

VOLVO

740
1987 Owner's Manual
U.S.A. & Canada

Essential Information

Please take the time to fill out the forms on this page. When completed, these forms will provide information essential to the proper servicing and ordering of parts for your Volvo.

Owner

Name

Address

City, State

Zip/Code

Tel. No.

Notice:

Your Volvo is designed to meet all applicable safety and emission standards, as evidenced by the certification labels attached to the door opening sheet metal and on the left wheel housing in the engine compartment. For further information regarding these regulations, please contact your dealer.

Vehicle Information (see "Label information" section)

Vehicle License Number

Vehicle Identification Number (VIN)

Service Designation Number

Engine Designation

See "Specifications" section

Color Code

Upholstery

Tire designation

See "Tires" section

Vehicle Capacity

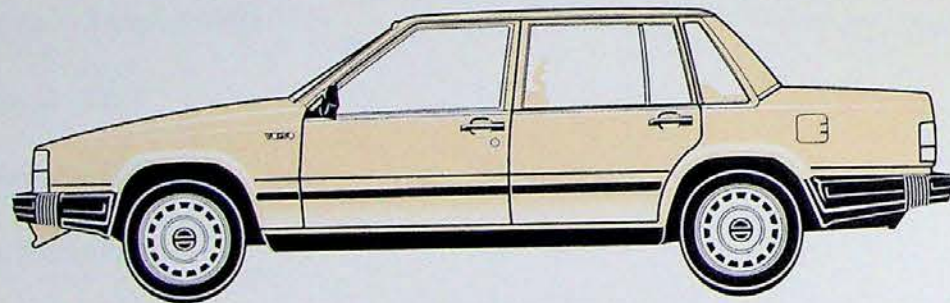
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All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication. Volvo reserves the right to make model changes at any time, or to change specifications or design, without notice and without incurring obligation.



This Owner's manual provides information on driving and maintaining your Volvo

It should be noted that there are certain differences among model versions and market requirements; thus, you may find features described and/or pictured in this manual that do not appear on your car.

Should you require more detailed information with regard to adjustments or repairs please contact your Volvo dealer.

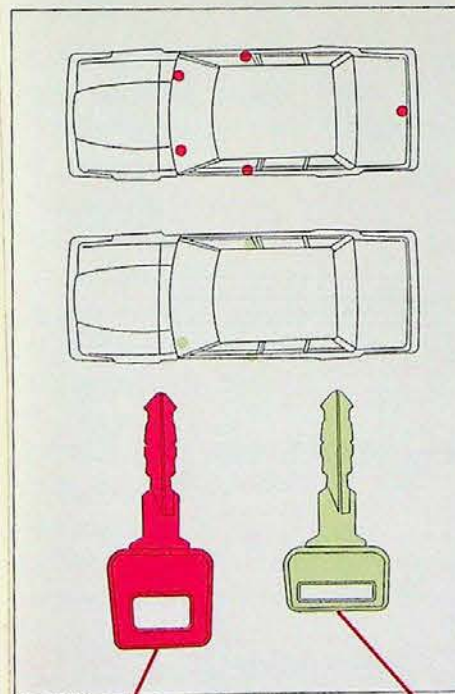
Do not export your Volvo to another country before investigating that country's applicable safety and exhaust emission requirements. In some cases it may be difficult or impossible to comply with these requirements. Modifications to the emission control system(s) may render your Volvo not certifiable for legal operation in the U.S., Canada, and other countries.

Number tag



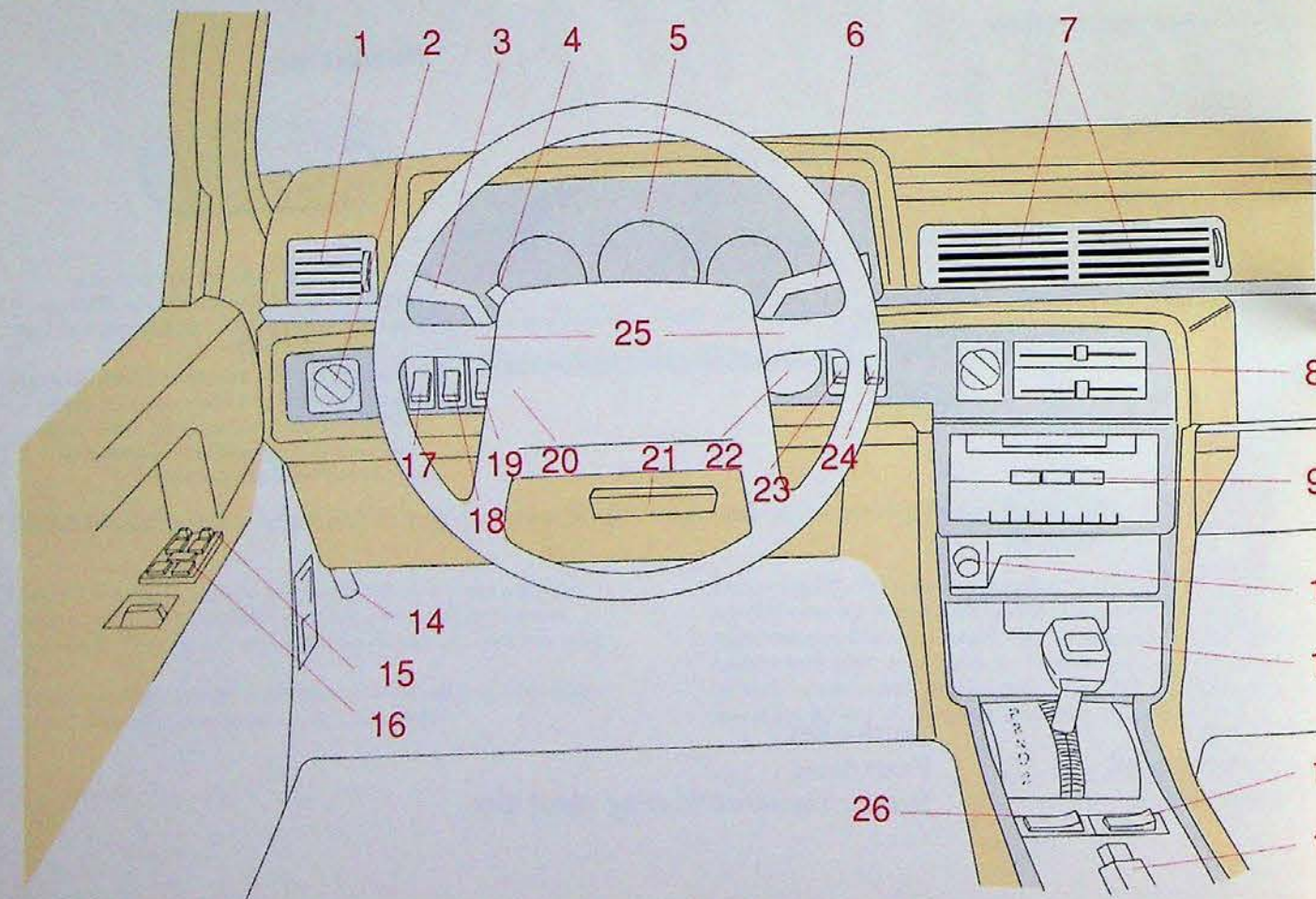
The key number codes are stamped on a separate tag supplied with the keys. This tag should be separated from the key ring and kept in a safe place.

The back of the tag is coated with adhesive tape. In the event the original keys are lost, duplicates may be ordered from your Volvo dealer. The central locking system is described in detail in section Doors and locks.



Owner's key
This key operates all locks in the vehicle

Service key
Front doors
Starting (ignition)/Steering wheel lock

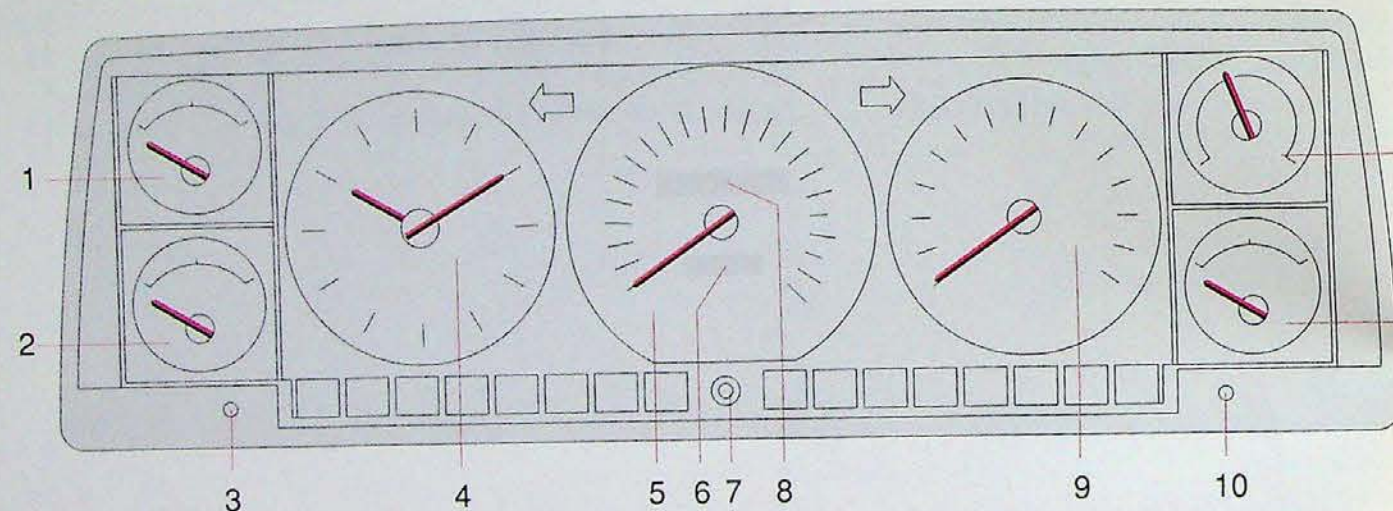


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The pages in this section provide a detailed description of the vehicle's instruments and controls.

Note that vehicles may be equipped differently, depending

The pages in this section provide a detailed description of the vehicle's instruments and controls. Note that vehicles may be equipped differently, depending on special legal requirements, etc.



Note: Canadian model speedometers/odometers indicate kilometers only.

- 1 Voltmeter (Turbo models)
- 2 Fuel gauge
- 3 Clock reset knob
- 4 Quartz crystal clock
- 5 Speedometer
- 6 Trip odometer

- 7 Trip odometer reset knob
- 8 Odometer
- 9 Tachometer (GLE, Turbo model)
- 10 Instrument panel lamps rheostat
- 11 Temperature gauge
- 12 Boost gauge (Turbo models)

Quartz crystal clock

To reset the hands, push in the reset knob and turn.

Tachometer

Reads thousands of engine rpm. Engine should not be operated in red range.

Trip odometer

Used for measuring shorter distances. (last figure represents 1/10 mile or km)

Trip odometer reset knob

Push in to reset.

Temperature gauge

The pointer should be approximately midway on the gauge face when driving. If the pointer enters the red range repeatedly, check coolant level and fan belt tension. See sections "Coolant" and "Drive belts".

CAUTION: Allow engine to cool before adding coolant.

Fuel gauge

The fuel tank capacity is approx. 15.8 US gals (60 liters).

The red range represents approx. 2.4 US gals. (9 liters). See "Refueling" for further information.

Instrument panel lamps rheostat

Clockwise = brighter.

Counterclockwise = dimmer.

Voltmeter

(turbo-engine cars only)

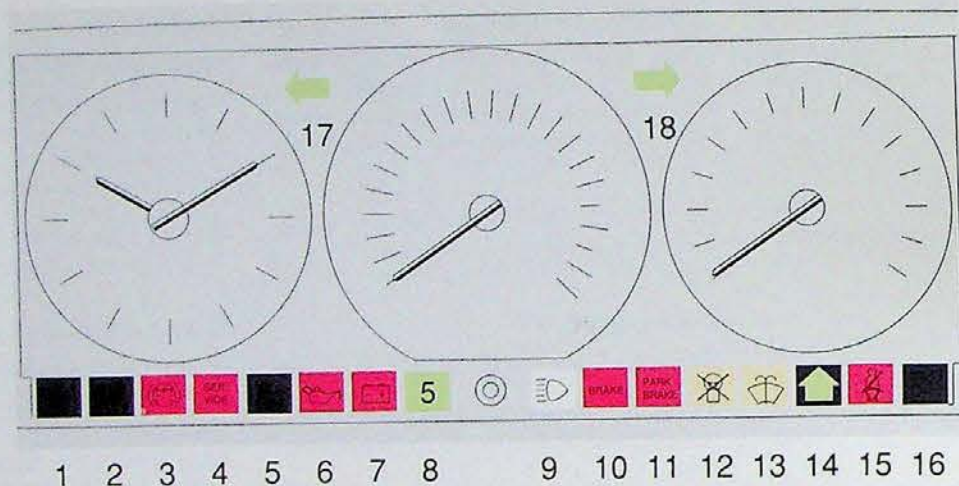
The voltmeter indicates the voltage in the electrical system and thereby also the state of the battery. While the car is being driven the pointer should be within the black field. Should the pointer point to the upper or lower red field when driving, this may indicate some fault in the electrical system.

Boost pressure gauge

(turbo-engine cars only)

The boost pressure gauge is divided into sections.

Black section: The engine acts as a normally-aspirated engine. Best fuel economy is achieved while driving in this range.
Yellow section: The turbo is engaged.



- 1 (Not connected)
- 2 (Not connected)
- 3 ABS-system, see p. 10
- 4 Service reminder light, see p. 10
- 5 (Not connected)
- 6 Low engine oil pressure
- 7 Alternator not charging
- 8 Overdrive (5th gear) engaged (manual transmission)
- 9 High beams

- 10 Brake failure
- 11 Parking brake applied
- 12 Bulb failure
- 13 Low washer fluid level.
If the lamp glows continuously when the engine is running, there is only about 1/2 - 1 US qts. remaining in the washer fluid reservoir.

- 14 Shift indicator light (manual transmission models) 4th gear disengaged, Turbo with automatic transmission
- 15 Fasten seat belts
- 16 (Not connected)
- 17 Turn signal, left
- 18 Turn signal, right

The warning lights described on this page should never be on when driving

When the ignition key is turned on, and before the engine starts, all of the warning lights should be on to test the function of the bulbs. Should a light not go off after the engine has

started, the system indicated should be inspected. However, the parking brake reminder light will not go off until the parking brake is fully released.

Alternator warning light



If the light comes on while the engine is running, check the tension of the alternator drive belt as soon as possible.

NOTE: This warning light is illuminated if the alternator is not charging. However, parking brake, brake failure and bulb failure warning lights will be illuminated at the same time due to the design of the system.

Oil pressure warning light



If the light comes on during driving, the oil pressure is too low. Stop the car and then stop the engine immediately. Do not drive the car. See section titled "Engine oil". After hard driving, the light will come on occasionally when the engine is idling. This is normal, provided it goes off when the engine speed is increased.

Bulb failure warning light



The light will come on if any of the following bulbs are defective:
one of the low beam headlights
one of the tail lights
one of the brake lights when the brake pedal is depressed.

Check the fuse and bulb. See sections titled "Replacing bulbs" and "Fuses". Should the warning light come on after a defective outside bulb has been replaced, the corresponding bulb on the other side of the car should also be replaced.

Brake failure warning light



If the light comes on while driving and the brake pedal can be depressed further than normal, it is an indication that one of the brake circuits is not functioning. Stop immediately, open hood and check brake fluid level, see section "Brake fluid, power steering". Fluid level below MIN mark: do NOT drive. Tow car to shop for check/repair of brake system.

Parking brake reminder light



This light will be on when the parking brake (hand brake) is applied. The parking brake lever is situated between the front seats.

Indicator lights

Service reminder light



This light will come on at 5000 mile (8000 km) intervals. It is a reminder to the driver to have the engine oil changed. The light will stay on 2 min. after start until reset by the servicing dealer. For resetting see section "Service diagnosis".

Anti-lock Brake System ABS



ABS prevents wheel lock-up during severe braking conditions. If the light comes on while driving there is a malfunction of the ABS system (the standard braking system will however function).

The Anti-lock Braking System (ABS) is designed to improve vehicle control (i.e. stopping and steering) during severe braking conditions by limiting wheel lock-up. When the system "senses" impending wheel lock-up, braking pressure is automatically modulated in order to help prevent lock-up, which could lead to a skid. While the system is modulating braking pressure, the driver may detect a pulsation of the brake pedal. The on/off switching of the trunk-mounted ABS modulator may also be audible. This is normal.

Please be aware that ABS does not increase the absolute braking potential of the vehicle. Thus, while control will be enhanced, ABS will not shorten stopping distances on slippery surfaces.

Shift indicator light

(Manual transmission cars only)



The Volvo shift indicator light (S.I.L.) is a device designed to help you get even better gas mileage from your Volvo car. Studies have shown that the best fuel economy is obtained by shifting gears at low engine rpm and high relative engine load. The Volvo S.I.L. is calibrated to show you when to shift for improved mileage without sacrificing smooth acceleration.

Use of the S.I.L. is simple. Shift to the next higher gear as soon as the light comes on. You may find after using the S.I.L. for some time that your natural shifting rhythm will adapt to the S.I.L.'s suggestion. Some drivers may even shift before the light comes on.

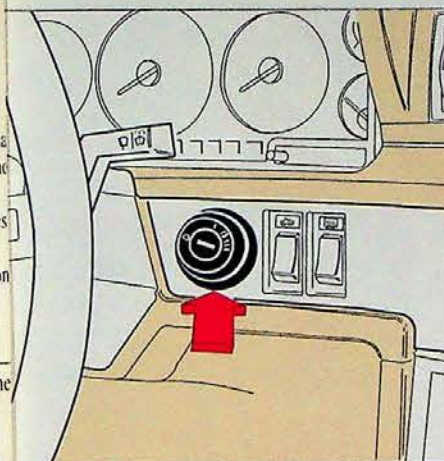
Obviously, there will be times when you need to shift later than the light would indicate, for example, when climbing hills or trailer towing. Using the light regularly, however, should result in a mileage improvement of six percent or more, depending on how you normally drive.

Programming instructions for shift indicator

If the current supply to the control unit is cut (battery disconnected), the control unit will have to be re-programmed as the control unit memory will be erased.

Drive the car in each gear, first gear not necessary, for approximately 8 seconds. The gear change indicator light will flicker on (0.5 seconds), as each gear is programmed.

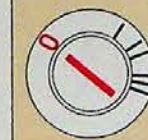
Note: Remove the foot completely from the clutch pedal after each gear change when programming the control unit.



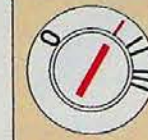
Starting (ignition) switch/steering wheel lock

The steering wheel lock might be under tension when the car is parked. Turn the steering wheel slightly to free the ignition key.

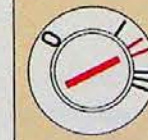
A chime will sound if the starting key is left in the ignition lock and the front door on the driver's side is opened.



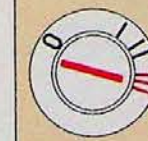
0 Locked position:
remove the key to lock
the steering wheel.



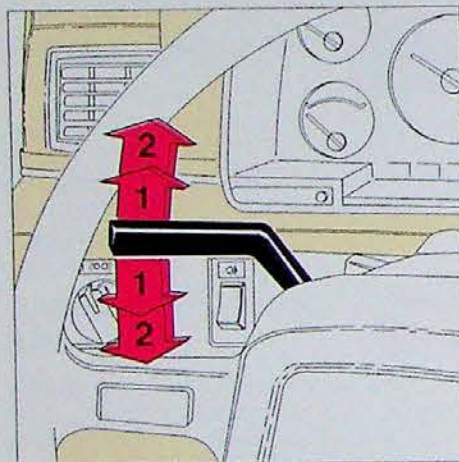
I Intermediate position:
heater blower, cigarette
lighter, accessories,
etc. on.



II Drive position:
key position when en-
gine is running.



III Starting position:
release the key when
engine starts. The key
returns automatically
to driving position.



Turn signals

1 Lane change position. In maneuvers such as lane changing, the driver can flash the turn signals by moving the turn signal lever to the first stop and holding it there. The lever will return to the neutral position when released.

2 Signal lever engaged for normal turns.

NOTE: Defective turn signal bulb will cause turn signal indicator and remaining signal lights to flash more rapidly than normal.



3 High beam/low beam switch (headlights on). Move the lever towards the steering wheel and release it.

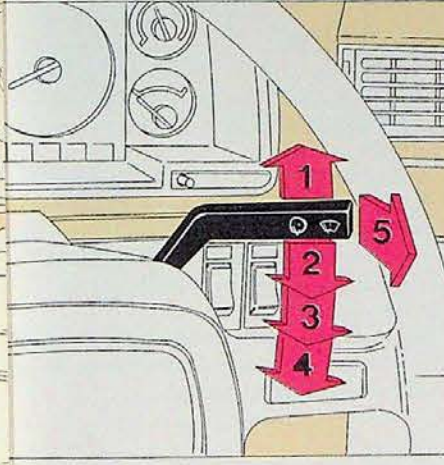
3 Headlight flasher (headlights off). Move the lever towards the steering wheel. The headlight high beam will be on until the lever is released.



Hazard warning flasher

The four-way flasher should be used to indicate that the vehicle has become a traffic hazard.

NOTE: Regulations regarding the use of the hazard warning flasher may vary from state to state.



Wiper/washer

Intermittent wiper.

With switch in this position, the wipers will sweep approximately every seventh second.

2 "Single sweep" position.

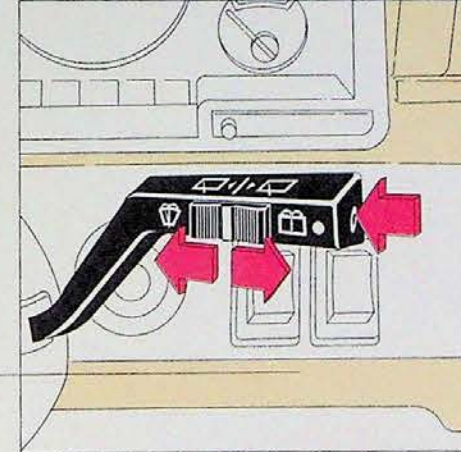
Switch returns automatically when released.

3 Wipers, low speed.

4 Wipers, high speed.

5 Windshield wiper/washer.

The wiper will make 2-3 complete sweeps after the lever is released.



Tailgate window wiper/washer (wagon)

The tailgate window wiper/washer is operated by a switch at the end of the wiper lever.

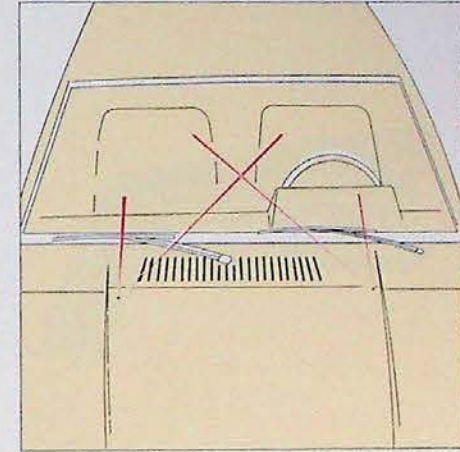
1 The wiper operates continuously.

2 Intermittent position: the wiper strokes approximately every 10 seconds.

3 Tailgate washer.

After the button is released the wiper strokes 2-3 additional times before stopping.

The electrical circuit is protected by fuse 14, located in the central electrical unit. See the section entitled "Fuses".



Adjusting washer nozzles

The washer jets should spray the windshield as shown. Use the edge of a small screwdriver to adjust the nozzles, if necessary.

Washer fluid reservoir

The washer fluid reservoir is located in the engine compartment and holds approx. 0.5 US gal. (2.0 liters) on sedan models and approx. 0.8 US gal (3.2 liters) on wagon models.

During cold weather, the reservoir should be filled with windshield washer solvent.



Cruise control

(optional on certain models)

The cruise control switches are located on the turn signal switch lever.

To engage and set desired speed:

1. Set switch (1) to ON.
2. Accelerate to desired cruise speed.

NOTE: The cruise control cannot be engaged at speeds below 22 mph (35 km).

3. Depress SET SPEED switch (2).

Operating brake pedal or clutch pedal (where applicable)

This will automatically disengage the cruise control. Previously selected cruise speed is retained in the memory and by momentarily setting the switch to RESUME position that speed will be re-engaged.

NOTE: The vehicle will accelerate very quickly should there be a substantial speed differential when the switch is reset to RESUME. It is therefore recommended that the vehicle be accelerated manually and the switch reset to RESUME when the speed differential is reduced.

WARNING!

The cruise control should not be used in heavy traffic or when driving on wet or slippery roads.

If the gear shift is moved to Neutral while the cruise control is engaged, then depress the brake pedal momentarily, or set the cruise control switch (1) to OFF. This will disengage the cruise control and prevent overrevving the engine.

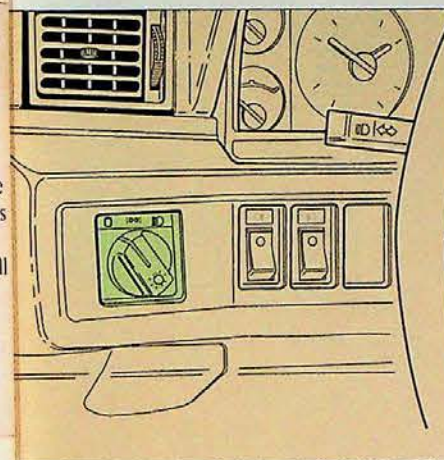
Note: When driving on a grade, actual vehicle speed may vary slightly from the set cruise control speed.

Acceleration

Momentary acceleration, such as for passing, does not interrupt cruise control operation. The previously selected speed will be maintained without having to set switch to RESUME.

To disengage the cruise control system:

set switch (1) to position OFF, or depress brake pedal, or depress clutch pedal (where applicable). Switching off the starting (ignition) switch will automatically disengage the cruise control system.



Headlights and position lights

☐ All lights off

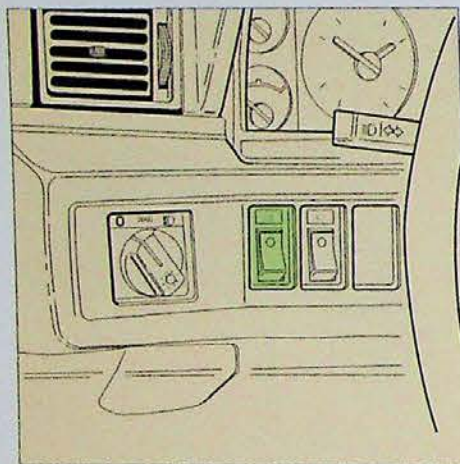
☐ Parking lights on

☐ Headlights and parking lights are on if starting (ignition) switch is in position I or II.

If the headlight switch is in position II, all lights will go out when starting switch is switched off.

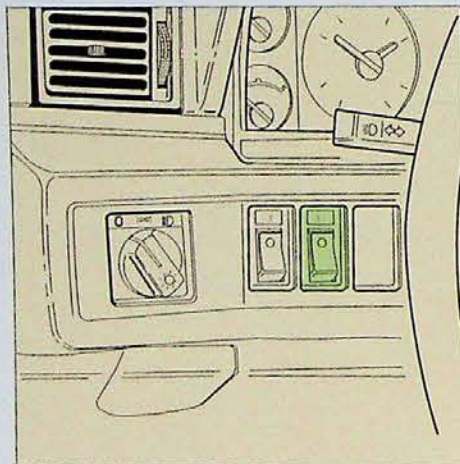
With the headlight switch in position III, the parking lights will stay on.

