Types 26 27

VOLVO 240 series

model year 1982

Owner's Manual

Personal Information

Name .....

Address .....

Tel. No. .....

Driving Licence No. .....

Insurance Company .....

Insurance Policy No. .....

Nearest Volvo Dealer

Name .....

Address .....

Tel. No. .....

Garage Manager .....

Tel. No. .....

Car Information

Type Designation .....

Chassis No. .....

Engine No. .....

Registration No. .....

When you need service: **authorized Volvo workshops** maintain and repair your car according to the instructions issued by the Volvo Factory — and always with **genuine Volvo spare parts.**

Contents

Eng. B 1

Presentation

This manual contains instructions on how to drive and maintain your Volvo

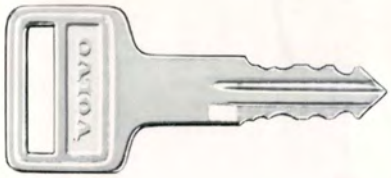
This manual covers descriptions of the models fitted with 4-cylinder petrol engines. Notice however, that there are certain differences between different types and different countries which is why this manual may contain information which does not apply to your particular car. This manual also contains information regarding components, which, for some models, are only obtainable as accessory items or as optional extras.

Should you require more detailed information concerning adjustments or repairs to your car, please refer to our service manuals, which can be obtained from your Volvo dealer.

If you should take up residence in another country, find out about regulations concerning import and inspection of cars in the country you are moving to. Legislation can differ considerably from country to country. Adapting your car to meet legal requirements can involve considerable costs.

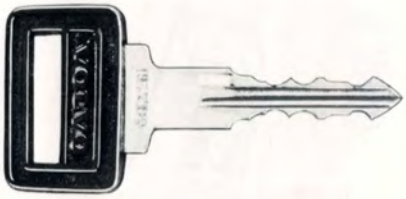
The specifications and constructional data as well as the illustrations contained in this manual are not binding.
We reserve the right to make alterations without prior notification.

Number tag

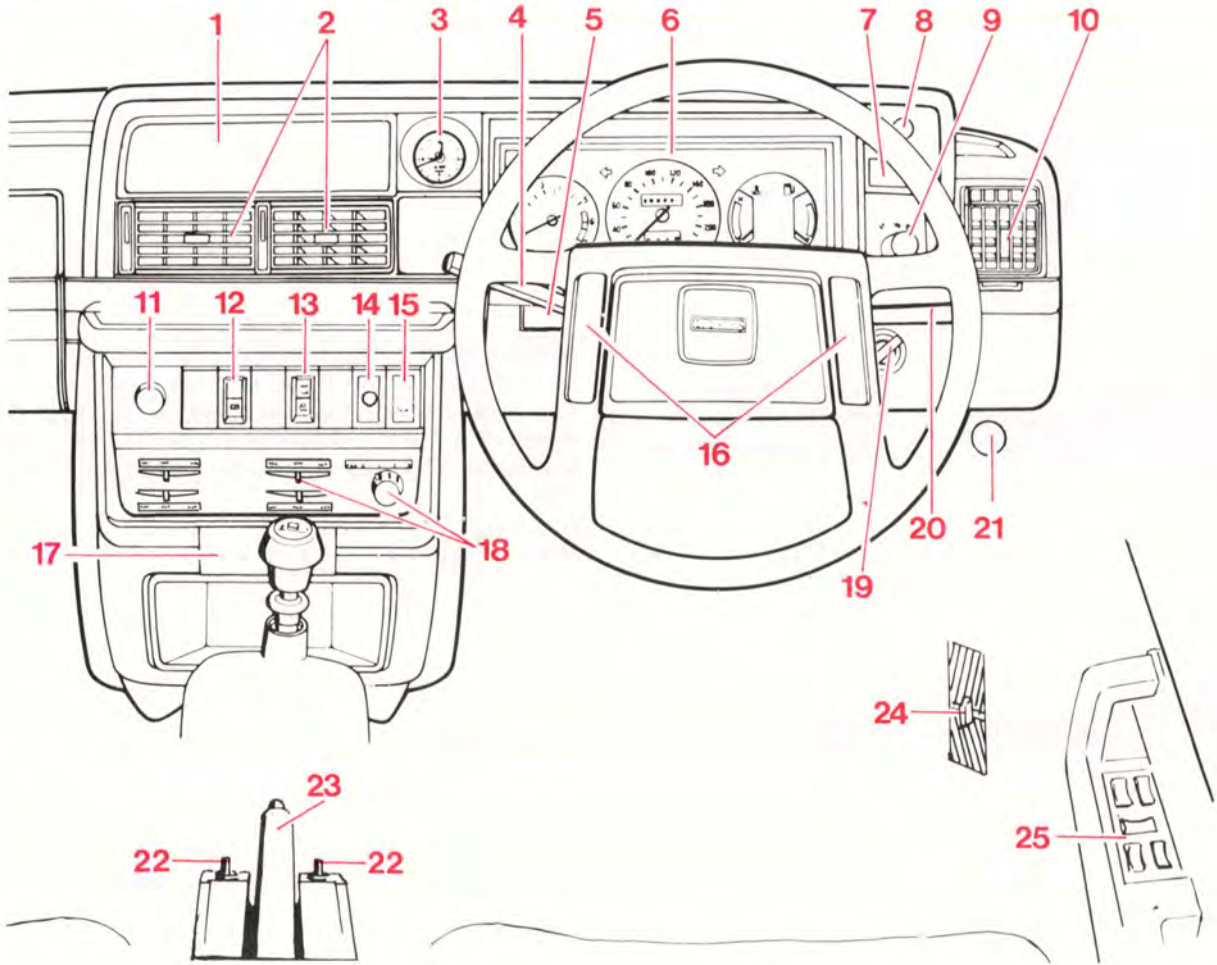


Boot lid 2- and
4-door models
Glove compartment

Make a note of the number of your keys in your pocket diary or on a slip of paper.
The door and ignition switch/steering wheel lock key number is stamped on the separate tag supplied with the keys. This tag should be separated from the key ring.
Should you lose a key, you can order a new one from a Volvo dealer.



Doors
Ignition switch/steering wheel lock
Tailgate, 5-door model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		Described on page
1	Storage shelf	—
2	Air vents	17
3	Clock	14
4	Stalk for direction indicators, headlight dipper and flasher	8
5	Choke (only carburettor engine)	13
6	Instrument panel	6
7	Rear fog lights (certain markets)	12
8	Panel illumination knob	9
9	Headlights, parking lights and day running lights	9
10	Air vent, defroster vent, side window	17
11	Cigar lighter	14
12	Heated rear window	12
13	Switch for hazard warning lights	12
14	Air conditioning (optional equipment)	19
15	Fasten seat belts light	24
16	Horn	—
17	Ashtray	14
18	Heater controls	16, 18
19	Ignition switch, steering wheel lock	8
20	Windscreen, headlamp, tailgate window, wash/wipe 245	10
21	Bonnet release	28
22	Elec operated rear wiew mirror (optional equipment)	20
23	Parking brake (handbrake)	13
24	Air vent (one on each side)	17
25	Elec operated window winders (optional equipment)	15

Pages 6–19 contain a detailed description of all the car's instruments and controls.
Please note that variations are possible between the various markets, due, among other factors, to varying legislation.

Instrument panel

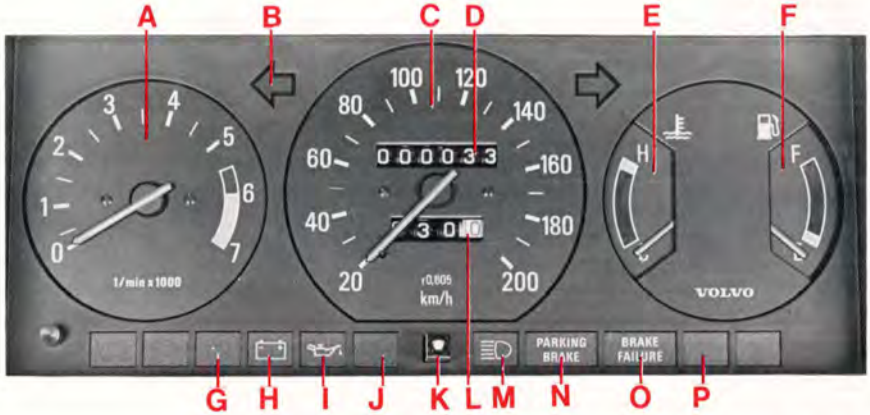
A Clock (certain models)
Rev counter (certain models)
Engine speed in rpm × 1000. Black section may only be used occasionally e.g. when accelerating. The red section must not be reached.

B Direction indicator (green)

C Speedometer

D Mileage recorder
In kilometres or miles

E Temperature gauge
During normal driving, the pointer should be in black section.
If the pointer is repeatedly in the red section, the coolant level and fan belt tension should be checked, see pages 58 and 59.



F Fuel gauge
The fuel tank holds about 60 litres (13 UKgal)

G Choke light (amber)
This light stays on while the choke is pulled out.

Warning light, boost pressure
(turbo engined cars only)

H Battery charging failure light (red)

I Oil-pressure failure light (red)

J Overdrive light (green)
Goes on when overdrive is engaged.

K Trip meter reset knob
Push in to reset

L Trip meter
Figure in right window = 100 metres (or 1/10th mile)

M Headlight main beams (blue)

N Parking brake light (red)

O Brake circuit failure warning light (red)

P Bulb failure warning light (yellow)

The six warning lights on this page should never go on when driving

But they should go on when the ignition is switched on before the engine starts. This tells you whether the lights are functioning or not. All the lights should go out when the engine starts (the parking brake light does not of course go out until you release the parking brake).

N Parking brake light

This goes on when the parking brake between the front seats is applied.

I Oil-pressure failure light

If this light goes on when driving, then the engine oil pressure is too low. Stop the car, switch off the engine immediately and check the oil level in the engine, see page 52.
It can happen that this lamp goes on after very hard driving, when the engine returns to idle. This is normal providing that it goes out when the engine speed is increased.

P Bulb failure warning light

This light goes on if any of the following bulbs are out of order:

day running lights (certain markets)
dipped beams
rear lights
brake lights (the brake circuits failure warning light goes on each time the brake pedal is depressed)

See pages 60–63 for changing these bulbs.

Should the warning light go on after a defective outside bulb has been replaced with a new one, replace also the corresponding bulb on the other side of the car.

O Brake circuits failure warning light

If this light goes on when driving and the brake pedal feels spongy, then one of the footbrake circuits os not functioning. However, the car can be driven – but with due care – to a workshop for a check on the brake circuits.

H Battery charging failure light

This light goes on when the alternator is not charging.
Note that if the fan belts slip off or if the fan-belt tension is so poor that the alternator does not charge, **not only will this light go on but also warning lights N, O and P.**
This is due to particular legislation on certain markets and is therefore **quite normal.**

G Warning light, boost pressure

If this light goes on when driving, then the boost pressure is too high. The car can however be driven with due care to a workshop for inspection.

Ignition switch/steering wheel lock, direction indicator stalk

Ignition switch/steering wheel lock

Lock position: Steering wheel locks when key is removed.

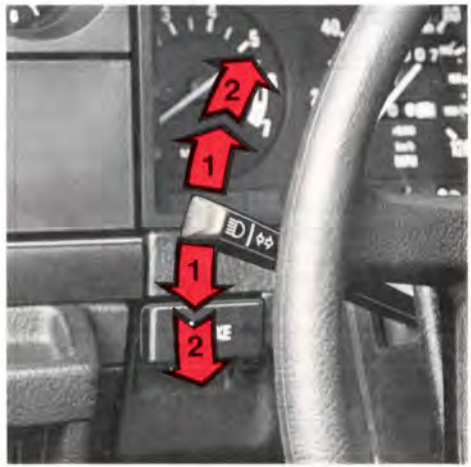
Intermediate position: Certain electrical components (e.g., heater fan, cigar lighter) can now be operated.

Engine-running position: The key is in this position when the engine is running.

Start position: Turn the key to this position to start the engine. Release the key as soon as the engine starts. It automatically springs back to the "engine-running position".

If difficulty is found in turning the ignition key, turn the steering wheel a little to the left and then to the right.

A buzzer sounds if the key is in the ignition switch/steering wheel lock (or if the parking lights or headlights are on) and the driver's door is open.



Stalk for direction indicators, mainbeams/dipped beams and headlight flasher

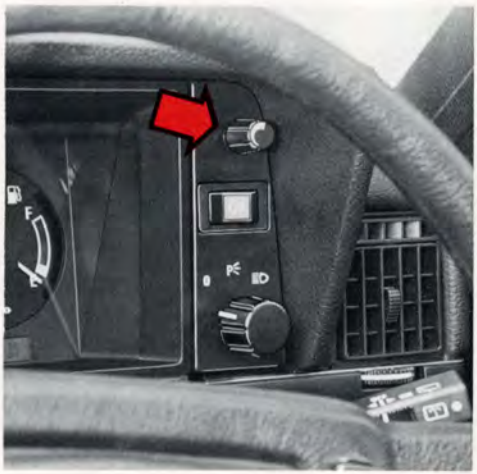
1 Lane-changing, overtaking
When indicating a change of lane or when overtaking, move the lever slightly up or down and hold it there. The stalk will return to the neutral position when released.

2 Normal turns

If a direction indicator bulb becomes defective, the other direction indicator bulb will blink more rapidly than usual.

3 Mainbeams/dipped beams (headlights switched on)
Move the lever towards the rim of the steering wheel and then release it.

3 Headlight flasher (headlights switched off)
Move the lever towards the rim of the steering wheel. Mainbeams remain on until you release the lever.



Headlights and day running lights

0 **Ignition switched off:** All lights off.
Ignition switched on: Day running lights (front and rear) on.

Day running lights go on automatically when the engine is running and cannot, therefore, be switched off by themselves.
If, during a trip abroad, for example, you do not require the day running lights to be on, this can be arranged by removing the fuse no. 4 (see page 66.

(Day running lights are only fitted for certain markets.)

Parking lights. Day running lights switched off.
The parking lights should only be used when parking and **never when driving.**

Headlights and parking lights. Day running lights switched off.
The headlights should naturally be on when driving in darkness or on poorly lit streets and roads.

A reminder buzzer sounds if the parking lights or headlights are on (or if the ignition key is still in the ignition switch steering wheel lock) and the driver's door is open.

Panel illumination knob

Clockwise: brighter.
Anti-clockwise: dimmer.

Windscreen, headlamp, tailgate window wash/wipe

Windscreen wash/wipe, headlamp wash/wipe

1 Intermittent position
If you move the wash/wipe stalk to this position the wipers will make a single sweep about every five seconds. Can suitably be used when driving in drizzling rain or in fog.

2 Wipe-pause position
If you want the wipers to make only one or two sweeps, move the stalk to this position and hold it there with your finger. When you let it go, the wipers return to their parking position.

3 Windscreen wipers — normal speed

4 Windscreen wipers — high speed

5 Windscreen wash/wipe + headlamp wash/wipe
The windscreen wipers also start with the stalk in this position. When the stalk is released the wipers make 2–3 extra sweeps.

Headlamp wipers only on cars intended for certain markets.

Note! The headlamp wipers have an overload protection which disengages the wipers if snow or ice blocks the wiper blades. On such an occasion switch off the ignition and remove the snow or ice. Before operating the wipers again, wait a couple of minutes or so after switching on the ignition.

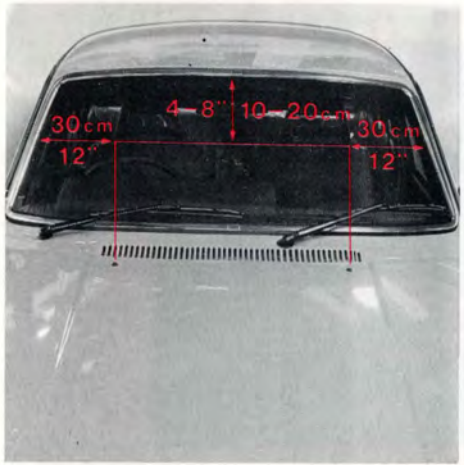
Tailgate wiper, washer 245

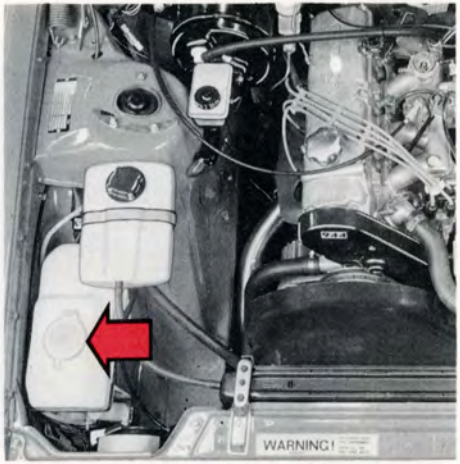
The tailgate window wash/wipe is operated by the switches on the windscreen wiper stalk. See illustration above.

1 Tailgate wiper

2 Intermittent sweep position (certain models).
With the button in this position, the tailgate wiper makes one sweep about every fifteen seconds.

3 Tailgate washer
The wiper makes 2–3 double sweeps after the button has been released (certain models).





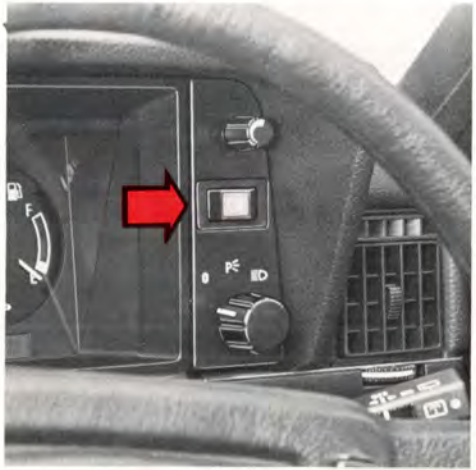
Adjusting the washer nozzles

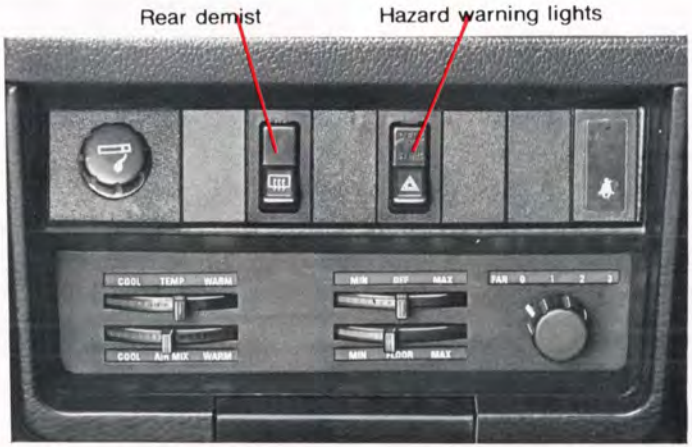
Stick a pin in the nozzles and adjust their position so that the jets strike the window as shown in the picture.

Washer reservoir

The washer reservoir serves both the windscreen, tailgate and headlamp washers. It is located under the bonnet and holds about 5½ litres (10 UKpints).
On turbo engined cars, the reservoir is located on the right in the engine compartment, Capacity 5 litres (9 UK pints).
The reservoir should be filled in the winter time with the anti-freeze specified on page 82.

Rear fog lights, rear demist, hazard warning lights





Rear fog lights (certain markets)

Use the lights when driving where there is fog or, e.g., rain or snow which considerably impairs vision.

NOTE! Legislation regarding rear fog lights varies from country to country.

Rear demist — heated rear window

Switch off once the rear window is free from mist and ice so as not to overload the battery unduly.

Avoid placing anything near the heating wires that could damage them. Observe due care when wiping the inside of the rear window since rings on fingers, etc., can damage the wires.

Hazard warning lights

Use the hazard warning lights only when you have to stop or park the car where it might be a possible danger to other traffic.

Note that regulations governing the use of these lights may vary in different places.

Choke indicator light

Parking brake indicator light

Parking brake (handbrake)

The parking brake is situated between the front seats. It operates on the rear wheels.
When the parking brake is applied, and the ignition switched on, the PARKING BRAKE light on the instrument panel goes on. Always use the parking brake (handbrake) when parking, to maintain the best possible function.
For winter use, see page 82.

Choke (only in cars with carburettor engines)

The choke control should be pulled out when starting a cold engine.

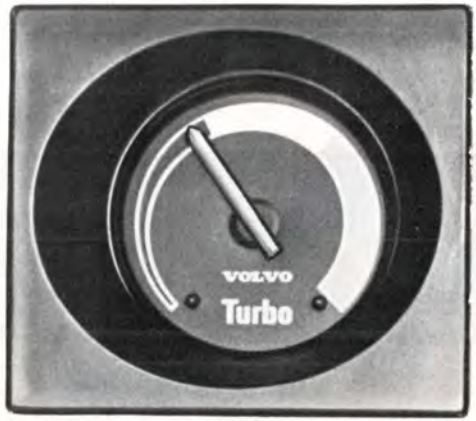
Temperatures below +10° C.
Pull out the choke fully, but do not depress the accelerator.

Temperatures above +10° C
Pull out the choke ¾, but do not depress the accelerator.
The choke light on the instrument panel goes on when the choke is pulled out.

Use the choke as briefly as possible!

See "Starting the engine", page 34.

Clock, boost pressure gauge, cigar lighter, ashtrays



Clock

The clock is electrically operated from the car battery. To reset the hands, push in the knob in the middle and rotate it. The clock may even be located in the instrument panel. In such cases, the knob is located to the left below clock.

Boost pressure gauge

(turbo engined cars only)

The boost pressure gauge is divided into three sections.

Black section: The engine acts as a normal aspirated engine. This section is the most economical to drive in.

Yellow section: The turbo is engaged.

Red section: The excess pressure in the intake manofold is too high. Drive the car carefully to a Volvo dealer for inspection.

