

4. Power transmission

41. Clutch

Driven plate (clutch disc)

Type	Single dry plate clutch, mechanically operated			
	B18FT, FT(M)	Others	B20F	D19T
Model year	Jan '91-	'86-	'93-	'94-
Friction lining, outside diameter	215 mm	200	207	200
Friction lining, inside diameter	145 mm	137	137	137
Driven plate:				
- thickness, new	7.7 ± 0.3 mm	7.7 ± 0.3	7.7 ± 0.3	7.7 ± 0.3
- thickness, min.	6.4 ± 0.3 mm	6.4 ± 0.3	6.4 ± 0.3	6.4 ± 0.3
Friction lining material (non asbestos)	Ferodo F202	Ferodo F202	Ferodo F808	Ferodo F202

Release bearing

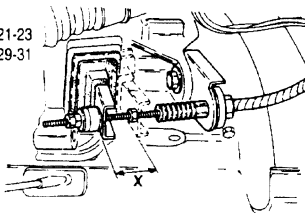
Type Self-centering, rotating

Pressure plate assembly (clutch assembly)

Type	Diaphragm spring			
Pressure plate outside Ø	216 mm	200	207	200
Pressure plate inside Ø	143 mm	127	137.5	132
Max. permissible out-of-balance	250 gr.mm	300	250	350

Clutch pedal adjustment

Stroke, non-extended release fork ('90)	21-23 mm
Stroke, extended release fork ('91-)	29-31 mm



41095

Tightening torques

	Nm
Gear lever pivot, bolt	21
Pressure plate assembly, Ø 200 mm, bolts	22
Pressure plate assembly, Ø 215/207 mm, bolts	20
Clutch housing bolts	50
Bearing housing bolts	45
Flywheel bolts	55
Bolt, clutch cable eye	14
Bolt, flywheel sensor	17

43. Manual gearbox

Gear ratios

Code*	Final drive	Gears					
		1st	2nd	3rd	4th	5th	Reverse
M50-407E	4.067:1	3.091:1	1.842:1	1.321:1	0.967:1	0.794:1	3.55:1
M51-373E	3.733:1	3.091:1	1.842:1	1.321:1	0.967:1	0.758:1	3.55:1
M52-373M	3.733:1	3.727:1	2.053:1	1.321:1	0.967:1	0.794:1	3.55:1
M52-407E/M	4.067:1	3.727:1	2.053:1	1.321:1	0.967:1	0.794:1	3.55:1
M53-407E	4.067:1	3.091:1	1.863:1	1.321:1	1.321:1	0.795:1	3.55:1
M54-373E	3.733:1	3.091:1	1.842:1	1.321:1	0.967:1	0.756:1	3.55:1
M55-407E/M	4.067:1	3.727:1	2.047:1	1.321:1	0.967:1	0.795:1	3.55:1
M55-373E/M	3.733:1	3.727:1	2.047:1	1.321:1	0.967:1	0.795:1	3.55:1
M55-356M	3.563:1	3.727:1	2.047:1	1.321:1	0.967:1	0.795:1	3.55:1
M57-373M	3.733:1	3.727:1	2.047:1	1.321:1	0.967:1	0.756:1	3.55:1
M57-407E	4.067:1	3.727:1	2.047:1	1.321:1	0.967:1	0.756:1	3.55:1
M59-373E	3.733:1	3.733:1	1.864:1	1.321:1	0.967:1	0.756:1	3.55:1
M59-373M	3.733:1	3.091:1	1.864:1	1.321:1	0.971:1	0.756:1	3.55:1
M60-373E	3.733:1	3.642:1	2.048:1	1.321:1	0.967:1	0.756:1	3.55:1
JCS-223	3.294:1	3.727:1	2.047:1	1.321:1	0.971:1	0.756:1	3.55:1

*M = Mechanical speedometer drive

E = Electronic speedometer drive, versions with Electronic Information Centre in instrument panel

Lubrication

Oil capacity (max.) litres

3.4

Lubricating oil, type

Transmission fluid Part No. 3345534-6

Tightening torques

Bolt in 5th gear wheel (primary shaft)

74

Nut in 5th gear wheel (secondary shaft)

135

Remote control rod to gearbox

20

Drain plug

38

Gearbox cover

25

Speedometer sensor

25

Gearbox bracket (front)