Switch from high to low beams, and vice versa, by moving the turn signal switch lever on the left side of the steering column towards the steering wheel.



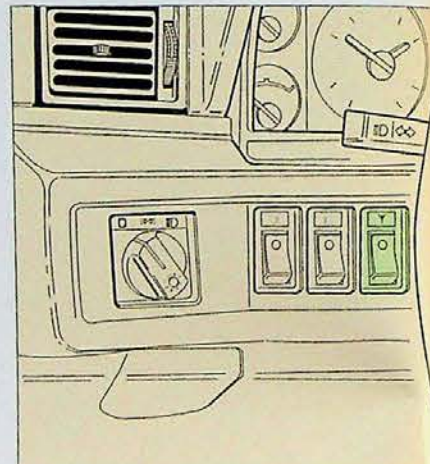
Rear fog lights

The rear fog lights are considerably brighter than the normal tail lights and should be used only when atmospheric conditions, such as fog, rain, snow, smoke or dust reduce the daytime or nighttime visibility of other vehicles to less than 500 ft. (152 meters). The headlights must be switched on. Note that local regulations governing the use of these lights may vary.



Auxiliary front fog lights (optional on certain models)

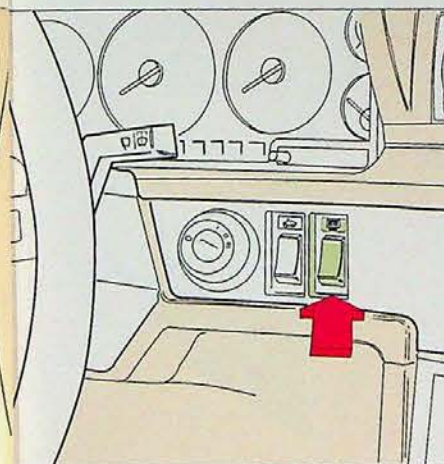
Auxiliary front fog lights can be switched on only with the low-beam headlights on.



Power antenna (optional on certain models)

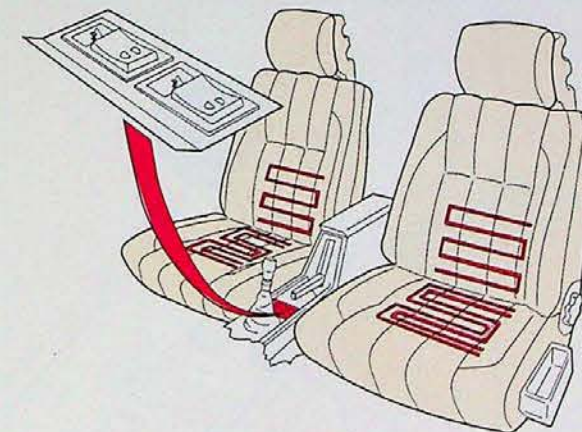
The power antenna switch can be used to retract the antenna when the audio system is turned on. This will permit operation of the cassette drive with the antenna in the down position.

Caution: Always lower the antenna when entering a garage or car wash to avoid antenna damage.



Rear window demister

To operate, depress the switch. The indicator lamp in the switch will come on. The system will be switched off automatically after 10-15 minutes or when the starting (ignition) key is switched off.

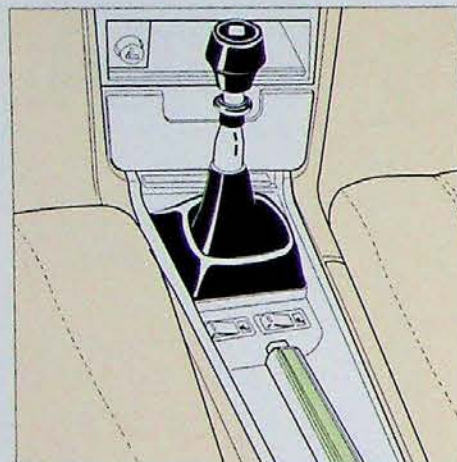


Heated front seats

The front seats are equipped with electrically-heated backrests and seat cushions. The heating is thermostatically-controlled and cuts out automatically. Use the switches to disengage the seat heating manually when the seat is not occupied.

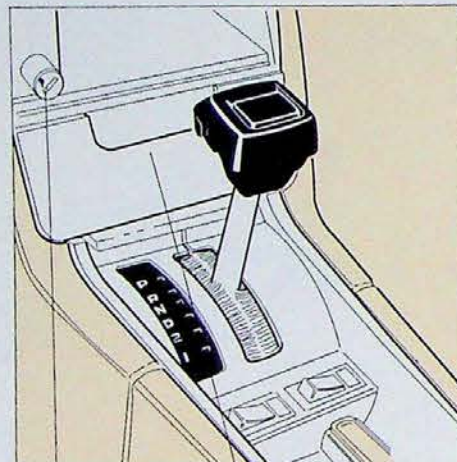
Extra heating (certain models)

The switch has two positions, one for normal heating and one for extra heating.
Right position = normal heating
Left position = extra heating



Parking brake (hand brake)

The lever is situated between the front seats. The brake is applied to the rear wheels. Always use the parking brake (hand brake) when parking. On hills, also turn the front wheels toward the curb. In order to obtain the best possible performance of the parking brake, the brake linings should be broken in. See section titled "Brake system".

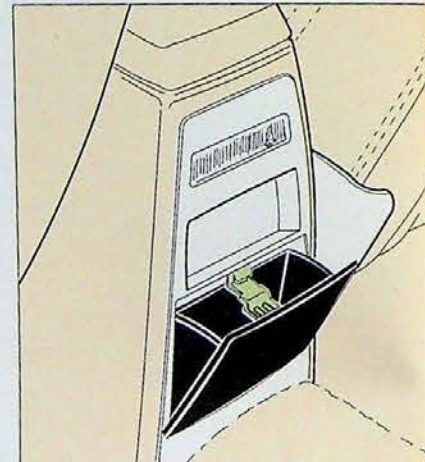


Lighter

Ash tray

Cigarette lighter

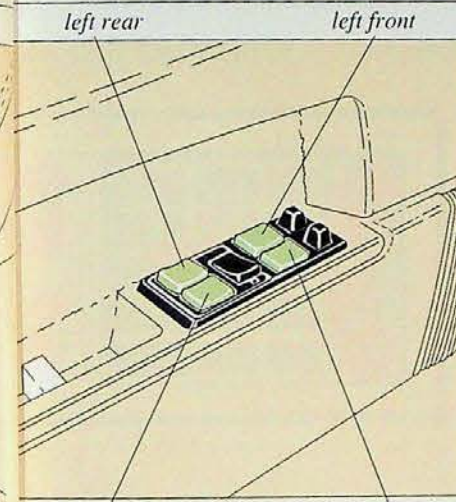
To operate, depress the knob fully. When the knob automatically releases, the cigarette lighter is ready for use. The starting (ignition) switch must be switched on (to position I or II) for the cigarette lighter to function.



Rear seat ash tray

Ash trays

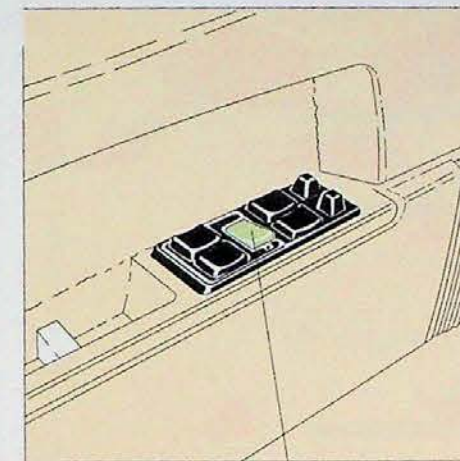
To remove the ash trays depress the center spring and remove.



Electrically-operated windows (GLE, Turbo models)

The electrically operated windows are controlled by switches from the driver's armrest as shown in the above illustration. The starting (ignition) switch must be ON (position II) for the electrically operated windows to 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.

Warning! Remove the starting (ignition) key when children are left unattended in the vehicle.



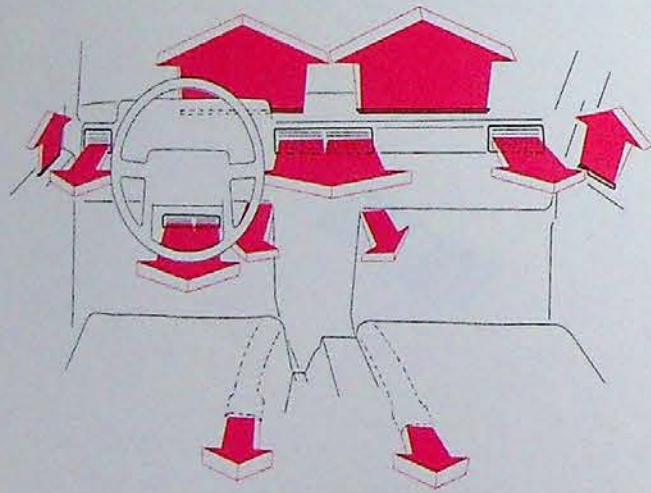
Cut-out switch

Cut-out switch for electrically-operated rear-door windows

If the car is equipped with rear door power windows, this function can be disabled by a switch located on the driver's door armrest. This switch is positioned 90° in relation to the other switches.

- The rear door windows can be raised or lowered with the respective door switch as well as the switch on the driver's door.
- 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.

Heating and ventilation



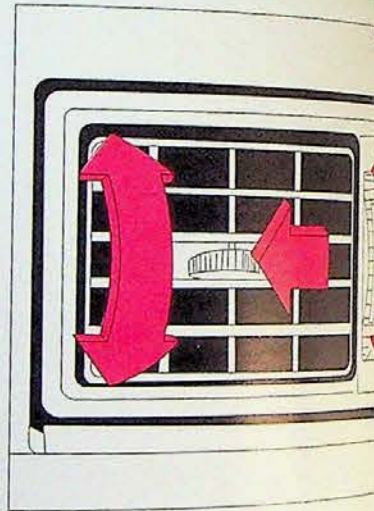
Heating and ventilation

Your Volvo is equipped with:

- Heating system
- or
- Heating system combined with air conditioning.

Depending on which function you select, warm or cool/cold air is distributed to the different parts of the passenger compartment. An additional driver's air louver is located beneath the steering column and can be adjusted upwards, downwards, or closed as desired.

Heating and ventilation system without air conditioning

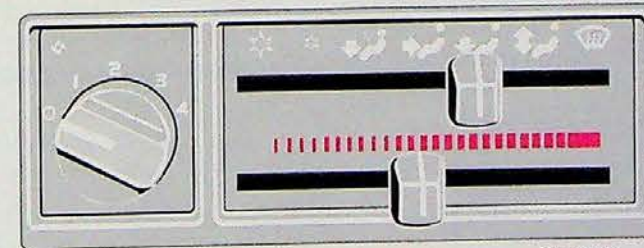


Air louvers (dash)

- A Open
- B Closed
- C Directing air flow horizontally
- D Directing air flow vertically

A certain amount of air will always enter through the dash air louvers as long as they are open, independently of the position of the dash air louvers. Close the dash air louvers to obtain maximum air flow to floor or windshield.

Fan
= off
= max. speed



Recirculating air.

Air from panel louvers.

Air from floor and panel louvers.

Air from panel louvers.

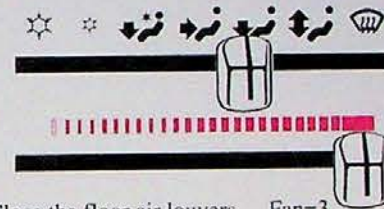
Air to floor.

Air to floor, windshield and side windows.

Air to windshield and side windows.

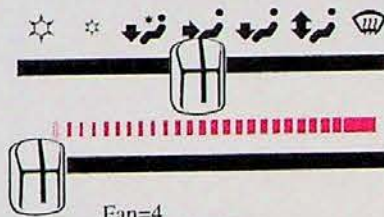
Heating and ventilation

Optimum heat



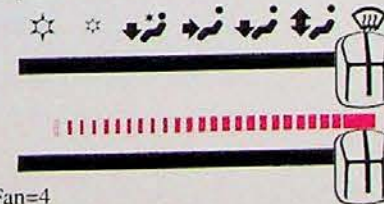
Close the floor air louvers Fan=3

Maximum ventilation



Fan=4
To obtain more fresh air at floor level: open fresh air louvers and reduce fan speed.

Optimum demist/defrost



Fan=4
Close the floor air louvers.

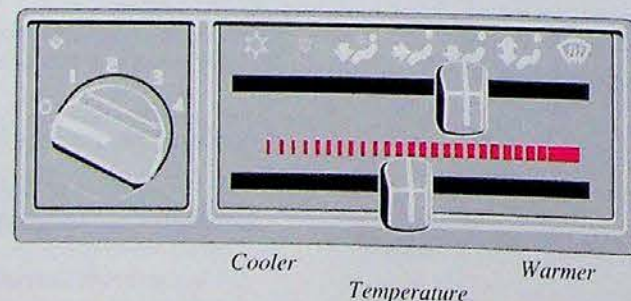
Temperature

On the system without air conditioning these two symbols represent identical functions.

Always keep the air inlet in front of the windshield clear of snow in winter.

Heating and ventilation with air conditioning

Fan
0 = off
4 = max. speed



Quickest cooling.
Normal cooling. Cooled air from panel louvers.
Normal cooling. Cooled air from floor and panel louvers.
Air through panel louvers.*
Air to floor.*
Air to floor, windshield and side windows.*
Defrost. Air to windshield and side windows.

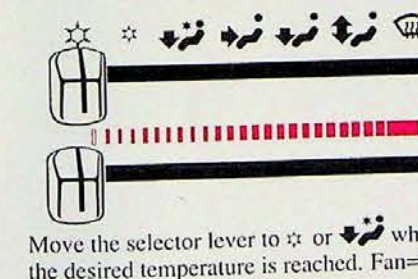
Warm air can be obtained even though the air conditioning system is operating.

*Air conditioning unit not engaged.

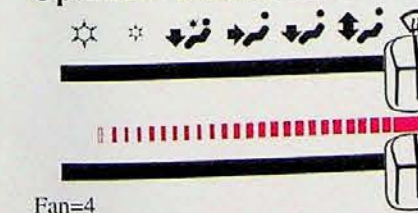
Optimum heat



Maximum ventilation



Optimum demist/defrost



Additional information and tips

- The air conditioning compressor is engaged only if the temperature is above 46°F (+8°C).
- In all three air conditioning positions the fan runs at speed 1 if the switch is at "0". This is a safety measure to prevent formation of ice in the system.
- When the outside air is contaminated with exhaust gases, smoke, etc. (as when driving through a tunnel), move the lever to ☆ for a few minutes. In this position very little air is drawn in to the passenger compartment from outside. Do not, however, leave the lever in this position for more than 10-15 minutes, since hardly any fresh air is being supplied. Regulate the temperature with the temperature control lever.
- The air conditioning unit functions best if used regularly.

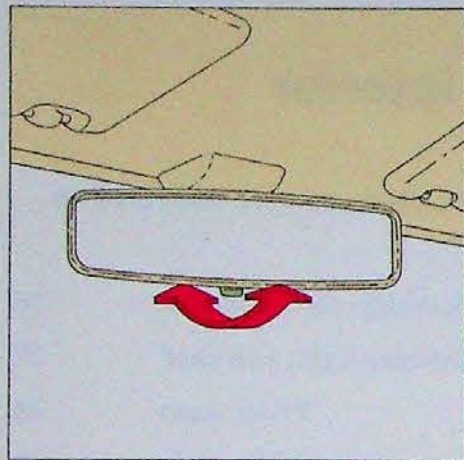
Always keep the air inlet grill in front of the windshield clear of snow in winter.

For complete operating instructions, maintenance guidelines, and specifications, please consult your Audio Cassette/Tuner Instruction Booklet. The Booklet also contains information on radio reception and the radio antenna.

Body and interior

The seats, seat belts, doors, etc. are described on the following pages.

Rear-view/side-view mirrors	26
Interior light, sun roof	27
Front seats	28
Child safety	29
Seat belts	30
Doors and locks	32
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Station wagon tailgate, storage spaces	37
Folding rear seat (wagon)	39
Cargo space lighting, spare tire, jack (wagon)	41

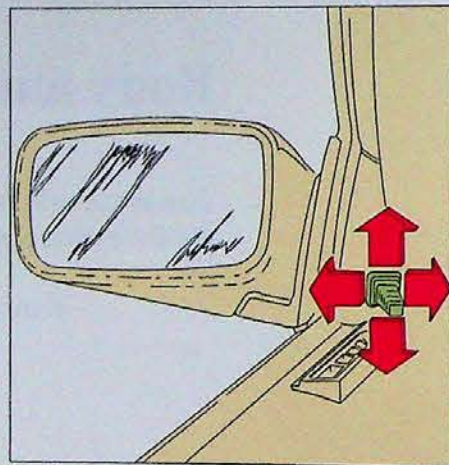


Rear-view mirror

- A Normal position
- B Night position, reduces glare from following headlights

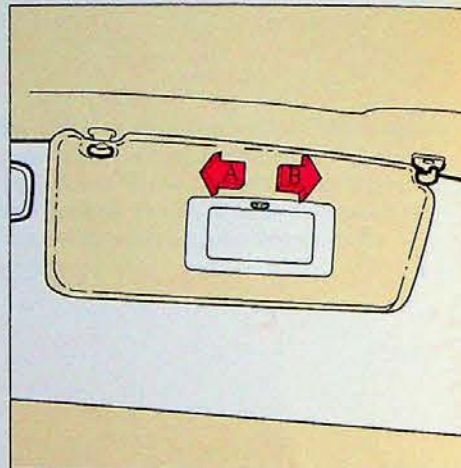
Never use ice scrapers made of metal as they can easily scratch the mirror surface.

The mirrors should always be adjusted before driving.



Side-view mirrors

Use the lever to adjust.



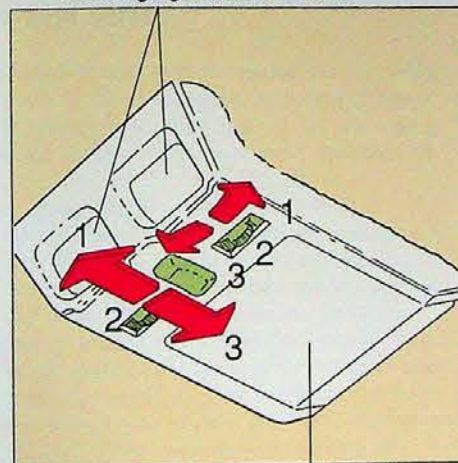
Make-up mirror

The make-up mirror is located on the right-side sun visor.

Make-up mirror lighting:
(GLE, Turbo models)

- A OFF
- B ON

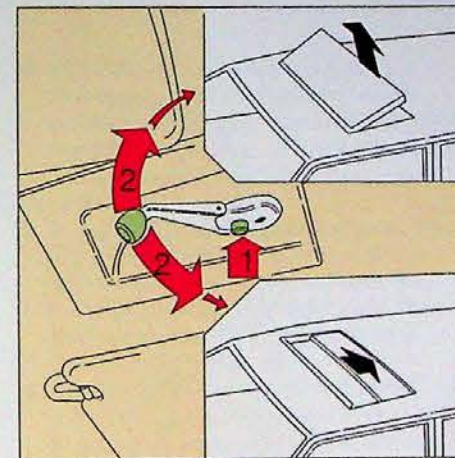
Reading lights for front seats



Interior light

Interior light

- 1 Light always on.
- 2 Light always off.
- 3 Light is on when either of the front or rear doors are opened.



Crank-operated sun roof

Sun roof (certain models)

The sun roof can be used in two ways: as a conventional sliding roof, or the rear edge can be raised or lowered to provide various ventilation positions.

Depress the button prior to cranking.
Counter-clockwise: sliding roof
Clockwise: ventilation positions.

NOTE: For added safety, always have the crank folded during driving

Height adjustment

The front section of the seats can be adjusted to three height positions and the rear section to four.

Lever forward = front height adjustment

Lever rearward = rear height adjustment

Do not adjust the seat while driving.



Lumbar support adjustment

Fore-aft seat adjustment

Pull control upward, then slide seat forward or rearward to desired position.

Make sure that the seat is properly secured when you release the control.

Note: For your safety, never adjust seat while driving.

Seat back inclination adjustment

Rotate control clockwise to tilt seat back rearward.

Rotate counterclockwise to tilt seat back forward.

Note: that body weight must be shifted to allow seat back to move forward or rearward.

Child safety

Volvo recommends the proper use of restraint systems for all occupants including children. Remember that, regardless of age and size, a child should always be properly restrained in a car.

Holding a child in your arms is NOT a suitable substitute for a child restraint system. In an accident, a child held in a person's arms can be crushed between the vehicle's interior and an unrestrained person. The child could also be injured by striking the interior, or by being ejected from the vehicle during a sudden maneuver or impact. The same can also happen if the infant or child rides unrestrained on the seat. Other occupants should also be properly restrained to help reduce the chance of injuring or increasing the injury of a child. In many states and provinces there is legislation governing how and where children should be carried in a car. Find out the regulations existing in your state or province.

A child restraint system can help protect a child in a vehicle. Here's what to look for when selecting a child restraint system:

- It should have a label certifying that it meets applicable Federal Motor Vehicle Safety Standards (FMVSS 213-80) - or in Canada, CMVSS 213.

- Make sure the child restraint system is approved for the child's height, weight and development - the label required by the standard or regulation, or instructions for infants restraints, typically provide this information.

- In using any child restraint system, we urge you to look carefully over the instructions that are provided with the restraint. Be sure you understand them and can use the device properly and safely in this vehicle.

- If your child restraint requires a top tether strap, consult your authorized Volvo dealer for top tether anchorage and installation information (sedan models only).

When a child has outgrown the child safety seat (approximately age 4-5 years, depending on size) you should use the rear seat with the standard seat belt fastened. The best way to protect the child here is to place the child on a cushion so that the seat/lap belt is properly located on the hips.

A specially designed and tested safety cushion for this purpose can be obtained from your Volvo dealer.

Seat belts

Always fasten the seat belts before you drive or ride.

Two lights will be illuminated for 4-8 seconds after the starting (ignition) key is turned to the driving position. One light is located in the instrument panel and one in the console between the front seats.

A chime will sound at the same time if the driver has not fastened his seat belt. The rear outboard seats are provided with self-retracting inertia-reel belts. The front seats are provided with twin roller belts.

To buckle:

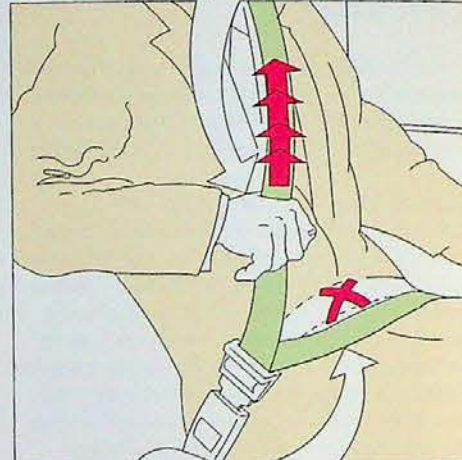
Pull the belt out from both retractors far enough to insert the latch plate into the receptacle (buckle for rear seats), until a distinct snapping sound is heard.

The seat belt retractors are normally "unlocked" and you can move freely, provided that the shoulder belt is not pulled out too far. The retractors will lock up as follows:

- if belt is pulled out rapidly
- during braking and acceleration
- if the vehicle is leaning excessively
- when driving in turns



Adjusting shoulder belt



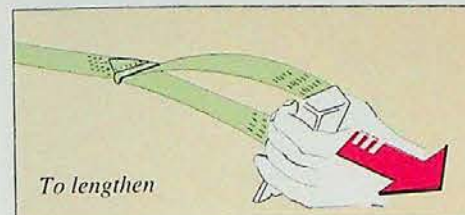
Lap portion of the belt should sit low

In order for the seat belt to provide maximum protection in the event of an accident, it must be worn correctly. When wearing remember:

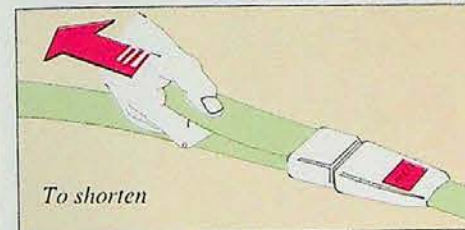
- the belt should not be twisted or turned
- the lap belt must be positioned low (not pressing against the abdomen). Make sure that the shoulder belt is rolled up into its retractor and that the shoulder and lap belts are taut.

Warning!

Aftermarket devices used to induce slack into the shoulder belt portion of the three-point belt system will have a detrimental effect on the amount of protection available to you in the event of a collision.



To lengthen



To shorten

Center-rear belt adjustment

The center-rear seat belt is manually adjustable. It should always be adjusted to fit snugly across the lap.

WARNING!

Never use a seat belt for more than one occupant. Never wear the shoulder portion of the belt under the arm or otherwise out of position. Such use could cause injury in event of accident. As the seat belts lose much of their strength when exposed to violent stretching, they should be replaced after any collision, even though they may appear to be undamaged. Never repair the belt on your own, but have this done by an authorized Volvo dealer only.

To unfasten

Depress red pushbutton in receptacle (buckle) and let the belts rewind into their retractors.

Maintenance

Check periodically that the anchor bolts are secure and that the belts are in good condition.

Use water and a mild detergent for cleaning. Check seat belt mechanism function as follows:

Attach the seat belt. Pull rapidly on the strap.

CAUTION: Check other traffic before performing the following check.

Brake firmly from approximately 30 mph (50 km/h) or turn in a tight circle while pulling on the belt.

In both of the above checks you should not be able to pull the belt out.



During pregnancy

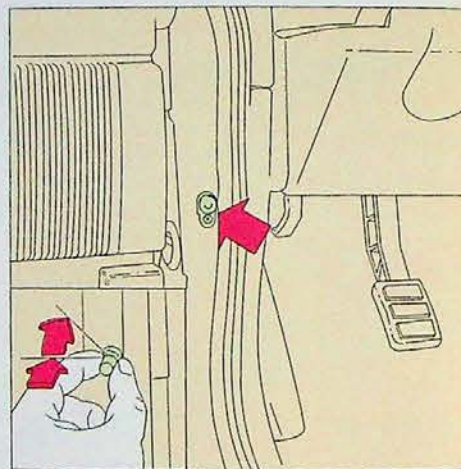
Pregnant women should always wear seat belts. Remember that the belt should always be positioned in such a way as to avoid any possible pressure on the abdomen. The lap portion of the belt should be located low, as shown in the above illustration.

Note:

Legislation in your state or province may mandate seat belt usage.

WARNING!

The lock buttons should not be in the down position during driving. In case of an accident, this may hinder rapid access to the occupants of the vehicle. Also see information on "child safety locks" on next page.

**Door locks**

The vehicle is equipped with a central door-locking system. This means the lock on the driver's door controls the locks on the other doors (including the trunk or tailgate) automatically.