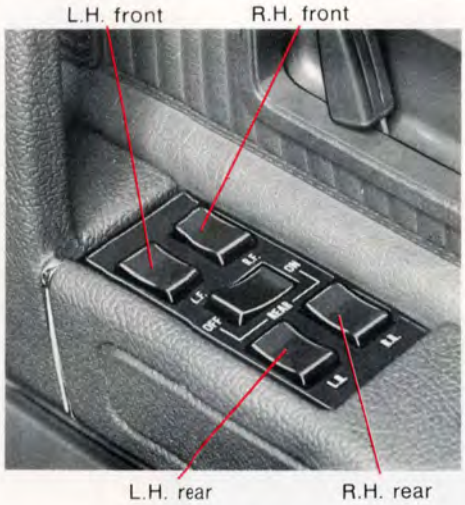
The warning light for boost pressure goes on if the gauge pointer moves into the red section.

Cigar lighter

To use the cigar lighter, push it in fully. It automatically springs back when sufficiently heated.

Ashtrays

To empty the ashtray, draw it out fully, press down its tongue and remove.



Electrically operated window winders

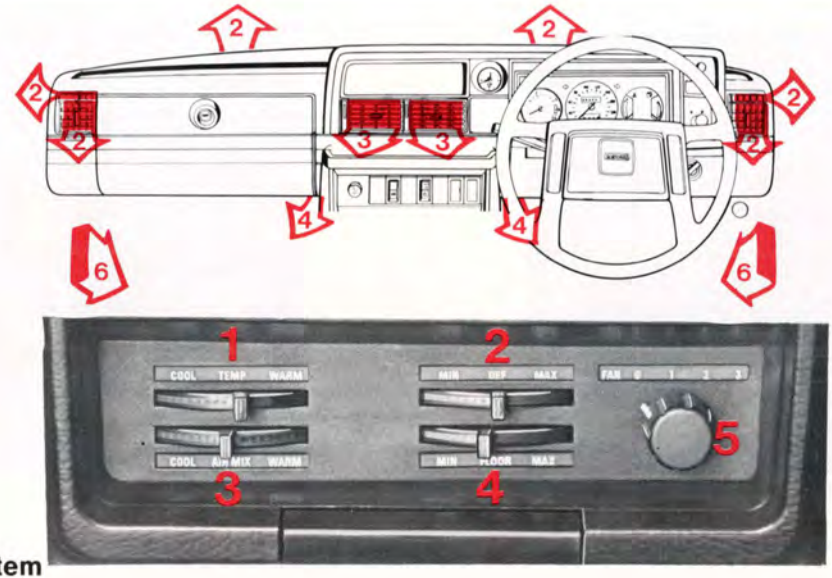
For cars so fitted, the electrically operated window winders are controlled by means of switches set in the door arm rests. The above illustration shows the driver's arm rest, from where all the electrically operated windows can be controlled.
The ignition must be switched on in order that the window winders can function. The window is lowered if the rear part of the switch is pressed and raised if the front part of the switch is pressed.

Cut-out for rear door windows

Cut-out switch for rear door window winder

If the car is also fitted with electrically operated rear door windows: these can be disconnected by means of the switch located in the centre of the switch panel in the driver's door arm rest. The switch is situated at 90° to the winder switches.

ON — The rear door windows can be raised or lowered with the respective door switch as well as the switch on the driver's door.
OFF — The rear door windows **cannot** be raised or lowered with the respective door switch but instead **only** with the corresponding switch on the driver's door.



Standard heating system

1 TEMP
Left = COOL
Right = WARM

2 DEF (defroster)
Air to windscreen and the **two outer vents** with side window defroster nozzles.
Left = MIN-closed
Right = MAX-open

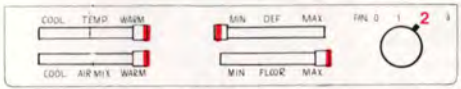
3 AIR MIX
Air to the **two centre vents.**
Left = COOL — fresh air
Right = WARM — heated fresh air
Cool and heated fresh air can be mixed to desired temperature, but not, however, warmer than that set by TEMP control lever.

4 FLOOR
Left = MIN — no air to floor
Right = MAX — full air flow to floor

5 FAN (Air blower)
0 = off
3 = max.

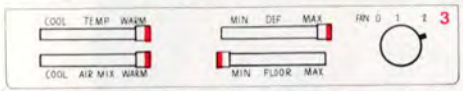
6 "Fresh" air vents
Lever forwards-vent open
Lever rearwards-vent closed

To get best heating ...



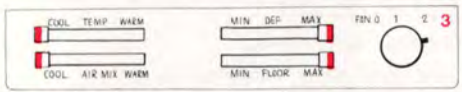
Close the air vents on the facia and the floor "fresh"-air vents.

... and to remove mist:

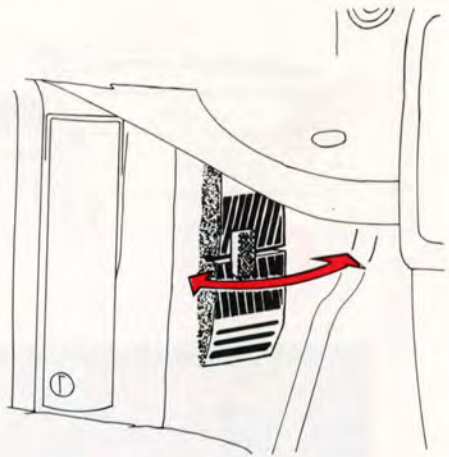


Also close the air vents on the facia and the floor "fresh"-air vents. If it has been snowing, remove any snow over the air intake to the heating system.

... and to get best ventilation:



The floor "fresh"-air vents must be fully open and the fan speed reduced if you want particularly cool air.

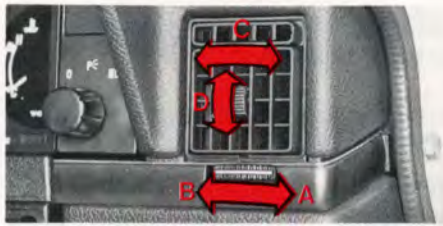


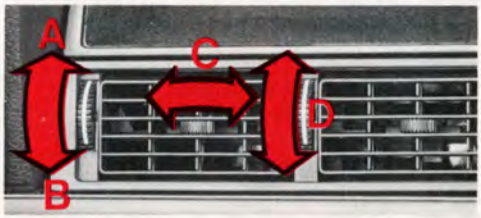
"Fresh"-air vents

A "fresh"-air vent is situated on each side near the feet. Air flow is regulated by the lever in the middle of the vent.

Lever forwards – vent open
Lever rearwards – vent closed

Maximum flow is obtained with the vents fully open and the fresh-air fan closed. If the fan speed is increased, the fresh air will flow through the air vents on the facia instead.





Air vents

A closed
B open
C air flow to the side
D air flow vertically

Note that the four air vents function differently. You can regulate the air flow through the two outer air vents with the defroster lever. The two centre air vents, on the other hand, can only be operated by means of the vertical serrated wheel next to them.

Heating and ventilation

Combined unit heating system (certain models)

This heating system is standard on all models on certain markets.

1 TEMP
Left = COOL
Right = WARM

2 FLOOR
Not pushed in = no air to floor
Pushed in = max. air to floor

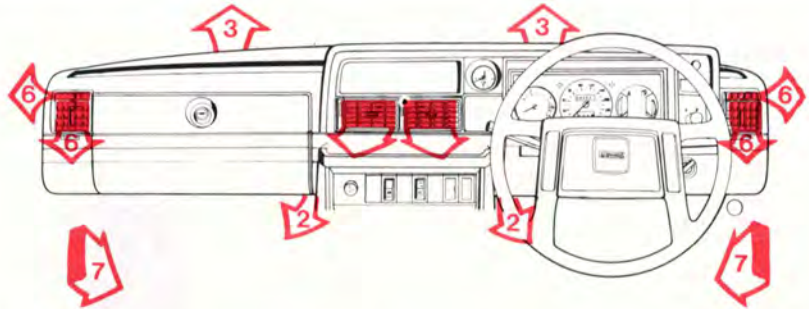
3 Defroster
Not pushed in = weak defroster effect
Pushed in = max. defroster

4 REC (recirculation)
Intended only to be used if the car is fitted with air conditioning. Not to be used for heating.

5 FAN
1 = lowest speed
4 = highest speed
The fan is always in operation

6 Air vents
Air flow through these vents is reduced if 2 FLOOR and 3 Defroster are open.

7 "Fresh"-air vents
Lever forwards-vent open
Lever rearwards-vent closed



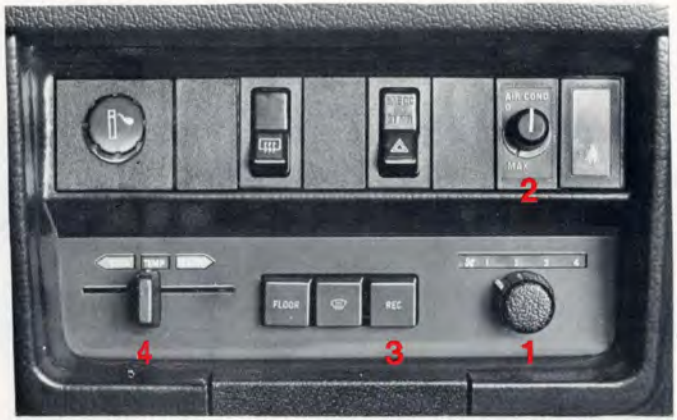
Proceed as follows to get ... ... best heating

1 TEMP ⟶ WARM
2 FLOOR button pushed in
5 FAN ⟶ 3 (possibly 4)
6 All air vents closed
Also close floor "fresh"-air vents.

... and remove mist

1 TEMP ⟶ WARM
3 Defroster button pushed in
5 FAN ⟶ 4
6 All air vents closed

Also close floor "fresh"-air vents.
If snow has fallen, remove any snow on the air intake (in front of the windscreen).



Air conditioning (certain models)

How to operate the air conditioning:

1 FAN
4 = for rapid cooling

2 AIRCOND (compressor)
Start the compressor by turning the knob clockwise to MAX. For rapid cooling, e.g., when the car has been parked and ambient temperature is high, turn the knob into the yellow sector past MAX. When the desired temperature has been reached, turn back the knob into the blue sector.

The knob should always be in the blue sector during highway or motorway driving. Should the knob be in the yellow sector on these occasions, this could cause the air conditioning system to ice up and impair the air conditioning function.

3 REC (recirculation)
This knob must be pushed in during the cooling period and also if the outer temperature and/or humidity is high.

4 TEMP
The control must be at COOL, that is, fully to the left, when the air conditioning is used. The temperature is regulated instead by the rotatable knob for the compressor.

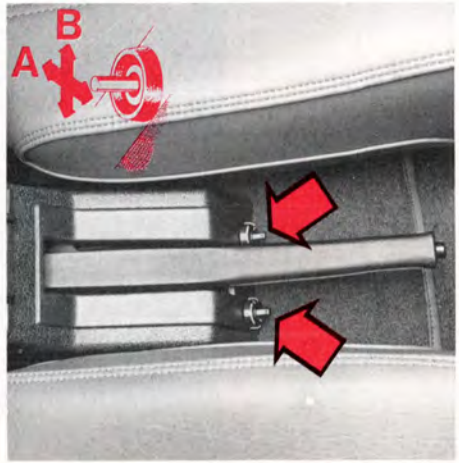
NOTE! All the car windows and the "fresh"-air intakes near the floor must be closed!

FLOOR, defroster **not** pushed in. All air now flows in through the air vents on the facia. These, of course, should be open.

A tip: For rapid removal of mist from the car, the air conditioning system can be used with advantage even when it is relatively cold outside since the air in the system is de-moistened before being blown into the car.

Let a Volvo workshop check the system each year.

Rear view mirrors



Inside rear view mirror

D Normal position
N Anti-dazzle position — use if headlights of car behind irritate you.

Manually adjustable outside rear view mirrors

A Lateral adjustment
B Vertical adjustment

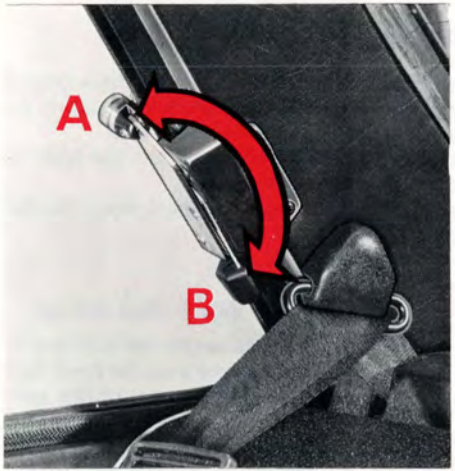
Electrically adjustable outside rear view mirrors

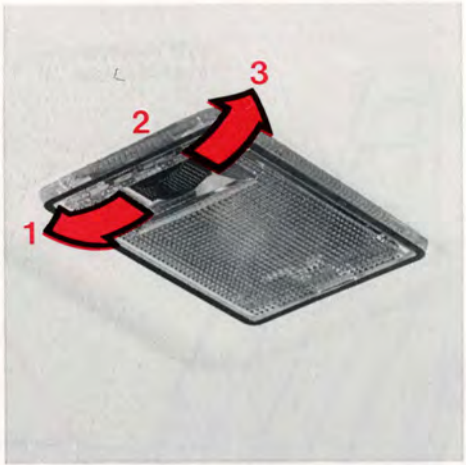
The switches for adjusting the two outside mirrors are located in the front edge of the handbrake console.

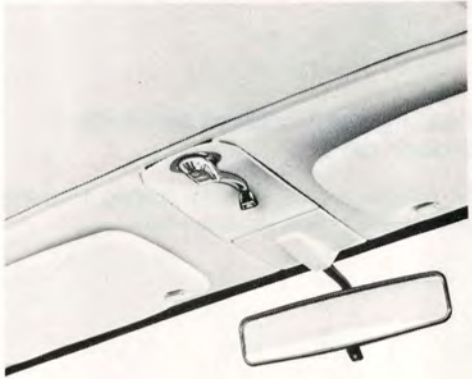
A Lateral adjustment
B Vertical adjustment

Avoid using ice scrapers made of steel as they can easily scratch the mirror surface.

Always adjust the mirrors before driving off!







Hinged rear quarter-light (2-door cars)

A Open
B Closed

Interior light

1 The light is always on.
2 The light is always out.
3 The light goes on when one of the doors is opened.

The 245 has a somewhat different type of bulb housing.

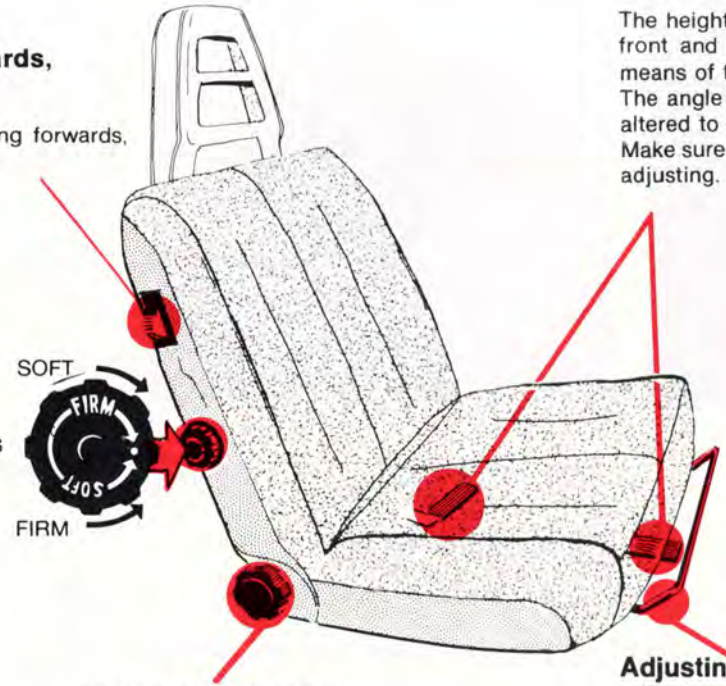
Sun roof (certain models)

The sun roof is opened and closed by a handle situated between the sun visors.
Open out the handle and crank anti-clockwise to open the sun roof, and clockwise to close it.
For reasons of safety, the handle should always be in its recess during driving.

Front seats

Folding the backrest forwards, 2-door cars

To release the backrest for folding forwards, push in the button indicated here.



Lumbar support firmness

Backrest inclination

The front seat is electrically heated. At a temperature of about +15° C (60° F) a thermostat switches on the heating, and switches it off when the temperature is about +25° C (77° F).

Adjusting the height position

The height of the driver's seat can be adjusted front and rear to three different positions by means of the respective levers there.
The angle of the seating cushions can also be altered to different positions.
Make sure that the seat is properly secured after adjusting.

Never adjust when driving!

The passenger seat is bolted to four brackets on the floor. Any height adjustment of this seat will thus require the use of a tool.
Otherwise, the passenger seat has the same adjustment possibilities as the driver's seat. In other words, three different positions front and rear.

Adjusting lengthwise

To adjust the seat lengthwise, pull up the bar and move the seat forwards or backwards as desired. Make sure that the seat is properly secured when you release the bar.

Never adjust during driving!

Children in the car

A grown-up with fastened seat belt in a Volvo is assured of good protection in the event of a collision or other accident.
The size and build of a child will determine how best it can be protected from injury when travelling in the car. The following, therefore, should be noted.
Remember that a child, irrespective of its age and size, must never be "loose" in the car. On no account should small children be seated on the lap of a person not using a seat belt. Neither should a seat belt be used to secure more than one person.
Many countries have legislation as to where and how children should be seated in a car. Find out that which applies in your country and in any country in which you drive.
The most effective type of protection depends on the build of the child:

Babies and small children who cannot sit up

Children belonging to this group should lie in a carry cot, detachable pram top or similar which is placed in the rear seat with the head of the baby towards the middle of the car. It can be prevented from falling down onto the floor in the event of abrupt braking, etc., either by fastening the rear seat belt round it or by installing the Volvo safety bench in front of the rear seat. This bench can be purchased from a Volvo dealer.

Children from the age they can sit and up to a size of about 117 cm = almost 4 ft. (up to 6–7 years).

Children in this age group should always travel in a child safety seat. The seat you use should comply with the regulations in force in your country.
Never use the type of seat which solely hooks on or suspends from the rear seat backrest. The child safety seat may be positioned against the backrest but should be secured independently to the body of the car.
An approved seat is available from your Volvo Dealer.

Not available on certain markets. Consult your Volvo dealer.

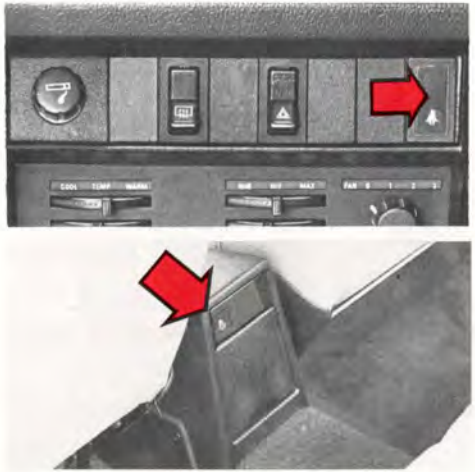
Children taller than 117 cm = almost 4 ft. (from the age of 6–7 years).

When a child has outgrown the child's seat, it should travel in the rear seat with the standard rear seat belt fastened.

The best seating arrangement for such a child from a safety point of view is to seat it on a cushion (your Volvo dealer may have the "special Volvo cushion") to enable the seat lap belt to fit as far down on the hips as possible.

The use of the seat belts is described in greater detail overleaf.

Seat belts



Button for releasing belt, front seats

Button for releasing belt, rear seats

Seat belts

Always have the seat belts fastened for all types of driving. Even the rear seat passengers should naturally use the seat belts otherwise they can be thrown against the front seats in the event of a collision. Should this happen, the belt of the front seat concerned will be exposed to a much heavier load than it is intended for so that both persons can incur injury as a result. Even abrupt braking can give rise to serious consequences if the belts are not used.
Two warning lights, one on the instrument panel and one on the console for the parking brake start blinking if the driver or front-seat passenger has not fastened their seat belts.

Automatically retracting inertia-reel seat belts

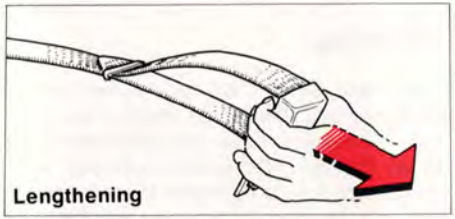
The front seats and, on certain markets, the two ends of the rear passenger seat are fitted with automatically retracting inertia-reel seat belts.

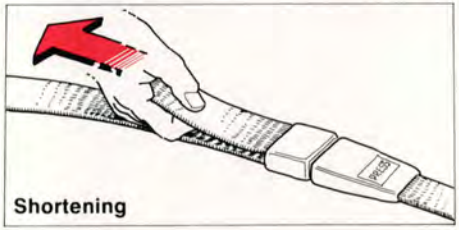
These are fastened as follows: pull out the strap slowly to prevent the mechanism from locking. Push the tongue down into the lock. A pronounced click indicates that it is locked. **The belt must not be twisted.**

To release the belt, push in the red button on the lock. Allow the belt to roll up fully.

Normally the belt is "unlocked".
It locks, and thus cannot be drawn out:

- if pulled out rapidly
- when braking and accelerating
- if the car is at a fairly sharp angle
- when rounding a bend





Checking the seat belts

Check to make sure that the strap does not fasten or fray against sharp edges and now and again check that the bolts are well-tightened and that the belt is otherwise in good condition. Use water and a good quality detergent for cleaning the belt.

The locking function of the inertia-reel belt can be checked as follows:

- Take hold of the belt and jerk it.
- Brake the car abruptly at about 50 km/h (30 mile/h) or drive round in a narrow circle. (But first look out for approaching traffic.)
  Pull the belt.

During the above-mentioned tests, it should **not be possible to pull out the belt.**

Manually adjusted seat belts

The centre seat belt fastens across the lap, and should always be adjusted to the right length.

Pregnant women

Pregnant women should be very careful when using seat belts. Remember that the belt should always be positioned in such a way as to avoid any possible pressure on the abdomen. The lap belt should be located low, as shown in the above illustration.

WARNING!

