

VOLVO

Service Manual

Fault tracing

Repair

Maintenance

Section 1 (17)

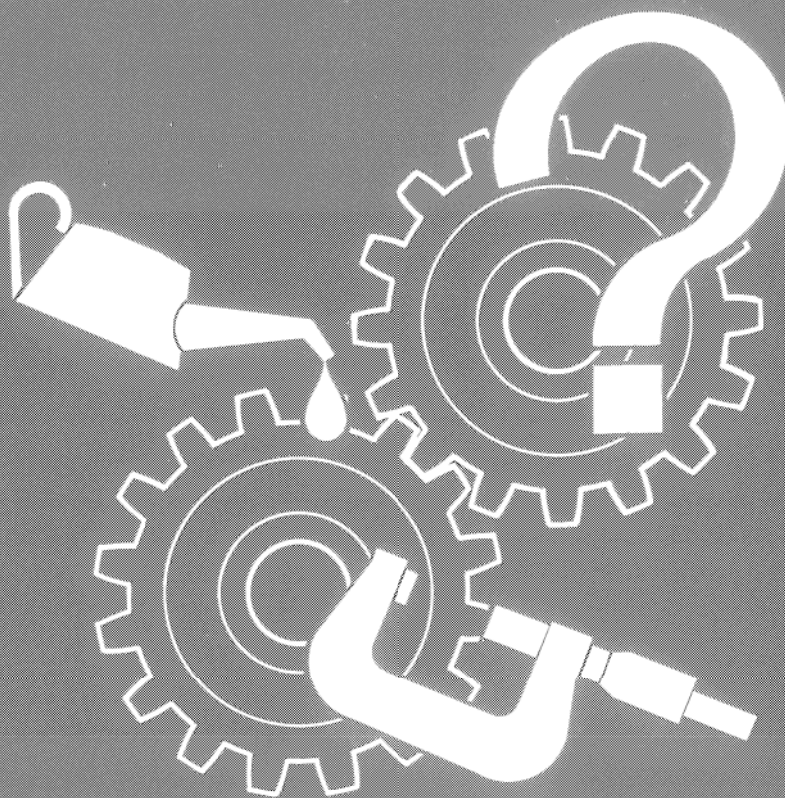
**Volvo
Service programme**

**240, 400,
700/900, 850**

1991–1996

TP 1701033

BOOK 1



Volvo Car Corporation

Contents

Foreword	1
Specifications	2
Pre-delivery service	11
Warranty service	12
Maintenance service 240	13
Maintenance service 400	17
Maintenance service 700/940/960	21
Maintenance service 850	25
Options	29
Test driving	30

Main differences compared to the previous edition.

- EGR valve deleted from B6254/6304 as of model year 1996.

Changes implemented up to and including January 1995

Any changes made to cars after this date are not included in this book.
Refer to the service bulletins.

Volvos are sold in versions adapted for different markets. These adaptations depend on many factors including legal, taxation and market requirements. This manual may therefore show illustrations and text which do not apply to cars in your country.

Volvo owners planning to export their car(s) to another country should investigate the applicable safety and exhaust emission requirements. In some cases it may be impossible to comply with these requirements.

Order no.: TP 1701033

Replaces previous book: TP number 1701032.

We reserve the right to make alterations without prior notification.

© Volvo Car Corporation

Service Bulletin

Fault tracing

Repairs

Maintenance



SECTI	ON	GR
1	17	911)

 OUP
 July 1995

 NO.
 Corrections to Service
 Manual
 900

Page 1 of 4

Corrections to Service Manual

Parts of Service Manual Section 1(17) Volvo Service Program 240, 400, 700/900, 850 1991-1996 TP 1701033 *Book 1* and Service Manual Section 1(17) Volvo Service Program 240, 400, 700/900, 850 1991-1995 TP 1702032 *Book 2*, need alteration.

NOTE! Does not apply to TP 1707032 *Book 1* (1000 km interval). A separate Service Bulletin will be issued at a later date.

Please alter the text and stick the stickers in the Service Manuals as follows. Then discard this Service Bulletin.

	X		X	D16
	X			D17
	X			
	X			~~D14~~ D17
X	X	X	X	D18
X	X	X	X	D19
				D21

(TP 1701033) *Book 1*

Page 24, right column in table.

Cross out "D14" and write in "D17" as illustrated.

(TP 1702032) *Book 2*

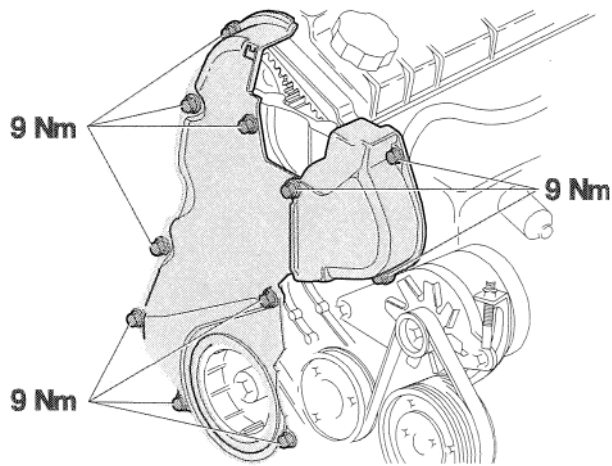
Page 10, next to illustration at the top of the page.

Cross out "U" and write in "D19T" as illustrated.

B 16 F, B18 K/KP/EP/FP/U, B 20 F/~~X~~

D19T

1700036S



1700016A

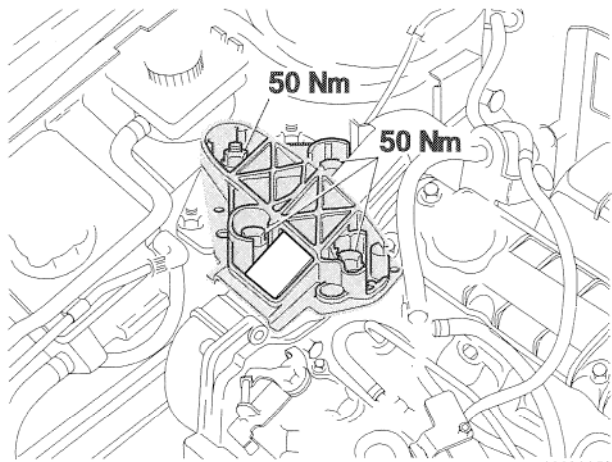
Install timing gear covers.