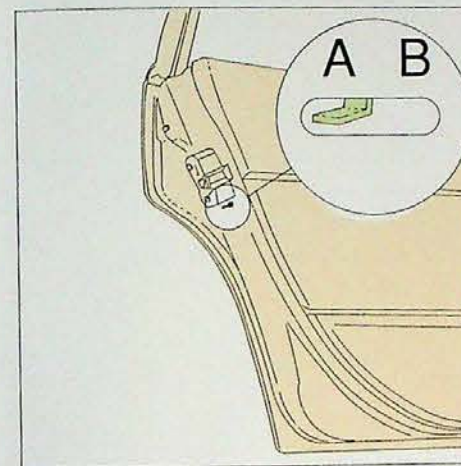
If the driver's door is locked or unlocked from the outside using the key, the other doors will be locked or unlocked automatically.

To lock/unlock the car by using the lock button on the inside of the driver's door, push/pull to lock/unlock all the doors. Check the action of the buttons on the other doors to verify their correct function (lock/unlock). The driver's door can be locked only by using the key when outside the vehicle.

To avoid battery drain

The interior light and the warning lights in the rear of the doors come on when a door is opened.

To avoid battery drain when the doors are opened for prolonged periods, these lights can be switched off by pushing in and turning the door light switches slightly clockwise. When the door is closed the switch will return to its normal position.

**Child safety locks**

The buttons are located on the rear door jambs.

- A The door lock functions normally.
- B The door cannot be opened from the inside. Normal operation from outside.

Remember, in the event of an accident, the rear seat passengers cannot open the doors from the inside with the buttons in position B.

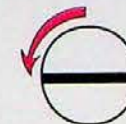


Unlocking



Locking

Withdraw key in vertical position
The trunk lock can also be disconnected from the central locking system by turning the key counterclockwise as shown below:



Withdraw key in horizontal position

Trunk lid

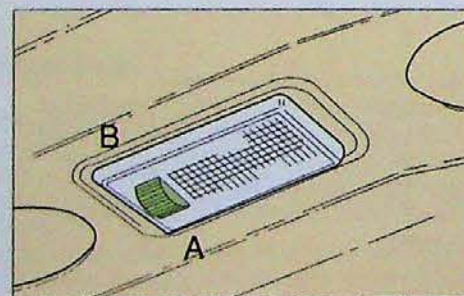
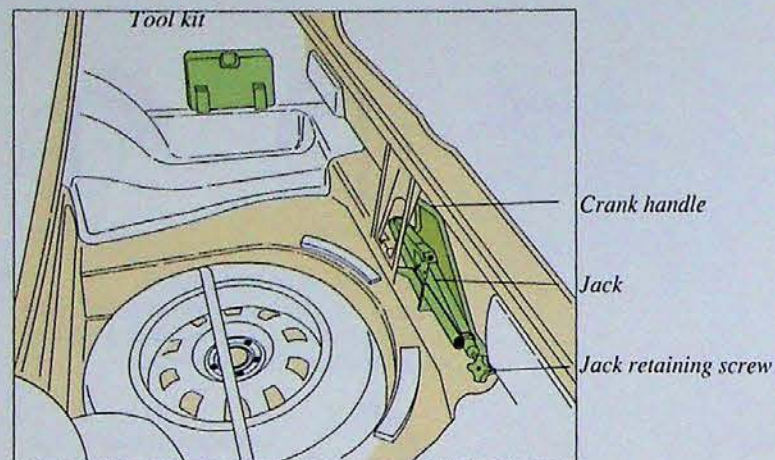
The trunk lock is incorporated in the central locking system. This means that you can either lock or unlock the trunk by means of the driver's door lock. You can also operate the trunk lock directly with the owner's key even if the vehicle is centrally locked.

The trunk is now always locked. This option can be used if for example, you lend your car to somebody. If you give only the service key to the driver it will not be possible to open the trunk. To reconnect the lock to the central locking system:



Withdraw key in vertical position.

Trunk, Long load storage (sedan)



Trunk light

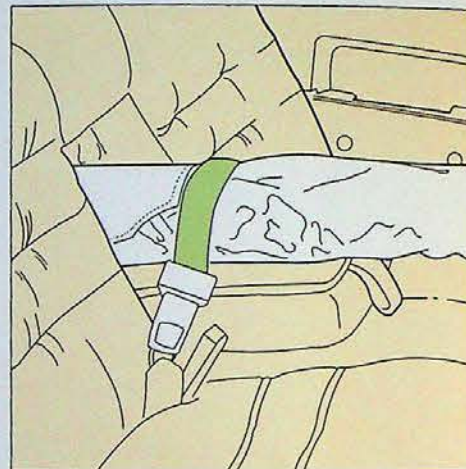
A Light always off.
B Light is on when trunk lid is opened.

Long load storage

In the panel behind the rear seat is a door which makes it possible to carry long loads such as skis, etc.

WARNING!

When braking rapidly the load could be displaced and cause injury to occupants. Sharp edges on the load should be covered for protection. It is essential that the load be secured safely. Use belts locked around the folded down armrest (see illustration).

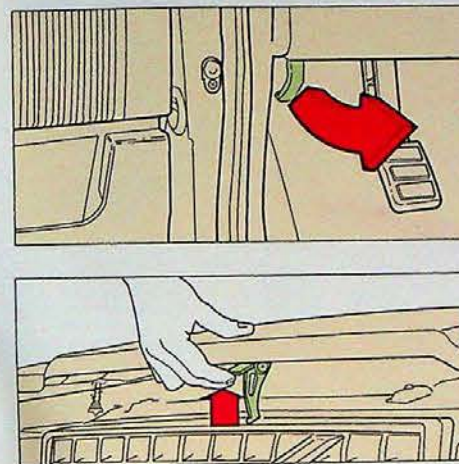


Protective covers (for skis) should also be used to avoid soiling or tearing the upholstery. Please note that the flap in the rear seat is only intended for light loads such as skis, wood etc. Max. length of load 6 1/2 ft = 2m. Max. weight of load 33 lbs = 15 kg.

WARNING!

Take care when loading/unloading the vehicle. Always turn off the engine and apply the parking brake. Place automatic transmission gear shift selector in position P (Park). This will prevent accidental movement of the gear shift selector to position D (Drive).

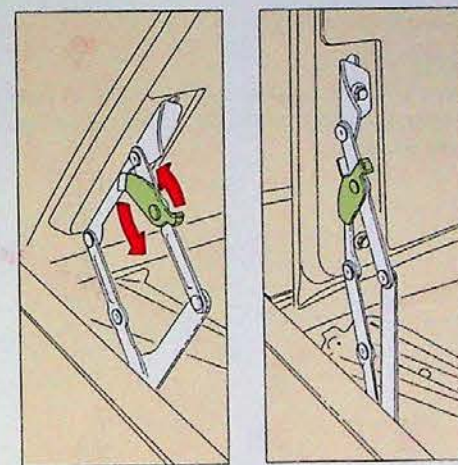
Hood, Engine compartment light



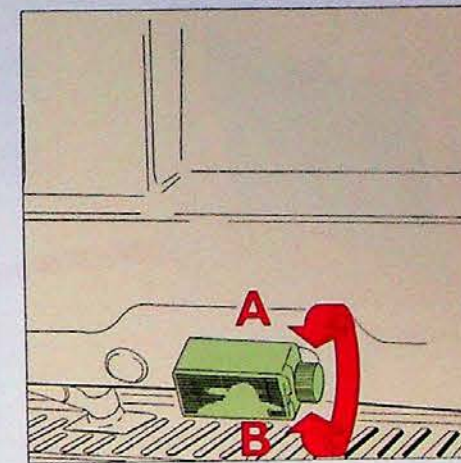
To open the hood

Pull the release handle. It is located under the left side of the dash.

Lift the hood slightly, insert a hand under the center line of the hood and depress the safety-catch handle. Open the hood. Check that the hood locks properly when closed.



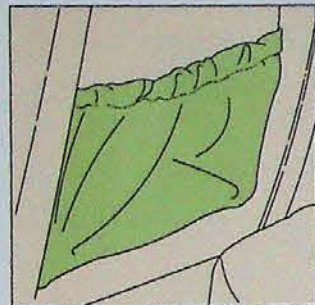
The normal opening angle for the hood is approximately 55°. By turning the catches on the hinges as illustrated, the hood can be opened to the vertical position. The catches will return to their normal positions when the hood is closed. Take care in low-roof garages!



Engine compartment light

A the light is always off
B the light comes on when the hood is opened.

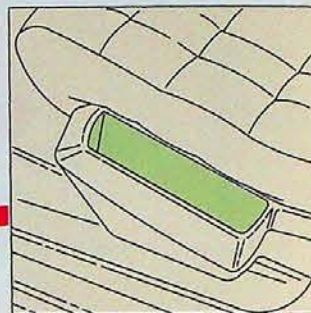
Storage spaces



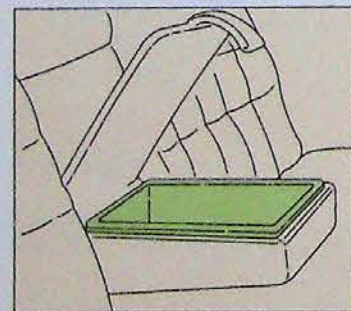
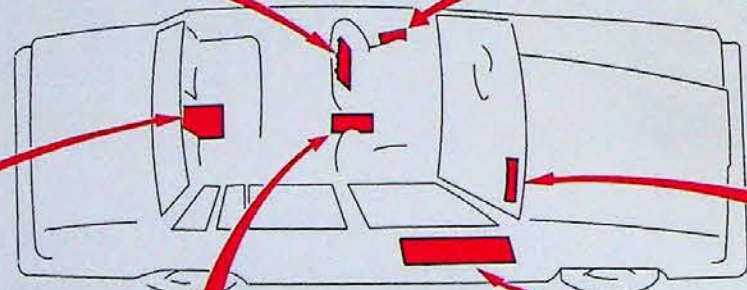
Pocket on rear of front seats

WARNING!

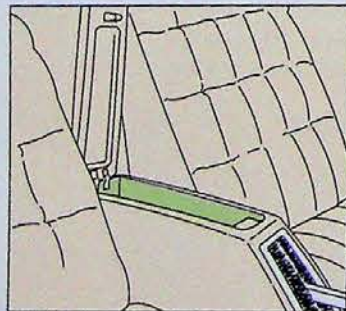
Packages on the rear window shelf can obscure vision and may become dangerous projectiles in the event of a sudden stop or an accident.



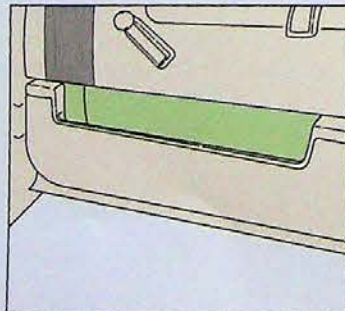
Storage area alongside seat



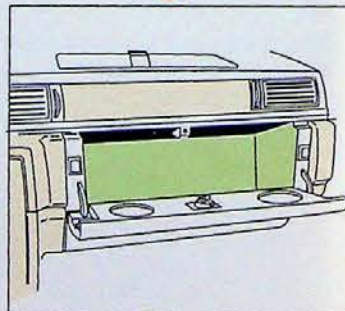
In rear seat armrest



Between front seats

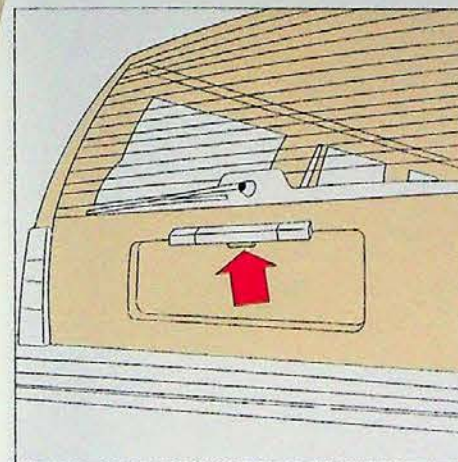


Compartment in front doors

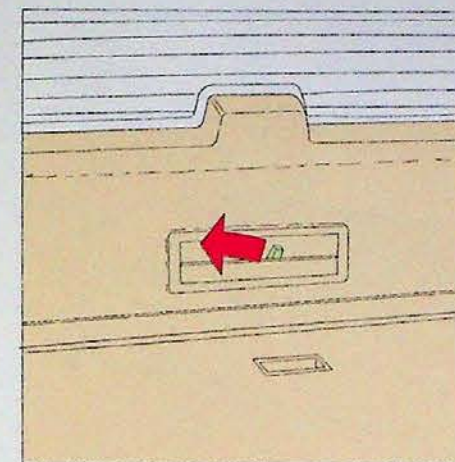


Glove compartment

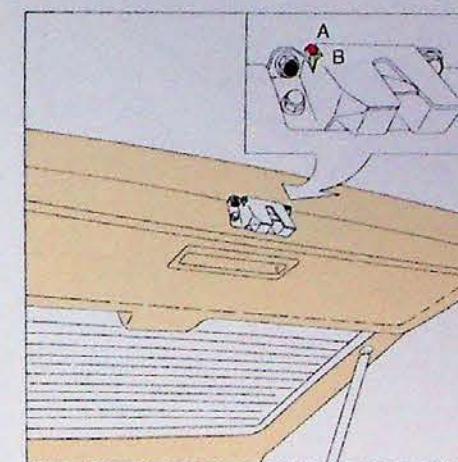
Tailgate, Child safety lock (wagon)



Opening the tailgate



Opening from the inside



Location and setting of child safety lock.

Tailgate

To unlock - turn the key clockwise and allow it to spring back.

To lock - turn the key counter-clockwise and allow it to spring back.

Note: If the vehicle has a central locking system the tailgate will be unlocked and locked at the same time as the driver's door. The tailgate is opened by pressing up the catch on the handle.

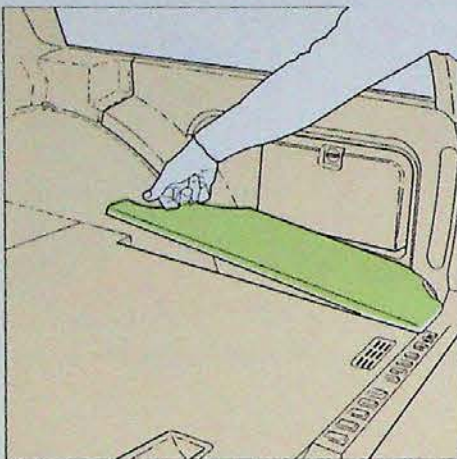
To open the tailgate from the inside of the vehicle, move the handle to the left and push outwards.

Child safety lock

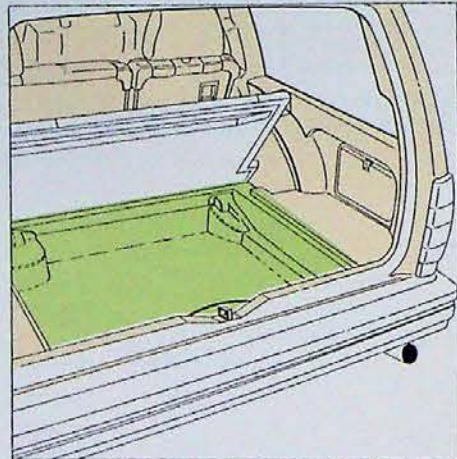
The tailgate incorporates a safety catch which is located to the side of the lock.

A the tailgate functions normally
B the tailgate cannot be opened from the inside

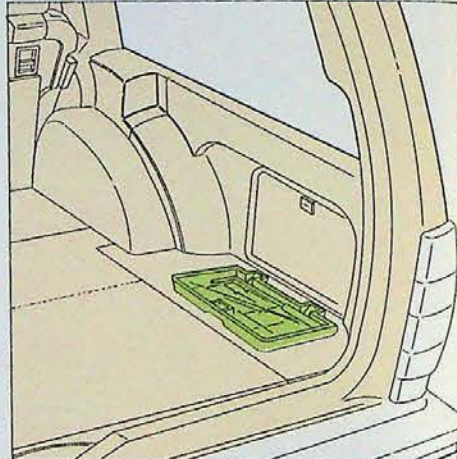
Concealed storage bins



Opening the small storage bin



The lid of the largest storage bin is hinged in the middle.



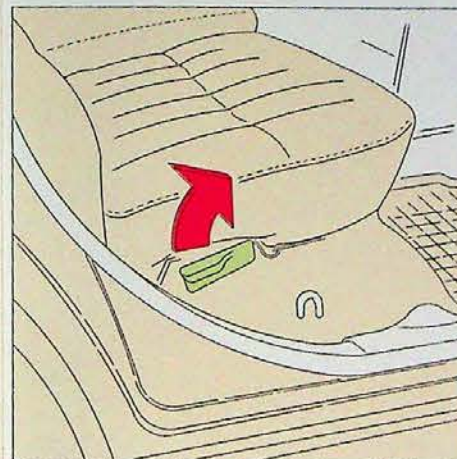
Tool box

Concealed storage bins

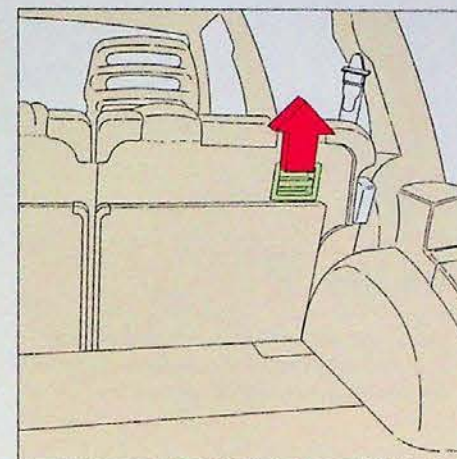
There are 3 storage bins under the floor of the cargo space; the largest bin can be locked with a key.

Tool box

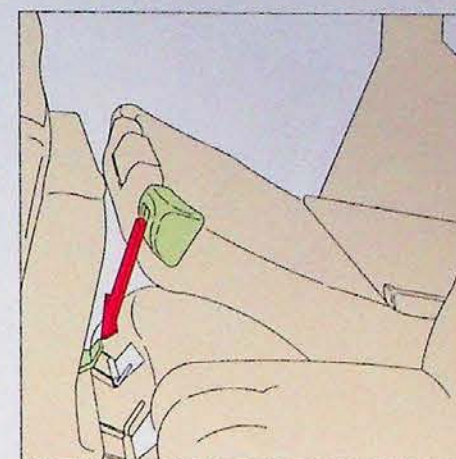
The tool box can be released by turning the catch.



Seat cushion release lever



Release lever - backrest



Latches fit into holes

Folding rear seat; increasing the cargo space

The rear seat is split 60/40 so that each section can be folded independently.

Note: Straighten front backrests if they are tilted too far to the rear.

Place a hand on the rear of the seat cushion, lift the release lever on the seat cushion, and swing the cushion up and toward the back of the front seats.

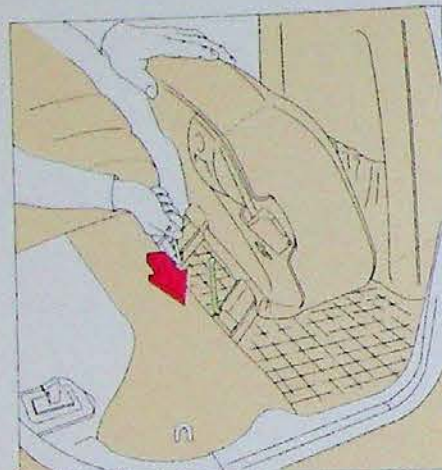
Remove head restraints from rear seat. This is done by grasping the restraint and lifting straight up. Move the backrest release lever upwards and fold the backrest forward.

Important: Make sure that the latches on the underneath of the seat cushions engage the holes on the top edges of the backrest. Make sure that the seat belts are correctly positioned when returning the seat to its original position.

Warning!

Do not pile cargo higher than the top of the backrests. This will help prevent luggage, etc. from being thrown about and, possibly injuring passengers in the event of sudden maneuvers, rapid braking, or an accident.

— Removing seat cushions, Securing cargo (wagon) —



Lift the seat cushion part way and remove retaining pins.

Removing seat cushions

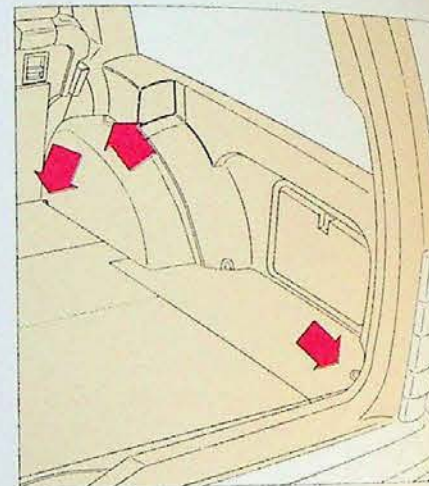
The seat cushion can be easily removed to provide a slightly larger cargo storage area. To remove: Lift the seat cushion part way and remove the retaining pins with a twisting motion. Do not fold the seat completely as the retaining pins will then be difficult to remove. Remove the seat cushion.

Warning!

Unless the station wagon is equipped with a cargo-compartment seat, passengers should not ride in this section of the car.

Warning!

Do not place extremely heavy articles against the front seats, as the backrest which is folded down is then placed under severe strain. Be sure to secure cargo. Hard and sharp articles could, otherwise, damage the front-seat backrest and/or cause injury to passengers in the event of rapid braking or a collision.



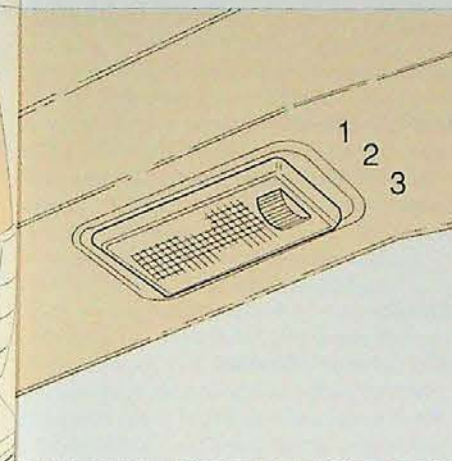
Always secure cargo

Securing cargo

As a safety precaution, the cargo space is equipped with six eyelets to which straps can be attached to secure luggage. Suitable straps can be purchased from your Volvo dealer.

Warning!

The eyelets are not to be used as passenger restraints.



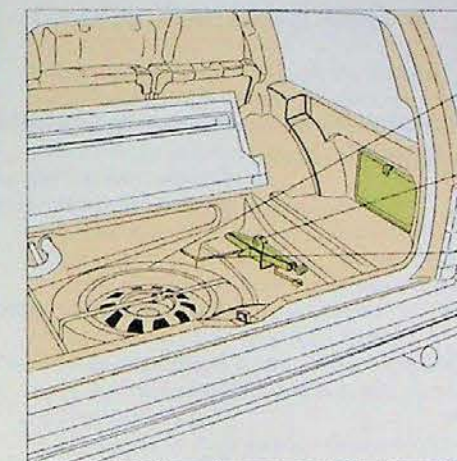
Switch positions

Cargo space lighting

There is an extra courtesy light at the rear of the cargo space.

- 1 Light comes on when the tailgate is opened
- 2 The light is always OFF
- 3 The light is always ON

— Cargo space lighting, Spare tire and jack (wagon) —



Spare tire and jack

Spare tire and jack

The spare tire and the jack are located beneath the floor mat in the large storage bin. Always secure the spare tire and the jack to prevent them from rattling.

Starting and driving

This section on starting and driving contains items such as starting the engine, operating gear selector, towing, trailers.

Fuel requirements, Refueling	43
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A new car should be broken-in!

Refrain from utilizing your car's full acceleration during the first 1,200 miles (2,000 km).

Automatic transmission

Do not use "kick-down" during the first 1200 miles (2000 km).

Manual transmission

Do not exceed following speeds:*

Gear	First 600 miles (1,000 km)		600-1,200 miles (1,000-2,000 km)	
	mph	km/h	mph	km/h
first	18	30	25	40
second	30	50	45	70
third	50	80	60	100
fourth	70	110	80	130
overdrive	80	130	90	150

*These are the maximum speeds recommended by the factory. Note that legislation in different countries and states can stipulate maximum speeds other than those given here.

Unleaded Fuel

Each Volvo has a catalytic converter and must use only unleaded gasoline (as specified on the instrument panel and by a label near the filler inlet). U.S. and Canadian regulations require that pumps delivering unleaded gasoline be labelled "UNLEADED". Only these pumps have nozzles which fit your car's filler inlet. It is unlawful to dispense leaded fuel into a vehicle labelled "unleaded gasoline only". Leaded gasoline damages the catalytic converter and the oxygen sensor system. Repeated use of leaded gasoline will lessen the effectiveness of the emission control system and could result in loss of emission warranty coverage. State and local vehicle inspection programs will make detection of misfueling easier, possibly resulting in emission test failure for misfueled vehicles.

Octane Rating

Volvo engines require unleaded gasoline with an (R+M)/2 octane rating, also called the Anti-Knock Index or AKI, of 87 or higher. This is generally equivalent to a Research Octane Number (RON) of 91 or higher. For turbocharged engines, Volvo recommends the use of premium unleaded gasoline with an (R+M)/2 rating of 91, for improved performance and driveability at high altitudes and in hot climates.

Gasoline Containing Alcohol

Some fuel suppliers sell gasoline containing alcohol without advertising the presence of alcohol. If you are not sure whether there is alcohol in the gasoline you buy, check with the service station operator. Blends of unleaded gasoline and ethanol (ethyl alcohol, grain alcohol), sometimes called "gasohol", are available in some areas. Gasohol, if used, must contain no more than 10 percent ethanol and must have an (R+M)/2 rating of 87 or higher. If you experience problems with starting, driveability, or fuel economy with gasohol, you should discontinue its use. Take care not to spill gasoline during refueling. Gasolines containing alcohol can cause damage to painted surfaces, which may not be covered under the New Vehicle Warranty. Do not use gasolines containing methanol (methyl alcohol, wood alcohol). This practice can result in vehicle performance deterioration and can damage critical parts in the fuel system. Such damage may not be covered under the NEW VEHICLE LIMITED WARRANTY.

Refueling

The fuel tank filler cap is located behind the door on the left rear fender. **Open cap slowly during hot weather conditions.** When filling, position the cap in the special bracket on the door.

After filling the tank, install the cap and turn until a "click" is heard. The fuel tank is designed to hold approximately 15.8 US gal. (60 liters), with sufficient volume left over to accommodate possible expansion of the fuel in hot weather. When the gauge's needle enters the red zone, approximately 2.4 US gal. (9 liters) of fuel remain in the tank. Be aware that the "usable" tank capacity will be somewhat less than the 15.8-US gal. (60 liter) maximum. When the fuel level is low, such factors as ambient temperature, the fuel's "vapor pressure" characteristics, and terrain can affect the fuel pumps' ability to supply the engine with an adequate supply of fuel. Therefore, it is advisable to refuel as soon as possible when the needle nears the red zone. After the needle enters the red zone, you should be able to drive approximately 25 miles (40 km) depending on driving style and conditions.