If a seat belt has been exposed to a powerful strain in connection with a collision, for example, it must be replaced even if it does not appear to be damaged. Consult your Volvo dealer for advice.
Remember that **the belt must be replaced complete,** that is, the **entire** belt together with the roller, all the anchorages, retaining bolts, nuts and **locking mechanism** as well as the belt lock between the seats.
Change a belt even if only one of the straps is very worn or damaged.
Never repair or modify a seat belt on your own. Let a Volvo workshop do this for you.

WARNING!

The doors should not be locked when driving, since this would prevent anyone from getting into the car quickly in the event of an accident. Remember that with the child safety lock in operation the rear doors can only be operated from the outside.

Unlocking the front doors

Both front doors are unlocked with the key supplied. To unlock and open the door, turn the key 1/4 turn clockwise, (anti-clockwise on l-h door). This pushes up the lock button on the inside so that the door can be opened with the door handle.

To open a door from the inside, the lock button must first be pulled up.

The locks should be oiled with a suitable lock oil during the wintertime to protect against freezing.

If a lock has frozen, do not try to force it with a key otherwise the key may break in the lock. Instead, heat the lock or the key.

Locking the doors

The doors are locked by pushing down the lock button and shutting the door.

Do not leave the key in the car!

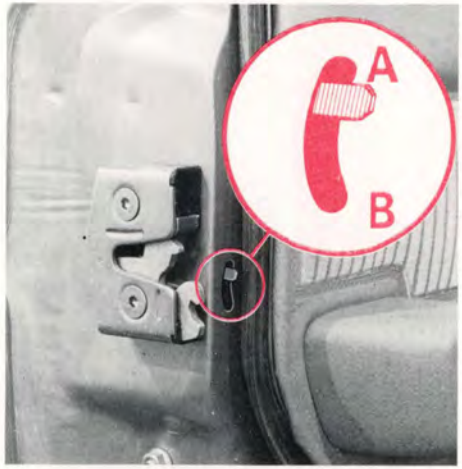
The front doors can also be locked from the outside with the key. Turn the key 1/4 turn anti-clockwise, (clockwise for the left-hand door).

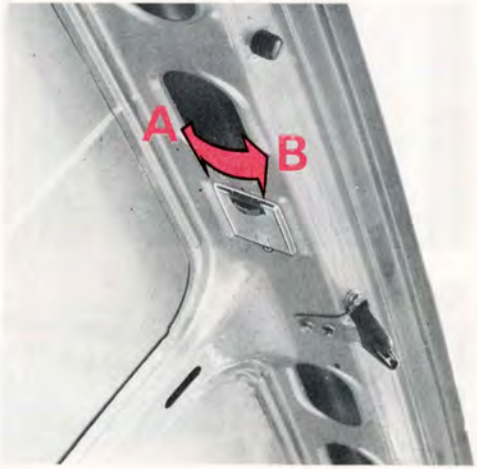
Central Lock

Some models are equipped with a central lock. This means that the lock in the driver's door automatically controls the locks on the other doors (including the tailgate on the 5-door model).

If you lock or unlock the driver's door from the outside using the key, the other doors will automatically be locked or unlocked.

If, however, you lock or unlock the driver's door by means of the lock button on the inside of the door, then you must push or pull slightly harder in order to operate the other doors. By locking at the lock buttons on the other doors you can see if they are locked or not.





Child safety lock, 4 and 5-door models

The small button for operating the child safety lock is situated on the inside at the end of the rear doors, and is accessible only when the door opens.

A the lock functions normally
B the door **cannot** be opened from the **inside.**

Remember that with the button in position B, the rear-seat passengers cannot open the doors from the inside themselves in the event of an accident. The rear doors must be opened from the outside.
See also the text in the warning block on the previous page.

Boot lid, 2 and 4-door models

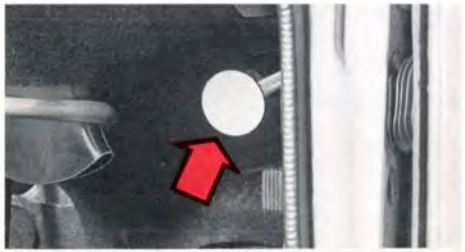
The lid is opened by turning the key clockwise.

Spare wheel, warning triangle, jack and tool kit are strapped in the boot to the left.

Boot light, 2 and 4-door models

A light always out
B light goes on when lid opens.

Bonnet, tank filler cap

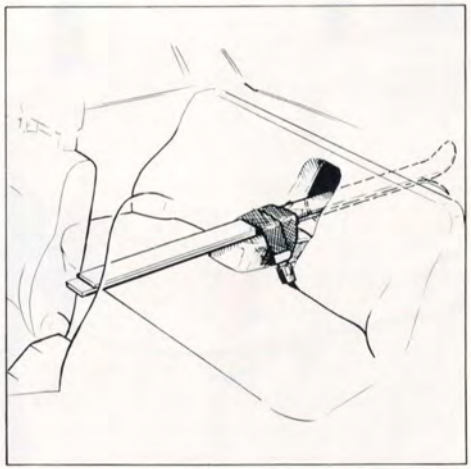


The bonnet is opened as follows

Pull the bonnet release knob (to the extreme right under the facia).
Lift up the front of the bonnet slightly and put your fingers under the front edge and press the safety catch upwards.
Open the bonnet.
Make sure it is properly fastened when you close it again.

Tank filler cap

The tank filler cap is situated on the inside of the flap on the right-hand rear wing. The cap can be placed in the holder of the inside of the flap while refuelling.
A "wheezing" sound can be heard when removing the filler cap due to a pressure in the fuel tank. This is quite normal and is not to be regarded as something dangerous.
When re-fitting the cap after filling the tank, turn the cap until you hear a clicking sound.
The correct octane will depend on the engine type, see page 88.
The fuel tank holds about 60 litres (13 UKgal).



Flap for long loads

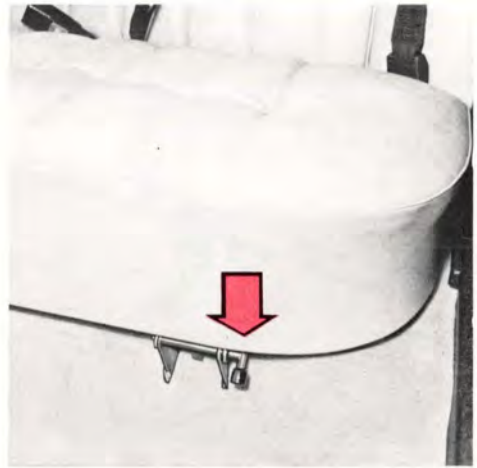
A flap in the rear seat makes it possible to carry long objects.
Always remember to secure the load eg. with the centre belts around the armrest, see illustration.
Protective bags should also be used to avoid soiling the upholstery.
Please note that the flap in the rear seat is only intended for light loads e.g. skis, planks
Max. length of load 2 m (6.4 ft)
Max. weight of load 15 kg (33 lbs)

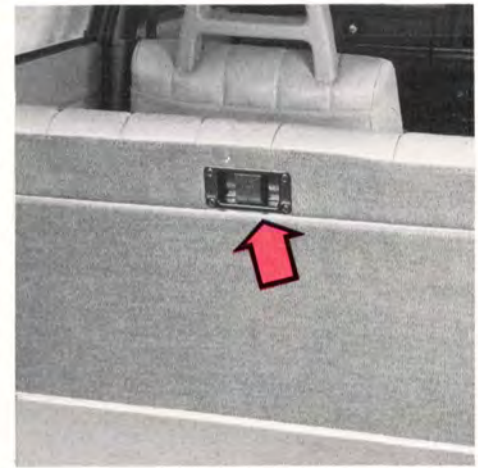
Take care when loading/unloading. If the gear selector, on a car with an automatic gearbox, is in position N, the weight and movement of the load during loading/unloading may cause the gear selector to move into position D.

WARNING!

When braking rapidly the load can be displaced and cause injury to occupants. Sharp edges on the load should be covered for protection.

5-door models, Folding up the rear seat



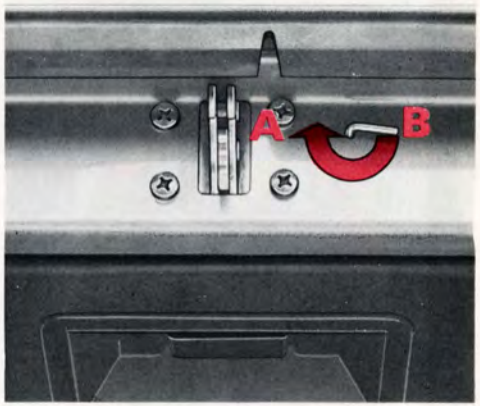


The 245 rear seat, cargo space and tailgate are described on pages 30, 31 and 32.

Folding up the rear seat, 245

Push down **one** of the two levers at the front of the cushion (one on each side). Take hold of the rear end of the cushion and tilt up towards the front seat backrest.

Move the handle on the rear seat backrest and fold down the backrest.
Make sure that all the seat belts are in their proper place when the rear seat is put back in position again.



Opening from the outside

To open, turn the key and press in the knob. Note that the procedure for locking and unlocking the tailgate varies, depending on whether or not the car is fitted with a central lock (see page 26).

Opening from the inside

Pull out the handle at the bottom of the tailgate.

Safety latch

A it is not possible to open the tailgate from the **inside,** only from the outside.

B tailgate can be opened either from the inside or the outside.

Tailgate, 5-door models

Cargo attachment eyelets

Six eyelets have been fitted to which straps for securing bulky loads can be attached – a safety measure designed to protect occupants from injury in the event of, e.g., abrupt braking. Four of these eyelets are shown on the illustration: The other two are situated underneath the rear seat cushion which can be tilted up. Your Volvo dealer can supply you with straps specially made to hold down your luggage, etc.

Spare wheel, jack

Turn the two clips a 1/4 of a turn and lift off the cover to get at the spare wheel and jack.

Extra stowage cavities

Two extra stowage cavities are situated under the load space floor.
An extra seat, intended to be fitted in "back-to-front" in the load space on the 245 can be obtained from the Volvo dealer.

WARNING

Do not load the vehicle to a height above the rear backrest. Failure to observe this may cause some of the load to be thrown forward, when braking hard or during a collision, and result in serious injuries to yourself and your passengers.

Starting and driving

Running-in a new car

During the running-in period, the following speeds should not be exceeded:

During the first 1 000 km (600 miles):		Between 1 000 and 2 000 km (600 and 1 200 miles):	
1st gear	30 km/h (20 mile/h)	1st gear	35 km/h (20 mile/h)
2nd gear	55 km/h (35 mile/h)	2nd gear	65 km/h (40 mile/h)
3rd gear	80 km/h (50 mile/h)	3rd gear	100 km/h (60 mile/h)
4th gear	110 km/h (70 mile/h)*	4th gear	130 km/h (80 mile/h)**

*130 km/h (80 mile/h), overdrive engaged.

**150 km/h (95 mile/h), overdrive engaged.

Also avoid driving at low speed in high gear and do not use the kick-down (automatic transmission) during the first 2 000 km (1 200 miles)

This is how you start the engine:

Carburettor engine

Cold engine:

1 Apply the parking brake (handbrake).

2 Gear lever in neutral (position N or P automatic transmission)

3 Depress the clutch pedal

4 **Temperatures below +10° C (50° F):**
Pull out the choke fully, do not touch the accelerator pedal.

Temperatures above +10° C (50° F):
Pull out the choke 3/4, do not touch the accelerator pedal.

5 Turn the ignition key to start position.
If the engine does not start immediately slowly depress the accelerator pedal to the floor and keep it there until the engine starts.
Release the key when the engine has started.

6 Push in the choke until best idling is obtained. Push it in more and more as the engine becomes warmer.
The choke should be pushed fully in when the engine is thoroughly warm.

Never race an engine immediately after starting from cold!

Hot engine (operating temperature):

1 Apply the parking brake (handbrake).

2 Gear lever in neutral (position N or P — automatic transmission).

3 Depress the clutch pedal.

4 Depress accelerator pedal half-way.

5 Turn the ignition key to the starting position.
If the engine does not start immediately depress the accelerator pedal to the floor and keep it there until the engine starts.
Release the key when the engine has started.

WARNING

Before starting your car in a garage, always open the garage doors.
The exhaust gases from the engine contain carbon monoxide which is poisonous and particularly dangerous since it is invisible and odourless.

Injection engine

1 Apply the parking brake (handbrake).

2 Move the gear lever to neutral (position N or P – automatic transmission).

3 Depress the clutch pedal.

4 Do not touch the accelerator pedal!

5 Turn the ignition key to the starting position. Release the key when the engine has started.

If the engine does not start immediately, depress the accelerator pedal half-way and keep it there until the engine starts.

Avoid repeated short attempts to start. (Each time the starter motor is engaged, fuel is injected into the engine.)
Instead, allow the starter motor to operator for a rather longer time (but not more than 15–20 seconds each time).

Never operate at high engine speed or full throttle whilst the engine is still cold!

Warm up the engine as soon as possible

Experience has shown that engines in cars driven short distances with many stops in between wear abnormally quickly. This is due to the fact that the engine is never given an opportunity to attain normal operating temperature.
When the engine starts, try to get it up to normal operating temperature as quickly as possible.
Do not let the engine idle but start driving under light load as soon as possible.

TURBO CAUTION

Especially important for cars with turbo engines:
Do not race the engine immediately after starting. When cold, oil flows less rapidly and will not reach all necessary parts immediately.
Before switching off:
Always let the engine speed drop to **idle** before switching off. After a hard drive let the engine idle for a few minutes before switching off. If the is turbo rotating at high speeds and the engine is switched off there is a great risk of heat damage or seizing due to lack of lubrication.

Economic driving does not necessarily mean driving slowly

Driving economically means that you drive gently and at moderate speeds at all times. Here are a few tips which should be observed.

- Warm up the engine as quickly as possible. Do not let the engine idle but start driving under light load as soon as possible. A cold engine uses up more fuel, and wear is greater compared to a warm engine.
- Avoid driving only short distances since this does not enable the engine to become warm enough.
- Drive gently. Avoid racing starts, hard accelerations and abrupt braking.
- Keep your car at a constant speed when driving on highways and motorways.
- Do not carry unnecessary loads in the car or boot.
- Keep your tyres at the correct pressure. Check the pressure regularly, e.g. when refuelling.
- Avoid driving with winter tyres unless you have to.
- Use a roof rack only when necessary.

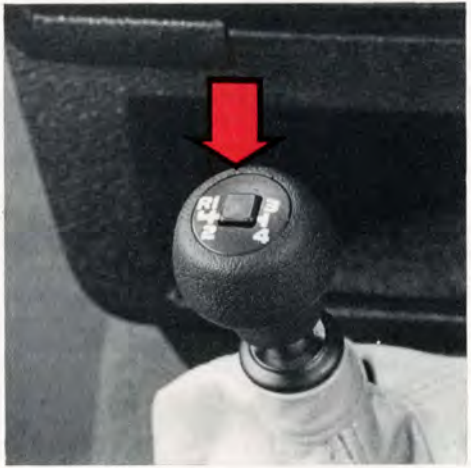
An important part of economy driving is to use the gearbox in the right way.
In other words, always select the right gear!

- Suitable change-up and change-down speeds for the various gears:
  1st – 2nd: approx. 20 km/h (12 mile/h)
  2nd – 3rd: approx. 35 km/h (22 mile/h)
  3rd – 4rd: approx. 50 km/h (30 mile/h)
- If your car is fitted with an overdrive, you ought to use it as often as possible with normal highway driving above approx. 70 km/h (44 mile/h).
- Avoid using the kick-down unnecessarily (automatic transmission).

Naturally, you should also keep your car, particularly the engine, in good trim. Here are some factors which can increase fuel consumption:

- Worn spark plugs
- Faulty ignition setting
- Clogged air cleaner
- Faulty valve clearance
- Malfunctioning air pre-heating
- Faulty idling
- Dirty engine oil and clogged oil filter
- Brakes that "stick"
- Faulty front wheel alignment

All this and much more too should be checked and, if necessary, put right at the 10 000 km (6 000 miles) service in your Volvo workshop.



Overdrive light
The overdrive light goes on when the overdrives is engaged.

Gear-lever positions

Depress the clutch pedal fully when changing gear.

Reverse gear inhibitor

Reverse gear cannot be engaged until the ring under the gear-lever knop is first pulled up towards the knob. The ring, therefore, prevents engaging reverse unintentionally.

Overdrive (certain models)

The overdrive can only be engaged in 4th gear. The overdrive is engaged by pessing the switch on the top of the gear lever. If the switch is pressed once again, the overdrive will be disengaged. In addition the overdrive is automatically disengaged when changing down. We do however recommend that you disengage the overdrive before changing down.
The clutch pedal should be depressed slightly when engaging/disengaging the overdrive to facilitate a smooth change over. The overdrive should be used as much as possible, at speeds in excess of 70 km/h (45 mile/h), for good fuel economy).

Selector lever position

P parking
R reverse
N neutral
D drive
2, 1 } low gear

P parking

Select this position when parking the car with engine stopped or running. Never alight from a car when the engine is running. If, by mistake, the gear selector is moved from "P" the car may start moving.

The car must be standing still when selecting P!

With the selector lever at **P** the transmission is mechanically blocked. When parking on a hill or suchlike, the parking brake should always be applied.

R reverse

The car must be standing still when selecting R!

N neutral

N is the neutral position, that is, no gear is engaged.

Apply the parking brake when the car is parked with the selector lever at N.

D drive

D is the normal driving position. Changing up and down between the transmission's 3 gears takes place automatically depending on acceleration and road speed.

2 low gear

Changing up and down between 1st and 2nd takes place automatically.
But there is **no** changing up to 3rd.

Engage position 2 if you wish to change down immediately to 2nd (provides more powerful engine braking).

Position 2 can be used ...

with relatively slow motorway driving
when driving in towns, etc.
when driving in hilly country
when overtaking
in order to increase engine braking

Do not select position 2 for speeds above 105 km/h (65 mile/h) (110 km/h=70 mile/h for cars with injection engine).

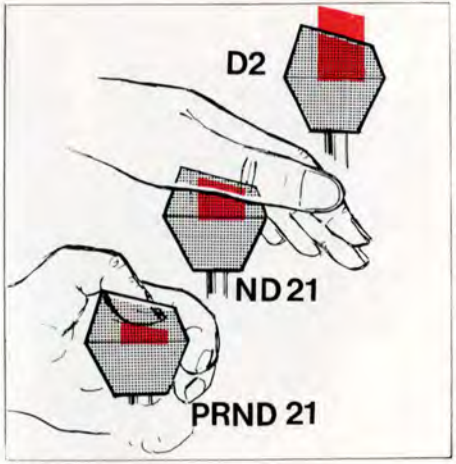
1 low gear

If position 1 is selected at high speed, 2nd engages. It is only when the speed has dropped to about 50 km/h (30 mile/h) that 2nd engages.

NOTE! There is no upchanging from 1st!

Select position 1 if you only want to drive in 1st gear and **do not** want to change up, e.g., with driving in hilly country when position 1 gives the best engine braking.

Do not select position 1 for speeds above 105 km/h (65 mile/h) (110 km/h=70 mile/h for cars with injection engine).



Selector lever gate

The selector lever can be moved freely between position **D** and **2** while the other positions are provided with a gate which opens by depressing the button in the selector lever knob. To move the selector lever between positions **N** and **1**, lightly depress the button in the knob with the palm of the hand.

To move the selector lever to positions **R** and **P**, depress the button fully (best with the thumb). The button must also be fully depressed when moving the selector lever from **P**.

In other words, when the button is fully depressed, the selector lever can be freely moved between all the gear positions.

Starting and stopping with automatic transmission

1 Move the selector lever to **P** or **N**. (The engine cannot be started with the selector lever in any other position.)

2 Start the engine in the normal way with the ignition key.

3 Either apply the parking brake or depress the brake pedal lightly (otherwise the car will start moving slowly when the selector lever is moved to any of the driving positions).

4 Move the selector lever to the desired driving position.

5 Release the brake and depress the accelerator pedal.

The car is stopped very simply by taking the foot off the accelerator pedal and by depressing the brake pedal.
No need to touch the selector lever.

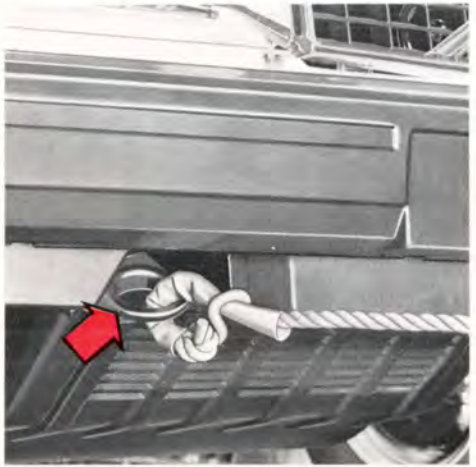
Kick-down

When the accelerator pedal is depressed to the floor, immediate down-changing to the next lower gear takes place automatically (kick-down). As soon as max. speed for this gear is obtained or if you ease the accelerator pedal out of the kick-down position, then you get automatic upchanging to the next higher gear. Kick-down should be used when you want maximum acceleration, e.g., when overtaking.

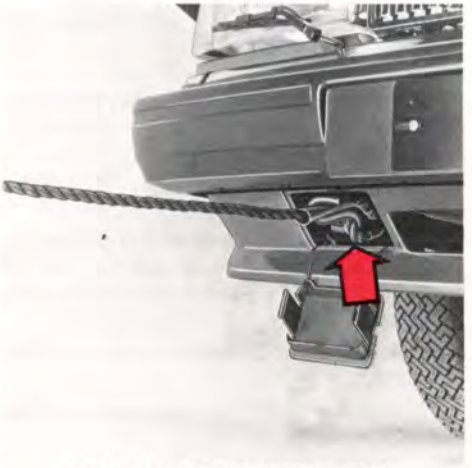
Remember!

- **The car must be stationary when selecting P or R!**
- **The car must be idling when D, 2, 1 or R is selected and the car is stationary!**
- **105 km/h (65 mile/h) is the max. permissible speed when position 2 or 1 is selected during driving. (110 km/h=70 mile/h for cars with injection engine.)**

Towing



Towing eye, front



Towing eye, front (with spoiler)

Towing eye, rear

Always remember the following when about to tow!

