

# 2006 VOLVO C70

**VOLVO**  
for life



2006

## **VOLVO OWNER'S MANUAL C70**

### **Introduction**

Welcome to the worldwide family of Volvo owners. We hope that you will enjoy many years of safe driving in your Volvo, an automobile designed with your safety and comfort in mind. To help ensure your satisfaction with this vehicle, we encourage you to familiarize yourself with the equipment descriptions, operating instructions and maintenance requirements/recommendations in this manual. We also urge you and your passengers to wear seat belts at all times in this (or any other) automobile. And, of course, please do not operate a vehicle if you may be affected by alcohol, medication or any impairment that could hinder your ability to drive.

Your Volvo is designed to meet all applicable safety and emission standards, as indicated by the certification labels attached to the driver's door opening, and on the underside of the hood.

**For further information please contact your retailer, or:**

**In the USA:**

Volvo Cars of North America

Customer Care Center

P.O. Box 914

Rockleigh, New Jersey 07647-0914

1-800-458-1552

<http://www.volvocars.us>

**In Canada:**

Volvo Cars of Canada Ltd.  
National Customer Service  
175 Gordon Baker Road  
North York, Ontario M2H 2N7  
1-800-663-8255  
<http://www.volvocanada.com>

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## General Information

### pg. 2 Introduction

**Shiftlock**

When your car is parked, the gear selector is locked in the (P)ark position. To release the selector from this position, turn the ignition key to position II (or start the engine), depress the brake pedal, press the button on the front side of the gear selector and move the selector from (P)ark.

**Keylock**

When the ignition is switched off, the gear selector must be in the (P)ark position before the key can be removed from the ignition switch.

**Anti-lock Brake System (ABS)**

The ABS system in your car performs a self-diagnostic test when the vehicle first reaches the speed of approximately 12 mph (20 km/h). The brake pedal will pulsate several times and a sound may be audible from the ABS control module. This is normal.

**Fuel filler door**

Press the button on the light switch panel when the car is at a standstill to open the fuel filler door.

**Fuel filler cap**

After refueling, close the fuel filler cap by turning it clockwise until it clicks into place. If this cap is not closed tightly or if the engine is running when the car is refueled, the Malfunction Indicator Lamp ("Check Engine" light) may indicate a fault.

**Points to keep in mind**

- Before you operate your vehicle for the first time, please familiarize yourself with the new-engine oil consumption information on [page 191](#). You should also be familiar with the information found in the chapters "Instruments and controls," and "Starting and driving."
- Information contained in the balance of the manual is extremely useful and should be read after operating the vehicle for the first time.
- The manual is structured so that it can be used for reference. For this reason, it should be kept in the vehicle for ready access.
- Do not export your Volvo to another country before investigating that country's applicable safety and emission control 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.
- All information, illustrations and specifications contained in this manual are based on the latest product information

available at the time of publication. Please note that some vehicles may be equipped differently, depending on special legal requirements. Optional equipment described in this manual may not be available in all markets.

- Volvo reserves the right to make model changes at any time, or to change specifications or design without notice and without incurring obligation.

## **WARNING!**

If your vehicle is involved in an accident, unseen damage may affect its driveability and safety.

## Volvo and the environment

Volvo is committed to the well being of its customers. As a natural part of this commitment, we care about the environment in which we all live. Caring for the environment means an everyday involvement in reducing our environmental impact. Volvo's environmental activities are based on a holistic view, which means we consider the overall environmental impact of a product

### pg. 3 Introduction

throughout its complete life cycle. In this context, design, production, product use, and recycling are all important considerations. In production, Volvo has partly or completely phased out several chemicals including freons, lead chromates, naphtanates, asbestos, mercury and cadmium; and reduced the amount of chemicals used in our plants 50% since 1991.

Volvo was the first in the world to introduce into production a three-way catalytic converter with a Lambda sond, now called the heated oxygen sensor, in 1976. The current version of this highly efficient system reduces emissions of harmful substances (CO, HC, NOx) from the exhaust pipe by approximately 95% and the search to eliminate the remaining emissions continues. Volvo is the only automobile manufacturer to offer CFC-free retrofit kits for the air conditioning system of all models as far back as the 1975 model 240. Advanced electronic engine controls, refined purification systems and cleaner fuels are bringing us closer to our goal. After Volvo cars and parts have fulfilled their use, recycling is the next critical step in completing the life cycle. The metal content is about 75% of the total weight of a car, which makes the car among the most recycled industrial products. In order to have efficient and well controlled recycling, many Volvo variants have printed dismantling manuals, indicating the weight and material of individual components. For Volvo, all homogeneous plastic parts weighing more than 1.7 oz. (50 grams) are marked with international symbols that indicate how the component is to be sorted for recycling. In addition to continuous environmental refinement of conventional gasoline-powered internal combustion engines, Volvo is actively looking at advanced technology alternative-fuel vehicles.

When you drive a Volvo, you become our partner in the work to lessen the car's impact on the environment. To reduce your vehicle's environmental impact, you can:

- Maintain proper air pressure in your tires. Tests have shown decreased fuel economy with improperly inflated tires.
- Follow the recommended maintenance schedule in your Warranty and Service Records Information booklet.
- Drive at a constant speed whenever possible.
- See a trained and qualified Volvo service technician as soon as possible for inspection if the check engine (malfunction indicator) lamp illuminates, or stays on after the vehicle has started.
- Properly dispose of any vehicle-related waste such as used motor oil, used batteries, brake pads, etc.
- When cleaning your car, use Volvo's own car care products, all of which have systematically been adapted to the environment.

## **WARNING!**

## CALIFORNIA proposition 65

Engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the state of California to cause cancer, and birth defects or other reproductive harm. In addition, certain fluids contained in vehicles and certain products of component wear contain or emit chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm.

pg. 4 Introduction

## **Important warnings**

### **Accessory installation**

- We strongly recommend that Volvo owners install only genuine, Volvo-approved accessories, and that accessory installations be performed only by the factory-trained technicians at your authorized Volvo retailer.
- Genuine Volvo accessories are tested to ensure compatibility with the performance, safety, and emission systems in your car. Additionally, your authorized Volvo retailer knows where accessories may and may not be safely installed in your Volvo. In all cases, please consult your authorized Volvo retailer before installing any accessory in or on your car.
- Accessories that have not been approved by Volvo may or may not be specifically tested for compatibility with your car. Additionally, an inexperienced installer may not be familiar with some of your car's systems.
- Any of your car's performance and safety systems could be adversely affected if you install accessories that Volvo has not tested, or if you allow accessories to be installed by someone unfamiliar with your car.
- Damage caused by unapproved or improperly installed accessories may not be covered by your new car warranty. See your Warranty and Service Records Information booklet for more warranty information. Volvo assumes no responsibility for death, injury, or expenses that may result from the installation of non-genuine accessories.

### **Driver distraction**

- Driver distraction results from driver activities that are not directly related to controlling the car in the driving environment. Your new Volvo is, or can be, equipped with many feature-rich entertainment and communication systems. These include hands-free cellular telephones, navigation systems, and multipurpose audio systems. You may also own other portable electronic devices for your own convenience. When used properly and safely, they enrich the driving experience. Improperly used, any of these could cause a distraction.
- For all of these systems, we want to provide the following warning that reflects the strong Volvo concern for your safety:
  - Never use these devices or any feature of your vehicle in a way that distracts you from the task of driving safely. Distraction can lead to a serious accident. In addition to this general warning, we offer the following guidance regarding specific newer features that may be found in your vehicle:
    - Never use a hand-held cellular telephone while driving. Some jurisdictions prohibit cellular telephone use by a driver while the vehicle is moving.
    - If your car is equipped with a navigation system, set and make changes to your travel itinerary only with the vehicle parked.
    - Never program your audio system while the vehicle is moving. Program radio presets with the vehicle parked, and use your programmed presets to make radio use quicker and simpler.
    - Never use portable computers or personal digital assistants while the vehicle is moving.

A driver has a responsibility to do everything possible to ensure his or her own safety and the safety of passengers in the vehicle and others sharing the roadway. Avoiding distractions is part of that responsibility.

Contents

## Contents

[Instrument overview](#)

[Safety](#)

[Instruments and controls](#)

[Climate](#)

[Interior](#)

[Locks and alarm](#)

[Starting and driving](#)

[Wheels and tires](#)

[Vehicle care](#)

[Maintenance and servicing](#)

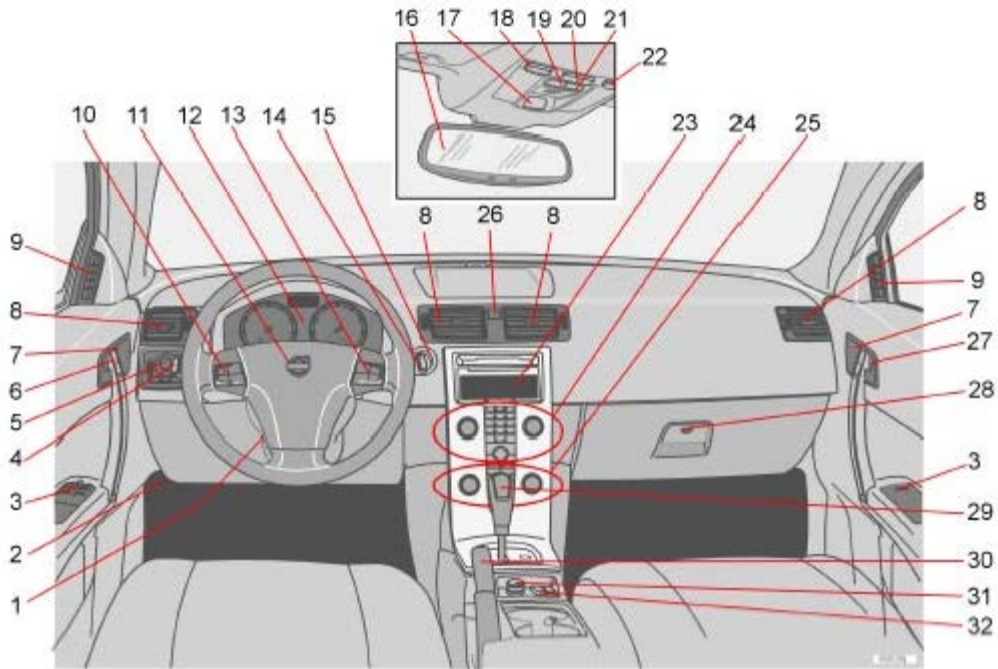
[Audio](#)

[Specifications](#)

[Index](#)

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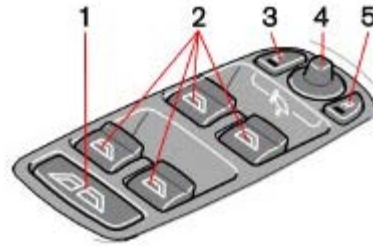
## Chapter 1 - Instrument overview



pg. 8 Instrument overview

	Page
1. Steering wheel adjustment	<a href="#">46</a>
2. Hood opener	<a href="#">157</a>
3. Controls in driver's door (see inset illustration below)	
4. Left steering wheel lever	<a href="#">40</a>
5. Lighting panel, fuel filler door opener	<a href="#">38</a>
6. Door open handle, and locking button	<a href="#">93</a>
7. Lock indicator light	<a href="#">93</a>
8. Climate system air vent	<a href="#">59</a>
9. Side window air vent	
10. Cruise control	<a href="#">42</a>
11. Horn, airbag	<a href="#">14</a>
12. Main instrument panel	<a href="#">32</a>
13. Audio controls	<a href="#">176</a>
14. Right steering wheel lever	<a href="#">44</a>
15. Ignition switch	<a href="#">104</a>
16. Rear-view mirror and optional compass	<a href="#">49</a>
17. Seat belt reminder	<a href="#">13</a>
18. Driver's side reading light	<a href="#">77</a>
19. Movement detector (option), alarm sensor	<a href="#">95</a>
20. Courtesy lighting switch	<a href="#">77</a>
21. Position for accessory switch	
22. Passenger's side reading light	<a href="#">77</a>
23. Display for climate control, personal settings, and audio system	<a href="#">51</a>

24. Controls for personal settings and audio system	<a href="#">51 / 176</a>
25. Controls for climate system	<a href="#">60</a>
26. Hazard warning flashers	<a href="#">46</a>
27. Door open handle, and locking button	<a href="#">93</a>
28. Glove compartment	<a href="#">90</a>
29. Gear selector, manual/	<a href="#">107</a>
29. Gear selector, automatic	<a href="#">108</a>
30. Parking brake	<a href="#">47</a>
31. 12-volt socket	<a href="#">47</a>
32. Switches for raising/lowering the power retractable hard top	<a href="#">72</a>



*Control panel in driver's door*

	Page
1. All windows up/down	<a href="#">48</a>
2. Power windows	<a href="#">48</a>
3. Door mirror button, driver's side	<a href="#">50</a>
4. Door mirror adjustment control	<a href="#">50</a>
5. Door mirror button, passenger's side	<a href="#">50</a>



# 2006 VOLVO C70

## Chapter 2 - Safety

### pg. 9 Safety

Occupant safety	<a href="#">10</a>
Seat belts	<a href="#">11</a>
Supplemental Restraint System (SRS)	<a href="#">14</a>
Front airbags	<a href="#">15</a>
Occupant Weight Sensor - disabling the passenger's side front airbag	<a href="#">18</a>
Side impact protection (SIPS) airbags	<a href="#">21</a>
Door Mounted Inflatable Curtain (DMIC)	<a href="#">22</a>
Whiplash Protection System (WHIPS)	<a href="#">23</a>
Roll-over Protection system (ROPS)	<a href="#">25</a>
Collision status	<a href="#">26</a>
Inspecting SRS system components	<a href="#">27</a>
Child safety	<a href="#">28</a>

### pg. 10 Safety

## Occupant safety

### Volvo's concern for safety

Safety is Volvo's cornerstone. Our concern dates back to 1927 when the first Volvo rolled off the production line. Three-point seat belts (a Volvo invention), safety cages, and energy-absorbing impact zones were designed into Volvo cars long before it was fashionable or required by government regulation.

We will not compromise our commitment to safety. We continue to seek out new safety features and to refine those already in our cars. You can help. We would appreciate hearing your suggestions about improving automobile safety. We also want to know if you ever have a safety concern with your car. Call us in the U.S. at: 1-800-458-1552 or in Canada at: 1-800-663-8255.

### Occupant safety reminders

How safely you drive doesn't depend on how old you are but rather on:

- How well you see.
- Your ability to concentrate.
- How quickly you make decisions under stress to avoid an accident.

The following suggestions are intended to help you cope with the ever changing traffic environment.

- Never drink and drive.
- If you are taking any medication, consult your physician about its potential effects on your driving abilities.



- Take a driver-retraining course.
- Have your eyes checked regularly.
- Keep your windshield and headlights clean.
- Replace wiper blades when they start to leave streaks.
- Take into account the traffic, road, and weather conditions, particularly with regard to stopping distance.

### **Reporting safety defects in the U.S.**

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Volvo Cars of North America. If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your retailer, or Volvo Cars of North America.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153) or write to: NHTSA, U.S. Department of Transportation, Washington D.C. 20590. You can also obtain other information about motor vehicle safety from the Hotline.

Volvo strongly recommends that if your vehicle is covered under a service campaign, safety or emission recall or similar action, it should be completed as soon as possible. Please check with your local retailer or Volvo Cars of North America, LLC if your vehicle is covered under these conditions.

### **NHTSA can be reached at:**

Internet:

<http://www.nhtsa.gov>

Telephone:

1-888-DASH-2-DOT (1-888-327-4236).

pg. 11 Safety

## **Seat belts**



*Adjusting the seat belt*

### **Using seat belts**

Volvo, the inventor of the three-point seat belt, urges you and all occupants of your vehicle to wear seat belts and ensure that children are properly restrained, using an infant, car, or booster seat determined by age, weight and height. Volvo also believes no child should sit in the front seat of a vehicle.

Most states and provinces make it mandatory for occupants of a vehicle to use seat belts.

### **Seat belt tensioners**

The front and rear seat belts are equipped with tensioners that reduce slack in the belts. These tensioners are triggered in situations where the airbags deploy. The front seat belts also include a tension reducing device which, in the event of a collision, limits the peak forces exerted by the seat belt on the occupant.

## Buckling a seat belt

Pull the belt out far enough to insert the latch plate into the receptacle until a distinct click is heard. The seat belt retractor is normally "unlocked" and you can move freely, provided that the shoulder belt is not pulled out too far. The retractor will lock up as follows:

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

## When wearing the seat belt remember:

- The belt should not be twisted or turned.
- The lap section of the belt must be positioned low on the hips (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.

## Unbuckling the seat belt

- To remove the seat belt, press the red section on the seat belt receptacle. Before exiting the vehicle, check that the seat belt retracts fully after being unbuckled. If necessary, guide the belt back into the retractor slot.



*Sample label on all seat belts with tensioners*

### **WARNING!**

Never use a seat belt for more than one occupant. Never wear the shoulder portion of the belt under the arm, behind the back or otherwise out of position. Such use could cause injury in the event of an accident. As seat belts lose much of their strength when exposed to violent stretching, they should be replaced after any collision, even if they appear to be undamaged.

## Seat belts

### **WARNING!**

- Never repair the belt yourself; have this work done by a trained and qualified Volvo service technician only.
- Any device 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.

- The seat back should not be tilted too far back. The shoulder belt must be taut in order to function properly.
- Do not use child safety seats or child booster cushions/backrests in the front passenger's seat. We also recommend that children who have outgrown these devices sit in the rear seat with the seat belt properly fastened.



### Seat belt use during pregnancy

The seat belt should always be worn during pregnancy. But it is crucial that it be worn in the correct way. The diagonal section should wrap over the shoulder then be routed between the breasts and to the side of the belly. The lap section should lay flat over the thighs and as low as possible under the belly. It must never be allowed to ride upward. Remove all slack from the belt and insure that it fits close to the body without any twists.

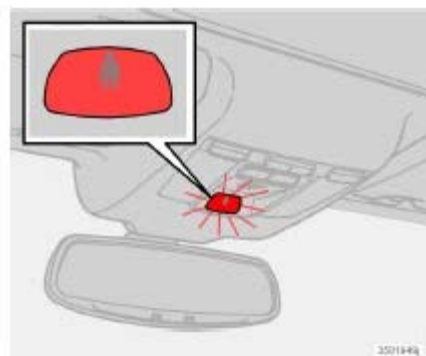
As a pregnancy progresses, pregnant drivers should adjust their seats and steering wheel such that they can easily maintain control of the vehicle as they drive (which means they must be able to easily operate the foot pedals and steering wheel). Within this context, they should strive to position the seat with as large a distance as possible between their belly and the steering wheel.

### Child seats

Please refer to [page 30](#) for information on securing child seats with the seat belts.

pg. 13 Safety

### Seat belts



*Seat belt reminder light in ceiling console*

### Seat belt reminder

The seat belt reminder consists of an audible signal, an indicator light above the rearview mirror, and a symbol in the instrument panel (see [page 35](#)) that alert the driver and front seat passenger if their seat belts are not fastened.

**NOTE:** The function is active for a total of 6 minutes from the time the ignition is switched on.

**During the first minute:**

The seat belt reminder function only reacts if the driver has not fastened his/her seat belt.

- The indicator light above the mirror and the symbol in the instrument panel will light up and stay lit until the seat belt has been fastened.
- A chime will sound for 6 seconds. The frequency of the chiming increases with the speed of the car.

**After one minute has elapsed:**

The seat belt reminder reacts if the driver and/or the front seat passenger have not fastened their seat belts.

- The indicator light above the mirror and the symbol in the instrument panel will light up and stay lit until the seat belt(s) have been fastened, or until the remaining 5 minutes of the 6-minute cycle have elapsed.
- The chime will sound for 6 seconds, at 30-second intervals. The frequency of the chiming increases with the speed of the car. After 6 minutes, the chime will no longer sound and the indicator lights will go out.

**Seat belt maintenance**


Check periodically that the seat belts are in good condition. Use water and a mild detergent for cleaning. Check seat belt mechanism function as follows: attach the seat belt and pull rapidly on the strap.

**Supplemental Restraint System (SRS)**



**Supplemental Restraint System**

As an enhancement to the three-point seat belts, your Volvo is equipped with a Supplemental Restraint System (SRS). Volvo's SRS consists of seat belt tensioners, front airbags, side impact airbags, the occupant weight sensor, and inflatable curtains. All of these systems are monitored by the SRS control module. An SRS warning light in the instrument panel (see the illustration above) illuminates when the ignition key is turned to position I, II, or III, and will normally go out after approximately 7 seconds if no faults are detected in the system.

Where applicable, a text message will also be displayed when the SRS warning light illuminates. If this warning symbol is not functioning properly, the general warning symbol  illuminates and a text message will be displayed.

 **WARNING!**

- If the SRS warning light stays on after the engine has started or if it illuminates while you are driving, have the vehicle inspected by a trained and qualified Volvo service technician as soon as possible.

- Never try to repair any component or part of the SRS yourself. Any interference in the system could cause malfunction and serious injury. All work on these systems should be performed by a trained and qualified Volvo service technician.

**⚠ WARNING!**

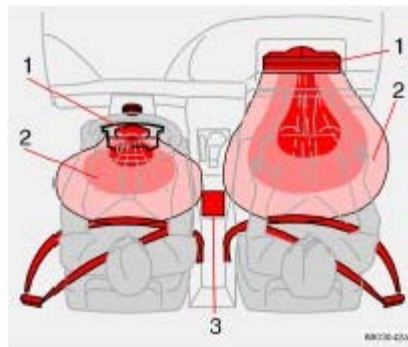
If your vehicle has been subjected to flood conditions (e.g. soaked carpeting/ standing water on the floor of the vehicle) or if your vehicle has become flood-damaged in any way, do not attempt to start the vehicle or put the key in the ignition before disconnecting the battery (see below). This may cause airbag deployment which could result in personal injury. Have the vehicle towed to a trained and qualified Volvo service technician for repairs.

**Automatic transmission:**

Before attempting to tow the vehicle, use the following procedure to override the shiftlock system to move the gear selector to the neutral position:

- Switch off the ignition for at least 10 minutes and disconnect the battery
- Wait at least one minute.
- Insert the key in the ignition and turn it to position II.
- Press firmly on the brake pedal.
- Move the gear selector from (P)ark to the (N)eutral position. See [page 110](#) for information on manually overriding the shiftlock system.

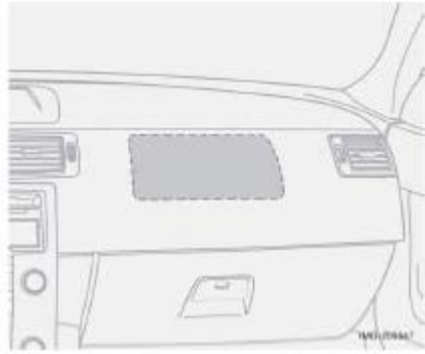
## Front airbags



### The front airbag system

The front airbags supplement the three-point seat belts. For these airbags to provide the protection intended, seat belts must be worn at all times.

The front airbag system includes gas generators (1) surrounded by the airbags (2) and a deceleration sensor (3) that activates the gas generators, causing the airbags to be inflated with nitrogen gas.



*Location of the passenger's side front airbag*

As the movement of the seats' occupants compresses the airbags, some of the gas is expelled at a controlled rate to provide better cushioning. Both seat belt tensioners also deploy, minimizing seat belt slack. The entire process, including inflation and deflation of the airbags, takes approximately one fifth of a second.

The location of the front airbags is indicated by "SRS AIRBAG" embossed on the steering wheel pad and above the glove compartment, and by decals on both sun visors and on the front and far right side of the dash.

- The driver's side front airbag is folded and located in the steering wheel hub.
- The passenger's side front airbag is folded behind a panel located above the glove compartment.



#### **WARNING!**

- The airbags in the vehicle are designed to be a SUPPLEMENT to-not a replacement for-the three-point seat belts. For maximum protection, wear seat belts at all times. Be aware that no system can prevent all possible injuries that may occur in an accident.
- Never drive a vehicle with a steering wheel-mounted airbag with your hands on the steering wheel pad/airbag housing.
- The front airbags are designed to help prevent serious injury. Deployment occurs very quickly and with considerable force. During normal deployment and depending on variables such as seating position, one may experience abrasions, bruises, swellings, or other injuries as a result from deployment of one or both of the airbags.
- When installing any accessory equipment, make sure that the front airbag system is not damaged. Any interference in the system could cause malfunction.

## **Front airbags**

### **Front airbag deployment**

- The front airbags are designed to deploy during certain frontal or front-angular collisions, impacts, or decelerations, depending on the crash severity, angle, speed and object impacted. The airbags may also deploy in certain non-frontal collisions where rapid deceleration occurs.
- The SRS sensors, which trigger the front airbags, are designed to react to both the impact of the collision and the inertial forces generated by it, and to determine if the intensity of the collision is sufficient for the seat belt tensioners and/or airbags to be deployed.

However, not all frontal collisions activate the front airbags.

- If the collision involves a nonrigid object (e.g., a snow drift or bush), or a rigid, fixed object at a low speed, the

front airbags will not necessarily deploy.

- Front airbags do not normally deploy in a side impact collision, in a collision from the rear or in a rollover situation.
- The amount of damage to the bodywork does not reliably indicate if the airbags should have deployed or not.

**NOTE:**

- Deployment of front airbags occurs only one time during an accident. In a collision where deployment occurs, the airbags and seat belt tensioners activate. Some noise occurs and a small amount of powder is released. The release of the powder may appear as smoke-like matter. This is a normal characteristic and does not indicate fire.
- Volvo's dual-threshold, dual-stage front airbags use special sensors that are integrated with the front seat buckles. The point at which the airbag deploys is determined by whether or not the seat belt is being used, as well as the severity of the collision.
- Collisions can occur where only one of the airbags deploys. If the impact is less severe, but severe enough to present a clear injury risk, the dual-stage airbags are triggered at 70% of their total capacity. If the impact is more severe, the dual-stage airbags are triggered at full capacity.

Should you have questions about any component in the SRS system, please contact a trained and qualified Volvo service technician or Volvo Customer Support:

**In the USA**

Volvo Cars of North America  
Customer Care Center  
P.O. Box 914 Rockleigh, New Jersey 07647-0914  
1-800-458-1552  
<http://www.volvocars.us>

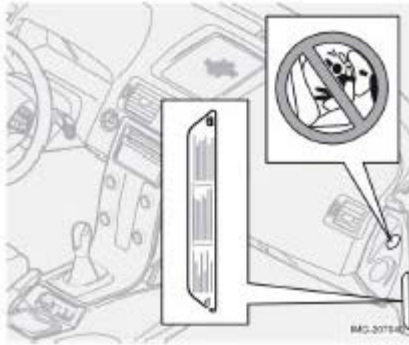
**In Canada**

Volvo Cars of Canada Ltd.  
National Customer Service  
175 Gordon Baker Road  
North York, Ontario M2H 2N7  
1-800-663-8255  
<http://www.volvocanada.com>

 **WARNING!**

- Do not use child safety seats or child booster cushions/backrests in the front passenger's seat. We also recommend that occupants under 4 feet 7 inches (140 cm) in height who have outgrown these devices sit in the rear seat with the seat belt fastened(a).
- Never drive with the airbags deployed. The fact that they hang out can impair the steering of your vehicle. Other safety systems can also be damaged.
- The smoke and dust formed when the airbags are deployed can cause skin and eye irritation in the event of prolonged exposure.

a. See also the Occupant Weight Sensor information on [page 18](#).



*Airbag decal on the far right end of the passenger's dashboard*



*Airbag decal on the outside of both sun visors*

**WARNING!**

- Children must never be allowed in the front passenger's seat. Volvo recommends that ALL occupants (adults and children) shorter than 4 feet 7 inches (140 cm) be seated in the back seat of any vehicle with a passenger-side front airbag. See [page 30](#) for guidelines.
- Occupants in the front passenger's seat must never sit on the edge of the seat, sit leaning toward the instrument panel or otherwise sit out of position.
- The occupant's back must be as upright as comfort allows and be against the seat back with the seat belt properly fastened.
- Feet must be on the floor, e.g., not on the dash, seat or out of the window.



*Airbag decal on passenger's side dashboard*



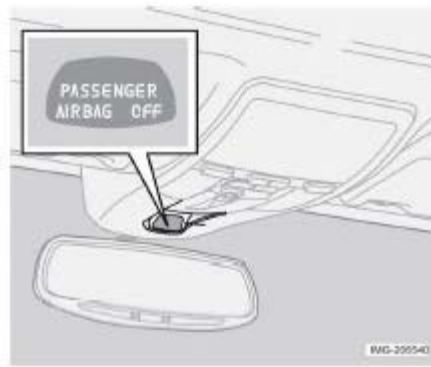
## **WARNING!**

- No objects or accessory equipment, e.g. dashboard covers, may be placed on, attached to, or installed near the air bag hatch (the area above the glove compartment) or the area affected by airbag deployment (see the illustration on [page 14](#)).
- There should be no loose articles, e.g. coffee cups, on the floor, seat, or dashboard area.
- Never try to open the airbag cover on the steering wheel or the passenger's side dashboard. This should only be done by a trained and qualified Volvo service technician.

Failure to follow these instructions can result in injury to the vehicle occupants.

pg. 18 Safety

## **Occupant Weight Sensor - disabling the passenger's side front airbag**



*Occupant Weight Sensor (OWS) indicator light*

### **Disabling the passenger's side front airbag**

Volvo recommends that ALL occupants (adults and children) shorter than 4 feet 7 inches (140 cm) be seated in the back seat of any vehicle with a front passenger side airbag, and be properly restrained for their size and weight. See also the child safety recommendations on [page 30](#).

The passenger's side front airbag is automatically enabled/disabled by the Occupant Weight Sensor (OWS), a system that monitors the weight of the person or object in the front passenger's seat. The system consists of a silicone-filled bag located under the padding in the front passenger's seat cushion, a control module located under this seat, and a seat belt tension sensor, located on the outboard side of the seat.

The OWS system continuously monitors the pressure on the front passenger's seat cushion and the tension applied to the seat belt. Based on this data, OWS assesses the weight of the occupant or object in the front passenger's seat. This information is transmitted to the SRS system control module, which enables or disables the passenger's side front airbag accordingly, as indicated in the table on the following page.

If the system is functioning normally, the status of the front passenger's side airbag (enabled/disabled) will be shown by the OWS indicator light as explained in the table on the following page. The OWS indicator light is separate and in addition to the SRS warning light in the instrument panel.

**NOTE:** When the ignition is switched on, the OWS indicator light will go on for up to 10 seconds while the system performs a self-diagnostic test. The light will then go out unless the seat is occupied by a low weight occupant/object. However, if a fault is detected in the system:

- The OWS indicator light will stay on

- The SRS warning light ([see page 14](#)) will come on and stay on
- The message PASS. AIRBAG OFF SERVICE URGENT will be displayed in the information display.

 **WARNING!**

If a fault in the system is detected and indicated as explained on the preceding page, be aware that the passenger's side front airbag will not deploy in the event of a collision. In this case, the SRS system and Occupant Weight Sensor should be inspected by a trained and qualified Volvo service technician as soon as possible.

 **WARNING!**

- Never try to open, remove, or repair any components in the OWS system. This could result in system malfunction. Maintenance or repairs should only be carried out by an a trained and qualified Volvo service technician.
- The front passenger's seat should not be modified in any way. This could reduce pressure on the seat cushion, which might interfere with the OWS system's function.

### Occupant Weight Sensor - disabling the passenger's side front airbag

Passenger's seat occupancy status	OWS indicator light status	Passenger's side front airbag status
Seat unoccupied	OWS indicator light PASS AIRBAG OFF is not lit	Passenger's side front airbag disabled
Seat occupied by low weight occupant/object <sup>a</sup>	OWS indicator light PASS AIRBAG OFF lights up	Passenger's side front airbag disabled
Seat occupied by heavy occupant/object	OWS indicator light PASS AIRBAG OFF is not lit	Passenger's side front airbag enabled

a. Volvo recommends that children always be properly restrained in appropriate child restraints in the rear seats. In rare situations when the seat belt is not latched, some child restraint systems may not be detected by the OWS because there is very little weight on the vehicle seat cushion. In these cases the airbag may be turned off but the "passenger airbag off" indicator would not be lit. DO NOT assume the front passenger airbag is turned off unless the indicator is lit. Make sure the child restraint is properly belted and that the indicator is lit, or move the child restraint to the rear seat.

## Modifications

If you are considering modifying your vehicle in any way to accommodate a disability, for example by altering or adapting the driver's or front passenger's seat(s) and/or airbag systems, please contact Volvo at:

### In the USA

Volvo Cars of North America  
Customer Care Center  
P.O. Box 914 Rockleigh, New Jersey 07647-0914  
1-800-458-1552

### In Canada

Volvo Cars of Canada Ltd.  
National Customer Service  
175 Gordon Baker Road  
North York, Ontario M2H 2N7  
1-800-663-8255

pg. 20 Safety

## Occupant Weight Sensor - disabling the passenger's side front airbag

### WARNING!

- No objects that add to the total weight on the seat should be placed on the front passenger's seat. If a child is seated in the front passenger's seat with any additional weight, this extra weight could cause the OWS system to enable the airbag, which might cause it to deploy in the event of a collision, thereby injuring the child.
- The seat belt should never be wrapped around an object on the front passenger's seat. This could interfere with the OWS system's function.
- The front passenger's seat belt should never be used in a way that exerts more pressure on the passenger than normal. This could increase the pressure exerted on the weight sensor by a child, and could result in the airbag being enabled, which might cause it to deploy in the event of a collision, thereby injuring the child.

### WARNING!

Keep the following points in mind with respect to the OWS system. Failure to follow these instructions could adversely affect the system's function and result in serious injury to the occupant of the front passenger's seat:

- The full weight of the front seat passenger should always be on the seat cushion. The passenger should never lift him/herself off the seat cushion using the armrest in the door or the center console, by pressing the feet on the floor, by sitting on the edge of the seat cushion, or by pressing against the backrest in a way that reduces pressure on the seat cushion. This could cause OWS to disable the front, passenger's side airbag.
- Do not place any type of object on the front passenger's seat in such a way that jamming, pressing, or squeezing occurs between the object and the front seat, other than as a direct result of the correct use of the ALR/ELR seat belt (see [page 30](#)).
- No objects should be placed under the front passenger's seat. This could interfere with the OWS system's function.

pg. 21 Safety

## Side impact protection (SIPS) airbags



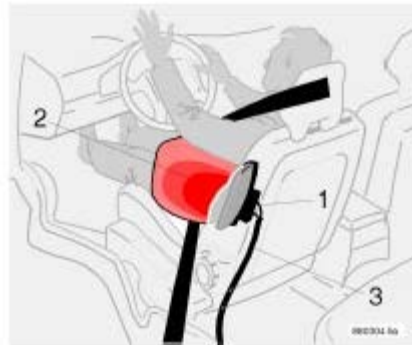
Location of the side impact (SIPS) airbag

### Side impact airbags - front seats only

As an enhancement to the structural side impact protection built into your car, the car is also equipped with Side Impact Protection System (SIPS) airbags.

The SIPS airbag system is designed to help increase occupant protection in the event of certain side impact collisions. The SIPS airbags are designed to deploy only during certain side-impact collisions, depending on the crash severity, angle, speed and point of impact.

**NOTE:** SIPS airbag deployment (one airbag) occurs only on the side of the vehicle affected by the impact. The airbags are not designed to deploy in all side impact situations.



Components in the SIPS airbag system

### Components in the SIPS airbag system

This SIPS airbag system consists of a gas generator (1), the side airbag modules built into the outboard sides of both front seat backrests (2), and electronic sensors/wiring (3).

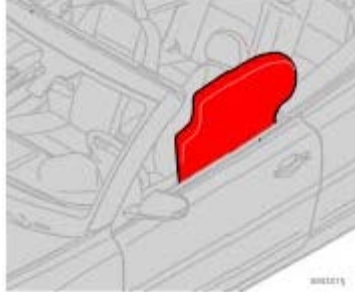
#### **WARNING!**

- The SIPS airbag system is a supplement to the structural Side Impact Protection System and the three-point seat belt system. It is not designed to deploy during collisions from the front or rear of the car or in rollover situations.
- The use of seat covers on the front seats may impede SIPS airbag deployment.
- No objects, accessory equipment or stickers may be placed on, attached to or installed near the SIPS airbag system or in the area affected by SIPS airbag deployment.
- Never try to open or repair any components of the SIPS airbag system. This should be done only by a trained and qualified Volvo service technician.
- In order for the SIPS airbag to provide its best protection, both front seat occupants should sit in an upright position with the seat belt properly fastened.

• Failure to follow these instructions can result in injury to the occupants of the vehicle in the event of an accident.

pg. 22 Safety

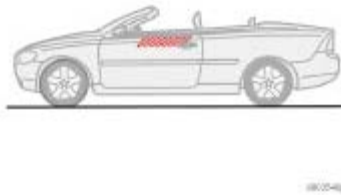
## Door Mounted Inflatable Curtain (DMIC)



### The Door Mounted Inflatable Curtain system

The DMIC is a supplement to the structural side impact protection. These inflatable curtains are concealed in the upper section of the driver and passenger doors.

- The Inflatable Curtain (DMIC) and the Side Impact Airbag System (SIPS-bag) will **both** deploy in certain side impacts.
- In certain situations in which there is a roll-over risk, **only** the inflatable curtain (DMIC) may deploy.



### NOTE:

- DMIC deployment can occur regardless of whether the power retractable hard top is up or down.
- If the inflatable curtain deploys, it remains inflated for approximately 5 seconds.

### WARNING!

- The DMIC system is a supplement to the Side Impact Protection System. It is not designed to deploy during collisions from the front or rear of the car. It only provides protection for the occupants of the front seats.
- Never install or mount any equipment on the insides of the doors, door pillars, or side panels. This could impede

the function of the DMIC system.