Detergent or Injector Cleaning Gasoline

The use of specially formulated gasoline which contains so called "detergent injector cleaning" additives is allowed and recommended by Volvo. The use of these detergent additives in gasoline has been shown to be effective in reducing the build up of certain injector deposits.

Driving economy

Economical driving does not necessarily mean driving slow

Better driving economy may be obtained by thinking ahead, avoiding rapid starts and stops and adjusting the speed of your vehicle to immediate traffic conditions. Observe the following rules:

- Bring the engine to normal operating temperature as soon as possible by driving with a light foot on the accelerator pedal for the first few minutes of operation. A cold engine uses more fuel and is subject to increased wear.
- Whenever possible, avoid using the car for driving short distances. This does not allow the engine to reach normal operating temperature.
- Drive carefully and avoid rapid acceleration and hard braking.
- Do not exceed speed limit.
- Avoid carrying unnecessary items (extra load) in the car.
- Check tire pressure regularly (check when tires are cold)
- Remove snow tires when threat of snow or ice has ended.
- Note that roof racks, ski racks, etc., increase air resistance and thereby fuel consumption.
- Turbo: try to keep the boost pressure gauge in the black range.

- Utilize overdrive at speeds above approx. 45 mph (70km/h)
- Avoid using automatic transmission kick-down feature unless necessary.
- On cars with manual transmission, utilize the shift indicator light (S.I.L.). See "Instruments".

Other factors which decrease gas mileage are:

- Worn or dirty spark plugs
- Incorrect spark plug gap
- Dirty air filter
- Incorrect valve clearance
- Dirty engine oil and clogged oil filter
- Dragging brakes
- Incorrect front end alignment
- Low tire pressure

Some of the above mentioned items and others are checked at the standard Maintenance Service intervals.

To start the engine:

- 1 Enter the car and fasten the seat belt.
- 2 Apply the parking brake, if not already set.
- 3 Place the gear selector lever in neutral/park (position N or P on cars with automatic transmission).
- 4 Without touching the accelerator pedal turn the ignition key to starting position. Release the key as soon as the engine starts.

Avoid repeated short attempts to start (fuel is injected every time the starter is engaged when engine is cold). Allow the starter to operate for a longer time (but not more than 15 - 20 seconds).

Do not race a cold engine immediately after starting. Oil flow may not reach some lubricating points fast enough to prevent engine damage.

Warning!

Always open the garage doors fully before starting the engine inside a garage to ensure adequate ventilation. The exhaust gases contain carbon monoxide, which is invisible and odorless but very poisonous.

Starting the engine, Turbo caution

Engine warm-up - initial driving procedure

Experience shows that engines in vehicles driven short distances are subject to abnormally-rapid wear because the engine never reaches normal operating temperature. It is therefore beneficial to reach normal operating temperature as soon as possible. This is best achieved by driving with a light foot on the accelerator pedal for a few minutes after starting.

Turbo caution

Never race the engine **immediately after starting**. Oil flow may not reach some lubricating points fast enough to prevent engine damage.

Before switching off the engine, let it operate at idle for a short time to allow the spinning of the turbo-compressor's turbine vanes to slow. After hard driving, this idle time should last a couple of minutes, during which the vanes will slow and the compressor will cool down while still receiving lubrication. If the turbine vanes are spinning at high speeds when the engine is switched off, there is a great risk of heat damage and/or turbine seizure due to lack of lubrication.

Do not race the engine just prior to switching off!

Manual transmission + overdrive



Press to engage/disengage overdrive

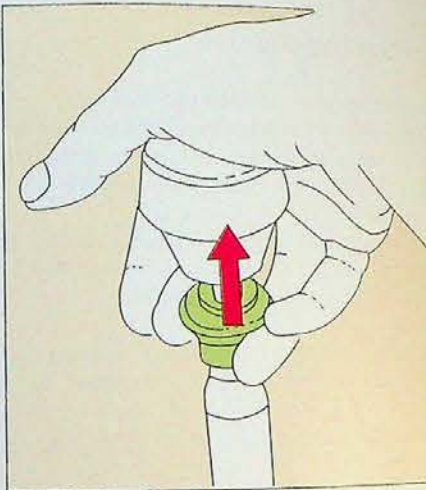
Gear lever

Depress the clutch fully when shifting gears, and when engaging/disengaging overdrive (5th gear). Remove foot from the clutch pedal after shifting.

Overdrive (5th gear)

The overdrive can be engaged in 4th gear only. The overdrive is engaged/disengaged by depressing the switch on top of the gear shift lever.

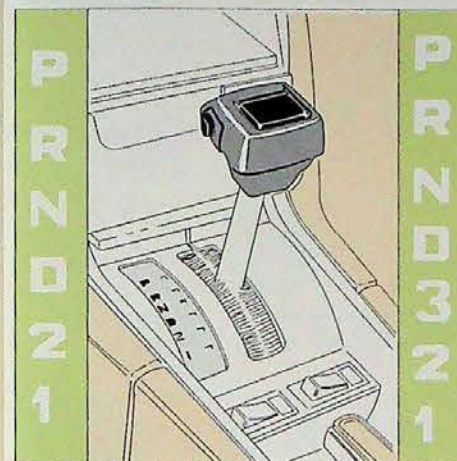
The overdrive is automatically disengaged when downshifting from 4th gear, but you should **always** disengage the overdrive **manually** before downshifting. To improve mileage it is recommended to use the overdrive as much as possible at speeds above 45 mph (70 km/h). The green control light "5" on the dashboard lights when the overdrive is engaged. See "Shift indicator light" section for more information on economical use of the manual transmission.



Lift before selecting reverse

Reverse gear

The detent collar on the gear lever must be lifted prior to engaging reverse gear. This prevents unintentional selection of the gear.



AW-transmission

ZF-transmission

Gear selector positions

P park
R reverse
N neutral
D drive
3 intermediate
2 and low
1

P (Park)

Use this position when parked with the engine running or stopped.

Never use P while car is in motion. The transmission is mechanically-locked when in position P. Also, apply the parking brake when parking on grades. **Never leave the car when the engine is running.** If, by mistake, the gear selector is moved from P, the car may start moving.

R (Reverse)

Never engage R while car is moving forward.

N (Neutral)

Neutral position = no gear is engaged. Use parking brake.

Driving gears

D (Drive)

D is the normal driving position. Upshifts and downshifts of the forward gears occur automatically and are governed by accelerator pedal position and vehicle speed.

Automatic transmission

Lock-up (GL, GLE models)

With the gear selector in position D (Drive) the lockup device disengages the torque converter at speeds above approx. 47-56 mph (75-90 km/h). It provides lowered engine speeds and improved mileage. The lockup engagement may be noticed as an extra upshift when accelerating.

3 (upper position) (ZF transmission)

Upshifts and downshifts between 1st, 2nd, and 3rd gears occur automatically. Upshift to D does not occur. Position 3 can be used . . .

- for passing
- when towing a trailer
- for stop and go city driving

83 mph (135 km/h) is maximum permitted speed in position 3

Always observe posted speed limits!

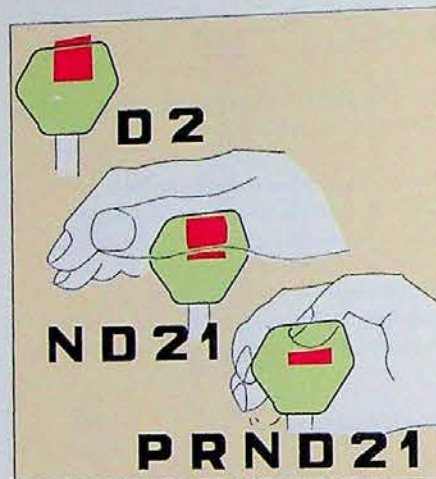
Automatic transmission

2 (intermediate position)

Upshifts and downshifts of first two gears (low and intermediate) occur automatically. No upshift to 3rd or 4th gear occurs. Position 2 may be used to obtain forced downshift to 2nd gear for increased engine braking effect.

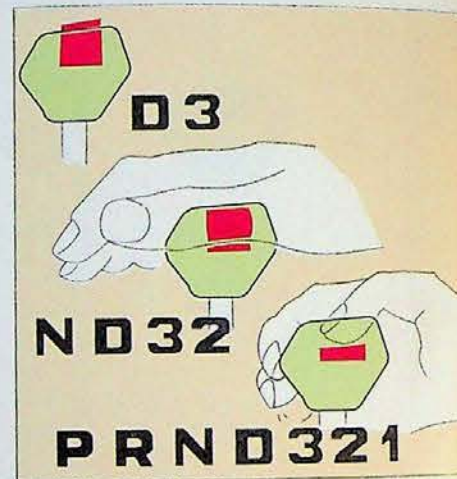
1 (low position)

If position 1 is selected when driving at high speeds, 2 is engaged first and 1 when the speed has dropped to approx. 30 mph (50 km/h). **No upshift can occur once 1 is engaged.** Use position 1 to select low gear when no upshift is desired, for instance, when entering and descending steep grades.



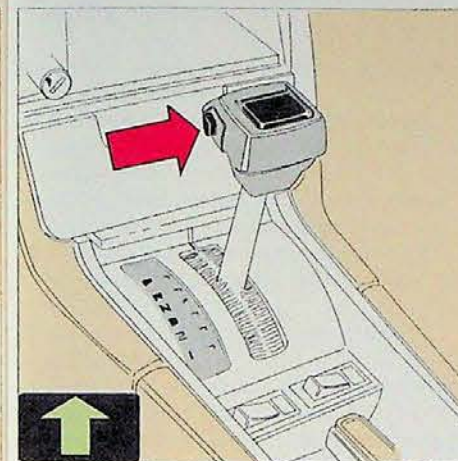
Shift gate: AW transmission

The gear selector can be moved freely between D and 2. Selections of other positions are obtained by depressing the selector knob prior to moving the selector. Slightly depressing the selector knob allows selection of positions N, D, 2 and 1. Fully depressing the selector knob allows selection of positions R and P. This is also necessary when initially bringing the selector out of position P. Fully depressing the selector knob thus permits shifting freely between all positions.



Shift gate: ZF transmission

The gear selector can be moved freely between D and 3. Selections of other positions are obtained by depressing the selector knob prior to moving the selector. Slightly depressing the selector knob allows selection of positions N, D, 3 and 2. Fully depressing the selector knob allows selection of positions R, P and 1. This is also necessary when initially bringing the selector out of position P. Fully depressing the selector knob thus permits you to move the selector to all positions.



4th gear disengagement: AW Transmission

The 4th gear is engaged automatically after the transmission has shifted through 1st, 2nd and 3rd gears at certain speeds and loads. By pressing in the button on the side of the selector lever, the 4th gear can be disengaged, thus providing a three-speed transmission. As a reminder the  light on the dashboard glows. By pressing in the button again, the transmission reverts to four-speed operation and the  light shuts off.

Disengage the 4th gear when:

- towing a trailer
 - driving in mountainous regions
- Since using the 4th gear improves fuel economy, it should be used as often as possible in conditions other than those stated above.

Kick-down

Automatic shift to a lower gear is achieved by depressing the throttle pedal fully and briskly. An up-shift will be achieved when approaching the top speed for a particular gear or by releasing the throttle pedal slightly. Kick-down can be used for maximum acceleration or when passing at highway speeds below a certain limit.

NOTE:

- Never select P or R while the car is in motion.
- When initially selecting positions D, 3, 2, 1, or R the car should be standing still with the engine idling.
- The gear selector should not be downshifted to 2 or 1 at speeds above 75 mph (125 km/h).*

*Always observe local speed limits!

Automatic transmission

Starting and stopping a car equipped with automatic transmission

1. Fasten the seat belts.
2. Apply the parking brake or the brake pedal to hold the car (to prevent the car from moving when the gear selector is moved).
3. Select position P or N. (engine cannot be started in any other position.)
4. Start the engine by turning the starting (ignition) key.
5. Select desired gear. The gear engages with a slight delay, especially noticed in R.
Engine should be idling; never accelerate until after you feel the gear is engaged! Too rapid acceleration immediately after selecting gears will provide harsh engagement and premature transmission wear.
6. Release the brake and accelerate.
To stop the car, release the accelerator pedal and apply the brakes.
Selecting position N when standing still with engine running for prolonged periods of time will avoid overheating transmission fluid.

WARNING!

Always place gear selector securely in Park, and apply parking brake before leaving vehicle. Never leave car unattended with engine running.

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 transmission oil. For driving on mountain roads with long persistent 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; instead, engage the parking brake. This prevents unnecessary heating of the transmission oil.
- When towing, prepare as follows:
AW71 Transmission:
Disengage the 4th gear (the indicator light on the instrument panel goes on).
ZF Transmission:
Disengage position D by selecting gear position 3. This prevents upshifts to Drive and helps ensure lower transmission oil temperatures.

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 and low engine rpm.
- idling for prolonged periods while the air conditioning system is in operation.
- stopping the engine suddenly after high speed driving (so-called "after-boiling" can occur).

To avoid overheating, the following rules should be followed:

- Reduce speed and downshift when towing a trailer up long, steep inclines. The risk of overheating can be reduced by switching off the air conditioning system for a short time.
- Do not let the engine idle unnecessarily for prolonged periods.
- Do not stop the engine immediately after high-speed driving, but instead, 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 section) the following precautions should be taken:

- Switch off the air conditioning system.
- Stop the car and put the gear lever into neutral (position N). **Do not stop the engine!**
- Increase the engine speed to approx. 2000 rpm (twice idling speed).

Electrical system

When replacing the battery or when carrying out work involving the electrical system, the following should be observed:

- A battery connection to the wrong terminal will damage the diodes. Before connections are made, check the polarity of the battery with a voltmeter.
- If booster batteries are used for starting, they must be properly connected to minimize the risk of the diodes being damaged. For correct connection, see "Jump starting" section.
- Never disconnect the battery circuit (for example, to replace the battery) while the engine is running, as this will immediately ruin the alternator. Always make sure that all the battery connections are properly tightened.
- If any electrical-welding work is performed on the vehicle, the ground lead and all the connecting cables of the alternator must be disconnected and the welder cables placed as near the welding point as possible.

Warning!

Do not drive with trunk lid or tailgate open!

Poisonous exhaust gases may enter via the open trunk lid or tailgate. If the trunk lid/tailgate must be kept open for any reason, proceed as follows:

- Close the windows.
- Set the ventilation system control to  and fan control to its highest setting.

CAUTION: Driving through standing water

Drive slowly and carefully if going through standing water (i.e. flooded roadways, etc.). Damage to engine could result if excess water is ingested through the air intake system. **Never drive the vehicle in water deeper than 1 foot (300 mm).**

Points to remember

Weight distribution affects handling

At the specified curb weight your car has a tendency to understeer, which means that the steering wheel has to be turned more than might seem appropriate for the curvature of a bend. This ensures good stability and reduces the risk of rear wheel skid. Remember that these properties can alter with the vehicle load. The heavier the load in the trunk, the less the tendency to understeer.

Handling, roadholding

Vehicle load, tire design, and inflation pressure, all affect vehicle handling. Therefore, check that the tires are inflated to the recommended pressure according to the vehicle load. See "Tire pressure" section.

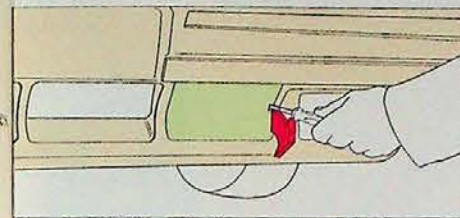
WARNING!

It is recommended that tires of the same make and dimensions be used on all four wheels. Do not use bias ply tires as this will adversely alter vehicle handling characteristics.

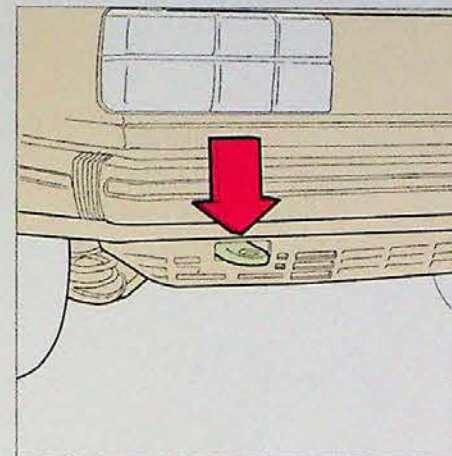
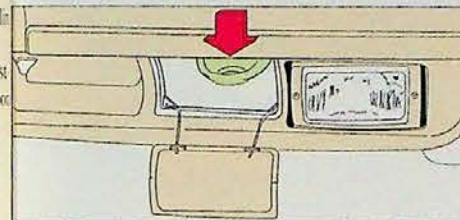
Roof racks (removable and permanent)

Roof racks are available as Volvo accessories. Observe the following points when in use:

- Avoid single-point loads. Distribute the load evenly.
- Place heavier cargo at bottom of load.
- Observe that center of gravity and handling are influenced by load weight.
- Increasing load size increases wind resistance and, thus, adversely affects fuel economy.
- Anchor the cargo correctly with a cord.
- Drive carefully. Avoid rapid starts, fast cornering and hard braking.
- Max. roof load is 220 lbs (100 kg) for removable rack mounted on drip rails.
- Max. roof load is 70 lbs (30 kg) for permanent rack mounted directly on roof.



Front eyelet



Rear eyelet

CAUTION:

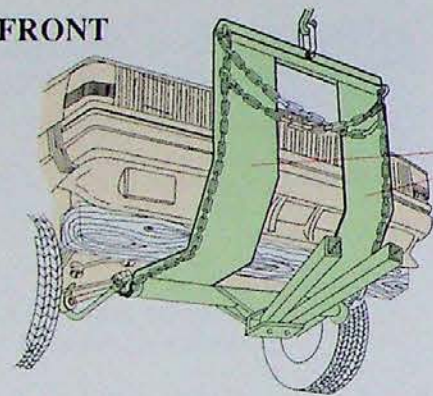
The towing eyelets must not be used for pulling another vehicle out of a ditch or any similar purpose involving severe strain.

Precautionary steps to observe when car is in tow

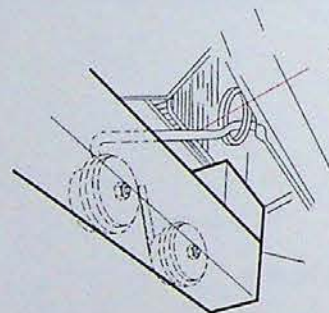
- Steering must be unlocked.
- Please check with state and local authorities before attempting this type of towing, as vehicles being towed are subject to regulations regarding maximum towing speed, length and type of towing device, lighting, etc.
- Remember that power brake and power steering assists will not be available when engine is inoperative. Brake pedal pressure required is 3 - 4 times above normal and greater steering effort must be exerted.
- Gear selector in position N. Check transmission oil level (see section titled "Transmission oil").
- Maximum speed: 20 mph (30 km/h).
- Maximum distance with rear wheels on ground: 20 miles (30 km).

Cars equipped with automatic transmission cannot be started by pushing or pulling the car.

FRONT



Grease between bumper/spoiler and towing sling

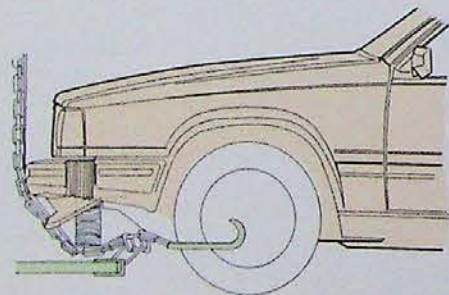


Wire

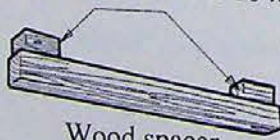
Towbar

Auxiliary hooks

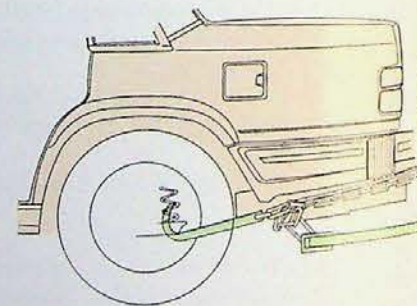
Towing sling



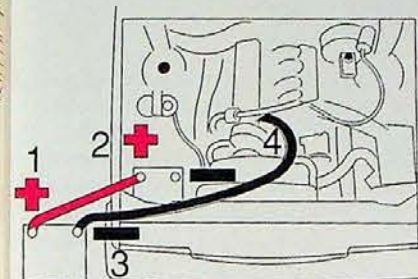
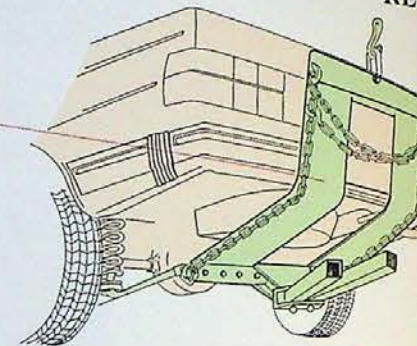
Wood spacer blocks adjustable to conditions
4" x 4" x 6" = 10 x 10 x 15 cm



Wood spacer
4" x 4" x 60" 10 x 10 cm x 1.5 m



REAR



CAUTION:
Improper hook-up of jumper cables or use of other than 12-volt batteries could result in damage to equipment and/or battery.

Check that cars are not touching to prevent premature completion of negative circuit. Note the position of the battery terminals and using jumper cables.

- First connect booster battery positive (+) terminal (1) to car battery positive (+) terminal (2).

- Then connect booster battery negative (-) terminal (3) to a stationary solid metal part on the engine at a point away from the battery (4).

Do not connect booster cable to any part of fuel system or any moving parts. Avoid touching hot manifolds.

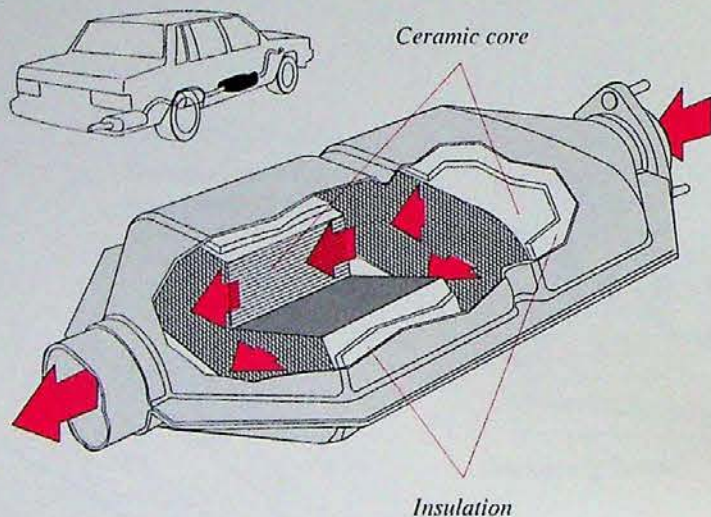
- After engine has started, remove first the negative (-) terminal jumper cable. Then remove the positive (+) terminal jumper cable.

WARNING!

To reduce the possibility of explosion, never expose battery to open flame or electric spark. Do not smoke near battery. Batteries generate hydrogen gas which is flammable and explosive. Battery fluid contains sulfuric acid. Do not allow battery fluid to contact eyes, skin, fabrics or painted surfaces. If contact occurs, flush affected area immediately with water. Obtain medical attention immediately if eyes are affected.

Catalytic Converter Cautions

- Keep your engine properly tuned. Certain engine malfunctions, particularly involving the electrical, fuel or ignition systems, may cause unusually-high converter temperatures. Do not continue to operate your vehicle if you detect engine misfire, noticeable loss of power or other unusual operating conditions, such as engine overheating, repetitive stalls, or backfires. A properly tuned engine will help avoid malfunctions that could damage the Catalytic Converter.



- Remember that tampering or unauthorized modifications to the engine or the vehicle may be illegal and can cause catalyst or exhaust system overheating. This includes: Altering fuel injection settings or components. Adjusting ignition timing beyond specified limits. Altering emission system components or location or removing components. Repeated use of leaded fuel.

- Do not park your car over combustible materials, such as grass or leaves, which can come into contact with the hot exhaust system and cause such materials to ignite under certain wind and weather conditions.

- Excessive starter cranking, in excess of one minute, with an intermittently-firing or flooded engine, can cause catalyst or exhaust system overheating. This also applies to lengthy pushing or towing of vehicle to start (manual transmissions only).

NOTE: Unleaded fuel is required for cars with catalytic converter. A label on the instrument panel and inside fuel tank filler door will remind owners and filling station attendants of this requirement. Important! It is unlawful to dispense leaded fuel into any vehicle labeled "unleaded gasoline only".

If one of the brake circuits should malfunction, the red warning light will come on (see page 8).



The pedal stroke increases slightly and the pedal feels softer but the pedal pressure required does not increase noticeably. If the red warning light comes on: stop immediately, open the hood and check brake fluid level (see "Brake fluid, power steering" section).

- Fluid level below MIN mark: do **not** drive. Tow car to shop for check/repair of brake system.
- Fluid level between MIN and MAX mark: proceed with extreme **caution** to a Volvo dealer for an inspection of the brake system.

If the brake power-assist does not function

The power assist to the brakes functions only when the engine is running. When the car is moving without the engine running the brake pedal pressure required to stop the car is increased by 3 - 4 times. The brake pedal feels stiff and hard.

Moisture on brake discs and brake pads affects braking.

Driving in rain and slush or passing through an automatic car wash can cause water to collect on the brake discs and pads. This will cause a delay in braking effect when the pedal is depressed. To avoid such a delay when the brakes are needed, depress the pedal occasionally when driving through rain, slush, etc. This will remove the water from the brakes. Check that brake application feels normal! This should also be done after washing or starting in very damp weather.

Severe strain on the brake system

The brakes will be subject to severe strain when driving in mountains or hilly areas. The speed is usually low which means that the cooling of the brakes is less efficient than when driving on level roads. To reduce the strain on the brakes it is advisable not to use the brakes excessively. Instead, shift into a lower gear and let the engine help with the braking. A good rule is to use the same gear downhill as would be used ascending the same grade. For vehicles with automatic transmission use position 2 or, in some cases, 1. Do not forget that, if you are towing a trailer, the brakes will be subjected to greater load than is normal.

Breaking-in parking brake (hand brake)

To obtain best parking brake performance, the brake linings should be broken-in. Stop 5-7 times from 30 mph (50 km/h), transmission in neutral, applying the parking brake with the release button pressed in during the stop. The force must not lock the rear wheels. If this happens, release the brake enough to let the wheels rotate. Drive a mile between each stop to cool the brakes. Check for proper parking brake operation.

Note:

The brake lights are not illuminated when applying the parking brake. To warn traffic from behind it is therefore advisable to depress the brake pedal slightly to illuminate the brake lights.

When preparing for trailer hauling, observe the following:

- Use a trailer hitch which meets Federal Safety Standards for rear end collisions (FMVSS 301-75).
An automatic transmission oil cooler must also be installed, since the automatic transmission is subject to increased load and temperature, certain vehicles are equipped with this extra oil cooler as standard equipment. Consult your Volvo dealer for further information.
- Maximum trailer weight recommended by Volvo is 3,300 lbs (1500 kgs). Observe legal requirements of the state in which the vehicles are registered.

All Volvo models are equipped with energy-absorbing shock-mounted bumpers. Trailer hitch installation should not interfere with the proper operation of this bumper system.

WARNING!