- Unlock the steering wheel in order to steer the car!
- Bear in mind regulations concerning maximum permissible speed when towing!
- Also bear in mind that the servo assistance provided by the footbrake does not function when the engine is not running! So you have to depress the brake pedal 3 or 4 times harder than is the case when the engine is running!
- If the car has power-assisted steering, then the steering will feel considerably heavier.
- Drive as smoothly as possible. Try to keep the towline stretched in order to avoid unnecessary jerking.

Special recommendations for automatic transmission

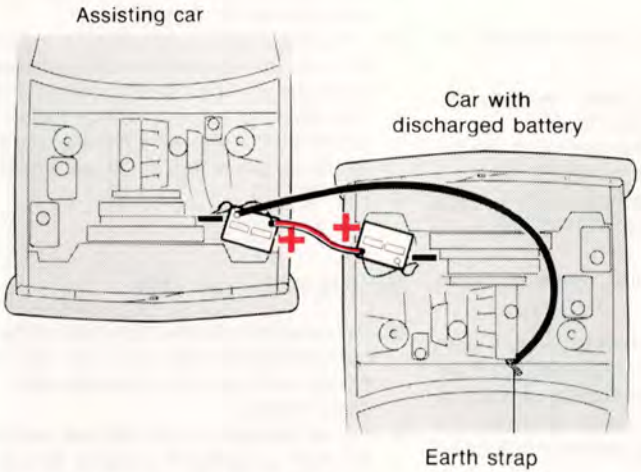
- The selector lever should be in position N, the transmission must be properly adjusted and the oil level correct (see page 54).
- Maximum permissible speed: 20 km/h (12 mile/h)!
- Maximum permissible towing distance: 30 km (20 miles)!

Starting the engine by towing

IMPORTANT! Cars equipped with automatic transmission cannot be started by towing.
If the battery is flat, an auxiliary battery should be used instead (see next page).

Cars with manual gearbox

The towing car is started and driven at an even speed. Towed car: switch on the ignition (pull out the choke if the engine is cold).
Depress the clutch pedal, engage 3rd or 4th gear, wait until the car has picked up speed and gradually take your foot off the clutch pedal. As soon as the engine starts, depress the clutch pedal.



WARNING!

Bear in mind that the batteries, especially the auxiliary battery, contain oxyhydrogen gas, which is very explosive. A spark, which can be caused by faulty connection of the assisting car battery, is sufficient to cause a battery to explode and cause both personal injury and material damage.

Starting with an auxiliary battery

If for some reason the battery in your car has become discharged, it is possible, in order to start the engine, to "borrow" current either from a separate battery or from another car's battery.
In order to avoid any risk of explosion we recommend that you proceed exactly as follows:

1 Ensure that the auxiliary battery has a voltage rating of 12 V.

2 If the auxiliary battery is located in another car make sure that the cars do not touch each other.

3 Connect one end of the red cable to the + pole (red coloured, P or +) of the auxiliary battery. Always check that the clamps are securely attached, so that no sparks can occur during the start attempts.

4 Connect the other end of the red cable to the + pole of the discharged battery.

5 Connect one end of the black cable to the − pole (coloured blue, N or −) of the auxiliary battery.

6 Connect the other end of the black cable to a point (earth point) **which lies a short distance from the battery, i.e. the earth strap between the engine and the body.**

7 Start the engine of the assisting car. Allow the engine to run for a few minutes at a higher idle speed than normal, approx. 25 r/s = 1 500 r/min.

8 Start the engine of the car which has the discharged battery.
NOTE! Do not move the clamps during the start attempt (risk for sparks) and do not lean over the batteries!

9 Remove the cables in the exact reverse order to which they were attached.

Points worth noting

Driving and steering

At the specified kerb weight, your car has a tendency to understeer. This is counteracted when rounding bends by turning the steering wheel more.
This should ensure stable driving and reduce the risk of rear wheel skids.
Remember that these properties can alter depending on how the car is loaded.

The pressure in the tyres is also of the greatest importance with regard to the car's operation. We would advise you not to experiment too much with the air pressure but follow our recommendations on page 68.
We advise you not to fit different types of wheels, for example, radial and diagonal, or even tyre makes, since this can alter the handling of the car considerably.

Do not drive with the boot lid/tailgate open!

There is always a risk when driving with the boot lid (tailgate) open that exhaust gas (and thereby carbon monoxide) is sucked into the car via the luggage compartment. This applies particularly to the 245 model.

If you have to drive a short distance with the boot lid open, proceed as follows:
1 Close all the windows.
2 Set the heat/ventilation controls FLOOR and DEF to MAX and FAN to max. speed.

Cooling system

The risk for overheating is greatest, especially in hot weather, when:

— towing a trailer up steep inclines for prolonged periods at full throttle.
— idling for prolonged periods while the air conditioning system is in operation.
— stopping the engine suddenly after high-speed driving, so-called afterboiling.

To avoid overheating, the following rules should be followed:

- Reduce speed and change down when towing a trailer up long steep inclines. If the car is fitted with airconditioning, the risk of overheating can be reduced by switching off the airconditioning system for a short while.
- Do not let the engine idle unnecessarily.
- Do not stop the engine immediately after high-speed driving, but allow the engine to idle for 1/2–1 minute before switching off.

When the risk of overheating is imminent, or in the event of overheating, (the temperature gauge goes repeatedly into, or stays continually in, the red field) the following precautions should be taken:

- Switch off the airconditioning system, if fitted.
- Stop the car and put the gear lever into neutral position – position N.
  Do not stop the engine!
- Increase the engine speed to approx. 2 000 r/min (twice idling speed).
- Check the level of coolant in the expansion tank without removing the cap, see page 58. If topping-up is necessary, unscrew the cap carefully so as to release the pressure in the system before removing the cap completely. Top-up according to the instructions on page 58.

Driving with roof rack

- Use a stable rack which is intended for and can be properly fixed to the car roof. Volvo dealers sell roof racks approved by the Volvo Factory.
- It is not advisable to let the rack remain on the roof unused for lengthy periods. In addition to exposing it to the vagaries of the weather, it increases the car's resistance and thus fuel consumption.
- Spread the load evenly over the roof rack, avoid lopsidedness.
- Place the heaviest load first. It should not be placed on top of a lighter load.
- Remember that the car's centre of gravity and driving charateristics alter with the weight of the load.
- Bear in mind that the surface exposed to wind increases with the size of the load.
- Anchor the load well with strong ropes, etc.
- Drive smoothly, avoid jack-rabbit starts, sharp cornering and abrupt braking.
- The maximum permissible roof load is 100 kg (220 lb.).

If the brake servo does not function

The brake servo only functions when the engine is running. If you push-start your car or have it towed, you must depress the brake pedal 3 or 4 times harder than when the engine is running.

Driving with the choke out causes a deterioration in the power of the servo.
The brake pedal is stiff and hard when the brake servo is not functioning.

Failure in one of the brake circuits

The brake failure warning light, will then go on.

The brake pedal feels easier to depress and goes down slightly further.
However, you do not need to depress the brake pedal harder in order to get normal braking.

If the warning light goes on: drive to a workshop and have the brake system checked.

Moisture on brake discs and brake linings alters the braking properties!

When you drive your car in heavy rain or through pools of water and when washing it, water can splash onto the brake linings. This can alter the friction properties of the brake linings so that a certain delay in the braking effect can sometimes be noticed.

If you drive long distances in rain or slush, you should depress the brake pedal lightly now and again in order to heat up the brake linings and remove the moisture on them. This should also be done after washing the car and after starting in very damp weather.

Spoiler

If your car is fitted with a **spoiler,** this affects air cooling of the front brakes. For this reason, the spoiler may only be used with certain types of wheels, see page 67.

How to avoid severe use of the brakes

Driving in the Alps or in other hilly country with corresponding differences in altitude exposes the car brakes to severe use.
Since also the speed is often low at the same time, the brakes are not so effectively cooled compared to hard driving on a level road.
To avoid unnecessarily overloading the brakes, we recommend that, instead of using the footbrake, you change down on downhills and use the same gears as you would use when driving uphill. For cars with automatic transmission: engage position 2 or possibly 1. This will utilize the braking power of the engine more effectively so that the footbrake need only be used for brief moments.

Towing a caravan or trailer

When preparing your car for driving with a caravan (trailer), remember the following:

- Only approved towing brackets should be used. Information on which types are approved can be obtained from your Volvo dealer. Towing brackets which are designed to be attached to the bumper should not be used. The bumpers on our cars are designed to absorb impacts and consequently should not be used to mount towing brackets.
  Note that the cables cannot be connected to just any part of the car's electrical system! This is because the bulb element sensor (bulb warning lamp) is connected in a special way.
- The rearview mirror arms must be extended since the trailer is normally wider than the car.
- The max. permissible trailer weight etc. to be towed is 1500 kg (3300 lbs).
- The use of Volvo's level control prevents rear end "droop" when towing a caravan. Ask your Volvo dealer for more details.
- The load in the caravan should be distributed so that the towbar pushes down on the car's towing bracket with a load of 65–75 kg (142–165 lbs).
- The towing bracket ball coupling and any moving parts should be cleaned regularly and smeared with grease to prevent unnecessary wear. If your car is equipped with one of Volvos retractable towing brackets, remember to lock the hook in the operating position with the pin.
- The car's engine, clutch and gearbox is more severely loaded than normally. Do not let the engine labour, change down in good time. Start off and change gear as smoothly as possible.
- Make sure that the clutch does not overheat. Slip the clutch as little as possible. This is especially important when repeatedly stopping and starting on hilly roads.
- The braking distances are longer than normal. Avoid severe braking.
- Long, steep downhill slopes put extra load on the car's brakes. Select a lower gear when driving downhill and adapt the speed to suit.
- The car's ability to accelerate when overtaking is somewhat reduced due to the extra weight.
- Greater demands are placed on the cooling system. Avoid overheating by observing the precautions described on page 40.
- The car's tyre pressure should be increased. The amount depends upon the load applied to the towing bracket.
- Legislation regarding maximum allowable speeds varies from country to country. Find out what is applicable in your country and any other country in which you are driving.
- Generally, the output of the engine is reduced at high altitudes, thereby reducing the car's towing ability. This applies to both manual and automatic transmissions. Caravan towing should not be carried out before the car is properly run-in (during the first 1000 km – 600 miles).

The following "Special Tips" apply to cars with automatic transmission

- For steep hills and when driving for prolonged periods at low speeds, position 1 should be selected. Avoid, however, repeated changes since this can cause overheating of the gearbox oil. For driving on mountain roads with long persistant uphill gradients, select position 2.
- When negotiating long, steep downhill slopes, position 1 should be selected and position 2 for less severe inclines, in order to obtain the best possible engine braking effect.
- Do not hold the car stationary on an incline by using the accelerator pedal, engage the handbrake instead. This prevents the gearbox oil from becoming too hot.
- When towing a caravan it is redommended that the oil in the automatic gearbox be changed after every 40,000 km (24,000 miles).
- When driving with heavy trailers, it is recommended that an additional oil cooler is installed. This applies especially when driving hard e.g. mountain driving or prolonged driving at high speeds without braks.
  The additional oil is available as a genuine Volvo accessory. Regarding oil change, se page 52.

SERVICING

SPECIFICATIONS

Servicing

Before your car was handed over to you by your dealer, it underwent two inspections: the first was carried out at the Volvo Factory, and the other by your dealer in the form of a pre-delivery inspection according to the specifications of the Volvo Factory.

Warranty service

When you have driven your car roughly 1 000–2 000 km (600–1 200 miles), hand in your car to your dealer for a warranty inspection, during which the oil in the engine, gearbox and final drive will be changed.

10 000 km (6 000 miles) service

After the above-mentioned warranty service, you should adapt the maintenance of your car to the service booklet specifications with servicing every 10 000 km (6 000 miles). The service booklet tells you what this service entails.

Do-it-yourself

There is some servicing work which you can do yourself, e.g. checking oil levels, changing oils, and so on. These and those small repairs which every driver encounters, for example, changing a bulb, a fuse, a wheel, are subsequently described in this manual.
More detailed descriptions of repairs and adjustments are contained in our service manuals which you can order via your Volvo dealer.

Bear in mind ...

- A 10 000 km (6 000 miles) service is needed in order to keep your car in good trim both from a traffic and operational point of view.
- A neglected 10 000 km (6 000 miles) service can result in your car emitting exhaust gases harmful to the environment.
- Servicing is best done by a Volvo workshop, since it has personnel familiar with Volvo products, Volvo special tools and reliable service literature.
- Your service booklet is stamped after each service has been carried out. A "well-stamped" service booklet is an indication that the car has been well looked after and this should increase its trade-in value.

If our warranty is to apply, we make one absolute condition and that is that the above-mentioned warranty inspection is carried out at roughly the correct mileage, that your car has otherwise been looked after according to the instructions in this manual, that, e.g., the prescribed oil changes and service inspections are carried out at these intervals and also that repairs and servicing are done by an authorized Volvo workshop.

Remember the following before doing any work on your car:

1 Your car is fitted with an alternator

This means that you must observe the following when about to do any work on the electrical system otherwise expensive and lengthy repairs to the alternator might be the result:

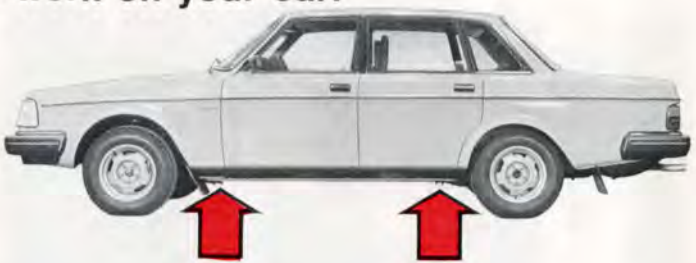
- Make sure that the battery cables are correctly wired to the respective battery pole and are well-tightened.
- If you use another battery to help you start your car, then connect the + pole of the auxiliary battery to the + pole of the car battery and the – pole to earth, see page 39.
- Never disconnect the battery while the engine is running (should you wish to change the battery, for example).
- Before doing any electrical welding on the car, disconnect the battery earth cable and all the alternator and charging regulator cables.
- If a rapid charger is used, disconnect the battery cables. Remember that a rapid charger may not be used as an aid in starting. Also, the engine should be switched off when connecting and disconnecting cables.

2 If your engine is the injection type

The greatest cleanliness must be observed in connection with any work on the fuel injection system. No dirt must be allowed to get into the system.
A Volvo workshop should be allowed to do work on the fuel injection system since it has the necessary equipment for this.

3 Jacking or hoisting the car

If the car is hoisted with a workshop hoist or jacked up with a workshop jack, the four jack attachments (two on each side as illustrated) must be used. They are specially reinforced for this purpose.



If a workshop jack is used, it can be placed under the rear axle casing or under the front axle member between the front wheels.

The guard plate under the engine should first be removed when jacking up the front end under the front axle. Make sure that the jack is securely positioned so that the car does not slide off it when jacked up.

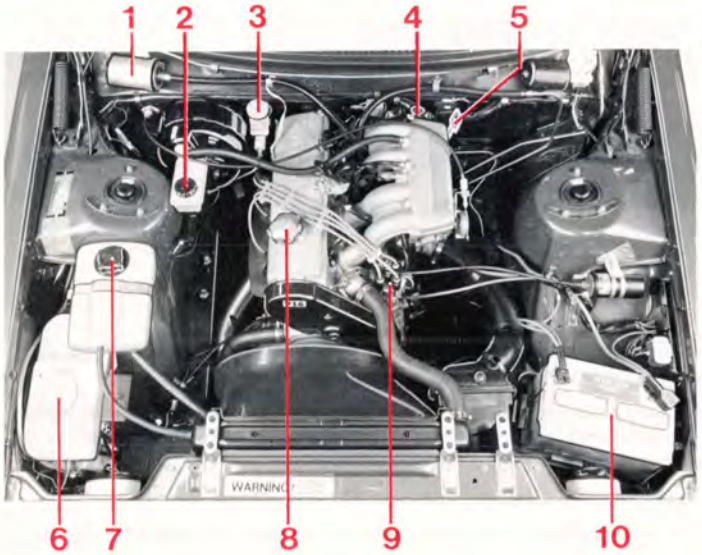
Always use jack supports or similar.

NOTE! Never place a jack under a steering rod or the engine oil sump.

WARNING!

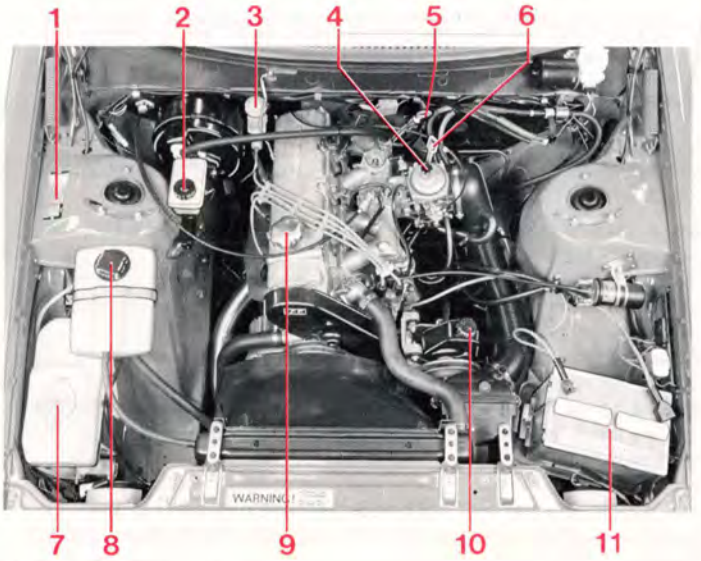
- The jack must stand on firm ground level.
- Never crawl under the car when it is jacked up!
- The jack supplied with the car is only intended for use when changing wheels. With any other work requiring the car to be in a jacked-up position, use a garage jack and place axle stands or blocks under the car where it is to be raised.
- Apply the parking brake, engage 1st gear or reverse on cars with a manual gear box – position P with an automatic transmission!
- Place chocks in front of and behind the wheels still on the ground! Use thick wooden blocks or large stones for this purpose.

Engine compartment



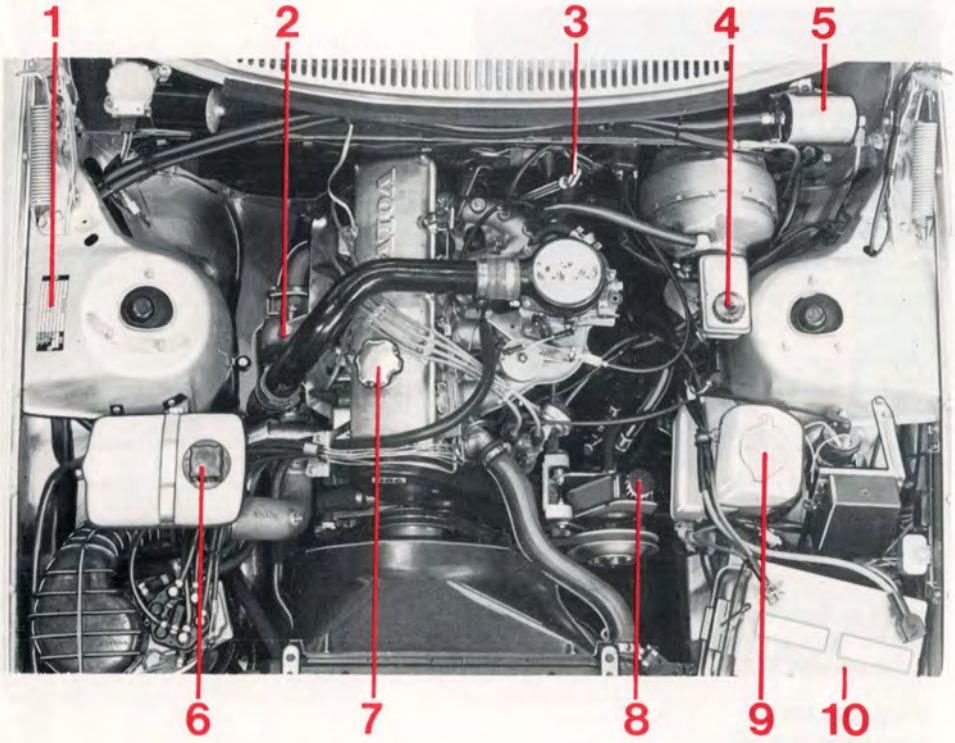
Fuel injection engine

1 Fuel filter
2 Brake fluid reservoir
3 Clutch fluid reservoir
4 Oil dipstick, engine
5 Oil dipstick, auto (certain models)
6 Fluid reservoir for windscreen/ headlamp wash/wipe
7 Expansion tank, coolant
8 Oil filler cap, engine
9 Distributor
10 Battery



Carburettor engine

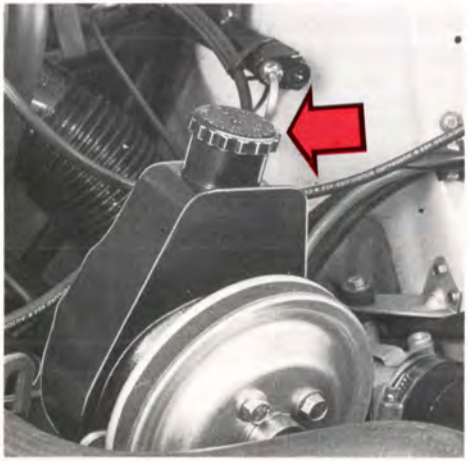
1 Data plate
2 Brake fluid reservoir
3 Clutch fluid reservoir
4 Carburettor
5 Oil dipstick, engine
6 Oil dipstick, auto (certain models)
7 Fluid reservoir for windscreen/ headlamp wash/wipe
8 Expansion tank, coolant
9 Oil filler cap, engine
10 Fluid reservoir, power assisted steering
11 Battery

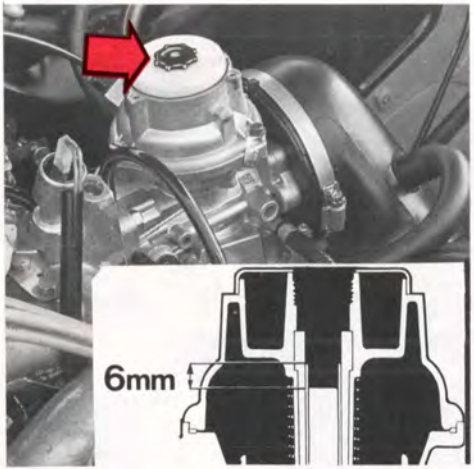


Fuel injection engine with turbocharger

1 Data plate
2 Turbocharger
3 Oil dipstick, engine
4 Brake fluid reservoir
5 Fuel filter
6 Expansion tank, coolant
7 Oil filler cap, engine
8 Fluid reservoir, power assisted steering
9 Fluid reservoir for windscreen/headlamp wash/wipe
10 Battery

Power-assisted steering, carburettor





Power-assisted steering (certain models)

Check the oil level when the oil is warm, and when the engine is running.
Clean the oil reservoir.
The dipstick is attached to the cap.
The oil level should be between the HOT and ADD marks.

