



Contents

00 - Technical data	1
1 Check list for assessing the running gear on accident vehicles	1
2 General notes	3
40 - Front suspension	4
1 Appraisal of accident vehicles	4
2 Repairing front suspension	5
2.1 Overview - front axle	5
2.2 Raising wheel suspension to unladen position	6
3 I - Assembly overview, subframe, anti-roll bar and suspension link	8
3.1 Repairing threads in longitudinal member	10
3.2 Fixing subframe in position	10
3.3 Checking swivel joint	12
3.4 Removing and installing swivel joint	12
3.5 Installation position of swivel joints	15
3.6 Removing and installing suspension link	15
3.7 Removing and installing bracket	17
3.8 Renewing bonded rubber bush for bracket	19
3.9 Removing and installing subframe	21
3.10 Removing and installing anti-roll bar, vehicles with power-assisted steering	24
4 II - Assembly overview - wheel bearing	26
4.1 Removing and installing front wheel hub with wheel bearing, 13" running gear	28
4.2 Removing and installing front wheel hub with wheel bearing, 14" and 15" running gear ..	32
5 III - Assembly overview - suspension strut	38
5.1 Vehicle data sticker	39
5.2 Removing and installing suspension strut	39
5.3 Repairing front coil spring suspension strut	43
6 Repairing drive shafts	46
6.1 Removing and installing drive shafts	46
7 IV - Repairing drive shaft with constant velocity joint	49
7.1 Checking outer constant velocity joint	54
7.2 Checking inner constant velocity joint	55
8 V - Repairing drive shaft with triple roller joint	57
8.1 Dismantling and assembling triple roller joint	60
42 - Rear suspension	64
1 Appraisal of accident vehicles	64
2 Repairing rear axle	65
2.1 Removing and installing rear axle	65
2.2 Assembly overview - rear axle beam, drum brake	68
2.3 Assembly overview - rear axle beam, disc brake	71
2.4 Removing and installing bonded rubber bush	73
2.5 Removing and installing spring	76
2.6 Removing and installing shock absorber	77
2.7 Assembly overview - shock absorber on vehicle with front wheel drive	79
3 Repairing wheel bearing, drum brake	82
3.1 Assembly overview - wheel bearing	82
3.2 Removing and installing wheel bearing/hub unit on vehicles with drum brakes	83
4 Repairing wheel bearing (disc brake)	85
4.1 Assembly overview - wheel bearing	85
4.2 Removing and installing wheel bearing/wheel hub on vehicles with disc brakes	86



44 - Wheels, tyres, vehicle geometry	89
1 Appraisal of accident vehicles	89
2 Specified torques for wheel bolts	90
3 Removing and fitting tyres with run-flat capability to wheel rims	91
3.1 Pressing tyre off wheel rim	91
3.2 Removing tyre from wheel	92
3.3 Fitting tyre to wheel rim	93
4 Tyre Pressure Monitor Display (TPM)	95
5 Wheel alignment	97
5.1 General	97
5.2 Test prerequisites	98
5.3 Test preparations	99
5.4 Vehicle data sticker	99
5.5 Wheel alignment specifications	99
5.6 Transverse vehicle inclination "zero position"	101
5.7 Overview - wheel alignment procedure	101
5.8 Adjusting front axle camber	101
5.9 Check rear axle camber.	103
5.10 Check rear axle toe.	103
5.11 Adjusting front axle toe	103
5.12 Checking left and right wheel lock	103
6 Wheels, tyres	105
6.1 Vehicles with breakdown set	105
6.2 Tyre sealant	105
6.3 Removing a tyre	105
6.4 Fitting a new tyre	106
6.5 Disposal of tyre sealant	106
7 Protecting wheel centring seat against corrosion	107
48 - Steering	108
1 Appraisal of accident vehicles	108
2 Electrical/electronic components and fitting locations	109
3 Steering column	110
3.1 Removing and installing steering column	110
3.2 Checking steering column for damage	114
3.3 Removing and installing steering lock housing	115
3.4 Assembly overview - cross member for steering column	116
3.5 Removing and installing locking cable for ignition with key removal lock	117
3.6 Checking ignition key removal lock	118
3.7 Removing and installing mounting bracket	118
3.8 Removing and installing strut	119
4 Repairing mechanical (manual) steering box	121
4.1 Assembly overview - mechanical (manual) steering box	121
4.2 Removing and installing mechanical (manual) steering box	122
4.3 Dismantling and assembling mechanical (manual) steering box	125
4.4 Removing and installing track rod	127
4.5 Checking play, tightness and bellows of track rod ball joints	128
4.6 Checking and adjusting left track rod length	128
4.7 Allocation of track rod ball joints	129
4.8 Determining centre position of steering rack	129
4.9 Adjusting steering box	129
5 Repairing electrohydraulic power-assisted steering box (TRW)	131
5.1 Assembly overview - power-assisted steering box (TRW)	131



5.2	Removing and installing power-assisted steering box (TRW)	132
5.3	Removing and installing power steering sensor G250 (TRW)	138
5.4	Dismantling and assembling power-assisted steering box (TRW)	141
5.5	Removing and installing track rod (TRW)	143
5.6	Checking play, tightness and bellows of track rod ball joints (TRW)	144
5.7	Checking and adjusting left track rod length (TRW)	144
5.8	Allocation of track rod ball joints (TRW)	145
5.9	Determining centre position of rack (TRW)	145
5.10	Adjusting steering box (TRW)	146
5.11	Checking delivery pressure of motor/pump unit (TRW)	146
5.12	Removing and installing motor/pump unit (TRW)	149
5.13	Assembly overview - motor/pump unit (TRW)	153
5.14	Renewing reservoir of motor/pump unit (TRW)	154
6	Repairing electrohydraulic power-assisted steering box (Koyo)	157
6.1	Assembly overview - power-assisted steering box (Koyo)	157
6.2	Removing and installing power-assisted steering box (Koyo)	158
6.3	Removing and installing power steering sensor G250 (Koyo)	164
6.4	Dismantling and assembling power-assisted steering box (Koyo)	167
6.5	Removing and installing track rod (Koyo)	169
6.6	Checking play, tightness and bellows of track rod ball joints (Koyo)	170
6.7	Checking and adjusting left track rod length (Koyo)	170
6.8	Allocation of track rod ball joints (Koyo)	171
6.9	Determining centre position of rack (Koyo)	171
6.10	Adjusting steering box (Koyo)	171
6.11	Checking delivery pressure of motor/pump unit (Koyo)	172
6.12	Removing and installing motor/pump unit (Koyo)	174
6.13	Assembly overview - motor/pump unit (Koyo)	178
6.14	Renewing reservoir of motor/pump unit (Koyo)	179
7	Bleeding steering system, checking for leaks and checking fluid level	182
7.1	Bleeding steering system	182
7.2	Checking steering system for leaks	182
7.3	Checking hydraulic fluid level of power-assisted steering	183