- Never try to open or repair any components of the DMIC system. This should be done only by a trained and qualified Volvo service technician.

**⚠ WARNING!**

In order for the DMIC to provide its best protection, both front seat occupants should sit in an upright position with the seat belt properly fastened; adults using the seat belt and children using the proper child restraint system. Only adults should sit in the front seats. Children must never be allowed in the front passenger seat. See [page 30](#) for guidelines. Failure to follow these instructions can result in injury to the vehicle occupants in an accident.

pg. 23 Safety

## Whiplash Protection System (WHIPS)



### Whiplash Protection System (WHIPS) - front seats only

The WHIPS system consists of specially designed hinges and brackets on the front seat backrests designed to help absorb some of the energy generated in a collision from the rear (when the vehicle is "rear-ended"). In the event of a collision of this type, the hinges and brackets of the front seat backrests are designed to change position slightly to allow the backrest/head restraint to help support the occupant's head before moving slightly rearward. This movement helps absorb some of the forces that could result in whiplash.

**⚠ WARNING!**

- The WHIPS system is designed to supplement the other safety systems in your car. For this system to function properly, the three-point seat belt must be worn. Please be aware that no system can prevent all possible injuries that may occur in an accident.
- The WHIPS system is designed to function in certain collisions from the rear, depending on the crash severity, angle and speed.

**⚠ WARNING!**

Occupants in the front seats must never sit out of position. The occupant's back must be as upright as comfort allows and be against the seat back with the seat belt properly fastened.

**⚠ WARNING!**

- If your car has been involved in a rearend collision, the front seat backrests must be inspected by a trained and qualified Volvo service technician, even if the seats appear to be undamaged. Certain components in the WHIPS system may need to be replaced.
- Do not attempt to service any component in the WHIPS system yourself.

pg. 24 Safety

## Whiplash Protection System (WHIPS)

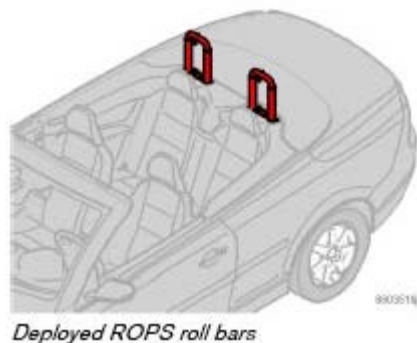


### WARNING!

Boxes, suitcases, etc. wedged behind the front seats could impede the function of the WHIPS system.

pg. 25 Safety

## Roll-over Protection system (ROPS)



### Roll-over Protection system (ROPS)

The ROPS system consists of two roll bars located behind the rear seat head restraints, and a sensor that monitors the roll or pitch angle of the car.

If the car rolls or pitches beyond a preset angle, the roll bars are automatically deployed (raised).

## NOTE:

- The ROPS system is designed to function regardless of whether the power retractable hard top is up or down. By design, the tops of the roll bars are equipped with a point in order to pierce the rear window if the top is up.
- If ROPS has deployed, the system should be inspected and repaired if necessary by a trained and qualified Volvo service technician.

### **WARNING!**

- The rear seat of the Volvo C70 is intended for two occupants, and only two rear seat belts are provided. The center section of the seat should never be used to seat a passenger.
- No objects should be placed over the roll bars or behind the rear seat head restraints.
- All repairs or maintenance to the ROPS system should only be performed by a trained Volvo service technician.

pg. 26 Safety

## Collision status



### Driving after a collision

If the car has been involved in a collision, the text **CRASH STATUS SEE MANUAL** may appear in the information display. This indicates that the car's functionality has been reduced.

**NOTE:** This text can only be shown if the display is undamaged and the car's electrical system is intact.

**COLLISION STATUS** is a feature that is triggered if one or more of the safety systems (e.g. front or side airbags, an inflatable curtain, or one or more of the seat belt tensioners) has deployed. The collision may have damaged an important function in the car, such as the fuel lines, sensors for one of the safety systems, the brake system, etc.

### **WARNING!**

- Never attempt to repair the car yourself or to reset the electrical system after the car has displayed **CRASH STATUS SEE MANUAL**. This could result in injury or improper system function.
- Restoring the car to normal operating status should only be done by a trained and qualified Volvo service technician.
- After **CRASH STATUS SEE MANUAL** has been displayed, if you detect the odor of fuel vapor, or see any signs of fuel leakage, do not attempt to start the car. Leave the car immediately.



### **Attempting to start the car**

If damage to the car is minor and there is no fuel leakage, you may attempt to start the car. To do so:

- Remove the ignition key.
- Reinsert the key in the ignition switch. The car will then attempt to reset COLLISION STATUS to normal status.
- Try to start the car.

### **Moving the car**

If the electrical system is able to reset system status to normal (CRASH STATUS SEE MANUAL will no longer be shown in the display), the car may be moved carefully from its present position, if for example, it is blocking traffic. It should, however, not be moved farther than is absolutely necessary.

#### **WARNING!**

Even if the car appears to be drivable after COLLISION STATUS has been set, it should not be driven or towed (pulled by another vehicle). There may be concealed damage that could make it difficult or impossible to control. The car should be transported on a flatbed tow truck to a trained and qualified Volvo service technician for inspection/repairs.

pg. 27 Safety

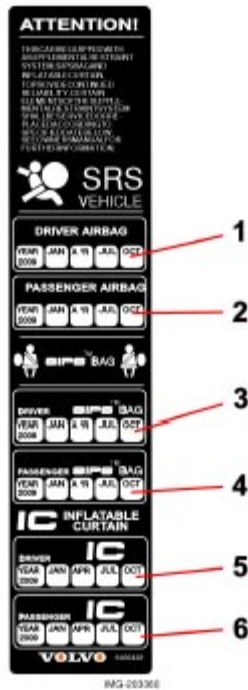
## **Inspecting SRS system components**

### **Inspection date**

1. Driver's side airbag
2. Passenger's side airbag
3. Side airbag on the driver's side
4. Side airbag on the passenger's side
5. Driver's side inflatable curtain
6. Passenger's side inflatable curtain

#### **WARNING!**

There is no owner maintenance that can be performed on the SRS system. The month and year shown on the decal to the right (located on door pillar) indicate when you should contact your Volvo retailer for specific servicing or replacement of airbag system components. This service must be performed by a trained and qualified Volvo service technician.



*This is a sample of the decal located in the right door opening.*

## Child safety

### Children should be seated safely

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.

Your car is also equipped with ISOFIX/ LATCH attachments, which make it more convenient to install child seats.

Some restraint systems for children are designed to be secured in the vehicle by lap belts or the lap portion of a lap-shoulder belt. Such child restraint systems can help protect children in cars in the event of an accident only if they are used properly. However, children could be endangered in a crash if the child restraints are not properly secured in the vehicle. Failure to follow the installation instructions for your child restraint can result in your child striking the vehicle's interior in a sudden stop.

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.

All states and provinces have legislation governing how and where children should be carried in a car. Find out the regulations existing in your state or province. Recent accident statistics have shown that children are safer in rear seating positions than front seating positions when properly restrained. 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) - 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 infant restraints, typically provide this information.
- In using any child restraint system, we urge you to carefully look 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. A misused child restraint system can result in increased injuries for both the infant or child and other occupants in the vehicle.

When a child has outgrown the child safety seat, you should use the rear seat with the standard seat belt fastened. The best way to help protect the child here is to place the child on a cushion so that the seat belt is properly located on the hips. Legislation in your state or province may mandate the use of a child seat or cushion in combination with the seat belt, depending on the child's age and/or size. Please check local regulations.

A specially designed and tested booster cushion (not available in Canada) can be obtained from your Volvo retailer for children weighing 33 - 80 lb. (15 - 36 kg) and 38-54 inches (97 - 137 cm) in height.

pg. 29 Safety

## Child safety

### **WARNING!**

Do not use child safety seats or child booster cushions/backrests in the front passenger's seat. We also recommend that children under 4 feet 7 inches (140 cm) in height who have outgrown these devices sit in the rear seat with the seat belt fastened.

Keep vehicle doors and trunk locked and keep keys out of a child's reach. Unsupervised children could lock themselves in an open trunk and risk injury. Children should be taught not to play in vehicles.

On hot days, the temperature in the trunk or vehicle interior can rise very quickly. Exposure to these high temperatures for even a short period of time can cause heat-related injury or death. Small children are particularly at risk.



### **ISOFIX/LATCH anchors**

Lower anchors for ISOFIX-equipped child seats are located in the rear seats, hidden below the backrest cushions. Symbols on the seat back upholstery mark the anchor positions as shown. To access the anchors, kneel on the seat cushion and locate the anchors by feel. Always follow your child seat manufacturer's installation instructions.

pg. 30 Safety

## Child safety

## **Automatic Locking Retractor/ Emergency Locking Retractor**

To make child seat installation easier, each seat belt (except for the driver's belt) is equipped with a locking mechanism to help keep the seat belt taut.

### **When attaching the seat belt to a child seat:**

- Attach the seat belt to the child seat according to the child seat manufacturer's instructions.
- Pull the seat belt out as far as possible.
- Insert the seat belt latch plate into the buckle (lock) in the usual way.
- Release the seat belt and pull it taut around the child seat.

A sound from the seat belt retractor will be audible at this time and is normal. The belt will now be locked in place. This function is automatically disabled when the seat belt is unlocked and the belt is fully retracted.

### **Volvo's recommendations**

Why does Volvo believe that no child should sit in the front seat of a car? It's quite simple really. A front airbag is a very powerful device designed, by law, to help protect an adult.

Because of the size of the airbag and its speed of inflation, a child should never be placed in the front seat, even if he or she is properly belted or strapped into a child safety seat. Volvo has been an innovator in safety for over seventy-five years, and we'll continue to do our part. But we need your help. Please remember to put your children in the back seat, and buckle them up.

#### **WARNING!**

Do not use child safety seats or child booster cushions/backrests in the front passenger's seat. We also recommend that children who have outgrown these devices sit in the rear seat with the seat belt properly fastened.

### **Volvo has some very specific recommendations:**

- Always wear your seat belt.
- Airbags are a SUPPLEMENTAL safety device which, when used with a three-point seat belt can help reduce serious injuries during certain types of accidents. Volvo recommends that you do not disconnect the airbag system in your vehicle.
- Volvo strongly recommends that everyone in the vehicle be properly restrained.
- Volvo recommends that ALL occupants (adults and children) shorter than 4 feet 7 inches (140 cm) be seated in the back seat of any vehicle with a front passenger side airbag.

Drive safely!



**2006  
VOLVO  
C70**

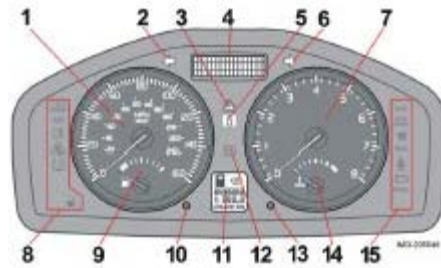
**Chapter 3 - Instruments and controls**

**pg. 31 Instruments and controls**

Instrument panel	<a href="#">32</a>
Indicator and warning symbols	<a href="#">33</a>
Symbols on the left side of the instrument panel	<a href="#">34</a>
Symbols on the right side of the instrument panel	<a href="#">35</a>
Symbols on the center of the instrument panel	<a href="#">36</a>
Information display	<a href="#">37</a>
Lighting panel	<a href="#">38</a>
Manually unlocking the fuel filler door	<a href="#">39</a>
Left-side steering wheel lever	<a href="#">40</a>
Trip computer	<a href="#">41</a>
Cruise control	<a href="#">42</a>
Right-side steering wheel lever	<a href="#">44</a>
Rain sensor	<a href="#">45</a>
Steering wheel adjustment, Hazard warning flashers	<a href="#">46</a>
Parking brake, 12 volt sockets	<a href="#">47</a>
Power windows	<a href="#">48</a>
Mirrors	<a href="#">49</a>
Personal settings	<a href="#">51</a>
Home Link® Universal Transceiver (option)	<a href="#">53</a>

**pg. 32 Instruments and controls**

**Instrument panel**



## 1. Speedometer

## 2. Turn signal, left

## 3. Warning symbol

See the next page for additional information.

## 4. Information display

The display presents information and warning messages, the ambient temperature, and the clock, etc. When the ambient temperature is between 23° and 36°F (-5° and +2°C), a snowflake symbol is shown in the display. This symbol serves as a warning for possible slippery road surfaces. Please note that this symbol does not indicate a fault with your car. At low speeds, or when the car is not moving, the temperature readings may be slightly higher than the actual ambient temperature.

## 5. Information symbol

See the next page for additional information.

## 6. Turn signal, right

## 7. Tachometer

The tachometer shows engine speed in thousands of revolutions per minute (rpm). Do not drive continuously with the needle in the red area of the dial, which indicates maximum allowable engine rpm range. Instead, shift to a higher gear or slow the vehicle down. The engine management system will automatically prevent excessively high engines speeds. This will be noticeable as a pronounced unevenness in engine speed.

## 8. Indicator and warning symbols

## 9. Fuel gauge

The fuel tank holds approximately 16.3 US gallons (62 liters). When a warning light in the gauge comes on, there are approximately 2.1 US gallons (8 liters) of fuel remaining in the tank.

## 10. Trip odometer reset button

The trip odometers are used to measure short distances. Press the button briefly to switch between the odometer for the car's total mileage and the two trip odometers, T1 and T2. A long press (more than 2 seconds) resets the currently selected trip odometer.

## 11. Function display

This window displays information on functions such as the odometer, trip odometers, optional rain sensor, and cruise control.

## 12. High beam indicator

### 13. Clock setting button

Turn the button to set the time.

### 14. Temperature gauge


The gauge indicates the temperature of the engine cooling system. If the temperature is abnormally high and the needle enters the red zone, a message is shown in the display. Bear in mind that auxiliary lamps in front of the air intake reduce the cooling capacity at high outside temperatures and high engine loads.

### 15. Indicator and warning symbols

pg. 33 Instruments and controls

## Indicator and warning symbols

### Function check

The indicator and warning symbols light up when you turn the ignition key to the driving position (position II) before starting. This shows that the symbols are functioning. When the engine starts, all symbols go out. If the engine is not started within 5 seconds, all of the symbols except CHECK ENGINE and  will go out. Certain symbols may not have their functions illustrated, depending on the car's equipment.

The PARK BRAKE symbol will not go out until the parking brake has been released.

### Symbols in the center of the instrument panel



#### Warning symbol

The red warning symbol lights up to indicate a fault that could affect the car's driveability. A text explaining the nature of the fault will also be shown in the information display. The symbol and accompanying text will remain on until the fault has been corrected. This symbol may also light up in combination with other indicator or warning symbols.

If the red warning symbol lights up:

1. Stop the car as soon as possible in a suitable location.
2. Read the message in the information display.
3. Follow the instructions provided, or contact a trained and qualified Volvo service technician.



#### Information symbol

The yellow information symbol lights up to alert the driver to a message in the information display. The message can be erased by pressing the READ button (see [page 37](#)), or will disappear automatically after two minutes.

When the message "TIME FOR REGULAR SERVICE" is displayed, the text can be erased and the information symbol light can be turned off by pressing the READ button. The text will disappear and the symbol light will go out automatically after two minutes.

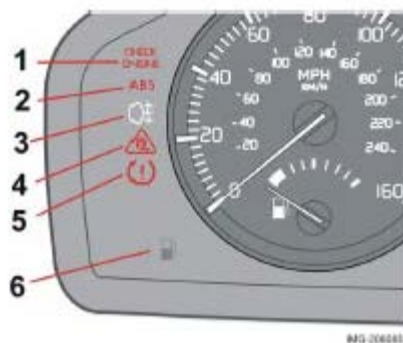
When the message "TIME FOR REGULAR SERVICE" is displayed, the text can be erased and the information symbol light can be turned off by pressing the READ button. The text will disappear and the symbol light will go out automatically after two minutes.

This symbol may also light up in combination with other indicator or warning symbols.

**NOTE:** The car can still be driven after the information symbol has come on. The car can be driven for 1-2 weeks after service-related information has been displayed.

pg. 34 Instruments and controls


## Symbols on the left side of the instrument panel



## Symbols - left side of instrument panel


### 1. Malfunction indicator light

**CHECK ENGINE** As you drive, a computer called On-Board Diagnostics II (OBDII) monitors your car's engine, transmission, electrical and emission systems. The CHECK ENGINE light will light up if the computer senses a condition that potentially may need correcting. When this happens, please have your car checked by a trained and qualified Volvo service technician as soon as possible.


A CHECK ENGINE light may have many causes. Sometimes, you may not notice a change in your car's behavior. Even so, an Symbols on the left side of the instrument panel uncorrected condition could hurt fuel economy, emission controls, and driveability. Extended driving without correcting the cause could even damage other components in your car. Canadian models are equipped with this symbol  .

### 2. Anti-lock Brake system (ABS)




**ABS** If the warning light comes on, there is a malfunction of the ABS system (the standard braking system will still function). The vehicle should be driven to a trained and qualified Volvo service technician for inspection. See [page 111](#) for additional information. Canadian models are equipped with this symbol .

### 3. Rear fog light


 This symbol indicates that the rear fog light (located in the driver's side tail light cluster) is on.

### 4. Dynamic Stability and Traction Control system (DSTC)

 This indicator symbol flashes when the DSTC (Dynamic Stability and Traction control system) is actively working to stabilize the car. See [page 113](#) for more detailed information.

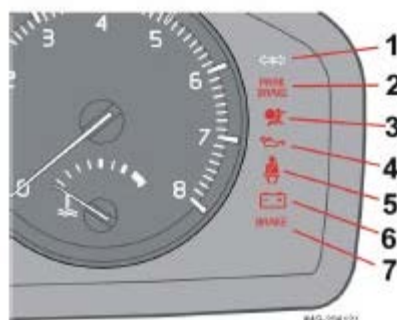
### 5. Not in use

### 6. Fuel level warning light

 When this light comes on, there are approximately 2.1 US gallons (8 liters) of fuel remaining in the tank.


pg. 35 Instruments and controls

## Symbols on the right side of the instrument panel



## Symbols - right side of instrument panel


### 1. Turn signal indicator for trailer (certain models)

 If you are towing a trailer, this light will flash simultaneously with the turn signals on the trailer. If the light does not flash when signaling, one of the turn signals on the trailer or on the car are not functioning properly.

### 2. Parking brake applied

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

PARK  
BRAKE

the front seats. Always pull up this lever as far as possible when applying the parking brake. Canadian models are equipped with this symbol  .

### 3. SRS warning light



If this light comes on while the car is being driven, or remains on for longer than approximately 10 seconds

after the car has been started, the SRS system's diagnostic functions have detected a fault in a seat belt lock or tensioner, a front airbag, side impact airbag, and/or an inflatable curtain. Have the system(s) inspected by a trained and qualified Volvo service technician as soon as possible.

### 4. Oil pressure warning light



If the light comes on while driving, stop the car, stop the engine immediately, and check the engine oil level. If

the oil level is normal and the light stays on after restart, have the car towed to the nearest trained and qualified Volvo service technician. After hard driving, the light may come on occasionally when the engine is idling. This is normal, provided it goes off when the engine speed is increased.

### 5. Seat belt reminder



See [page 13](#) for detailed information.

### 6. Generator warning light



If the light comes on while the engine is running, have the charging system checked by a trained and qualified

Volvo service technician.

### 7. Brake failure warning light

**BRAKE** If this light comes on while driving or braking, stop the car as quickly as possible in a safe place, open the

hood, and check the brake fluid level in the reservoir. See [page 157](#) for the location of the reservoir.

Canadian models are equipped with this symbol  .



#### **WARNING!**

If the fluid level is below the MIN mark in the reservoir or if a "Brake failure - Service urgent" message is displayed in the information display: **DO NOT DRIVE**. Have the car towed to a trained and qualified Volvo service technician and have the brake system inspected.

pg. 36 Instruments and controls

## Symbols on the center of the instrument panel

**If the BRAKE and ABS warning lights come on at the same time, this could indicate a fault in the brake system.**

In this case:

1. Stop the car in a suitable place and switch off the engine.
2. Restart the engine.
3. If both warning lights go off, no further action is required and the car can be driven.
4. If both lights remain on after the engine has been restarted, switch off the engine again and check the brake fluid level. See [page 157](#) for the location of the reservoir.

### Door open warning

The driver will be alerted if one of the doors, the hood, or the trunk lid are open or ajar.

### At low speeds



If the car is moving at a speed of less than approximately 4 m.p.h. (7 km/h), the Information symbol in the instrument panel will light up and a message will be shown in the information display indicating which door(s), etc is not completely closed.

### At higher speeds



If the car is moving at a speed above approximately 4 m.p.h. (7 km/h), the Warning symbol in the instrument panel will light up and a message will be shown in the information display indicating which door(s), etc is not completely closed.

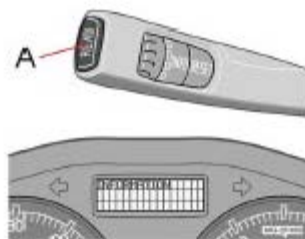
### Hood and trunk



If the hood and/or trunk lid is not completely closed, the Information symbol in the instrument panel will light up and a message will be displayed, regardless of the vehicle's speed.

pg. 37 Instruments and controls

## Information display



### Messages

When an indicator or warning light in the instrument panel comes on, a message is also shown in the information display. To read a message:

Press the READ button (A).

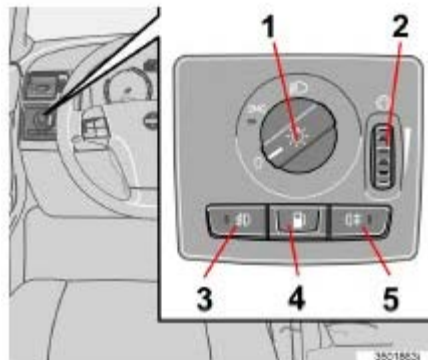
Pressing READ repeatedly enables you to scroll to any other messages that may be stored.

If a message is displayed when e.g. you are using the trip computer, this message must be read before you can access the trip computer.

Message	Meaning
STOP SAFELY	Stop and switch off the engine to help prevent the risk of serious damage.
STOP ENGINE	Stop and switch off the engine to help prevent the risk of serious damage.
SERVICE URGENT	Take your car to a trained and qualified Volvo service technician for inspection immediately.
SEE MANUAL	Refer to your owner's manual. For additional information, please contact a trained and qualified Volvo service technician.
SERVICE REQUIRED	Take your car to a trained and qualified Volvo service technician for inspection as soon as possible (but preferably before the next scheduled maintenance service).
TIME FOR REGULAR SERVICE	This message is affected by the number of miles/km driven, by the number of months, or by the number of engine hours since the service reminder was reset at the most recent regularly scheduled service.

pg. 38 Instruments and controls


## Lighting panel



1. Headlight/parking light switch
2. Instrument panel lighting
3. Front fog lights
4. Fuel filler door unlock button
5. Rear fog light


## Parking lights

The front and rear parking lights can be turned on even when the ignition is switched off.

- Turn switch 1 to position  . The license plate lights also illuminate when the parking lights are switched on.

## Headlights

- Turn the ignition key to position II.
- The low beam headlights (daytime running lights) illuminate automatically, except when the light switch (1) is in

position  .

**NOTE:** See [page 40](#) for information on switching between high and low beams.

### **Fog lights**

#### **Front fog lights (option)**

The front fog lights can be used in combination with either the headlights or the parking lights.

- Turn the ignition key to position II.
- Press button 3 to turn on the front fog lights.

An indicator light in the button illuminates when the front fog lights are on.

#### **Rear fog light**



The single rear fog light is located in the driver's side tail light cluster. The rear fog light will only function in combination with the high/low beam headlights or the optional front fog lights.

- Turn the ignition key to position II.
- Press button 5 to turn on the rear fog light.

An indicator light in the button illuminates when the rear fog light is on.

**NOTE:** The rear fog light is considerably brighter than the normal tail lights and should be used only when conditions such as fog, rain, snow, smoke or dust reduce visibility for other vehicles to less than 500 ft. (150 meters).

### **Instrument panel lighting**

The instrument panel lighting illuminates when the ignition key is in position II and the light switch (1) is in either position  or  .

- Move the thumb wheel (2) up to increase brightness or down to decrease brightness.

### **Unlocking the fuel filler door**

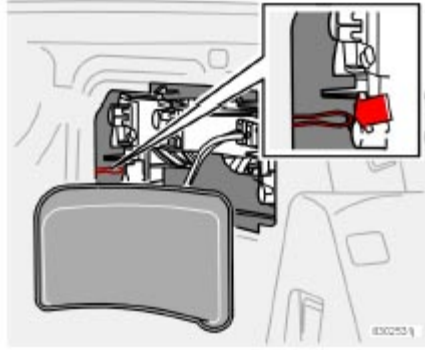
With the ignition switched off, press button 4 to unlock the fuel filler door. Please note that the fuel filler door will remain unlocked until the car begins to move forward.

An audible click will be heard when the fuel filler door re-locks.

Please refer to the following page for instructions on manually opening the fuel filler door.

pg. 39 Instruments and controls

### **Manually unlocking the fuel filler door**



### **Manually unlocking the fuel filler door**

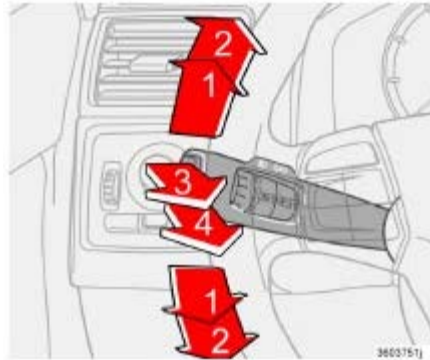
If it should be necessary to manually unlock the fuel filler door from the trunk, the power retractable hard top should be up.

- Remove the panel covering the tail light housing on the right side of the trunk.
- Pull the cord that is attached to a hook to pop open the fuel filler door.

When the fuel filler door has opened, return the cord to the hook and replace the tail light cover panel.

pg. 40 Instruments and controls

### **Left-side steering wheel lever**



#### **Lever positions**

1. Turn signals, lane change position
2. Turn signals, position for normal turns
3. High beam flash
4. Toggle between high and low beams, Home Safe lighting

#### **Turn signals**

##### **When turning**

Move the lever as far up or down as possible (to position 2) to start the turn signals. The turn signals will be cancelled automatically by the movement of the steering wheel, or the lever can be returned to its initial position by hand.

##### **When changing lanes**


The driver can flash the turn signals by moving the turn signal lever up or down to position 1 and releasing it. The turn

signals will flash three times and the lever will automatically return to its initial position.

**NOTE:** If the turn signal indicator flashes faster than normal, check for a burned-out turn signal bulb.

## High/low beam headlights

### Continuous high beams

- Turn the ignition key to position II.
- With the light switch (1) in position  , (see [page 38](#)) pull the turn signal lever toward the steering wheel (position 4) to toggle between high and low beams.

### High beam flash

- Turn the ignition key to position II.
- Pull the turn signal lever to position 3. The high beams will remain on until the lever is released.

## Home safe lighting

When you leave your car at night, you can make use of the home safe lighting function to illuminate the area in front of the car.

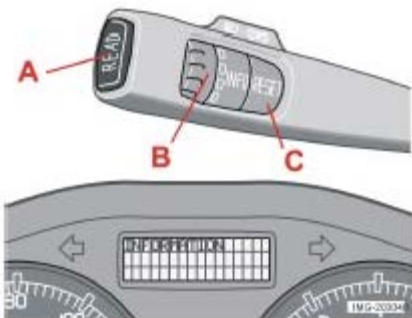
- Remove the key from the ignition switch.
- Pull the direction indicator lever as far as possible towards the steering wheel (to position 4) and release it.
- Exit the car and lock the doors.

The headlights and parking lights will illuminate and remain on for 30<sup>1</sup>, 60 or 90 seconds. The time interval can be changed according to your preferences by using the Personal Settings function, see [page 51](#) for more information.

1. Factory setting

pg. 41 Instruments and controls

## Trip computer



## Trip computer

The trip computer stores information gathered from several systems in your car and has four menus (five on Canadian models) that can be shown in the information display.

- Driving distance on current fuel reserve
- Average fuel consumption

- Current fuel consumption
- Average speed

**NOTE:** Current speed in m.p.h. (Canadian models only)

**NOTE:** Warning messages from the car's monitoring systems will override the trip computer function. If a warning message is shown in the information display while you are using the trip computer, you must acknowledge the message by pressing the READ button (A). Press button A again to return to the trip computer function.

### **Controls**

The four trip computer functions (five on Canadian models) can be accessed by twisting INFO (B) one step at a time in either direction. Twisting a fifth time (sixth time on Canadian models) returns you to the original function. The trip computer can be reset (average fuel consumption and average speed will be erased from system memory) by pressing RESET (C) for at least five seconds.

### **Driving distance on current fuel reserve**

This function shows the approximate distance that can be driven on the fuel remaining in the tank. This calculation is based on average fuel consumption during the last 20 miles (30 km) of driving and the amount of fuel remaining in the tank when the reading was taken. When the driving distance on current fuel reserve is less than 12 miles (20 km), "----" will be displayed in the information display.

### **Average fuel consumption**

This value indicates fuel consumption since the last time the trip computer was reset (by pressing RESET, button C). When the engine is switched off, information on fuel consumption is stored and remains in system memory until the RESET (button C) is pressed again.

### **Current fuel consumption**

This value indicates the current fuel consumption, based on readings taken once per second. When the car is not moving, "----" will be displayed.

### **Average speed**

This value indicates average speed since the last time the trip computer was reset (by pressing RESET, button C). When the engine is switched off, information on average speed is stored and remains in system memory until the RESET (button C) is pressed again.

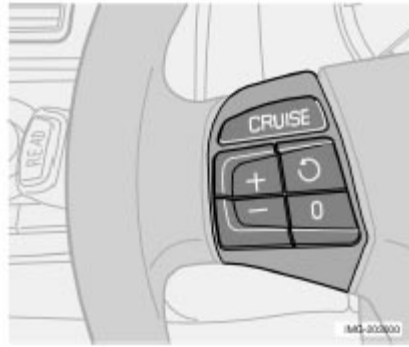
### **Current speed in m.p.h. (Canadian models only)**

This function provides the driver with an instantaneous conversion of the car's current speed from km/h to m.p.h.

**NOTE:** Trip computer readings may vary slightly depending on the circumference of the tires on the car, tire inflation, or driving style.

## **Cruise control**





## Cruise control

The cruise control buttons are located on the left side of the steering wheel hub.

### Engaging the cruise control function

1. Press the CRUISE button. CRUISE will appear in the function display in the center of the instrument panel.

**NOTE:** This does not set the vehicle's speed.

2. Press + or - to set the current speed. CRUISE ON will be displayed.



### Increasing or decreasing speed

Use + or - in the following ways to increase or decrease the vehicle's speed:

- Press and hold down + or - until the vehicle reaches the desired speed. This will become the set speed when the button is released.
- Press + or - for approximately a half second and release the button to increase or decrease vehicle speed by approximately 1 mph (1.6 km/h).

### NOTE:

- Cruise control will not function at speeds below 20 mph. (30 km/h).
- Momentary acceleration, for less than 1 minute (e.g. when passing another car), does not affect cruise control operation. The car will automatically return to the previously set speed when the accelerator pedal is released.

### Temporarily disengaging the cruise control

Press 0 to temporarily disengage cruise control. CRUISE will appear in the function display. The currently set speed is stored in the system's memory.

### **Cruise control is also automatically disengaged:**

- If the speed drops below approximately 20 mph (30 km/h) when driving uphill.
- When the brake or clutch pedal is depressed.
- If the gear selector is moved to position N.
- During wheel spin or wheel lock-up.
- If the vehicle's speed is increased by using the accelerator pedal for more than 1 minute.

### **Returning to the set speed**



Press the button to resume the previously set speed.

pg. 43 Instruments and controls

## **Cruise control**

### **Disengaging cruise control**

Cruise control can also be disengaged by:

- Pressing the CRUISE button (CRUISE ON will no longer be shown in the function display).
- Putting the gear selector in (N)eutral.

### **⚠ WARNING!**

Cruise control should not be used in heavy traffic or when driving on wet or slippery roads. Cruise control may not maintain set speed on steep downgrades.

pg. 44 Instruments and controls


## **Right-side steering wheel lever**




### **Windshield wipers**

- A. Windshield/headlight washers
- B. Rain sensor (option) - on/off
- C. Thumb wheel
- D. Not in use


## Windshield wipers off

 The windshield wipers are off when the lever is in position 0

## Manual wiper function


 From position 0, move the lever upward. The windshield wipers will sweep one stroke at a time for as long as the lever is held up.

## Intermittent wiper function

 With the lever in this position, you can set the wiper interval by moving the thumb wheel (C) upward to increase wiper speed or downward to decrease the speed.

## Continuous wiper function

 The wipers operate at "normal" speed.

 High speed wiper function.

## A - Windshield washers


Pull the lever toward the steering wheel and release it. The wipers will make 2-3 sweeps across the windshield after the lever has been released.

**CAUTION!** Use ample washer fluid when washing the windshield to avoid scratching the glass.

## Headlight washers (certain models)

When the lever has been pulled, high pressure jets mounted in the bumper will spray the headlights. The following applies to conserve washer fluid (see [page 38](#) for information on the light switch positions):

## Low/high beam headlights on

 The headlights will be washed the first time the windshield is washed. Thereafter, the headlights will only be washed once for every five times the windshield is washed within a 10-minute period.

## Parking lights on



- Optional Bi-Xenon headlights will be washed once for every five times the windshield is washed.
- Normal halogen headlights will not be washed.

pg. 45 Instruments and controls

## Rain sensor



### **B - Rain sensor (option)**

The rain sensor automatically regulates windshield wiper speed according to the amount of water on the windshield. The sensitivity of the rain sensor is adjusted by moving the thumb wheel (C in the illustration on the previous page) up (the wipers will sweep the windshield more frequently) or down (the wipers will sweep the windshield less frequently).

#### **On/Off**

##### **To activate the rain sensor:**

1. Switch on the ignition.
2. Put the windshield wiper lever in position 0.
3. Press button B (see the illustration on the previous page). The rain sensor symbol will appear in the lower display.

##### **The rain sensor can be deactivated by:**

- Pressing button (B) with the ignition on. or
- Moving the windshield wiper lever down. If the lever is moved up, the rain sensor function will remain activated.

#### **CAUTION!**

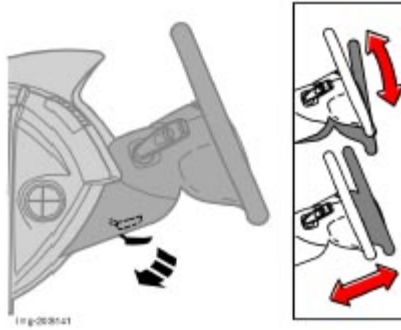
The rain sensor should be deactivated when washing the car in an automatic car wash, etc. If the rain sensor function is left on, the wipers will start inadvertently in the car wash and could be damaged.

##### **The rain sensor is automatically deactivated:**

- When the key is removed from the ignition.
- Five minutes after the ignition is switched off if the key is left in the ignition.

### **C - Thumb wheel**

The thumb wheel is used to set the wiper interval when intermittent wiping is selected, or the sensitivity to the amount of rain on the windshield when the rain sensor is selected. Move the wheel upward or downward to increase/decrease wiper speed when the intermittent function is selected, or to increase/decrease the optional rain sensor's sensitivity when this function is activated.



### Steering wheel adjustment

Both the height and the reach of the steering wheel can be adjusted to a comfortable position for the driver.

1. Pull down the lever on the steering column to release the steering wheel.
  2. Adjust the steering wheel to a suitable position
  3. Press the lever back into place to lock the steering wheel in the new position. If necessary, press the steering wheel slightly while pressing the lever into the locked position.
- Check that the steering wheel is locked in the new position.



*Hazard warning flashers*



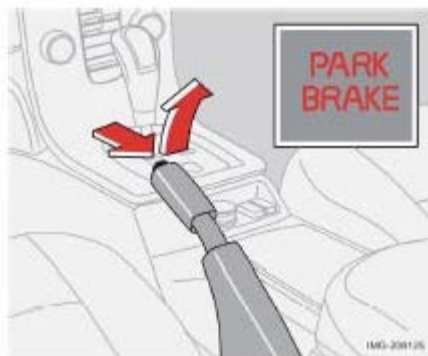
### **WARNING!**

Never adjust the steering wheel while driving.

### Hazard warning flashers

The four-way flasher should be used to indicate that the vehicle has become a traffic hazard. To activate the flashers, press the triangular button in the center dash. Press the button again to turn off the flashers.

**NOTE:** Regulations regarding the use of the hazard warning flasher may vary, depending on where you live.



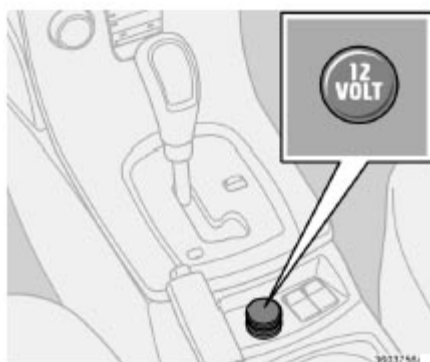
### **Parking brake (hand brake)**

The parking brake lever is located between the front seats. The parking brake is applied to the rear wheels. The indicator light in the instrument panel lights up when the brake is applied.

The indicator light also comes on if the parking brake is only applied "one click" - check that the lever is fully applied.

To apply the parking brake: pull up firmly on the lever.

To release the parking brake: pull the lever up slightly, press the button, lower the lever and release the button.



*Front 12 volt socket in center console*

### **12 volt sockets**

The 12 volt sockets can be used to plug in certain accessories such as cellular telephones, etc. The key must be in position I (or higher) for the auxiliary socket to function.

#### **NOTE:**

- The cover should be kept on when the auxiliary socket is not in use.
- Maximum current from the sockets is 10A.