Install upper timing gear cover and four screws.

Install fuel pump drive wheel cover and three screws.

Tighten all screws.

Tightening torque: **9 Nm (6.7 ft.lbs).**



1700017A

Install engine mounting.

Install mounting.

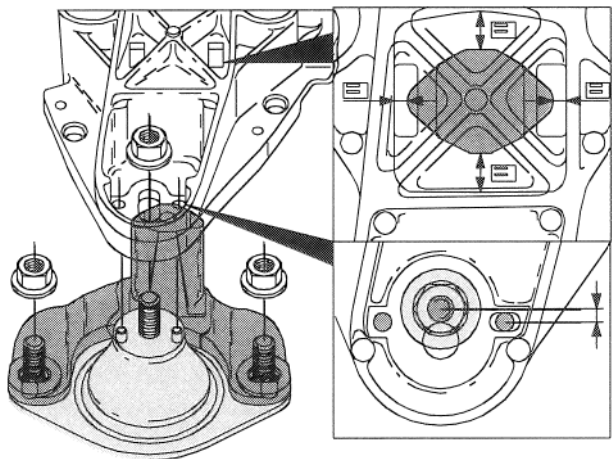
Install and tighten three screws.

Tightening torque: **50 Nm (37 ft.lbs).**

Install and tighten nut.

Tightening torque: **50 Nm (37 ft.lbs).**

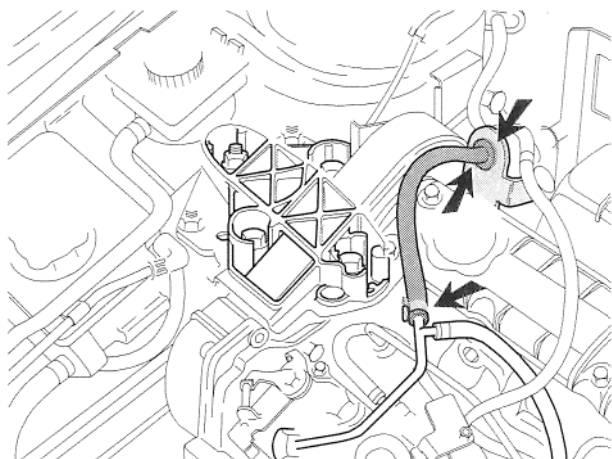
Remove lifting yokes 999 **5006** and 999 **5383** and lifting hooks 999 **5115**.



1700033A

Check/adjust installation.

Adjust by undoing the two nuts or the centre nut.



1700018A

Connect fuel pump return line.

Reinstall:

- rubber ring in lifting eye.
- return line through lifting eye.
- a new clamp ring on the return line.

Connect return line to fuel pump pipe and tighten clamp ring.

(TP 1701032) Book 1

Page 25, bottom of second column, stick over text:
"Carry out at 5000 km. See figure page 28".

"Carry out at 5000 km. Does
not apply to year model 1996.

(TP 1702032) Book 2

Page 15, stick in after text:
"Tightening torque ZF 15 Nm (11 ft. lbs)
CVT 30 Nm (22 ft. lbs) "

ZF 4 H P 14Q : NOTE! Oil should be changed twice. The
second change should take place after a 5 km test drive .

(TP 1702032) Book 2

Page 96 , text for upper illustration.

Bonnet - lubricate

- hinges (does not apply to 800 series year model 1994-)
- bonnet latch
- safety catches

(TP 1702032) Book 2

Page 96 , text next to middle illustration

Doors - lubricate

- hinges (does not apply to 400/800)
- door stops (does not apply to 800 series year model 1994-)
- lock lugs
- locks
- rear door bearing rivets (850)

(TP 1702032) *Book 2*

Page 97, bottom half of page after text:

"Resetting is complete and the service lamp is turned off."

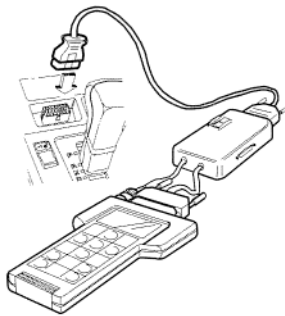
Reset SRL with the Volvo Scan Tool (ST)

850

Ignition on.

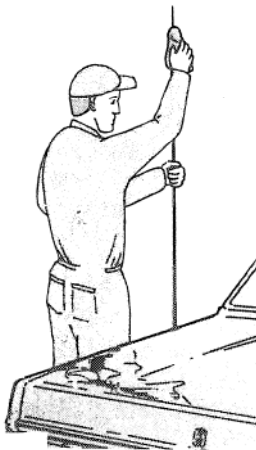
Connect Volvo Scan Tool (ST) to OBD2 socket.

From year model 1996



4300708A

1. Switch on
2. Window displays: SELF TEST OK
3. Select: LANGUAGE
4. Press: ENTER
5. Select: 800 SERIES
6. Press: ENTER
7. Select: SERVICE
8. Press: ENTER
9. Select: RESET SRL
10. Press: EXIT



4300708A

D21 - Power antenna clean

240, 400, 700, 940/960, 850

Clean antenna as follows:

1. Raise antenna.
2. Spray antenna mast with CRC-556 or similar.
3. Wipe antenna.
4. Respray antenna mast.
5. Raise and lower antenna three times.
6. Wipe antenna.

Foreword

This is how to work with the Volvo Service Programme

This service programme applies to the 200, 400, 700, 900 and 850 Series as of model year 1991.

Pre-delivery service:

All cars now undergo a factory pre-delivery inspection, with a comprehensive check of all functions. Therefore, the previous more comprehensive pre-delivery service programme has been deleted and replaced with the **limited programme** detailed on page 11.

Petrol-engine cars:

Warranty service: Carried out at 1,000–2,000 km for 400 Series cars equipped with B 16 F, B 18 EP/FP/FT engines. See page 12.

There is no warranty service on the 200, 700, 900 and 850 Series.

Maintenance service: 15,000 km service interval for all variants. Turbo-charged engines require engine oil of CCMC G5 quality; for all other engines, oil quality shall correspond to at least API SG or CCMC G4.

