servicing wheel bearings, Lupo FSI, Lupo GTI	231
5.1	Servicing wheel bearings, Lupo FSI, Lupo GTI	231
5.2	Servicing wheel bearings	231
5.3	Removing and installing wheel bearing/wheel hub unit, vehicles with disc brakes	233
44	- Wheels, Tyres, Wheel alignment	236
1	Tightening torques for wheel bolts	236
1.1	Tightening torques for wheel bolts	236
2	Wheels, tyres	236
2.1	Wheels, tyres	236
2.2	Vehicles with wheel breakdown kit	236
2.3	Removing tyre	237
3	Vehicle alignment	238
3.1	Vehicle alignment	238
3.2	Test prerequisites:	239
3.3	Preparations for measurements	239
3.4	Vehicle alignment specifications, Lupo 3L	241
3.5	Vehicle alignment specifications, Lupo FSI	241
3.6	Vehicle alignment specifications, Lupo GTI	242
3.7	Adjusting front wheel camber	242
3.8	Adjusting front wheel toe	244



3.9	Adjusting camber on rear axle	244
3.10	Checking left and right-hand wheel lock	244
48	Steering	246
1	Airbag, steering wheel, steering column	246
1.1	Airbag, steering wheel, steering column	246
1.2	Removing and installing driver's airbag unit, Lupo 3L	246
1.3	Removing and installing steering wheel, Lupo 3L	249
1.4	Removing and installing coil connector with slip ring, Lupo 3L	251
1.5	Removing and installing driver's airbag unit, Lupo FSI, Lupo GTI	252
1.6	Removing and installing steering wheel, Lupo FSI, Lupo GTI	255
1.7	Removing and installing coil connector with slip ring, Lupo FSI, Lupo GTI	257
1.8	Removing and installing steering column	259
1.9	Assembly overview: Steering column, column tube	264
1.10	Dismantling and assembling column tube and steering column	271
2	Servicing mechanical steering box, Lupo 3L	279
2.1	Servicing mechanical steering box, Lupo 3L	279
2.2	Removing and installing mechanical steering box	279
2.3	Assembly overview: mechanical steering box	285
2.4	Removing and installing track rod	290
2.5	Checking play, security and boots on tie rod ends	291
2.6	Checking left-hand track rod length and if necessary adjusting	291
2.7	Allocation of track rod ball joints	293
2.8	Adjusting steering box	294
3	Electro/mechanical power steering, Lupo 3L	295
3.1	Electro/mechanical power steering, Lupo 3L	295
3.2	Removing and installing steering column	295
3.3	Assembly overview: Steering column	306
4	Servicing electro/hydraulic power assisted steering, Lupo FSI	309
4.1	Servicing electro/hydraulic power assisted steering, Lupo FSI	309
4.2	Removing and installing power assisted steering box	309
4.3	Assembly overview, power assisted steering box	316
4.4	Removing and installing track rod	321
4.5	Checking play, security and boots on track rod ends	322
4.6	Checking left-hand track rod length and adjusting	322
4.7	Allocation of track rod end ball joints	324
4.8	Removing and installing motor/pump unit	325
4.9	Assembly overview: motor/pump unit	328
4.10	Bleeding steering system	330
4.11	Checking steering system for leaks	331
4.12	Checking power assisted steering oil level	332
5	Servicing power assisted steering, Lupo GTI	335
5.1	Servicing power assisted steering, Lupo GTI	335
5.2	Checking vane pump delivery pressure	335
5.3	Removing and installing power assisted steering box	337
5.4	Assembly overview, power assisted steering box	343
5.5	Assembly overview: Hydraulic pipes, power assisted steering box (right-hand drive vehicles)	347
5.6	Removing and installing track rod	349
5.7	Checking play, security and boots on track rod ends	350
5.8	Checking left-hand track rod end length and adjusting	350
5.9	Allocation of track rod ends	352
6	Assembly overview: vane pump, reservoir and hydraulic pipes, Lupo GTI	353
6.1	Assembly overview: vane pump, reservoir and hydraulic pipes, Lupo GTI	353
6.2	Removing and installing power-assisted steering vane pump	356
6.3	Removing and installing ribbed belt	359



Lupo 1999 >

Running gear, axles, steering Lupo 3 L, Lupo FSI, Lupo GTI - Edition 07.2004

7	Definitions	359
7.1	Definitions	359