



Contents

00 - Technical data	1
1 Safety information	1
1.1 Safety measures when working on vehicles with start/stop system	1
2 Identification	2
2.1 Gearbox identification	2
3 Technical data	3
3.1 Allocation gearbox - engine	3
3.2 Capacities	7
3.3 Calculation of gear ratios	7
4 Overview - power transmission	8
5 Electrical components	10
5.1 Overview of fitting locations - electrical components	10
6 Repair instructions	12
6.1 General repair instructions	12
30 - Clutch	15
1 Clutch mechanism	15
1.1 Overview of fitting locations – clutch mechanism	15
1.2 Assembly overview - pedal cluster	17
1.3 Assembly overview - clutch hydraulics	21
1.4 Assembly overview - clutch release mechanism	27
1.5 Removing and installing bearing bush	28
1.6 Checking function of clutch master cylinder and clutch slave cylinder	29
1.7 Removing and installing clutch position sender G476	30
1.8 Removing and installing return spring	33
1.9 Removing and installing over-centre spring	35
1.10 Removing and installing clutch pedal	39
1.11 Removing and installing mounting bracket	43
1.12 Removing and installing clutch master cylinder	51
1.13 Removing and installing clutch slave cylinder	53
1.14 Removing and installing lines for clutch mechanism	56
1.15 Bleeding clutch mechanism	59
1.16 Repairing clutch release mechanism	61
2 Clutch	62
2.1 Assembly overview - clutch	62
2.2 Removing and installing clutch	64
34 - Controls, housing	79
1 Selector mechanism	79
1.1 Installation position - selector mechanism	79
1.2 Assembly overview - gear knob and cover	81
1.3 Assembly overview - Gear lever and selector housing	84
1.4 Assembly overview - selector mechanism	85
1.5 Removing and installing gear knob	86
1.6 Removing and installing selector mechanism	91
1.7 Repairing selector mechanism	95
1.8 Adjusting selector mechanism	97
1.9 Checking selector mechanism	101
2 Removing and installing gearbox	102
2.1 Removing gearbox	102
2.2 Installing gearbox	162
2.3 Specified torques for gearbox	192



3	Assembly mountings	194
3.1	Assembly overview - assembly mountings	194
4	Transporting gearbox	196
5	Gear oil	197
5.1	Checking gear oil level	197
5.2	Draining and filling gear oil	197
6	Securing to engine and gearbox support	200
7	Dismantling and assembling gearbox	204
7.1	Schematic overview - gearbox	204
7.2	Assembly overview - gearbox	206
7.3	Assembly overview - cover for gearbox housing and 5th/6th gear	207
7.4	Assembly overview - gearbox housing and selector mechanism	209
7.5	Assembly overview - selector unit	211
7.6	Assembly overview - shafts, differential, selector mechanism	212
7.7	Assembly overview - selector forks	213
7.8	Repairing selector unit	216
7.9	Renewing selector shaft seal	217
7.10	Repairing selector forks	218
7.11	Removing cover for gearbox housing and 5th and 6th gears	221
7.12	Dismantling and assembling gearbox	226
7.13	Installing cover for gearbox housing and 5th and 6th gears	241
8	Gearbox housing, clutch housing	249
8.1	Assembly overview - gearbox housing and clutch housing	249
8.2	Assembly overview - gearbox housing cover	251
8.3	Repairing gearbox housing	252
8.4	Repairing clutch housing	257
8.5	Repairing gearbox housing cover	258
35 - Gears, shafts		261
1	Input shaft	261
1.1	Assembly overview - input shaft	261
1.2	Dismantling and assembling input shaft	263
1.3	Adjusting input shaft	268
1.4	Renewing input shaft seal	273
2	Output shaft	275
2.1	Assembly overview - output shaft	275
2.2	Dismantling and assembling output shaft	278
2.3	Adjusting output shaft	288
3	Reverse shaft	293
3.1	Assembly overview - reverse shaft	293
3.2	Dismantling and assembling reverse shaft	296
39 - Final drive - differential		299
1	Oil seals	299
1.1	Overview of fitting locations - seals	299
1.2	Renewing left seal	300
1.3	Renewing right oil seal	302
2	Differential	306
2.1	Assembly overview - differential	306
2.2	Dismantling and assembling differential	308
2.3	Adjusting differential	313
3	Adjustment overview	317