800 and 900 Series petrol-engine turbo cars require an additional oil change at 5,000 km. **Note!** Do not reset the service indicator. **Hard driving:** follow the oil change intervals specified in the owner's manual.

Diesel-engine cars:

Warranty service: 1,000-2,000 km for all diesel variants, see page 12. Does not apply to the 400 Series.

Maintenance service: 15,000 km service interval for all variants. However, an extra oil change is necessary as well as drainage of condensate from the filter every 7,500 km for all diesel variants. Oil quality: minimum API CD.

The Volvo Service Programme is split up into two books. This book - **book 1** - contains summaries of those measures which are necessary so as to ensure proper reliability and safety over a long period of time, as well as relevant specifications.

The method section - **book 2** - describes **how** the various checks are carried out and it follows the same procedure used in book 1. After each checking point in the maintenance service, book 1, there is a reference code - A1, A2, B1, B2 etc. This code refers to the place in book 2 where the relevant item is described.

The test drive is a final check that the car is in good condition when it leaves the workshop, and it should be carried out after every service.

The Volvo Service Programme has been developed for normal operational conditions. There may be some differences owing to such factors as local climate, marketing requirements or legislation. For vehicles with unusually low mileages, the service intervals should be based on time instead of mileage. For customers whose driving conditions differ considerably from that of the normal driver, a more "individually tailored" programme should be worked out together with the customer.

Specifications

Engine

Valve clearance

Engine			Cold engine (mm)	hot engine (mm)
B 200-230	adjustment*		0.40	0.45
	inspection*		0.30-0.40	0.35-0.45
B 280	adjustment and inspection	inlet exhaust	0.10-0.15 0.25-0.30	0.15-0.20 0.30-0.35
D 24, D 24 T/TIC	adjustment and inspection	inlet exhaust	0.20 0.40	0.25 0.45
B 16, B 18, B 20, D 19 T	adjustment	inlet exhaust	0.20 0.40 B 18 FT: 0.50	
	inspection	inlet exhaust	0.15-0.25 0.35-0.45 B 18 FT: 0.45-0.55	
B 204/234, D 24 TIC EGR, B 5202/5252, B 5204/5234/5254 B 6254/6304	Hydraulic tappets, cannot be adjusted			

* Same clearance for inlet and exhaust valves

Belt tension - camshaft belts

Engine type	Inspection	Adjustment	Tools
B 16/18/20, D 19 T		7.5	999 5506 and 999 5434
D 24, D 24 T/TIC/TIC EGR		12.5	999 5197
B 200/230	Manual adjustment of belts (no adjustment value)		
B 280	Camshaft chain (no adjustment value)		
B 204/234	3.5 - 4.5	Automatic belt tensioning	998 8500
B 5252/5254 (21 mm belt)	3.5 - 4.6		
B 5252 (23 mm belt)	2.7 - 4.2		
B 5204/5234/5254 (23 mm belt)	2.5 - 4.0		
B 6304 (21 mm belt)	3.5 - 4.6		
B 6304 (23 mm belt)	3.0 - 4.0		
B 6254/6304 (28 mm belt)	2.5 - 3.5		

Belt tension, balancer shaft belt

Engine type	Adjustment cold engine	Adjustment hot engine	Tools
B 204/234	3.8 ± 0.2	4.9 ± 0.2	999 8500

Belt tension, pump belt

Engine type	Adjustment	Tool
D 24	12.5	999 5197

Belt tension - auxiliary unit belts - 400

Engine type	Inspection* min. value	Adjustment "run-in" belt	Adjustment new belt
B 16, B 18, B 20 (3-track belt) Tool 115 9660			
	20 kg	30-35 kg	45-50 kg
B 16, B 18, B 20 (4-track belt) Tool 115 9660			
	25 kg	40-50 kg	55-60 kg
B 16, B 18, B 20, D 19 T (6-track belt) Tool 5434/5436			
Basic variant	4.5 mm	4 mm	3-4 mm
Single variant	3.5 mm	3 mm	2-3 mm
Double variant	3.5 mm	3 mm	2-3 mm

* If belt tension drops below nominal value, tension should be set at the adjustment value for "run-in" belt.
Other engines require no readjustment of belt tension.

Fuel system

CO-idle 240 (petrol)

Engine variant	CO-content in %		Idle speed r/s (rpm)
	Adjustment value	Inspection value	
B 200 E	1.0	0.5-2.0	15.0 (900)
B 200 F ¹⁾	cannot be adjusted	0.4-0.8	12.9 (775)
B 230 E	1.0	0.5-2.0	15.0 (900)
B 230 F ¹⁾	cannot be adjusted	0.4-0.8	12.9 (775)
B 230 FX ¹⁾	cannot be adjusted	0.4-0.8	12.9 (775)
B 230 FD ¹⁾	cannot be adjusted	0.4-0.8	12.9 (775)

1) Lambda-sond connected. Measured upstream of catalytic converter.

Injection timing and idle speed 240 (diesel)

Engine variant	Injection timing (BTDC)		Idle speed r/s (rpm)	
	Adjustment value	Inspection value	Low	High
D 24	0.80	0.77-0.85	12.5 (750)	90 (5400)

CO-idle 400

Engine variant	CO-content in %		Idle speed ³⁾ r/s (rpm)
	Adjustment value	Inspection value	
B 18 U, B 20 F	cannot be adjusted	0.4-1.2	Cannot be adjusted
B 16 F, B 18 FP ¹⁾	cannot be adjusted	0.4-1.2	15.0 (900)
B 18 FT/FTM ¹⁾	0.7	0.4-1.0	13.3 (800)
B 18 K ²⁾ /KP	1.5	0.5-2.5	14.2 (850) ⁴⁾
B 18 EP	1.2	1.0-1.4	14.2 (850)
B 18 EP, EVAP	1.2	0.8-3.0	14.2 (850)
B 18 U(M)	1.5	1.0-1.5	Cannot be adjusted
B 20 F(M)	1.5	0.5-1.5	Cannot be adjusted

1) F/FP/FT-engines: Measurement of CO-content upstream of catalytic converter. Use tool 5230.

AC if fitted is switched off.

2) B 18 K: Inspection must be carried out within 3 minutes after coolant thermostat has opened.

3) Engine cooling fan may not be connected.

