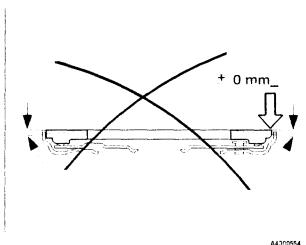
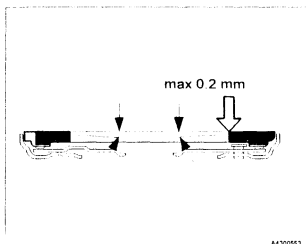


Section 4 Power gearbox

Group 41 Clutch

Pressure plate, maximum distortion (see illustration below)	mm	0.2
Clutch pedal, travel	mm	130



Tightening torques:

Pressure plate, flywheel	Nm/ft.lb.	25/18
Mounting screws, master cylinder	Nm/ft.lb.	25/18
Clutch slave cylinder	Nm/ft.lb.	10/7.5

Group 43 Gearbox

Information applicable to manual gearboxes:

Manual gearbox							
Gear ratios:							
Type	M56L	M56LK	M56H	M58	M59	M58L	M58L
1st gear	3.38:1	3.38:1	3.07:1	3.07:1	3.07:1	3.38:1	3.38:1
2nd gear	1.90:1	1.90:1	1.77:1	1.77:1	1.77:1	1.90:1	1.90:1
3rd gear	1.19:1	1.19:1	1.19:1	1.19:1	1.19:1	1.19:1	1.19:1
4th gear	0.87:1	0.87:1	0.87:1	0.87:1	0.87:1	0.87:1	0.87:1
5th gear	0.70:1	0.70:1	0.70:1	0.70:1	0.70:1	0.70:1	0.70:1
Reverse gear	3.30:1	3.30:1	2.99:1	2.99:1	2.99:1	3.30:1	3.30:1
Final drive	3.77:1	3.57:1	4.00:1	4.00:1	4.00:1	4.00:1	4.25:1
(alternative gear ratios)	4.00:1	4.25:1	4.45:1				
	4.45:1						

Tightening torques, manual gearboxes:	Nm / ft.lb.
Starter motor-gearbox	40/30
Bell housing-cylinder block:	
Petrol engine M 10 x 40 and M 10 x 70	50/40
Diesel engine M 12 x 50	80/60
Diesel engine M 8 x 40	25/20
Bracket, gear selector	25/20
Inductive sensor (ABS sensor)	10/7
Gear selector assembly	25/20
Switch for reversing lamp	25/20
Cable grommet, firewall M6 nut	6/4
Engine mountings	50/40
Plug for draining / checking level	35/26

Information applicable to automatic gearboxes:

Automatic gearbox		
Type of gearbox	AW55-50SN	AW50-42
Gear ratios		
1st gear	4.77:1	3.61:1
2nd gear	3:1	2.06:1
3rd gear	1.96:1	1.37:1
4th gear	1.33:1	0.98:1
5th gear	1.02:1	-
Reverse gear	3.23:1	3.95:1
Final drive (alternative gear ratios)	2.44:1	2.56:1
		2.76:1
		3.10:1
Line pressure:		
Position D, idling speed	MPa 0.4	0.4
Position D, stalling speed	MPa 1.3	1.2
Position R, idling speed	MPa 0.6	0.6
Position R, stalling speed	MPa 1.9	1.8

Engine:	Model year	Final drive	Gearbox Volvo P/N	Control module Volvo P/N
B 5202 S	99-	3.10:1	12 08 891	94 42 483
B 5204 T3	99-	2.56:1	12 08 877	92 06 838
B 5204 T4	99-	2.76:1	12 08 925	92 06 838
B 5234 S	99-	2.76:1	12 08 889	92 06 838
B 5234 T3	99-	2.56:1	12 08 941	92 06 838
B 5234 T6 (AWD)	99-	2.56:1	12 08 943	92 06 838
B 5234 T7	99-	2.56:1	12 08 919	92 06 838
B 5234 T8 (AWD)	99-	2.56:1	12 08 943	92 06 838
B 5252 S	99-	2.76:1	12 08 898	91 44 362
D 5252 T	99-	2.56:1	12 08 825	92 06 838
B 5254 S	99-	2.76:1	12 08 889	92 06 838
B 5254 T	99-	2.56:1	12 08 919	92 06 838
B 5244 T	99-	2.44:1	See VADIS	See VADIS