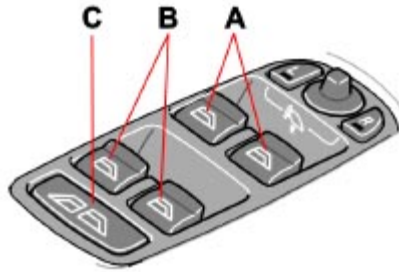
*Rear 12 volt socket*

## Ashtrays/cigarette lighter

The auxiliary sockets can also be used for cigarette lighters. Ashtrays and lighters are available as accessories. Please contact your Volvo retailer.

pg. 48 Instruments and controls

## Power windows



A. Front windows, B. Rear windows, C. All windows

### Operation

The power windows are opened and closed using the buttons in the armrests, or can be opened by pressing the unlock button on the central locking system's remote control (see [page 87](#)).

### Opening/closing the windows from inside the car

#### NOTE:

- The ignition must be ON (ignition key in position I, II or the engine running) for the power windows to function.
- The power windows will also function after the ignition has been switched off as long as neither of the doors has been opened.

### Opening a window

- Lightly press down the front edge of any of the buttons (A or B) to the first detent ("stop") to open a window to the position of your choice.

#### **WARNING!**

Always remove the ignition key when the vehicle is unattended.

Never leave children unattended in the vehicle.

Make sure that the windows are completely unobstructed before raising or lowering them.

- Press down the front part of one or both buttons A as far as possible and release to automatically open the front window(s) completely.
- To stop the window at any time, pull the button up.

### Closing a window

- Lightly pull up the front edge of any of the buttons (A or B) to the first detent ("stop") to close a window to the position of your choice.
- Pull up the front part of one or both buttons A as far as possible and release to automatically close the front window(s) completely.

### All windows

Button C can be used to open or close all of the windows at the same time.

- Briefly press the right side of the button to automatically open all of the windows.
- Press and hold down the left side of the button to close all of the windows.

pg. 49 Instruments and controls

## Mirrors



### Rearview mirror

#### Auto-dim function

A sensor at the lower edge of the mirror reacts to headlights from following traffic and automatically reduces glare.



#### Rearview mirror with compass (option)

The upper right-hand corner of the rearview mirror has an integrated display that shows the compass direction toward which the car is pointing. Eight different directions can be displayed: N, NE, E, SE, S, SW, W and NW. The display shows your car's orientation with respect to true north.

#### Calibrating the compass

The compass may need to be calibrated in certain cases. If calibration is required, the character C appears in the mirror's display.



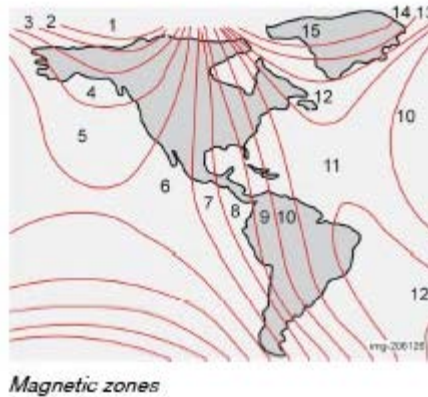


To calibrate the mirror:

1. Stop the car in a large, open area, away from traffic.
2. Start the car.
3. Using a pen or similar object, hold the button (1) depressed for at least six seconds. The character C will be displayed again.
4. Drive slowly in a circle at a maximum speed of 6 m.p.h. (10 km/h) until a compass direction is displayed. Calibration is complete.

pg. 50 Instruments and controls

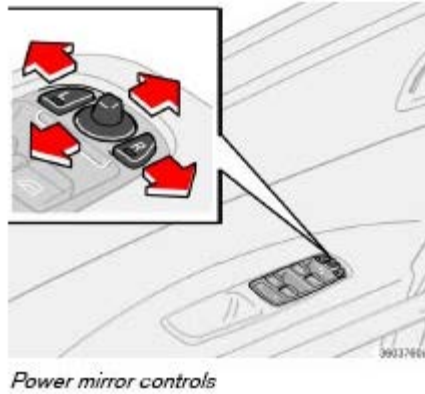
## Mirrors



### Adjusting the zone

The earth is divided into 15 magnetic zones. The compass is adjusted for the zone to which the car was delivered. Select a different zone as follows:

1. Turn on the ignition.
2. Using a pen or similar object, hold the button (1 in the illustration on the previous page) depressed for at least 3 seconds. The number for the current area is displayed.
3. Press the button repeatedly until the number for the required geographical area (1-15) is displayed.



A few seconds after browsing is complete, the display reverts to the compass direction.

### **Power door mirrors**

The mirror control switches are located on the driver's door armrest.

To adjust the mirrors:

**Driver's door mirror:** Press the L button (a light in the switch will go on) to activate the adjustment control. Use this control to adjust the driver's door mirror.

**Passenger's door mirror:** Press the R switch (a light in the switch will go on) to activate the adjustment control. Use this control to adjust the passenger's door mirror.

After you have adjusted the mirror(s), press the L or R switch again (the LED will go out) to deactivate the adjustment control.

### **⚠️ WARNING!**

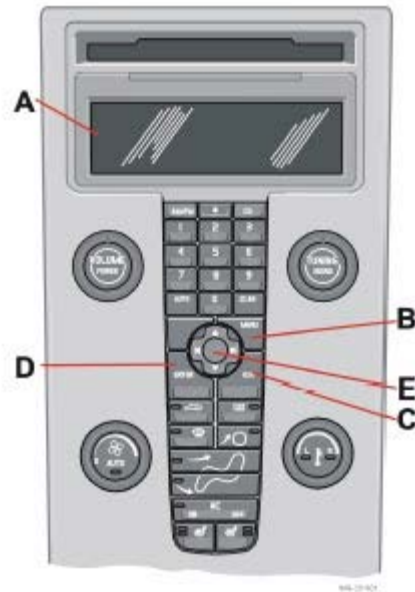
The mirrors should always be adjusted prior to driving. Objects seen in the passenger's side wide-angle door mirror are closer than they appear to be.

### **Storing the mirrors' position**

The position of the power door mirrors is stored when the car is locked with the remote control. When the car is unlocked with the same remote control, the mirrors will move to the stored position.

pg. 51 Instruments and controls

### **Personal settings**



Control panel

### Control panel

A - Display

B - Menu button

C - Exit button

D - Enter button

E - Menu navigation controls

Personal settings can be made for some of the car's functions, such as the central locking system, climate control, and the audio system. Please refer to [page 185](#) for more information on the audio functions that can be adjusted. The settings are presented in the display (A).

To access the menu and adjust settings:

1. Press MENU (B).
2. Scroll to "Car Settings" using the menu navigation control (E).
3. Press ENTER (D).
4. Select an alternative using the menu navigation control (E).
5. Confirm your selection by pressing ENTER.

To exit the menu:

Press EXIT (C).

### Available settings

#### Lock confirmation light

When the car is locked/unlocked with the remote control, the direction indicators can be selected to flash to confirm the action. The alternatives On/Off are available for both locking and unlocking.

#### Autolock

When the car starts to move, the doors and trunk can be locked automatically. The alternatives On/Off are available.

#### Unlock

There are two alternatives for unlocking:

1. **Global** (All doors) Unlocks all doors and the trunk with one press on the remote control.
2. **Two Step** (Two-stage unlocking) This alternative unlocks the driver's door with one press on the remote control. A second press unlocks the passenger's door and the trunk.

#### Approach lighting

This alternative determines the length of time for which the car's lights will remain on when the Approach light button

on the central locking system's remote control is pressed. Intervals of 30/60/90 seconds may be selected. See [page 87](#) for more information.

### **Home safe lighting**

This alternative determines the length of time for which the car's lights will remain on when the high beam lever on the steering column is pulled toward the wheel with the ignition

pg. 52 Instruments and controls

### **Personal settings**

switched off. Intervals of 30/60/90 seconds may be selected. See [page 40](#) for information on using this function.

### **Information**

- VIN number: The VIN (Vehicle Identification Number) is the car's unique identity number.
- Number of Keys: The number of keys registered for the car is displayed here.

### **Climate functions**

- Blower speed in AUTO mode: The blower speed can be set to AUTO mode in models equipped with ECC. Choose between "Low", "Normal" and "High".
- Timer for recirculation: When the timer is active, the air recirculates in the car for 3-12 minutes depending on the ambient temperature. Select On/Off depending on whether the recirculation timer is to be active or not.

### **Reset to factory settings**

Use this alternative to return to the default climate system settings.

pg. 53 Instruments and controls

### **Home Link® Universal Transceiver (option)**



### **Introduction**

HomeLink\* is an advanced system that can be programmed to learn the codes of three different remote controlled-devices (e.g., garage door openers, remote lighting, entry door lock). HomeLink's sun visor-mounted transceiver, powered by your car's electrical system, may then be used in place of your hand-held remote controls.

**NOTE:** For your security, the HomeLink Universal Transceiver is designed to not function if you lock your car from the outside.

## Programming the transceiver

1. The ignition switch must be turned to the "accessory" position (II) before programming the HomeLink Universal Transceiver.
2. Begin by erasing all 3 factory default channels. Hold down the two outside buttons (the left and right buttons in the illustration) on the HomeLink Universal Transceiver for about 20 seconds, until HomeLink's indicator light begins to flash. Then release the buttons.
3. Hold your hand-held transmitter (garage door opener, for example) 2 to 5 in. (5 to 12 cm) away from the HomeLink surface, keeping the indicator light in view. For placement questions, contact HomeLink toll-free 1-800-355-3515 (Internet: <http://www.HomeLink.com>).
4. Using two hands, push and hold both your hand-held transmitter's button and the transceiver button you wish to program. The indicator light will flash first slowly, then rapidly. Rapid flashing indicates that the HomeLink button has been successfully programmed. Release both buttons.
5. If you are programming a rolling code-equipped device (e.g., garage door opener or entry door lock), refer to "Programming rolling codes" on the next page to complete the programming process.
6. Repeat steps 3 and 4 to program the other two transceiver buttons. If, after several attempts, you are unable to successfully train the HomeLink Universal Transceiver to learn your hand-held transmitter's signal, contact HomeLink toll-free 1-800-355-3515 (Internet: <http://www.HomeLink.com>).

\* HomeLink is a registered trademark of Johnson Controls, Intl.  
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### **WARNING!**

If you use HomeLink to open a garage door or gate, be sure no one is near the gate or door while it is in motion. Do not use the HomeLink Universal Transceiver with any garage door opener that lacks safety "stop" and "reverse" features as required by federal safety standards. (This includes any garage door opener model manufactured before April 1, 1982) A garage door opener that cannot "detect" an object, signalling the door to "stop" and "reverse" does not meet current federal safety standards. Using a garage door opener without these features increases the risk of serious injury or death. For more information on this matter, call toll-free 1-800-355-3515.

(Internet: <http://www.HomeLink.com>)

pg. 54 Instruments and controls

## Home Link® Universal Transceiver (option)

### Canadian residents:

During programming, your hand-held transmitter may automatically stop transmitting. To successfully train HomeLink, continue to hold the HomeLink button. At the same time, repeatedly press and hold your hand-held transmitter's button at two-second intervals until HomeLink has learned your transmitter's code. The HomeLink indicator light will flash first slowly, and then rapidly to indicate that the button has been successfully programmed.

### Determining if your garage door uses a rolling code

Determine, in one of the following ways, if your garage door uses a rolling code system and is manufactured after 1996:

- Refer to the garage door opener owner's manual for verification.

- If your hand-held transmitter appears to program the HomeLink Universal Transceiver but the programmed button does not activate the garage door, your garage door opener may have a rolling code.
- Press the programmed HomeLink button. If the garage door opener has the rolling code feature, the HomeLink indicator light flashes rapidly and then glows steadily after approximately 2 seconds.

**To train a rolling code garage door opener**, follow these instructions after programming the desired transceiver button according to "Programming the transceiver." The help of a second person may make training easier.

1. Locate the training button on the garage door opener motor head unit. The location and color of the training button may vary. If you encounter difficulty, refer to the garage door opener owner's manual or call toll-free 1-800-355-3515 (Internet: <http://www.HomeLink.com>).
2. Press the "training" button on the garage door opener motor head unit until the "training" light comes on.
3. Press and release the programmed HomeLink button. Press and release the programmed HomeLink button a second time to complete the training process.
4. Some garage door openers may require you to do this procedure a third time to complete the training.
5. The programmed button on your HomeLink Universal Transceiver should now operate your garage door opener. The original handheld transmitter can also be used, as desired, to operate the garage door.

The remaining two HomeLink buttons can be programmed in the same way. In the event of any problems in programming the HomeLink Universal Transceiver, call toll-free 1-800- 355-3515 (Internet: <http://www.HomeLink.com>).

## **Operating the HomeLink Universal Transceiver**

Once programmed, the HomeLink Universal Transceiver can be used in place of your handheld transmitters. To operate, the key must be turned to the "accessory" position (II) or the engine must be running. Press the programmed HomeLink button to activate the garage door, driveway gate, security lightning, home security system etc. Your original hand-held transmitters may, of course, be used at any time.

### **Erasing programmed buttons**

Individual buttons cannot be erased, To erase all three programmed buttons:

1. Turn the ignition key to the "accessory" position (II).
2. Hold down the two outside buttons on the HomeLink Universal Transceiver for about 20 seconds, until HomeLink's indicator light begins to flash.
3. Release both buttons.

pg. 55 Instruments and controls

## **Home Link® Universal Transceiver (option)**

The HomeLink buttons can be reprogrammed using the procedures described on the previous page.

### **Reprogramming a single HomeLink button**

1. Press and hold the desired HomeLink button. Do not release the button until step 3 has been completed.
2. When the indicator light begins to flash slowly (after approximately 20 seconds), position your hand-held transmitter 2 to 5 in. (5 to 12 cm) away from the HomeLink surface.
3. Press and hold the hand-held transmitter button. The HomeLink indicator light will flash first slowly, then rapidly. When the indicator light flashes rapidly, release both buttons.

The previously programmed device has now been erased and the new device can be activated by pressing the HomeLink button that has just been programmed. This procedure will not affect any other programmed HomeLink buttons

**NOTE:**

- Retain the original transmitter(s) for future programming procedures (e.g., if you purchase a new vehicle).
- For your own security, erase all programmed buttons on the HomeLink Universal Transceiver when you sell your vehicle.
- Metallic sun protection films should not be used on any windows in a vehicle equipped with HomeLink Universal Transceiver. This could interfere with the transceivers function.

pg. 56 Instruments and controls

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[Contents](#) | [Top of Page](#)

# 2006 VOLVO C70

## Chapter 4 - Climate

pg. 57 Climate

General information	<a href="#">58</a>
Air vents	<a href="#">59</a>
Electronic climate control (ECC)	<a href="#">60</a>
Air distribution	<a href="#">63</a>

pg. 58 Climate

### General information

#### Air conditioning - A/C

Your car is equipped with Electronic Climate Control (ECC), which automatically maintains the selected temperature in the passenger compartment and helps dehumidify the air.

#### NOTE:

- The air conditioning system can be switched off, but for optimal air quality in the passenger compartment and to prevent the windows from fogging, the air conditioning should be left on - even in cool weather.
- In warm weather, a small amount of water may accumulate under the car when it has been parked. This water is condensation from the A/C system and is normal.

#### Ice and snow

Always keep the air intake grille at the base of the windshield free of snow.

#### Climate control maintenance

Special tools and equipment are required to maintain and carry out repairs on the climate system. Work of this type should only be done by a trained and qualified Volvo service technician.

#### Refrigerant

Volvo cares about the environment. The air conditioning system in your car contains a CFC-free refrigerant - R134a. This substance will not deplete the ozone layer. The system contains 1.2 lbs (530 g) R134a (HFC 134a), and uses PAG oil.

#### Passenger compartment filter

Replace the cabin air filter with a new one at the recommended intervals. Please refer to your Warranty and Service Records Information booklet, or consult a trained and qualified Volvo service technician for these intervals. The filter 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.

**NOTE:** There are different types of cabin air filters. Ensure that the correct type is installed.



## Display

The display above the climate control panel shows the climate settings that have been made.

## Personal settings

There are two functions in the climate system that can be set to your preferences:

- Blower speed in Auto mode.
- Timer controlled recirculation of the air in the passenger compartment. For information about how to make these settings, see the Personal settings section on [page 52](#).

## Climate system sensors

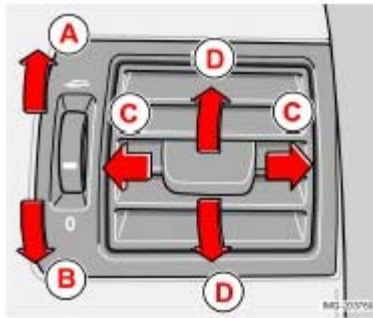
The sunlight sensor on the upper side of the dashboard and the passenger compartment temperature sensor, located behind the climate system control panel, should not be obstructed.

## Acceleration

The air conditioning system is temporarily switched off during full throttle acceleration.

pg. 59 Climate

## Air vents



### Air vents in the dashboard

- A. Open
- B. Closed
- C. Horizontal air flow
- D. Vertical air flow

Direct the outer air vents toward the side windows to defrost.

pg. 60 Climate

## Electronic climate control (ECC)



1. Auto - On/Off
2. Blower speed
3. Recirculation
4. Defroster
5. Airflow controls
6. A/C - ON/OFF
7. Heated driver's seat
8. Heated front passenger's seat
9. Rear window and door mirror defrosters
10. Temperature selector

## ECC functions

### 1. Auto -On/Off



The AUTO function automatically regulates climate control to maintain the desired temperature. The

automatic function controls heating, air conditioning, blower speed, recirculation, and air distribution. When the retractable hard top is down, warm or cool air from the climate system is directed downward in the passenger compartment, and the climate system's effect is limited if it is not possible to compensate for the ambient temperature.

If you select one or more manual functions, the remaining functions continue to be controlled automatically. All manual settings are switched off when AUTO is switched on. AUTO CLIMATE is shown in the display.

### 2. Blower speed



The blower speed can be increased or decreased by turning the knob. The blower speed is regulated

automatically if AUTO is selected. The previously set blower speed is disconnected.

**NOTE:** If the knob is turned counterclockwise and the blower indication in the display goes out, the blower and the air conditioning are switched off. The display shows the blower symbol and OFF.

### 3. Recirculation



This function can be used to shut out exhaust fumes, smoke, etc from the passenger compartment. The air

in the passenger compartment is then recirculated, i.e. no air from outside the car is taken into the car when this function is activated.

## Electronic climate control (ECC)

If the air in the car recirculates for too long, there is a risk of condensation forming on the insides of the windows, especially in winter.

### Timer

The timer function minimizes the risk of fogging, or stale air when the recirculation function is selected. See [page 52](#) for information on setting the recirculation timer.

**NOTE:** Recirculation is always disengaged if the defroster button is engaged to clear ice or condensation from the side windows.

### 4. Defroster



Directs airflow to the windshield and side windows and increases blower speed. The LED in the defroster

button lights up when this function is activated. The air conditioning system is controlled to provide maximum air dehumidification. The air is not recirculated.

### 5. Airflow controls



Press one of the three buttons in the illustration to activate the selected airflow. A symbol in the display

above the climate control panel and a lit LED in the selected button indicate that the manual function has been selected. With manually selected airflow both warm and cool air can be selected. See also the table on [page 63](#).

### 6. Air conditioning On/Off



The air conditioning system is controlled automatically by the system when the ON LED is lit to maintain

the selected temperature.

When OFF is selected and the OFF LED is lit, the air conditioning system is deactivated. Other functions are still controlled automatically.

When Defroster (4) is selected, the air conditioning system is activated for maximum dehumidifying.

### 7 and 8. Heated front seats (option)



**Maximum heating:** Press the button once - both LEDs light up.

**Reduced heating:** Press the button a second time - one LED lights up.

**Seat heating off:** Press the button a third time - no LEDs are lit.

### 9. Rear window and door mirror defrosters



Press to defrost the rear window and door mirrors.

The rear window and door mirrors are defrosted simultaneously if the switch is pressed once. The function is active if one LED is lit in the switch. The door mirrors are deactivated automatically after approximately 6 minutes. The rear window is deactivated after approximately 12 minutes.

**NOTE:** This function is automatically switched off when the power retractable hard top is down.

## 10. Temperature selector



The temperatures on the driver's and passenger's sides can be set separately using the knob (with the

thermometer in it). The temperature can be set for both sides of the car when the ignition is switched on (both LEDs will be on), which means that a temperature setting will apply to both sides of the car.

To set the temperature on one side of the car:

pg. 62 Climate


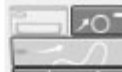





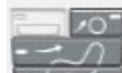
## Electronic climate control (ECC)

- Press the knob once. The LED for one side of the car will light up. Turn the knob to adjust the temperature.
- Press the knob a second time to set the temperature on the opposite side of the car.
- Press the knob a third time to set the temperature on both sides of the car the same time.

**NOTE:** Selecting a temperature that is higher or lower than necessary will not heat or cool the passenger compartment faster.

pg. 63 Climate

## Electronic climate control (ECC)

	Air distribution	Use:		Air distribution	Use:
	Defroster. Air is not recirculated in this mode. Air conditioning is always engaged. There is also a certain amount of airflow to the panel air vents.	Defrost/de-fog the windshield and front side windows.		Air to the floor and windows. There is also a certain amount of airflow to the dashboard air vents.	For comfortable conditions and good defrosting in cold weather. Medium to high blower speed.
	Air to windshield and front side windows. There is also a certain amount of airflow to the dashboard air vents.	Prevents fogging in cold or humid weather (blower speed should be moderate to high)		Air to the floor and from the dashboard air vents.	For sunny weather with cool ambient temperatures.
	Air to the windows and from the dashboard air vents.	For good comfort in warm, dry weather.		Air to the floor. There is a certain amount of airflow to the dashboard and window air vents.	To warm the feet.
	Airflow directed to the head and chest from the dashboard air vents.	To ensure efficient cooling in a warm weather.		Airflow to the windows, dashboard air vents, and floor.	For cooler air toward the feet, or for warmer air toward the head and chest.

pg. 64 Climate

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[Contents](#) | [Top of Page](#)

# 2006 VOLVO C70

## Chapter 5 - Interior

### pg. 65 Interior

Front seats	<a href="#">66</a>
Power seats	<a href="#">68</a>
Power retractable hard top	<a href="#">70</a>
Temporary cover	<a href="#">75</a>
Wind blocker	<a href="#">76</a>
Interior lighting	<a href="#">77</a>
Storage compartments	<a href="#">79</a>
Loading the trunk	<a href="#">82</a>
Carrying long loads	<a href="#">84</a>

### pg. 66 Interior

#### Front seats



#### Manual passenger's seat adjustment

The passenger's seat can be manually adjusted in a number of ways to provide a comfortable driving and sitting position.

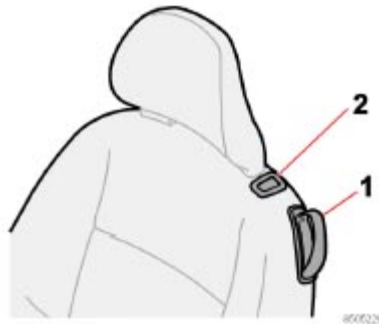
1. Forward-rearward: Pull the lever up and slide the seat to the position of your choice.
2. Use this control to raise or lower the front edge of the seat cushion.
3. Use this control to raise or lower the rear edge of the seat cushion.
4. Turn this knob (option on some passenger's seats) to adjust the firmness of the lumbar support.
5. Turn this knob to adjust the backrest tilt.
6. Control panel for power seats.

**⚠ WARNING!**

- Do not adjust the seat while driving.
- The seat should be adjusted so that the brake pedal can be depressed fully.
- Position the seat as far rearward as comfort and control allow.

pg. 67 Interior

## Front seats



*Easy entry (power seat shown)*

### Accessing the rear seat-Easy Entry

#### Manual seat

Moving the seat forward:

- Pull up control 1 (see the illustration above) to release the backrest.
- Tilt the backrest forward and slide the seat forward.

Moving the seat rearward:

- With the backrest tilted forward, move the seat rearward to the desired position.
- Pull up control 1 and return the backrest to the upright position.

#### Power seats

Moving the seat forward:

- Pull up control 1 (see the illustration above) to release the backrest.
- Tilt the backrest forward.
- Press and hold down the front section of button 2 (see the illustration above) to move the seat forward.

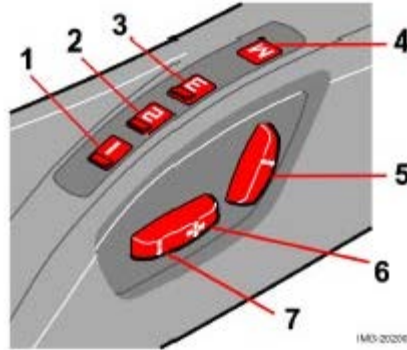
Moving the seat rearward:

- Press and hold down the rear section of button 2 until the seat has returned to its original position.
- Pull up control 1 and return the backrest to the upright position.

**⚠ WARNING!**

After the seat has been returned to its original position, be sure that the backrest is securely locked in the upright

## Power seats



### The power driver's seat can be adjusted:

- If the ignition key is in position I or II.
- During a 10 minute period after the doors have been unlocked if the door remains open.
- If the door is closed and the ignition key is not yet in the ignition, or if the key is in position 0, the seat can be adjusted or during a period of 40 seconds. The power passenger's seat can only be adjusted if the ignition key is in position I or II, or if the engine is running.

### Adjusting the seat

Controls 5, 6, and 7 on the side of the seat can be used to make adjustments.

5. Backrest tilt

6. Move this section of the control up or down to raise/lower the rear section of the seat. Move the control forward to move the seat forward.

7. Move this section of the control up or down to raise/lower the front section of the seat. Move the control rearward to move the seat rearward.

**NOTE:** The power seats have an overload protector that activates if a seat is blocked by any object. If this occurs, switch off the ignition (key in position 0) and wait for approximately 20 seconds before operating the seat again.

### Emergency stop

**NOTE:** If the seat inadvertently begins to move, press any of the buttons to stop the seat.

### Programming the seat memory, driver's seat only (option)

Three different seating positions can be stored (buttons 1, 2, and 3 in the illustration) in the seat's memory.

The following example explains how button 1 can be programmed. Buttons 2 and 3 can be programmed in the same way.

### To program (store) a seat position in button 1:

- Use controls 5, 6, and 7 to adjust the seat to the desired position.
- Press and hold down the M (memory) button.
- With the M button depressed, press button 1 to store the seat's current position.



To move the seat to the position that it was in when button 1 was programmed, press and hold down button 1 until the seat stops moving.

As a safety precaution, the seat will stop automatically if the button is released before the seat has reached the preset position.

### **Central locking system remote control and driver's seat memory**

The remote control transmitter can also be equipped with an optional function that controls the electrically operated driver's seat in the following way:

- Adjust the seat to the desired position.
- When you leave the car, lock it using the remote control.
- The next time the driver's door is unlocked with the same remote control and the driver's door is opened, the driver's seat will automatically move to the position

pg. 69 Interior

## **Power seats**

that it was in when the door was most recently locked with that remote control.

### **WARNING!**

- Because the driver's seat can be adjusted with the ignition off, children should never be left unattended in the car.
- Movement of the seat can be STOPPED at any time by pressing any button on the power seat control panel.
- Do not adjust the seat while driving. The seat should be adjusted so that the brake pedal can be depressed fully. In addition, position the seat as far rearward as comfort and control allow.
- The seat rails on the floor must not be obstructed in any way when the seat is in motion.

pg. 70 Interior

## **Power retractable hard top**

### **Before raising or lowering the power retractable hard top**

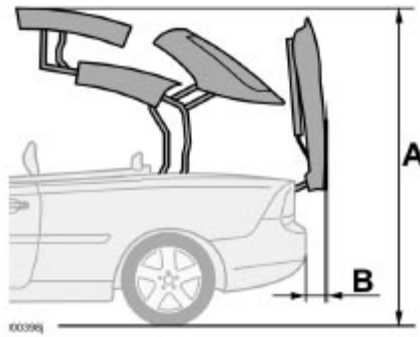
Please observe the following information before operating the power retractable hard top:

- There should be no objects on the power retractable hard top's cover.
- Remove all snow, ice or loose objects from the power retractable hard top and trunk lid.
- The top should be dry before it is lowered.

### **CAUTION!**

If the power retractable hard top is lowered while it is wet, water may drip into the passenger compartment or trunk.

- There should be at least 6.5 feet (2 meters) of free space from the ground (distance A in the illustration below).
- There should be at least 8 inches (20 cm) of free space behind the vehicle (distance B in the illustration below).
- The ambient temperature should be above 14°F (-10°C).



- The trunk divider (see [page 71](#)) must be closed.
- The trunk must be closed.
- The brake pedal must be depressed while the retractable hard top is in motion. Volvo also recommends the following:
- The vehicle should be parked outdoors, on level ground.
- Raising or lowering the power retractable hard top should preferably be done in one, continuous operation.
- If the vehicle is parked outdoors, the engine should be idling to help avoid battery drain.

### CAUTION!

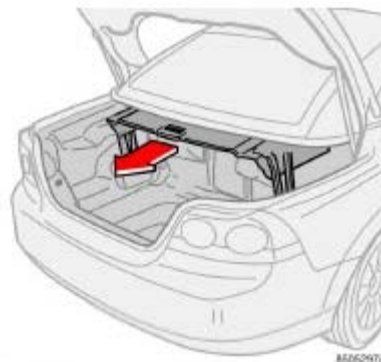
If the instructions on these pages are not followed, damage to the power retractable hard top's mechanism may occur.

### WARNING!

- The power retractable hard top must not be obstructed in any way when it is being operated. Always have an unobstructed view of the power retractable hard top when it is in motion. See also the decal on the trunk divider.
- Anyone near the vehicle should be well clear of the power retractable hard top's moving parts before it is operated.
- Children must never be allowed to play with the power retractable hard top control buttons.

pg. 71 Interior

## Power retractable hard top



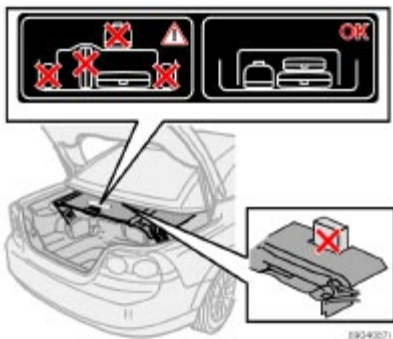
Trunk divider

## Trunk divider

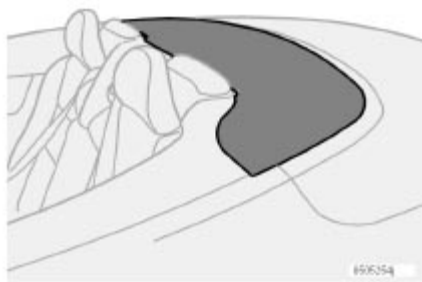
The purpose of the trunk divider is to indicate the amount of cargo that can be stowed in the trunk without affecting movement of the power retractable hard top.

- To open, grasp the handle and lift.
- To close, pull the trunk divider rearward.

If trunk divider is not properly closed because of the amount of cargo in the trunk, it will not be possible to lower the power retractable hard top.



*Trunk divider decal*



### **Power retractable hard top cover**

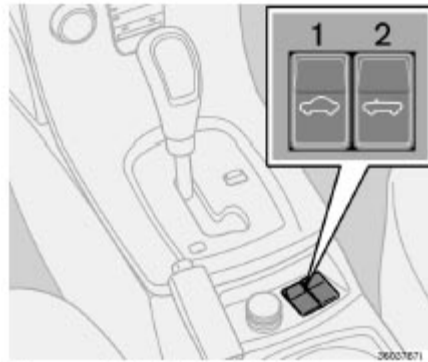
When lowered, the power retractable hard top is concealed by a cover, see the illustration above.

#### **CAUTION!**

Do not sit or place heavy objects on the power retractable hard top cover.

pg. 72 Interior

### **Power retractable hard top**



Power retractable hard top buttons

## Raising or lowering the power retractable hard top

- Turn the ignition key to position II, or start the engine if the vehicle is parked outdoors.
- Press the brake pedal and keep it depressed while the retractable hard top is in motion.
- Press and hold down the left button (1) to raise the power retractable hard top or the right button (2) to lower it. Hold down the respective button until the top is completely raised or lowered. Release the button when an audible signal sounds. The message ROOF OPEN or ROOF CLOSED will be displayed.

### NOTE:

- Please heed any messages that may appear in the information display while the top is in operation.
- Any windows that are closed will be opened approximately 1 inch (2 cm) while the power retractable hard top is in operation. The windows will be automatically re-closed when the top is completely raised or lowered.

pg. 73 Interior

## Power retractable hard top

### WARNING!

See the section "Before raising or lowering the power retractable hard top" on [page 70](#) before operating the power retractable hard top. Never pull the release wire for the power retractable hard top's hydraulic system that is located under the rear seat cushion. This wire is only intended for use by qualified service personnel. Pulling this wire could lead to:

- High risk of being injured by the power retractable hard top mechanism.
- Unexpected movement of the hard top, or the hard top or the trunk could inadvertently open.
- The retractable hard top can be damaged.

## Power retractable hard top-related text messages

- PRESS BRAKE TO OPERATE ROOF

The brake pedal must be depressed while the retractable hard top is in motion.

- CLOSE TRUNK FOR ROOF OPERATION

The trunk is open and must be closed before operating the power retractable hard top.

- CLOSE TRUNK SEP. FOR ROOF OPERAT.

The trunk divider (see [page 71](#) for more information) must be closed before operating the power retractable hard top.

- LOW BATTERY FOR ROOF OPERATION

The battery's charge is too low to operate the power retractable hard top. In this case, the top can only be raised. Start the engine, or if necessary, have the battery charged before operating the top.

- **ROOF NOT LOCKED**

The power retractable hard top is not fully up or down. Press and hold down the respective button again to complete the operation.

- **TEMP LIMITS ROOF OPERATION**

The power retractable hard top mechanism has overheated, or the ambient temperature is below 14° F (-10° C). If the mechanism has overheated, wait for approximately 5 minutes (the message in the information display will disappear) and try to lower or raise the top again.

**If a fault in the power retractable hard top mechanism occurs, the following messages will be displayed:**

- **ROOF FAILURE SERVICE REQUIRED**

The power retractable hard top cannot be operated. Contact an authorized Volvo retailer or service technician. If the top is down in this situation, a cover for the vehicle is provided in the trunk. See [page 75](#) for more information.

- **ROOF FAILURE SEE MANUAL**

The power retractable hard top must be operated according to the following instructions.

### **Emergency operation**

If the message ROOF FAILURE SEE MANUAL is displayed, the power retractable hard top cannot be operated in the normal way.

**NOTE:** If a fault has occurred and the power retractable hard top has been raised, it cannot be lowered again until the fault has been corrected.

### **CAUTION!**

- Carefully read the information under "Before raising or lowering the power retractable hard top" on [page 70](#) before operating the power retractable hard top.
- Damage may be unavoidable if the power retractable hard top must be operated under such conditions.

pg. 74 Interior

## **Power retractable hard top**

- Press button 1 or 2 (see the illustration on [page 72](#)) until ROOF FAILURE SEE MANUAL is displayed.
- Release the button.
- Press the button again and hold it down. After approximately 2 seconds, the power retractable hard top will begin to move. Keep the button depressed until the top is fully raised.

### **NOTE:**

- Movement of the top may stop briefly. However, the button should be held down throughout the entire operation.
- An audible signal will sound during the entire operation.

### **WARNING!**

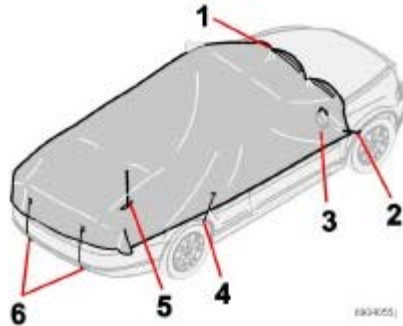
Never pull the release wire for the power retractable hard top's hydraulic system that is located under the rear seat cushion. This wire is only intended for use by qualified service personnel. Pulling this wire could lead to:

- High risk of being injured by the power retractable hard top's opening/closing mechanism.
- Unexpected movement of the hard top/ the hard top or the trunk could inadvertently open.

The retractable hard top can be damaged.

pg. 75 Interior

## Temporary cover

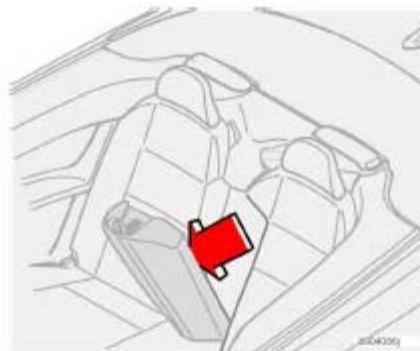


### Covering the vehicle

The cover should only be used if the power retractable hard top is down and cannot be raised. It should be placed over the car so that the shock-cord attaching points are on the underside.

To install the cover:

- Raise all windows.
- Take out the cover (stowed in the compartment in the rear side of the ski hatch in the center of the rear seat backrest), remove it from the bag and unfold it.

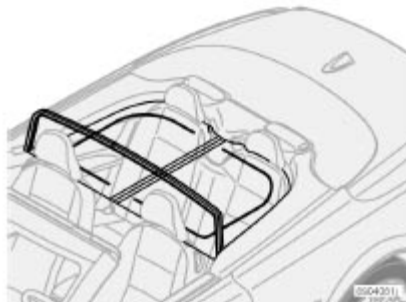


*Location of the cover*

- Slide the openings in the cover (3) over the respective door mirrors and attach the front shock-cord hooks (2) on the edges of the front wheel housings.
- Slide the cover under the windshield wipers so that there is one fold under each wiper blade (1).
- Guide the antenna through hole 5.
- Attach the rear side hooks (4) on the edges of the rear wheel housings.
- Attach the rear hooks (6) under the rear bumper.

pg. 76 Interior

## Wind blocker



*Wind blocker*

### Wind blocker (retailer installed accessory)

The wind blocker is intended for use while driving with the power retractable hard top down to help reduce swirling breezes in the passenger compartment.

