5. Brakes

51 Brakes

Specifications

Type of brakes:		Single cylinder, floating calliper		
Brake discs:		Front wheel -97	Front wheel 98-	Rear wheel
Manufacturer		Lucas 14"	Lucas 15"	Lucas 14"
Type		Ventilated	Ventilated	Solid
Diameter, disc	mm	256	281	260
Diameter servo cylinder	mm / inches	229/9"		
Thickness:				
-new disc	mm	24.0	24.0	10
- minimum when replacing brake pads	mm	22.1	22.1	8.9
-minimum	mm	21.5	21.5	8.4
Maximum lateral runout, measured on the removed brake disc	mm	0.04	0.04	0.04

Brake pads

Technical data:		Front:	Rear:
Material thickness:			
-new	mm	9.4	9.4
-minimum	mm	2.0	2.0
Total thickness, new	mm	14	-

Warning! When replacing the brake pads always use Volvo Genuine parts.

5. Brakes

Specifications

Tightening torques

Mechanical component:	Nm
Front calliper:	
Brake calliper, sliding pin	35
Mounting screws, brake calliper	100
Terminals, brake pipes	14
Brake hose, brake calliper	15
Bleed nipple	5
Rear calliper:	
Brake calliper, sliding pin	33
Mounting screws, brake calliper	55
Terminals, brake pipes	14
Bleed nipple	5
Brake hose, brake calliper	29

52 Hydraulic brake system

General

Brake fluid:	Quality:
Type of brake fluid:	DOT 4+ Minimum requirement . . . . .
Approximate capacity:	0.45 litre

It is recommended that the brake fluid is replaced every year.

Master cylinder:		-1997	1998-
Make		Bendix	Bendix
Inner diameter, primary / secondary . . .	mm	22.2/22.2	23.8/23.8
Travel, primary / secondary	mm	15/15	15/15

Brake servo:		-1997	1998-
Type		Bendix ISO vac	Bendix ISO vac
Diameter	mm / inches	228, 6/9"	228, 6/9"
Gear ratio		3.9:1	4.2:1

Pressure reduction valve -1997		Brake pressure reduction	Reduction grade
Brake pressure reduction:			
4 door	MPa	2.5	50%
5 door	MPa	3.5	50%

Vacuum pump capacity: Petrol engine with automatic gearbox

Checking electrical vacuum pump:	Use gauge: 999 5230 See the checking method described in VADIS, group of functions: 5 (52).
	Vacuum control valves: 3 check valves
Vacuum measured directly at the pump	Minimum: 80–90 kPa, negative pressure

Control value

Type	Pierburg	Hella
Pump runs ..... kPa	- 45	- 50
Pump stopp ..... kPa	>-45	>-50

Vacuum pump capacity: Diesel engines:

Vacuum measured directly at the pump, idle speed, minimum: 0.9 bar (Piérburg) / 0.8 bar (Magneti Marelli).

Engine speed (RPM): rps (rpm)	2.5 litres cylinder:		3.5 litres cylinder:	
	Time: sec	Press: bar	Time: sec	Press: bar
11.6 (700)	5	0.5	6	0.5
	9	0.7	12	0.7
16.6 (1000)	3.3	0.7	4	0.7
(Pierburg)	9	0.9	13	0.9
(Magneti Marelli)	9	0.8	13	0.8

Tightening torques

Mechanical component:	Nm
Flexible brake hoses, front brake calliper	15
Flexible brake hoses, rear brake calliper	29
Brake pipe connectors	14
Screw, brake pedal, pin ..... - 2000	45
Screw, brake pedal, pin 2001-	25
Master cylinder, nuts	25
Relief valve on the master cylinder or bodywork	25
Nuts, brake servo	25
Screws, pedal housing	25
Screws / nuts, vacuum pump, cylinder head, diesel engine	22
Screws, dust cover on the link arm	55

55 handbrake

Specifications

Adjustment

Full brake effect: After adjustment: 4 - 5 notches.

When checking: 8 notches maximum Always check that the rear wheels run freely after adjustment.

Tightening torques

Mechanical component:		Nm
Screws, mounting for the handbrake cable on the link arm		21
Screws, handbrake lever to bodywork	M8	25
Screws, handbrake lever to bodywork	M6	10
Screw, hand brake switch		3
Screws, cable eyes		25
Screw, brake disc to hub		5

59 ABS brakes (ABS)

General

ABS unit:	
Manufacturer	Bosch
Type -1997	ABS 5.0
Type 1998-	ABS 5.3
Brake fluid	Minimum DOT4+

System:		
Brake fluid capacity for system	litres	0.45
Test of the ABS valve and hydraulic pump, at speed	km/h	6
ABS system functions at speed	km/h	3

Sensor for ABS, wheel:	
Resistance sensor: -front/rear	1600±10% Ω
The sensor signal, is minimal at 2.75 km/h:	120 mV
-with wheels rotating	50 mV or more.
The sensors are checked by the system at	40 km/h/25 mph

ABS pulse wheel:	
Number of teeth	43
Maximum radial runout: -front	0.15 mm
-rear	0.13 mm
Distance between sensor and pulse wheel	0.3 - 0.9 mm

ABS hydraulics:	
Operating range	10-16 V
Resistance, solenoids:	
- inlet valve, TRACS valve	6-8 Ω
- outlet valve	3-5 Ω
Operating range	0.1 - 20 MPa

Tightening torques

Mechanical component:		Nm
Centre screw, electronic control module		17
Torx screws, electronic control module:	-1st stage	3
	-2nd stage turning 90°, stop before 8 Nm is reached, maximum	8
Brake pipe		14
Rear pulse wheel -'97		25
	Allen screw	8
Rear pulse wheel -'98		8
Screws, wheel sensor:	-front	25
	-rear, and dust boot	55
Nuts and screws, ABS hydraulic pump		25
Nut, rear wheel hub		175