4) B 18 K with air conditioning (A/C): 15.8 (950).

Injection timing and idle speed 400 (diesel)

Engine variant	Injection timing (BTDC)		Idling speed r/s (rpm)	
	Adjustment value	Inspection value	Low	High
D 19 T	Injection pump data		13.7±0.5 (825±25)	70.8±1.7 (4250±100)

CO-idle 700/940/960

Engine variant	CO-content in %		Idle speed r/s (rpm)
	Adjustment value	Inspection value	
B 200 E	1.0	0.5–2.0	15.0 (900)
B 200 F ¹⁾	cannot be adjusted	0.4–0.8	12.9 (775)
B 200 G	1.0	0.5–2.0	12.9 (775)
B 200 GT	1.0	0.5–2.0	12.9 (775)
B 204 E	0.8	0.6–1.0	15.0 (900)
B 204 FT ¹⁾	cannot be adjusted	0.4–0.8	13.3 (800)
B 230 E	1.0	0.5–2.0	15.0 (900)
B 230 F ¹⁾	cannot be adjusted	0.4–0.8	12.9 (775)
B 230 FB ¹⁾	cannot be adjusted	0.4–0.8	12.9 (775)
B 230 FD ¹⁾	cannot be adjusted	0.4–0.8	12.9 (775)
B 230 G	1.0	0.5–2.0	15.0 (900)
B 230 GT	1.0	0.5–2.0	12.5 (750)
B 230 GK	1.0	0.5–2.0	13.3 (800)
B 230 FT ¹⁾	cannot be adjusted	0.4–0.8	12.5 (750)
B 230 FK ¹⁾	cannot be adjusted	0.4–0.8	12.5 (750)
B 234 F ¹⁾	cannot be adjusted	0.4–0.8	14.2 (850)
B 234 G	0.8	0.5–1.1	14.2 (850)
B 280 E	1.0	0.5–2.0	12.5 (750)
B 280 F ¹⁾	0.6	0.2–1.0	12.5 (750)
B 6254 F	Cannot be adjusted	0.4–0.8	12.5 (750)
B 6254 G	1.0	0.5–2.0	12.5 (750)
B 6304 F ¹⁾	cannot be adjusted	0.4–0.8	12.5 (750)
B 6304 G	1.0	0.5–2.0	12.5 (750)

1) Lambda-sond connected. Measurement of CO content upstream of catalytic converter

Injection timing and idle speed 700/940/960 (diesel)

Engine variant	Injection timing mm		Idle speed r/s (rpm)	
	Adjustment value	Inspection value	Low	High
D 24	0.70	0.65–0.73	12.5 (750)	90 (5400)
D 24 T Austria	0.75	0.72–0.80	13.8 (830)	90 (5400)
D 24 TIC	0.90	0.87–0.95	13.8 (830)	90 (5400)
D 24 TIC (EGR)	0.95	0.92–1.00	13.8 (830)	90 (5400)

CO idle 850

Engine variant	CO content in %		Idle speed r/s (rpm)	
	Adjustment value	Inspection value	–1993	1994–
B 5202/5252 F	cannot be adjusted	0.2–1.0	13.3 (800)*	14.2 (850)*
B 5204/5254 F	cannot be adjusted	0.2–1.0	13.3 (800)*	14.2 (850)*
B 5204/5234 T	cannot be adjusted	0.2–1.0	14.2 (850)*	14.2 (850)*
B 5234 S	cannot be adjusted	0.2–1.0	13.3 (800)*	14.2 (850)*

* Idle speed cannot be adjusted. Idle speed with activated radiator fan: 1992: 13.7 r/s (825 rpm)
 1993: 13.3 r/s (800 rpm)
 1994–: 14.2 r/s (850 rpm)

Lubricating system

Oil, quality designations

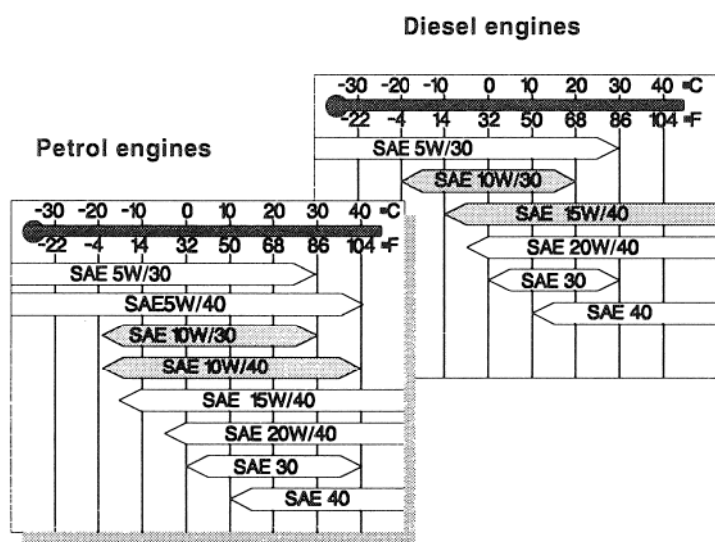
Engine type	API-Service	CCMC	Volvo P/N
Petrol turbo engines	----	Min. class G5	13 81 060-1 (3.85 l)
Other petrol engines	Min. class SG ¹⁾	Min. class G4	13 81 145-0 (3.85 l)
Diesel engines	Min. class CD ²⁾	Min. class D2	13 43 306-5 (1 l)

1) Oils with designation SG/CD meet this requirement.

2) Oils with designations SF/CD and SG/CD meet this requirement.

Viscosity

Temperature range refers to steady air temperature.



10 0005A

Note! SAE 15W/40 or SAE 20W/40 engine oils are recommended for use in extreme driving conditions which involve high engine oil consumption eg driving in mountainous regions with frequent engine braking or fast motorway driving. Note however the lower temperature limits.

Oil capacity, incl. oil filter

200/700/900/800			400		
Engine	Model year	Litres (l)	Model year	Engine	Litres (l)
B 200/230		3.85	-1992	All	5.3
B 204/234		4.00	1993	All**	5.0
B 5202/5252/5204/5234/5254	-1996 *	5.30	1994-	B 16, B 18	4.6
B 5202/5252/5204/5234/5254	1996- *	5.80		B 20	5.7
B 280		6.00		D 19 T (incl. filter)	~~5.0~~ 5.2
B 6254/6304		5.75		" (excl. filter)	4.8
D 24		6.00	** Chassis no. 401000- (440/460) and 585000- (480): 4.6 l.		