### Installing the wind blocker

- Unfold the wind blocker to its full width.
- Unfold the supports on both rear sides.
- Slide the wind blocker's rear supports under the rear head restraints so that they rest on the upper edge of the backrest.

#### **CAUTION!**

Slide in the supports carefully to avoid damaging the upholstery.

- Press the side lock tabs into the holes in the side panels until they click into place.
- Raise the wind blocker.



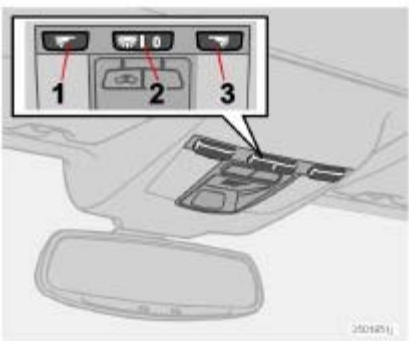
#### **WARNING!**

Make sure the wind blocker is securely attached. An improperly secured wind blocker may cause injury to occupants of the vehicle or to other motorists.

When not in use, the wind blocker should be stored in its bag, in the trunk, against the rear seat backrest.

pg. 77 Interior

## Interior lighting

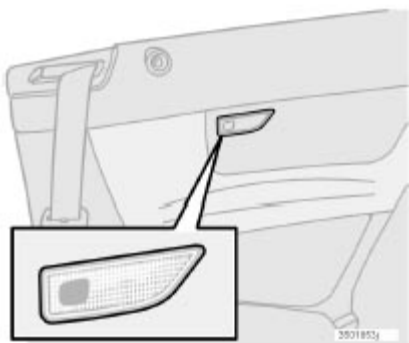


## Interior lighting

1. Driver's side reading light
2. Courtesy lighting
3. Passenger's side reading light

The front seat reading lights can be switched on and off by pressing buttons 1 or 3.  
The courtesy lighting (2) can be set to three positions:

- **Off** - Press the right side of the button.
- **Neutral position** - the interior courtesy lighting comes on when a door is opened, and is switched off when the door is closed.
- **ON** - Press the left side of the button.



## Rear seat reading lights

The rear reading lights can be switched on or off by pressing the respective buttons.

## Courtesy lighting - automatic function

The interior lighting has a built-in automatic function that switches on the courtesy lighting for 30 seconds when:

- the car is unlocked from the outside using the key or remote control
- the engine is switched off and the ignition key is turned to the 0 position.

The courtesy lighting lights up or remains on for 5 minutes when:

- one of the doors is open
- the courtesy lighting has not been switched off (the right side of button 2 depressed).

The automatic lighting goes out when:

- the engine is started

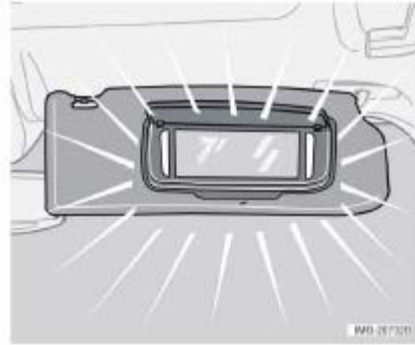


- the car is locked from the outside using the key or remote control.

If the courtesy lighting is not switched off manually, it will be turned off automatically 5 minutes after the engine has been switched off.

pg. 78 Interior

## Interior lighting

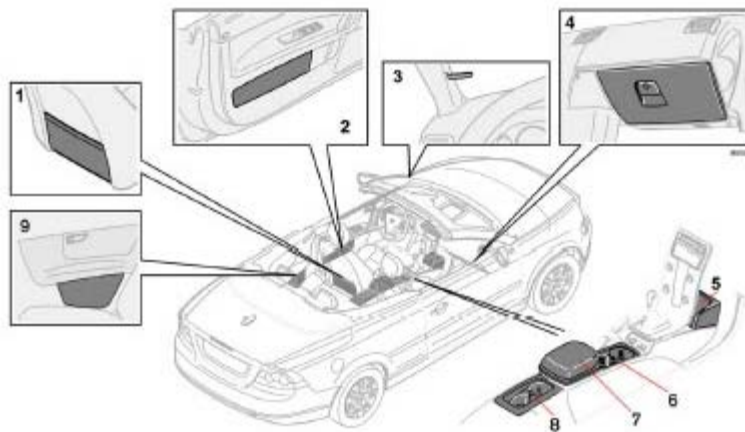


## Vanity mirror

Raise the cover to switch on the light.

pg. 79 Interior

## Storage compartments



1. Storage pocket (also on front side of front seat cushion)
2. Compartment in door panel
3. Ticket clip
4. Glove compartment
5. Storage compartment behind the center instrument panel (retailer installed accessory)
6. Cup holders
7. Storage compartment in center console (for e.g. CDs)

8. Cup holders

9. Rear seat storage compartments

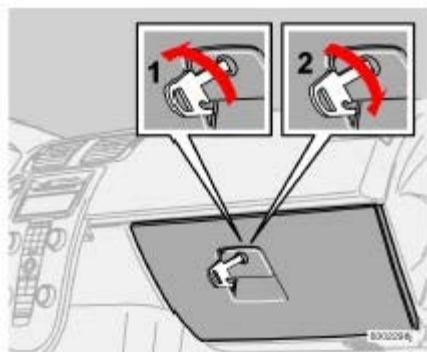
**⚠ WARNING!**

Anchor any heavy objects to prevent them from moving during sudden stops.

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

pg. 80 Interior

## Storage compartments



1. Unlock 2. Lock

### Glove compartment

The owner's manual and maps can be stored here. There are also holders for pens and fuel cards. The glove compartment can only be locked and unlocked using the detachable key blade from the central locking system's remote control. See the chapter "Locks and alarm" for further information about the key blade.

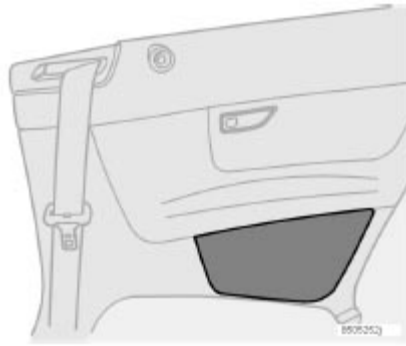


### Compartment in door panel

Open the compartment by pressing near the upper edge.

### Locking function

The door panel compartments can be locked by pressing the Lock button on the central locking system's remote control, or by using the detachable key blade (see [page 88](#)).



### **Rear seat storage compartment**

Open the compartment by pressing near the upper edge.

### **Locking function (option)**

The rear seat storage compartments can be locked by pressing the Lock button on the central locking system's remote control, or by using the detachable key blade (see [page 88](#)).

pg. 81 Interior

## **Storage compartments**

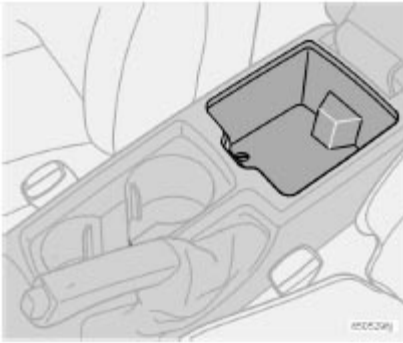


*Rear cup holders*

### **Center console storage compartment**

This compartment can be opened by pressing the front edge of the button.

This storage compartment also contains a keyhole that is used to manually open the trunk with the key blade (see [page 88](#)).



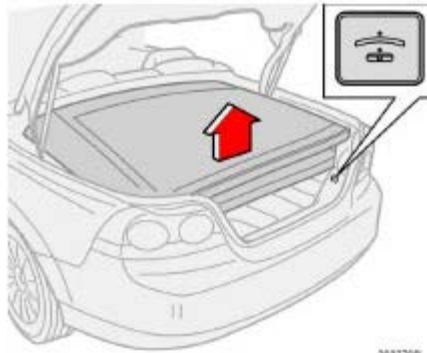
*Center console storage compartment*

### **Locking function (option)**

The center console storage compartment can be locked by pressing the Lock button on the central locking system's remote control, or by using the detachable key blade (see [page 88](#)).

pg. 82 Interior

### **Loading the trunk**



*Button for changing level of folded power retractable hard top*

### **Loading the trunk with the power retractable hard top down**

When the power retractable hard top is down, it is folded in the trunk. Using the button shown in the illustration above, the folded power retractable hard top can be moved up or down slightly to facilitate loading or unloading small objects.

**NOTE:** This movement is part of the normal power retractable hard top operation, which means that messages pertaining to the power retractable hard top's operation (see [page 73](#)) also apply to the this function.

#### **WARNING!**

Anyone near the vehicle should be well clear of the power retractable hard top's moving parts before it is operated.

#### **CAUTION!**

Any objects that impede the movement of the power retractable hard top may damage the top or its mechanism. When the power retractable hard top has been raised for loading the trunk, or if its movement has been interrupted by pressing the button twice, the trunk should not be closed. Doing so can damage the system or cause paint damage.

To raise the level of the folded power retractable hard top:

- Open the trunk.
- Press the button on the right side of the trunk opening.

**NOTE:**

- There may be a delay of several seconds before the folded power retractable hard top begins to move.
- Movement of the top can be stopped by pressing the button again.
- The folded power retractable hard top will raise slightly. If an audible signal sounds during this operation, check the information display in the center instrument panel for messages.
- Lift the trunk divider (see [page 71](#)) to provide an opening into the trunk.
- When the objects to be loaded have been placed in the trunk, press down the trunk divider.
- Press the button to move the power retractable hard top downward. Movement of the top can be stopped by pressing the button again.
- Close the trunk.

**NOTE:** The trunk cannot be closed while the folded power retractable hard top is in the upper position.

**Raising and lowering the folded top in the event of a fault**

If the message ROOF FAILURE SEE MANUAL is displayed, the folded power

pg. 83 Interior

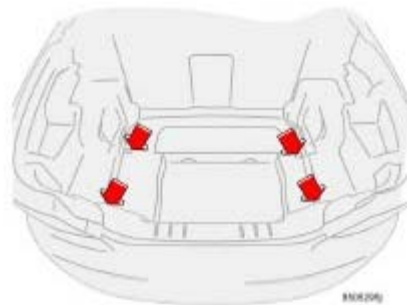
retractable hard top can only be lowered in the trunk.

**Loading the trunk**

**CAUTION!**  
Damage may be unavoidable if the power retractable hard top must be operated when this message is displayed.

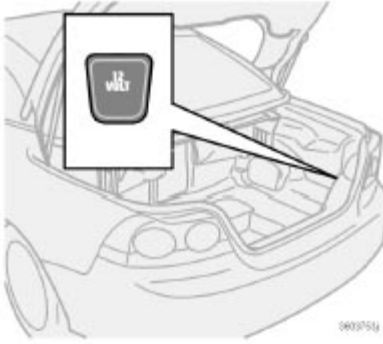
- Press the button again and hold it down. After approximately 2 seconds, the power retractable hard top will begin to move. Keep the button depressed until the folded top is lowered.

**NOTE:** An audible signal will sound during this entire operation.



**Load anchoring eyelets**

The eyelets in the trunk can be used to fasten accessory load and lashing straps, load nets, and other load anchors.



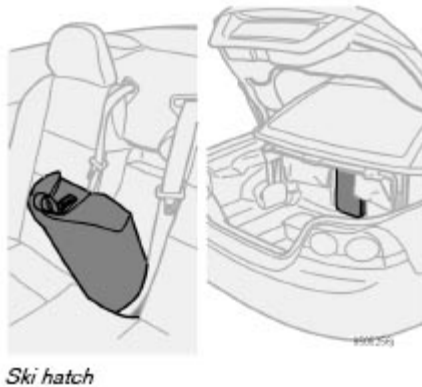
### **Auxiliary 12 volt socket (option)**

Fold down the lid to use the socket.

- Using the 12 volt socket while the engine is not running drains the vehicle's battery.
- If the ignition is switched off and a device drawing more than 0.1A is connected to a socket, a battery alert will be shown in the driver information display.
- The cover should be kept on when the auxiliary socket is not in use.

pg. 84 Interior

## **Carrying long loads**



### **Carrying long loads (ski hatch)**

The center section of the rear seat backrest can be opened to create space for carrying long, light objects (max. length 6.5 ft/2 meters, max. weight 55 lbs/25 kg). To do so, the center section (cushion) of the rear seat backrest must be removed, and the plastic hatch in the trunk must be opened.

### **Removing the center backrest cushion**

Pull the strap at the upper edge of the cushion, pull it forward, and lift it out.

### **Opening the plastic hatch**

From the trunk, press the catches in the two holes in the hatch toward each other to release the hatch, and fold it down.

**NOTE:** If the vehicle is equipped with the optional ski bag, the bag's zipper must be opened from the passenger's compartment in order to insert objects through the ski hatch.

## Replacing the backrest cushion

Begin by guiding the lower section of the cushion into place. Then press the upper section of the cushion into place.

**NOTE:** This cushion is locked in place when the vehicle is locked with the remote control. See [page 89](#).

## Securing long objects

Long objects should be secured with one of the rear seat belts.

- Wrap the belt once around the object and lock the belt in the retractor as usual.

If the vehicle is equipped with the optional ski bag, pass the seat belt through the bag's handle before fastening the seat belt.

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[Contents](#) | [Top of Page](#)

# 2006 VOLVO C70

## Chapter 6 - Locks and alarm

### pg. 85 Locks and alarm

Remote control and key blade	<a href="#">86</a>
Valet locking	<a href="#">89</a>
Glove compartment and trunk	<a href="#">90</a>
Opening the trunk from the inside, Double locking	<a href="#">91</a>
Remote control battery	<a href="#">92</a>
Locking and unlocking	<a href="#">93</a>
Alarm	<a href="#">94</a>

### pg. 86 Locks and alarm

## Remote control and key blade

### Remote controls

Two remote controls that also function as ignition keys are provided with your car. The remote controls contain detachable metal key blades for manually locking or unlocking the driver's door, the glove compartment, and the trunk.

USA-FCC ID: LTQVO315TX

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canada-IC: 3659AVO315TX

Operation is subject to the following conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

### Loss of a remote control

If either of the remote controls is lost, the other must be taken with the car to a trained and qualified Volvo service technician. As an anti-theft measure, the code of the lost remote control must be erased from the system. Each key blade has a unique code, which is used by an authorized Volvo retailer if new key blades are required. A maximum of six remote controls/key blades can be programmed and used for one car.

### Immobilizer (start inhibitor)

Each of the keys supplied with your car contains a coded transponder. The code in the key is transmitted to an antenna in the ignition switch where it is compared to the code stored in the start inhibitor module. The car will start only with a properly coded key. If you misplace a key, take the other keys to a trained and qualified Volvo service technician for reprogramming as an antitheft measure.



USA-FCC ID: LTQWFS 125VO

This device complies with part 15 of the FCC rules. Operation is subject to the following condition: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canada-IC: 3659A-WFS125VO

Operation is subject to the following conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

### **CAUTION!**

Never use force on the narrow section of the remote control - this is where the transponder is located. The car cannot be started if the transponder is damaged.

pg. 87 Locks and alarm

## **Remote control and key blade**



### **Remote control functions**

1. **Lock** - Press the Lock button on the remote once to lock both doors, the trunk, the cabin storage compartments (compartment in the doors, the rear side panels, and the ski hatch in the center of the rear seat backrest). The turn signals will flash twice to confirm locking.

**NOTE:** The remote control will not lock or unlock the glove compartment.

2. **Unlock** - Press the Unlock button on the remote once to unlock the driver's door. The turn signals will flash twice to confirm unlocking.

After a short pause, press the Unlock button a second time within 10 seconds to unlock the other doors, storage compartments, and the trunk.

A long press (at least two seconds) opens all side windows.

### **NOTE:**

- The turn signals flash to confirm that the vehicle has been correctly locked/ unlocked with the remote control. When locking the vehicle, the turn signals will flash a confirmation only if all the doors are securely closed and locked. Flashing confirmation for locking and unlocking may be customized in the vehicle's Personal settings menu. See [page 51](#) for more information.
- The two-step unlocking function can be changed so that one press of the Unlock button unlocks all of the doors and

the trunk. See Personal settings on [page 61](#) for more information.

- **Automatic relocking:** If the doors are unlocked, the locks will automatically reengage (re-lock) and the alarm will rearm after 2 minutes unless a door or the trunk has been opened.
- **Automatic locking:** When the car starts to move, the doors and trunk can be locked automatically. This feature can be turned on or off, see Personal settings on [page 61](#) for more information.
- Airbag deployment will automatically attempt to unlock the doors.

### 3. **Approach lighting** - As you approach the car:

Press the yellow button on the remote control to light the interior lighting, position/parking lamps, license plate lighting and the lights in the door mirrors. These lights will switch off automatically after 30, 60 or 90 seconds. See the Personal settings on [page 51](#) for information about adjusting the time setting.

4. **Unlock trunk**- Press the button once to disarm the alarm system and unlock only the trunk. After closing, the trunk will not automatically relock. Press Lock to relock it and rearm the alarm.

5. **Panic alarm:** - This button can be used to attract attention during emergency situations. To activate the panic alarm, press and hold the red button for at least 3 seconds or press it twice within 3 seconds. The turn signals and horn will be activated. The panic alarm will stop automatically after 30 seconds. To deactivate, wait approximately 5 seconds and press the red button again.

**NOTE:** This button will NOT unlock the car.

pg. 88 Locks and alarm

## Remote control and key blade



*Removing the key blade*

### Key blade

The key blade can be removed from the remote control. When removed, the key blade can be used as follows:

- To lock/unlock the driver's door
- To lock/unlock the glove compartment (see [page 90](#))
- To lock/unlock the trunk
- For valet locking (see the explanation below)

### Removing the key blade

Slide the spring loaded catch (1 in the illustration above) to the side and pull the key blade (2) out of the remote control.

### Reinserting the key blade in the remote control

- Hold the remote control with the pointed end down.
- Carefully slide the key blade into its groove.
- Gently press the key blade in the groove until it clicks into place.

### Unlocking the doors with the detached key blade

- Insert the key blade as far as possible in the driver's door lock. Turn the key blade clockwise approximately one-quarter turn to unlock the driver's door only.

**NOTE:**

After unlocking the driver's door with the key blade, opening the door will trigger the alarm.

**To disable the alarm:**

- Press the Unlock button on the remote control, or insert the key in the ignition switch.

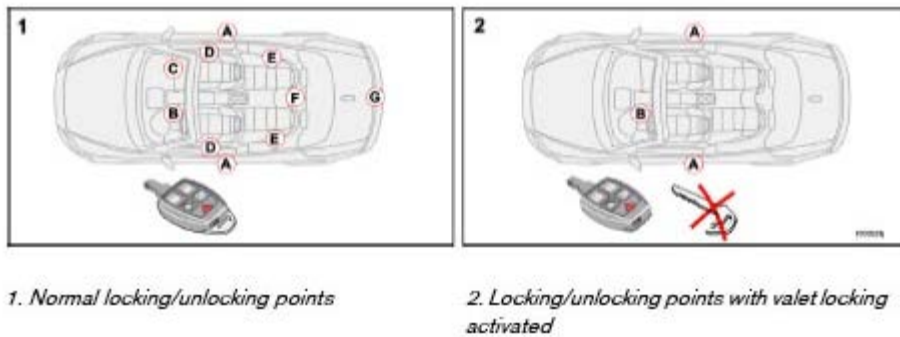
### Locking the doors with the detached key blade

- Lock the front passenger's door by pressing the lock button on the door.
- Turn the key blade one-quarter turn counter-clockwise to lock the driver's door.

**NOTE:** This does not arm the alarm or lock the trunk.

pg. 89 Locks and alarm

### Valet locking



### Valet or service locking

By utilizing the remote control with the key blade removed, the valet locking feature enables you to block access to the trunk, glove compartment and other storage compartments in the cabin for e.g. valet parking or when the car is brought to the retailer for service.

### Locking points

- A. Doors
- B. Steering wheel lock
- C. Glove compartment
- D. Compartments in door panels
- E. Compartments in rear side panels
- F. Ski hatch
- G. Trunk

**With the valet locking function activated:**

- The vehicle's doors can be locked or unlocked
- The engine can be started
- Locking points C, D, E, F, and G cannot be unlocked with the remote control.

### Activating the valet locking function

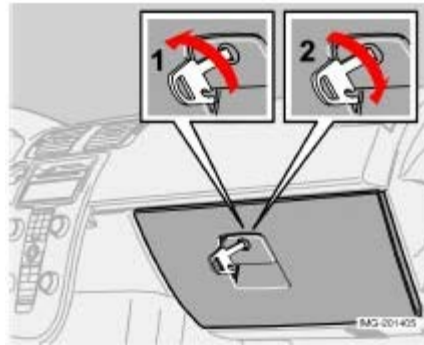
- Remove the key blade from the remote control.
- Turn the key blade 180° clockwise in the glove compartment lock to lock points C, D, E, F, and G and disconnect these points from the central locking system (a message appears in the information display).
- Give the parking attendant or service personnel only the remote control (with the key blade removed).

### Deactivating the valet locking function

Turn the key blade 180° counterclockwise in the glove compartment lock to deactivate valet locking.

pg. 90 Locks and alarm

## Glove compartment and trunk

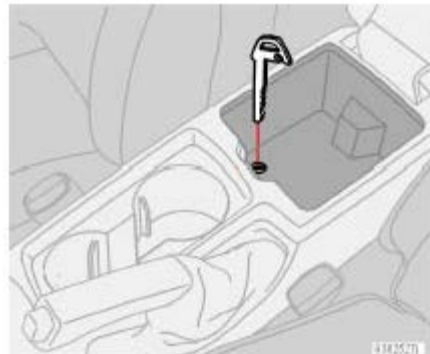


### Locking the glove compartment

The glove compartment can only be locked and unlocked using the detachable key blade on the remote control.

- Unlock the glove compartment by turning the key a quarter of a turn (90°) counterclockwise. The key slot is vertical when the glove compartment is unlocked.

Lock the glove compartment by turning the key a quarter of a turn (90°) clockwise. The key slot is horizontal when the glove compartment is locked.



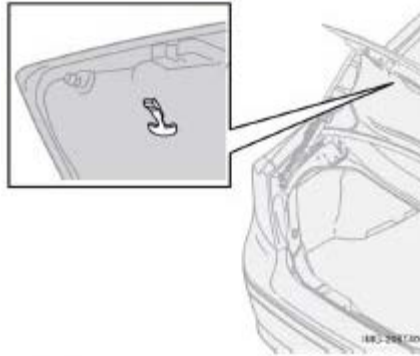
## Mechanically opening the trunk

If necessary, the trunk can be opened mechanically using the key blade.

- Open the cover on the center console storage compartment.
- Insert the key blade in the key hole and turn it 90 degrees clockwise.

pg. 91 Locks and alarm

## Opening the trunk from the inside, Double locking



*Opening the trunk from the inside*

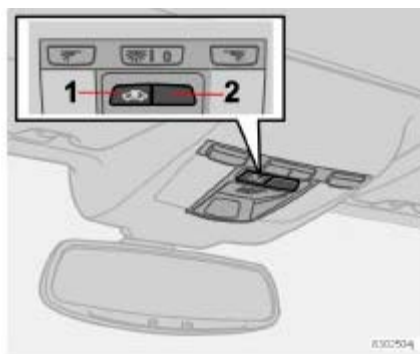
## Opening the trunk from the inside

### U.S. models only

The car is equipped with a florescent handle on the inside of the trunk lid, which can be used in an emergency situation to open the trunk from the inside.

- Pull the handle down to release the trunk lid.

After use, the handle must be pushed back into its original position before the trunk can be closed.



*1. Disabling the double locking feature and the accessory alarm sensors  
2. Not in use*

## Double locking

**If the car is locked with the remote control while the power retractable hard top is down,** the double locking feature activates after approximately 30 seconds. This means that the doors cannot be unlocked or opened from inside the car.

### Temporarily disabling the double locking function

If a person or pet is to remain in the car when the top is down and the car has been locked using the remote, the double locking feature can be temporarily disabled.

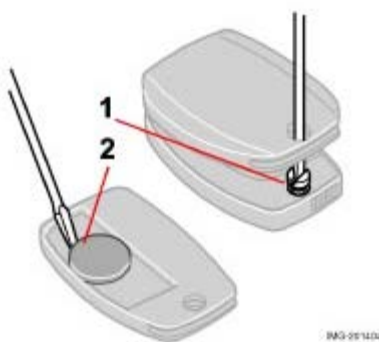
- Turn the ignition key to position II and then back to position 0.
- Press the button (1). The LED in the button will remain on for one minute after the key has been removed from the ignition switch or until the car is locked. A text message will also be displayed.

#### NOTE:

- This procedure also disables the alarm system's accessory inclination and movement sensors. These sensors are automatically reconnected to the alarm system the next time the car is unlocked and then locked again.
- The double locking function will be automatically enabled the next time the car is locked with the remote while the power retractable hard top is open.
- Disabling the double locking function and accessory alarm sensors does not disarm the car's standard alarm.

pg. 92 Locks and alarm

### Remote control battery



#### Weak battery in the remote control

When the battery begins to lose its charge, the Information symbol in the instrument panel (see [page 33](#)) lights up and REMOTE BATTERY LOW VOLTAGE is shown in the information display.

#### Replacing the battery in the remote control

If the range of the transmitter is noticeably reduced, this indicates that the battery (type CR 2032, 3V) is weak and should be replaced. To replace the battery:

- Remove the key blade.
- Place the remote control with the keypad downward. Remove the screw (1) using a small slotted screwdriver.
- Remove the cover.
- Note how the + and - sides of the battery are positioned on the inside of the cover. The plus side of the new battery (marked on the battery) must face downward.

#### CAUTION!

When replacing the battery, avoid touching the electrical circuitry in the other half of the remote control.

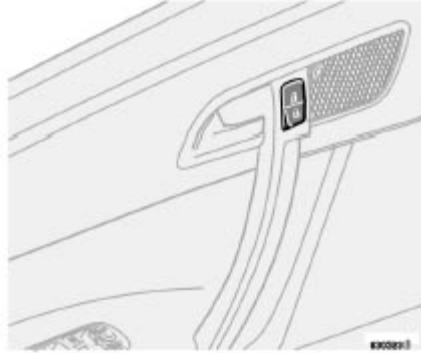
- Pry out (2) and replace the battery. Avoid touching the battery and its contact surfaces with your fingers.
- Press the cover back into place and tighten the screw.

- Reinsert the key blade in the remote control.

The old battery should be disposed of properly at a recycling center or by a trained and qualified Volvo service technician.

pg. 93 Locks and alarm

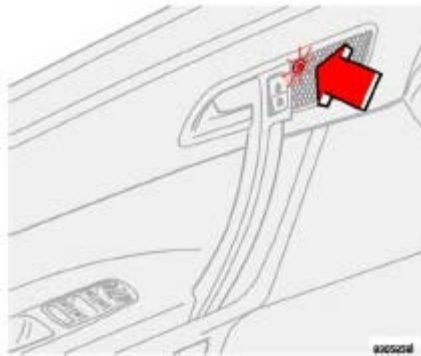
## Locking and unlocking



### Locking/unlocking the car from the inside

The switches near the door opening handles on the driver's and passenger's doors can be used to lock or unlock all doors and the trunk, and to set the alarm.

- **Unlocking:** Press in the upper section in the lock button. A long press (at least two seconds) also opens all the side windows.
- **Locking:** Press in the lower section of the lock button.



### Lock indicator lights

An indicator light in each door will illuminate for approximately 5 minutes after the car has been locked using the remote control.

If the car is locked from the inside while the ignition is on, the light will remain on until the car is unlocked or the ignition is switched off.

### NOTE:

- The doors cannot be opened by pulling up the lock button.
- If both doors are closed when a lock button is pressed, the alarm will not be armed.
- Each door can also be locked manually using the lock button on that particular door. This applies only if the car has not been locked from the outside.
- The doors can also be unlocked (and the door opened) by pulling the handle in the door twice.

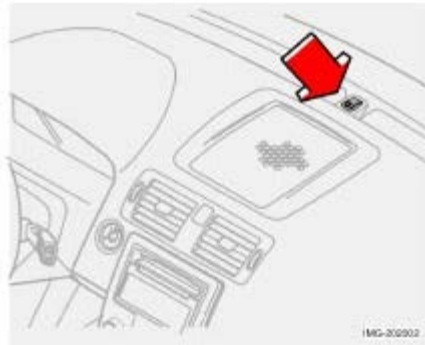
### Locking the doors when leaving the vehicle

The lock switches in the doors can also be used for locking all doors when leaving the vehicle. However, please be aware of the following:

- If one or more of the doors is open and the key is not in the ignition when the button is pressed, the doors will lock automatically when they are closed. This will also arm the alarm.
- If the key is in the ignition and one of the doors is open, the vehicle cannot be locked using the buttons on the doors.

pg. 94 Locks and alarm

## Alarm



*Alarm indicator light*

### The alarm system

The alarm is automatically armed whenever the car is locked with the remote control, or if a front lock button is depressed.

When armed, the alarm continuously monitors a number of points on the car. The following conditions will trigger the alarm:

- The hood, trunk, or a door is forced open.
- The ignition switch is tampered with
- An attempt is made to start the car with a non-approved key (a key not coded to the car's ignition).
- If there is movement in the passenger compartment (if the car is equipped with the optional movement sensor).
- The car is lifted or towed (if the car is equipped with the optional inclination sensor)
- The battery is disconnected (while the alarm is armed).
- The siren is disconnected when the alarm is disarmed.

**NOTE:** The alarm system functions in the same way, regardless of whether the power retractable hard top is raised or lowered.

### The alarm indicator light

The status of the alarm system is indicated by the indicator light on at the top of the dashboard (see illustration):



Indicator light off - the alarm is not armed

- The indicator light flashes every two seconds - the alarm is armed
- The indicator light flashes rapidly before the ignition is switched on - the alarm has been triggered. The message "ALARM TRIGGERED, CHECK CAR" will also be displayed.
- **Fault in the alarm system:** If a fault has been detected in the alarm system, a message will be shown in the information display. Contact a trained and qualified Volvo service technician to have the alarm system inspected and repaired if necessary.

### Arming the alarm

Press the LOCK button on the remote control, or press the central lock button on one of the doors with the door open. One long flash of the turn signals will confirm that the alarm is armed.

### Disarming the alarm

Press the UNLOCK button on the remote control or insert the key in the ignition to disarm the alarm. Two short flashes from the car's direction indicators confirm that the alarm has been deactivated and that all doors are unlocked.

### Turning off (stopping) the alarm

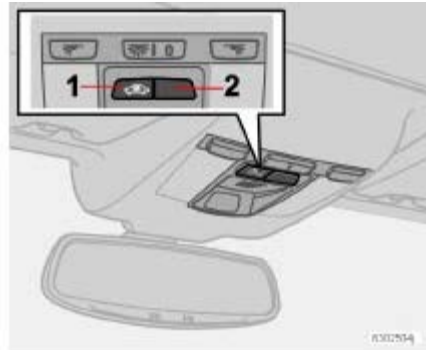
If the alarm is sounding, it can be stopped by pressing the UNLOCK button on the remote control or by inserting the key in the ignition switch.

### Audible/visual alarm signal

An audible alarm signal is given by a battery powered siren. The alarm cycle lasts for 30 seconds.

pg. 95 Locks and alarm

## Alarm



1. Disabling the double locking feature and the accessory alarm sensors  
2. Not in use

The visual alarm signal is given by flashing all turn signals and turning on the interior lighting for approximately 5 minutes.

### Temporarily turning off the accessory alarm sensor(s)

In certain situations it may be desirable to turn off the accessory inclination and movement alarm sensors if, for example, you drive your vehicle onto a ferry where the rocking of the boat could trigger the alarm or if a pet is left in the vehicle with the doors locked.

- Turn the ignition key to position II and then back to position 0 and remove it from the ignition switch.
- Press the button (1). The LED in the button will remain on for one minute after the key has been removed from the ignition switch or until the car is locked.

## Important

- The accessory sensors are automatically reconnected to the alarm system the next time the vehicle is unlocked and then locked again.
- This function will not turn off the vehicle's standard alarm.

U.S.A. FCC ID: MAYDA 5823(3)

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canada IC: 4405A-DA 5823(3)

Movement sensor DA5823 by Dynex Operation is subject to the following conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

pg. 96 Locks and alarm

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[Contents](#) | [Top of Page](#)

# 2006 VOLVO C70

## Chapter 7 - Starting and driving

### pg. 97 Starting and driving

General information	<a href="#">98</a>
Fuel requirements	<a href="#">101</a>
Ignition switch and steering wheel lock	<a href="#">104</a>
Starting the engine	<a href="#">105</a>
Manual transmission, 6-speed	<a href="#">107</a>
Automatic transmission - Geartronic	<a href="#">108</a>
Shiftlock override	<a href="#">110</a>
Brake system	<a href="#">111</a>
Stability system	<a href="#">113</a>
Park assist (accessory)	<a href="#">115</a>
Towing	<a href="#">117</a>
Jump starting	<a href="#">119</a>
Towing a trailer	<a href="#">120</a>
Detachable trailer hitch	<a href="#">122</a>
Transporting loads	<a href="#">123</a>

### pg. 98 Starting and driving

## General information

### Economical driving conserves natural resources

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 vehicle for driving short distances. This does not allow the engine to reach normal operating temperature.
- Drive carefully and avoid rapid acceleration and hard braking.
- Use the transmission's (D)rive position as often as possible and avoid using kickdown.
- Do not exceed posted speed limits.
- Avoid carrying unnecessary items (extra load) in the vehicle.
- Maintain correct tire pressure. Check tire pressure regularly (when tires are cold).
- Remove snow tires when threat of snow or ice has ended.

- At highway driving speeds, fuel consumption will be lower with the air conditioning on and the windows closed than with the air conditioning off and the windows open.
- Using the onboard trip computer's fuel consumption modes can help you learn how to drive more economically.

### **Other factors that decrease gas mileage are:**

- Dirty air cleaner
- Dirty engine oil and clogged oil filter
- Dragging brakes
- Incorrect front end alignment

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

### **Weight distribution affects handling**

At the specified curb weight your vehicle 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 cargo area, the less the tendency to understeer.

### **WARNING!**

**Driving with the trunk open:** Driving with the trunk open could lead to poisonous exhaust gases entering the passenger compartment. If the trunk must be kept open for any reason,

- Close the windows
- Set the ventilation system control to air flow to floor, windshield and side windows and the blower control to its highest setting.

### **CAUTION!**

Drive slowly and carefully if going through standing water (i.e. flooded roadways, etc.). Damage to the engine could result if excess water is drawn in through the air intake system. Never drive the vehicle in water deeper than 18 inches (48 cm).

### **Handling, roadholding**

Vehicle load, tire design and inflation pressure all affect vehicle handling. Therefore, check that the tires are inflated to

pg. 99 Starting and driving

### **General information**

the recommended pressure according to the vehicle load. See the "Tire pressure" section. Loads should be distributed so that capacity weight or maximum permissible axle loads are not exceeded.

### **Cold weather precautions**

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

- Make sure that the engine coolant contains 50 percent antifreeze. Any other mixture will reduce freeze protection. This gives protection against freezing down to -31°F (-35°C). See section "Coolant". The use of "recycled" antifreeze is not approved by Volvo. Different types of antifreeze must not be mixed.
- Volvo recommends using only genuine Volvo antifreeze in your vehicle's radiator.
- 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 de-icer before refueling.
- The viscosity of the engine oil is important. Oil with low viscosity (thinner oil) improves cold-weather starting as

well as decreasing fuel consumption while the engine is warming up. For winter use, 5W-30 oil, particularly the synthetic type<sup>1</sup>, is recommended. Be sure to use good quality oil but do not use cold-weather oil for hard driving or in warm weather. See [page 191](#) for more information.

- The load placed on the battery is greater during the winter since the 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.
- Volvo recommends the use of snow tires on all four wheels for winter driving - see the chapter "Wheels and tires."
- To prevent the washer fluid reservoir from freezing, add washer solvents containing antifreeze (see [page 157](#) for the location of the washer fluid reservoir). This is important since dirt is often splashed on the windshield during winter driving, requiring the frequent use of the washers and wipers. Volvo Washer Solvent should be diluted as follows:  
Down to 14° F (-10° C): 1 part washer solvent and 4 parts water  
Down to 5° F (-15° C): 1 part washer solvent and 3 parts water  
Down to 0° F (-18° C): 1 part washer solvent and 2 parts water  
Down to -18° F (-28° C): 1 part washer solvent and 1 part water.
- Use Volvo Teflon Lock Spray in the locks.

**NOTE:** Avoid using de-icing sprays as they can cause damage to the locks.

### **Conserving electrical current**

Keep the following in mind to help minimize battery drain:

- When the engine is not running, avoid turning the ignition key to position II. Many electrical systems (the audio system, the optional navigation system, power windows, etc) will function with the ignition key in position I. This position reduces drain on the battery.
- Please keep in mind that using systems, accessories, etc that consume a great deal of current when the engine is not

1. Synthetic oil is not used when the oil is changed at the normal maintenance intervals except at owner request and at additional charge.

pg. 100 Starting and driving

### **General information**

running could result in the battery being completely drained.

- The optional 12 volt socket in the trunk provides electrical current even with the ignition switched off, which drains the battery.

**NOTE:** If the ignition is switched on, a warning message will be displayed in the text window in the instrument panel when the battery charge is low.

An energy conserving function designed into the vehicle's electrical system will switch off certain functions or reduce the load on the battery by, e.g., reducing the audio system's volume.

### **Before a long distance trip**

It is always worthwhile to have your vehicle checked by a trained and qualified Volvo service technician before driving long distances. Your retailer will also be able to supply you with bulbs, fuses, spark plugs and wiper blades for your use in the event that problems occur.