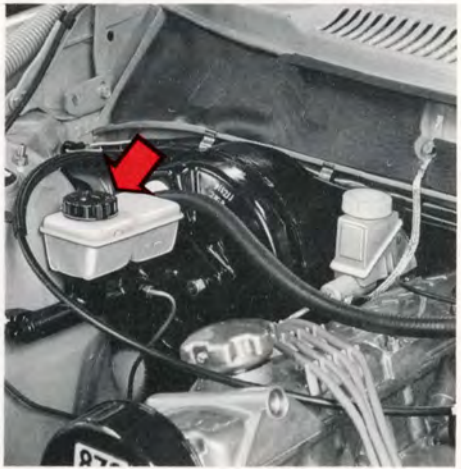
Oil quality: *ATF
Oil capacity: 0.7 litres (1.2 UKpints)
Oil-level check: Every 10 000 km (6 000 miles)
Oil change: No change needed.

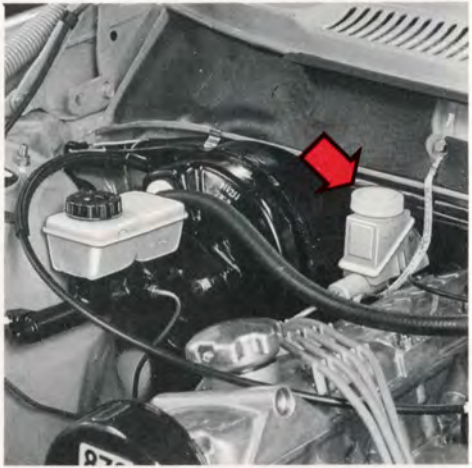
*ATF=Automatic transmission fluid.

Carburettor

The oil level should be up to about 6 mm (1/4") from the edge of the centre spindle. If necessary, top-up with ATF.

Oil quality: ATF.
Oil capacity: 4.5 cc
Oil-level check: Every 10 000 km (6 000 miles)
Oil change: No change needed.





Brake fluid

The brake level should be above the MIN mark.

Fluid type: Brake fluid
Quality: DOT 4
Fluid volume: 0.4 litres (1 UKpint)
Fluid-level check: When refuelling
Fluid change: Every 3rd year.
If your car has a spoiler, change the brake fluid every year.
With continuous driving where the brakes are used very often and severely, e.g., driving in mountainous country, etc., the brake fluid should be changed once a year. This is not included in a 10 000 km (6 000 miles) service but should be done by a Volvo workshop in connection with such a service.

Clutch fluid

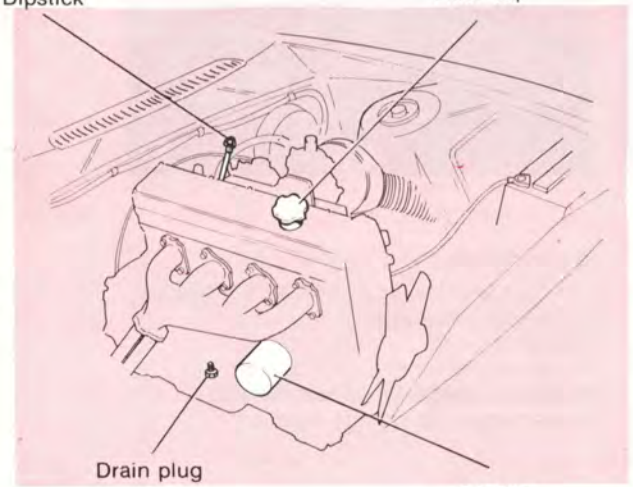
The fluid level should be above the MIN mark.
Fluid type: Brake fluid.
Quality: DOT 4
Fluid volume: 0.2 litres (0.5 UKpint).
Fluid level check: When refuelling.
Fluid change: No change needed.

Engine oil

Checking the engine oil level

Check the oil level when refuelling. It should be between the marks on the dipstick. It must never be allowed to go below the MIN mark, nor should it be above the MAX mark, otherwise abnormal oil consumption will result. The distance between the marks on the dipstick corresponds to about 1 litre (2 pints).

NOTE! Always wipe the dipstick before checking the oil level.



Draining the engine oil

To drain the oil remove the plug in the bottom of the engine sump. The oil should be drained after driving when it is still warm. **Observe due care since the oil can be very hot.**

Topping-up with engine oil

When oil has to be added, top-up with the same type of oil already used in the engine. Take care not to spill oil onto the exhaust manifold (especially turbo-engined vehicles).
Note! Do not top-up too much, otherwise there will be abnormal oil consumption.

Changing the oil filter

Change the oil filter when changing the oil in the engine. Scrap the old filter. Should only the filter need to be replaced, add about 1/2 litre (1 pint) oil to the engine.

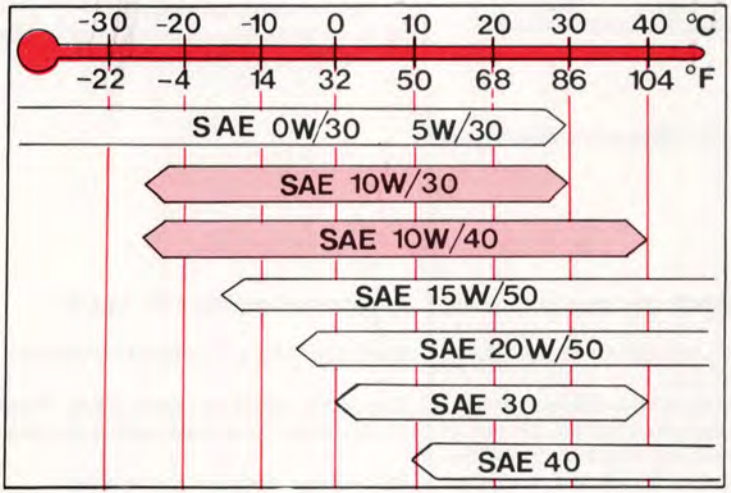
Oil quality:

According to API Service { **SE-CC** / **SF-CC**

Synthetic or semisynthetic oils may be used if their specifications comply with the above.
Note! Oils with the designation SE-CD **must not** be used.

Viscosity:

Temperature range (stable ambient temperatures)



SAE 15W/50 or SAE 20W/50 oils are recommended for use in extreme driving conditions that involve high oil consumption and high oil temperatures e.g. mountain driving with frequent decelerations or fast motorway driving. (Note however the lower temperature limits.)

Capacity:

excl. oil filter 3.35 litres (5.9 UK pints)
incl. oil filter 3.85 litres (6.8 UK pints)
Turbo-engined cars, add 0.6 litres (1 UK pint) if oil cooler is drained.

Oil-level check:

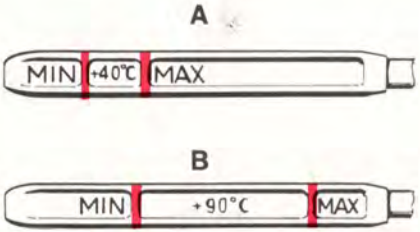
When refuelling

Oil change:

Cars with turbo
During the running-in period, after 1000–2000 km (600–1200 miles).
Thereafter every 5000 km (3000 miles) or at least once every 6 months.

Cars without turbo
After every 10 000 km (6000 miles) or at least once a year.
During the running-in period after 1000–2000 km (600–1200 miles).
Under unfavourable conditions e.g. high temperatures, driving with a trailer, steep hills, long stretches at high speeds, long periods of idling, driving short distances in cold weather, the oil should be changed every 5000 km (3000 miles) or least every 6 months.

Gearbox oil



A Cold gearbox oil – **oil temperature +40° C.** This temperature is obtained after idling the engine for about 10 minutes in a workshop or a garage.
At oil temperatures below +40° C, the level may be below the MIN mark.

B Warm gearbox oil – **oil temperature +90° C.** This temperature is obtained when driving fast for about 60 minutes.
At oil temperatures above +90° C, the level may be above the MAX mark.

The engine should be idling when checking the oil level.

Automatic transmission

Check the oil level as follows:
Park the car on flat ground with the engine idling.
Slowly move the selector lever through all the gear positions and then to position P. Wait 2 minutes before checking the oil level. As the illustration shows, the dipstick has a "cold" and a "warm" side.
The oil level should be between the MIN and MAX marks.
Wipe the dipstick with a clean nylon cloth, paper or chamois leather.
CAUTION! The oil may be very hot!

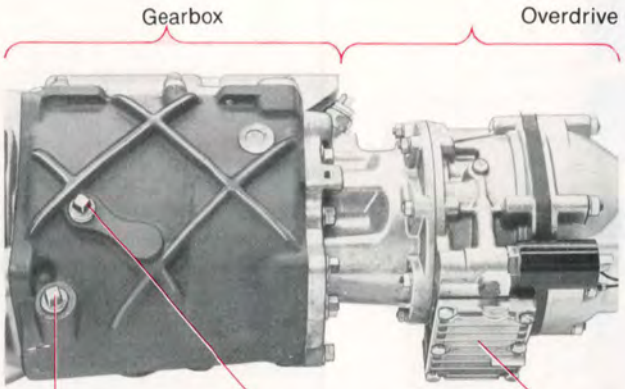
Do not use rags which can leave fluff on the dipstick.
The transmission is topped-up via the tube in which the dipstick sits.
The space between the MIN and MAX marks on the dipstick corresponds to 0.5 litre. Do not fill the transmission with too much oil, since this can result in oil being ejected from the transmission.
Too little oil, on the other hand, can inhibit driving, particularly in very cold weather.

Approved oil quality: ATF, Type G

Capacity: Total 6.75 litres (11.9 UKpints)

Check the oil level: After every 10 000 km (6 000 miles), or at least every 6 months.

Oil change: Normally not required.
Police cars and taxis, also cars used continuously for towing caravans and similar or cars that are driven hard must have the oil in the transmission changed every 40 000 km (24 000 miles) by an authorized Volvo workshop.



Gearbox without overdrive (type M45)

Gearbox with overdrive (type M46)

The oil should be up to the level plug.
The same oil lubricates both the gearbox and the overdrive.
The oil is **drained** by removing the drain plug. This should be done after driving when the oil is still warm.

Observe due care since the oil may be very hot.

Oil is **added** through the level/filler hole.

Additional for cars with overdrive: the cap for the overdrive oil strainer must also be removed and the oil strainer cleaned.

When topping-up make sure that the oil runs over into the overdrive.

Oil quality:

ATF-oil type F or G (all year round)

Capacity:

Gearbox without overdrive (M45): 0.75 litres (1.3 UKpints)
Gearbox with overdrive (M46): 2.3 litres (4.0 UKpints)

Oil-level check:

Every 10 000 km (6 000 miles)

Oil change:

Only after the first 1 000–2 000 km (600–1 200 miles).

Final drive oil

Draining the oil and topping-up

Drain the oil by unscrewing the plug.

Observe due care since the oil may be very hot.

Fill with oil through the filler/level hole.

Checking the oil level Topping-up with oil

The oil should be level with the filler hole. Cars with limited slip differential should have a final drive oil provided with a special additive.

Top-up if necessary.

Oil quality:

API–GL–5 (MIL–L–2105 B or C)
Cars with limited slip differential should have a final drive oil of the above quality provided with a special additive.

Viscosity:

SAE 90 or SAE 80W/90

Capacity:

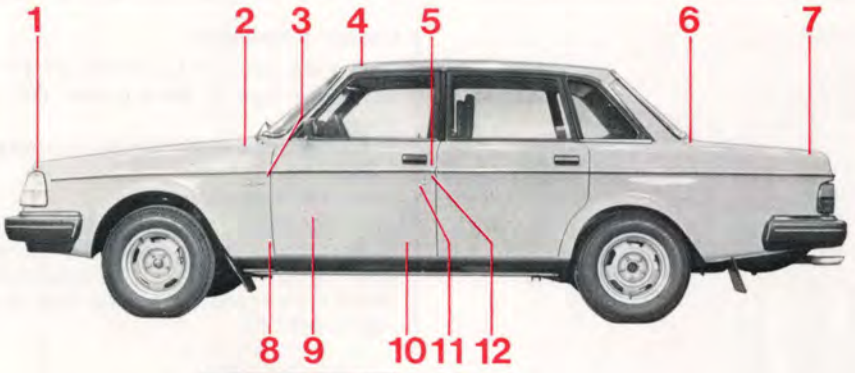
1.3 litres (2.3 UKpints)
(1.6 litres, (2.8 UKpints), certain models)

Oil-level check:

Every 10 000 km (6 000 miles)

Oil change:

Only after the first 1 000–2 000 km (600–1 200 miles)



A Grease
B Oil

8 Door hinge, lower
Door stop

No.	Lubricating points (qty)	Lubricant
1	Bonnet lock (1)	Paraffin wax
2*	Bonnet hinges (2)	Oil
3*	Door hinges, upper (4)	Grease
4	Sun roof wind deflector (1	Oil
5	Striker plates (4)	Paraffin wax
6*	Boot lid hinges (2)	Oil
7	Boot lid lock (1)	Oil
8*	Door hinges, lower (4)	Grease
	Door stop (4)	Oil
9	Window winders (4)	Oil, grease
	Lock devices (4) (on the inside of the doors)	Silicone grease
10	Front seat slide rails (4) and latch devices (2)	Oil
11	Key holes (2)	Lock oil
12	Door locks outer slide surfaces (4)	Paraffin wax

* This lubrication is included in the 10 000 km (6 000 miles) inspections.

Lubricant:

Use lubricant according to the table under the adjacent illustration.

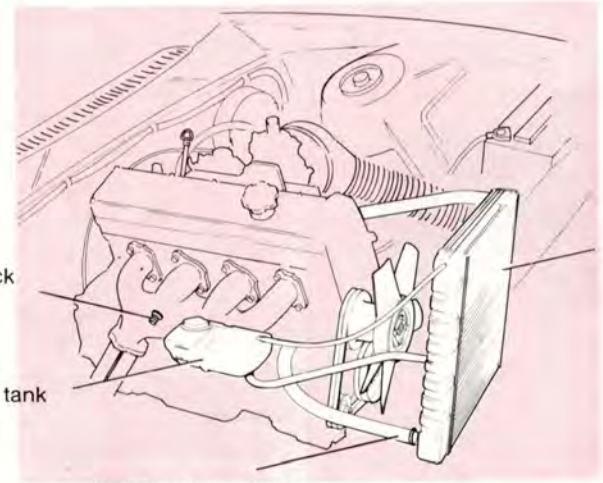
Lubrication intervals:

If you lubricate the body once or several times a year you will avoid possible rattles and unnecessary wear. The hinges on the bonnet, doors and boot lid must be lubricated every 10 000 km (6 000 miles).

Note!

During the wintertime, the locks in the door handles and boot lid should be treated with a reliable anti-freeze to prevent them from freezing up.

Coolant



Checking coolant

The coolant level should be between the MAX and MIN marks on the expansion tank. Add coolant when the level has dropped to the MIN mark.

Unscrew the expansion tank cap slowly if the engine is hot in order to allow any excess pressure to escape.

Changing coolant

Draining

1 Move the heater control to WARM
2 Remove the cap from the expansion tank
3 Open the drain cock on the engine block right-hand side
4 Disconnect the lower hose at the radiator

Filling

5 Close the drain cock (see point 3 above) and connect the lower hose (see 4 above)
6 Fill the expansion tank to MAX or a bit over
7 Warm up the engine and check that the cooling system is not leaking and continue adding coolant until the level reaches the MAX mark.

Coolant composition

Use all the year round a mixture of 50 % Volvo anti-freeze **type C (blue–green)** and 50 % water.

NOTE! different types of coolant must not be mixed.

Never add only water!

The anti-freeze prevents corrosion in the summertime and also freezing in the wintertime. The car is supplied from the factory with a coolant which protects against frost down to –35° C (–31° F).

NOTE!

If you live in a warm climate where very cold spells (freezing point at night) do not occur, rustproofing can be mixed with the cooling water instead of anti-freeze.

Cooling system capacity:

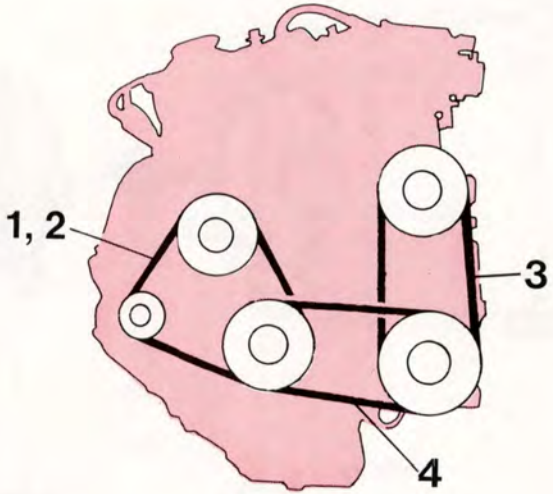
The cooling system holds 9.5 litres (16.7 UKpints).

Level check:

Check the coolant level when refuelling.

Coolant change:

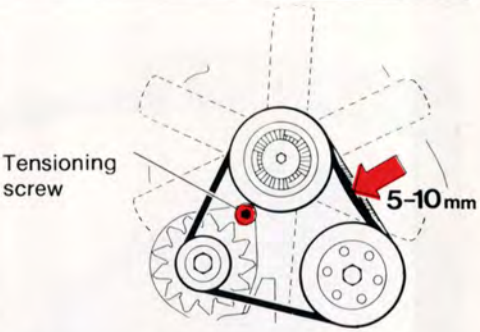
The coolant must be changed every **third autumn** providing that the cooling system contains 50% Volvo anti-freeze and 50% water. Otherwise it should be changed more often.



Drive belts

belt 1 }	fan, alternator and water pump
belt 2 }	
belt 3	power-assisted steering (certain models)
belt 4	air conditioning (optional equipment[1])

[1]) Standard on certain markets.



Belt-tension check

It should be possible to depress the belt 5–10 mm (5/16") midway with normal thumb pressure. The tension on new belts should be checked and if necessary adjusted after every 1 000–2 000 km (600–1 200 miles).

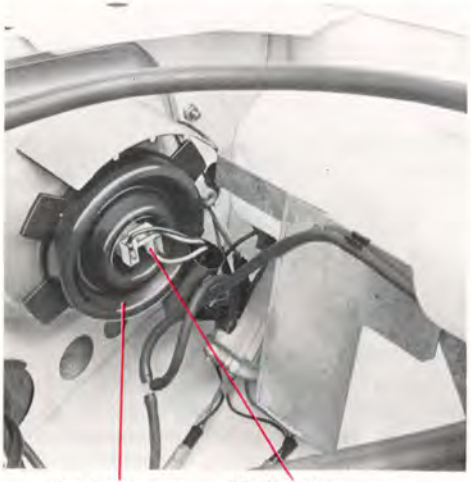
Belt check

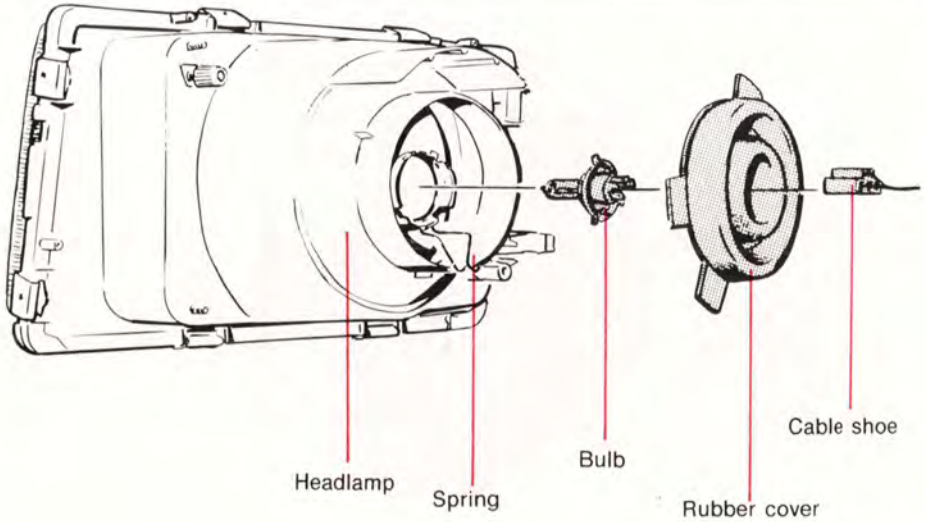
Check regularly the belts to make sure they are in good condition and are clean. Worn or dirty belts can cause poor cooling and alternator output as well as impair the power-assisted steering and the air conditioning.

Replacement and adjustment

The belts 3 and 4 should be adjusted or replaced by a Volvo workshop. In the event only belt 1 or belt 2 has to be replaced, then both must be changed at the same time.