Bumper-attached trailer hitches must not be used on Volvos, nor should safety chains be attached to the bumper. Trailer hitches attaching to the vehicle rear axle must not be used.

CAUTION: Never connect a trailer's hydraulic brake system directly to the vehicle brake system, nor a trailer's lighting system directly to the vehicle lighting system. Consult your nearest authorized Volvo dealer for correct installation.

Trailer towing does not normally present any particular problems, but take into consideration:

- Recommended hitch tongue load is 165 lbs (75 kgs).
- Engine and transmission are subject to increased loads. Therefore, engine coolant temperature should be closely watched when driving in hot climates or hilly terrain. Use lower gear and turn off air conditioner if temperature gauge pointer enters the red range.
- Disengage the overdrive on models with automatic transmission.
- Avoid overload and other abusive operation.
- Hauling a trailer affects handling, durability, and economy. A trailer air dam, Volvo accessory, will often improve mileage.

- It is necessary to balance trailer brakes with the towing vehicle brakes to provide a safe stop. Check and observe State/Local regulations.
- More frequent vehicle maintenance is required.
- Remove the ball and drawbar assembly when the hitch is not being used.

Note: Refer to section entitled "Automatic transmission" for additional trailer hauling tips.

Cold weather precautions

If you wish to check your car before the approach of cold weather, the following advice is worth noting:

- Make sure that the **engine coolant** contains at least 50 percent antifreeze; that is, 5.0 qts. (4.25 liters) Volvo type C blue-green glycol additive. This gives protection against freezing down to -31 °F (-35 °C). See section "Coolant".
- Try to keep the **fuel tank** well filled-this prevents the formation of condensation in the tank.
In addition in extremely cold weather conditions it is worthwhile to add fuel line deicer before refueling.
- Use the correct grade of **engine oil** to avoid difficulties when starting. See section "Engine oil".
- The load placed on the **battery** is greater during the winter since the heater, windshield wipers, lighting etc. are used more often. Moreover, the capacity of the battery decreases as the temperature drops. In very cold weather, a poorly charged battery can freeze and be damaged. It is therefore advisable to check the state of charge more frequently and spray an anti-rust oil on the battery posts.

- To prevent the **washer reservoir** from freezing, add washer solvents containing antifreeze. This is important since dirt is often splashed on the windshield during winter driving, thus requiring frequent use of the washers and wipers.
The Volvo washer solvent should be diluted as follows:
Down to 14 °F (-10 °C): 1 part anti-freeze and 4 parts water
Down to 5 °F (-15 °C): 1 part anti-freeze and 3 parts water
Down to 0 °F (-18 °C): 1 part anti-freeze and 2 parts water
Down to -18 °F (-28 °C): 1 part anti-freeze and 1 part water

Before a long distance trip

It is always worthwhile to have your car checked at a Volvo dealer before driving long distances. Your Dealer will also be able to supply you with bulbs, fuses, spark plugs and wiper blades for your use in the event that problems occur.

A list of all authorized Volvo dealers in the U.S. and Canada is available.

If you prefer to check the car yourself, please note the following:

- Check that engine runs smoothly and that fuel consumption is normal.
- Check engine oil, coolant levels, and for possible fuel leakage.
- Check transmission oil level and rear axle for leakage.
- Check condition of drive belts.
- Check state of charge of battery.
- Examine tires carefully (the spare tire as well), and replace those that are worn. Check tire pressures.
- The brakes, front wheel alignment, and steering gear should be checked by your Volvo dealer only.
- Check all lights, including high beams.
- Reflective warning triangles are legal requirement in some countries.
- Have a word with your Volvo dealer concerning engine adjustment if you intend to drive in countries where it may be difficult to obtain correct fuel.

City driving

City driving can be a severe driving condition. Low operating speeds, long periods of idling combined with high operating temperatures, air conditioning usage, etc., will make necessary more frequent servicing (at least every third month).

If you do not intend to use your car for a long time

The following points may be of use if you do not intend to use your car for a long time (e.g. because of a long holiday, winter, etc.)

- Fill fuel tank to prevent water from condensing inside the tank.
- Wash the car carefully and wax it to protect the paint - don't forget the chromed parts.
- The vehicle should be left in a dry, well ventilated garage.
- Do not apply the hand brake. Block the wheels instead.
- Disconnect the battery's negative (-) cable.
- Lift the wiper arms away from the windshield.
- Increase tire pressure to maximum allowed, i.e. 36 psi.
- Open one of the windows slightly for ventilation.
- Ensure that the coolant contains sufficient anti-freeze to provide protection down to -22°F (-30°C). Volvo anti-freeze also provides resistance against corrosion.
- Remove all valuables and lock the car.
- Check the battery voltage at least every 6 weeks.

Wheels and tires

The handling and riding comfort of the vehicle is dependent on the inflation pressure and the type of tires fitted. Read the following pages carefully.

General	62
Tread wear indicators	63
Inflation pressures	64

General information

Your vehicle is equipped with 6 x 15" or 14" wheel rims and 185/70 R14 (GL, GLE) or 195/60R15 tires. In other words the width of the wheel rim is 6 inches and its diameter 15 inches.

The tire designation is coded as follows:

- 185 or 195 = tire width in mm.
- 70 or 60 = tire profile. This is the relationship (in percent) between the section height and width of the tire.
- R = radial tires.
- 14 or 15 = suitable intended rim size.

The tires have good road holding characteristics and offer very safe handling on dry and wet surfaces - even at high speeds. It should be noted however that the tires have been developed to give these features on snow-free surfaces. For optimum road holding on icy or snow covered roads - we recommend suitable winter tires.

When replacing tires, be sure that the new tires are the same size designation, type (radial) and preferably from the same manufacturer, on all four wheels. Otherwise there is a risk of altering the car's road-holding and handling characteristics.

Note: When storing wheel/tire assemblies (e.g. winter tires and wheels), either stand the assemblies upright, or suspend them off the ground. Laying wheel/tire assemblies on their sides for prolonged periods can cause wheel and/or tire damage.

Wear indicator

The tires have a so-called "wear indicator" in the form of a number of narrow strips running across or parallel to the tread. When approx. 1/16" (1.5 mm) is left on the tread, these strips show up and indicate that the tire should be replaced.

Tires with less than 1/16" (1.5 mm) tread have a very poor grip in rain or snow.

When replacing worn tires, it is recommended that the tire be identical in type (radial) and size as the one being replaced. Using a tire of the same make (manufacturer) will prevent alteration of the driving characteristics of the vehicle.

To improve tire economy:

- Maintain correct tire pressure.
- Drive smoothly: avoid fast starts, hard braking and tire screeching.
- Tire wear increases with speed.
- Do not change wheel location unless necessary.
- Correct front wheel alignment is very important.
- Unbalanced wheels impair tire economy and driving comfort.
- Hitting curbs can damage the tires and/or wheels permanently.

Flat spots

All tires become warm during use. After cooling, when the vehicle is parked, the tires have a tendency to distort slightly, forming flat spots. These flat spots can cause vibrations similar to the vibrations caused by imbalanced wheels.

They do, however, disappear when the tire warms up. The degree to which flat spots form depends on the type of cord used in the tire. Remember that, in cold weather, it takes longer for the tire to warm up and consequently longer for the flat spot to disappear.

Snow tires, studded tires, snow chains

Tires for winter use:

Use snow tires fitted to the standard 14" or 15" wheel rims. Suitable tire sizes: 185/70R14 (GL, GLE; on all four wheels) or 195/60R15 (Turbo; on all four wheels). No rims from other Volvo models can be used on the 740.

Do not mix tires of different design, as this could negatively affect overall tire road grip especially during slippery road conditions!

Studded tires should be run-in 300-600 miles (500-1000 km) during which the car should be driven as smoothly as possible to give the studs the opportunity to seat properly in the tires. The car tires should have the same rotational direction throughout their entire lifetime. In other words, if you wish to rotate the wheels, make sure that the same wheels are always on the same side of the car.

Tire chains can only be used on the rear wheels if the chains do not project too far from the tire and chafe against the brake caliper or other components.

Strap-on emergency chains must not be used since the clearance between the brake caliper and the wheel rim is inadequate.

WARNING!

Special wheel rims for air dams

Only special wheel rims, tested and approved by Volvo, are suitable for use with the air dam installed on the 740.

Wheels and tires

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General	62
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Wheels and tires

Checking and correcting tire pressure

Check the tire pressure when refueling.
The tire pressure should be corrected only when the tires are cold.
With warm tires, correct only when the pressure is too low. The tire temperature rises after driving just a few miles.

Vehicle Loading

The tires on your Volvo will perform to specifications at all normal loads when inflated as recommended on the tire information label located on the rear facing side on the right front door. This label lists both tire and vehicle design limits.
Do not load your car beyond the load limits indicated.

Tire Pressure Label

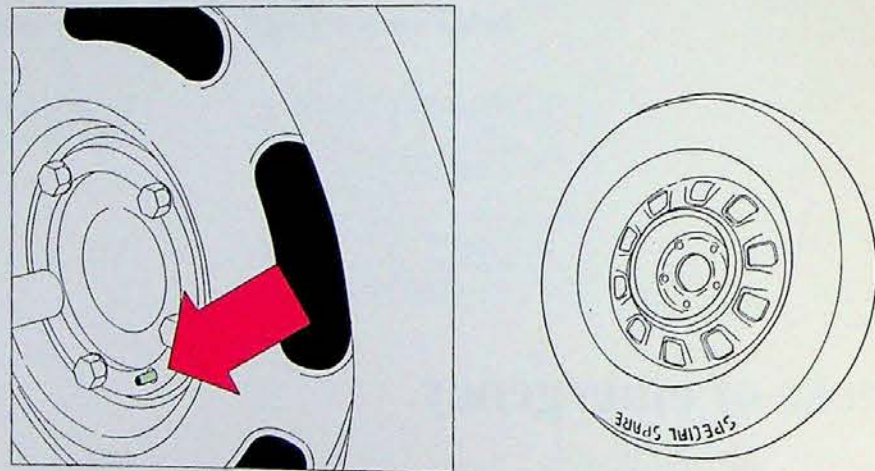
VEHICLE CAPACITY		OCCUPANTS			COLD TIRE PRESSURE	
WEIGHT		FHT	RR	TOTAL	FRONT	REAR
MAX LOAD	1045	2	3	5	30	36
RECOMMENDED FOR FUEL ECONOMY						
OPTIONAL PRESSURE						
TIRE SIZE	185/70R14	2	1	3	27	30
IF TIRES ARE NOT INFLATED TO THESE RECOMMENDED PRESSURES						
155 R 15	SIZE	2	1	3	27	30
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION					40	PSI
VOLVO						

In case of emergency

In case of emergency

Even if you maintain your car in good running condition, there is always the possibility that something might go wrong and prevent you from driving, such as a punctured tire, blown fuse or bulb....

Special spare tire	66
Changing a wheel	67
Replacing bulbs	69
Replacing fuses	76
Replacing wiper blades	79
Troubleshooting	80

**WARNING!**

Current legislation prohibits the use of the "Special Spare" tire other than as a temporary replacement for a punctured tire. In other words, it must be replaced as soon as possible by a standard tire.

Roadholding, etc., may be affected with the "Special Spare" in use. Do not, therefore, exceed 50 mph (80 km/h).

Special Spare

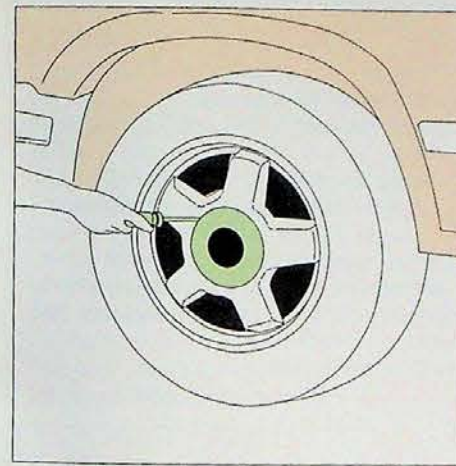
The spare tire of your car is what is called a "Special Spare". This is embossed on the tire. See illustration.

GL/GLE models have 14" wheels and Special Spare tire pressure 40 psi (280 kPa).

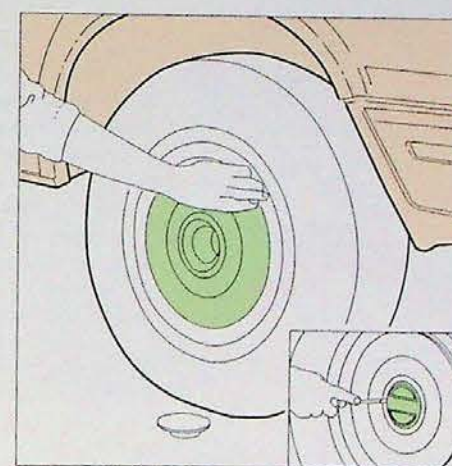
Turbo models have 15" wheels and Special Spare tire pressure 50 psi (350 kPa).

These pressures should be maintained irrespective of which position on the car the Special Spare tire is used on.

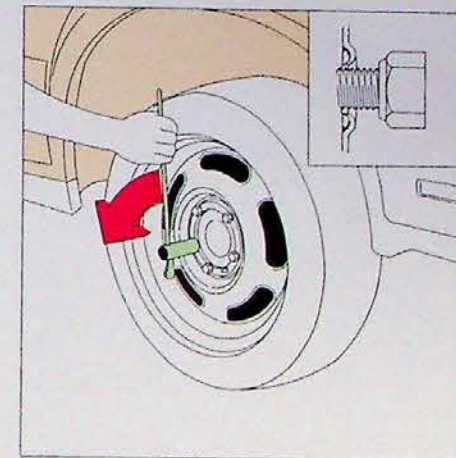
In the event of damage to this tire a new one can be purchased from your Volvo dealer.



Removal of wheel cap on aluminum wheel



Steel wheel for GL

**Changing a wheel**

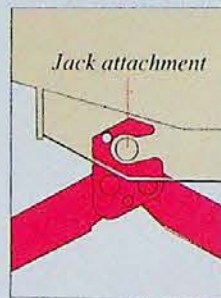
The spare wheel is located in the trunk, beneath the carpet (sedans), or beneath the rear cargo-area floor (wagons).

Before using the jack, make sure the car is standing on firm, level ground. Apply the parking brake. On models with automatic transmission place the transmission selector lever in position P. On models with manual transmission, place the gear-shift lever in 1st gear or reverse. Block the wheels standing on the ground with wooden blocks or large stones.

- Remove the wheel cap, using the screwdriver in the tool kit.
- With the car still on the ground, use the box wrench from the tool kit to loosen the wheel nuts 1/2 - 1 turn. Turn the nuts counter-clockwise to loosen.

NOTE:

To avoid excessive wear and the necessity of rebalancing, mark and reinstall wheels in same location as before removal. To lessen the chance of imbalance, each wheel hub is equipped with a guide stud to ensure that a removed wheel can be reinstalled in its original position (as when changing over to winter tires/wheels).



There is a jack attachment adjacent to each wheel location. Hang the jack from the attachment as shown in the illustration and crank while simultaneously guiding the base to the ground. **Before raising the car check that the jack is still correctly positioned in the attachment.** Now raise the vehicle until the wheel is free from the ground. Unscrew the wheel nuts completely and carefully remove the wheel so as not to damage the thread of the studs.

WARNING!

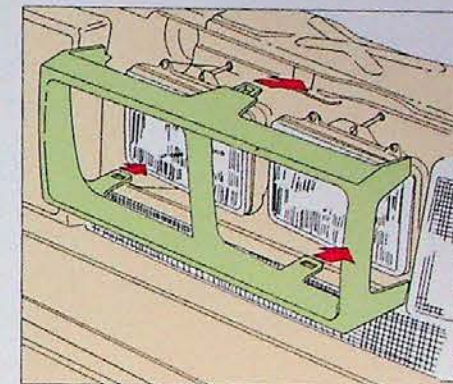
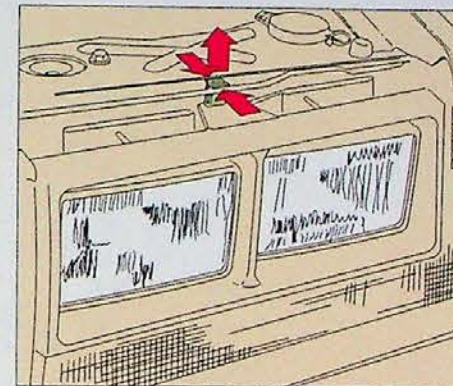
- Be sure the jack is on firm and level ground.
- Never allow any part of your body to be extended under a car supported by a jack.
- Use the jack intended for the car when replacing a wheel. For any other job, use stands to support the end of the car being worked on.
- Apply the parking brake, select position P (automatic transmission), or 1st gear or reverse on manual transmission.
- Block the wheels standing on the ground. Use rigid wooden blocks or large stones.
- The jack should be kept well-greased.

Installing the wheel

Clean the contact surfaces on the wheel and hub. Lift the wheel and place it on the hub. Make sure that you align the wheel with the guide stud on the wheel hub prior to installation. Install the wheel nuts clockwise and tighten lightly. The bevelled side of the nuts should face the wheel. Lower the vehicle to the ground and alternately tighten the nuts to 63 ft. lbs. (85 Nm). Install the wheel cap. Some models have a hub cap that extends to the wheel rim. The valve symbol on the inside of the hub cap should be installed toward the valve.

NOTE:

The method for replacement of bulbs in the various lighting units is shown on the following pages. Make sure when installing bulbs, that the guide pin on the socket fits into its corresponding recess. When installing Halogen bulbs, do not touch the glass with your fingers. The reason for this is that grease, oil or any other impurities can be carbonized onto the bulb and damage the reflector. Use bulbs of correct type and voltage. Failure to do so could cause the bulb failure warning light to activate.

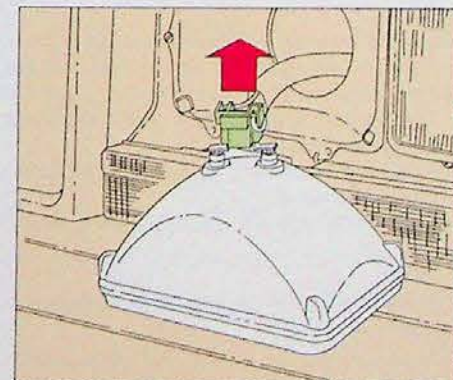
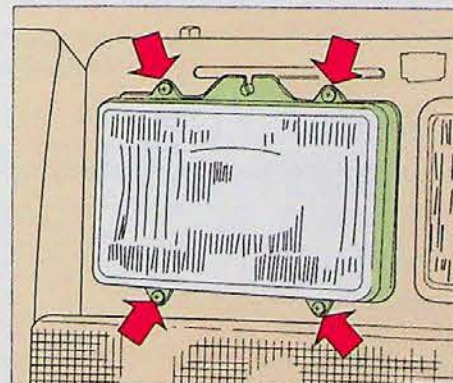


Replacing sealed beam headlamp units

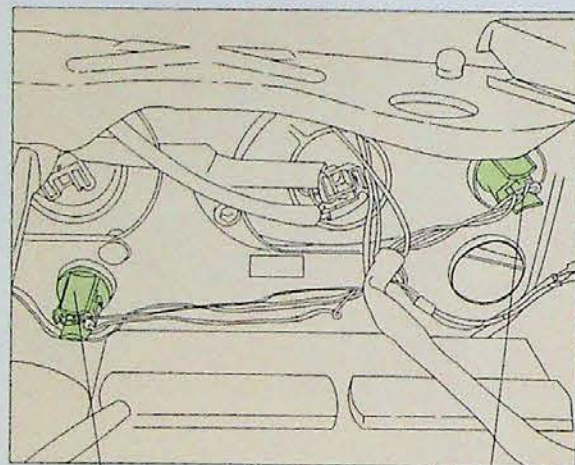
- 1 squeeze the clip and pull it upwards.
- 2 Lift up the rim slightly and remove it forwards.
- 3 Remove the Phillips screws and rim. Lift out the headlamp unit.
- 4 Disconnect the socket contact.

Installation is done by reversing the procedure.

Check headlight alignment.



Replacing bulbs



Turn signal bulb

Position/side marker bulb

Replacing bulbs, front

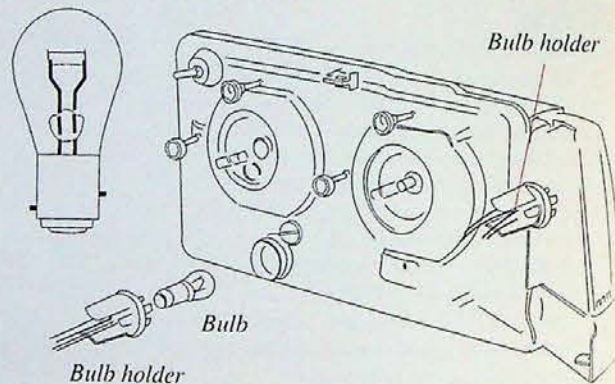
Access to the bulbs is obtained from the engine compartment.

- 1 Switch off the lights and starting (ignition) key.
- 2 Do not remove the connector from the bulb holder.
Turn the bulb holder slightly counterclockwise and withdraw the bulb holder and bulb.
- 3 Remove the bulb from the holder by pressing in and turning slightly counterclockwise.
- 4 Insert a new bulb and install the bulb holder.

Note:

One of the tabs on the bulb holder is slightly wider than the other two.

32/3 CP
BAY 15d
US Bulb No. 1157

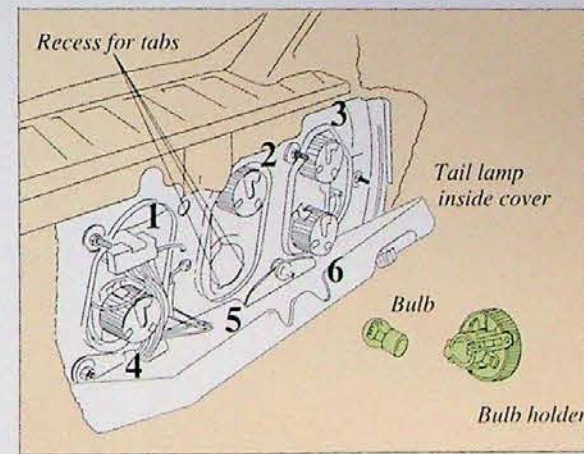
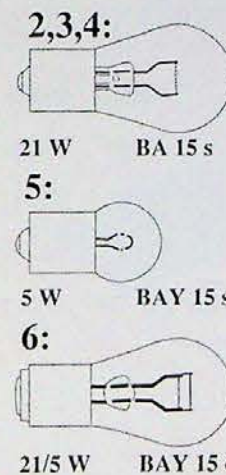


- 5 Turn the bulb holder clockwise to secure it.
Check the bulb function.

Note:

It may be necessary to remove the washer fluid reservoir fill tube in order to gain access to the bulb holder.

Replacing bulbs

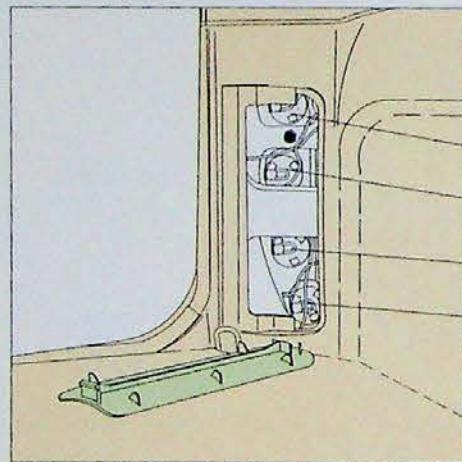


Replacing tail light bulbs (sedan models)

All tail lamp bulbs are replaced from inside of trunk.

- 1 Unscrew and remove tail lamp inside cover. Note that inside cover is hooked at the lower edge.
- 2 Turn bulb holder approx. 3/8" (1 cm) counterclockwise and remove it.
- 3 Depress bulb in bulb holder, turn it slightly counterclockwise, and remove it.
- 4 Install a new bulb. Install bulb holder in tail lamp.
- 5 Turn bulb holder clockwise. Check that bulb lights. Replace tail lamp inside cover.

Bulbs	Power CP(W)	Socket	US Bulb No
1 Reflector	-		
2 Back up light	32(21)	BA 15s	1073
3 Rear turn signal	32(21)	BA 15s	1073
4 Rear foglamp	32(21)	BA 15s	1073
5 Tail light	4(5)	BA 15s	67
6 Tail light/brake light	32/3(21/5)	BAY 15d	1157

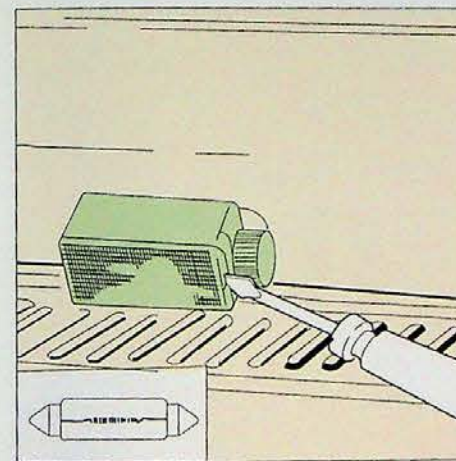


Light	Wattage	Socket
Fog light	21W	BA15s
Back-up lights	21W	BA15s
Turn signals	21W	BA15s
Brake light and tail light	21/5W	BAY15d

All tail light bulbs are replaced from inside the vehicle.

Replacing tail light bulbs (wagon models)

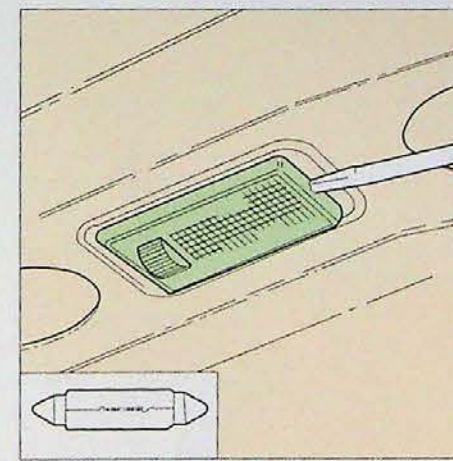
- Turn off the lights
- Remove the cover with a screw driver
- Rotate the bulb holder about 1/2" (1 cm) counterclockwise and remove the holder from the tail light cluster.
- Gently press the bulb into the holder, then rotate the bulb counterclockwise in order to release it.
- Install a new bulb in the holder and replace the bulb holder in the tail light cluster.
- Turn the bulb holder clockwise
- Check that the bulb lights
- Re-install cluster cover



Engine compartment light

Insert a screwdriver and pry off the light assembly. Lift it out to remove. Replace the bulb.

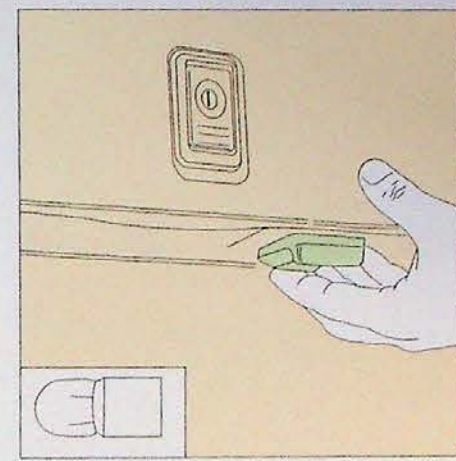
Bulb	Power	Socket
Engine compartment light	10 W	SV8.5



Trunk light (sedan models)

Depress the catch with a screwdriver and remove the light assembly. Lift it out to remove. Replace the bulb.