As a minimum, the following items should be checked before any long trip:

- Check that engine runs smoothly and that fuel consumption is normal.
- Check for fuel, oil, and fluid leakage
- Have the transmission oil level checked<sup>2</sup>.
- Check condition of drive belts.

Check state of the battery's charge.

- 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 a trained and qualified Volvo service technician only.
- Check all lights, including high beams.
- Reflective warning triangles are legally required in some states/provinces.
- Have a word with a trained and qualified Volvo service technician if you intend to drive in countries where it may be difficult to obtain the correct fuel.
- Consider your destination. If you will be driving through an area where snow or ice are likely to occur, consider snow tires.

2. To prevent injury from contact with hot surfaces, do not inspect your vehicle's transmission fluid yourself. Have your vehicle's transmission fluid level inspected by a trained and qualified Volvo service technician.

pg. 101 Starting and driving

## Fuel requirements

### Octane rating

Volvo engines are designed for optimum performance on unleaded premium gasoline with an AKI octane rating of 91 or above. AKI (ANTI KNOCK INDEX) is an average of the Research Octane Number, RON, and the Motor Octane Number, MON.  $((RON + MON)/2)$ . The minimum octane requirement is AKI 87 (RON 91).

### Deposit control gasoline (detergent additives)

Volvo recommends the use of detergent gasoline to control engine deposits. Detergent gasoline is effective in keeping injectors and intake valves clean. Consistent use of deposit control gasolines will help ensure good driveability and fuel economy. If you are not sure whether the gasoline contains deposit control additives, check with the service station operator.

**NOTE:** Volvo does not recommend the use of store-bought fuel injector cleaning additives.

### Unleaded fuel

Each Volvo has a three-way catalytic converter and must use only unleaded gasoline. U.S. and Canadian regulations require that pumps delivering unleaded gasoline be labelled "UNLEADED". Only these pumps have nozzles which fit your vehicle's filler inlet. It is unlawful to dispense leaded fuel into a vehicle labelled "unleaded gasoline only". Leaded gasoline damages the three-way catalytic converter and the heated 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.

**NOTE:** Some U.S. and Canadian gasolines contain an octane enhancing additive called methyl-cyclopentadienyl manganese tricarbonyl (MMT). If such fuels are used, your Emission Control System performance may be affected, and the Check Engine Light (malfunction indicator lamp) located on your instrument panel may light. If this occurs, please return your vehicle to a trained and qualified Volvo service technician for maintenance.

### Gasoline containing alcohol and ethers

Some fuel suppliers sell gasoline containing "oxygenates" which are usually alcohols or ethers. In some areas, state or local laws require that the service pump be marked indicating use of alcohols or ethers. However, there are areas in which the pumps are unmarked. If you are not sure whether there is alcohol or ethers in the gasoline you buy, check with the service station operator. To meet seasonal air quality standards, some areas require the use of "oxygenated" fuel. Volvo allows the use of the following "oxygenated" fuels; however, the octane ratings listed on this page must still be met.

**Alcohol - Ethanol:** Fuels containing up to 10% ethanol by volume may be used. Ethanol may also be referred to as

Ethyl alcohol, or "Gasohol". Ethers - MTBE: Fuels containing up to 15% MTBE may be used.

### Fuel Formulations

Do not use gasoline that contains lead as a knock inhibitor, and do not use lead additives. Besides damaging the exhaust emission control systems on your vehicle, lead has been strongly linked to certain forms of cancer. Many fuels contain benzene as a solvent. Unburned benzene has been strongly linked to certain forms of cancer. If you live in an area where you must fill your own gas tank, take precautions.

These may include:

- standing upwind away from the filler nozzle while refueling

pg. 102 Starting and driving

### Fuel requirements (contd.)

- refueling only at gas stations with vapor recovery systems that fully seal the mouth of the filler neck during refueling
- wearing neoprene gloves while handling a fuel filler nozzle.

#### WARNING!

Carbon monoxide is a poisonous, colorless, and odorless gas. It 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 your retailer for correction.

### Use of Additives

With the exception of fuel line antifreeze during winter months, do not add solvents, thickeners, or other store-bought additives to your vehicle's fuel, cooling, or lubricating systems. Overuse may damage your engine, and some of these additives contain organically volatile chemicals. Do not needlessly expose yourself to these chemicals.

### Fuel filler door

Press the button on the light switch panel (see the illustration on [page 38](#)) **with the ignition switched off** to unlock the fuel filler door. Please note that the fuel filler door will remain unlocked until the vehicle begins to move forward. An audible click will be heard when the fuel filler door relocks.

If you intend to leave your vehicle while it is being refueled, this feature enables you to lock the doors/trunk while leaving the fuel filler door unlocked.

You can also keep the vehicle locked if you remain inside it during refueling. The central locking button does not lock the fuel filler door.

Be sure the fuel filler door is not obstructed and is completely closed after refueling. **Open the fuel filler cap slowly during hot weather.**

### Refueling

The fuel tank is designed to hold approximately 16.3 US gallons (62 liters) with sufficient volume left over to accommodate possible expansion of the fuel in hot weather. Be aware that the "usable" tank capacity will be somewhat less than the specified maximum. When the fuel level is low, such factors as ambient temperature, the fuel's "Reid vapor pressure" characteristics, and terrain can affect the fuel pump's 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, or when the fuel warning light comes on.

pg. 103 Starting and driving

## Fuel requirements (contd.)

### CAUTION!

Do not refuel with the engine running<sup>a</sup>. Turn the ignition off or to position I. If the ignition is on, an incorrect reading could occur in the fuel gauge

After refueling, close the fuel filler cap by turning it clockwise until it clicks into place.

Allow for fuel expansion by not overfilling the tank. Overfilling could also cause damage to the emission control systems. Avoid spilling gasoline during refueling. In addition to causing damage to the environment, gasolines containing alcohol can cause damage to painted surfaces, which may not be covered under the New Vehicle Limited 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.

a. If the fuel filler cap is not closed tightly or if the engine is running when the vehicle is refueled, the Check Engine Light (malfunction indicator lamp) may indicate a fault. However, your vehicle's performance will not be affected. Use only Volvo original or approved fuel filler caps.

pg. 104 Starting and driving

## Ignition switch and steering wheel lock

### 0 - Locked position



Remove the key to lock the steering wheel<sup>1</sup>. Never turn the key to position 0 while driving or when the

vehicle is being towed.

**NOTE:** A ticking sound may be audible if the key is turned to a position between 0 and I. To stop this sound, turn the key to position II and back to position 0.

### I - Intermediate position<sup>2</sup>



Certain accessories, radio, etc. on, daytime running lights off.

### II - Drive position



The key's position when driving. The vehicle's entire electrical system is activated.

### III - Start position



Release the key when the engine starts. The key returns automatically to the Drive position.

A chime will sound if the key is left in the ignition and the driver's door is opened.



## Steering wheel lock

When the key is removed from the ignition, the steering wheel locks so that it cannot be turned.

If the front wheels are hard up against a curb, the steering wheel lock may be under too much tension to unlock. If so, the key will turn in the ignition switch but the car will not start. At the same time, a message "Steering locked" will appear in the driver information text display.

If this happens:

- Remove the key from the ignition.
- Turn the steering wheel slightly and hold it to relieve pressure on the lock mechanism. Reinsert the key. The steering should immediately unlock. If not, try again.

**NOTE:** In order to help reduce vehicle theft, make sure the steering wheel lock is engaged before leaving the vehicle.

### **WARNING!**

Never switch off the ignition (turn the ignition key to position 0) or remove the key from the ignition switch while the vehicle is in motion. This could cause the steering wheel to lock, which would make the vehicle impossible to steer.

1. The gear selector must be in the Park position.
2. Please be aware that leaving the key in this position will increase battery drain.

pg. 105 Starting and driving

## Starting the engine

### To start the engine:

- Fasten the seat belt.

### **WARNING!**

Before starting, check that the seat, steering wheel and mirrors are adjusted properly. Make sure the brake pedal can be depressed completely. Adjust the seat if necessary.

- Apply the parking brake, if not already set. The gear selector (automatic transmission) is locked in the (P)ark position (SHIFTLOCK). See also [page 108](#).

**Manual transmission:** The clutch must be fully depressed.

- Without touching the accelerator pedal, turn the ignition key to the starting position. Allow the starter to operate for up to 10 seconds. Release the key as soon as the engine starts. If the engine fails to start, repeat this step.

### **Autostart (T5 turbo with automatic transmission only)**

This function makes it possible to start the vehicle without holding the key in position III. Turn the key to position III and release it. The starter motor will then operate automatically (for up to ten seconds) until the engine starts.

**NOTE:** After a cold start, idle speed may be noticeably higher than normal for a short period. This is done to help bring components in the emission control system to their normal operating temperature as quickly as possible, which enables them to control emissions and help reduce the vehicle's impact on the environment.

- For cold starts at altitudes above 6000 ft. (1800 meters), depress the accelerator pedal halfway and turn the key to the starting position. Release the pedal slowly when the engine starts.
- To release the gear selector from the (P)ark position, the engine must be running (or the ignition key must be in

position II) and the brake pedal must be depressed.

- Select the desired gear. On models with an automatic transmission, the gear engages after a very slight delay which is especially noticeable when selecting R.

#### **NOTE:**

- **Immobilizer:** If two of the keys to your vehicle are close together, e.g., on the same key ring when you try to start the vehicle, this could cause interference in the immobilizer system and result in the vehicle not starting. If this should occur, remove one of the keys from the key ring before trying to start the vehicle again.
- **Keylock:** Your vehicle is equipped with a keylock system. When the engine is switched off, the gear selector must be in the (P)ark position before the key can be removed from the ignition switch.
- When starting in cold weather, the automatic transmission may shift up at slightly higher engine speeds than normal until the automatic transmission fluid reaches normal operating temperature.
- Do not race a cold engine immediately after starting. Oil flow may not reach some lubrication points fast enough to prevent engine damage.

#### **WARNING!**

Volvo's floor mats are specially manufactured for your car. They must be firmly secured in the clips on the floor so that they cannot slide and become trapped under the pedals on the driver's side.

pg. 106 Starting and driving

### **Starting the engine**

#### **CAUTION!**

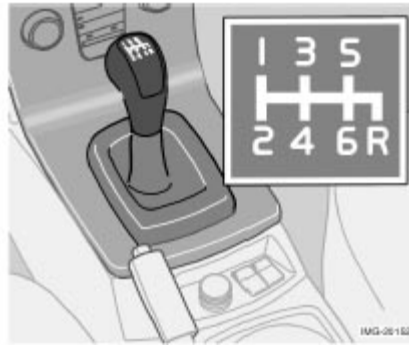
Automatic transmission: The engine should be idling when you move the gear selector. Never accelerate until after you feel the transmission engage! Accelerating immediately after selecting a gear will cause harsh engagement and premature transmission wear. Selecting P or N when idling at a standstill for prolonged periods of time will help prevent overheating of the automatic transmission fluid.

#### **WARNING!**

Always place the gear selector in Park (1st gear or reverse on models with a manual transmission) and apply the parking brake before leaving the vehicle. Never leave the vehicle unattended with the engine running. Always open 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.

pg. 107 Starting and driving

### **Manual transmission, 6-speed**



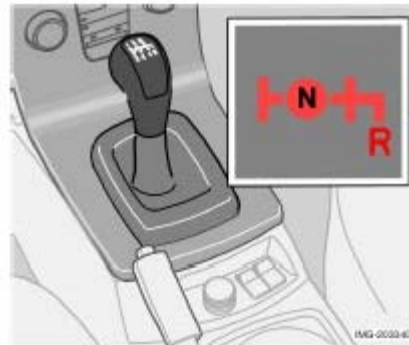
### **6-speed manual transmission (option on certain models)**

Depress the clutch pedal completely when changing gears<sup>1</sup>.

Remove your foot from the clutch pedal while driving. The shift pattern should be followed. Overdrive (5th and 6th gears) should be used as often as possible to help improve fuel economy.

#### **1. Clutch interlock**

The clutch must be fully depressed before you can start your car. If the clutch is not depressed, it will not be possible to start the engine.



### **Engaging reverse gear, 6-speed transmission**

Reverse gear should only be engaged from a complete stop.

**NOTE:** Reverse gear is electronically blocked and cannot be selected if the vehicle is moving at a speed of approximately 13 mph (20km/h).

#### **CAUTION!**

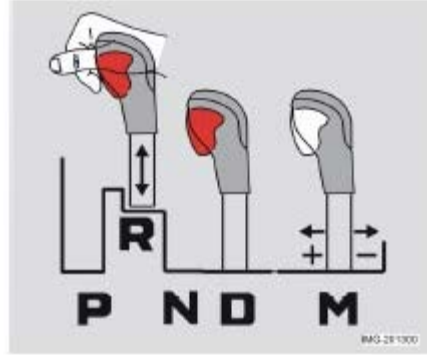
Never shift into reverse while moving forward.



#### **WARNING!**

An extra mat on the driver's floor can cause the accelerator, brake, and/or clutch pedal to catch. Check that the movement of these pedals is not impeded. Not more than one protective floor covering may be used at one time.

## Automatic transmission - Geartronic



### Shift gate positions

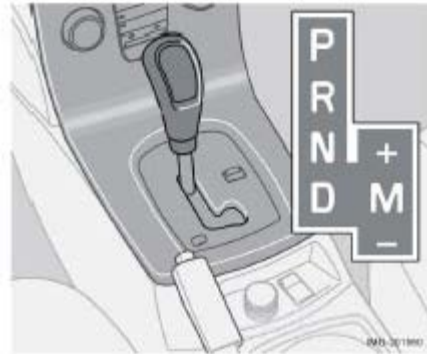
Depress the button on the front of the gear selector knob to move the selector between the R, N, D, and P positions. The gear selector can be moved freely between the Geartronic (manual shifting) and (D)rive positions while driving.

### Gear selector positions

#### P - Park

Select the **P** position when starting or parking.

In **P**, the transmission is mechanically blocked (Shiftlock). Always apply the parking brake when parking.



### CAUTION!

The car must be stationary when selecting position P.

#### R - Reverse

The car must be stationary when shifting to position **R**.

#### N - Neutral

**N** is the neutral position. The engine can be started, but no gear is selected. Apply the parking brake when the car is stationary with the gear selector in **N**.

**NOTE:** If the gear selector is in the Neutral position and the car has been at a standstill for at least 3 seconds (regardless of whether the engine is running or not), the gear selector will be locked in Neutral.

In order to move the gear selector to another position:

- Turn the ignition key to position II (if the engine is not already running)

- Depress the brake pedal
- Move the gear selector to the desired position

### **D - Drive**

**D** is the normal driving position. The car automatically shifts between the various forward gears, based on the level of acceleration and speed. The car must be at a standstill when shifting to position **D** from position **R**

### **Manual shifting - Geartronic**

The manual shifting mode (Geartronic) can be selected at any time, including while the car is moving.

- To access the **(M)**annual shifting position from **(D)**rive, move the gear selector to the right to **M**.
- To return to the **(D)**rive position from **M**, move the gear selector to the left.

pg. 109 Starting and driving

## **Automatic transmission - Geartronic**

### **While driving**

- If you select the **M** position while driving, the gear that was being used in the Drive position will also initially be selected in the **M** position.
- Move the gear selector forward (toward "+") to shift to a higher gear or rearward (toward "-") to shift to a lower gear.
- If you hold the gear selector toward "-", the transmission will downshift one gear at a time and will utilize the braking power of the engine. If the current speed is too high for using a lower gear, the downshift will not occur until the speed has decreased enough to allow the lower gear to be used.
- If you slow to a very low speed, the transmission will automatically shift down.



### **W - Winter/Wet driving mode - enhanced vehicle traction**

Mode W reduces torque at the wheels, which helps improve traction when starting off on a slippery surface. Press the button near the base of the gear selector to engage/disengage this driving mode.

- A "W" will be displayed in the instrument panel when Winter/Wet driving mode is engaged.
- Mode W will only function if the gear selector is in the **(D)**rive position.

Once underway, turn off mode W to improve vehicle performance and fuel economy.

### **Cold starts (turbo engines)**

When driving before the engine has reached its normal operating temperature, the transmission will shift up at slightly higher engine speeds to heat the three-way catalytic converter as quickly as possible.

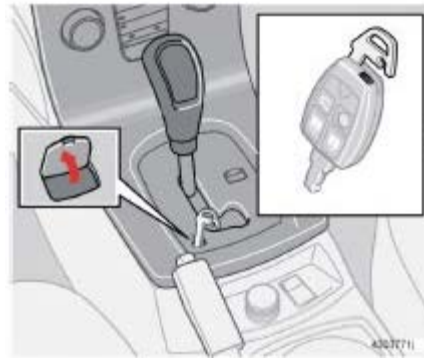
### **Kickdown**

Automatic shift to a lower gear (kickdown) is achieved by depressing the accelerator pedal fully and briskly. An upshift will occur when approaching the top speed for a particular gear or by releasing the accelerator pedal slightly. Kickdown can be used for maximum acceleration or when passing at highway speeds.

**NOTE:** The gear selector must be in the D (Drive) position for kickdown to function.

pg. 110 Starting and driving

## **Shiftlock override**



*Overriding the shiftlock system*

### **Overriding the shiftlock system**

Shiftlock prevents the gear selector from being moved out of Park unless the ignition key is in position II and the brake pedal is depressed.

In certain cases it may be necessary to move the gear selector from the Park position manually, for example if the battery is discharged.

#### **Manually overriding the Shiftlock system:**

- Apply the parking brake.
- Depress the brake pedal.
- There is a small cover behind P-R-N-D on the gear selector panel. Open the rear edge of the panel.

Insert the key blade (see [page 88](#)) or a screwdriver into the opening and press it down until it bottoms and move the gear selector out of the P position.

pg. 111 Starting and driving

## **Brake system**

### **Brake circuit malfunction**

The brake system is a hydraulic system consisting of two separate brake circuits. If a problem should occur in one of these circuits, it is still possible to stop the vehicle with the other brake circuit.

If the brake pedal must be depressed farther than normal and requires greater foot pressure, the stopping distance will be longer.

A warning light in the instrument panel will light up to warn the driver that a fault has occurred.

If this light comes on while driving or braking, stop immediately and check the brake fluid level in the reservoir

**NOTE:** Press the brake pedal hard and maintain pressure on the pedal - do not pump the brakes.

### **WARNING!**

If the fluid level is below the MIN mark in the reservoir or if a brake system message is shown in the information display: **DO NOT DRIVE**. Have the vehicle towed to a trained and qualified Volvo service technician and have the brake system inspected.

### **Power brakes function only when the engine is running**

The power brakes utilize vacuum pressure which is only created when the engine is running. Never let the vehicle roll to a stop with the engine switched off.

If the power brakes are not working, the brake pedal must be pressed approximately five times harder than usual to make up for the lack of power assistance. This can happen for example when towing your vehicle or if the engine is

switched off when the vehicle is rolling. The brake pedal feels harder than usual.

### **Water 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 or cold weather.

### **Severe strain on the brake system**

The brakes will be subject to severe strain when driving in mountains or hilly areas, or when towing a trailer. Vehicle speed is usually slower, which means that the cooling of the brakes is less efficient than when driving on level roads. To reduce the strain on the brakes, shift into a lower gear and let the engine help with the braking. Do not forget that if you are towing a trailer, the brakes will be subjected to a greater than normal load.

### **Anti-lock brakes (ABS)**

The Anti-lock Braking System (ABS) helps to improve vehicle control (stopping and steering) during severe braking conditions by limiting brake lockup. When the system "senses" impending lockup, braking pressure is automatically modulated in order to help prevent lockup that could lead to a skid.

**The system performs a self-diagnostic test when the engine is started and when the vehicle first reaches a speed of approximately 12 m.p.h. (20 km/h).**

The brake pedal will pulsate several times and a sound may be audible from the ABS control module. This is normal.

pg. 112 Starting and driving

## **Brake system**

### **Electronic Brake Force Distribution (EBD)**

EBD is an integrated part of the ABS system. EBD regulates the hydraulic pressure to the rear brakes to help provide optimal braking capacity.

**NOTE:** To obtain optimal effect from the ABS system:

- Keep constant pressure on the brake pedal.
- Do not pump the brake pedal.

The switching of the ABS modulator will be audible and the brake pedal will pulsate during braking. Please be aware that ABS does not increase the absolute braking potential of the vehicle. While control will be enhanced, ABS will not shorten stopping distances on slippery surfaces.

If the warning lamp lights up there is a malfunction of the ABS system (the standard braking system will still function) and the vehicle should be driven cautiously to a trained and qualified Volvo service technician for inspection.

### **WARNING!**

If the BRAKE and ABS warning symbols light at the same time, there may be a problem in the brake system. If the brake fluid level is normal in these circumstances, drive carefully to the nearest Volvo workshop to have the brake system checked.

### **Emergency Brake Assistance - EBA**

EBA is designed to provide full brake effect immediately in the event of sudden, hard braking. The system is activated by the speed with which the brake pedal is depressed.

When the EBA system is activated, the brake pedal will go down and pressure in the brake system immediately

increases to the maximum level. Maintain full pressure on the brake pedal in order to utilize the system completely. EBA is automatically deactivated when the brake pedal is released.

## Stability system

The car is equipped with DSTC (Dynamic Stability and Traction Control). This system consist of the following functions:

### Traction control - TC

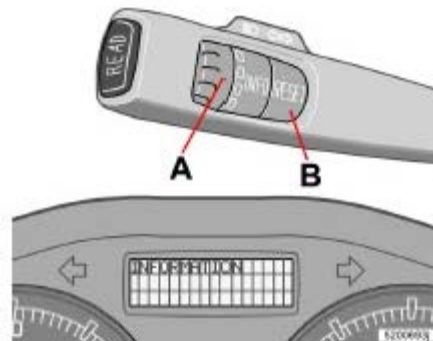
This function is designed to help reduce wheel spin by transferring power from a drive wheel that begins to lose traction to the wheel on the opposite side of the vehicle (on the same axle). TC monitors and compares the rotational speed of the drive wheels. If one of the drive wheels shows a tendency to spin, the difference in speed is immediately detected.

TC is most active at low speeds, and a pulsating sound will be audible when the system is regulating wheel spin. This is quite normal.

This function cannot be disabled.

### Spin control - SC

The spin control function is designed to help prevent the drive wheels from spinning while the vehicle is accelerating. This is done by temporarily reducing engine torque to the drive wheels, which helps improve tractive force.



Disabling/enabling spin control

Under certain circumstances, such as when driving with snow chains, or driving in deep snow or loose sand, it may be advisable to temporarily disable this function for maximum tractive force.

### Disabling the spin control function:

This is done in the menu system, and will be indicated by a text messages in the information display.

- Turn control (A) on the left steering wheel lever until the DSTC menu is displayed.
- Press and hold down the reset button (B) until DSTC SPIN CONTROL OFF or DSTC ON is displayed.

The anti-spin function will be automatically reactivated when the engine is started.

### WARNING!

The car's handling and stability characteristics will be altered with the spin control function disabled.

### Active yaw control - AYC

This function helps maintain directional stability, for example when cornering, by braking one or more of the wheels if



the vehicle shows a tendency to skid or slide laterally. A pulsating sound will be audible when the function is active, which is quite normal. If you apply the brakes while this function is active, the brake pedal will feel stiffer than usual. This function cannot be disabled.

pg. 114 Starting and driving

## Stability system

### DSTC-related symbols in the instrument panel

 **The symbol in the instrument panel lights up and goes out again after approx. 2 seconds**

The symbol lights up for a system check when the car is started.

 **Flashing symbol**

Spin Control is actively functioning to help avoid loss of traction during acceleration.  
Traction Control is actively functioning to help avoid drive-wheel spin.  
Active Yaw Control is actively functioning to help avoid skids or lateral slides.

 **The information symbol lights up and remains on**

STC/DSTC SPIN CONTROL

OFF is shown in the information display.

The Spin Control function has been disabled with the STC/DSTC button.

 **The information symbol lights up and remains on**

TRACTION CONTROL TEMPORARILY

OFF is shown in the information display with the symbol.

The Traction Control function has been temporarily reduced due to high brake temperature. The function is reactivated automatically when the brake temperature returns to normal levels.

 **The information symbol lights up and remains on**

ANTI-SKID SERVICE REQUIRED

is shown in the information display with the symbol.

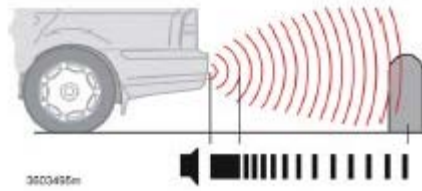
The STC or DSTC system has been switched off because of faults.

- Stop the car in a safe place and switch off the engine.
- Restart the engine.

If the warning symbol remains lit, drive to a trained and qualified Volvo service technician to have the system checked.

pg. 115 Starting and driving

## Park assist (accessory)



### General description

The rear park assist system is designed to assist you when backing into parking spaces, garages, etc. It utilizes ultrasound sensors located in the rear bumper to gauge distance, and provides an audible signal when the vehicle is being backed close to another vehicle, object, or a person.

### When is park assist active?

- **Front:** the system is active from the time the engine is started until the car exceeds a speed of approximately 10 mph (15 km/h).
- **Rear:** the system is activated when reverse gear is selected. The indicator light in the button will light up.

### When the system is actively working:

- The audio system's volume will be reduced.
- An intermittent signal will be audible from the speakers to indicate that you are approaching a person, object, parked vehicle, etc. The signals begin when the distance between the bumper and the object is:

**Rear:** approximately 5 feet (1.5 meters).

**Front:** approximately 2.5 ft (0.8 meters)

- At a distance of approximately 1 foot (30 cm), the signal will become constant.

### Deactivating park assist, front/rear

- Press the Exit button on the center control panel (see the illustration on [page 51](#)). PARK ASSIST DEACTIVATED, ENTER TO ACTIVATE will be displayed.
- Press Enter to reactivate the system.

### NOTE:

- **Rear park assist:** towing a trailer, carrying bicycles in a rear-mounted carrier, etc, could trigger the rear park assist system's sensors.

**NOTE:** Rear park assist is deactivated automatically when towing a trailer if Volvo original connector wiring is used.

- **Front park assist:** it may not be possible to combine auxiliary headlights. and front park assist since these lights could trigger the system's sensors.

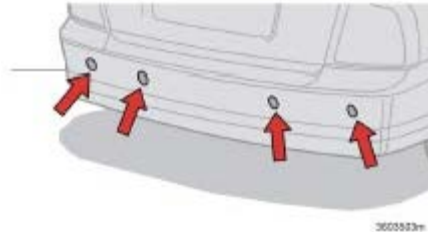
### WARNING!

These systems are designed to be a supplementary aid when parking the vehicle. They are not, however, intended to replace the driver's attention and judgement.

### CAUTION!

In certain circumstances, the park assist system may give unexpected warning signals that can be caused by external sound sources that use the same ultrasound frequencies as the system. This may include such things as the horns of other vehicles, wet tires on asphalt, pneumatic brakes, motorcycle exhaust pipes, etc. This does not indicate a fault in the system.

## Park assist (accessory)



Park assist sensors

### Cleaning the sensors

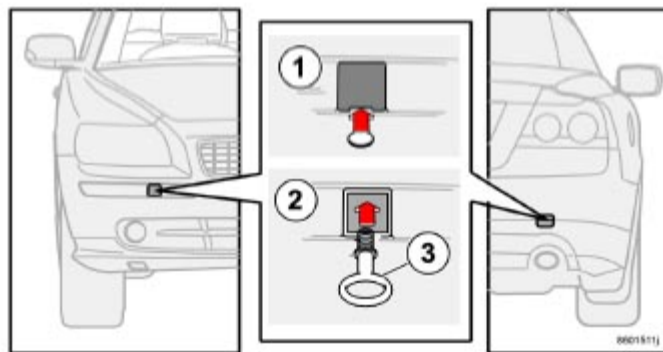
For the system to function properly, the sensors in the rear bumpers should be kept clean. They can be cleaned with car washing detergent and a sponge.



### Faults in the system

If a fault should occur in the system, the Information symbol will light up and remain on and PARK ASSIST SERVICE REQUIRED will be displayed.

## Towing



### Emergency towing

The towing eyelet is located under the floor of the cargo area. This eyelet must be screwed into the positions provided on the right sides of either the front or rear bumper (see illustrations).

### To attach the towing eyelet:

- Take out the towing eyelet, which is either stored under the floor panel in the trunk near the spare tire (if the vehicle is so equipped), or in the bag holding the temporary cover behind the ski hatch.
- Use a coin or screwdriver to pry open the lower edge of the cover (1) to access the hole for the towing eyelet (2).

Screw the towing eyelet in place first by hand and then using the tire iron until it is securely in place (3). After the vehicle has been towed, the eyelet should be unscrewed and returned to its storage place. Press the plastic cover in bumper back into position.

 **WARNING!**

Volvo does not recommend towing a disabled vehicle behind another vehicle. Significant difficulty in steering and braking, combined with unfavorable weather, traffic, and road conditions may make it impossible to maintain vehicle control.

### **Towing a vehicle with all four wheels on the ground**

- Apply the parking brake.
- Insert the key into the ignition to unlock the steering wheel. The steering wheel must be unlocked. With the engine off and the vehicle at a standstill, great effort will be required to turn the steering wheel.

 **WARNING!**

Towing a vehicle with a locked steering wheel will make the vehicle impossible to steer.

- Turn the ignition key to position II.
- Place the gear selector in neutral. For vehicles with automatic transmissions, follow instruction on [page 110](#), "Shiftlock override" to allow the gear selector to be moved from the Park position.
- Keep firm pressure on the brake pedal while releasing the parking brake.
- When towing has been completed, return the gear selector to Park (automatic) or Reverse (manual) and apply the parking brake.

pg. 118 Starting and driving

## **Towing**

### **The following points should also be observed:**

- **Never exceed 50 mph (80 km/h).** Never exceed local towing speed limits and heed all local towing restrictions.
- **Never tow farther than 50 miles (80 km).**
- Keep the tow rope taut at all times while the vehicle is in motion.
- The disabled vehicle should be towed in the forward direction only.

 **WARNING!**

- Never allow a vehicle to be towed without a driver behind the wheel of the disabled vehicle.
- Never remove the key from the ignition while the vehicle is moving. The steering wheel could lock, making it impossible to steer the vehicle.
- When the engine is not running, steering resistance and the effort needed to apply the brakes will be great.
- Never attempt to tow a vehicle with a dead battery at night.

**CAUTION!**

- 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, marker flags, etc.

- Never attempt to push- or tow-start a vehicle with a dead battery. This would inject unburned fuel into the three-way catalytic converter(s), causing overheating, backfiring, and damage. See [page 119](#) for instructions on jump starting the vehicle.

### Having the car towed

Volvo recommends the use of flat bed equipment for towing vehicles with front wheel drive. If wheel lift equipment must be used, please use extreme caution to help avoid damage to the vehicle.

In this case, the vehicle should be towed with the rear wheels on the ground if at all possible.

If it is absolutely necessary to tow the vehicle with the front wheels on the ground, please refer to the towing information on the previous page.

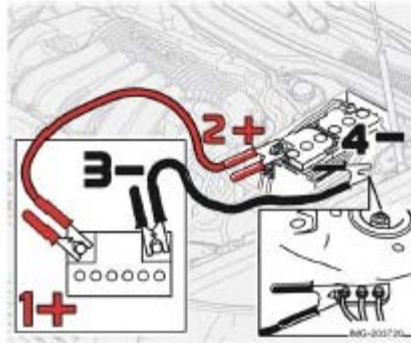
- Sling-type equipment applied at the front will damage radiator and air conditioning lines.
- It is equally important not to use slingtype equipment at the rear or apply lifting equipment inside the rear wheels; serious damage to the rear axle may result.
- If the vehicle is being towed on a flat bed truck, the towing eyelets must not be used to secure the vehicle on the flat bed. Consult the tow truck operator.

### WARNING!

- The towing eyelets must not be used for pulling the vehicle out of a ditch or for any similar purpose involving severe strain.
- Do not use the towing eyelets to pull the vehicle up onto a flat bed tow truck.

[pg. 119 Starting and driving](#)

### Jump starting



Follow these instructions to jump start your vehicle's dead battery or to jump start another vehicle's dead battery using your vehicle. If the 12-volt auxiliary battery to be used is in another vehicle, check that the vehicles are not touching to prevent premature completion of a circuit. Be sure to follow jump starting instructions provided for the other vehicle.

To jump start your vehicle:

- Switch off the ignition.
- First connect the auxiliary battery positive (+) terminal (1) to the positive (+) terminal in your vehicle's battery (2), marked with a "+" sign.
- Connect the auxiliary battery's negative (-) terminal (3) to the ground point in your vehicle's engine compartment near the driver's side spring strut (4).
- Start the engine in the assisting vehicle, then start the engine in the vehicle with dead battery.

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

 **WARNING!**

**PROPOSITION 65 WARNING!**

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and reproductive harm. Wash hands after handling.

 **WARNING!**

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

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 the affected area immediately with water. Obtain medical help immediately if eyes are affected.

Never expose the battery to open flame or electric spark.

Do not smoke near the battery.

Failure to follow the instructions for jump starting can lead to personal injury.

pg. 120 Starting and driving

## Towing a trailer

### General information

Volvo recommends the use of Volvo trailer hitches that are specially designed for the vehicle.

Maximum trailer weights recommended by Volvo are:

- **Trailers without brakes:** 1,540 lbs (700 kg).
- **Trailers with brakes:** 2,000 lbs (900 kg) Observe the legal requirements of the state/province in which the vehicles are registered.
- **The maximum recommended hitch tongue load** is 165 lbs (75 kg).
- 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.

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

- Increase tire pressure to recommended full. See the chapter "Wheels and tires."
- When your vehicle is new, avoid towing heavy trailers during the first 620 miles (1,000 km).
- Maximum speed when towing a trailer: 50 m.p.h. (80 km/h).
- 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 a lower gear and turn off the air conditioner if the temperature gauge needle enters the red range.
- If the automatic transmission begins to overheat, a message will be displayed in the information display.
- Avoid overload and other abusive operation.
- Hauling a trailer affects handling, durability, and economy.
- It is necessary to balance trailer brakes with the towing vehicle brakes to provide a safe stop (check and observe state/local regulations).
- Do not connect the trailer's brake system directly to the vehicle's brake system.
- More frequent vehicle maintenance is required.
- Remove the ball and drawbar assembly when the hitch is not being used.

- Volvo recommends the use of synthetic engine oil when towing a trailer over long distances or in mountainous areas.

### **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's rear axle must not be used.

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 a trained and qualified Volvo service technician for correct installation.

When towing a trailer, the trailer's safety wire must be correctly fastened to the hole or hook provided in the trailer hitch on the vehicle. The safety wire should never be fastened to or wound around the drawbar ball.

### **NOTE:**

- When parking the vehicle with a trailer on a hill, apply the parking brake before putting the gear selector in (P)ark, or in reverse on models with a manual trans-

pg. 121 Starting and driving

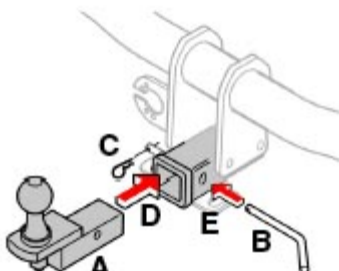
## **Towing a trailer**

mission. Always follow the trailer manufacturer's recommendations for wheel chocking.

- When starting on a hill, put the gear selector in (D)rive before releasing the parking brake.
- If you use the manual (Geartronic) shift positions while towing a trailer, or if the vehicle is equipped with a manual transmission, make sure the gear you select does not put too much strain on the engine (using too high a gear).
- The drawbar assembly/trailer hitch may be rated for trailers heavier than the vehicle is designed to tow. Please adhere to Volvo's recommended trailer weights.
- Avoid driving with a trailer on inclines exceeding 15%.

pg. 122 Starting and driving

## **Detachable trailer hitch**



*A - ball holder (1 7/8" ball), B - locking bolt, C - cotter pin, D - hitch assembly, E - safety wire attachment*

### **Installing the ball holder**

- If necessary, remove the cotter pin from the locking bolt and slide the locking bolt out of the hitch assembly.

- Slide the ball holder into the hitch assembly.
- Align the hole in the ball holder with the one in the hitch assembly.
- Slide the locking bolt through the hitch assembly/ball holder.
- Insert the cotter pin in the hole at the end of the locking bolt.

### Removing the ball holder

- Remove the cotter pin from the locking bolt and slide the locking bolt out of the ball holder/hitch assembly.
- Pull the ball holder out of the hitch assembly.

**NOTE:** A cover for the hitch assembly is also included in the kit.

pg. 123 Starting and driving

## Transporting loads

**Loading the car** Your vehicle's load-carrying capacity is affected by factors such as:

- the number of passengers
- tire inflation
- the amount of optional or accessory equipment installed
- the amount of cargo

See the [chapter "Wheels and tires"](#) for more detailed information.

Before loading the car, turn off the engine, and apply the parking brake when loading or unloading long objects. The gear selector can be inadvertently knocked out of position by long cargo, causing the car to move.

### Keep the following in mind when loading the vehicle:

- Load the cargo in the trunk against the rear seat backrest.
- Load heavy cargo as low as possible.
- Center wide loads.
- Secure all cargo with restraining straps anchored to the load securing eyelets.
- Cover sharp edges on the load.

### **WARNING!**

Remember that an object weighing 44 lbs (20 kg) produces a force of 2,200 lbs (1,000 kg) in a head-on collision at 30 m.p.h. (50 km/h)!

pg. 124 Starting and driving

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# 2006 VOLVO C70

## Chapter 8 - Wheels and tires

### pg. 125 Wheels and tires

General information	<a href="#">126</a>
Tire inflation	<a href="#">128</a>
Tire inflation pressure tables	<a href="#">130</a>
Tire designations	<a href="#">131</a>
Glossary of tire terminology	<a href="#">132</a>
Vehicle loading	<a href="#">133</a>
Uniform Tire Quality Grading	<a href="#">134</a>
Wheel nuts	<a href="#">136</a>
Tire rotation	<a href="#">137</a>
Changing a wheel	<a href="#">138</a>
Tire sealing system	<a href="#">141</a>

### pg. 126 Wheels and tires

#### **General information**

Your vehicle is equipped with tires according to the vehicle's tire information placard on the B-pillar (the structural member at the side of the vehicle, at the rear of the driver's door opening), or on the inside of the fuel filler door on Canadian models.