Changing bulbs





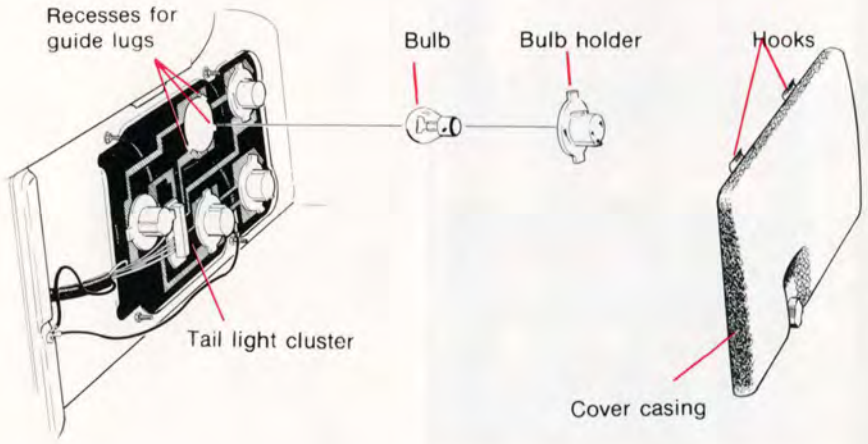
Changing headlight bulbs

Both headlight bulbs are changed from the engine compartment as follows:

1 Open the bonnet.
2 Pull the cable shoe loose.
3 Remove the rubber cover.
4 Squeeze and bend away the spring holding the bulb. Change the bulb.

Bulb	Output	Socket
Mainbeams/ dipped beams	60/55 W	H4

Bulb and other parts are re-fitted in reverse order. The bulb can be fitted in one way only due to the position of the three asymmetrical guide lugs on its base. Never take hold of the bulb globe with your fingers. Grease, oil from fingers can cause a heated bulb to emit a vapour which can damage the headlight reflector.



Tail light cluster, (GLT, see next page)

	Power	Socket
1 Direction indicator	21 W	BA 15 s
2 Brake light	21 W	BA 15 s
3, 4 Rear parking (tail) lights, 2	5 W	BA 15 s
5 Reversing light	21 W	BA 15 s

Cars with rear fog light:	**Power**	**Socket**
1 Direction indicator	21 W	BA 15 s
2 Reversing light	21 W	BA 15 s
3 Brake light	21 W	BA 15 s
4 Rear parking (tail) light	5 W	BA 15 s
5 Rear fog light	21 W	BA 15 s

All the bulbs in the tail light cluster are changed from inside the boot.

1 Unscrew and remove the cover casing for the tail light cluster. The casing is secured at the top by means of hooks. Lever out the lower edge forwards/upwards and unhook the top of the casing.
2 Turn the bulb holder for the damaged bulb about 1 cm anti-clockwise and remove it.
3 Remove the bulb from the bulb holder by pressing in the bulb and turning it slightly anti-clockwise.
4 Fit a new bulb in the bulb holder by reversing step 3 and re-fit the bulb holder in the tail light cluster.
NOTE! Note that one of the guide lugs on the bulb holder is somewhat wider than the other two. This lug must fit into the widest recess in the hole for the bulb holder.
Turn the bulb holder clockwise.
Check that the bulb lights.
Re-fit the cover casing.

Changing bulbs

Tail light cluster GLT

All bulbs in the tail light cluster are changed from the inside of the boot, see page 61.

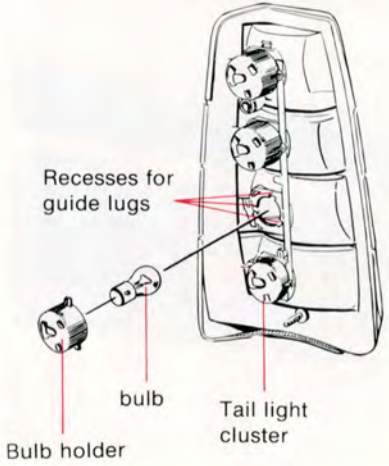
Bulbs	Power	Socket
1 Brake light	21 W	BA 15 s
2 Reversing light	21 W	BA 15 s
3 Rear direction indicator	21 W	BA 15 s
4 Rear parking light	5 W	BA 15 s
5 Reflex		
6 Rear foglight	21 W	BA 15 s

* Certain markets: Rear parking light (tail light) 5 W

Bulbs, front

Unscrew the Phillips screw securing the glass. Then press in the bulb slightly while turning it anti-clockwise.
When re-fitting, check that the rubber seal is in position.

Bulbs	Power	Socket
1 Parking light (day running light)	21/5 W (32/3 CP)	BAY 15 d
2 Direction indicator	21 W	BA 15 s



Bulbs	Power	Socket
3 Brake light	21 W	BA 15 s
4 Reversing light	21 W	BA 15 s
5 Direction indicator	21 W	BA 15 s
6 Tail light	5 W	BA 15 s

Cars with rear fog light:

3 Rear fog light	21 W	BA 15 s
4 Reversing light	21 W	BA 15 s
5 Direction indicator	21 W	BA 15 s
6 Brake light and tail light	21/5 W	BAY 15 d

Rear bulbs, 5-door models

All bulbs in the tail light cluster are removed from the inside.

Changing bulb, left hand side:

- Remove the spare tyre cover and the spare wheel.

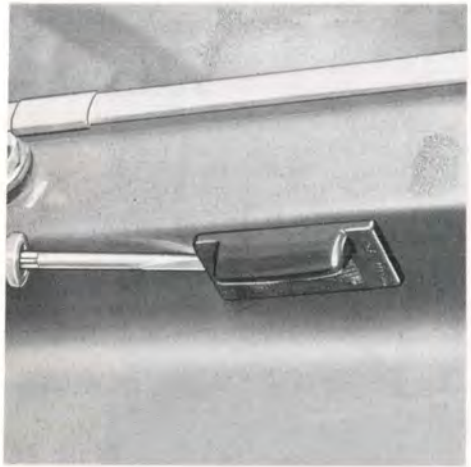
Changing bulb, right hand side:

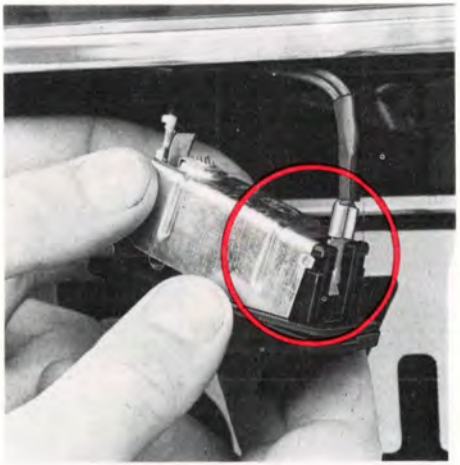
- Remove the right hand stowage cover.
- Loosen the clip and move panel aside (see illustration).

The procedure for changing a bulb is basically the same as for the 4-door model.

When changing a bulb, hold the bulb holder with the word 'Volvo' towards the centre of the car.

Changing bulbs





Number plate light 242, 244

Slide the bulbhousing backwards until it is released from the front edge. Pull out the bulb housing and change the bulb. Fit a new bulb, and re-fit the bulb housing by first inserting the leading edge in position and then by pushing up the rear edge with your hand.

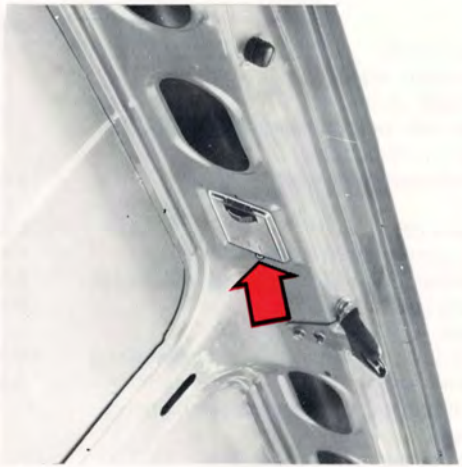
Bulbs	Power	Socket
Number plate, 242, 244	4 W	BA 9 s

Number plate light, 245

Insert a screwdriver in the opening on one side of the bulb housing and push in the catch. Withdraw the bulb housing from its attachment.
Pull out the casing end which does not have a guide lug on it. Remove rubber seal.

Bulbs	Power	Socket
Number plate light, 245	5 W	S 8.5-8

When re-fitting, first insert the guide lugs in the recesses and then press on the casing. Fit the rubber seal and snap the bulb housing into position.



Boot light 242, 244

Remove the screw securing the lamp and lift outwards toward the right. Change the bulb. Re-fit the lamp by first inserting the guide lugs and the left-hand side in the recess then push in the lamp and tighten the screw.

Bulbs	Power	Socket
Boot light 242, 244	15 W	S 8.5-8

Interior light

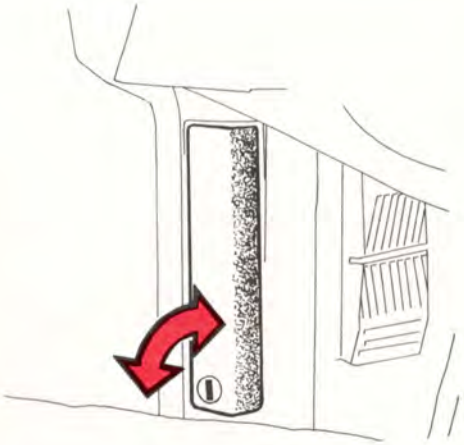
Press in the catch in the bulb housing by inserting a screwdriver in the opening on the short side. Pull the bulb housing from its attachment and change the bulb. Replace in reverse order of removal.

Bulbs	Power	Socket
Interior light	10 W	S 8.5-8

Instrument panel light, etc.

The bulbs for the instrument panel lights and switches are placed in such a way that it is best to let your Volvo workshop replace them whenever necessary.

Fuses



Changing fuses

The fuses are grouped under a cover at the front of the left-hand front door.
The cover is removed by turning the small knob at the bottom 1/4 turn.
If a fuse has to be replaced, always fit a new one with the right "amperage".
Never fit a fuse with a higher rating. If fuses blow repeatedly, then you should have the electrical system checked by a workshop.
The dipped/mainbeam headlights are not wired via a fuse.

17 Cavity for spare fuses

		Ampere
1	Cigar lighter	8 A
	Headlamp wiper	
	Tailgate wiper (245)	
	Elec. rear view mirrors (certain models)	
	Radio (opt. extra)	
2	Windscreen wash/wipe	16 A
	Horn	
3	Heater fan	25 A
4	Day running lights (certain markets)	8 A
5	Fuel pump (tank pump, injection engines)	8 A
6	Brake light	8 A
	Relay, interior light	
7	Fuel pump (main pump, injection engines)	16 A
8	Interior and glove compartment lighting	8 A
	Boot and engine compartment lighting	
	Clock	
	Central lock (certain models)	
9	Hazard warning lights	8 A
10	Elec. window winders (certain models)	16 A
11	Heated rear window	16 A
	Overdrive	
12	Reversing light	8 A
	Heated driver's seat	
	Relay, elec. window winders	
	Air conditioning (certain models)	
13	Instruments, fasten seat belt reminder	8 A
	Direction indicators	
	Relay, fuel injection (injection engines)	
14	Rear fog light (certain markets)	8 A
15	Left parking light	8 A
	Number plate light	
16	Right parking light	8 A
	Lights for instrument panel and instruments	
	Buzzer for lights and key	

General

Volvos are fitted at the Factory with radial tyres in the following sizes:

242, 244 DL	165 SR 14
242, 244 GL	175 SR 14
244 GLE, GLT	185/70 HR 14
245	185 SR 14

Certain GLT-models can be fitted with 195/60 HR 15 tyres.

(Some versions of the 245 have 185 SR 14 R tyres, where the final R stands for "reinforced".)
Make sure you get the same type of tyre (radial) when replacing an old one. Also it must be of the same size and preferably also of the same make, otherwise there is risk of notably altering the driving characteristics of the car.

IMPORTANT!

The standard wheels for the earlier Volvo models of the 142, 144 and 145 **cannot** be used on your car because, in certain situations, they would scrape against the body.

Tread-wear indicator

The tyres have a so-called "tread-wear indicator" in the form of sections of the tyre tread which are approx. 1.5 mm shallower than the normal pattern. It is high time to change a tyre when it is worn down so much that these sections become prominent. Remember that a tyre tread down to less than 1.5 mm has very poor road grip when driving in rain or snow.
Remember, too, that leglislation may exist concerning the tread wear.

WARNING!

Special wheels

The only approved "special wheels" for your Volvo are the light alloy ones which have been tested at the Volvo factory and which are sold by your Volvo dealer.

Spoiler
If a spoiler is fitted to your car, then the cooling air flow to the front brakes will be affected. A spoiler may only be used, therefore, in conjunction with the Volvo special light-alloy wheels or with 1980 or later model steel wheels **together with ventilated disc brakes** (consult your Volvo dealer if in doubt).

Wheels and tyres

Checking and correcting tyre pressure

Check the tyre pressure when refuelling.
Correct the tyre pressure if necessary but only when the tyres are cold.
A warm tyre should only be pumped if the pressure is too low. It only takes a couple or so miles of driving to increase the temperature and thereby also the air pressure.

Some tips on how to avoid unnecessary tyre wear

- Maintain correct tyre pressure.
- Drive smoothly, avoid racing starts, tyre screeching in bends and heavy braking.
- Remember that tyre wear increases with the speed.
- Do not change round the wheels unless you really have to.
- Do not drive with faulty front wheel adjustment.
- Do not drive with unbalanced wheels.
- Do not jam or scrape the tyre against the kerb when parking.

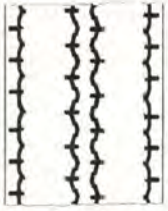
Tyre pressures, cold tyres, kPa (lbf/in²)
(1 lbf/in² = 7 kPa)

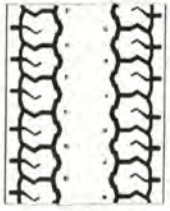
Car-Model	Tyre	1–3 persons		Full load	
		Front	Rear	Front	Rear
242, 244 DL 242, 244 GL	165 R 14 175 R 14	180 (26) 180 (26)	190 (27) 190 (27)	190 (27) 180 (26)	230 (32) 220 (31)
244 GLE GLT	185/70 R 14 195/60 R 15	180 (26)	190 (27)	190 (27)	230 (32)
245	185 R 14 185 R 14 R	190 (27) 190 (27)	210 (30) 190 (27)	200 (28) 200 (28)	280 (40) 300 (42)*
"Special Spare"		280 (40)	280 (40)	280 (40)	280 (40)

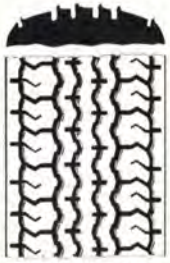
* Australia 280 (40)

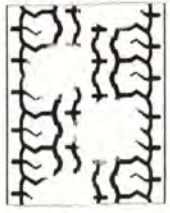
With lengthy driving at high speed (more than one hour above 120 km/h = 75 mile/h) or when driving in a hot climate the pressure should be increased by 30 kPa (4 lbf/in²). **Does not apply to "Special Spare".**

Examples of different types of tyre wear

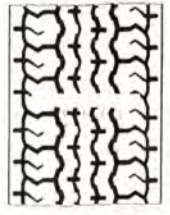

Too low pressure


Too high pressure


Faulty toe-in


Imbalance

Normal tyre wear


Tread-wear indicator-exposed

Winter equipment

Studded winter tyres should have a running-in distance of between 500 and 1 000 km (300 and 600 miles), during which driving should be smooth to enable the studs to bed well into the tyre.
A wheel should rotate in the same direction of rotation throughout its entire lifespan. So, if you want to change round the wheels, make sure that they are on the same side throughout.
For best comfort and safety, we recommend the Volvo winter wheel.

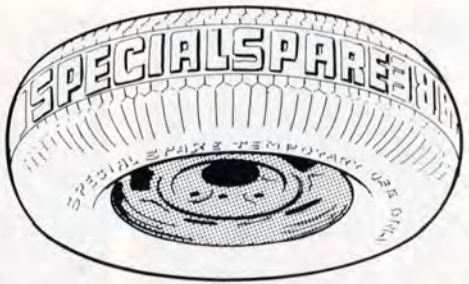
Snow chains can be used on the rear wheels providing that they are of the fine-link type and do not project so much from the tyre that they can scrape against the brake calipers or other parts.
You should try to avoid driving with snow chains on bare ground since this causes rapid chain wear.
Volvo dealers have snow chains designed and approved by Volvo.

Note that the maximum speed with snow chains is 60 km/h (38 mile/h).

Rapid links must not be fitted since the space between the brake calipers and rims does not permit this.

Important about wheel changing

When, for example, changing over from standard to winter wheels, you should mark the removed wheel so that it can be re-fitted in the same place and in the same position on the hub as it did previously. This should save you the trouble of having to re-balance the wheels when re-fitted.



Spare Wheel "Special Spare" (certain models)

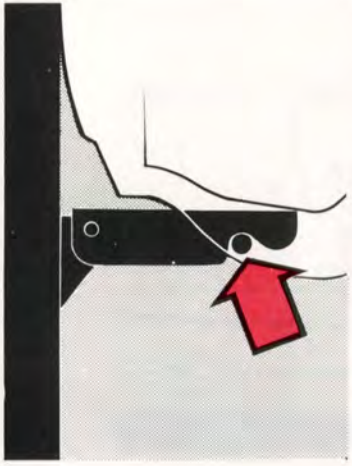
The spare wheel supplied with certain models has the so-called "special spare" type of tyre. The words SPECIAL SPARE are embossed in the tread pattern.
On 242/244 models this special spare is of 6-ply rating. On 245 models the special spare is of 8-ply rating.
The tyre pressure should be 270 kPa (2.7 kp/cm^2 – 36 p.s.i.) on 242/244 and 280 kPa (2,8 kp/cm^2 – 40 p.s.i.) On 245 models.
If the tyre should become damaged, a new tyre can be purchased from the Volvo dealer.

The "special spare" type of spare wheel is only intended for use in connection with a puncture, and should be replaced as soon as possible with a normal tyre.
Also bear in mind that this type, in combination with normal tyres, can cause changes in the car's handling characteristics for example, a certain sensitivity to road markings etc.
The maximum recommended speed using this type of tyre is therefore 100 km/h (60 mile/h), even if the tyre itself can tolerate the maximum speed of the car.

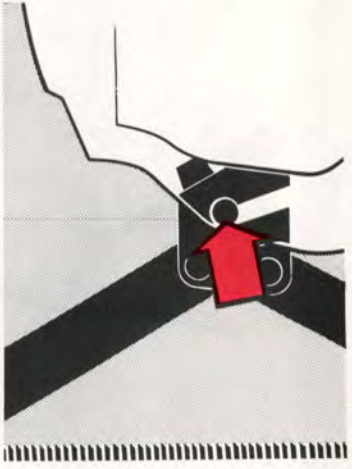
Changing wheels

Several types of wheel are available. The procedure for changing is, however, the same irrespective of type.
The spare wheel, jack and tool kit are stored to the left in the luggage compartment. On 5 door models the jack and crank should be secured according to the above illustration to avoid any disturbing rattles. Make sure that the spare wheel is held firmly.
Apply the parking brake and engage 1st gear or reverse on cars with a manual gear box – selector lever in position P with an automatic transmission. Place chocks in front of and behind those wheels which remain on the ground.
Remove the hub emblem with a screwdriver from the tool kit and then remove the ring plate by hand.

Slacken the wheel nuts 1/2–1 turn with the box wrench (slackened anti-clockwise).



2 and 4 door models



5 door models

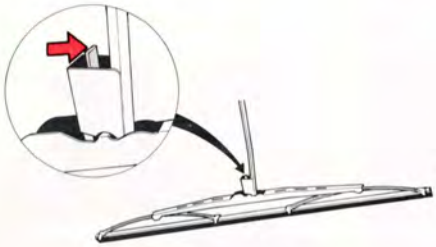
Place the jack in the jack attachment next to the wheel to be raised. Make sure that the arm is lodged well in the attachment (see arrows). Jack up the car so that the wheel is off the ground.
Remove the wheel nuts and lift off the wheel. Take care not to damage the threads on the wheel studs.

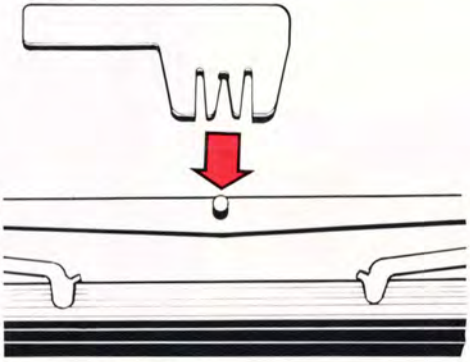
Fitting wheels

- Clean the contact surfaces between wheel and hub.
- Fit the wheel. Tighten the wheel nuts. The bevelled side of the nuts should face the wheel, see right hand illustration on page 70.
- Lower the car, and final-tighten the nuts crosswise. Tighten them to a torque of 100–130 Nm (10–13 kpm = 74–96 lbf ft).
- Replace the wheel cap.

WARNING!

- The jack should stand on firm level ground.
- **Never crawl under the car when it is jacked up!**
- The jack supplied with the car should be used for changing wheels. With any other work requiring the car to be in a jacked-up position, place support trestles or blocks under the car where it is raised.
- Apply the parking brake, engage 1st gear or reverse – position P cars equipped with an automatic transmission!
- Place chocks in front of and behind the wheels still on the ground! Use thick wooden blocks or large stones for this purpose.
- The jack should be kept well-greased.





Replacing windscreen wiper blades

Fold out the wiper arm forwards/upwards. With your finger press in the lock spring on the reverse side of the wiper arm. Withdraw the wiper blade.
Push in the new wiper blade and **check to make sure that it is securely fitted.**

For your own and other traffic users safety, you should change the windscreen wiper blades when they no longer wipe clean but leave marks.

Replacing headlamp wiper blades (certain models)

Pull wiper arm forwards. Remove wiper blade. Press the new blade into position so that it is held firmly by both sides. NOTE: The longer part of the wiper blade should be turned to face the centre of the car.

Washing

Your car should be washed as soon as it gets dirty, particularly during the wintertime when road salt and moisture can cause corrosion.