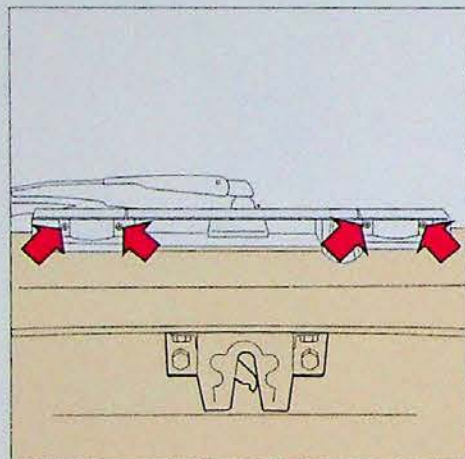
Bulb	Power	Socket
Trunk light	10 W	SV8.5



License plate light (sedan models)

Slide the bulb housing backwards until it is released from the front edge. Pull out the lamp housing and replace the bulb. Insert the front edge of the lamp housing and press up the rear edge by hand.

Bulbs	Power	Socket
License plate light	4 W	BA9s

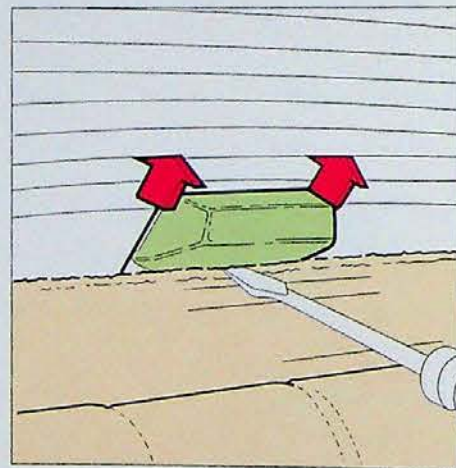


Use phillips head screwdriver

License plate light (wagon models)

Remove the screws with a Phillips head screwdriver. Remove lamp housing. Depress the bulb and rotate it counter-clockwise. Remove the bulb. Install a new bulb and re-install light housing.

Bulb	Power	Socket
License plate light	4W	W2.1x9.5d

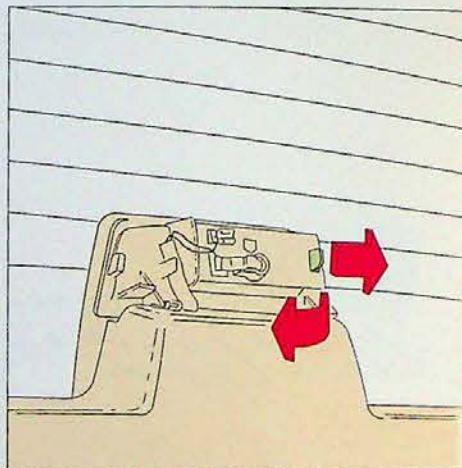


Depress catch with screwdriver

High-level brake lights

To remove:
Turn off ignition. Depress catch with a screwdriver.
Sedan models
Pull the cover upwards to remove it.
Wagon models
Grasp the cover with both hands and pull it towards you.

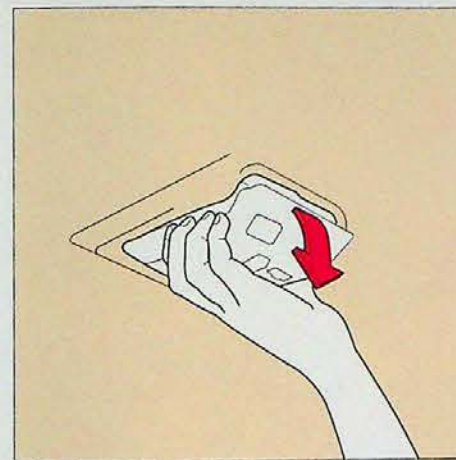
Bulb	Power	Socket
High level brake light	20W	BA9s



Depress catches

Depress catches and fit new bulb.

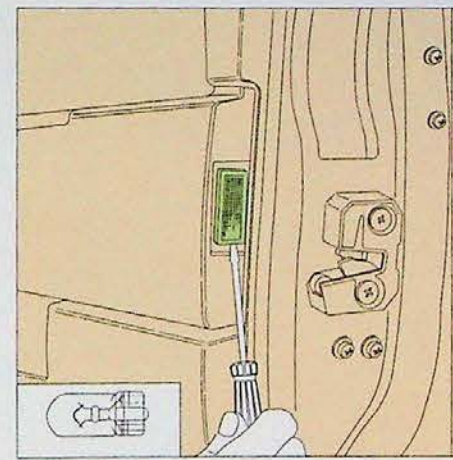
To fit:
Fit the reflector and check that the light works.
Sedan models
Press the cover into position, noting the position of the alignment pin at the top.
Wagon models
Align the catches and press the cover into position.



Interior light and reading lights

Take hold of the front section of the light as shown and pull straight down.
Replace the blown bulb and check operation before reinstalling the bulb housing.

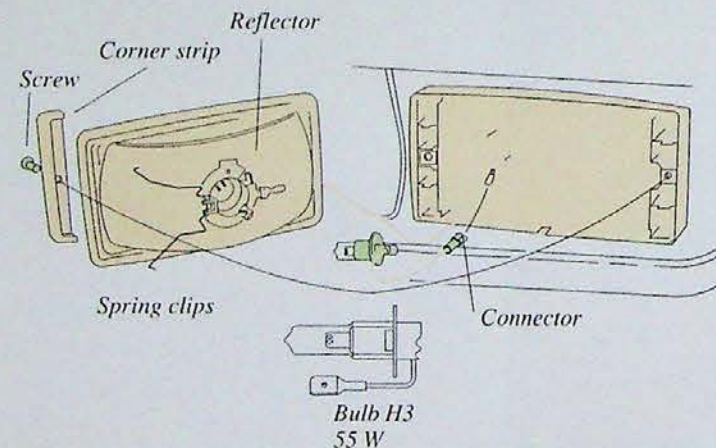
Bulb	Power	Socket
Interior light	10 W	SV8.5
Reading light	5 W	W2.1x9.5d



Door warning lamps

All doors are equipped with red warning lamps. To replace a bulb, insert a screwdriver as shown in picture and gently turn it to remove the lens. Withdraw the bulb, replace it and re-insert the lens.

Bulb	Power	Socket
Door warning lamp	3 W	W2.1x9.5d



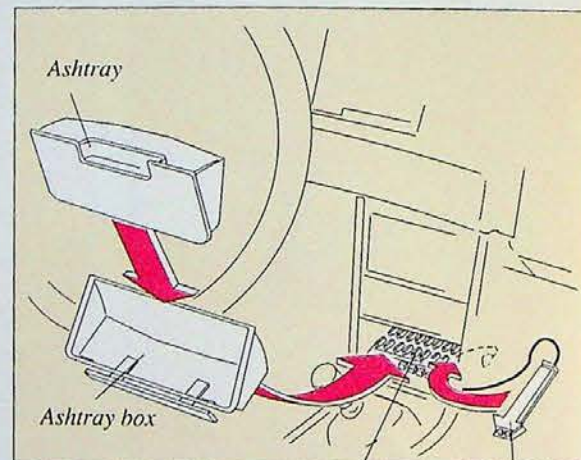
Fog lights (certain models)

Remove the Phillips screws securing the corner strips and pull out the reflector.

Remove the spring clips holding the bulb. Withdraw the connector and install a new bulb. Replace parts in the reverse order. Observe "TOP" on the lens.

Note:

Do not touch bulb glass with fingers. Grease or oil can damage reflector when heated.



Fuse replacement

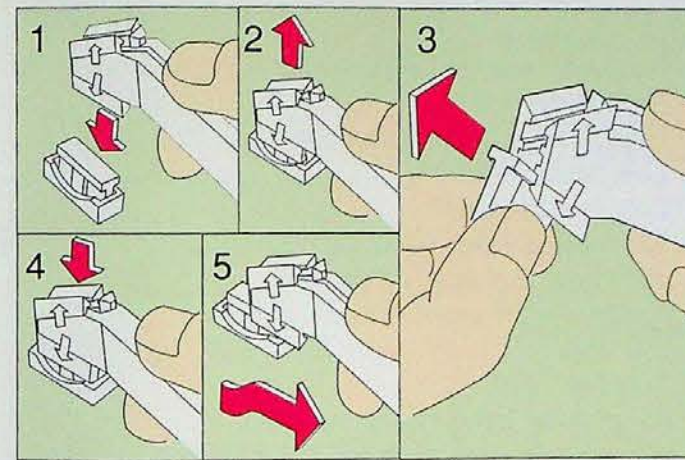
A blown fuse is indicated by the failure of all the units protected by it, and it is caused by overloading the circuits. The fuses (and relays) are located in the central electrical unit behind the ashtray in the center console.

To obtain access to the central electrical unit:

Remove the ashtray. Pull out and depress the tongue.

Press up the section marked "electrical fuses-press" and remove the unit.

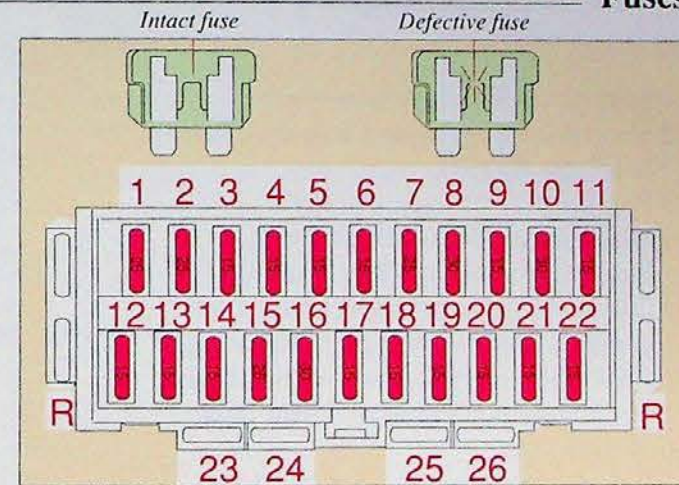
There are 25 fuses in two rows. See following pages for fuse designations/locations.



It is necessary to remove the fuses to see if they are blown, see next page for information on fuses and related circuits.

If you find it difficult to obtain access to the fuses, unclip the fuse tool on the right-hand side of the fuse compartment and use it to remove the fuse, see illustration.

- 1 Press the tool onto the fuse.
- 2 Pull the tool and fuse straight up.
- 3 Pull out the fuse from the tool and push in a new fuse in the same way.
- 4 Push in the fuse in the fusebox with the tool.
- 5 Slide the tool out.



The fuses are removed by pulling them straight out. If they are defective, the metal wire is broken. When fitting a new fuse, be certain to use one with the **same amperage and color** as the one removed (see top of fuse)! Spare fuses are located on each side of the fusebox (1x15A, 1x25A, 1x30A).

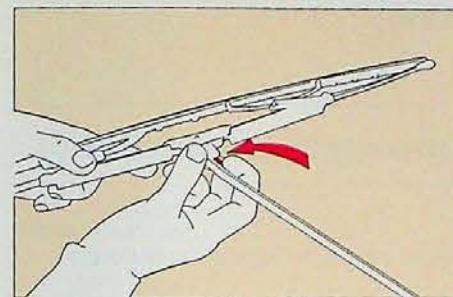
Fuses

Location*	Amperage	Location*	Amperage
1 Fuel pump, fuel injection system	25	16 Heater blower, air conditioning	30
2 Central locking, hazard warning flashers, headlight flashers	25	17 High beam (left)	15
3 Fog lights	15	18 High beam (right), extra lights	15
4 Brake lights, shift indicator light, trunk light, antenna, door warning	15	19 Low beam (left)	15
5 Glove compartment light, clock, radio, engine compartment light, interior light, trunk light, antenna, door open warning, power antenna, make-up mirror light	15	20 Low beam (right)	15
6 Heated front seats	30	21 LH parking lights (front and rear), license plate light, lighting for: ash tray, heater, control panel, switch for heated rear window	15
7 Electric cooling fan	25	22 Seat belt light, RH parking lights (front and rear), storage compartment behind parking brake, fog lights	15
8 Electrically operated windows	30	23 (spare)	15
9 Warning light, seat belt, turn signals, air conditioning, heated front seats, electric cooling fan, electrically-operated windows	15	24 Diagnostic socket	15
10 Heated rear window	30	25 Rear fog lights	15
11 Tank pump	15	26 (spare)	30
12 Back-up lights, cruise control, overdrive (manual transmission), disengagement of 4th gear on automatic transmission AW 71	15		
13 (spare)	15		
14 Electrically-operated side view mirrors, cigarette lighter, radio, rear wiper (wagon)	15		
15 Horn, windshield wash/wipe	25		

Refer to fuse location chart at fusebox for fuses specific to your car. For more detailed information concerning function and location of relays, fuses, etc., refer to the Volvo Service Manuals. These can be purchased directly using the Service Literature Brochure/Order Form or through your Volvo dealer.

*Some of the equipment/systems listed may be available on certain models only and/or as optional items only.

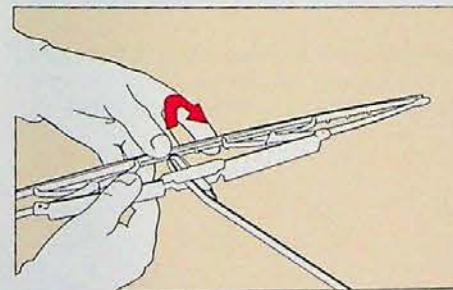
Replacing wiper blades



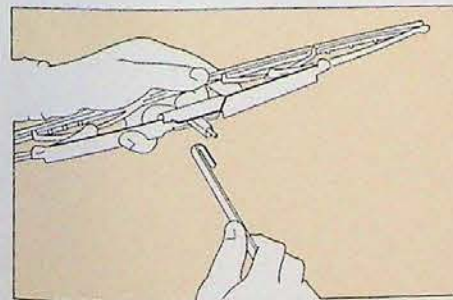
Replacing wiper blades

Lift the wiper arm off the windshield and hold blade at right angles to arm. Pinch the end of the plastic clip located at the back of the arm.

Slide the wiper blade along the arm to release it from the hook.



Install new blade, installation is the reverse of removal, and make sure that it is properly attached to the wiper arm.



For reasons of safety, you should change the windshield wiper blades as soon as they start to leave marks on the windshield or fail to wipe efficiently and cleanly.

The wiper blades can be cleaned by using a stiff-bristle brush and warm, soapy water.

Service diagnosis

This section contains information which can be of help in the event of a breakdown.
Only those faults which can be rectified with the vehicle's tool kit are listed.

The engine does not start or is difficult to start

The instructions for starting the engine have not been followed.
Follow the instructions in section "Starting the engine".

The battery is poorly charged or dead

Start the vehicle by towing or by using the auxiliary battery.
Recharge the battery.
Find out why the battery is poorly charged.

Poor contact in the electrical system

Check all leads to spark plugs, coil, distributor, battery and starter motor.

No fuel reaching engine

Check that there is fuel in the tank.
Check that none of the hoses in the fuel system are loose.
Check that the fuses for the fuel pump are not faulty, fuses No. 1 and 11.

Faulty ignition system

Check spark plugs, electrode gap should be 0.028" (0.7 mm), and wipe clean.
Check distributor cap for cracks and wipe clean on inside.
Check that all electric leads in the ignition system are clean and correctly connected.

Misfiring and erratic engine operation

Faulty ignition system

Check spark plugs, electrode gap should be 0.028" (0.7 mm), and wipe clean.
Check distributor cap for cracks and wipe clean on inside.
Check that all electric leads in the ignition system are clean and correctly connected.

Ice in injection system

Park the vehicle in a warm garage and add a fuel line de-icer to the fuel system.

Blocked air filter/fuel filter

Change filter.

Tire imbalance or vibration during driving

Wheel imbalance

Have the wheels re-balanced.

Incorrect tire pressure

Check and adjust tire pressure.

Level of oil in power-assisted steering pump too low

Check and fill oil, see section "Power steering fluid".

Service diagnosis

Engine overheats

Radiator hose cracked or leaking

Check and replace if necessary.

Insufficient coolant

Check and fill coolant, see section "Cooling system".

Fan belt frayed or belt tension incorrect

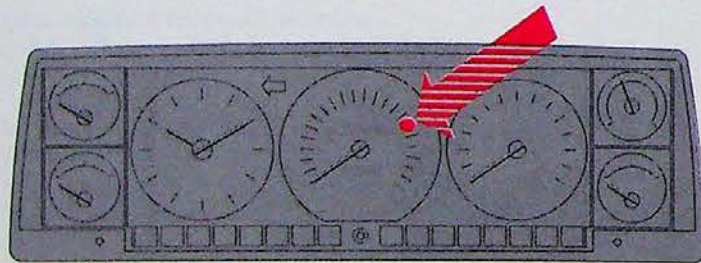
Replace or adjust tension.

Service-light in instrument glows

The recommended interval for changing motor oil has been exceeded. Change engine oil and filter, see section "Engine oil". Reset the service-light.

Resetting service-light

Remove the cover under the instrument panel in front of the driver's seat. The reset-button is located on the back of the instruments in line with the odometer, see illustration.



Car care

Car care includes not only maintaining the appearance of the car, but also protecting the car exterior from the effects of air pollution, rain and mud.

The rustproofing compound under the car should be checked regularly and, if necessary, damaged areas should be repaired.

The paintwork should also be touched up immediately, if damaged, to prevent rust formation.

Rustproofing	84
Paintwork damage	86
Washing the car	88
Cleaning the upholstery	90

What causes rust

The two most common causes of rust to your car are:

The accumulation of road dirt and moisture in hard-to-get-at cavities and other areas under the car.
The removal of paint and protective coatings on the outside of the car and underneath through damage by stones, gravel or minor accidents.

Several factors influence the speed at which corrosion will occur:

- The length of time various parts of a car stay wet. Parts of the car filled with road dirt and water remain damp for long periods of time even after other parts have dried. Particular attention should be paid to the underside of the car and floor sections inside. The floor sections stay wet because moisture collects and remains under the floor matting. Drain holes located at the bottom of the doors can get clogged with dirt, trapping water inside the door and causing the door to rust through at the bottom.
- Corrosion will be accelerated in areas of higher relative humidity, especially where temperatures often stay above the freezing point and where the atmosphere is affected by industrial pollution, or where salt is used for de-icing the roads. Where parts of the car are covered with road dirt containing road salt, corrosion will be accelerated at lower relative humidity than if the surface were clean.
- Increased temperature will cause an accelerated rate of corrosion of those parts of the car which are not well ventilated to permit quick drying.
- Industrial pollution and the presence of salt will also accelerate the deterioration of paint finishes.

The foregoing identifies the need for every car owner to keep his or her car-particularly the underside-as clean and dry as possible and to repair any minor damage to paintwork and protective coating as soon as possible.

The need is more important in those areas where road salt is used for de-icing, the relative humidity is higher, air pollution is present, and temperatures regularly stay above freezing.

Rustproofing, inspection and touching-up

Your Volvo was carefully and thoroughly rustproofed at the factory. The underbody and wheel housings 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, wheel housings and the edges of the fenders using water at high pressure.
- Inspect and touch-up the rustproofing if necessary.

The invisible (internal) rustproofing

The invisible rustproofing, used for beams, internal cavities and end sections, should be retreated first after 36 months and, thereafter, every 24 months.

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

The visible rustproofing

You should check the visible (external) rustproofing at regular intervals (at least once a year). If it is necessary to touch-up the rustproofing, this should be done immediately to prevent moisture penetration. Wash and dry the car thoroughly before touching up. Use spray-on or brush-on rustproofing compounds.

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.

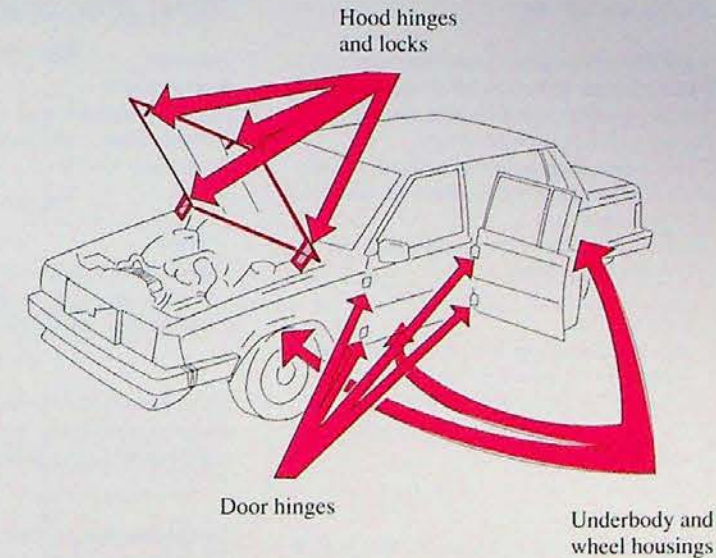
Parts of the car which may need to be touched up and the recommended rustproofing compound are:

- visible welded seams and panel seams-(type b)
- underbody and wheel housings-(type c)
- door hinges-(type b)
- hood hinges and locks-(type b)

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

The sheet metal surfaces of the engine compartment are protected by a transparent wax-based rustproofing compound. The compound withstands normal washings without deterioration.

Mineral based solvents will, however, dissolve the compound, especially so if they contain emulsifiers. In such cases the wax protection should be renewed.

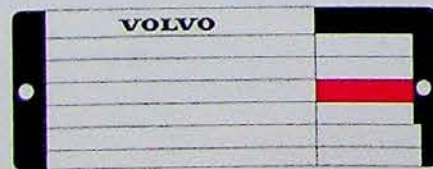


Paint touch-up

Paint touch-up

Paint damage requires immediate attention to avoid rusting. Make a habit of checking the finish regularly; when washing the car for instance. Touch up if necessary. Paint repairs require special equipment and skill. Contact your Volvo dealer for any extensive damages. Minor scratches can be repaired by using Volvo touch-up paint.

NOTE:
When ordering touch-up paint from your Volvo dealer, use the paint code indicated on the model plate. The plate is located on the panel above the right-side head lights.



Paint code

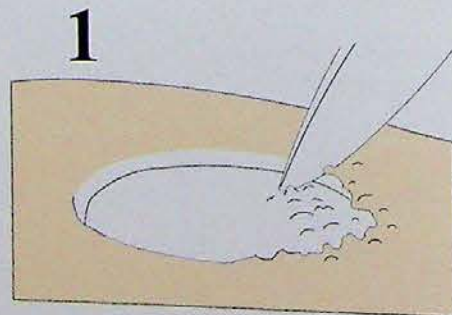
Minor stone chips and scratches

Material:
Rust remover
Primer - brush-on type
Surface finish - brush-on type
Penknife or similar
Brush

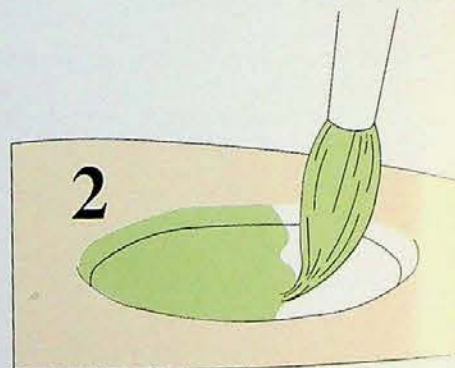
NOTE:
When touching up the car, it should be well cleaned and dry and have a surface temperature above 60 °F (15 °C).

Scratches on the surface (where the paint has not been completely penetrated). Repairs can be made directly after light scraping to remove dirt.

Deep scratches, (down to the bare metal):
1 Scrape or sand the damaged surface lightly and break the edges of the scratch.

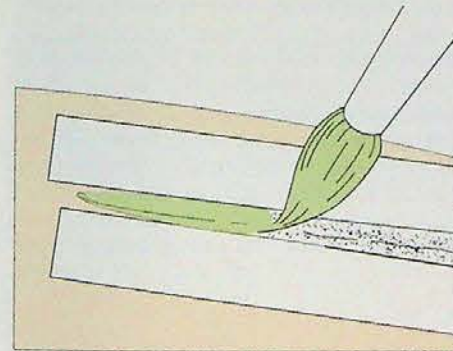


Apply the rust remover. (Avoid contact with eyes and skin!) Wait a few minutes and then rinse carefully with water and wipe dry.
2 Thoroughly mix the primer and apply it with a small brush.



When the primer surface is dry, the paint can be applied using a brush. Mix the paint thoroughly; apply several thin paint coats and let dry after each application.

3



3 If there is a longer scratch, you may want to protect surrounding paint by masking it off.

Touching up damaged paint on fender edges and sills

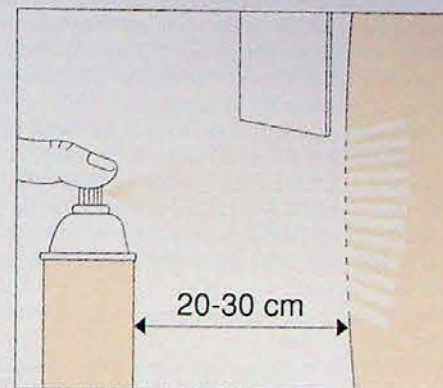
Material:
Rust remover
Primer - spray
Surface finish - spray
Sand paper (H 150 - 300 grit)
Thinner

NOTE:
When touching up the car, it should be well cleaned and dry and have a temperature exceeding 60°F (+15°C).

Mask with tape and paper prior to painting larger surfaces. Remove the masking immediately after application of the last paint coat, before the paint starts to dry.

Touching up is as follows:

- Remove paint flakes.
- Sand the damaged surface and wash it clean with thinner.
- Apply the rust remover. (Avoid contact with skin!). Wait a few minutes and then rinse carefully with water and wipe dry.



- Shake the spray can for at least 1 minute. Spray on the primer. Move the can slowly and evenly back and forth over the spot and about 8 - 12 in. (20 - 30 cm) from the surface. Protect the surrounding surfaces with suitable paper.

NOTE:
Spray painting should be done in a well ventilated and dust-free area.

- When the primer has dried, apply the surface enamel in the same way. Spray on several times and allow the paint to dry a minute or so between each application.

Paint touch-up

Washing

Washing the car

The car should be washed at regular intervals since dirt, dust, insects and tar spots adhere to the paint and may cause damage. When washing the car, do not expose it to direct sunlight. Use lukewarm water to soften the dirt before you wash with a sponge, and plenty of water, to avoid scratching. A detergent can be used to facilitate the softening of dirt and oil. A water-soluble grease solvent may be used in cases of sticky dirt. However, use a wash place equipped with a drainage separator. Dry the car with a clean chamois and remember to clean the drain holes in the doors and rocker panels. Tar spots can be removed with kerosene or tar remover after the car has been washed. After washing, lubricate the electrically-operated antenna mast with a cloth soaked in oil. A stiff-bristle brush and lukewarm soapy water can be used to clean the wiper blades. Frequent cleaning improves visibility considerably.

Note:

It is particularly important to wash the car frequently in the wintertime to prevent corrosion, when salt has been used on the roads. Also wash off the dirt from the underside (wheel housings, fenders, etc.)