* The volume of oil for 1996 models will be increased from 5.3 to 5.8 litres. The date of introduction will vary according to the type of engine. Engines with the higher volume (5.8 l) have a dipstick with a red fluorescent handle and a tag which denotes the difference in litres between the max and min oil level values.

Electrical system

Spark plugs

Engine variant	Kit number
B 18 E(S), B 18 FT (M) B 20 F	33 44 899-4
B 16 F, B 18 (others)	33 44 473-8
B 200/230 E/G	270 747-9
B200 FT/GT	270 747-9
B 204 E	270 747-9
B 204 FT	270 747-9
B 234 F/G	
B 200 F	270 746-1
B 230 FT/GT	270 746-1
B 230 F/FB/FD/FK/GK/FX	270 746-1
B 280 E/F	273 599-1
B 5204	271 603-3
B 5202/5252, B 5254*	271 727-0
B 5204/5234 T	271 766-8
B 6254/6304 F/G	271 636-3

* For forced driving: Kit number 271 603-3

Tightening torques, spark plugs, Nm (kpm)

B 16/18/20	25 (2.5)
B 200/230.....	25 (2.5)
B 204/234.....	25 (2.5)
B 280	12 (1.2)
B 5204/5254, B 5202/5252.....	25 (2.5)
B 5204/5234 T.....	25 (2.5)
B 6254/6304	25 (2.5)

Electrode gap

400	0.8-0.9 mm.
Others	0.7-0.8 mm

Battery

Standing voltage	12.0 volt
Start voltage	9.5 volt
Electrolyte spec. gravity:	
Fully charged battery	1.28
Recharge at	1.21

Drivetrain

Clutch

Clutch fork stroke

400 30 ±1 mm

Play at clutch fork

240 1 - 3 mm

Note! On cars with rotating bearings (without return spring) the clutch fork is pushed backwards to check play.

740/940/960/850 have a hydraulic clutch.

Automatic transmission

240, 700, 900 **AW 70/71/72** **ZF 4 HP 22**

Oil change volume approx. 6.0 litres approx. 6.0 litres

Oil quality Dexron II D/E Dexron II D/E

400 **ZF 4 HP 14 Q**

Oil change volume approx. 6.6 litres

Oil quality Volvo oil, P/N 33 44 208-8

..... **CVT**

Oil change volume approx. 3.8 litres

Oil quality Volvo oil, P/N 33 44 959-6

Note! No other oil types may be used!

850 (AW 50-42) (no oil change normally required*)

Oil change volume incl. flush approx. 6.5 l

Oil quality Dexron II E and Ford Mercon
or Dexron III and Ford Mercon
(Must meet both specifications at the same time)

960 (AW 30-43) (no oil change normally required*)

Oil change volume incl. flush approx. 6.5 l

Oil quality Dexron II E and Ford Mercon
or Dexron III and Ford Mercon
(Must meet both specifications at the same time)

* Oil change every 75,000 km only for cars in continuous taxi traffic and cars used frequently for towing trailers.

Manual gearbox (no oil change required)**240, 700, 900 (M 45, M 46, M47)**

Oil quality* ATF, type F or G.

* For cars driven in areas where outside temp. seldom drops below
-10 °C or cars which are driven a lot (eg taxis) we recommend Volvo Thermo
Oil, P/N 1 161 323-9. **Note!** Do not mix the different oil types!

940/960 (M90)

Oil quality Volvo P/N 11 61 423-7

400 (gearbox/final drive)

Oil quality Volvo P/N 33 45 534-6.

Note! No other oil types may be used!

850 (gearbox/final drive)

Oil quality Volvo P/N 11 61 423-7

Final drive (no oil change required)

Oil quality API-GL-5 (MIL-L-2105 B or C)
Rec. Volvo P/N 11 61 329-6 (0.5 litres).

Power steering

Oil quality ATF, type F or G.

Wheels and tyres

Model	Inflation pressure (kPa)	
	Front	Rear
240 4-d. Petrol	180	190
240 5-d. Petrol	190	210
240 4/5-d. Diesel without power steering	210	210
240 4-d. Diesel with power steering	190	190
240 5-d. Diesel with power steering	190	210
400	210	190
740/940/960 4-d.	190	190
740/940/960 5-d.	190	210
850	220	200
850 Turbo	230	210

Note! The table gives nominal values. Tyre inflation pressure depends on tyre type, car load and speed. Check the specifications.

Ball joint (axle shaft - link arm)

Permitted play with normally loaded front suspension:

axial.....max. 1 mm

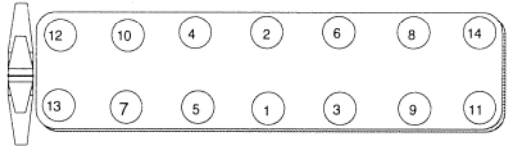
radial.....max. 0.5 mm

Pre-delivery service

Operation	Remarks
Remove Rappard paint cover	See service bulletin 1-17-808 and 1-17-910 resp.
Fit the supplied parts	Wheel hubs, spoiler, extra lights, front towing eyelet cover (in glovebox) etc. Fasten sticker as per service bulletin 0-05-800. 400/850: Move the switch for the boot light to the automatic position.
Cars with electronic starter inhibitor/Immobilizer	Fasten sticker
Check/adjust tyre pressures	See specifications on page 10.
Plug the attachment points in the members with the supplied plugs (not 400 and 800)	
Remove brake disc covers	See service bulletins 5-51-801 and 5-51-905
Remove spring spacers	Cars with "low chassis". See service bulletins 1-17-802 and 1-17-908.
Fit the supplied fuses - set clock	440/460: Fit brace in no. 23 (use brace in no. 20)
Information unit (400)	Calibrate fuel gauge. See service manual section 3(35-38).
External horn and light functions	Check the horn, hazard warning flashers, turn signal indicators, high and low beam, tail lights, reversing lights, brake lights.
Check/adjust engine oil level	Check the level no earlier than 3 minutes after completed test drive with car parked on level ground. If necessary, top up oil to max. level.
Reset service reminder (850)	See service manual section 3(35-38)
Wash the car	Wash with shampoo. If necessary wax the body.
Check the car for signs of transit damage	
Remove the plastic covers from the floor, seats and door panels and clean if necessary.	Check that the driver's area and the rest of the interior are clean and spotless!