The car can be washed as follows:

- Hose off the dirt underneath the body (wheel housings, wing edges, etc.).
- Hose down the entire car to soften up any dirt, etc.
- Wash with a sponge (with or without detergent), using plenty of water. Tepid, and not hot, water should preferably be used.
- If the dirt has caked onto the car, a cold de-greaser should first be applied, but this should be done where proper drains are available for this in order not to pollute the environment.
- Wash thoroughly with clean water.
- Dry with a clean, soft chamois leather.

Remember also to clean the drain holes in the doors and sills.

Suitable detergents:

Car wash or 5–10 cl ordinary dish washing fluid to 10 litres (2.2 UKgal) water.

Spots on trim mouldings round windows, wings and doors can be removed with a suitable polish (never use abrasive grinding paste or steel wool). Other chromed parts can be cleaned with a chrome restorer.

Automatic car wash

An automatic wash is a simple and quick way to clean your car, but it is worth remembering that it can never be as thorough as when you yourself go over the car with sponge and water. Keeping the underbody clean is most important, especially in the wintertime. Most automatic washers do not have facilities for washing the underbody.

Before driving into an automatic washer, make sure that outside rear mirrors, extra lights, etc., are secure, otherwise there is risk of the machine dislodging them. You should also remove the radio antenna prior to the wash, if it can be screwed loose.

Use only automatic washes with clean brushes. We recommend that you do not wash your car in an automatic wash during the first six months (because the paint will not have hardened sufficiently).

Bear in mind that an automatic washer can never do as good a job as a manual wash.

Special for Gt. Britain

With an automatic washer with brushes, the headlamp wiper arms should be moved down past the parking position to protect the arms from the brushes and so prevent damage to the wiper mechanism.

WARNING!

When driving the car away immediately after it has been washed, apply the brake gently a few times to remove any moisture from the brake linings.

Polishing and waxing

You should polish and wax your car when the surface finish begins to lose its lustre and ordinary washing is no longer sufficient to make it shine again.

Normally it is not necessary to polish your car for at least one year after delivery. However, it may be necessary to wax it sooner.
Wash and dry the car thoroughly before polishing and/or waxing it.
Use tar remover or equivalent for removing any asphalt spots and tar pittings. Larger spots can be removed with a fine abrasive paste intended for this purpose.
Polish first with a suitable agent and then wax the car. Either fluid or solid wax can be used.
Many preparations contain both polishing agent and wax.
It is not enough to wax a dull surface, it must be polished.

WARNING!

Remember that the fumes from perchloro-ethylene are poisonous and should not be inhaled.

Make sure that there is good ventilation in and around the car when using this agent.
Also remember that petrol, cleaners' naphtha and methylated spirit are highly inflammable liquids.

Cleaning soiled upholstery

The easiest and best way to clean soiled interior fabrics, etc., is to apply a cleaner specifically intended for this purpose. Remove stains **as quickly as possible** before they become "set". Do not scrub the stain with a hard brush.
Loosen up the dirt and vacuum clean it: do not try to rub it off.

Stain remover

Ammonia solution: 1 tsp. ammonia (approx. 90%) is mixed with 3 dl water.

Ammonia-soap solution: The above ammonia is mixed with one dl soapy water. (Mild soap in lukewarm water.)

Perchlorethylene petrol: Mix equal parts perchlorethylene and spot-removal petrol (straight petrol).
Do not use the perchlorethylene petrol on wet material. If perchlorethylene petrol has been used, it must be allowed to evaporate before the stain is treated further with water.

Methylated spirit

Cleaners' naphtha

Cleaning stains on fabrics and textile carpets.

Gently remove excess stain with a dull knife or scraper. Use clean white cloths and try to absorb as much of the stain as possible. Vacuum clean around the spot to prevent leaving a cleaning ring.

Moisten a clean white piece of paper with remover. Apply the paper to the stain. Then dab it with a dry piece of cotton to absorb both stain and remover. Repeat this treatment until the stain disappears.

Remember

- With stains caused by, for example, ink, lipstick, etc., use the stain remover very carefully since there is danger of the colour in the stain spreading.
- Use the solvent cleaner sparingly. Too much solvent can damage the foam plastic in the seats.
- Always work from the outside in towards the middle of the stain.

Treating stains on leather and vinyl

Never scrape or rub stains.

Never use strong stain remover.

Cleaners' naphtha or similar can be used but **carefully** when removing heavy stains. Follow this up by applying a weak soap solution and lukewarm water.

Detergents and solvents

Do not use petrol containing lead or benzene as a detergent or solvent.

Both lead and benzene cause headaches, sickness etc. In sufficiently large doses they can cause damage to the blood forming compounds of the body.

Cleaning the seat belts

Use water and a synthetic detergent.

Cleaning the carpets

The carpets should be vacuum-cleaned or swept clean regularly, particularly during the wintertime, when they should be taken out and dried. At the same time, clean thoroughly the area underneath the carpets.

Your Volvo dealer will be pleased to supply you with further information about cleaning the upholstery etc.

Touching-up paintwork damage

The paint on a car is an important part of its protection against rusting. It should, therefore, be checked regularly for damage. Damaged paintwork requires immediate attention in order to avoid rust. The most common blemishes, which you yourself can remedy, are:

- Minor gravel damage or scratches
- Flaking, e.g., round wing edges and sills.

Your car should be well-cleaned and dry (and the temperature should be above +15° C (59° F) when about to remedy any paintwork damage.

Minor gravel damage

Material:

- Rust remover (phosphate type) — supplied in tube or tin
- Primer — supplied in tin
- Surface enamel — supplied in tin or so-called "paint pen" (the paint pen head also contains grinding paste for final treatment)
- Penknife or similar
- Brush

If the gravel damage has not penetrated down to the metal and there is still a layer of undamaged enamel, lightly scrape off any dirt and apply the paint to the damaged spot.

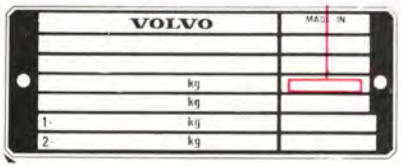
If the gravel damage has penetrated down to the plate, proceed as follows:

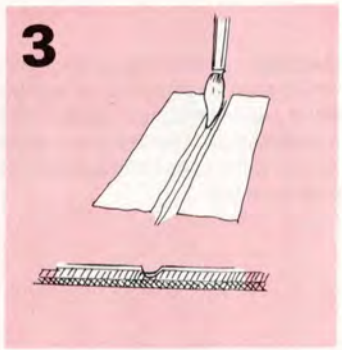
1 Scrape the damaged surface clean and then bevel off the paint edges with a penknife or similar (illustration 1).
2 Apply rust remover (protect eyes and hands), wait several minutes and flush well with water.
Wipe dry!
3 Shake the primer well and apply the damaged part with a fine brush or matchstick (illustration 2).
4 When the primer has dried, apply a surface coat with a brush.
Make sure that the paint has been well-stirred and apply it lightly several times and allow it to dry between each application.

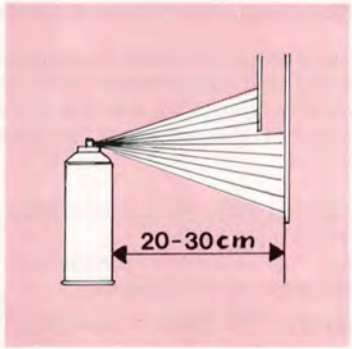
Colour code

To ensure that you always get the right colour, use the colour code number given on the type designation plate on right hand inside wing in the engine compartment.

Colour code







5 For scratches, proceed as previously, but it may be advisable to use masking tape to protect the undamaged paintwork (Illustration 3).
6 Wait a day or two to do any subsequent treatment that has to be done. The paint head contains grinding paste which can be used to polish off any blemishes. Use a soft rag and apply the paste sparingly.

Touching-up flaking wing edges and sills

Material:

- Rust remover (phosphate type) — supplied in tube or tin
- Primer — spray
- Surface enamel — spray
- Grinding paper (grade 150–300)
- Thinner

When painting large surfaces, it is better to mask the surrounding with tape and paper. Remove the tape and paper immediately after the final spraying before the paintwork has dried.

1 Carefully remove the flakes.
2 Rub down the damaged surface and wash it clean with thinner.
3 Apply the rust remover (protect eyes and hands), wait several minutes and flush thoroughly with water.
Wipe dry!
4 Shake the spray can for at least 1 minute. Spray on the primer. Move the can slowly and evenly forwards and backwards over the spot and about 20–30 cm (8–12 in.) from the surface. Protect the surrounding surfaces with suitable paper.
5 When the primer has dried, spray on the surface enamel in the same way. Spray on several times and allow the paint to dry a minute or so between each application.

Rustproofing, inspection and touching-up

Your Volvo was carefully and thoroughly rustproofed at the factory. The underbody and wheelarches were sprayed with a thick, durable rustproofing compound and the beams, internal cavities and end sections were sprayed with a low viscous, penetrating rustproofing agent.

There are two very effective methods of maintaining this protection:

- Keep your car clean.
  Clean the underbody, wheelarches and the edges of the wings using water at high pressure.
- Inspect and touch-up, if necessary, the rustproofing.

The invisible rustproofing

The invisible rustproofing (used for beams, internal cavities and end sections) must be retreated after not more than 3 years and thereafter every second year.

Bear in mind, if good results are to be obtained these sections must be treated with a fine spray of rustproofing compound at a workshop with the correct spraying equipment. Consult your local dealer.

The visible rustproofing

You should check the visible (external) rustproofing at regular intervals and **at least once a year.** If it is necessary to touch-up the rustproofing, this should be done immediately to prevent moisture ingress. Wash and dry the car thoroughly before touching-up. Use spray-on or brush-on rustproofing compounds. An oil can with a long bendable spout may be used for parts which are difficult to reach.

There are three different types of rustproofing compounds available:

a) thin (ML), for seams under the car.

b) thin (transparent) for visible parts.

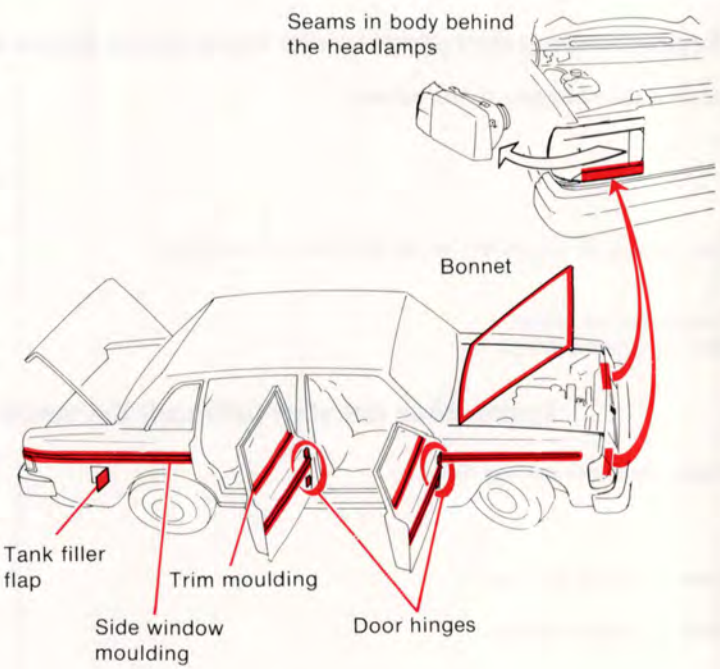
c) thick, for parts on the underbody and wheel housing which experience most wear.

Parts of the car which may need to be touched-up and the rustproofing compound recommended are:

- visible welded seams and panel seams – (type b)
- underbody and wheel housings, especially the seams between the floor and door sills – (type a, followed by type c)
- bonnet and tank filler flap – (type b)
- door hinges – (type b)
- below all trim mouldings and side window mouldings (type b), apply carefully to the mouldings.
- seams in body behind the headlamps – (type a or b).

Final cleaning

After completion of all work on the vehicle, remove excess rustproofing compound with a cloth soaked in white spirit.



Possible fault	Action
Engine does not start (starter motor cannot crank engine at normal speed or starter motor does not function at all).	
Poorly charged battery or flat battery.	Hand in the battery to a charging station for charging or fit a new battery. The car may possibly be started by towing or, if an automatic transmission is fitted, with the help of an auxiliary battery (but find out the reason why the battery is flat).
Poor contact at the battery or starter motor connections.	Clean the cable terminals and tighten up the pole shoes and all connections.
Fault in starter motor. Fault in ignition switch.	Let a Volvo workshop carry out repairs.
Engine does not start (although the starter motor cranks engine at normal speed)	
Engine does not get any fuel.	Check to see if there is fuel in the tank and check lines up to engine. Injection engines: check to make sure that fuses No. 5, 7 and 13 are functioning properly (see page 61).
Water or dirt in the fuel.	Drain the fuel and clean the tank.
Fault in ignition system.	Check spark plugs (electrode gap, cracked insulator, etc.). Check condition of and gap between breaker contacts. Check distributor cap for cracks or other damage. Check all electric cables in the ignition system to make sure they are properly connected and that they are clean. Check the ignition coil.
Fault in carburettor or injection system.	Let a Volvo workshop carry out repairs.

Possible fault	Action
Misfiring and uneven running throughout the entire speed range	
Fault in ignition system.	Check spark plugs. Check breaker contacts, condenser, distributor cap and electric cables in ignition system.
Fault in carburettor or in injection system.	Let a Volvo workshop carry out repairs.
Misfiring at high speed	
Fault in spark plugs or breaker contacts.	Check these and the condenser.
Fault in carburettor or in injection system.	Let a Volvo workshop carry out repairs.
No power in engine	
Clogged air cleaner.	Check air cleaner.
Clogged fuel filter.	Clean fuel filter (injection engine: replace filter).
Faulty dwell angle.	Check.
Faulty firing.	Check.
High fuel consumption	
Leakage in fuel system.	Put right.
Poor spark plugs.	Check and if necessary replace spark plugs.
Faulty firing.	Adjust ignition setting.
Clogged air cleaner.	Check air cleaner, replace if necessary.
Fault in carburettor or in injection system.	Let a Volvo workshop carry out repairs.

Cold weather long-distance trips

Cold weather (below zero temp. risk)

If you yourself wish to check your car in order to avoid unnecessary trouble before the approach of the cold season, the following advice is worth noting:

1 Make sure that the **glycol** additive in the engine cooling system is approx. 50%. This provides protection against freezing down to about –35° C (–31° F).
See page 54 with regard to changing the coolant.

2 Try to keep the fuel tank well-filled as much as possible in order to prevent condensation water forming in the **fuel** tank.
Also use (if appropriate for your car engine) a suitable carburettor de-icer, which should be added before filling with petrol.

3 Use less viscous **oils** for the engine lubricating system in order to avoid starting difficulties.
See oil recommendations on page 53.

4 The **battery** has to stand up to greater stresses during the winter than during the summer, since lighting, etc. is used more. In addition, the capacity of the battery decreases with the temperature.
Check the battery capacity and grease the battery terminals.

5 During the wintertime, never park with the **handbrake** applied, but engage first gear or reverse instead and preferably block the wheels.

6 To prevent icing in the **windscreen/headlamp washer reservoir,** fill it with anti freezing fluid (use Volvo washing fluid). This is important since dirt and water are often splashed up on to the windscreen during winter driving, and this requires frequent use of the washers and wipers.

Suitable mixture percentages of water and washer fluid are:
Between ± 0° and –5° C 1 part washer fluid 6 parts water
Between –5° and –10° C 1 part washer fluid 2 parts water
Between –10° and –15° C 1 part washer fluid 3 parts water

7 To avoid being confronted with frozen **door locks,** "lubricate" them in good time with anti-freezing lubricant.

Before a long-distance trip

If you are thinking of taking your car on a fairly long journey, have it fully checked. It is always a good idea to ensure that you have, at least on a small scale, the most essential spare parts. Many workshops have special kits for this purpose (bulbs, fuses, etc.).

If you prefer to look over your vehicle yourself, the following hints are worthwhile noting:

- Check that the engine is running smoothly and the fuel consumption is normal.
- Check the engine and drive with a view to oil, coolant and fuel leakage.
- Check the condition and tension on the drive belts. Replace worn belts.
- Check the condition of the battery and electrolyte level.
- Check the tyres thoroughly, including the spare tyre. Replace those that are unreliable.
- Have the brakes, front wheels and steering checked.
- Check the lighting.
- Check the tool equipment.
  A warning triangle is necessary when travelling in certain countries.

If you are going to travel abroad your Volvo dealer will be pleased to supply you with a list of Volvo dealers.
If you intend travelling to countries where it is difficult to obtain fuel with the recommended octane rating, the engine can be adapted accordingly to a certain extent.

SPECIFICATIONS

Index 94–96

Dimensions and weights

New measuring units

The new SI-units are included in the specifications on the following pages. The former units are also included but in brackets. Those new units which concern this manual are the following:

Output is indicated in kW (kilowatts)
previous unit h.p. (horsepower)

Torque is indicated in Nm (Newtonmetre)
previous unit kpm (kiloponds metre)

Speed is indicated in r/s (revs per second)
previous unit rpm (revs per minute)

Pressure (fluids, gases) is indicated in kPa (kiloPascal)
previous unit kp/cm^2 (kiloponds per square centimetre)

Cargo space. 245

Length with rear seat up	113 (44.5)
rear seat down	188 (74.0)
Overall width	135 (53.2)
Overall height	83 (32.7)
Capacity with rear seat up	1.2 m^3 (42 ft^3)
rear seat down	2.15 m^3 (71 ft^3)
Cargo opening max. width	116 (45.7)
max. height	78 (30.7)

All dimensions are given in centimeters (inches)
All weights are given in kg (lbs)

Dimensions and weights	242	244	245
Length	479 (189)	479 (189)	479 (189)
Width	171 (67.2)	171 (67.2)	171 (67.2)
Height	143 (56.2)	143 (56.2)	146 (57.5)
Wheelbase (axle distance)	264 (103.9[1])	264 (103.9[1])	264 (103.9[1])
Track, front	142 (55.9[2])	142 (55.9[2])	143 (56.3)
rear	135 (53.2[3])	135 (53.2[3])	136 (53.5)
Turning circle	9.8 m (32.2 ft)	9.8 m (32.2 ft)	9.8 m (32.2 ft)
Kerb weight (depending on the equipment)	1 310–1 410 (2 889–3 109)	1 325–1 445 (2 922–3 186)	1 390–1 495[1]) (3 065–3 296)
Permitted gross laden weight	1 780 (3 920)	1 780 (3 920)	1 950 (4 295[4])
Max. load (without driver)*	370–470 (811–1 031)	335–415 (734–498)	455–560 (999–1 230[4])
Max. axle pressure, front*	830 (1 825)	830 (1 825)	830 (1 825[4])
rear*	970 (2 183)	970 (2 183)	1 160 (2 550[4])
Max. roof load	100 (220)	100 (220)	100 (220)
Max. trailer (caravan) weight	1 500 (3 300)	1 500 (3 300)	1 500 (3 300)

*** Max permissible axle load must never be exceeded!**

[1]) Cars with power-assisted steering: 265 (104.3)
[2]) 244 GLE, GLT: 143 (56.3)
[3]) 244 GLE, GLT: 136 (53.5)
[4]) 245 delivery van: 1 390 (3 061)
1950 (4 295)
560 (1 230)
830 (1 830)
1 180 (2 590), some markets 1 230 (2 700)

ENGINE

Four-cylinder, fluid-cooled, petrol engine.
Cylinder block of special cast iron.
Cylinder liners drilled directly in the block.
Cylinder head of aluminium with separate inlet and exhaust ports.
Single, overhead camshaft.
Lubrication via a gear pump driven from the crankshaft.
Oil filter of the full-flow type.
Fuel system with carburettor (B 19 A, B 21 A or B 23 A) or fuel injection (B 19 E, B 21 E, B 21 E Turbo or B 23 E).
The cooling system is of the sealed, overpressure type.