The tires have good road holding characteristics and offer good handling on dry and wet surfaces. It should be noted however that the tires have been developed to give these features on snow/ice-free surfaces.

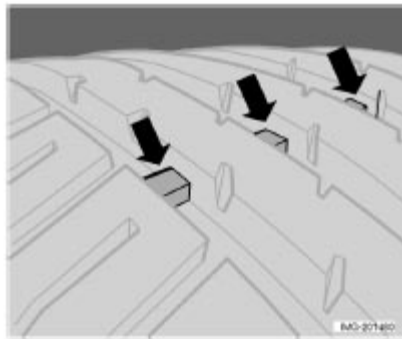
Certain models are equipped with "all-season" tires, which provide a somewhat higher degree of road holding on slippery surfaces than tires without the "all-season" rating. However, for optimum road holding on icy or snow-covered roads, we recommend suitable winter tires on all four wheels.

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 roadholding and handling characteristics.

#### **Storing wheels and tires**

When storing complete wheels (tires mounted on rims), they should be suspended off the floor or placed on their sides on the floor.

Tires not mounted on rims should be stored on their sides or standing upright, but should not be suspended.



*Tread wear indicator*

### **CAUTION!**

Tires should preferably be stored in a cool, dry, dark place, and should never be stored in close proximity to solvents, gasoline, oils, etc.

### **Tread wear indicator**

The tires have wear indicator strips running across or parallel to the tread. The letters TWI are printed on the side of the tire. When approximately 1/16" (1.6 mm) is left on the tread, these strips become visible and indicate that the tire should be replaced.

Tires with less than 1/16" (1.6 mm) tread offer very poor traction.

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.

### **WARNING!**

- The wheel and tire sizes for your Volvo are specified to meet stringent stability and handling requirements. Unapproved wheel/tire size combinations can negatively affect your vehicle's stability and handling. Approved tire sizes are shown in the Tire inflation pressure tables on [page 130](#).
- Any damage caused by installation of unapproved wheel/tire size combinations will not be covered by your new vehicle warranty. Volvo assumes no responsibility for death, injury, or expenses that may result from such installations.

pg. 127 Wheels and tires

## **General information**



### **New tires**

Remember that tires are perishable goods. As of 2000, the manufacturing week and year (Department of Transportation (DOT) stamp) will be indicated with 4 digits (e.g. 1502 means that the tire illustrated was manufactured during week 15 of 2002).

### **Tire age**

Tires degrade over time, even when they are not being used, which can affect their reliability and roadholding characteristics. Therefore, all tires older than 6 years (including the spare tire and winter tires) should be inspected by a qualified technician, regardless of appearance or mileage. Heat caused by hot climates or frequent high loading conditions can accelerate the aging process.

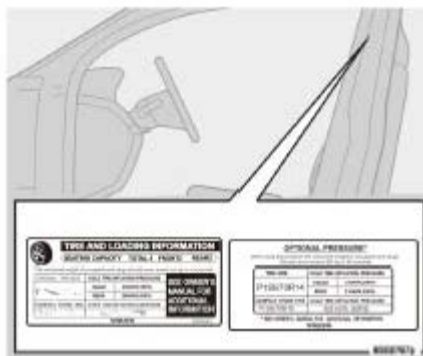
A tire's age can be determined by the DOT stamp on the sidewall (see the illustration above). A tire with e.g., visible cracks or discoloration should be replaced immediately.

### Improving tire economy:

- Maintain correct tire pressure. See the tire pressure table on [page 130](#).
- Drive smoothly: avoid fast starts, hard braking and tire screeching.
- Tire wear increases with speed.
- Correct front wheel alignment is very important.
- Unbalanced wheels impair tire economy and driving comfort.
- Tires must maintain the same direction of rotation throughout their lifetime.
- When replacing tires, the tires with the most tread should be mounted on the rear wheels to reduce the chance of oversteer during hard braking.
- Hitting curbs or potholes can damage the tires and/or wheels permanently.

pg. 128 Wheels and tires

### Tire inflation

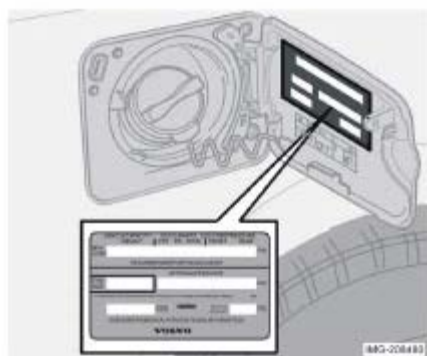


*Tire inflation placards on U.S. models*

### Tire inflation

Check tire inflation pressure regularly.

A table listing the recommended inflation pressure for your vehicle can be found on [page 130](#). Tire inflation pressure placards are also located on the driver's side B-pillar (the structural member at the side of the vehicle, at the rear of the driver's door opening), or on the inside of the fuel filler door on Canadian models. These placards indicate the designation of the factory-mounted tires on your vehicle, as well as load limits and inflation pressure.



*Tire inflation placard on Canadian models*

**NOTE:** The placards shown indicate inflation pressure for the tires installed on the car at the factory only.

- Use a tire gauge to check the tire inflation pressure, including the spare, at least once a month and before long trips. You are strongly urged to buy a reliable tire pressure gauge, as automatic service station gauges may be inaccurate.
- Use the recommended cold inflation pressure for optimum tire performance and wear.
- Under-inflation or over-inflation may cause uneven treadwear patterns.

 **WARNING!**

- Under-inflation is the most common cause of tire failure and may result in severe tire cracking, tread separation, or "blowout," with unexpected loss of vehicle control and increased risk of injury.
- Under-inflated tires reduce the load carrying capacity of your vehicle.

When weather temperature changes occur, tire inflation pressures also change. A 10- degree temperature drop causes a corresponding drop of 1 psi (7 kPa) in inflation pressure. Check your tire pressures frequently and adjust them to the proper pressure, which can be found on the vehicle's tire information placard or certification label.

### Checking tire pressure

#### Cold tires

Inflation pressure should be checked when the tires are cold.

**The tires are considered to be cold when they have the same temperature as the surrounding (ambient) air.**

This temperature is normally reached after the car has been parked for at least 3 hours.

pg. 129 Wheels and tires

## Tire inflation

After driving a distance of approximately 1 mile (1.6 km), the tires are considered to be hot. If you have to drive farther than this distance to pump your tire(s), check and record the tire pressure first and add the appropriate air pressure when you get to the pump.

If checking tire pressure when the tire is hot, never "bleed" or reduce air pressure. The tires are hot from driving and it is normal for pressures to increase above recommended cold pressures. A hot tire at or below recommended cold inflation pressure could be significantly under-inflated.

### To check inflation pressure:

- Remove the cap from the valve on one tire, then firmly press the tire gauge onto the valve.
- Add air to reach the recommended air pressure
- Replace the valve cap.
- Repeat this procedure for each tire, including the spare.
- Visually inspect the tires to make sure there are no nails or other objects embedded that could puncture the tire and cause an air leak.
- Check the sidewalls to make sure there are no gouges, cuts, bulges or other irregularities.

### NOTE:

- If you overfill the tire, release air by pushing on the metal stem in the center of the valve. Then recheck the pressure with your tire gauge.
- Some spare tires require higher inflation pressure than the other tires. Consult the tire inflation table on [page 130](#) or see the inflation pressure placard.

pg. 130 Wheels and tires

## Tire inflation pressure tables

Tire pressures recommended by Volvo for your vehicle. Refer to the tire inflation placard for information specific to the tires installed on your vehicle at the factory.

Tire size	Cold tire pressure for vehicle loads up to 800 lbs (365 kg) <sup>a</sup> psi (kPa)	
	Front	Rear
215/50R17 91V M+S	36 (250)	36 (250)
215/50R17 91V M+S	36 (250)	36 (250)
235/40R18 91Y	36 (250)	36 (250)
Temporary spare tire T125/85R16 99M	61 (420)	61 (420)

a. These weights include the weight of all occupants of the car plus cargo.

Optional tire pressure. These inflation pressures may only be used when the vehicle is not fully loaded.

Tire size	Optional cold tire pressure that may only be used for vehicle loads up to 495 lbs (225 kg). psi (kPa)	
	Front	Rear
215/50R17 91V M+S	32 (220)	32 (220)
215/50R17 91V M+S	32 (220)	32 (220)
235/40R18 91Y	32 (220)	32 (220)
Temporary spare tire T125/85R16 99M	61 (420)	61 (420)

### Load ratings

The load ratings in the tables above translate as follows:

91 = 1365 lbs (615 kg), 93 = 1433 lbs (650 kg), 99 = 1709 lbs (755 kg)

### Speed ratings

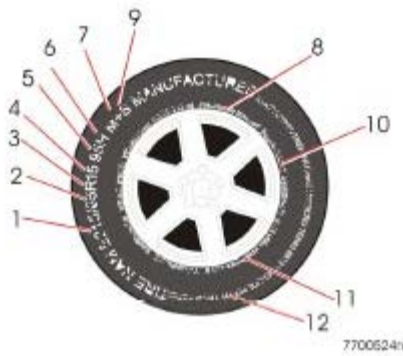
The speed ratings in the tables translate as follows:

M = 81 mph (130 km/h), V = 149 mph (240 km/h), W = 168 mph (270 km/h)

See also [page 131](#) for an explanation of the designations on the sidewall of the tire.

pg. 131 Wheels and tires

## Tire designations



## Tire designations

Federal law mandates that tire manufacturers place standardized information on the sidewall of all tires (see the illustration).

The following information is listed on the tire sidewall:

The tire designation (the following figures are examples of a tire designation):

1. **215**: the width of the tire (in millimeters) from sidewall edge to sidewall edge. The larger the number, the wider the tire.
2. **65**: The ratio of the tire's height to its width.
3. **R**: Radial tire.
4. **15**: The diameter of the wheel rim (in inches).
5. **95**: The tire's load index. In this example, a load index of 95 equals a maximum load of 1521 lbs (690 kg).
6. **H**: The tire's speed rating, or the maximum speed at which the tire is designed to be driven for extended periods of time, carrying a permissible load for the vehicle, and with correct inflation pressure. For example, H indicates a speed rating of 130 mph (210 km/h).

**NOTE:** This information may not appear on the tire because it is not required by law.

7. **M+S or M/S** = Mud and Snow, **AT** = All Terrain, **AS** = All Season

8. **U.S. DOT Tire Identification Number (TIN)**: This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, the next two are the tire size code and the last four numbers represent the week and year the tire was built. For example, the numbers 317 mean the 31st week of 1997. After 2000 the numbers go to four digits. For example, 2501 means the 25th week of 2001. The numbers in between are marketing codes used at the manufacturer's discretion. This information helps a tire manufacturer identify a tire for safety recall purposes.

9. **Tire Ply Composition and Material Used**: Indicates the number of plies indicates or the number of layers of rubber-coated fabric in the tire tread and sidewall. Tire manufacturers also must indicate the ply materials in the tire and the sidewall, which include steel, nylon, polyester, and others.

10. **Maximum Load**: Indicates the maximum load in pounds and kilograms that can be carried by the tire. Refer to the vehicle's tire information placard or the safety certification label, located on the B-Pillar or the driver's door or on the inside of the fuel filler door on Canadian models, for the correct tire pressure for your vehicle.

11. **Treadwear, Traction, and Temperature grades**: See [page 134](#) for more information.

12. **Maximum permissible inflation pressure**: the greatest amount of air pressure that should ever be put in the tire. This limit is set by the tire manufacturer.

pg. 132 Wheels and tires

## Glossary of tire terminology

The tire suppliers may have additional markings, notes or warnings such as standard load, radial tubeless, etc.

## Glossary of tire terminology

- **Tire information placard:** A placard showing the OE (Original Equipment) tire sizes, recommended inflation pressure, and the maximum weight the vehicle can carry.
- **Tire Identification Number (TIN):** A number on the sidewall of each tire providing information about the tire brand and manufacturing plant, tire size and date of manufacturer.
- **Inflation pressure:** A measure of the amount of air in a tire.
- **Standard load:** A class of P-metric or Metric tires designed to carry a maximum load at 35 psi [37 psi (2.5 bar) for Metric tires]. Increasing the inflation pressure beyond this pressure will not increase the tires load carrying capability.
- **Extra load:** A class of P-metric or Metric tires designed to carry a heavier maximum load at 41 psi [43 psi (2.9 bar) for Metric tires]. Increasing the inflation pressure beyond this pressure will not increase the tires load carrying capability.
- **kPa:** Kilopascal, a metric unit of air pressure.
- **PSI:** Pounds per square inch, a standard unit of air pressure.
- **B-pillar:** The structural member at the side of the vehicle behind the door.
- **Bead area of the tire:** Area of the tire next to the rim.
- **Sidewall of the tire:** Area between the bead area and the tread.
- **Tread area of the tire:** Area of the perimeter of the tire that contacts the road when mounted on the vehicle.
- **Rim:** The metal support (wheel) for a tire or a tire and tube assembly upon which the tire beads are seated.
- **Maximum load rating:** a figure indicating the maximum load in pounds and kilograms that can be carried by the tire. This rating is established by the tire manufacturer.
- **Maximum permissible inflation pressure:** the greatest amount of air pressure that should ever be put in the tire. This limit is set by the tire manufacturer.
- **Recommended tire inflation pressure:** inflation pressure, established by Volvo, which is based on the type of tires that are mounted on a vehicle at the factory. This inflation pressure is affected by the number of occupants in the car, the amount of cargo, and the speed at which the vehicle will be driven for a prolonged period. This information can be found on the tire inflation placard(s) located on the driver's side B-pillar or on the inside of the fuel filler door on Canadian models, and in the tire inflation table in this chapter.
- **Cold tires:** The tires are considered to be cold when they have the same temperature as the surrounding (ambient) air. This temperature is normally reached after the car has been parked for at least 3 hours.

pg. 133 Wheels and tires

## Vehicle loading

### Vehicle loading

Properly loading your vehicle will provide maximum return of vehicle design performance.

Before loading your vehicle, familiarize yourself with the following terms for determining your vehicle's weight ratings, with or without a trailer, from the vehicle's Federal/ Canadian Motor Vehicle Safety Standards (FMVSS/CMVSS) label, and the vehicle's tire information placard:

### Curb weight

The weight of the vehicle including a full tank of fuel and all standard equipment. It does not include passengers, cargo, or optional equipment.

### Capacity weight

All weight added to the curb weight, including cargo and optional equipment. When towing, trailer hitch tongue load is also part of cargo weight.

**NOTE:** For trailer towing information, please refer to the section "Towing a trailer" on [page 120](#).

### Permissible axle weight

The maximum allowable weight that can be carried by a single axle (front or rear). These numbers are shown on the Federal/Canadian Motor Vehicle Safety Standards (FMVSS/ CMVSS) label. The total load on each axle must never exceed its maximum permissible weight.

## Gross vehicle weight (GVW)

The vehicle's curb weight + cargo + passengers.

### NOTE:

- The location of the various labels in your vehicle can be found on [page 188](#).
- A table listing important weight limits for your vehicle can be found on [page 189](#).

### Steps for Determining Correct Load Limit

- (1) Locate the statement "the combined weight of occupants and cargo should never exceed XXX pounds" on your vehicle's placard.
- (2) Determine the combined weight of the driver and passengers that will be riding in your vehicle.
- (3) Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
- (4) The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.)
- (5) Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
- (6) If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual<sup>1</sup> to determine how this reduces the available cargo and luggage load capacity of your vehicle.

### WARNING!

- Exceeding the permissible axle weight, gross vehicle weight, or any other weight rating limits can cause tire overheating resulting in permanent deformation or catastrophic failure.
- Do not use replacement tires with lower load carrying capacities than the tires that were original equipment on the vehicle because this will lower the vehicle's GVW rating. Replacement tires with a higher limit than the originals do not increase the vehicle's GVW rating limitations.

1. See "Towing a trailer" on [page 120](#).

pg. 134 Wheels and tires

## Uniform Tire Quality Grading

### ALL PASSENGER VEHICLE TIRES MUST CONFORM TO FEDERAL SAFETY REQUIREMENTS IN ADDITION TO THESE GRADES

Quality grades can be found, where applicable, on the tire sidewall between the tread shoulder and maximum section width. For example:

**Treadwear 200 Traction AA Temperature**

**A**

#### TREADWEAR

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and one half (1 1/2) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and many depart significantly from the norm due to variation in driving habits, maintenance practices and differences in road characteristics and climate.

#### TRACTION

The traction grades, from highest to lowest, are AA, A, B, and C, as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance. The traction



grade assigned to this tire is based on braking (straight-ahead) traction tests and is not a measure of cornering (turning) traction.

 **WARNING!**

The traction grade assigned to this tire is based on braking (straight-ahead) traction tests and is not a measure of cornering (turning) traction.

### **TEMPERATURE**

The temperature grades are AA (the highest), A, B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a minimum level of performance that all passenger vehicle tires must meet under the Federal Motor Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

 **WARNING!**

The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, under-inflation, or excessive loading, either separately or in combination, can cause heat buildup and tire failure.

pg. 135 Wheels and tires

## **Snow chains, snow tire, studded tires**

### **Snow chains**

Snow chains can be used on your Volvo with the following restrictions:

- Snow chains should be installed on front wheels only. Use only Volvo approved snow chains.
- If accessory, aftermarket or "custom" tires and wheels are installed and are of a size different than the original tires and wheels, chains in some cases CANNOT be used. Sufficient clearances between chains and brakes, suspension and body components must be maintained.
- Some strap-on type chains will interfere with brake components and therefore CANNOT be used. Consult your Volvo retailer for additional snow chain information.

**CAUTION!**

- Check local regulations regarding the use of snow chains before installing.
- Always follow the chain manufacturer's installation instructions carefully. Install chains as tightly as possible and retighten periodically.
- Never exceed the chain manufacturer's specified maximum speed limit. (Under no circumstances should you exceed 31 mph (50 km/h).
- Avoid bumps, holes or sharp turns when driving with snow chains.
- The handling of the vehicle can be adversely affected when driving with chains. Avoid fast or sharp turns as well as locked wheel braking.

### **Snow tires, studded tires<sup>1</sup>**

**Tires for winter use:**

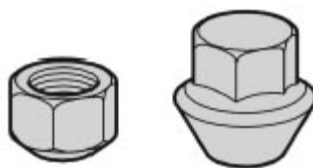
- Owners who live in or regularly commute through areas with sustained periods of snow or icy driving conditions are strongly advised to fit suitable winter tires to help retain the highest degree of traction.
- It is important to install winter tires on all four wheels to help retain traction during cornering, braking, and accelerating. Failure to do so could reduce traction to an unsafe level or adversely affect handling.
- Do not mix tires of different design as this could also negatively affect overall tire road grip.
- Winter tires wear more quickly on dry roads in warm weather. They should be removed when the winter driving season has ended.
- 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 tires should have the same rotational direction throughout their entire lifetime.

**NOTE:** Please consult state or provincial regulations restricting the use of studded winter tires before installing such tires.

1. Where permitted

pg. 136 Wheels and tires

## Wheel nuts



*Low and high wheel nuts*

### Wheel nuts

There are two different types of wheel nut, depending on whether the wheels are steel or aluminum.

#### Steel rims - low nut

Steel rims are normally secured using the low type of nut, although steel rims may also use the high type.

### WARNING!

Never use the short type of nut for aluminium wheels. This could cause the wheel to come loose.

#### Aluminum wheels - high nut

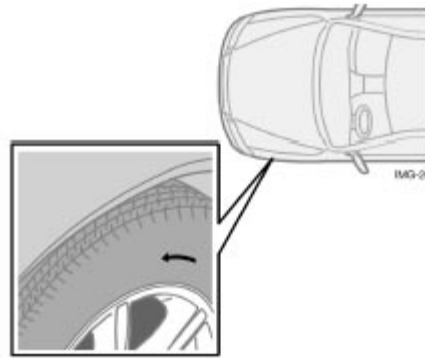
Only the high type of nut can be used for aluminum wheels. This is considerably different from other types of nut because it has a rotating conical thrust washer.

**NOTE:** This nut can also be used on steel wheels.

#### Lockable wheel nut

If steel wheels with lockable wheel nuts are used in combination with wheel covers, the lockable wheel nut must be fitted to the stud nearest the air valve. The wheel cover cannot otherwise be installed on the wheel.

## Tire rotation

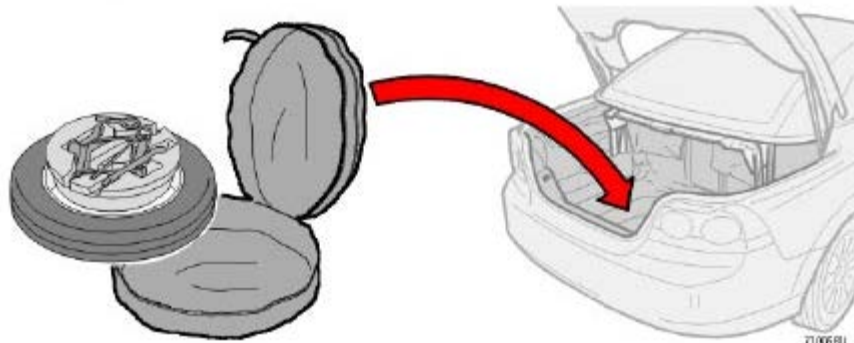


*The arrow shows the direction of rotation of the tire*

## Summer and winter tires

- When switching between summer and winter tires, mark the tires to indicate where they were mounted on the car, e.g. LF = left front, RR = right rear
- Tires with tread designed to roll in only one direction are marked with an arrow on the sidewall.
- Incorrectly mounted tires impair the car's braking properties and ability to force aside rain, snow and slush.
- The tires with the most tread should always be at the rear (to reduce the risk of skidding).
- Contact a Volvo workshop if you are unsure about the tread depth.

## Changing a wheel



*Location of the optional spare wheel and tools*

## Temporary Spare (option)

The spare tire is called a "Temporary Spare".

Recommended tire pressure (see the placard on the B-pillar or on the fuel filler door) should be maintained irrespective of which position on the car the temporary spare tire is used. In the event of damage to this tire, a new one can be purchased from your Volvo retailer.

## CAUTION!

The car must not be driven with wheels of different dimensions or with a spare tire other than the one that came with

the car. The use of different size wheels can seriously damage your car's transmission.

### Location of the optional spare wheel and tools

The spare wheel is packed in a storage bag and is located under the panel in the floor of the trunk. On cars with a spare wheel, the jack and lug wrench are secured in a foam plastic block placed in the center of the wheel. The retaining straps securing the spare wheel is attached to two eyelets in the floor of the spare wheel's storage compartment.

### WARNING!

Current legislation prohibits the use of the "Temporary Spare" tire other than as a temporary replacement for a punctured tire. It must be replaced as soon as possible by a standard tire. Road holding and handling may be affected with the "Temporary Spare" in use. Do not exceed 50 mph (80 km/h). Do not drive farther than 50 miles (80 km) on a temporary spare tire.

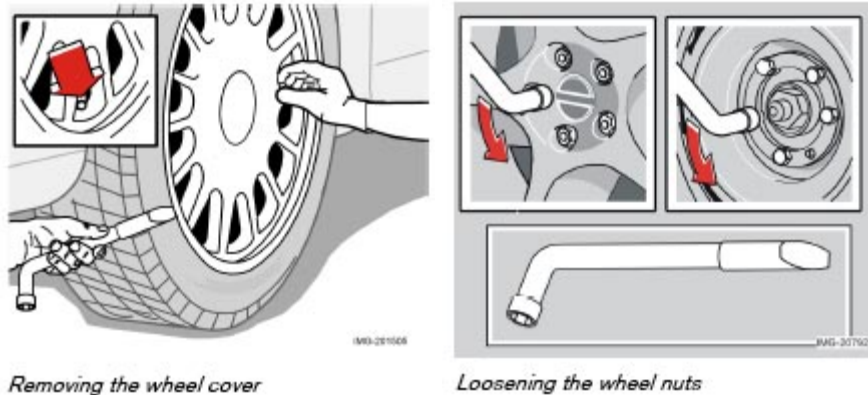
### Accessing the spare wheel:

- Open the hatch in the floor of the trunk.
- Release the retaining straps and lift out the spare wheel in its storage bag.
- Open the zipper on the storage bag and lift out the spare wheel.

The wheel that was replaced by the temporary spare tire can then be placed in the storage bag.

pg. 139 Wheels and tires

### Changing a wheel

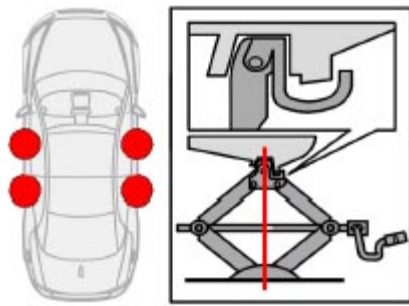


### Before raising the car:

- Engage the parking brake.
- Put the gear selector in (P)ark or in reverse if the car is equipped with a manual transmission.
- Block the wheels that are on the ground with wooden blocks or large stones.
- Remove the wheel cap (where applicable) using the lug wrench.
- With the car still on the ground, use the lug wrench to loosen the wheel nuts 1/2-1 turn by exerting downward pressure. Turn the nuts counterclockwise to loosen.

pg. 140 Wheels and tires

### Changing a wheel



*Positioning the jack*

### **Positioning the jack**

There are two jack attachment points on each side of the car.

- Position the jack correctly in the attachment (see illustration above) and crank while simultaneously guiding the base of the jack to the ground. The base of the jack must be flat on a level, firm, non-slippery surface.
- Before raising the car, check that the jack is still correctly positioned in the attachment.

#### **WARNING!**

The jack must correctly engage the jack attachment.  
Be sure the jack is on a firm, level, non-slippery surface.  
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 changing a tire. For any other job, use stands to support the car.  
Apply the parking brake and put the gear selector in the (P)ark position.  
Block the wheels standing on the ground, use rigid wooden blocks or large stones.  
The jack should be kept well-greased.

### **Removing a wheel:**

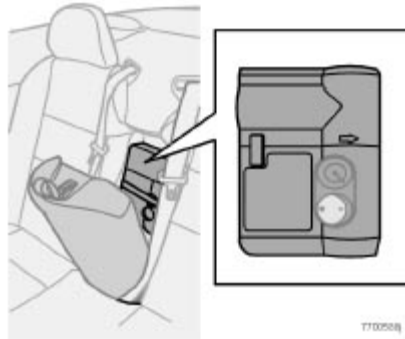
- Raise the vehicle until the wheel to be changed is lifted off the ground.
- Unscrew the wheel nuts completely and carefully remove the wheel so as not to damage the threads on the studs.

### **Installing a wheel**

- Clean the contact surfaces on the wheel and hub.
- Lift the wheel and place it on the hub.
- Install the wheel nuts and tighten hand-tight. Using the lug wrench, tighten crosswise until all nuts are snug.
- Lower the vehicle to the ground and alternately tighten the bolts crosswise to 62 ft. lbs. (85 Nm).
- Install the wheel cap (where applicable).

pg. 141 Wheels and tires

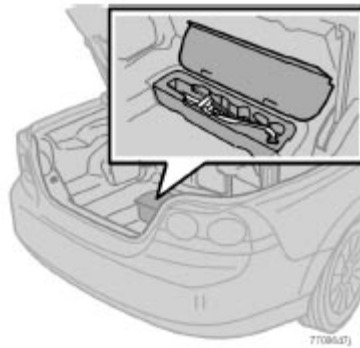
### **Tire sealing system**



*Location of the tire sealing kit*

Your vehicle is equipped with a tire sealing system that enables you to temporarily seal a hole in the tread surface and re-inflate a flat tire, or to adjust a tire's inflation pressure.

- The tire sealing kit is stowed behind the ski hatch in the center of the rear seat backrest.
- The jack, and lug wrench are secured in a foam plastic block located under the floor panel in the trunk.



*Location of the tools*

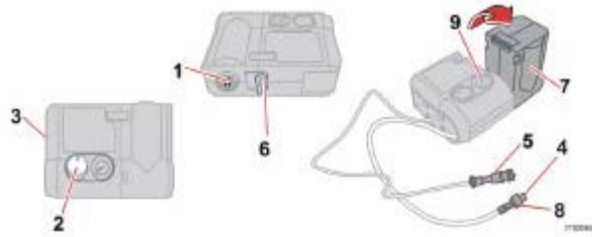
The system consists of an air compressor, an integrated container for the sealing compound, wiring to connect the system to the vehicle's electrical system via one of the 12-volt sockets, and a hose used to connect the system to the tire's inflation valve.

**NOTE:**

- The tire sealing system is only intended to seal holes on the tire's tread area, not the sidewall.
- Tires with large holes or tears cannot be repaired with the tire sealing system.

**⚠ WARNING!**

- After using the tire sealing system, the vehicle should not be driven farther than approximately 120 miles (200 km). Have the tire replaced as soon as possible.
- The vehicle should not be driven faster than 50 mph (80 km/h) while using a tire that has been temporarily repaired with the tire sealing system.
- After using the tire sealing system, drive carefully and avoid abrupt steering maneuvers and sudden stops.



## Temporarily repairing a flat tire

Before using the tire sealing system, observe the following:

### **WARNING!**

- Never leave the tire sealing system unattended when it is operating.
- Keep the tire sealing system kit away from children.
- The vehicle's engine should be running when the tire sealing system is used to avoid battery drain. Therefore, be sure the vehicle is parked in a well ventilated place before using the system.

- Be sure the vehicle is parked safely off the road and away from moving traffic.
- Apply the parking brake.
- Do not remove any foreign objects (nails, etc.) from the tire.

### Temporarily repairing a flat tire is done in two stages.

- In the first stage, the hole is sealed by pumping sealing compound into the tire. The car is then driven a short distance to distribute the sealing compound in the tire.
- In the second stage, the tire's inflation pressure is checked and adjusted if necessary.

#### Stage 1: Sealing the hole

Peel off the speed limit sticker (1) and affix it to the steering wheel hub where it will be clearly visible to the driver.

- Ensure that the orange switch (2) is in position 0 (the 0 side of the switch should be pressed down).
- Pull out the electrical wire (5) and hose (4) from the side compartment (3).
- Remove the valve cap from the tire's inflation valve and screw the hose connector onto the valve as tightly as possible by hand.
- Connect the electrical wire to the nearest 12-volt socket in the vehicle.
- Release the safety catch (6) and turn the orange colored section of the sealing kit (7), which holds the sealing compound container, 90 degrees until it clicks into the vertical position.
- Start the vehicle's engine.
- Start the tire sealing system's compressor by pressing the switch (2) to position I.

**NOTE:** The air pressure gauge (9) will temporarily show an increase in pressure to approximately 88 psi (6 bar) while the sealing compound is being pumped into the tire. The pressure should return to a normal level after approximately one minute.

pg. 143 Wheels and tires

## Tire sealing system

### **WARNING!**

- Contact with the sealing compound may cause skin irritation. If contact occurs, wash the affected area immediately with soap and water.
- Never stand next to the tire being inflated when the compressor is in operation. If cracks, bubbles, etc. form on the tire, switch off the compressor immediately. If there is visible damage to the sidewall or the rim, the tire cannot be repaired. The vehicle should not be driven if this occurs. Contact a towing service or Volvo On Call Roadside Assistance if applicable.

- Within seven minutes, inflate the tire to between 22 - 50 psi (1.8 - 3.5 bar). Switch off the compressor briefly to get a clear reading from the pressure gauge (9).

### **CAUTION!**

If the pressure remains below 22 psi (1.8 bar) after approximately seven minutes, turn off the compressor. In this case, the hole is too large to be sealed and the vehicle should not be driven.

- Disconnect the electrical wire from the 12-volt socket.
- Unscrew the hose from the tire's inflation valve and reinstall the valve cap.
- Fold down the orange section of the tire sealing system to its original (horizontal) position and press the safety catch into place.
- Safely stow the tire sealing system kit in a convenient place as it will soon be used again to check the tire's inflation pressure.
- Immediately drive the vehicle for approximately 2 miles (3 km) to distribute the sealing compound in the tire.



### **WARNING!**

If heavy vibrations, unsteady steering behavior, or noises should occur while driving, reduce speed and park the car in a safe place. Recheck the tire for bumps, cracks, or other visible damage, and recheck its inflation pressure. If the pressure is below 16 psi (1.3 bar), do not continue driving. Have the vehicle towed to a workshop or Volvo retailer.

## **Stage 2: Checking inflation pressure**

- Park the car in a safe place.
- Ensure that the orange switch (2) is in position 0 (the 0 side of the switch should be pressed down).
- Remove the valve cap from the tire's inflation valve and screw the hose connector onto the valve as tightly as possible by hand.
- Connect the electrical wire to the nearest 12-volt socket in the vehicle.
- Start the vehicle's engine.
- Check the tire's inflation pressure on the gauge (9).

**NOTE:** In dark conditions, switching on the tire sealing system's compressor will illuminate the pressure gauge.

- Inflate the tire to the correct pressure as indicated in the tire inflation tables on page 116. If the tire needs to be inflated, start the tire sealing system's compressor. If necessary, release air from the tire by pressing the vent button (8).
- Turn off the compressor (press switch 2 to the 0 position) when the correct inflation pressure has been reached.

pg. 144 Wheels and tires

## **Tire sealing system**

### **CAUTION!**

The compressor should not be used for more than ten minutes at a time to avoid overheating.

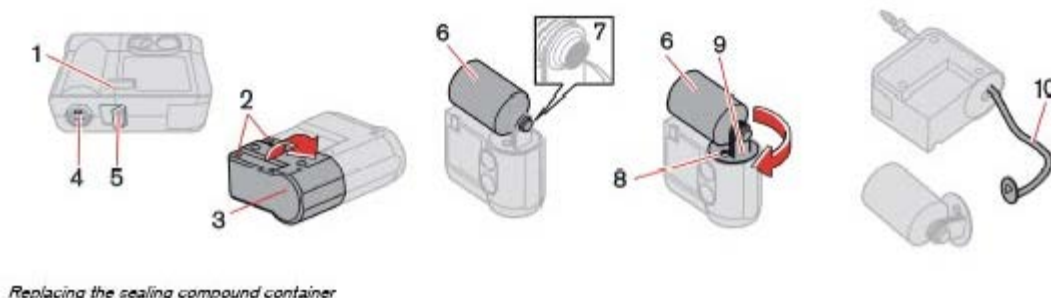


- Unscrew the hose from the tire's inflation valve and reinstall the valve cap.
- Disconnect the electrical wire from the 12-volt socket.
- Return the hose and electrical wire to the compartment on the side of the unit.

**NOTE:** When the tire sealing system has been used to seal a flat tire, the tank containing the sealing compound, and the hose must be replaced. See the instructions on the following page. Contact a Volvo retailer for replacement parts.

pg. 145 Wheels and tires

## Tire sealing system



### CAUTION!

If your vehicle is equipped with the optional Tire Pressure Monitoring System (see [page 117](#)), the use of the sealing compound may lead to incorrect tire pressure readings or in rare cases, damage to the tire pressure sensor. Use the tire sealing system to check and adjust the damaged tire's pressure.

After use, return the tire sealing system to its storage compartment behind the ski hatch in the center of the rear seat backrest.

### ⚠ WARNING!

If you interrupt your trip for more than one hour, check the inflation pressure in the damaged tire again before continuing. See the section "Stage 2: Checking inflation pressure" on [page 143](#).

## Replacing the sealing compound container

- The sealing compound container must be replaced if:
- the tire sealing system has been used to repair a tire the container's expiration date has passed (see the date on decal 1).

After use, the container (6), its retaining bracket (9), and the hose (10) must be replaced. Please consult your Volvo retailer for replacement parts.

See also the safety regulations on the bottom of the container.

### ⚠ WARNING!

Be sure that the compressor is not connected to a 12-volt socket while replacing the container.

pg. 146 Wheels and tires

## Tire sealing system

### Replacing the container and hose after use

- Unscrew the two screws (2) on the orange casing.
- Remove the speed limit sticker (4) and the expiration date decal (1).
- Release the safety catch (5) and remove the casing (3) from the sealing system unit.
- Press down the button (8) while twisting the container (6) and retaining bracket (9) clockwise approximately 2/3 of a turn and remove them.
- To remove the hose (10), first press it into housing and then pull it out from the opposite side.
- Wipe away any remaining sealing compound, or scrape it off if it has already hardened.
- Insert a new air hose and check that it is properly seated.
- Unscrew the cap from the new sealing compound container and check that the seal (7) is intact and undamaged.
- Screw the container (6) firmly into the bracket (9).
- Mount the bracket on the housing and twist it counterclockwise until it clicks into place.
- Reinsert the casing (3). Check that it is correctly in place and tighten the screws (2), and press the safety catch (5) into position.
- Affix the speed limit decal (4) and a new expiration date decal (1).

The empty container and used hose can be discarded as normal refuse, or recycled. Consult local regulations.

### Replacing the container after its expiration date has passed

- Unscrew the two screws (2) on the orange casing.
- Remove the speed limit sticker (4) and the expiration date decal (1).
- Release the safety catch (5) and remove the casing (3) from the sealing system unit.
- Unscrew and remove the container.
- Unscrew the cap from the new sealing compound container and check that the seal (7) is intact and undamaged.
- Screw the container (6) firmly into the bracket (9).
- Reinsert the casing (3). Check that it is correctly in place and tighten the screws (2), and press the safety catch (5) into position.
- Affix the speed limit decal (4) and a new expiration date decal (1).

The empty container can be discarded as normal refuse, or recycled. Consult local regulations.