Warranty service

Applies to the 400 Series with B 16 F, B 18 EP/FP/FT, and cars with diesel engines (not 400) at 1,000–2,000 km

Operation	Remarks
Diesel (D 24 , D 24 T and TIC/TIC (EGR)) Change engine oil and oil filter Check/tighten the cylinder head Does not apply to 1996 models	See specifications on page 6.  2000018A The engine shall be cold. Angle-tighten the screws 90. This should be performed in one movement without pausing. The screws are not to be loosened first. Tighten the screws in the sequence shown in the diagram.
400 CO idle - check/adjust	See specifications on page 4. B 18 EP: CO and idle B 16 F, B 18 FP/FT: Only idle

13

240	km x 1000		15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	
	Months		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	
	miles x 1000		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	
Tyres - check Brake linings* - check Brake hoses - check for leakage/damage Brake & fuel lines - check for leakage/damage Fuel filter - petrol - replace Fuel filter - diesel - drain condensate - replace Final drive - check for leakage Exhaust system - check condition/ for leakage/anchorage	Check for damage and wear Min. lining thickness: Front 3 mm, rear 2 mm Note! Every 7,500 km (5,000 miles) Check level only in case of leakage	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	B7	
		x	x																				B8
																							B9
																							B10
																							B12
																							B13
																							B14
																							B15
Lift the front wheels																							
Steering system/front wheel suspension - check/tighten - check for wear	Incl. check/adjustment of wheel bearings and check of shock absorbers	x																					C1
																						C2	
Propeller shaft, support bearing trunnion block - check for wear																							C3
																							C4
Rear wheel suspension - check/tighten - check for wear	Incl. shock absorbers	x																					C5
* Check disc brake thickness when replacing brake linings! See book 2.																							

* If the car is driven in mountainous areas or a moist climate, the brake fluid should be replaced every year.

Maintenance service – 400

400	Km x 1000 Months	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
Automatic gearbox lever,- check Parking brake - check/adjust External lighting - check	Check when driving into workshop	X		X		X		X		X		X		X		X		X		X	
	Check when driving into workshop	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Check when driving into workshop	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Wash/wipe on windscreen and headlamp - check/adjust Clutch - check/adjust Kickdown wire - check/adjust		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Crankcase ventilation - clean Engine/gearbox - check for leakage	D 19: Remove upper cover						X			X			X			X			X		
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Raise the car</i>																					
Engine/gearbox - check for leakage Drain engine oil and replace oil filter	Oil level transmission only if there is leakage Diesel *	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	* Extra oil change (not filter) every 7,500 km (5,000 miles). Note! Factory-fitted oil filter replaced at 7,500 km (5,000 miles).	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Automatic gearbox - drain the oil				X			X			X			X			X			X		
Driveshafts - check clearance - check rubber gaiters Tyres - check					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Check for damage and wear	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

400	Km x 1000 Months	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
Brake linings (discs)* - check	Min. thickness 2 mm	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Brake hoses - check for leakage/damage					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Brake/fuel lines - check for leakage/damage	Incl. fuel filter				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Fuel filter - petrol - replace																					
Fuel filter - diesel - drain condensate - replace	Note! Every 7,500 km (5,000 miles)							x							x						
Exhaust system - check	Check for leakage/anchorage	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Lift the front wheels</i>																					
Steering system/front wheel suspension - check/tighten - check for wear		x																			
<i>Lower the front wheels</i>																					
Rear wheel suspension - check/tighten - check for wear		x																			
Corrosion protection/ paintwork**, - check	Applies to model years - 1994		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Lower the car halfway</i>																					
Brake linings (drums) - check	Min. thickness 1 mm				x		x		x		x		x		x		x		x		x
<i>Lower the car</i>																					

* Check disc brake thickness when replacing brake linings! See book 2.

** Markets with anti-corrosion warranty: Inspection of rust-proofing after 3 and 6 years, see service bulletin 1 - 18 - 401.

400		Km x 1000 Months		15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	
				12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	
				10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	
Air filter - replace	Petrol engines		x						x			x			x			x			x			D1
	Diesel engines		x						x				x				x		x		x			D1
Spark plugs - replace	See spec. pg. 7																							D2
	LPG-fuel: 30,000 km (20,000 miles) interval							x					x					x						D3
Top up engine oil	See spec. pg. 6.		x						x			x						x			x			D4
Automatic gearbox - top up oil									x															D5
Fluid levels - engine compartment - check/top up	Engine cooling system, brake and power steering reservoirs and washer reservoir		x						x			x						x			x			D6
Coolant - check/top up	Anti-freeze rating/ Corrosion prot.		x						x			x						x			x			D6
Battery - check level			x						x				x											D7
Auxiliary drive belt - check/adjust belt tension	Multi-track belt		x									x						x						D9
Camshaft/auxiliary unit belt - replace	Standard and multi-track belt								x												x			D12

400		Km x 1000 Months		15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
		miles x 1000		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
				10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
Self-diagnostic system - read off fault codes	Engines with FENIX fuel system			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
CO - idle* - check/adjust	Carburettor engines Injected engines (not F-engines)			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Doors, bonnet - lubricate hinges, bonnet lock	Incl. door stopper, lock lugs and locks			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Power antenna -clean	Rec. to customer at every service																						
Brake fluid** - replace	Should be replaced every alternate year																						

* B 18 K with AC: Check/adjust idle speed compensator.