In areas of high industrial pollution more frequent washing is also recommended.

Suitable detergents

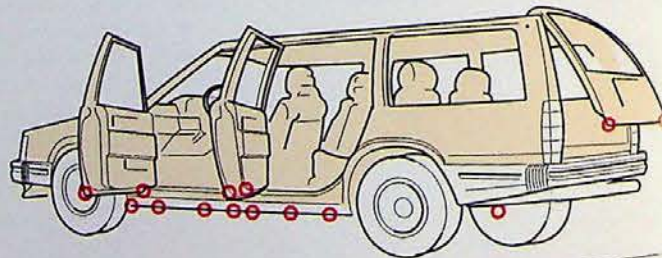
Special car washing detergent or household detergent can be used. A suitable mixture is about 2.5 fl. oz. (8.5 cl) of detergent to 2.6 US gal. (10 liters) of warm water. After washing with a detergent the car should be well rinsed with clean water.

Bird droppings

Remove from paintwork as soon as possible. Otherwise the finish may be permanently damaged.

Caution!

When the car is driven immediately after being washed, apply the brakes a few times in order to remove any moisture from the brake linings.



Note:

When washing the car, remember to remove dirt from the drain holes in the doors and sills.

Automatic car washing, Polishing and waxing, Chromed parts

Automatic washing - simple and quick

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 winter. Some automatic washers do not have facilities for washing the underbody. Before driving into an automatic wash, make sure that side view mirrors, auxiliary lamps, etc., are secure, otherwise there is risk of the machine dislodging them. You should also lower the antenna. Use automatic washers with clean brushes only. 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 wash is never as good as a manual wash.**

Polishing and waxing

Normally, polishing is not required during the first year after delivery, however, waxing may be beneficial. Before applying polish or wax the car must be washed and dried. Tar spots can be removed with kerosene or tar remover. Difficult spots may require a fine rubbing compound. After polishing use liquid or paste wax. Several commercially-available products contain both polish and wax. Waxing alone does not substitute for polishing a dull surface. A wide range of polymer-based car waxes can be purchased today. The waxes are easy to use and produce a long-lasting, high-gloss finish that protects the bodywork against oxidation, road dirt and fading.

Chromed parts

Chromium-plated and anodized parts should be washed with clean water as soon as they become dirty. This is particularly important if you drive on gravel roads or on roads where salt is used during the winter. After the car has been washed, apply wax or an anti-rust preparation. Stains on chrome trim can be removed with commercially-available chrome cleaner. Do not use abrasive compounds or steel wool.

Cleaning the upholstery

Cleaning the upholstery

Generally, the **fabric** can be cleaned with soapy water or a detergent. For more difficult spots caused by oil, ice cream, shoe polish, grease, etc., use a stain remover.

The **plastic** in the upholstery can be washed.

To clean **leather upholstery**, use soft cloth and mild soap solution, using, for instance, common bath soap.

For more difficult spots, consult an expert for the choice of cleaning agent.

On no account must gasoline, naphtha or similar cleaning agents be used on the plastic or the leather since these can cause damage.

As it ages, leather changes appearance, but the typical texture remains. To preserve smoothness and appearance, it is recommended to treat the leather with a special leather preservative after one or two years of use.

Cleaning the seat belts

Clean only with lukewarm water and mild soap solution.

Cleaning floor mats

The floor mats should be vacuumed or brushed clean regularly, especially during the winter when they should be taken out for drying. Spots on textile mats can be removed with a mild detergent.

Bear in mind

- Take extra care when removing stains such as ink or lipstick since the coloring can spread.
- Use solvents sparingly. Too much solvent can damage the seat padding.
- Start from the outside of the stain and work toward the center.

Service - an investment!

An investment which will pay dividends in the form of improved reliability, durability, and resale value.

Maintenance schedule	92
Volvo service	94
Engine compartment	95
Engine oil	97
Servicing	99
Power steering fluid, brake fluid	104
Transmission fluid	105
Coolant	106
Lubrication, body	107
Drive belts	108

Maintenance schedule

A = adjust (correct if necessary)

I = Inspect (correct or replace if necessary)

R = Replace

L = Lubricate

Maintenance Operation	thousand miles (thousand km)	0.6- 1.2 (1.0- 2.0)	5 (8)	10 (16)	15 (24)	20 (32)	25 (40)	30 (48)	35 (56)	40 (64)	45 (72)	50 (80)	55 (88)	60 ³ (96)	Description on page
Emissions system maintenance															
Engine oil and Oil filter ¹		R	R	R	R	R	R	R	R	R	R	R	R	R	97
Cooling system hoses and connections		I													106
Engine drive belts		A						I						I	108
Torque manifold nuts		A													99
Valve clearance								I						I	99
Vacuum fittings, hoses and connections		I													99
Air cleaner filter								R						R	99
Spark plugs								R						R	103
Fuel system cap, tank, lines and connections		I													99
Torque catalytic converter mounting Bolts		A													101
Automatic transmission fluid		I	I	I	I	R	I	I	I	R	I	I	I	R	105
Manual transmission fluid		R	I	I	I	I	I	I	I	I	I	I	I	I	-
Rear axle oil		R	I	I	I	I	I	I	I	I	I	I	I	I	-
Timing gear belt ²		A										R			99

1) For detailed information, see "Engine oil" section.

2) Not included in emissions systems maintenance, but we recommend that the timing gear belt be replaced every 50,000 miles (80,000 km).

3) For services beyond 60,000 miles (96,000 km), consult your "Maintenance records manual" and "Maintenance Service Chart".

Maintenance Operation	thousand miles (thousand km)	0.6- 1.2 (1.0- 2.0)	5 (8)	10 (16)	15 (24)	20 (32)	25 (40)	30 (48)	35 (56)	40 (64)	45 (72)	50 (80)	55 (88)	60 ² (96)	Description on page
Miscellaneous maintenance															
ENGINE															
Engine coolant								R						R	106
Fuel (line) filter														R	99
PCV nipple (orifice)						*				*				I	102
Ventilation hoses														I	102
BRAKES															
Inspect brakes. Replace components as necessary				I		I		I		I		I		I	104
Change brake fluid ¹								R						R	104
STEERING															
Tire wear (align front end if needed.)				I		I		I		I		I		I	63
Check power steering fluid level.			I	I	I		I	I	I		I	I	I	I	104
BODY															
Trunk, hood hinges and latches.				L		L		L		L		L		L	107

1) For detailed information, see page 106.

* Although not a part of emission control warranty service, Volvo suggests the flame guard on B230F engines be cleaned every 20,000 miles (32,000 km).

2) For services beyond 60,000 miles (96,000 km), consult your "Maintenance records manual" and "Maintenance Service Chart".

The following items should be checked weekly
by the driver (it takes only a few minutes):

Engine oil level	97
Brake fluid level	104
Radiator coolant level	106
Tire pressure (all five tires)	64

Operation of all lights	15,16
Horns	4,5
Windshield wipers	14
Level of windshield washer fluid	14

The following should also be carried out at
regular intervals:

Washing	88
Polishing	89
Cleaning	90
Rust protection	84

MAINTENANCE

Maintenance services

Your Volvo has passed two major inspections before being delivered to you, according to Volvo specifications. After being driven 600-1,200 miles (1,000-2,000 km), your car should be brought to the Volvo dealer for a service inspection. Engine, manual transmission and rear axle oils will be changed at this time.

Following this inspection, the maintenance inspections outlined in this book should be performed every 5,000 miles (8,000 km). The extended maintenance inspection intervals make it even more advisable to follow this program.

Inspection and service should also be performed any time a malfunction is observed or suspected.

It is recommended that receipts for vehicle emission services be retained in the event that questions arise concerning maintenance. See your "Maintenance Records Manual".

Maintenance inspection at 5,000 mile (8,000 km) intervals

Volvo advises you to follow the inspection program at 5,000 mile (8,000 km) intervals which is outlined in the "Maintenance Records Manual". This maintenance program contains inspections and services necessary for the proper function of your car over the next 5,000 miles (8,000 km).

The maintenance inspections contain several checks which require special instruments and tools and therefore must be performed by a qualified technician.

To keep your Volvo in top condition, specify time tested and proven Genuine Volvo Parts and Accessories.

The Federal Clean Air Act (USA)

The Clean Air Act requires vehicle manufacturers to furnish written instructions to the ultimate purchaser to assure the proper functioning of those components that control emissions.

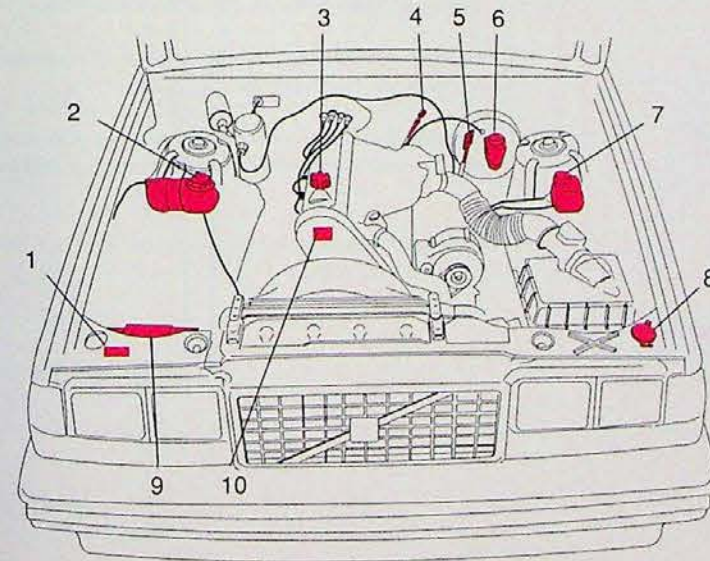
The maintenance instructions listed in the "Servicing" section of this Manual represent the minimum maintenance required. These services are not covered by the warranty. You will be required to pay for labor and material used. Refer to your Warranty booklet for further details.

In accordance with Federal Regulations, your Volvo is warranted to meet certain Emission Performance Standards. Refer to your Warranty booklet for detailed information.

- Emissions performance warranty (USA)
- Limited 5-year/50,000-mile Emission System Warranty (USA)
- 5-year/80,000-kilometer Emission System Warranty (Canada)

740 GL, GLE (B230F engine)

- 1 Data plate
- 2 Expansion tank, coolant
- 3 Oil filler cap, engine
- 4 Oil dipstick, engine
- 5 Oil dipstick, automatic transmission
- 6 Brake fluid reservoir
- 7 Oil reservoir, power steering
- 8 Washer fluid reservoir
- 9 Battery
- 10 Engine identification label



When filling gas always check:

Fuel: Octane rating 91 RON (Unleaded) 87 (R+M/2)
Canada: Unleaded regular

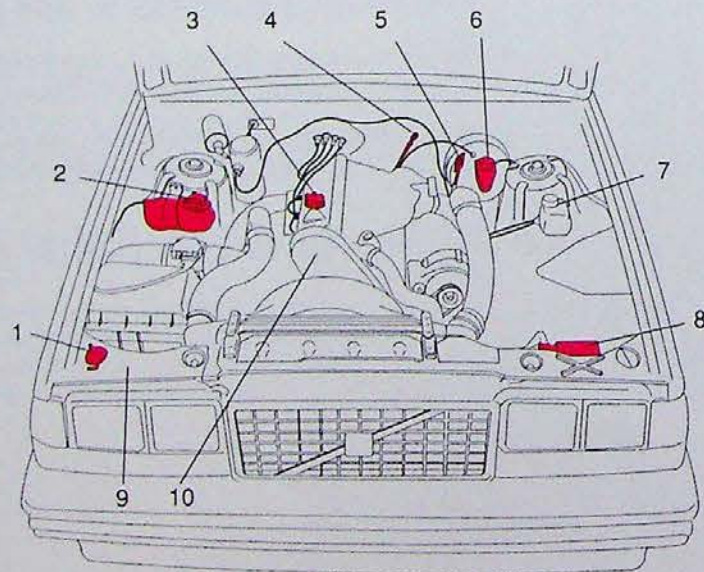
- 6 Check, without removing the cap, that the **brake fluid** level is above the MIN-mark. Brake fluid DOT 4.
- 4 **Oil** level should be between the dipstick marks. The distance between the marks represents approx. 1 US qt. = 1 liter. When necessary, add oil of the same type as already used.
- 2 **Coolant** level should be between the expansion tank marks. Mixture 50% anti-freeze and 50% water.
- 9 **Battery** -maintenance free type, it is only necessary to check the electrolyte level at each service.
- 8 **Washer fluid** reservoir should be filled with water and solvent (wintertime: windshield washer anti-freeze).

Important! Change engine oil and oil filter at 5,000 mile (8,000 km) intervals.

Engine compartment

740 Turbo (B230F-Turbo engine)

- 1 Washer fluid reservoir
- 2 Expansion tank, coolant
- 3 Oil filler cap, engine
- 4 Oil dipstick, engine
- 5 Oil dipstick, automatic transmission
- 6 Brake fluid reservoir
- 7 Oil reservoir, power steering
- 8 Battery
- 9 Data plate
- 10 Engine identification label



When filling gas always check:

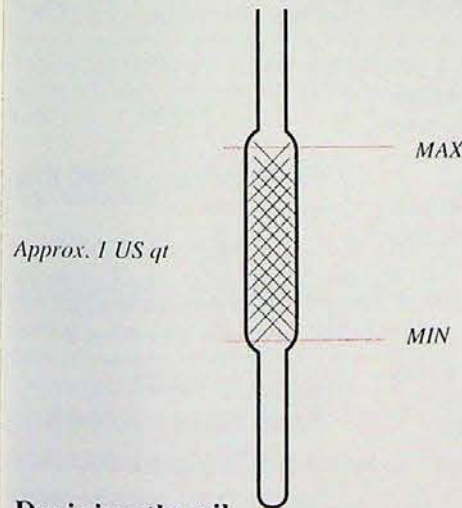
Fuel: Octane rating **91 RON (Unleaded) 87 (R+M/2)**
Canada: Unleaded regular

- 6 Check, without removing the cap, that the **brake fluid** level is above the MIN-mark. Brake fluid DOT 4.
- 4 **Oil level** should be between the dipstick marks. The distance between the marks represents approx. 1 US qt. = 1 liter. When necessary, add oil of the same type as already used.
- 2 **Coolant** level should be between the expansion tank marks. Mixture 50% anti-freeze and 50% water.
- 8 **Battery** -maintenance free type, it is only necessary to check the electrolyte level at each service.
- 1 **Washer fluid** reservoir should be filled with water and solvent (wintertime: windshield washer anti-freeze).

Important! Change engine oil and oil filter at 5,000 mile (8,000 km) intervals.

Checking the oil level

The oil level should be checked each time you refuel. Be sure the oil level is maintained between the upper and lower marks on the dipstick. Low oil level can cause internal damage to the engine and overfilling can result in high oil consumption. The distance between the dipstick marks represents approx. 1 US qt. (1 liter) of oil.



Draining the oil

Drain the oil after driving while it is still hot.

Warning!

The oil may be very hot.

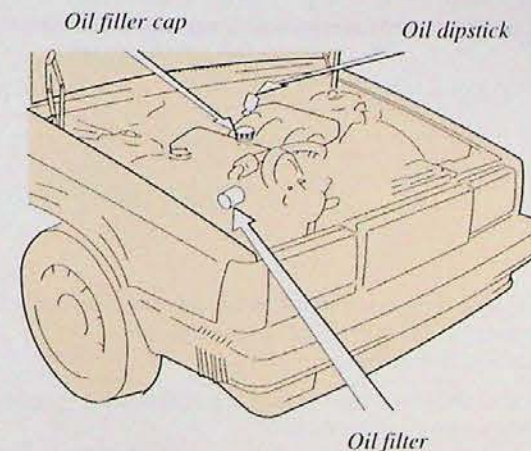
Engine oil

To add or change engine oil

Add oil of the same kind as already used. Capacity: 4.0 US qts. = 3.85 liters incl. filter.*

After an oil change, the oil level will lie between the two marks on the dipstick i.e. between MAX and MIN. This is normal. Do not add too much oil or excessive oil consumption will result.

*if oil cooler (Turbo models) is drained, add 0.7 US qts. (0.6 liters).



Oil filter

Changing oil filter

Replace the oil filter at every oil change.

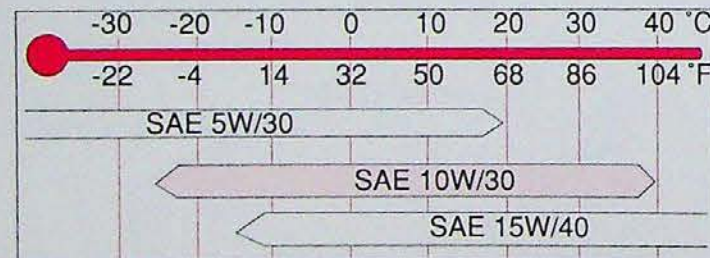
Engine Oil

Oil quality

Meeting API specification SF

Oils with designations SF/CC and SF/CD comply with these requirements.

Viscosity (stable ambient temperatures):



SAE 15W/40 is recommended for use in driving conditions that raise oil temperature and increase oil consumption i.e., mountain driving, trailer towing.

Note: SAE 15W/40 must not be used at low ambient temperatures; see viscosity chart.

Volvo recommends the use of energy-conserving oils. When using these oils, the Volvo recommended oil-change intervals must be followed.

Synthetic or semisynthetic oils may be used if their specifications comply with the oil quality requirements.

Volvo does not recommend additional oil additives, as they can adversely affect the engine.

Changing oil and oil filter

Oil and oil filter are first changed at the 600-1,200 mile (1,000-2,000 km) service. Thereafter, changes should be made as specified by this table:

If driving conditions include:	Then the correct oil/oil filter change interval is:
- Extended periods of idling and/or low-speed operation - Frequent short trips, less than 7 miles 11 km - Extended periods of driving in dusty and/or sandy areas - Trailer towing - Driving in mountainous areas	EVERY 5,000 miles = 8,000 km OR EVERY 3 MONTHS. WHICHEVER COMES FIRST
- Primarily highway driving - Frequent trips of longer than 7 miles = 11 km	EVERY 5,000 miles = 8,000 km OR EVERY 6 MONTHS. WHICHEVER COMES FIRST



American Petroleum Institute (API) label. This label certifies that the oil conforms to the applicable standards and specifications of the API.

Torque exhaust manifold nuts

The manifold nuts should be torqued at the 600-1,200 mile (1,000-2,000 km) inspection. A loose manifold could alter air/fuel ratio and cause an increase in emissions and/or poor driveability.

Valves

The valve clearance should be checked and, if necessary, adjusted every 30,000 miles (48,000 km).

Air cleaner

Replace the air cleaner cartridge with a new one every 30,000 miles (48,000 km). The cartridge should be replaced more often when driving under dirty and dusty conditions. The filter cannot be cleaned and, therefore, should always be replaced with a new one.

Vacuum fittings, hoses and connections

Unstable idle, misfiring, or poor emission control is often caused by leaking vacuum hoses or connections. Check hoses and connections on distributor vacuum unit, connections on heater control servo systems and hydraulic brake servo.

Checking and adjusting idle speed

Your Volvo is equipped with an electronically-controlled idle speed system that requires no checking or adjustment.

Fuel system cap, tank and lines, and connections

The effectiveness of the fuel system to contain hydrocarbons is dependent largely on a leak-free system. Check for proper sealing of gas-line filler cap which contains "O" ring-type seals. Check all evaporative hoses in vehicle for tightness. Check fuel lines under vehicle and repair if necessary.

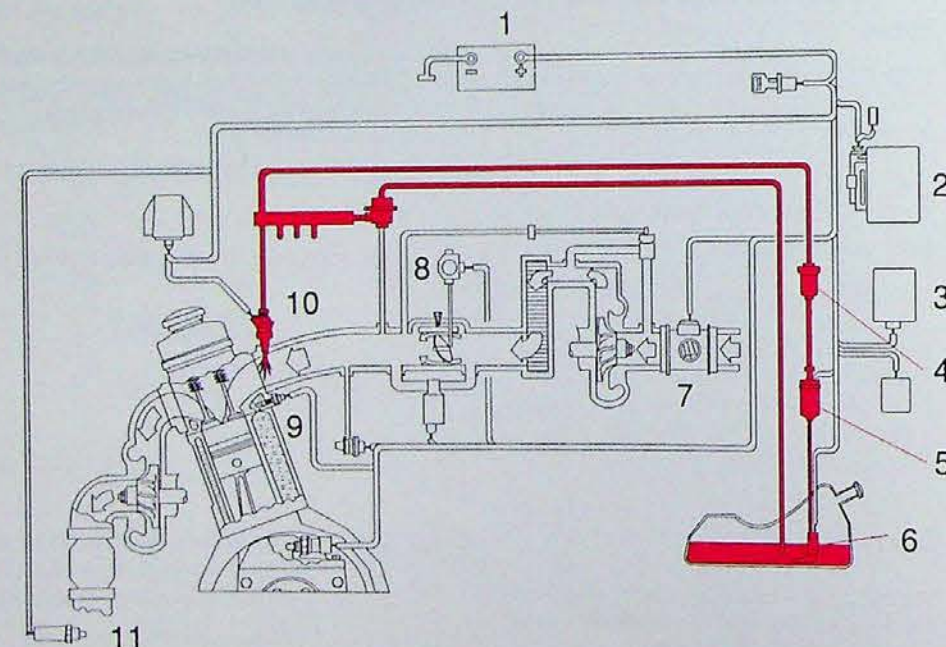
Fuel (line) filter

The fuel filter is located on the left suspension tower brace. This filter is to be changed every 60,000 miles (96,000 km). The filter is replaced as one complete unit. Replace more frequently if contaminated fuel is introduced into the tank (or if there is reason to suspect that this has occurred).

Timing gear belt

The timing gear belt should be adjusted at the 600-1200 mile (1000-2000 km) inspection. We recommend that the belt be replaced every 50,000 miles (80,000 km).

Servicing



- 1 Battery
- 2 Injection control unit
- 3 Ignition control unit
- 4 Fuel filter
- 5 Fuel pump
- 6 Fuel feed pump

- 7 Air mass meter
- 8 Throttle switch
- 9 Temperature sensor
- 10 Injector
- 11 Oxygen sensor

LH Jetronic 2.2 fuel system

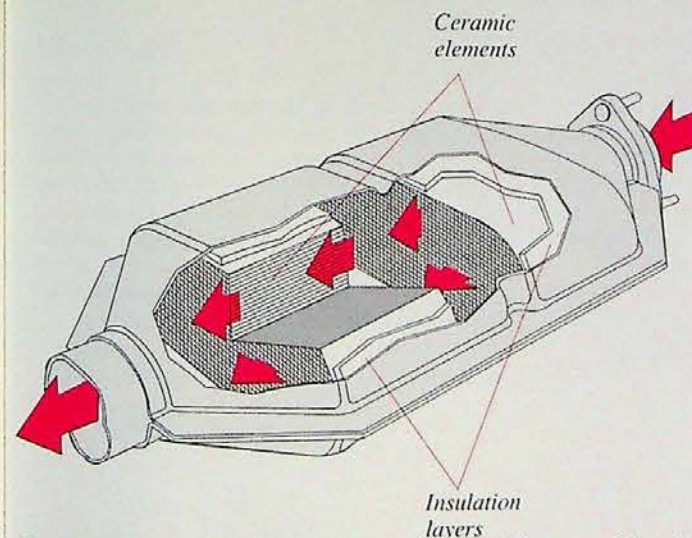
The LH-Jetronic 2.2 fuel injection system is all-electronic and is microprocessor-controlled. It can continually compensate for variations in engine load, speed and temperature to give the best economy and power. The most unique feature of the system is an air mass meter that measures the mass of the inducted air instead of the volume. In this way the system can make instantaneous adjustments for changes in air temperature or density, thus always assuring the best economy with the lowest-possible exhaust emissions.

Lambda-sond (oxygen sensor) system

This is an emission control system designed to reduce emissions and improve fuel economy. An oxygen sensor monitors the composition of the exhaust gases leaving the engine. The exhaust gas analysis is fed into an electronic unit which continually influences the injectors. This adjusts the air-fuel ratio to provide optimum conditions for combustion and efficient reduction of the three major pollutants (hydrocarbons, carbon monoxide and nitrous gases) by a 3-way catalytic converter.

Catalytic converter

This is a supplementary device in the exhaust system, designed to clean exhaust gases. This device is mainly a container with a ceramic material insert, designed to let the exhaust gases pass through channels in the insert. The channel walls are covered by a thin layer of platina-palladium. These metals act as catalysts, permitting a chemical reaction to occur without actually taking part in it. The emission (CO, HC, NOX) content will increase if the catalytic converter is damaged. Lambda-sond equipped vehicles use Catalytic Converters containing platinum and rhodium.

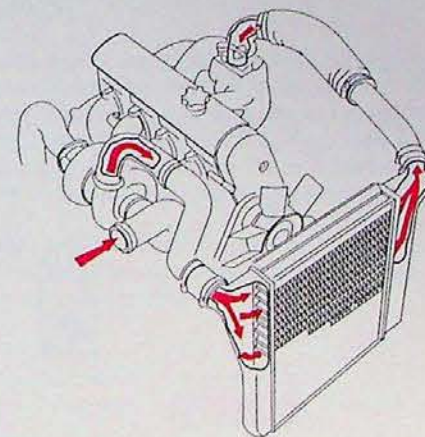


Torque Catalytic Converter mounting bolts

The Catalytic Converter mounting bolts should be torqued after the first 600-1,200 miles (1,000-2,000 km).

Caution:

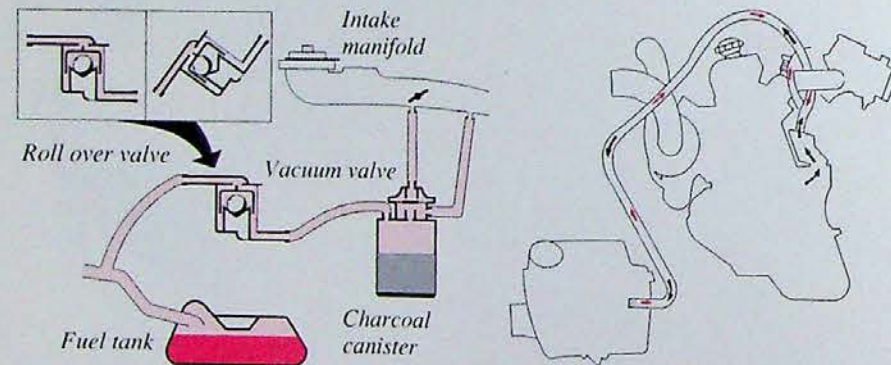
Vehicles with Catalytic Converter must use unleaded fuel only. Otherwise the Catalytic Converter will become ineffective. See "Fuel requirements".



The Intercooler Boost System

The B230F-Turbo engine with the Intercooler Boost System employs a turbo-compressor to force air into the engine inlet manifold and the intercooler boost system to cool the compressed inlet air. The resulting increase in air flow raises pressure in the intake manifold by approx. 8 psi (over atmospheric pressure) and engine power-output by approx. 46 horsepower over that developed by the normally-aspirated engine.

The intercooler (which resembles a radiator) is located between the turbo-compressor and inlet manifold.



Evaporative control system

The 740 is equipped with a gas-evaporative control system, which prevents gasoline fumes from being released into the atmosphere.