# 2006 VOLVO C70

## Chapter 9 - Vehicle care

pg. 147 Vehicle care

Washing and cleaning the car [148](#)

Paint touch up [151](#)

pg. 148 Vehicle care

### Washing and cleaning the car

#### Washing the car

The following points should be kept in mind when washing and cleaning 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. To help prevent corrosion, it is particularly important to wash the car frequently in the wintertime.
- Avoid washing your car in direct sunlight. Doing so may cause detergents and wax to dry out and become abrasive. To avoid scratching, use lukewarm water to soften the dirt before you wash with a soft sponge, and plenty of sudsy water.
- **Bird droppings:** Remove from paintwork as soon as possible. Otherwise the finish may be permanently damaged.
- 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.
- A stiff-bristle brush and lukewarm soapy water can be used to clean the wiper blades. Frequent cleaning improves visibility considerably.
- Wash off the dirt from the underside (wheel housings, fenders, etc).
- In areas of high industrial fallout, more frequent washing is recommended.
- After cleaning the engine, the spark plug wells should be inspected for water and blown dry if necessary.

#### Exterior plastic components

Cleaning exterior plastic components should be done with a cleaning agent specially designed for this purpose.

Solvents or stain removers should not be used. Consult your Volvo retailer.

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

#### **CAUTION!**

During high pressure washing, the spray mouthpiece must never be closer to the vehicle than 13" (30 cm). Do not spray into the locks.

When washing or steam cleaning the engine, avoid spraying water or steam directly on the electrical components or toward the rear side of the engine.

## Automatic washing - simple and quick

- We do NOT recommend washing your car in an automatic wash during the first six months (because the paint will not have hardened sufficiently).
- An automatic wash is a simple and quick way to clean your car, but it is worth remembering that it may not 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.

pg. 149 Vehicle care

## Washing and cleaning the car

### CAUTION!

Before driving into an automatic carwash, turn off the optional rain sensor to avoid damaging the windshield wipers. Make sure that side view mirrors, auxiliary lamps, etc, are secure, and that any antenna(s) are retracted or removed. Otherwise there is risk of the machine dislodging them.



### WARNING!

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

Engine cleaning agents should not be used when the engine is warm. This constitutes a fire risk.

## 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 vehicle 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 waxes can be purchased today. These waxes are easy to use and produce a long-lasting, high-gloss finish that protects the bodywork against oxidation, road dirt and fading.
- Do not polish or wax your vehicle in direct sunlight (the surface of the vehicle should not be warmer than 113° F (45° C)).

### CAUTION!

Volvo does not recommend the use of long-life or durable paint protection coatings, some of which may claim to prevent pitting, fading, oxidation, etc. These coatings have not been tested by Volvo for compatibility with your vehicle's clear coat. Some of them may cause the clear coat to soften, crack, or cloud. Damage caused by application of paint protection coatings may not be covered under your vehicle's paint warranty.

pg. 150 Vehicle care

## Washing and cleaning the car

### Upholstery care

#### Fabric

Clean with soapy water or a detergent. For more difficult spots caused by oil, ice cream, shoe polish, grease, etc., use a clothing/fabric stain remover. Consult your Volvo retailer.

### **Interior plastic components**

- Cleaning interior plastic components should be done with a cleaning agent specially designed for this purpose. Consult your Volvo retailer.

### **Alcantera™ suede-like material**

- Suede-like upholstery can be cleaned with a soft cloth and mild soap solution.

### **Leather care**

Volvo's leather upholstery is manufactured with a protectant to repel soiling. Over time, sunlight, grease and dirt can break down the protection. Staining, cracking, scuffing, and fading can result.

Volvo offers an easy-to-use, non-greasy leather care kit formulated to clean and beautify your vehicle's leather, and to renew the protective qualities of its finish. The cleaner removes dirt and oil buildup. The light cream protectant restores a barrier against soil and sunlight.

Volvo also offers a special leather softener that should be applied after the cleaner and protectant. It leaves leather soft and smooth, and reduces friction between leather and other finishes in the vehicle.

Volvo recommends cleaning, protecting and conditioning your vehicle's leather two to four times a year. Ask your Volvo retailer about Leather Care Kit 951 0251 and Leather Softener 943 7429.

### **CAUTION!**

- Under no circumstances should gasoline, naphtha or similar cleaning agents be used on the plastic or the leather since these can cause damage.
- 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.
- Sharp objects (e.g. pencils or pens in a pocket) or Velcro fasteners on clothing may damage the textile upholstery.

### **Cleaning the seat belts**

Clean only with lukewarm water and a mild soap solution.

### **Cleaning floor mats**

The floor mats should be vacuumed or brushed clean regularly, especially during winter when they should be taken out for drying. Spots on textile mats can be removed with a mild detergent. For best protection in winter, Volvo recommends the use of Volvo rubber floor mats. Consult your Volvo retailer.

pg. 151 Vehicle care

## **Paint touch up**

### **Touching up minor paint damage**

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

### **Color code**

When ordering touch-up paint from your Volvo retailer, make sure you have the right color. Use the paint code indicated on the model plate. The plate is located on the passenger's side center door pillar.

### Minor stone chips and scratches

Material:

- Primer - can
- Paint - touch-up pen
- Brush
- Masking tape

**NOTE:** When touching up the vehicle, it should be clean and dry. The surface temperature should be above 60° F (15° C).

If the stone chip has not penetrated down to the metal and an undamaged layer of paint remains, the touch-up paint can be applied as soon as the spot has been cleaned.

VOLVOCARCORPMADEIN	
kg	1
kg	2
1- kg	3
2- kg	4

020072a

*Paint color code*

### Deep scratches

- Place a strip of masking tape over the damaged surface. Pull the tape off so that any loose flakes of paint adhere to it.
- 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.



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



[Contents](#) | [Top of Page](#)

# 2006 VOLVO C70

## Chapter 10 - Maintenance and servicing

### pg. 153 Maintenance and servicing

Volvo maintenance	<a href="#">154</a>
Maintaining your car	<a href="#">155</a>
Hood and engine compartment	<a href="#">157</a>
Engine oil	<a href="#">158</a>
Fluids	<a href="#">159</a>
Wiper blades	<a href="#">161</a>
Battery	<a href="#">162</a>
Bulbs	<a href="#">164</a>
Replacing front bulbs	<a href="#">165</a>
Replacing bulbs in the trunk	<a href="#">168</a>
Replacing interior bulbs	<a href="#">169</a>
Fuses	<a href="#">170</a>

### pg. 154 Maintenance and servicing

#### **Volvo maintenance**

Volvo advises you to follow the maintenance program outlined in the Warranty and Service Records Information booklet. This maintenance program contains inspections and services necessary for the proper function of your vehicle. The maintenance services contain several checks that require special tools and training, 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 - U.S**

The Federal Clean Air Act requires vehicle manufacturers to furnish written instructions to the ultimate purchaser to assure the proper servicing and function of the components that control emissions. These services, which are listed in the "Warranty and Service Records Information" booklet, are not covered by the warranty. You will be required to pay for labor and material used.

#### **Maintenance**

Your Volvo passed several major inspections before it was delivered to you, in accordance with Volvo specifications. The maintenance procedures outlined in the Warranty and Service Records Information booklet, many of which will positively affect your vehicle's emissions, should be performed as indicated. It is recommended that receipts for vehicle emission maintenance be retained in case questions arise concerning maintenance. Inspection and maintenance should also be performed anytime a malfunction is observed or suspected.

#### **Applicable warranties - U.S/ Canada**



In accordance with applicable U.S. and Canadian regulations, the following list of warranties is provided.

- New Vehicle Limited Warranty
- Parts and Accessories Limited Warranty
- Corrosion Protection Limited Warranty
- Seat Belt and Supplemental Restraint Systems Limited Warranty
- Emission Design and Defect Warranty
- Emission Performance Warranty

These are the federal warranties; other warranties are provided as required by state/ provincial law. Refer to your separate Warranty and Service Records Information booklet for detailed information concerning each of the warranties.

### **Periodic maintenance helps minimize emissions**

Periodic maintenance will help keep your vehicle running well. Your Warranty and Service Records Information booklet provides a comprehensive periodic maintenance schedule up to 150,000 miles (240,000 km) of vehicle maintenance. The schedule includes components that affect vehicle emissions. This page describes some of the emission-related components.

### **Vehicle Event Data (Black Box)**

Your vehicle's driving and safety systems employ computers that monitor, and share with each other, information about your vehicle's operation. One or more of these computers may store what they monitor, either during normal vehicle operation or in a crash or near-crash event. Stored information may be read and used by:

- Volvo Car Corporation
- service and repair facilities
- law enforcement or government agencies
- others who may assert a legal right to know, or who obtain your consent to know such information.

pg. 155 Maintenance and servicing

## **Maintaining your car**

### **Owner maintenance**

Periodic maintenance requirements and intervals are described in your vehicle's Warranty and Service Records Information booklet.

The following points can be carried out between the normally scheduled maintenance services.

### **Each time the car is refueled:**

- Check the engine oil level
- Clean the windshield, windshield wipers, headlights, and tail lights

### **Monthly:**

- Check cold tire pressure in all tires. Inspect the tires for wear.
- Check that engine coolant and other fluid levels are between the indicated "min" and "max" markings.
- Clean interior glass surfaces with a glass cleaner and soft paper towels.
- Wipe driver information displays with a soft cloth.
- Visually inspect battery terminals for corrosion. Corrosion may indicate a loose terminal connector, or a battery near the end of its useful service life. Consult your Volvo retailer for additional information.

### **As needed:**

- Wash the car, including the undercarriage, to reduce wear that can be caused by a buildup of dirt, and corrosion that can be caused by salt residues.

- Clean leaves and twigs from air intake vents at the base of the windshield, and from other places where they may collect.

**NOTE:** Complete service information for qualified technicians is available online for purchase or subscription at [www.volvotechinfo.com](http://www.volvotechinfo.com).

pg. 156 Maintenance and servicing

## **Maintaining your car**

### **Emission inspection readiness What is an Onboard Diagnostic System (OBD II)?**

OBD II is part of your vehicle's computerized engine management system. It stores diagnostic information about your vehicle's emission controls. It can light the Check Engine light (MIL) if it detects an emission control "fault." A "fault" is a component or system that is not performing within an expected range. A fault may be permanent or temporary. OBD II will store a message about any fault.

### **How do states use OBD II for emission inspections?**

Many states connect a computer directly to a vehicle's OBD II system. The inspector can then read "faults." In some states, this type of inspection has replaced the tailpipe emission test.

### **How can my vehicle fail OBD II emission inspection?**

Your vehicle can fail OBD II emission inspection for any of the following reasons.

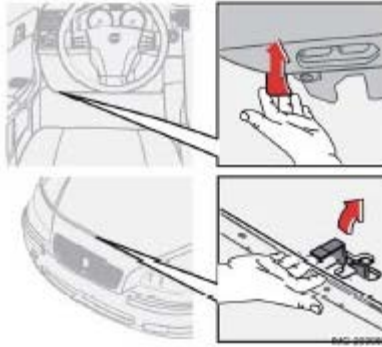
- If your Check Engine (MIL) light is lit, your vehicle may fail inspection.
- If your vehicle's Check Engine light was lit, but went out without any action on your part, OBD II will still have a recorded fault. Your vehicle may pass or fail, depending on the inspection practices in your area.
- If you had recent service that required disconnecting the battery, OBD II diagnostic information may be incomplete and "not ready" for inspection. A vehicle that is not ready may fail inspection.

### **How can I prepare for my next OBD II emission inspection?**

- If your Check Engine (MIL) light is lit - or was lit but went out without service, have your vehicle diagnosed and, if necessary, serviced by a qualified Volvo technician.
- If you recently had service for a lit Check Engine light, or if you had service that required disconnecting the battery, a period of driving is necessary to bring the OBD II system to "ready" for inspection. A half-hour trip of mixed stop-and-go/ highway driving is typically needed to allow OBD II to reach readiness. Your Volvo retailer can provide you with more information on planning a trip.
- Maintain your vehicle in accordance with your vehicle's maintenance schedule.

pg. 157 Maintenance and servicing

## **Hood and engine compartment**



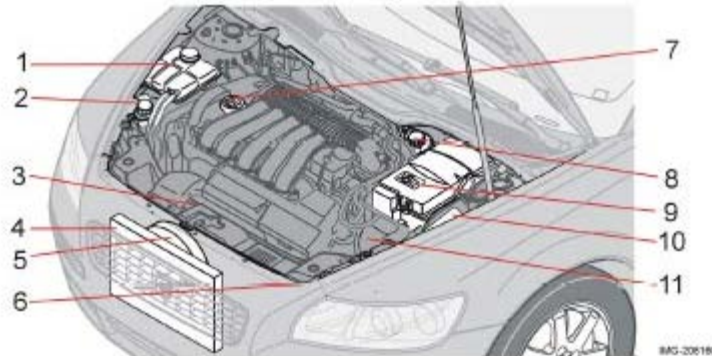
## Opening the hood

To open the hood:

- Pull the lever located under the left side of the dash to release the hood lock.
- Lift the hood slightly.
- Press up the release control located under the front edge of the hood (at the center) up to the right, and lift the hood.

### **WARNING!**

Check that the hood locks engage properly when closed.



## Engine compartment

1. Cooling system expansion tank
2. Power steering fluid reservoir
3. Dipstick - engine oil
4. Radiator
5. Cooling fan
6. Washer fluid reservoir
7. Engine oil filler cap
8. Brake/clutch fluid reservoir
9. Battery
10. Relay/fuse box
11. Air cleaner


### **WARNING!**

The cooling fan may start or continue to operate (for up to 6 minutes) after the engine has been switched off.

## Engine oil

### Changing engine oil and oil filter

See [page 191](#) for oil specifications. Refer to the Warranty and Service Records Information booklet for information on the oil change intervals.

Volvo recommends .

### NOTE:

- Volvo does not recommend the use of oil additives.
- Synthetic oil is not used when the oil is changed at the normal maintenance intervals except at owner request and at additional charge. Please consult your Volvo retailer.

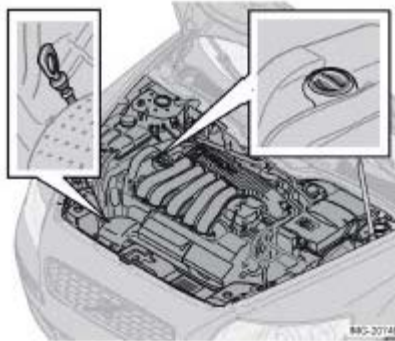
### Checking and adding oil

The oil level should be checked every time the vehicle is refueled. This is especially important during the period up to the first scheduled maintenance service.

- The car should be parked on a level surface when the oil is checked.
- **If the engine is warm**, wait for at least 10-15 minutes after the engine has been switched off before checking the oil.

### Checking the oil

1. Pull out the dipstick and wipe it with a lint-free rag.



*Location of dipstick and oil filler cap*

2. Reinsert the dipstick, pull it out, and check the oil level.
3. Add oil if necessary. If the level is close to the MIN mark, add approximately 1 US quart (1 liter) of oil.
4. Run the engine until it reaches normal operating temperature.
5. Switch off the engine and wait for at least 10-15 minutes and recheck the oil level. If necessary, add oil until the level is near the MAX mark.



**CAUTION!**

- Not checking the oil level regularly can result in serious engine damage if the oil level becomes too low.
- Oil that is lower than the specified quality can damage the engine.
- Always add oil of the same type and viscosity as already used.
- Never fill oil above the MAX mark. This could cause an increase in oil consumption.

**⚠ WARNING!**

Do not allow oil to spill onto or come into contact with hot exhaust pipe surfaces.

pg. 159 Maintenance and servicing

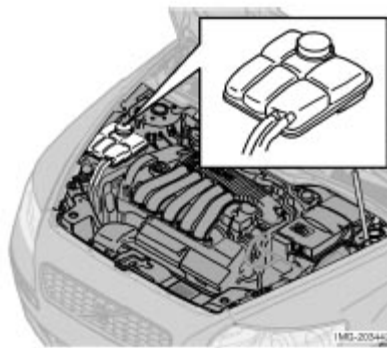
## Fluids



*Washer fluid reservoir*

### Washer fluid

The washer fluid reservoir is located in the engine compartment and holds approximately 6.8 US qts (6.5 liters). During cold weather, the reservoir should be filled with windshield washer solvent containing antifreeze.



*Coolant reservoir*

### Coolant

Normally, the coolant does not need to be changed. If the system must be drained, consult your Volvo retailer.

**NOTE:** Do not top off with water only. This reduces the rust-protective and antifreeze qualities of the coolant and has a lower boiling point. It can also cause damage to the cooling system if it should freeze. Top off with Volvo Genuine Coolant/Antifreeze only (a 50/ 50 mix of water and antifreeze).

**CAUTION!**

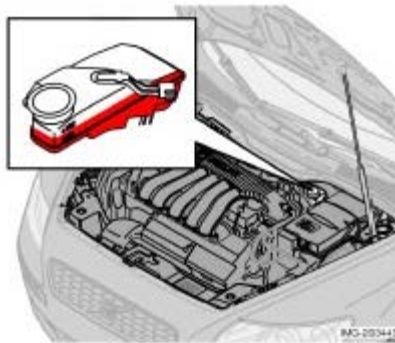
The cooling system must always be kept filled to the correct level, and the level must be between the MIN and MAX marks. If it is not kept filled, there can be high local temperatures in the engine which could result in damage. Different types of antifreeze/coolant may not be mixed. Check coolant regularly!

**⚠ WARNING!**

Never remove the radiator cap while the engine is warm. Wait until the vehicle cools. If it is necessary to top off the coolant when the engine is warm, unscrew the expansion tank cap slowly so that the overpressure dissipates.

pg. 160 Maintenance and servicing

## Fluids



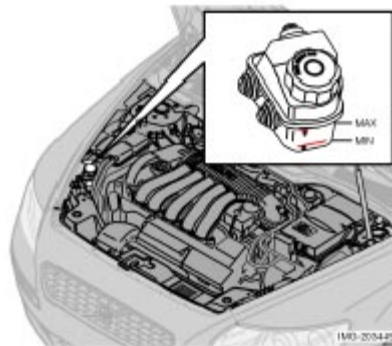
*Brake fluid reservoir*

### Brake fluid

The brake fluid should always be between the MIN and MAX marks on the side of the reservoir. Check, without removing the cap, that there is sufficient fluid in the reservoir.

**Fluid type:** DOT 4+ boiling point  $>536^{\circ}\text{F}$  ( $280^{\circ}\text{C}$ ), P/N 9437433

**Replace:** The fluid should be replaced according to the intervals specified in the Warranty and Service Records Information booklet. When driving under extremely hard conditions (mountain driving, etc), it may be necessary to replace the fluid more often. Consult your Volvo retailer. Always entrust brake fluid changing to a trained and qualified Volvo service technician.



*Power steering fluid reservoir*

### Power steering fluid

The fluid level should always be between the MIN and MAX marks.

**Fluid type:** Volvo power steering fluid or equivalent.

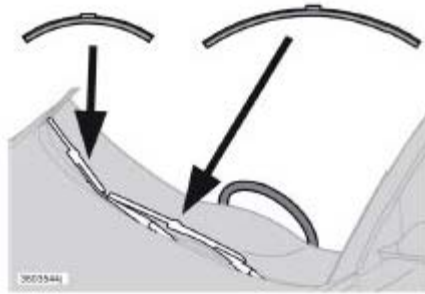
**Replace:** No fluid change required

 **WARNING!**

If a problem should occur in the power steering system or if the vehicle has no electrical current and must be towed, it is still possible to steer the vehicle. However, keep in mind that greater effort will be required to turn the steering wheel.

pg. 161 Maintenance and servicing

## Wiper blades

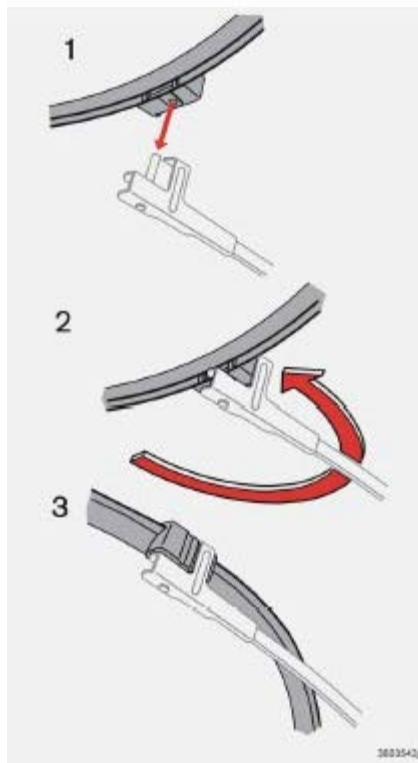


### Replacing windshield wiper blades

Fold out the wiper arm and fold out the wiper blade at a 90° angle to the wiper arm.

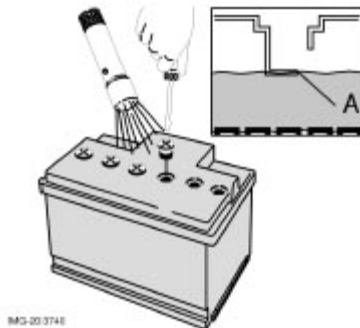
- Pull off the wiper blade from the attachment, straight to the side.
- Slide in a new wiper blade at a 90° angle to the wiper arm.
- Fold in the wiper blade under the metal plate and fold the wiper arm down.

**NOTE:** The wiper blades are different lengths. The blade on the driver's side is longer than the one on the passenger's side.



pg. 162 Maintenance and servicing

## Battery



### Battery maintenance

Driving habits and conditions, climate, the number of starts, etc., all affect the service life and function of the battery. In order for your battery to perform satisfactorily, keep the following in mind:

- Check the fluid level in each cell in the battery every 24 months or every 15,000<sup>1</sup> miles (24,000 km), whichever is sooner. The fluid should be at the level shown in the illustration above (A). Do not overfill.
- Use a screw driver to open the caps and a flashlight to inspect the level.
- If necessary, add distilled water. The level should never be above the indicator (A).
- The fluid level should be checked if the battery has been recharged.
- After inspection, be sure the cap over each battery cell is securely in place.
- Check that the battery cables are correctly connected and properly tightened.
- Never disconnect the battery when the engine is running, or when the key is in the ignition. This could damage the vehicle's electrical system.



- The battery should be disconnected from the vehicle when a battery charger is used directly on the battery.

 **WARNING!**

**PROPOSITION 65 WARNING!**

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and reproductive harm. Wash hands after handling.



Wear protection goggles.



See the owner's manual for additional information.



Keep away from children.



Corrosive.



No smoking, no open flames, no sparks.



Risk of explosion.

1. More frequently in warm climates.

pg. 163 Maintenance and servicing

## Battery

### Battery replacement

- Switch off the ignition and remove the key.
- Unscrew the cover over the battery.
- Wait at least 5 minutes after switching off the ignition before disconnecting the battery so that all information in the vehicle's electrical system can be stored in the control modules.
- Remove the cover and unscrew the front side of the battery box using a screwdriver.
- Disconnect the battery negative (ground)
- Release the clamp holding the battery.
- Disconnect the positive cable and lift out the battery.

Install the new battery in the reverse order.

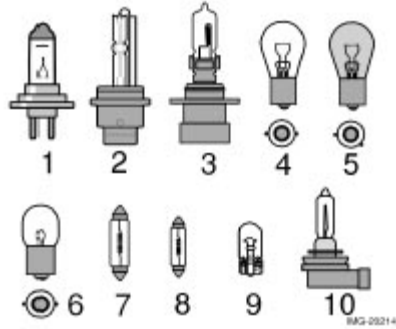
 **WARNING!**

Never expose the battery to open flame or electric spark.  
Do not smoke near the battery.

Battery fluid contains sulfuric acid. Do not allow battery fluid to contact eyes, skin, fabrics or painted surfaces. If contact occurs, flush the affected area immediately with water. Obtain medical help immediately if eyes are affected.

pg. 164 Maintenance and servicing

## Bulbs



### Bulbs used in the car

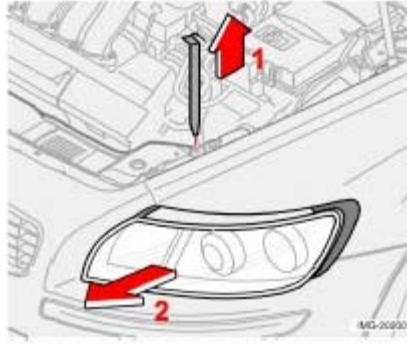
1.	Low beam headlight	55W H11
2.	Bi-Xenon headlight (option)	35W D2S
3.	High beam headlight	55W HB3
4.	Brake light, Rear fog light	P21/W5
5.	Turn signal, front/ rear (amber bulb)	PY21W
6.	Tail lights, Parking light, Side marker light	P21/W5
7.	Footwell lighting, cargo compartment light	W5W
8.	Vanity mirror	1,2W
9.	License plate lighting, Parking light in headlight housing Side turn signal (amber bulb)	W5W
10.	Front fog light (option)	55W H11

### NOTE:

- Never touch the glass of bulbs with your fingers. Grease and oils from your fingers vaporize in the heat and will leave a deposit on the reflector, which will damage it.
- The optional Bi-Xenon headlight bulbs contain trace amounts of mercury. These bulbs should always be disposed of by a trained and qualified Volvo service technician.
- Certain bulbs not listed here should only be replaced by a trained and qualified Volvo service technician.

pg. 165 Maintenance and servicing

## Replacing front bulbs



### Removing the headlight housing

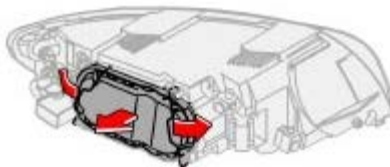
The entire headlight housing must be lifted out when replacing the high/low beam, parking light, turn signal, and side marker bulbs. To lift out the housing:

- Remove the key from the ignition and turn the headlight switch to position 0.
- Open the hood.
- Pull up the headlight housing's retaining pin (1)
- Pull the headlight housing to one side and then forward (2).
- Disconnect the wiring connector.
- Lift out the headlight housing and place it on a soft surface to avoid scratching the lens.

After the defective bulb has been replaced, reinsert the housing in the reverse order. Check that the retaining pin is correctly inserted.

### WARNING!

Bi-Xenon headlights (option) - due to the high voltage used by these headlights, these bulbs should only be replaced by a trained and qualified Volvo service technician.



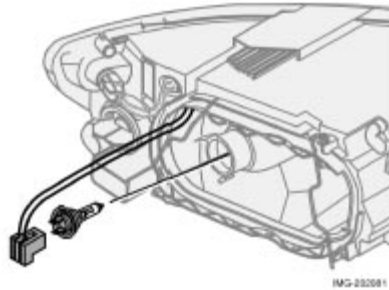
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*Cover with retaining clamps*

### Low beam bulb

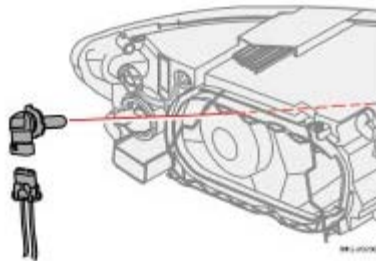
- Open the hood.
- Remove the headlight housing.
- Press the retaining clamps to the sides.
- Release the bulb's retaining spring by pressing it to the right, and then moving it outward and downward.
- Pull out the bulb.
- Disconnect the wiring connector from the bulb. Installing a new bulb.
- Insert the new bulb. It can only be installed in one position.

## Replacing front bulbs



Low beam bulb

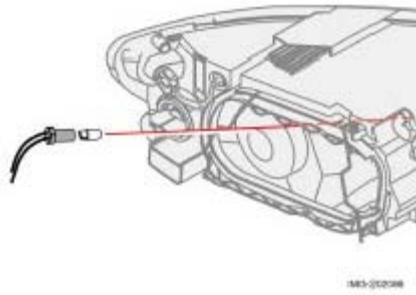
- Press the retaining spring upward and slightly to the left until it snaps into place.
- Press the wiring connector onto the bulb.
- Put the plastic cover in place.
- Press the retaining clamps back into place.
- Reinstall the headlight housing.



High beam bulb

### High beam bulb

- Open the hood.
  - Remove the headlight housing.
  - Turn the bulb holder counterclockwise and pull it out. Replace the bulb. Note how the bulb holder is positioned.
  - Reinstall the bulb holder. It can only be installed in one position.
1. Reinstall the headlight housing.

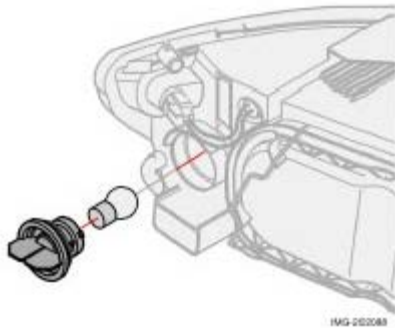


### **Parking light bulb**

- Pull out the bulb holder with a pair of pliers. The bulb holder should not be pulled out by the wire.
- Replace the bulb.
- Press the bulb holder back into place. It can only be installed in one position.

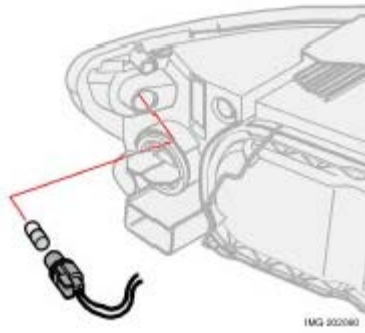
pg. 167 Maintenance and servicing

### **Replacing front bulbs**



### **Turn signal**

- Turn the bulb holder counterclockwise and remove it.
- Remove the bulb from the holder by pressing it in and twisting it counterclockwise.
- Insert a new bulb and reinstall the bulb holder in the headlight housing.

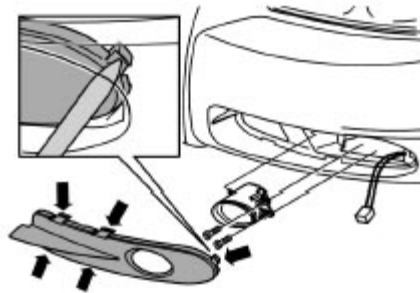


### **Side marker light**

- Turn the bulb holder counterclockwise, pull it out, and replace the bulb.
- Reinstall the bulb holder. It can only be installed in one position.

### **Front fog light (option)**

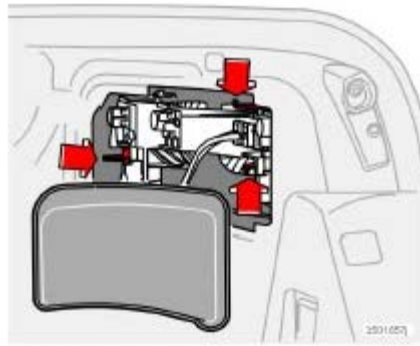
- Switch off all lights and turn the key to position 0.
- Remove the panel around the fog light housing. Depress the tabs around the edges as shown in the illustration in the right column.
- Unscrew both torx screws in the fog light housing and remove it.



- Disconnect the connector from the bulb.
- Turn the bulb counterclockwise and pull it out.
- Install the new bulb in its seat and turn it clockwise.
- Reconnect the connector to the bulb.
- Secure the fog light housing with the screws and press the panel back into place.

pg. 168 Maintenance and servicing

### **Replacing bulbs in the trunk**

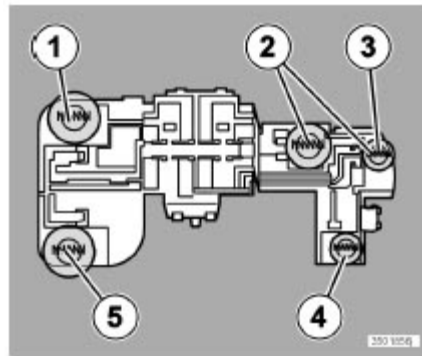


*Tail light bulb holder cover panel*

### Removing the tail light bulb holder

All bulbs in the tail light cluster can be replaced from the trunk. To access the bulb holder:

- Switch off all lights and turn the key to position 0.
- Remove the covers in the left/right panels as shown above to access the bulbs.
- Disconnect the wiring connector from the bulb holder.
- Press the catches together and pull out the bulb holder.
- Replace the defective bulb.

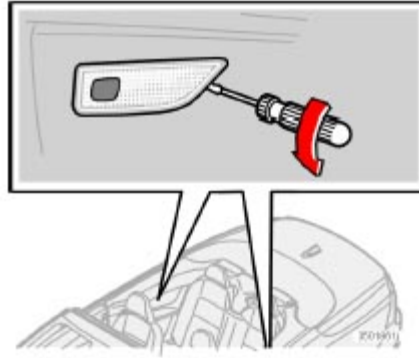


- Press the wiring connector back into position.
- Press the bulb holder into place and reinstall the cover.

### Location of tail light bulbs

1. Brake light
2. Parking light
3. Fog light (driver's side only)
4. Turn signal
5. Back-up light

**NOTE:** If the message indicating a burned out bulb remains in the information display after the bulb has been replaced, consult a trained and qualified Volvo service technician.



### Rear reading lights

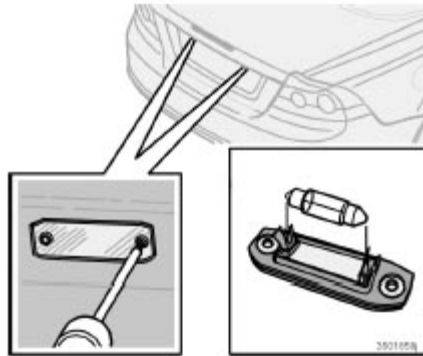
- Insert a screwdriver and turn it gently to detach the bulb housing.
- Remove the defective bulb.
- Install a new bulb.
- Press the bulb housing back into place.

### High-level brake light

These bulbs are of a special type. It is recommended that they be replaced by a trained and qualified Volvo service technician.

pg. 169 Maintenance and servicing

### Replacing interior bulbs



### License plate lighting

Replacing the bulb

- Switch off all lights and turn the key to position 0.
- Remove the screw with a screw driver.
- Detach the entire bulb housing and carefully pull it out. Turn the connector counterclockwise and pull out the bulb.
- Replace the bulb.
- Reinstall the connector and turn it clockwise.
- Reinstall the entire bulb housing and screw it into place.

### Footwell lighting

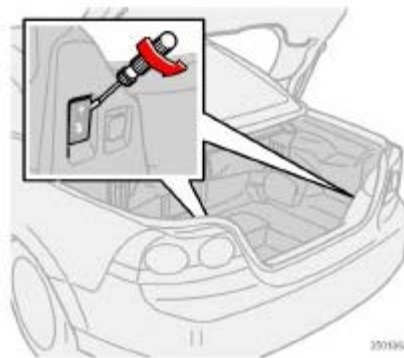
The footwell lighting is located under the dashboard on the driver's and passenger's sides. To replace a bulb:



- Insert a screwdriver under the edge of the lens. Turn the screwdriver gently to detach the lens.
- Remove the defective bulb.
- Install a new bulb.
- Press the lens back into place.

### Vanity mirror lighting

- Insert a screwdriver under the center of the lower edge of the mirror, turn it, and carefully pry up the lugs at the edge.
- Move the screwdriver under the edge on the left and right-hand sides (near the black rubber sections) and pry carefully to release the lower edge of the mirror.
- Pry carefully and lift out the entire mirror and the cover.
- Remove the defective bulb and replace it with a new one.
- To reinstall the mirror, begin by pressing the three lugs at the upper edge of the mirror back into place.
- Press the three lower lugs back into place.



### Trunk lights

- Insert a screwdriver and turn it gently to detach the bulb housing.
- Remove the defective bulb.
- Install a new bulb.
- Press the bulb housing back into place.

pg. 170 Maintenance and servicing

## Fuses

### Replacing fuses

There are relay/fuse boxes located in the engine compartment and the passenger compartment.

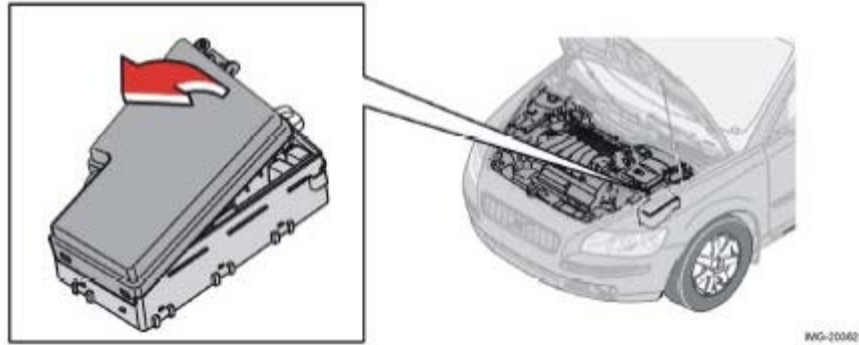
If an electrical component fails to function, this may be due to a blown fuse. The easiest way to see if a fuse is blown is to remove it.

To do so:

- Pull the fuse straight out. If a fuse is difficult to remove, special fuse removal tools are located on the inside of the fuse box covers.
  - From the side, examine the curved metal wire in the fuse to see if it is intact.
  - If the wire is broken, insert a new fuse of the **same color and amperage** (written on the fuse).
- If fuses burn out repeatedly, have the electrical system inspected by a trained and qualified Volvo service technician.

**⚠ WARNING!**

Never use fuses with higher amperage than those stated in the following tables. Doing so could overload the vehicle's electrical system.



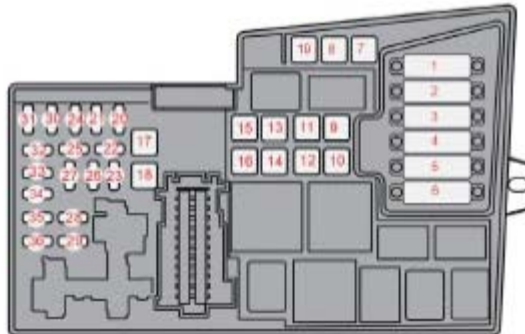
**Fuse box in the engine compartment**

The fuse box in the engine compartment has positions for 36 fuses.