** If the car is driven in mountainous areas or a moist climate, the brake fluid should be replaced every year.

Maintenance service – 700/940/960

700/940/960		Km x 1000		15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
		Months		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
		miles x 1000		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
Automatic gearbox lever - check shift lock Parking brake - check/adjust External lighting - check function	Check when driving into workshop	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A1
	Check when driving into workshop	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A2
	Check when driving into workshop	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A3
Wash/wipe on windscreen and headlamps - check/adjust Kickdown wire - check/adjust Crankcase ventilation - clean	Not AW 30-43	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A4
	Clean nipples and hoses. Replace flame trap. Turbo has no flame trap.		x				x	x	x		x		x		x		x		x		x		A6
									x		x		x		x		x		x		x		A7
	Check from above	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	A8
Raise the car																							
Engine/gearbox - check for leakage	Check from underneath. Check gearbox oil level only in case of leakage	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	B1
Drain engine oil and replace oil filter	Diesel: Oil change every 7,500 km. Oil and filter replacement every 15,000 km Petrol turbo engine: A first oil change (not filter) at 5,000 km (3,000 miles). Not AW 30-43 *	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	B2
Automatic gearbox - drain the oil	Not AW 30-43 *						x				x				x								B3

*On cars with AW 30-43 in continuous taxi traffic or frequently towing trailers, change oil every 75,000 km (50,000 miles).

*On cars with AW 30-43 in continuous taxi traffic or frequently towing trailers, change oil every 75,000 km (50,000 miles).

700/940/960		Km x 1000 Months		15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
		miles x 1000		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
				10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
Tyres	Check damage and for wear			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
- check																							
Brake linings	Min. lining thickness *: Front 3 mm, rear 2 mm			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
- check																							
Brake hoses																							
- check for leakage/damage																							
Brake/fuel line																							
- check for leakage/damage																							
Fuel filter - petrol																							
- replace										x							x						
Fuel filter - diesel																							
- drain condensate																							
- replace																							
Final drive																							
- check for leakage				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Exhaust system																							
- check condition/																							
check for leakage, anchorage				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Lift the front wheels</i>																							
Steering system/front wheel suspension				x																			
- check/tighten																							
- check for wear																							
Propeller shaft, support bearing, trunnion block																							
- check for wear																							
Rear wheel suspension																							
- check/tighten																							
- check for wear																							
Corrosion protection/paintwork																							
- check					x		x		x		x		x		x		x		x		x		x

* Check disc brake thickness when replacing brake linings! For measurement of front lining thickness see the method in book 2.

** Markets with anti-corrosion warranty: Inspection of rust-proofing after 3 and 6 years, see SB 1-18-1.

700/940/960		Km x 1000		15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300		
		Months		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240		
		miles x 1000		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200		
Lower the car																									
Air filter - replace Spark plugs - replace Valves - check/adjust clearance	Petrol engines Diesel Engines See spec. pg. 7. F-engines E/G-engines Not 4-valve engines					x			x		x				x	x			x				x	D1 D1	
																								D2 D2	
																									D3
																									D4
Top up engine oil	See spec. pg. 6.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	D5	
Automatic gearbox - top up oil	Engine cooling system, brake and power steering reservoirs and washer reservoir																							D6	
Fluid levels - engine compartment																								D6	
- check/adjust																									D6
																									D6
Coolant - check/top up	Anti-freeze rating/ Corrosion prot.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	D6	
Battery - check level		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	D7	
Auxiliary drive belts - check/just. - replace belt - grease the tension pulley*	Not B 6254/6304 Only B 6254/6304 Only B 6304 –1994		x		x		x		x		x		x		x	x	x		x					D9 D12 D12	
* Applies only to early model tensioners which can be dismantled.																									
Camshaft belt B 200-230 - replace - check/tighten	check the tensioner and lubricate the guide lug (15,000 km (10,000 miles) after belt replacement)							x					x					x						D11 D13	
Camshaft belt/balancer shaft belt B 204-234 - replace																								D11	

700/940/960	Km x 1000		15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	
			Months	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	
	miles x 1000		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	
Camshaft belt B 6304 (-93) - replace - grease tensioner	Apply the sticker				x		x	x			x			x			x			x			D12 D12
Camshaft belt B 6304 (94) - replace Camshaft belt B 6254/6304 95- - replace Camshaft belt, pump belt, idler roller - replace	Apply the sticker Apply the sticker Diesel						x			x		x					x	x					D12 D12 D14
EGR system - check function - clean EGR system - check function EGR system - clean CO idle - check/adjust Doors, bonnet - lubricate hinges, bonnet lock	D 24 T - Austria D24 TIC (EGR) Only B 230 FD/FT/FK (EGR) and B 6254/6304 S (EGR)-1995 Petrol engines Not F-engines Lubricate also door stop, lock lugs and locks			x		x	x	x		x		x		x		x		x		x		x	D16 D17 D17 D18 D19
Power antenna - clean Brake fluid - replace	Rec. to customer at every service Rec. to customer every alternate year *																						D21

* If the car is driven in mountainous areas or a moist climate, the brake fluid should be replaced every year.

D17

Maintenance service – 850

850	Automatic gearbox lever - check shift lock Parking brake - check/adjust External lighting - check function Wash/wipe on windscreen and headlamps - check function/wear Crankcase ventilation - clean Engine/gearbox - check for leakage <i>Raise the car</i>	Km x 1000 Months miles x 1000	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
			12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
			10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
Automatic gearbox lever - check shift lock Parking brake - check/adjust	Check when driving into workshop	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Check when driving into workshop Adjust on lift	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
External lighting - check function	Check when driving into workshop	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Check when driving into workshop	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Wash/wipe on windscreen and headlamps - check function/wear Crankcase ventilation - clean	Clean nipples and hoses. Replace flame trap. Turbo has no flame trap.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Check from above	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Engine/gearbox - check for leakage <i>Raise the car</i>	Check from underneath. Check transmission level only during leakage	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	850 Turbo: A first oil replacement (not filter) at 5,000 km (3,000 miles). Note! Do not reset the service reminder.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Check/tightening of turbo/exhaust pipe.	Performed at 5,000 km (3,000 miles). See illustration on page 28																					
Driveshaft joints - check for wear - check gaiters																						
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Note! For cars with automatic gearboxes which are used in continuous taxi traffic or frequently tow trailers change gearbox oil every 75,000 km.																						