50

Sealing plugs

25

Filler plug

22

Reversing switch

22

5th gear thrust collar

24

Remote control rod to gear lever

30

Crown wheel nut

130

Bolts, bearing housing

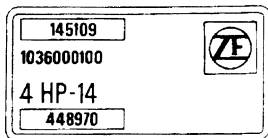
25

Bolts, input shaft guide bush

25

Nm

43. Automatic gearbox (ZF) 4 HP 14 Q



Identification

1036000100 = manufacturer's number (ZF)
 448970 = Volvo part number
 145109 = gearbox serial number

Reduction ratios	B18 FT	B18E,EP,FP	B20F
Final drive	4.225:1	4.405:1	3.979:1
1st gear		2.41:1	
2nd gear		1.37:1	
3rd gear		1.00:1 40% hydraulic 60% mechanical	
4th gear		0.74:1 100% mechanical	
Reverse		2.83:1	

Torque converter

Type	Hydraulic
Maximum torque increase B18FT/FTM	2.19
Maximum torque increase, others	2.24
Diameter	228 mm

Lubricating oil

Type of oil (4 litres)	A.T.F, Part no. 3344208-8
Oil capacity	litres 5.5
Capacity when changing oil	litres 3.3
Difference in oil level between MAX-MIN marks	litres 0.3
change interval*	km 40,000/45,000, dependent upon service programme
* change oil - test drive - change oil	

Kick-down cable settings

Difference between kick-down point and idling speed	mm 39 *1
Check the setting every	km 20,000/30,000 dependent upon service programme

Hydraulic system pressures at idling speed

	MPa (Bar)	Hot
Selector lever: in position D, N, P,	MPa (Bar)	0.8 (8.0)
in position R	MPa (Bar)	1.24 (12.4)

Hydraulic system pressures at stall speed

	MPa (Bar)	Selector lever in position D
B18 FT	MPa (Bar)	1.19 (11.9)
B18 E,EP,FP, B20	MPa (Bar)	1.16 (11.6)

Tightening torques

	Nm
Drain plugs	15
Start inhibitor/reversing switch	40
Bolts, oil filter cover	7
Bolts, oil pan	10
Front mounting pad, gearbox	40
Bolts, gearbox/subframe mounting	40
Union, dipstick tube	60
Threaded sleeve, dipstick tube	90
Bolts, valve body assembly	10
Cross-slotted screw, gear selector cam	10
Cross-slotted screws, pre-tensioning spring	10
Bolts, gearbox cover	10
Bolt, oil cooler	50
Lock nut, brake band adjusting screw	80
Bolts, torque converter	21
Bolts, transmission driving plate on crankshaft	50
Bolts, torque converter guard plate	27
Bolts and nuts, gearbox	50
Bolts, engine speed/ignition sensor	27
Studs, torque converter casing	50
Bolds, torque converter casing	50

43. CVT - Continuously Variable Transmission

Identification

- V Variable transmission
1 Ratio range of pulley set
1 B18U engine
406 Final drive 4.06:1
M Mechanical speedometer drive

V11-406-M

Gear ratios

Final drive	4.059:1
Intermediate ratio	1.423:1
Minimum ratio	2.270:1
Maximum ratio	0.445:1
Reverse	2.497:1

Kick-down cable setting

Check with the operating cam abutting the full throttle stop.
It must be possible to pull out the inner cable a further 1 mm.

Lubrication

Lubricating oil, type	ATF, Part No. 3344959-6 (5 litres)
Oil capacity	5 litres
Oil capacity when changing oil	3.8 litres
Difference between MAX-MIN on dipstick	0.6 litres
Change every	45,000 km

Tightening torques

	Nm
Drain plug	30
Start interlock/reversing switch	12
Bolts, oil pan	10 (tighten in a crosswise sequence)
Bolts, engine/gearbox mounting bracket:	
- bolts, engine (2x)	50
- bolts, gearbox (4x)	25
Bolts, gearbox/subframe mounting bracket	40
Nut, engine and gearbox front mounting pad	40
Retaining bolts and nuts, CVT	50
Fixing screw, oil filter	4
Bolts, vibration damper plate	20
Retaining nut, oil cooler	15
Nut, remote control arm	15
Bolt, oil dipstick tube	25
Bolts, primary and secondary unit covers	10
Lock nut, shift and selector cable	15

45. Half-shafts

CV joint housing, lubrication

Volvo grease (Part No. 1161029-2) must be used when servicing.

Quantity cm³ 80

Tightening torques

	Nm
Nut, half-shaft	230
Gaiter bolts, left-hand half-shaft	25