The system is comprised of an expansion chamber in the fuel tank, a roll-over valve on the cross member in front of the fuel tank, and a charcoal canister with built-in vacuum valve under the left-front wheel housing.

The components are interconnected by hoses which channel fuel vapor from the gas tank to the charcoal filter, where it is stored until the engine is started and then drawn into the engine's fuel-induction system.

Crankcase ventilation

The engine is equipped with positive crankcase ventilation which prevents crankcase gases from being released into the atmosphere. Instead, the crankcase gases are admitted to the intake manifold and cylinders.

PCV system

The PCV nipple in the intake manifold should be removed and cleaned every 60,000 miles (96,000 km).

Check/replace hoses at the same time.

Warning!

The ignition system operates at very high voltages. Special safety precautions must be followed to prevent injury. Always turn the ignition off when:

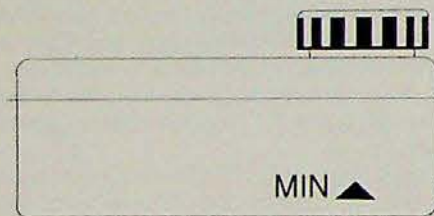
- Connecting engine test and diagnostic equipment to the vehicle (timing light, tach-dwell tester, ignition oscilloscope, etc).
- Replacing ignition components e.g. plugs, coil, distributor, HT leads etc.
- Do not touch any part of the ignition system while the engine is running. This may result in unintended movements and body injury.

Replacing spark plugs

The spark plugs should be changed every 30,000 miles (48,000 km). However, city driving or fast highway driving may necessitate changing after 15,000 miles (24,000 km) of driving. When installing new plugs, be sure to fit the right type and use correct torque, see "Specifications". When changing the plugs, check that the suppressor connectors are in good condition. Cracked or damaged connectors should be replaced.

When changing spark plugs, clean the cables and cable terminals, also the rubber seals. If the car is driven on roads where salt is used during the winter, coat the cables with silicone.

Brake fluid, power steering fluid



Brake fluid

The fluid level should be above the min mark.

Fluid type: DOT 4

Replace: every second year or 30,000 miles (48,000 km). The brake fluid should be replaced once a year or every 15,000 miles (24,000 km) when driving under extremely hard conditions (mountain driving etc.)

Check, without removing the cap, that the level is above the "MIN" mark of the fluid reservoir.

Always entrust brake fluid changing to a Volvo dealer.

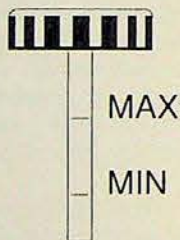
Power steering fluid

The fluid level should lie between the MIN and MAX marks on the dipstick (cool engine).

Check fluid level with engine idling and after driving while the fluid still is hot. Wipe the reservoir clean.

Fluid type: ATF

Replace: no fluid change required.



Automatic transmission oil

Capacity: See "Specifications" section.

Fluid type: Automatic Transmission Fluid type Dexron IID.

Replace: Every 20,000 miles (32,000 km).

Warning!

Oil spilled on a hot exhaust pipe constitutes a fire risk.

Automatic transmission

A Cold transmission: oil temperature +105°F (+40°C).

This is a normal temperature for the transmission after idling for about 10 minutes.

At oil temperature below +105°F (+40°C), the level may be below the MIN mark.

B Warm transmission: oil temperature +190°F (+90°C).

This temperature is reached after driving for about 30 minutes.

At oil temperature above +190°F (+90°C), the level may be above the MAX mark.

Note!

The engine should be idling when checking transmission fluid level.

Check the oil level as follows:

Park the car on level surface 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 cloth.

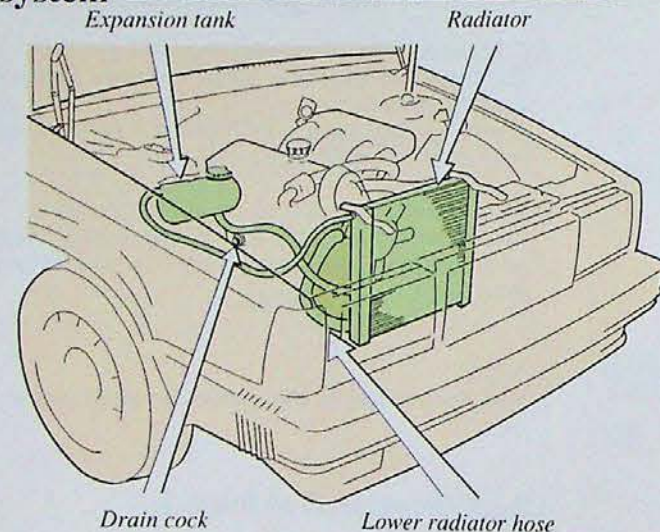
Warning! The oil may be very hot

Do not use rags that could leave lint on the dipstick.

The transmission is topped up via the dipstick tube.

The space between the MIN and MAX marks on the dipstick corresponds to 0.5 US qt. (0.5 liter). 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 negatively affect transmission operation, particularly in very cold weather.



Check coolant level

The cooling system must be filled with coolant and not leak to operate at maximum efficiency. Check the coolant level when filling fuel. The level should be between the "MAX" and "MIN" marks on the expansion tank. The check should be made with particular thoroughness when the engine is new or when the cooling system has been drained. Do not remove the filler cap other than for topping-up with coolant. Frequent removal may prevent coolant circulation between the engine and the expansion tank during engine warm-up and cooling.

Changing coolant

Every two years or 30,000 miles (50,000 km) the cooling system should be drained, flushed and refilled.

Remove the expansion tank cap. Open the drain cocks on both sides of the engine block and disconnect the lower radiator hose.

Fill coolant through the expansion tank. The heater controls should be fully open when draining and filling.

Add coolant until the level is up to the MAX mark or slightly above.

Start engine and run until hot. Check the cooling system connections for tightness. Also re-check the coolant level.

Capacity: See "Specifications"

Coolant: Volvo coolant type C (blue green)

Caution!

The cooling system must always be kept filled to correct level.

If it is not kept filled, there can be high local temperature in the engine which could result in damage.

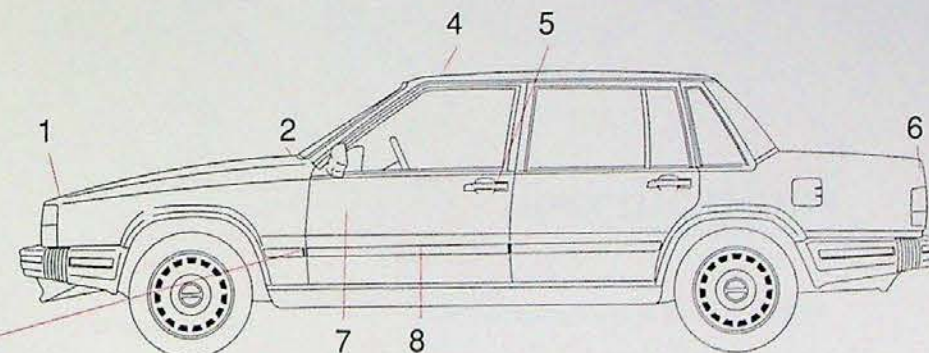
Top up with coolant

Top up with coolant by filling the expansion tank when level is at the "MIN" mark. Use a mixture of 50 percent anti-freeze/summer coolant and 50 percent water all year round. Top up to the "MAX" mark.

If the engine is warm, and you are going to top up coolant, unscrew the cap slowly in order to allow any excess pressure to escape.

Note!

Do not top up with water only. Water by itself reduces the rust-protective and anti-freeze qualities of the coolant and has a lower boiling point. It can also cause damage to the cooling system if it should freeze.



No. Lubricating point

- 1 Hood lock and latch
- 2 Hood hinges
- 3 Door stop
- 4 Sunroof wind deflector
- 5 Door lock catch plate
- 6 Trunk lid lock

Lubricant
Paraffin wax
Oil
Oil
Oil
Paraffin wax
Lock oil

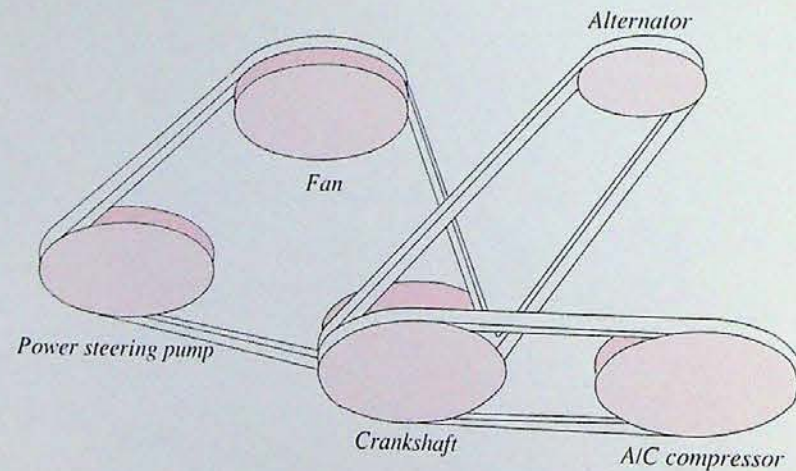
No. Lubricating point

- 7 Window regulator
Locking device
(on inside of door)
- 8 Front seat slide rail
and latch

Lubricant
Oil, grease
Silicone
grease

Oil

To avoid rattles and unnecessary wear, the body should be lubricated a few times per year.



Checking the belt tension

The belt tension can be checked by depressing the fan belt (engine not running!) at a point midway between the alternator and fan. It should be possible to press down the belt about 1/4"-3/8" (5-10 mm). This also applies to other drive belts on the engine.

Belt check

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

Belt adjustment and replacement

The belts can be difficult to reach and it is advisable to let your Volvo dealer adjust the tension of the belts or replace them, if necessary.

Specifications

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Engine specifications	113
Electrical system specifications	116
Capacities	117

Specifications

Dimensions and weights

	740 GL, GLE 740 TURBO				
Length	188.4"	478.5 cm	Gross Vehicle Weight (GvW):		
Width	68.9"	175 cm	GL/GLE (sedan)	3965 lbs.	1800 kg
Height	56.5"	143 cm	Turbo (sedan)	4010 lbs.	1820 kg
Wheelbase	109"	277 cm	Wagons	4230 lbs.	1920 kg
Track:			Capacity weight (sedan)	1000 lbs.	455 kg
front	57.5"	146 cm	Capacity weight (740 GLE wagon)	1045 lbs.	475 kg
rear	57.5"	146 cm	Capacity weight (740 Turbo wagon)	1035 lbs.	470 kg
Turning circle, between curbs	32.5 ft	9.9 m	Permissible axle weight, front:		
Trunk capacity (sedans)	17.2 cu. ft.	0.487 m	GL, GLE	1940 lbs.	880 kg
Cargo capacity (wagons)			Turbo	2050 lbs.	930 kg
With rear seats up	39.3 cu. ft.	1.1 m	Permissible axle weight, rear:		
With rear seats down	74.9 cu. ft.	2.1 m	GL, GLE (sedan)	2030 lbs.	922 kg
			Turbo (sedan)	2090 lbs.	950 kg
			Wagon	2310 lbs.	1050 kg
			Max. roof load	220 lbs.	100 kg
			Max. trailer weight	3300 lbs.	1500 kg
			Curb weight (sedan)	2907-	1319-
				3046 lbs.	1382 kg
			Curb weight (wagon)	3032-	1375-
				3169 lbs.	1437 kg

WARNING!

When adding accessories, equipment, luggage and other cargo to your vehicle, the total loaded weight capacity of the vehicle must not be exceeded.

Consult your Volvo dealer for information.

All specifications are subject to change without notice.

Label information

The Vehicle Identification Number (VIN) should always be quoted in all correspondence concerning your vehicle with the dealer and when ordering parts.

1 Vehicle identification number (VIN)

VIN plate is located on top left surface of dashboard. The VIN is also stamped on the right hand door pillar.

2 Vehicle emission control information

Your Volvo is designed to meet all applicable safety and emissions standards, as evidenced by the certification label on the right side of the firewall. For further information regarding these regulations, please consult your Volvo dealer.

3 Model plate

Vehicle Identification Number (VIN). Codes for color and upholstery etc. This plate is located on panel above right headlight.

4 Loads and tire pressures

5 Federal motor vehicle safety standards (FMVSS) specifications (USA) and Ministry of Transport (CMVSS) Standards (Canada)

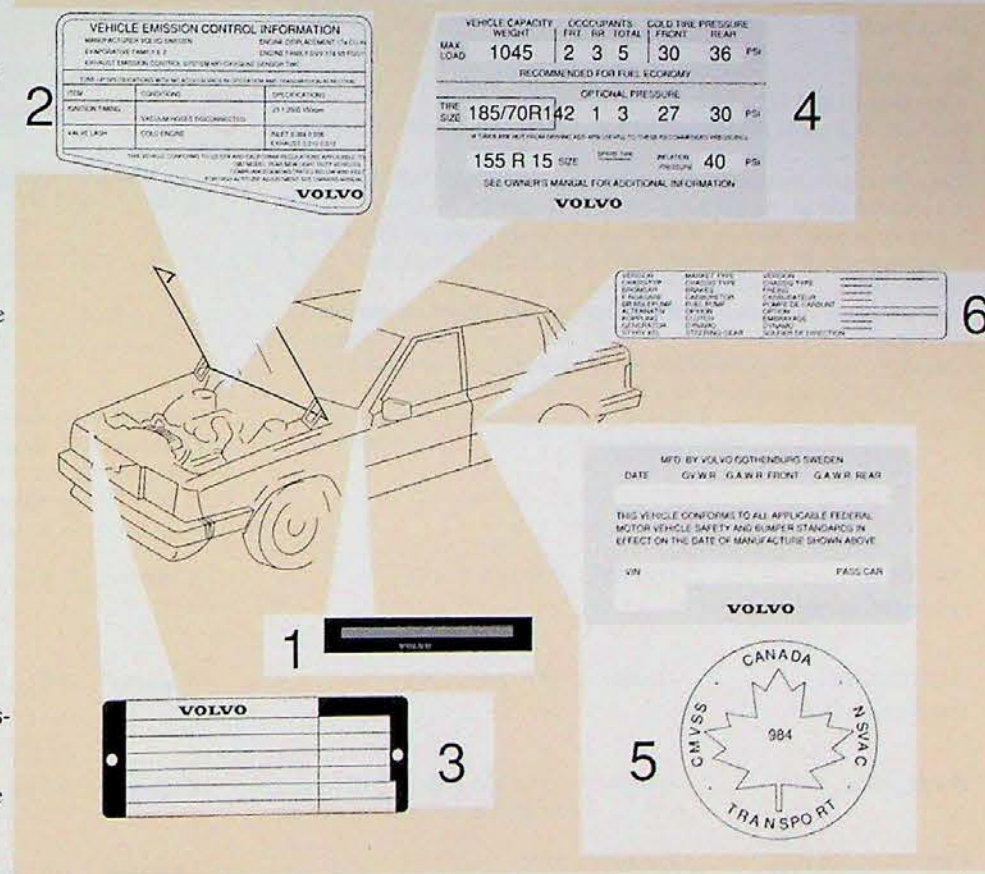
This label is located on rear-facing side of the driver's door.

6 Service label

Label on left-rear door frame.

Information on certain components.

All specifications are subject to change without notice.



Specifications

Engine oil

Oil quality:

According to API SF.

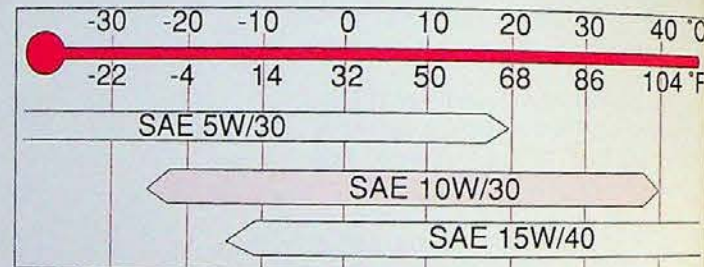
Oils with designation SF/CC and SF/CD comply with these demands.

Synthetic or semi-synthetic oils may be used if their specifications comply with the above.

Volvo recommends the use of fuel economy improving oils. When using these oils, the Volvo recommended oil change intervals must be followed.

Volvo does not recommend oil additives as they can adversely affect the engine.

Capacity: (incl. oil filter) 4.0 US qts. (3.85 liters); on Turbo models, add 0.7 US qts. (0.6 liters) if oil cooler is drained.



Note:

SAE 15 W/40 oil is recommended for use in severe driving conditions which involve high oil temperatures or excessive oil consumption e.g. mountain driving with frequent deceleration, or high-speed driving. Note, however, the higher temperature range of 15W/40 oil.

Manual transmission

Quality ATF type F or G

Capacity 2.4 Us qts. (2.3 liters)

Automatic transmission

Quality ATF Dexron IID

Capacity 7.9 Us qts. (7.5 liters)

Rear axle

Quality API-GL-5 (MIL-L-2105 B or C)
SAE 90 or 80W/90

Capacity 1.7 Us qts. (1.6 liters)

Power steering

Quality ATF

Capacity 0.7 Us qt. (0.7 liter)

Brake fluid

Brake fluid type DOT 4

Capacity 0.43 Us qt. (0.4 liter)

740 GL, GLE (B230F engine)

Type designation

Volvo B230F

Output (SAE J 1349)	114 hp at 5400 rpm (85 kw at 90 rps)
Max. torque (SAE J 1349)	136 ft. lbs. (185 nm) at 2750 rpm
Number of cylinders	4
Bore	3.78" (96 mm)
Stroke	3.15" (80 mm)
Displacement	2.32 Liters
Compression ratio	9.8:1
Valve clearance, cold engine	0.014-0.016"
inlet and exhaust	(0.35-0.40 mm)
Valve clearance, warm engine	0.016-0.018"
inlet and exhaust	(0.40-0.45 mm)

All specifications are subject to change without notice.

740 Turbo (B230F-Turbo engine)

Type designation

Volvo B230F-Turbo

Output (SAE J 1349)	160 hp at 5300 rpm (119 kw at 88 rps)
Max. torque (SAE J 1349)	187 ft. lbs. (253 nm) at 2900 rpm
Number of cylinders	4
Bore	3.78" (96 mm)
Stroke	3.15" (80 mm)
Displacement	2.32 Liters
Compression ratio	8.7:1
Valve clearance, cold engine	0.014-0.016"
inlet and exhaust	(0.35-0.40 mm)
Valve clearance, warm engine	0.016-0.018"
inlet and exhaust	(0.40-0.45 mm)

Specifications

Specifications

740 GL, GLE (B230F engine)

Cooling system

Type	Positive pressure, Closed system
Thermostat begins to open at	189 °F (87 °C)
Fan belts, designation	HC47cog x 1013
Coolant:	Volvo coolant type C (blue-green)
Capacity:	10 US qts (9.5 liters)

Ignition system

Firing order	1-3-4-2
Ignition setting (cannot be adjusted)	(12° B.T.D.C. at 750 rpm)
Spark plugs	Volvo P/N 271409-5*
Spark plug gap	0.024-0.028" (0.6-0.7 mm)
Tightening torque	15-22 ft. lbs. (20-30 Nm)
Distributor, direction of rotation	Clockwise

* Bosch WR7 DC (or equivalent)

740 Turbo (B230F-Turbo engine)

Cooling system

Type	Positive pressure, Closed system
Thermostat begins to open at	198 °F (92 °C)
Fan belts, designation	HC47cog x 1000
Coolant:	Volvo coolant type C (blue-green)
Capacity:	10 US qts (9.5 liters)

Ignition system

Firing order	1-3-4-2
Ignition setting (cannot be adjusted)	(12° B.T.D.C. at 900 rpm)
Spark plugs	Volvo P/N 271409-5*
Spark plug gap	0.024-0.028" (0.6-0.7 mm)
Tightening torque	15-22 ft. lbs. (20-30 Nm)
Distributor, direction of rotation	Clockwise

* Bosch WR7 DC (or equivalent)

Power transmission

Manual or automatic transmission.
Hypoid type final drive.

Manual transmission M46

Reduction ratios:	
1st gear	4.03:1
2nd gear	2.16:1
3rd gear	1.37:1
4th gear	1:1
Overdrive	0.78:1
Reverse	3.68:1
Rear axle	
Reduction ratios:	3.54:1 3.31:1

Automatic transmission AW70L & AW71

Reduction ratios:	
1st gear	2.45:1
2nd gear	1.45:1
3rd gear	1:1
4th gear	0.69:1
Reverse	2.21:1
Rear axle	
Reduction ratios:	3.73:1 4.10:1

Automatic transmission ZF 4HP-22

Reduction ratios:	
1st gear	2.48:1
2nd gear	1.48:1
3rd gear	1:1
4th gear	0.73:1
Reverse	2.09:1
Rear axle	
Reduction ratios:	3.91:1

Speeds at 1000 engine rpm (manual transmission)

Rear axle ratio	3.54:1		3.31:1	
	mph	km/h	mph	km/h
1st gear	5.0	8.0	5.3	9.0
2nd gear	9.2	14.8	9.8	16.0
3rd gear	14.5	23.4	15.5	25.0
4th gear	19.9	32.1	21.3	35.0
Overdrive	25.2	40.6	26.9	42.0
Reverse	5.4	8.7	5.8	10.0

Front end

McPherson-type spring and strut suspension. Shock absorbers housed in strut casing. Rack-and-pinion steering.
Safety-type steering column.
The alignment specifications apply to an unloaded car but include fuel, coolant, and spare wheel.
Toe-in, measured on the wheel rim: 5/64" +/- 1/64" (2 mm +/- 0.5 mm)
tire sides: 3/32" +/- 1/32" (2.5 mm +/- 1 mm)

All specifications are subject to change without notice.

Specifications

Electrical system

12 V, negative ground.	
Voltage-controlled alternator. Single-wire system with chassis and engine used as conductors.	
Voltage	12V
Battery, type	Maintenance free
Capacity	55 Amp/hr
Electrolyte, specific gravity	1.28
Recharge at	1.23
Alternator, rated output max. current	80 A (GL,GLE), 100 A (Turbo)

The following bulbs may be obtained from your nearest Volvo dealer:

Lights, 12 V	US bulb No.	Power	Socket
Headlights, inner	H4651	Halogen	Sealed beam
Headlights, outer	H4656	Halogen	Sealed beam
Parking lights, front	1157	21/5W/32/3 cp	BAY 15 d
Turn signals, front	1157	21/5W/32/3 cp	BAY 15 d
Turn signals, rear	1073	21 W/32 cp	Ba 15 s
Tail lights	67	5 W/4 cp	Ba 15 s
Tail light/brake light	1157	21/5W/32/3 cp	BAY 15 d
High-mounted brake light		20 W	Ba 9 s
Back-up lights	1073	21 W/32 cp	Ba 15 s
Rear fog lights	1073	21 W/32 cp	Ba 15 s
Fog lights		55 W	H3
License plate light		4 W	W 2.1 x 9.5 d
Door warning lights		3 W	W 2.1 x 9.5 d
Interior light		10 W	SV 8.5
Reading lights, front		5 W	W 2.1 x 9.5 d
Engine compartment light		10 W	SV 8.5
Trunk light		10 W	SV 8.5
Glove box light		2 W	Ba 9 s
Instrument lighting		3 W	W 2.1 x 9.5 d
Lighting control panel		1.2 W	Volvo P/N 966326
A/T selector		1.2 W	Volvo P/N 966326
Ashtray, rear		1.2 W	Volvo P/N 966326
Warning lights/Indicator lights		1.2 W	Volvo P/N 966326

Vehicle Loading

The tires on your Volvo will perform to specifications at all normal loads when inflated as recommended on the tire information label. The label is located on the rear-facing edge of the right front door. This label lists both tire and vehicle design limits. Do not load your car beyond the load limits indicated.

Tire pressure label

VEHICLE CAPACITY WEIGHT	OCCUPANTS		COLD TIRE PRESSURE		PSI
	FRE	TOT	FRONT	REAR	
MAX LOAD	1045	2 3 5	30	36	
RECOMMENDED FOR FUEL ECONOMY					
TIRE SIZE	OPTIONAL PRESSURE				PSI
	FRE	TOT	FRONT	REAR	
185/70R14	2	1 3	27	30	
* TIRE PRESSURE INFORMATION AND WTS (GROSS) IS BASED ON 1.2 TONS PER SQUARE METRE PRESSURE					
155 R 15	SIZE	MAX TIRE	RELATION	40	PSI
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION					
VOLVO					

Warning!

Improperly inflated tires will reduce tire life, adversely affect vehicle handling and can possibly lead to failure resulting in loss of vehicle control without prior warning.

Specifications

Tool kit

Wheel nut wrench.
2 screwdrivers (1 Phillips, 1 standard)
Pry bar
2 open end wrenches.

Capacities

Fuel tank (approx.)	15.8 US gal. 60 liters
Cooling system	10 US qts. 9.5 liters
Engine, at oil change	4.0 US qts.* 3.85 liters
Manual transmission (M46)	2.4 US qts. 2.3 liters
Automatic transmission (AW71)	7.9 US qts. 7.5 liters
Automatic transmission (ZF 4HP-22)	8.1 US qts. 7.7 liters
Rear axle	1.7 US qts. 1.6 liters
Power steering gear	0.7 US qts. 0.7 liters
*Turbo: If oil cooler is drained, add 0.7 US qts. (0.6 liters)	

All specifications are subject to change without notice.

Service Manuals

Service Manuals for your Volvo are available for purchase. These are the same manuals used by competent Volvo technicians. Major sections within the Service Manual System include: 0-General Information; 1-Lubrication and Service; 2-Engine; 3-Electrical System; 4-Power Transmission; 5-Brakes; 6-Suspension and Steering; 7-Springs, Shock absorbers and Wheels; 8-Body and Interior.

A Service Manual Brochure/Order Form was placed in the car prior to delivery from the dealer to you. Complete ordering information is provided.

Please note that these manuals may be offered for sale by your Volvo dealer. Prices charged by the dealer can vary from those listed in the brochure (according to Federal law).

Additional copies of the Brochure/Order Form may be obtained from your Volvo dealer, or by mail directly from:

Volvo Cars of North America
Rockleigh Industrial Park
Rockleigh, New Jersey 07647

Attention: Volvo Service Literature

Note that the above pertains to vehicles sold in the U.S.A. only.



Volvo supports Voluntary Mechanic Certification by the N.I.A.S.E. Certified mechanics have demonstrated a high degree of competence in specific areas.

Besides passing exams each mechanic must also have worked in the field for two or more years before a certificate is issued.

These professional mechanics are fully able to analyze vehicle problems and perform the necessary service procedures to keep your Volvo at peak operating condition.

Note! The above pertains to USA only.

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WARNING!

Detergents and solvents

Do not use gasoline containing lead or benzene as a detergent or solvent. Both lead and benzene are toxic and may be hazardous to your health.

WARNING!

Carbon monoxide is a poisonous colorless and odorless gas which is present in all exhaust gases. If you ever smell exhaust fumes inside the vehicle, make sure the passenger compartment is ventilated and immediately return the vehicle to dealer for correction. **Never** sit in a parked or stopped car for any extended amount of time, nor have it unattended while engine is running. **Never** operate the engine in confined, unventilated areas.

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