Type designation	B 19 A	B 21 A (Aus)	B 21 A
Output DIN	71 kW at 92 r/s (97 hp at 5 500 r/m)	78 kW at 88 r/s (106 hp at 5 250 r/m)	79 kW at 92 r/s (107 hp at 5 500 r/m)
Max. torque DIN	154 Nm at 42 r/s (15.7 kpm at 2 500 r/m)	172 Nm at 42 r/s (17.5 kpm at 2 500 r/m)	170 Nm at 42 r/s 17.3 kpm at 2 500 r/m)
Number of cylinders	4	4	4
Bore	88.9 mm	92 mm	92 mm
Stroke	80 mm	80 mm	80 mm
Displacement	1.99 dm^3 (1.99 l)	2.13 dm^3 (2.13 l)	2.13 dm^3 (2.13 l)
Compression ratio	8.5:1	9.3:1	9.3:1
Valve system	Overhead	Overhead	Overhead
Valve clearance			
warm engine, inlet, exhaust			
when adjusting	0.40–0.45 mm	0.40–0.45 mm	0.40–0.45 mm
when checking	0.35–0.50 mm	0.35–0.50 mm	0.35–0.50 mm
Firing order	1–3–4–2	1–3–4–2	1–3–4–2
Ignition setting	10° B.T.D.C. at	10° B.T.D.C. at	12° B.T.D.C. at
(vaccum governor	12–13 r/s (700–800 r/m)	12–13 r/s (700–800 r/m)	12–13 r/s (700–800 r/m)
disconnected	Volvo Part No 273597-5	Volvo Part No 273597-5	Volvo Part No 273596-6
Spark plugs	(Bosch W 7 DC[1])	(Bosch W 7 DC[1])	(Bosch W 6 DC[1])
spark plug gap	0.7–0.8 mm	0.7–0.8 mm	0.7–0.8 mm
tightening torque	20–30 Nm (2–3 kpm)	20–30 Nm (2–3 kpm)	20–30 Nm (2–3 kpm)
Distributor, direction			
of rotation	Clockwise	Clockwise	Clockwise
ignition points gap	0.4–0.5 mm	0.4–0.5 mm	0.4–0.5 mm

[1]) Part No. or equivalent

Specifications

Type designation	*B 21A	B 23A	*B 23A
Output DIN	75 kW at 88 r/s (102 hp at 5 250 r/m)	82 kW at 83 r/s (112 hp at 5 000 r/m)	78 kW at 83 r/s (106 hp at 5 000 r/m)
Max. torque DIN	168 Nm at 42 r/s (17.1 kpm at 2 500 r/m)	185 Nm at 42 r/s (18.9 kpm at 2 500 r/m)	179 Nm at 42 r/s (18.2 kpm at 2 500 r/m
Number of cylinders	4	4	4
Bore	92 mm	96 mm	96 mm
Stroke	80 mm	80 mm	80 mm
Displacement	2.13 dm^3 (2.13 l)	2.32 dm^3 (2.32 l)	2.32 dm^3 (2.32 l)
Compression ratio	8.5:1	10.3:1	9.0:1
Valve system	Overhead	Overhead	Overhead
Valve clearance			
warm engine, inlet, exhaust			
when adjusting	0.40–0.45 mm	0.40–0.45 mm	0.40–0.45 mm
when checking	0.35–0.50 mm	0.35–0.50 mm	0.35–0.50 mm
Firing order	1–3–4–2	1–3–4–2	1–3–4–2
Ignition setting	12° B.T.D.C. at	5° B.T.D.C. at	5° B.T.D.C. at
(vacuum governor	12–13 r/s (700–800 r/m)	12–13 r/s (700–800 r/m)	12–13 r/s (700–800 rm)
disconnected)	Volvo Part No 273597-5	Volvo Part No 273597-5	Volvo Part No 273597-5
Spark plugs	(Bosch W 7 DC[1])	(Bosch W 7 DC[1])	(Bosch W 7 DC[1])
spark plug gap	0.7–0.8 mm	0.7–0.8 mm	0.7–0.8 mm
tightening torque	20–30 Nm (2–3 kpm)	20–30 Nm (2–3 kpm)	20–30 Nm (2–3 kpm)
Distributor, direction			
of rotation	Clockwise	Clockwise	Clockwise
ignition points gap	0.4–0.5 mm	0.4–0.5 mm	0.4–0.5 mm

* certain models
[1]) or equivalent

B 19 E	B 21 E Turbo	B 23 E	B 21 E
86 kW at 100 r/s	114 kW at 92 r/s	100 kW at 92 r/s	90 kW at 92 r/s
(117 hp at 6 000 r/m)	(155 hp at 5 500 r/m)	(136 hp at 5 500 r/m)	(123 hp at 5 500 r/min)
150 Nm at 75 r/s	240 Nm at 63 r/s	190 Nm at 75 r/s	162 Nm at 58 r/s
(15.3 kpm at 4 500 r/m)	(24.5 kpm at 3 750 r/m)	(19.4 kpm at 4 500 r/m)	(16.5 kpm at 3 500 r/min)
4	4	4	4
88.9 mm	92 mm	96 mm	92 mm (3.622")
80 mm	80 mm	80 mm	80 mm (3.15")
1.99 dm^3 (1.99 l)	2.13 dm^3 (2.13 l)	2.32 dm^3 (2.32 l)	2.13 dm^3 (litres = 130 in^3)
9.2:1	7.5:1	10:1	9.3:1
Overhead	Overhead	Overhead	Overhead
0.40–0.45 mm	0.40–0.45 mm	0.40–0.45 mm	0.40–0.45 mm (0.016–0.018")
0.35–0.50 mm	0.35–0.50 mm	0.35–0.50 mm	0.35–0.50 mm (0.014–0.020")
1–3–4–2	1–3–4–2	1–3–4–2	1–3–4–2
8° B.T.D.C. at	15° B.T.D.C. at	5° ± 2° B.T.D.C. at	8° B.T.D.C. at
12–13 r/s (700–800 r/m)	12–13 r/s (700–800 r/m)	12–13 r/s (700–800 r/m)	12–13 r/s (700–800 r/m)
Volvo Part No. 273596-6	Volvo Part No. 273596-6	Volvo Part No. 273596-6	Volvo Part No. 273596-6
(Bosch W 6 DC[1])	(Bosch W 6 DC[1])	(Bosch W 6 DC[1])	(Bosch W 6 DC[1])
0.7–0.8 mm	0.7–0.8 mm	0.7–0.8 mm	0.7–0.8 mm
20–30 Nm (2–3 kpm)	20–30 Nm (2–3 kpm)	20–30 Nm (2–3 kpm)	20–30 Nm (2–3 kpm)
Clockwise	Clockwise	Clockwise	Clockwise
Breakerless	Breakerless	Breakerless	Breakerless

[1]) or equivalent

Specifications

Cooling system	Carb. engines	Injection engines
Type	Positive pressure (sealed system)	Positive pressure (sealed system)
Thermostat, begins to open at	92° C	87° C
Fan belts (two), designation	HC–38–925	HC–38–925
Capacity (incl. heating system)	9.5 litres (2.1 Imp gal)	9.5 litres (2.1 Imp gal)

Fuel system	Carb. engines	Injection engines
Carburettor	Zenith 175 CD 2 SE DVG 175 CDUS	Fuel injection CI-system
Petrol, octane rating (RON)	B19A, 91–93 B21A, 75 kW engine 91–93 B21A, 78 kW engine 97–98 B21A, 79 kW engine 97–98 B23A, 82 kW engine 97–98 B23A, 78 kW engine 91–93	B19E, 91–93 B21E, 91–93 B21ET, 97–98 B23E, 97–98

ELECTRICAL SYSTEM

12-volt system with voltage-controlled alternator.
Single-pole system where chassis and engine frame are used as conductors. Negative pole connected to chassis.

Voltage	12 V
Battery, type	Tudor 6 EX4E o.p.[1])
capacity	60 Ah
electrolyte, specific gravity	1.28
recharged at	1.21
Alternator, max. output	770 W
Starter motor, output	1.1 kW (1.5 hp)

[1]) or corresponding
[2]) Cars without day-running lights: Power 5 W. Socket BA 15 s
[3]) Note! Volvo long lifetime bulbs. We recommend them when changing since these bulbs last 3 times longer than ordinary car bulbs.
[4]) 5-door models with rear foglights: Power 21/5 W. Socket BAY 15 d[3]

Bulbs, 12 volt	Power	Socket	Number
Headlamps	60/55 W	H 4	2
Day running lights, front	21/5 W[2]	BAY 15 d[3]	
Dir. indicators, front	21 W	BA 15 s[3]	2
rear	21 W	BA 15 s[3]	2
Position lights, rear[4])	5 W	BA 15 s[3]	4 (245:2)
Brake lights [4])	21 W	BA 15 s[3]	2
Reversing lights	21 W	BA 15 s[3]	2
Rear foglights	21 W	BA 15 s[3]	1
Number plate light, 242, 244	4 W	BA 9 s[3]	2
Number plate light, 245	5 W	S 8.5-8[3]	2
Interior light	10 W	S 8.5-8	1 (245:2)
Engine compartment light	15 W	S 8.5-8	1
Boot light	15 W	S 8.5-8	1
Glove compartment	2 W	S 8.5-8	1
Instrument panel light	3 W	W 2.1 × 9.5 d	2
Lighting,			
control panel	1.2 W	W 2 × 4.6 d	3
automatic transmission	1.2 W	W 2 × 4.6 d	1
seat belt lock	1.2 W	W 2 × 4.6 d	2
ashtray, rear	1.2 W	W 2 × 4.6 d	1
Warning lights,			
battery charging	1.2 W	W 2 × 4.6 d	1
boost pressure	1.2 W	W 2 × 4.6 d	1
oil pressure	1.2 W	W 2 × 4.6 d	1
parking brake	1.2 W	W 2 × 4.6 d	1
brake failure	1.2 W	W 2 × 4.6 d	1
bulb failure	1.2 W	W 2 × 4.6 d	1
Other lights,			
overdive	1.2 W	W 2 × 4.6 d	1
seat belts	2 W	BA 9 s	1
dir. indicators	1.2 W	W 2 × 4.6 d	2
main beams	1.2 W	W 2 × 4.6 d	1
choke	1.2 W	W 2 × 4.6 d	1
rear foglights	1.2 W	W 2 × 4.6 d	1
hazard warning lights	1.2 W	W 2 × 4.6 d	1
heated rear window	1.2 W	W 2 × 4.6 d	1

POWER TRANSMISSION

Single, dry disc clutch, hydraulically operated (mechanically operated by a wire on cars with l-h drive).
Fully synchronized 4-speed gearbox with floor-mounted gear lever (M 45). Overdrive (M 46) on certain models.
Alternatively, fully automatic transmission (BW 55) consisting of a hydraulic torque converter and planetary gearbox. Hypoid-type final drive.
Limited slip differential as optional equipment.

Clutch

Clutch fork free travel 3 mm (0.12")
Does not apply to turbo engined cars.

Transmission

Type designation	M 45	M 46	BW 55 (auto.)
Reduction 1 st gear	4.03:1	4.03:1	2.45:1
2 nd gear	2.16:1	2.16:1	1.45:1
3 rd gear	1.37:1	1.37:1	1.00:1
4 th gear	1.00:1	1.00:1	—
Overdrive	—	0.80:1	—
Reverse	3.68:1	3.68:1	2.21:1

Final drive

Reduction 3.54:1, 3.73:1 or 3.91:1 depending on model and market

Speed in km/h (mile/h) at 17 r/s (1 000 engine r/min)

Final drive reduction ratio	3.54:1	3.73:1	3.91:1
1st. gear	8 (5)	8 (5)	8 (5)
2nd. gear	15 (9)	15 (9)	14 (9)
3rd. gear	24 (15)	23 (14)	22 (14)
4th gear	33 (21)	32 (20)	30 (19)
Overdrive (certain models)	42 (26)	40 (25)	—
Reverse	9 (6)	9 (6)	8 (5)

Note that these values are only approximate. In practice they can vary, depending on the size, pressure and wear of the tyres fitted.

Recommended minimum and maximum speeds, km/h (mile/h)

Model	1st gear	2nd gear	3rd gear	4th gear
242, 244 DL	–40 (25)	15–70 (9–44)	25–115 (15–70)	35– (22–)
242, 244 GL	–40 (25)	15–65 (9–40)	25–110 (15–68)	35–* (22–*)
245 DL, GL	–40 (25)	15–65 (9–40)	25–110 (15–68)	35–* (22–*)
244, 245 GLE	–45 (28)	20–75 (12–47)	30–120 (19–75)	40–* (25–*)
GLT	–45 (28)	20–80 (12–50)	30–125 (19–78)	40–* (25–*)

* approx. 70 km/h (44 mile/h) with overdrive (if fitted) engaged

In all correspondence with the dealer concerning your vehicle and when ordering parts, always quote the type designation, chassis and engine number.

1 **Type and model year designation as well as chassis number:**
Stamped on right door pillar and on plate mounted on stay for rear boot wall (242/244) or on the right hand panel on the inside of the large stowage compartment in the cargo space.

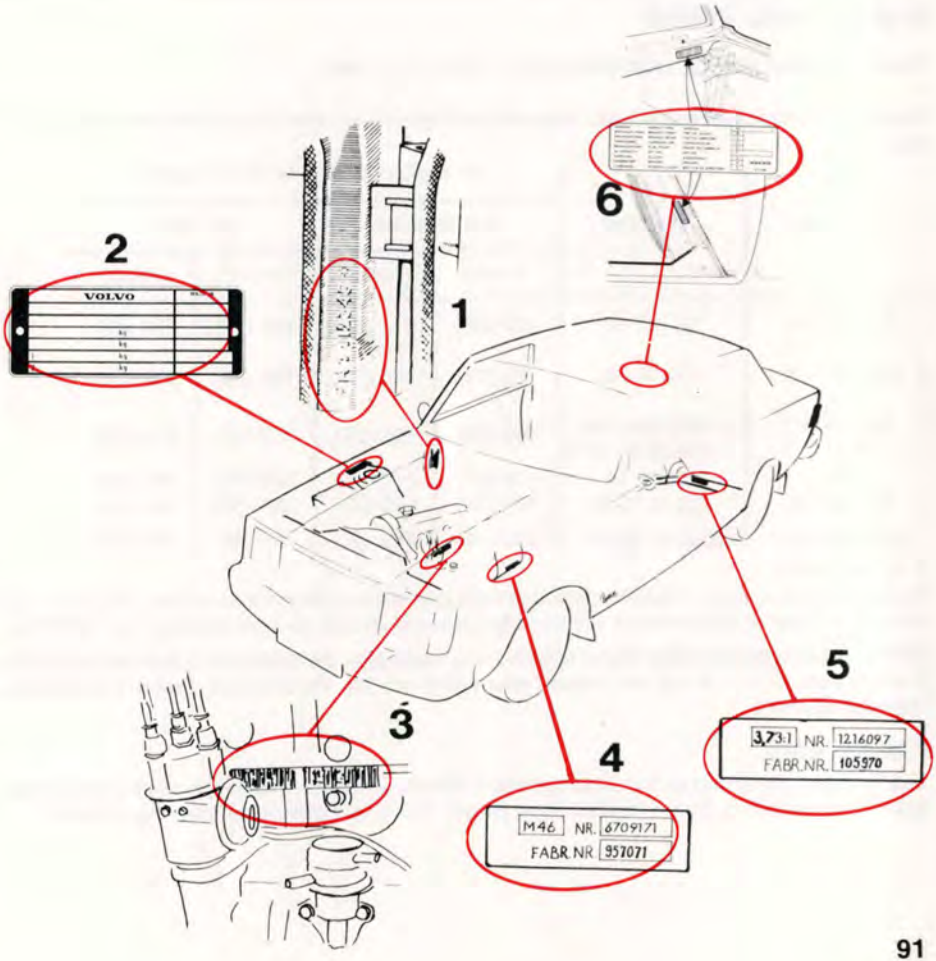
2 **Vehicle type designation, permitted max. weights and colour code:**

3 **Type designation, serial number and part number of engine:**
Stamped on engine left-hand side.

4 **Type designation, serial number and part number:**
Manual gearbox: underneath the gearbox.
Automatic transmission: on left-hand side.

5 **Final drive reduction ratio, part number and serial number:**
On a plate on left-hand side of final drive.

6 **Service plate**
Plate under rear window/boot lid on right-hand side (240) or on right-hand side of the large storage cavity in cargo space (245). Details about certain components are included on the plate.



WHEELS AND TYRES

Tyre pressure kPa (kilopascal) 7 kPa = 1 psi

The figures in brackets in the table indicate the English equivalents in pounds per square inch (psi).

Car model	Tyre type	Air pressure, cold tyres kPa (psi)			
		1–3 persons		Full load	
		Front	Rear	Front	Rear
242, 244 DL	165 R 14	180 (26)	190 (27)	190 (27)	230 (32)
242, 244 GL	175 R 14	180 (26)	190 (27)	180 (26)	220 (31)
244 GLE, GLT	185/70 R 14, 195/60 R 15	180 (26)	190 (27)	190 (27)	230 (32)
245 all models	185 R 14	190 (27)	210 (30)	200 (28)	280 (40)
	185 R 14 R	190 (27)	190 (27)	200 (28)	300 (44)[1]
Spare wheel	"Special Spare"	280 (40)	280 (40)	280 (40)	280 (40)

[1]) Australia 280 (40)

If you intend driving for a lengthy period at high speed (more than 1 hour above 120 km/h = 75 mile/h) or when driving in a hot climate, the pressure should be increased by 4 psi (30 kPa).

NOTE! The pressure applies to a cold tyre. For a warm tyre, the pressure should be 10–30 kPa (0.1–0.3 kp/cm^3 = 1.5–4.0 psi higher, depending on the temperature. **Does not apply to "Special Spare".**

FRONT END

McPherson type spring and strut suspension. Shock absorbers housed in strut casing. Rack and pinion steering. Some models have power steering. Safety-type steering column.

The front wheel alignment values apply to an unladen car but include fuel, coolant and spare wheel.

Toe-in (measured at rim)
2.5 ± 1 mm (0.10 ± 0.04")
1.5 ± 1mm (0.06 ± 0.04")
(with power steering)
Camber 1 to 1$^1/_2$° (GLT: +$^1/_4$° to +$^3/_4$°)

CAPACITIES

	Litre	Imp gal.
Fuel tank	60	13.2
Cooling system	9.5	2.0
	Litre	**Imp pint**
Engine oil,		
incl filter	3.85	6.8
excl filter	3.35	5.9
Turbo-engined cars add 0.6 litre (1 Imp pint) if oil cooler is drained.		
Transmission oil		
4-speed gearbox (M 45)	0.75	1.3
4-speed gearbox with overdrive (M 46)	2.3	4.0
auto. transmission (BW 55)	6.75	11.9
Final drive oil	1.3	2.3
certain models	1.6	2.8
Power steering oil	0.7	1.2
Clutch fluid	0.2	0.5

TOOL KIT

The tool kit contains:
Box spanner for wheel nuts and spark plugs
Box spanner lever
Philips screwdriver/standard screwdriver
Open-end spanners (2)

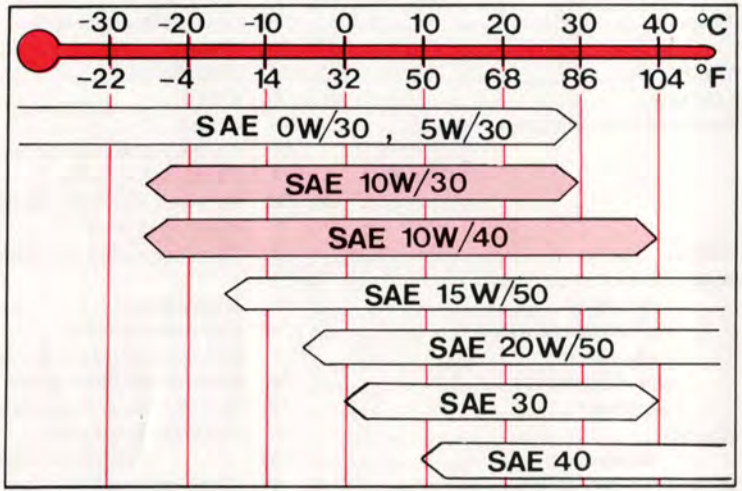
Oil quality API Service { SE-CC / SF-CC

Capacity (not GLT with turbo)
excl oil filter 3.35 litres (5.9 Pints)
incl oil filter 3.85 litres (6.8 Pints)

Capacity (GLT with turbo)
Same as above + 0.6 litres (1 pint) if oil cooler is drained.

SAE 15W/50 or SAE 20W/50 oils are recommend for use in extreme driving conditions which involve high oil consumption and high oil temperatures eg. mountain driving with frequent decelerations or fast motorway driving. (Note however the lower temperature limits.)

Viscosity: Temperature range (stable ambient temperatures)



Carburettor

Fluid: ATF (Dexron or Dexron II)

Capacity: 4.5 cm^3

Brake fluid

Fluid: DOT 4

Capacity: 0.4 litre (0.7 Pint)

Power steering

Fluid: ATF

Capacity: 0.7 litre (1.2 Pint)

Clutch fluid:

Fluid: DOT 4

Capacity: 0.2 litre (0.4 Pint)

Transmission

Oil: manual: ATF type For G
auto: ATF type G

Capacity: without overdrive: 0.75 litre (1.3 Pints)
with overdrive: 2.3 litres (4.0 Pints)

Capacity: auto 6.75 litres (12 Pints)

Final drive

Oil: API–GL–5 (MIL–L–2105 B or C)

Quality: SAE 90 or 80 W/90

Capacity: 1.3 litres (2.3 Pints)
certain models 1.6 litres (2.8 Pints)

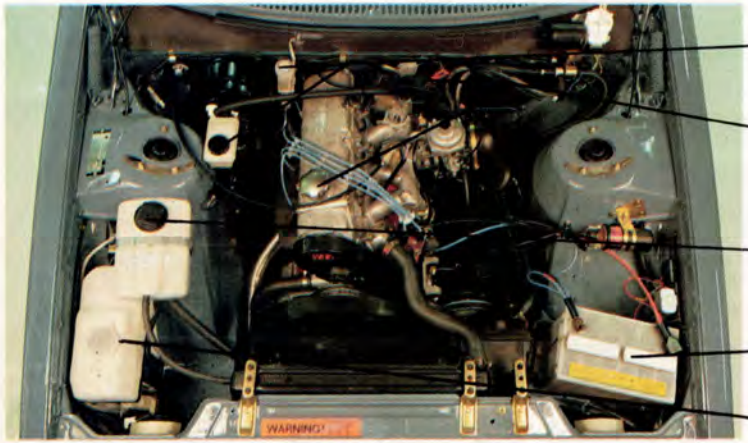
For cars with a limited slip differential use final drive oil API–GL–5 (MIL–L–2105 B or C) with a special additive.

Index

Index

Check the following when refuelling

Petrol: see page 88



Brake fluid level and **clutch fluid level** — should be above the MIN mark. No need to remove the cap to check. If necessary top up with brake fluid DOT 4.

Oil level — should be between the marks on the dipstick. The distance between the marks corresponds to about 1 litre (approx. 2 pints) oil.
If necessary top up with multigrade oil.

Coolant level — should be between MAX and MIN marks on expansion tank. If necessary top up with a mixture of 50% anti-freeze and 50% water.

Battery acid level — should be 5–10 mm (3/8") above the cell plates. If necessary top up with distilled water*.

Windscreen washer fluid container — should always be well-filled (in wintertime with water plus anti-freeze).

Tyre pressure, kPa (lbf/in²) cold tyres

Car Model	Tyre	1–3 persons		Full load	
		Front	Rear	Front	Rear
242, 244 DL	165 R 14	180 (26)	190 (27)	190 (27)	230 (32)
242, 244 GL	175 R 14	180 (26)	190 (27)	180 (26)	220 (31)
244 GLE, GLT	185/70 R 14, 195/60 R 15	180 (26)	190 (27)	190 (27)	230 (32)
245	185 R 14	190 (27)	210 (30)	200 (28)	280 (40)
	185 R 14 R	190 (27)	190 (27)	200 (28)	300 (44)[1]

[1]) Australia: 280 (40)

Look up the Owner's Manual if you want to find out how to change ...

... a bulb on page 60

... a fuse on page 66

... a wheel on page 70

* Low maintenance batteries need only be checked at the regular service intervals.

VOLVO

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