850	Km x 1000		15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	
	Months		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	
	miles x 1000		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	
Tyres - check	Check for damage and wear Min. lining thickness *: Front 3 mm, rear 2 mm	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Brake linings* - check		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Brake hoses - check damage/leakage								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Brake & fuel lines - check damage/leakage								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Fuel filter - replace								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Exhaust system - check condition, for leakage anchorage								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Lift the front wheels																							
Steering system/front wheel suspension - check for wear	Incl. shock absorbers							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Rear wheel suspension - check for wear								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Corrosion protection/paintwork** - check			x			x		x		x		x		x		x		x		x		x	
Lower the car																							
Air filter - replace	Incl. filter for control unit box. Does not apply to 94—.				x					x				x				x				x	
Spark plugs - replace				x																			
Top up engine oil	See spec. pg. 7.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	See spec. pg. 6.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* Check disc brake thickness when replacing brake linings! For measurement of front lining thickness, for method refer to book 2. ** Markets with anti-corrosion warranty: Inspection of rust-proofing after 3 and 6 years, see SB 1-18-1																							

* Check disc brake thickness when replacing brake linings! For measurement of front lining thickness, for method refer to book 2.

** Markets with anti-corrosion warranty: Inspection of rust-proofing after 3 and 6 years, see SB 1-18-1

850	Km x 1000 Months	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
		12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
	miles x 1000	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
Fluid levels - engine compartment - check Coolant - check/top up Battery - check level/anchorage Auxiliary drive belt - replace belt - grease belt tensioner*	Engine cooling system, brake and power steering fluid reservoirs and washer fluid reservoir	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Anti-freeze rating/Corrosion prot.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
* Only applies if the belt tensioner is of the early model which can be dismantled.																					
Camshaft belt (-93), 21 mm - grease the tensioner - replace belt Camshaft belt (94-), 23 mm - replace belt	Apply the sticker					x					x					x					x
	Apply the sticker					x			x		x										x
EGR system - clean - inspect Doors, bonnet - lubricate hinges Service reminder - reset	Applies to cars with EGR						x						x						x		
							x						x						x		
							x						x						x		
							x						x						x		
Power antenna - clean Brake fluid - replace	Does not apply to Yazaki instrument	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Rec. to customer at every service																				
	Rec. to customer every alternate year**																				
** If the car is driven in a mountainous area or moist climate, the brake fluid should be replaced every year.																					

Options

Windscreen	Check for signs of damage
Interior rear-view mirror	Check for proper attachment, that the glass is undamaged and that the mirror can be moved to anti-dazzle setting
Glovebox lighting	Check for proper operation
Interior lighting	Check for proper operation
Indicator lights	Check for proper operation of all warning and indicator lights
Instrument lighting	Check for proper operation Check also that the lighting intensity can be regulated
Heater controls + fan	Check mode switch
Rear window demisting	Check that the light in the switch functions
Signal	Check for proper operation
Turn signals	Check that the stalk returns when the steering wheel returns to the straight-ahead position
High and low beam	Check/adjust beam throw

Walk around the car and check the following:

Exterior lighting and reflectors	Check for signs of damage
Front number plate	Check for proper anchorage and any signs of damage
Rear number plate with lighting	Check for proper function and anchorage, and for any signs of damage
Windows, glass	Check for signs of damage
Seat belts	Check that seat belts, anchorages and belt catches are undamaged and that the warning system functions
Doors	Check for proper operation Check the door stoppers, sealing strips, locks, lock striker plates and window lifts
Door mirrors	Check for proper attachment, that the glass is undamaged and that the mirrors can be adjusted Check the function of the power door mirrors
Tyres, mudflaps	Check/adjust tyre pressure Check the mudflap attachment to the body

Recommend the following to the customer:

Remote control, electronic starter inhibitor (immobilizer)	Replace battery every alternate year
Cabin ventilation filter/Pollen filter	Replace at every service

Test driving

- Newly serviced vehicles should be test driven after every service to carry out a final check of roadworthiness.

Carry out the following checks in connection with test driving and rectify as necessary.

Before starting the engine, check that:

- the ignition and steering locks function
- the warning lamps and instruments function properly, as well as the MIL and warning lamps for SRS and ABS where fitted

Automatic gearbox:

- the starter motor only functions in positions P and N, and the reversing lamp only in position R

When starting the engine, check that:

- the brake pedal sinks and that the servo function is normal (not ABS)
- the starter motor functions normally and without abnormal noise
- the engine starts normally

When moving off, check that:

- the clutch does not bite or slip
- acceleration is normal and that there is no "pinking" or other abnormality. Floor the accelerator and accelerate from 2500-4500 rpm. Check that the boost gauge (turbo engines) gives a 75-100% readout.
- the gearbox functions normally and without any unusual noises
- there is no play or abnormal stiffness in the steering
- the car does not pull to one side or feel unstable
- the steering wheel is correctly set and returns to the straight-ahead position after a turn
- there is no wheel imbalance
- there are no vibrations or abnormal sounds from the driveline

Continue driving and check that:

- the engine attains normal operating temperature within the correct time
- there are no abnormal sounds from the body, front or rear suspension systems
- there is no abnormal wind noise
- the heating system and its controls function properly

When braking, check that:

- the car does not pull to one side
- pedal force is normal and there is no vibration
(Note! Cars fitted with ABS brakes pulsate when wheel locking is imminent - this is normal)

Additionally for automatic gearbox:

Check that:

- the parking lock in the P position functions properly and the control remains in position
- no slip occurs at stalling speeds in D or R. (**No stall test on 400 Series cars equipped with CVT.**)
- changes up function normally and without slip at half-throttle and that downshifts function properly in kickdown mode
- upshifts occur at the correct speed in kickdown (with all due consideration to the current traffic situation and road safety requirements!)
- the gearbox changes down and engine braking is activated when the lever is shifted from a high gear to a lower one
- overdrive functions properly. (Does not apply to 400 with CVT.)

After the test drive, check that:

- the engine does not backfire when switched off
- there is no visible leakage in the engine compartment
- the "service parts" are replaced and nothing unusual is noticeable
- there are no obvious faults on either the body or interior trim

Wipe the steering wheel and gear lever clean and ensure that there are no traces of workshop activity in/on the car.

Comments

To
VOLVO CAR CORPORATION
Aftersales
Dept. 57931 PVÖP32
S-405 08 GÖTEBORG

From

.....
.....
.....

Telefax +46 31 59 23 53

Publication:.....
.....

Section:..... Page..... TP No.....

Suggestion/Reason:

.....
.....
.....
.....
.....
.....
.....

Date.....

.....

If you have any suggestions or comments about this manual make a copy of this page, write down your comments and send to us.

TP 1701033
1200.05.95
English