Components

Current resistance values for gearbox components:

Component / resistance		
Shift solenoids 1 (S1) and 2 (S2)	Ω	10 - 15
Lock-Up solenoid (SL)	Ω	10 - 15
Line pressure solenoid (STH)	Ω	2 - 6
Engine speed (RPM) sensor:	Ω	300 - 600
Note that on gearboxes with control module P/N: 92 06 838 you cannot use an ohmmeter.		
Oil temperature sensor at +150°C	Ω	23 - 31
Oil temperature sensor at 0°C	Ω	1700 - 2300

Tightening torques:			Dimension
Torque converter - engine	Nm	48	M 10
Drive plate - torque converter	Nm	28	M 8
Gearbox - oil filler pipe, bracket	Nm	24	M 8
Gearbox - gearbox cable bracket	Nm	25	M 8
Manual shaft - lever for gear shift cables	Nm	16	M 8
Nipple for coolant pipe	Nm	30	M 14
Oil drain plug	Nm	40	M 18

AWD, bevel gear type: 1155:		
Gear ratio		3.31:1
Oil volume	litres	0.75
Quality, see section 1 Service and maintenance	Volvo P/N	11 61 513-5 (0.75 litre)
Tightening torques, gearbox	Nm (ft. lb.)	50 (37)

Group 45 Propeller shaft

Propeller shaft bolts:	Marking Lock paint	Length mm
Standard screw, front / rear joint	red	50.0
Balancing screw, rear joint	white	52.0
Balancing screw, rear joint	blue	55.0
Balancing screw, rear joint	black	57.5
Balancing screw, rear joint	yellow	60.0
Balancing screw, rear joint	grey	62.5
Balancing screw, rear joint	green	65.0
Balancing screw, rear joint	red	70.0

Tightening torques for screws:	Nm
Propeller shaft - bevel gear: Stage 1, diagonally	8
Stage 2, diagonally	30
Propeller shaft - viscous coupling:	
Stage 1, diagonally	8
Stage 2, diagonally	30
Centre bearing member - bodywork (screw)	25
Centre bearing bracket - member (screw)	25

Group 46 AWD, Rear axle / Drive shaft

Final drive AWD (1165)	
Gear ratio	3.31:1
Axial runout: Ring gear, maximum	mm 0.08
Axial runout: Pinion, maximum	mm 0.05
Backlash: New	mm 0.10 - 0.16
Backlash: Run in	mm 0.10 - 0.18
Torque, pinion bearing:	
New bearings	Nm 2.0 - 4.5
Used bearings	Nm 1.5 - 2.5
Pre-tension on the differential bearing, per side	mm 0.05 - 0.08
Sealing compound, cover - final drive housing	Volvo P/N 11 61 059
Lubricant volume: 1.35 litres. See Section 1: Service and maintenance	Volvo P/N 11 61 329-6 (0.5 litre)
Opening tension for rear final drive housing	mm 0.25 - 0.35
NOTE! Maximum 1 turn on the screw for tool 999 5566.	

Viscous coupling, balancing clamp:		
Runout mm	Clamp Marking	Volvo P/N:
0.045 - 0.061	5	91 81 400
0.062 - 0.079	6	91 81 401
0.080 - 0.097	7	91 81 402
0.098 - 0.115	8	91 81 403
0.116 - 0.132	9	91 81 404
0.133 - 0.150	10	91 81 405
0.151 - 0.168	11	91 81 406
0.169 - 0.213	12	91 81 407

Tightening torques:		
Carrier, pinion. Note check the torsion	Nm	180 - 320
NOTE! Pinion with used pretension socket, maximum	Nm	180 - 200
Bearing cap	angle-tighten	30° + 60°
Ring gear	angle-tighten	35° + 60°
Inspection cover - final drive (screw)	Nm	56
Oil level plug	Nm	34
Drive shaft nut, rear	angle-tighten	140° + 60°
Drive shaft nut, front:		
Step 1	Nm	120
Stage 2	angle-tighten	60°
NOTE! Use Loctite 638 on the splines according to the instructions in the Service Manual		
Drive shaft, right front, bearing cap	Nm	25
Wheel nuts	Nm	110