- Fuses 1-18 are relays/circuit breakers and should only be removed or replaced by a trained and qualified Volvo service technician.
- Fuses 19-36 may be changed at any time when necessary. Several extra fuses and a fuse removal tool to assist in removing/replacing fuses can be found on the underside of the fuse box cover in the engine compartment.

pg. 171 Maintenance and servicing

**Fuses**



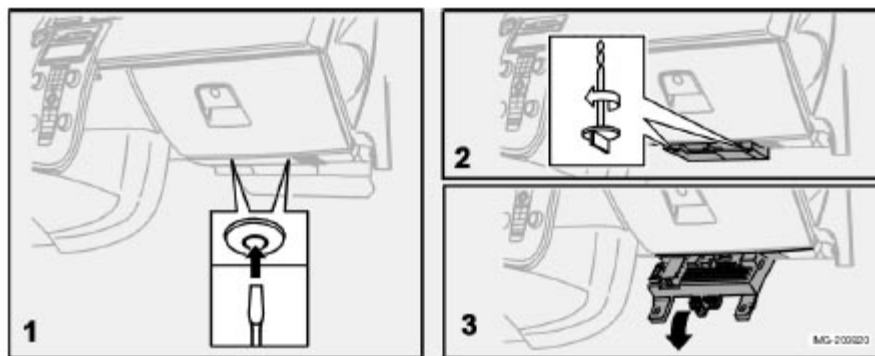
**Fuses in the engine compartment**

1. Coolant fan (radiator), 50A
2. Power steering, 80A
3. Feed to passenger compartment fuse box, 60A
4. Feed to passenger compartment fuse box, 60A
5. Not in use
6. Not in use
7. ABS pump, 30A
8. ABS valves, 20A
9. Engine control module (ECM), 30A
10. Climate system blower, 40A
11. Headlight washers, power retractable hard top, locking storage compartments, 20A

12. Feed to heated rear window, 30A
13. Starter motor relay, 30A
14. Trailer connector, 40A
15. Power retractable hard top, 30A
16. Feed to audio system, 30A
17. Windshield wipers, 30A
18. Feed to passenger compartment fuse box, 40A
19. Not in use
20. Horn, 15A
21. Not in use
22. Subwoofer, 25A
23. Engine control module (ECM)/transmission control module (TCM), 10A
24. Not in use
25. Not in use
26. Ignition switch, 15A
27. A/C compressor 10A
28. Not in use
29. Front fog lights (option), 15A
30. Not in use
31. Not in use
32. Fuel injectors, 10A
33. Heated oxygen sensor, vacuum pump, 20A
34. Ignition coils, engine control module, climate unit pressure sensor, 10A
35. Engine sensor valves, A/C relay, 15A
36. Engine control module (ECM), throttle sensor, 10A

pg. 172 Maintenance and servicing

## Fuses



### Fuse box in the passenger compartment

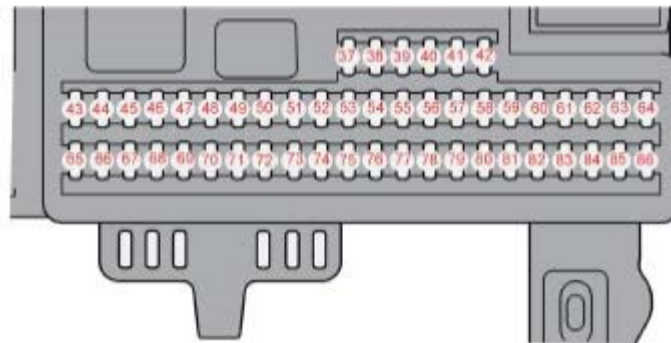
The fuse box in the passenger compartment is located under the glove compartment.

To access the fuses:

1. Remove the upholstery covering the fuse box by first pressing in the center pins in the mounting clips approximately 0.5 in (1 cm) with a small screwdriver and then pulling the pins out.
2. Turn both retaining screws (2) counterclockwise until they release.
3. Fold down the fuse box (3) half way. Pull it toward the seat until it stops. Fold it down completely. The fuse box can be unhooked completely.
4. Replace the blown fuse.
5. Close the fuse box in reverse order.
6. Pull the center pins fully out of the mounting clips, secure the upholstery with the mounting clips and press the pins

into the mounting clips again. The mounting clips then expand, holding the upholstery in position.

## Fuses



### Fuses in the passenger compartment

- 37. Not in use
- 38. Not in use
- 39. Not in use
- 40. Not in use
- 41. Not in use
- 42. Not in use
- 43. Audio system, Volvo Navigation system (option), 15A
- 44. Supplemental Restrain System (SRS), 10A
- 45. 12-volt socket in passenger compartment, 15A
- 46. Lighting - glove compartment, instrument panel, and footwells, 5A
- 47. Interior lighting, 5A
- 48. Windshield washers, 15A
- 49. Supplemental Restrain System (SRS), Occupant Weight Sensor (OWS), 10A
- 50. Not in use
- 51. Park assist (option), 10A
- 52. Transmission control module (TCM), 5A
- 53. ABS, power steering, Bi-Xenon headlights (option), 10A
- 54. Engine control module, turbo (ECM), 10A
- 55. Not in use
- 56. Alarm siren control module, 10A
- 57. On-board diagnostic socket, brake light switch, 15A
- 58. Right high beam, auxiliary lights relay, 7.5A
- 59. Left high beam, 7.5A
- 60. Heated driver's seat (option), 15A
- 61. Heated passenger's seat (option), 15A
- 62. Not in use
- 63. Power window - rear passenger's side, 20A
- 64. Lock indicator lights in door panels, Volvo Navigation system (option), 5A
- 65. Audio system, 5A
- 66. Audio system control module (ICM), climate system, 10A
- 67. Not in use
- 68. Cruise control, 5A
- 69. Climate system, rain sensor (option), 5A
- 70. Not in use
- 71. Not in use

- 72. Not in use
- 73. Front ceiling lighting, 5A

## pg. 174 Maintenance and servicing

### Fuses

- 74. Fuel pump relay, 15A
- 75. Not in use
- 76. Not in use
- 77. 12-volt socket in trunk, accessory control module (AEM), 15A
- 78. Not in use
- 79. Back-up lights, 5A
- 80. Not in use
- 81. Power window - rear driver's side, 20A
- 82. Power window and door lock - front passenger's side door, 25A
- 83. Power window and door lock - front driver's side door, 25A
- 84. Power passenger's seat (option), 25A
- 85. Power driver's seat, 25A
- 86. Interior lighting relay, trunk light, power seats, 5A



[Contents](#) | [Top of Page](#)

# 2006 VOLVO C70

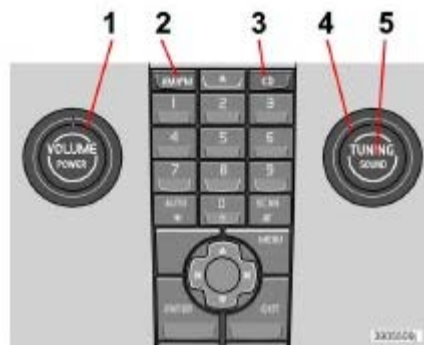
## Chapter 11 - Audio

pg. 175 Audio

Audio functions	<a href="#">176</a>
Radio functions	<a href="#">178</a>
CD changer	<a href="#">182</a>
Compact disc care	<a href="#">184</a>
Audio menu settings and selections	<a href="#">185</a>

pg. 176 Audio

### Audio functions



### Audio system controls

1. VOLUME dial
2. AM/FM1/FM2 selection
3. CD player button
4. TUNING dial
5. SOUND button

### On/off

Press POWER (1) to switch the audio system off or on.

- If the system is on when the ignition is turned to position 0 it will remain on until the key has been removed from the ignition switch.



*Steering wheel keypad*

- The system will automatically start the next time the key is turned to position I. Turn the volume dial or use the buttons in the optional steering wheel keypad to adjust the volume level. The volume level is also adjusted automatically according to the vehicle's speed, see [page 177](#) for more information on this function.

### **Steering wheel keypad**

The four buttons on the steering wheel keypad can be used to control the audio system. The steering wheel keypad can be used to adjust volume, shift between preset stations and change CD tracks. Press one of the two left-hand buttons briefly to change to the next/previous preset radio station, or to go to the next/previous track on a CD. Press and hold down these buttons to search within a track on a CD.

### **Daytime/twilight display**

In daylight the information is displayed against a light background. In darkness it is displayed against a dark background.

### **Sound source**

A sound source can be selected by pressing AM/FM (2) or CD (3). Press AM/FM repeatedly to toggle between FM1, FM2, and AM. The currently selected sound source will be shown in the display.

### **Sound settings**

- Press SOUND (5). Press this button repeatedly until you come to the setting that you wish to change.
- Turn the TUNING dial (4) to make the desired setting.

The following settings can be made:

BASS-set the bass level

TREBLE-set the treble level

BALANCE-set the left/right sound balance

FADER-set the front/rear sound balance

SUBWOOFER (option)-set the level for the subwoofer (bass speaker)

pg. 177 Audio

### **Audio functions**

CENTER<sup>1</sup>-make settings for the center speaker

SURROUND<sup>1</sup>-make settings for surround sound


### **Subwoofer (option)**

To switch the subwoofer on or off:

- Press MENU followed by ENTER.

- Select *AUDIO SETTINGS* and press ENTER.
- Select *SUBWOOFER* and press ENTER.

### Surround sound (option)

 Surround settings are used to balance sound levels throughout the vehicle. Surround settings for FM and CD are stored separately.

#### NOTE:

- Dolby Surround Pro Logic II is only available on the Premium Sound system.
- When listening to FM radio stations, Dolby Surround Pro Logic II functions best in areas with strong reception. If reception is weak, selecting 2 or 3- channel stereo may provide better sound quality. The Dolby symbol will be appear in the display when Dolby Pro Logic II is activated.

There are three alternative settings:

- *Pro Logic II*
- *3-channel*
- *Off* (normal 2-channel stereo)

### Activating/deactivating Surround sound

- Press MENU followed by ENTER.
- Select *AUDIO SETTINGS* in the menu and press ENTER.
- Select *Surround FM* or *Surround CD* and press ENTER.
- Select *Pro logic II*, *3-channel stereo* or *Off* and press ENTER.

### Equalizer Front/Rear

This function is used to fine-tune the sound from the front and rear speakers separately.

**NOTE:** This function is only available on certain sound systems.

To adjust the equalizer settings:

- Press MENU followed by ENTER.
- Select *AUDIO SETTINGS* in the menu and press ENTER.
- Select *Equalizer Front/Rear* and press ENTER.

The column in the display indicates the level for the current frequency.

- Adjust the level with the Tuning dial (4), or use the Up/Down arrows. Additional frequencies can be selected with the Right/Left arrows.
- Save the settings by pressing ENTER or exit without saving by pressing EXIT.

### ASC - speed compensated volume

The audio system's volume is adjusted automatically according to the speed of the vehicle. There are three settings available, which determine the level of volume compensation:

- Low
  - Medium\*
  - High
- \* Default setting.

To set the level of speed compensation:

- Press MENU followed by ENTER.
- Select *AUDIO SETTINGS* in the menu and press ENTER.



- Select *ASC* in the menu and press ENTER.
- Select *Low*, *Medium*, or *High* and press ENTER.

## 1. Dynaudio Sound System only

pg. 178 Audio

## Radio functions



### Radio function controls

1. AM/FM1/FM2 selection
2. Station preset buttons
3. TUNING dial for selecting radio stations
4. SCAN
5. MENU NAVIGATION CONTROL-press the up or down arrow keys to scroll in a menu, or the keys on the left/right sides of the control to search for or change radio stations/CD tracks
6. EXIT-press to cancel a menu selection or a selected function
7. AUTO-search for and store the strongest radio stations in the area in which you are driving

### Searching for stations

There are two ways to manually tune a radio station:

- Turn the TUNING dial (3) to the desired frequency.
- Press the left or right arrow key on the MENU NAVIGATION CONTROL and hold it down. The radio scans slowly in the selected direction and will increase the scanning speed after a few seconds. Release the button when the desired frequency appears in the display. The frequency can be fine-tuned by short presses on the left/right arrow keys.

### Storing preset stations

#### Manually storing a station

- Tune to the desired station.
- Press and hold the preset button under which the station is to be stored. The audio system sound will be interrupted for a few seconds and *STATION STORED* will appear in the display.

**NOTE:** A total of 30 stations can be stored; 10 stations each in AM, FM1 and FM2.

#### Automatically storing a station

Pressing AUTO (7) automatically searches for and stores up to ten strong AM or FM stations in a separate memory. If more than ten stations are found, the ten strongest ones are stored. This function is especially useful in areas in which

you are not familiar with radio stations or their frequencies.

To use the AUTO function:

- Select a waveband using the AM/FM button (1).
- Start the search by pressing AUTO until AUTO STORING appears in the display.
- When the search is completed, AUTO STORING will no longer be displayed. If there are no stations with sufficient signal strength, NO AST FOUND is displayed.

The auto-stored stations can be selected using the preset buttons (2).

Press EXIT (6) to terminate the automatic storing function.

When the radio is in auto-store mode, AUTO is shown in the display. AUTO disappears when you return to normal radio mode, which can be done by briefly pressing AM/FM (1), EXIT (6), or AUTO (7).

pg. 179 Audio

## Radio functions

To return to the Auto-store mode, press the AUTO button briefly and select a stored station by pressing one of the preset buttons (2).

### Saving auto-stored stations in the preset memory

An auto-stored station can be saved in the memory for manually preset stations.

- Press AUTO (7) briefly.

*Auto* is displayed.

Press one of the preset buttons (2) under which the station is to be stored. Hold down the button until *STATION STORED is displayed*.

The radio will then exit auto-store mode and the stored station can be selected by pressing the preset button.

### Scanning

SCAN (4) automatically searches through the selected waveband for strong AM or FM stations. When the radio finds a station, that station will be played for approximately 8 seconds, after which scanning resumes.

### Activating/deactivating SCAN

- Select radio mode using the AM/FM button (2).
- Press SCAN to activate the function. SCAN is shown in the display.
- Press the SCAN or EXIT button to deactivate the scan function and listen to the selected station.

### Storing a station found with SCAN

A station can be stored as a preset while the SCAN function is activated.

- Press one of the preset buttons (2) under which the station is to be stored. Hold down the button until *STATION STORED is displayed*.

The SCAN function will be deactivated and the station can be selected by pressing the preset button.

### Radio Broadcast Data System - RBDS

This feature, which may not be available in your area, functions only with FM broadcasts. The radio in your car is equipped with an advanced system allowing information from broadcasters to be transmitted visually, as text, together with the audio signal. This information is then decoded by the radio and made available for several new and unique features.

**The RBDS or Radio Broadcast Data System operates in the FM band only, and the information transmitted is supplied exclusively by participating broadcasters.**

Volvo has no control over the accuracy of the data or information.

Coverage by local broadcasters may be limited at this time, but as the technology and benefits grow, you will find the radio in your car is equipped to take advantage of this system.

### **PI (Program Information) seek**

When an FM station has been stored as a preset, the radio also stores RBDS program information if it is available.

When the preset is selected at a later time, the radio tries to access updated program information. In weak signal areas, there may be a delay before the station becomes audible. During this delay, there will be no sound.

PI seek can be interrupted by pressing EXIT.

### **Radio text**

Certain RBDS stations broadcast program information, which can be shown in the display.

To start this function:

- Select FM1 or FM2 and press the MENU button.
- Press ENTER.
- Select RADIOTEXT in the menu and press ENTER.

pg. 180 Audio

## **Radio functions**

To deactivate this function, select RADIOTEXT again and press ENTER.

### **Alarm**

Alarms bulletins are transmitted automatically by certain RBDS stations. The function cannot be deactivated.

"Alarm!" is shown in the radio display when an alarm message is sent. The function is used to warn motorists of serious accidents, etc.

### **Program type/station format - PTY**

The PTY function allows you to find stations whose programs suit your taste. Use the PTY function to select among the different station formats shown in the list. To show the format of the current station:

- Select FM1 or FM2 and press the MENU button.
- Press ENTER.
- Select PTY from the menu and press ENTER.
- Select SHOW PTY and press ENTER.

The PTY (program type) of the selected station is now shown in the display.

**NOTE:** Not all RBDS radio stations have PTY designations.

### **Station formats**

Switch off/deactivate (Clear all PTY)

News

Information

Sports

Talk

Rock

Classic rock

Adult hits

Soft rock

Top 40

Country

Oldies

Soft

Nostalgia  
Jazz  
Classical  
Rhythm and Blues  
Soft R&B  
Language  
Religious music  
Religious talk  
Personality  
Public  
College  
Weather

### **Search for a specific station format**

This function enables you to search for a certain station format by searching through the entire FM waveband.

- Select FM1 or FM2 and press the MENU button.
- Press ENTER.
- Select PTY and press ENTER.
- Choose SELECT PTY and press ENTER.
- Press ENTER for one or more of the listed station formats. Once you have selected all the desired types, select EXIT to exit the PTY list.
- Select SEARCH PTY and press ENTER. If the radio finds a station with the selected format, it will tune to this station.

If you would like to continue searching, press the left or right arrow on the MENU NAVIGATION control.

If no stations with the selected station format are found, the radio resumes its previous frequency.

pg. 181 Audio

## **Radio functions**

### **Automatic frequency update - AF**

The AF function ensures that one of the strongest available transmitters for a radio station is used. This function is only available on RBDS stations. To activate this function:

- Select FM1 or FM2 and press the MENU button.
- Press ENTER
- Select ADVANCED RADIO SETTINGS in the menu and press ENTER.
- Select AF and press ENTER.

To deactivate this function, select AF and press ENTER.

### **Resetting RBDS functions**

This function restores all radio settings to the original factory settings.

- Select FM1 or FM2 and press the MENU button.
- Press ENTER.
- Select ADVANCED RADIO SETTINGS in the menu and press ENTER.
- Select RESET ALL in the menu and press ENTER. Press ENTER again to confirm your selection.

pg. 182 Audio

## **CD changer**



### CD function controls

1. MENU NAVIGATION CONTROL-press the up or down arrow keys to scroll in a menu, or the keys on the left/right sides of the control to change CD tracks/fast forward/back
2. Buttons for selecting a disc in the CD changer
3. CD eject button
4. CD slot
5. CD player button
6. TUNING dial for selecting tracks on a CD

### Playing a CD

The CD changer can hold up to six discs.

- Press the CD button.
- Select an empty position using the 1-6 buttons or the up/down keys on the MENU NAVIGATION control. The display shows which positions are empty.
- Insert a disc into the slot (4).

**NOTE:** Ensure that INSERT DISC is displayed before inserting a disc.

### Changing tracks

Press the left or right arrow keys on the MENU NAVIGATION control to skip to the previous or next track.

**NOTE:** The TUNING dial (6) (turn clockwise to go to the next track, or counterclockwise to go to the previous track) or the optional steering wheel keypad can also be used for this purpose.

### Fast forward/back

Press and hold down the left or right arrows keys in the MENU NAVIGATION control (or the corresponding keys on the steering wheel keypad) to search within a track or the whole disc. The search continues for as long as the buttons are held down.

### Random play

This function plays the tracks on all of the CDs in the changer in random order (shuffle).

- Select CD (5) and press the MENU button.
- Press ENTER.
- Select RANDOM from the menu and press ENTER.
- Select SINGLE DISC or ALL DISCS for the CD changer to randomly choose from one or all discs. RND ALL is shown in the display for as long as the function is activated. Press the right arrow key on the MENU NAVIGATION control (1) to select the next random track.

**NOTE:** You can only select the next random track on the current disc.

- Press the EXIT button to stop random play.

### **Disc text**

Certain CDs contain information about the disc, such as the titles of the tracks, etc. This information can be shown in the display by activating the DISCTEXT function.

- Press MENU. Select the menu for relevant sound source and press ENTER.

pg. 183 Audio

### **CD changer**

- Select DISCTEXT in the menu and press ENTER.
- If information is stored on the disc, it will now appear in the display. To deactivate this function, select DISCTEXT in the menu and press ENTER.

### **Scan**

This function plays the first 10 seconds of each track on the CD.

- Press SCAN.
- Press EXIT to stop the scan function and listen to an entire track.

### **CD eject**

This function makes it possible to eject a single disc, or to eject all of the discs in the changer.

- Press the eject button (3) briefly to eject the disc that is currently playing.
- A longer press (more than two seconds) starts the process of ejecting all of the discs in the changer.

### **NOTE:**

- The EJECT ALL function can only be used while the vehicle is at a standstill and will be cancelled if the vehicle begins to move.

**NOTE:** For reasons of traffic safety, the ejected CD must be removed within 12 seconds or it will be automatically drawn back into the slot and the CD player will enter pause mode. Press the CD button to restart the disc.

pg. 184 Audio

### **Compact disc care**

#### **Keep the following in mind when playing/handling compact discs**

- The discs should conform to the norms EN60908 (IEC60908). CDR discs can cause listening problems due to the quality of the disc or recording equipment used.
- DualDisc: The audio side of a DualDisc (combined CD/DVD) does not meet CD specifications and may not play in your audio system.
- Keep the discs clean. Wipe them with a soft, clean, lint-free cloth, working from the center outward. If necessary, dampen the cloth with a neutral soap solution. Dry thoroughly before using.
- Never use cleaning spray or antistatic liquid. Use only cleaners specifically made for CDs.
- Use discs of the correct size only (3.5" discs should never be used).
- Do not put tape or labels on the disc itself. They could become stuck in the player.
- Volvo does not recommend the use of plastic outer rings on the disc.
- Condensation may occur on discs/ optical components of the changer in cold winter weather. The disc can be dried

with a clean, lint-free cloth. Optical components in the CD changer may, however, take up to one hour to dry off.

- Never attempt to play a damaged CD.
- When not in use, the discs should be stored in their covers. Avoid storing discs in excessive heat, direct sunlight or dusty locations.

pg. 185 Audio

## Audio menu settings and selections

### NOTE:

All alternatives marked \* can be selected or set to On or Off by navigating to the alternative in the menu and pressing Enter.

### FM1/FM2 menu

1. PTY
  - 1.1. SELECT PTY
    - 1.1.1. CLEAR ALL PTY
    - 1.1.2. The available program types are listed here
  - 1.2. SEARCH PTY
  - 1.3. SHOW PTY ON/OFF (default)\*
2. RADIOTEXT ON/OFF (default)\*
3. ADVANCED RADIO SETTINGS
  - 3.1. AF ON/OFF (default)\*
  - 3.2. RESET All
4. AUDIO SETTINGS
  - 4.1. SURROUND FM (Dynaudio Sound System only)
    - 4.1.1. Dolby Pro Logic II\*
      - 4.1.2.3 Channel\*
    - 4.1.3. OFF (default)\*
  - 4.2. SURROUND CD
    - 4.2.1. Dolby Pro Logic II (default)\*
      - 4.2.2.3 Channel\*
    - 4.2.3. OFF\*
  - 4.3. SUBWOOFER ON (default)/OFF\* (accessory)
  - 4.4. EQUALIZER FRONT (certain audio systems)
  - 4.5. EQUALIZER REAR (certain audio systems)
  - 4.6. Auto. volume control (speed compensated volume)
    - 4.6.1. Low\*
    - 4.6.2. Medium (default)\*
    - 4.6.3. High\*
  - 4.7. RESET ALL

### AM menu

1. 1. AUDIO SETTINGS
  - 1.1. SURROUND FM (Dynaudio Sound System only)
    - 1.1.1. Dolby Pro Logic II\*
      - 1.1.2. 3 Channel\*
      - 1.1.3. OFF (default)\*
    - 1.2. SURROUND CD (Dynaudio Sound System only)
      - 1.2.1. Dolby Pro Logic II (default)\*
        - 1.2.2.3 Channel\*
      - 1.2.3. Off\*
    - 1.3. SUBWOOFER ON (default)/OFF\* (accessory)

- 1.4. EQUALIZER FRONT (certain audio systems)
- 1.5. EQUALIZER REAR (certain audio systems)
- 1.6. Auto. volume control (speed compensated volume)
  - 1.6.1. Low\*
  - 1.6.2. Medium (default)\*
  - 1.6.3. High\*
- 1.7. RESET ALL

#### **CD menu**

- 1. RANDOM\*
- 2. AUDIO SETTINGS
  - 2.1. SURROUND FM (Dynaudio Sound System only)
    - 2.1.1. Dolby Pro Logic II\*
      - 2.1.2.3 Channel\*
    - 2.1.3. Off (default)\*
  - 2.2. SURROUND CD (Dynaudio Sound System only)
    - 2.2.1. Dolby Pro Logic II (default)\*
      - 2.2.2.3 Channel\*
    - 2.2.3. Off\*

pg. 186 Audio

#### **Audio menu settings and selections**

- 2.3. SUBWOOFER ON (default)/OFF\* (option)
- 2.4. EQUALIZER Front (certain audio systems)
- 2.5. EQUALIZER Rear (certain audio systems)
- 2.6. Auto. volume control (speed compensated volume)
  - 2.6.1. Low\*
  - 2.6.2. Medium (default)\*
  - 2.6.3. High\*
- 2.7. RESET ALL

#### **CD changer menu**

- 1. RANDOM
  - 1.1. Off (default)\*
  - 1.2. Single Disc\*
  - 1.3. All Discs\*
- 2. DISC TEXT ON/OFF (default)\*
- 3. AUDIO SETTINGS
  - 3.1. SURROUND FM (Dynaudio Sound System only)
    - 3.1.1. Dolby Pro Logic II\*
      - 3.1.2.3 Channel\*
    - 3.1.3. Off (default)\*
  - 3.2. SURROUND CD (Dynaudio Sound System only)
    - 3.2.1. Dolby Pro Logic II (default)\*
      - 3.2.2.3 Channel\*
    - 3.2.3. Off\*
  - 3.3. SUBWOOFER ON (default)/OFF\* (option)
  - 3.4. EQUALIZER Front (certain audio systems)
  - 3.5. EQUALIZER Rear (certain audio systems)
  - 3.6. Auto. volume control (speed compensated sound)
    - 3.6.1. Low\*



3.6.2. Medium (default)\*

3.6.3. High\*

3.7. RESET ALL

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[Contents](#) | [Top of Page](#)

# 2006 VOLVO C70

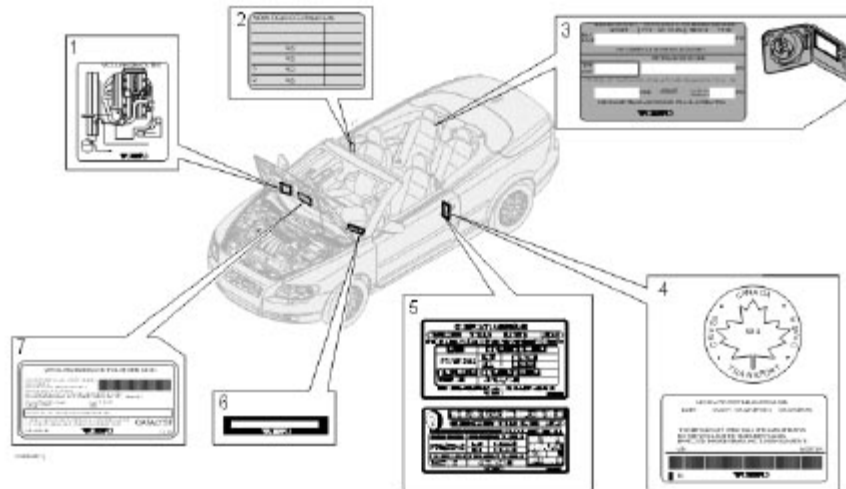
## Chapter 12 - Specifications

### pg. 187 Specifications

Label information	<a href="#">188</a>
Dimensions and weights	<a href="#">189</a>
Fuel, oils, and fluids	<a href="#">190</a>
Engine oil	<a href="#">191</a>
Engine specifications	<a href="#">192</a>
Electrical system	<a href="#">193</a>
Three-way catalytic converter	<a href="#">194</a>
Volvo programs	<a href="#">195</a>

### pg. 188 Specifications

#### Label information



1. **Vacuum hose routing** (underside of hood)

2. **Model plate**

Vehicle Identification Number (VIN). Codes for color and upholstery, etc. The label is located on the passenger's side center door pillar.

3. **Loads and Tire Pressures** (on inside of fuel filler door): Canadian models only.

4. **Federal Motor Vehicle Safety Standards (FMVSS) specifications (USA) and Ministry of Transport (CMVSS)**

## standards (Canada)

Your Volvo is designed to meet all applicable safety standards, as evidenced by the certification label on the facing side of the driver's door. For further information regarding these regulations, please consult your Volvo retailer.

## 5. Loads and Tire Pressures U.S. models only

Certain models will only have one decal, depending on the specifications of the vehicle.

## 6. Vehicle Identification Number (VIN)<sup>1</sup>

The VIN plate is located on the top left surface of the dashboard. The VIN is also stamped on the right hand door pillar, and can be found in the Personal settings menu (see [page 52](#)).

## 7. Vehicle Emission Control Information

Your Volvo is designed to meet all applicable emission standards, as evidenced by the certification label on the underside of the hood. For further information regarding these regulations, please consult your Volvo retailer.

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

pg. 189 Specifications

## Dimensions and weights

<b>Length</b>	175.9 in. (447 cm)
<b>Width</b>	69.7 in. (177 cm)
<b>Height</b>	57.2 in. (145 cm)
<b>Wheelbase</b>	103.9 in. (264 cm)
<b>Front track</b>	60.4/60.9 in. (154/155 cm)
<b>Rear track</b>	60.3/60.8 in. (153/154 cm)
<b>Turning circle</b>	34.9 ft. (10.6 m)
<b>Cargo capacity</b>	31.2 cu. ft. (883 liters)

### CAUTION!

The maximum permissible axle loads and/ or the gross vehicle weight must not be exceeded.



### WARNING!

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

Category	USA	Canada
<b>Gross vehicle weight</b>	Manual: 4490 lbs Automatic: 4510 lbs	2040 kg 2050 kg
<b>Capacity weight</b>	All models: 640 lbs	290 kg
<b>Permissible axle weight, front</b>	All models: 2420 lbs	1100 kg
<b>Permissible axle weight, rear</b>	All models: 2340 lbs	1065 kg
<b>Curb weight</b>	All models: 3715 - 3755 lbs	1685 - 1705 kg
<b>Max. trailer weight (w/o brakes)</b>	All models: 1540 lbs	All models: 700 kg
<b>Max. trailer weight (with brakes)</b>	All models: 2000 lbs	All models: 900 kg
<b>Max. tongue weight</b>	All models: 165 lbs	All models: 75 kg

pg. 190 Specifications

## Fuel, oils, and fluids

Category	Specification	Capacity
Fuel tank	Octane rating: Unleaded premium gasoline with an octane rating AKI of 91, or above. The minimum octane requirement is AKI 87 (RON 91).	16.3 US gallons (62 liters).
Engine oil (with filter replacement)	See page 191 for information on engine oil specifications.	6.1 US quarts (5.8 liters)
Automatic transmission oil	JWS	8.19 US quarts (7.75 liters)
Manual transmission oil	MTF 97309-10	2.2 US quarts (2.1 liters) - non-turbo models 2.1 US quarts (2.0 liters) - turbo models
Coolant	Volvo original coolant/antifreeze (50/50 mixture of water and anti-freeze)	9 US quarts (8.5 liters) - models with automatic transmission 8.5 US quarts (8.0 liters) - models with manual transmission
Brake fluid	DOT 4+ boiling point >536°F (280°C), P/N 9437433	0.63 US quarts (0.6 liters)
Power steering fluid	WSS M2C204-A or equivalent	1.3 US quarts (1.2 liters) - system and reservoir combined
Washer fluid reservoir	Use washer fluid solvent in cold weather conditions.	6.8 US quarts (6.5 liters)
Air conditioning system	Refrigerant - R134a	1.2 lbs. (530 grams)

pg. 191 Specifications


## Engine oil

### Oil specifications

Engine oil must meet the minimum ILSAC specification GF-3, API SL, or ACEA A1/B1. Lower quality oils may not offer the same fuel economy, engine performance, or engine protection.

Volume: 6.1 US qts (5.8 liters).

Volume between the MIN and Max marks on the dipstick: approximately 1.7 US qts (1.6 liters).

Volvo recommends  .

Depending on your driving habits, premium or synthetic oils may provide superior fuel economy and engine protection. Consult your Volvo retailer for recommendations on premium or synthetic oils.

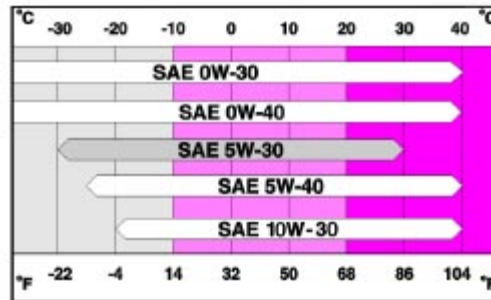
### Oil additives must not be used.

**NOTE:** Synthetic oil is not used when the oil is changed at the normal service intervals. This oil is only used at customer request, at additional charge. Please consult your Volvo retailer.

### Oil viscosity (stable ambient temperatures)

#### Operation in hot climates

When temperatures exceed 86° F (30° C) in your area, Volvo recommends, for the protection of your engine, that you use a



heavier weight oil, such as SAE 10W-30. See the viscosity chart.

### Operation in temperate climates

Incorrect viscosity oil can shorten engine life. Under normal use when temperatures do not exceed 86° F (30° C), SAE 5W-30 will provide good fuel economy and engine protection. See the viscosity chart.

### Extreme engine operation

Synthetic oils meeting SAE 10W-30 and complying with oil quality requirements are recommended for driving in areas of sustained temperature extremes (hot or cold), when towing a trailer over long distances, and for prolonged driving in mountainous areas.



*American Petroleum Institute (API) symbol*

### American Petroleum Institute (API) symbol

The API Service Symbol "donut" is divided into three parts:

- The upper section describes the oil's performance level.
- The center identifies the oil's viscosity.
- The lower section indicates whether the oil has demonstrated energy-conserving properties in a standard test in comparison to a reference oil.

pg. 192 Specifications

## Engine specifications

Engine designation	B5254T3
Output	
kW/rps	162/83
hp/rpm	218/5000
Torque	
Nm/rps	320/25-80
ft. lbs./rpm	238/1500-4800
No. of cylinders	5
Displacement (liters/cubic inches)	2.52/153.8
Bore (mm/in.)	83/3.27
Stroke (mm/in.)	93.2/3.67
Compression ratio	9.0:1
Spark plugs	
type	Volvo kit no. 30650379
gap inches/mm	0.027in./0.7mm
tightening torque ft. lbs./Nm	22.5 ft. lbs./30 Nm

### Charge air cooler (Intercooler)

Turbocharged engines employ a turbo-compressor to force air into the engine inlet manifold and a charge air cooler to cool the compressed inlet air. The resulting increase in air flow raises pressure in the intake manifold and increases engine power over that developed by the normally-aspirated engine. The charge air cooler (which resembles a radiator) is located between the turbo-compressor and inlet manifold.

### Fuel system

The engine is equipped with a multiport fuel injection system.

pg. 193 Specifications

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## Electrical system

### General information

12-volt system with voltage controlled generator. Single wire system in which the chassis and engine block are used as conductors, grounded on the chassis.

### Bulbs

Please refer to [page 164](#) for a list of the bulbs used in your car.

### Battery

Voltage	12 V	12 V
Cold start capacity (CCA)	600 A	700 A <sup>1</sup>
Reserve capacity (RC)	120 min	150 min

1. Cars equipped with the Dynaudio Sound system and/or the Volvo Navigation system

If the battery must be replaced, replace it with one with the same cold start capacity and reserve capacity as the original (see the decal on the battery).

Generator 1 maximum current	120/150 A
Starter motor output	1.4/1.9 kW

1. Dependent on engine type

[pg. 194 Specifications](#)

## Three-way catalytic converter

### Three-way catalytic converter - general information

- Keep your engine properly tuned. Certain engine malfunctions, particularly involving the electrical, fuel or distributor ignition systems, may cause unusually high three-way catalytic 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 or backfiring. A properly tuned engine will help avoid malfunctions that could damage the three-way catalytic converter.
- Do not park your vehicle 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), or an intermittently firing or flooded engine can cause three-way catalytic converter or exhaust system overheating.
- Remember that tampering or unauthorized modifications to the engine, the Engine Control Module, or the vehicle may be illegal and can cause three-way catalytic converter or exhaust system overheating. This includes:
  - Altering fuel injection settings or components.
  - Altering emission system components or location or removing components.
  - Repeated use of leaded fuel.

**NOTE:** Unleaded fuel is required for vehicles with three-way catalytic converters.

[pg. 195 Specifications](#)

## Volvo programs

### **Volvo On Call Roadside Assistance**

Your new Volvo comes with a four year ON CALL roadside assistance. Additional information, features, and benefits are described in a separate information package in your glove compartment. If you have misplaced your package, dial:  
In the U.S.A. 1-800-638-6586 (1-800-63-VOLVO)  
In Canada: 1-800-263-0475

### **Technician certification**

In addition to Volvo factory training, Volvo supports certification by the National Institute for Automotive Service Excellence (A.S.E.). Certified technicians have demonstrated a high degree of competence in specific areas. Besides passing exams, each technician must also have worked in the field for two or more years before a certificate is issued. These professional technicians are best able to analyze vehicle problems and perform the necessary maintenance procedures to keep your Volvo at peak operating condition.

pg. 196 Specifications

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[Contents](#) | [Top of Page](#)

# 2006 VOLVO C70

## Index

pg. 197-200 Index

### Numerics

12 volt socket, in trunk	<a href="#">83</a>
12 volt sockets	<a href="#">47</a>

### A

ABS (anti-lock brake system)	<a href="#">2</a>
Accessory Installation- Important Warning	<a href="#">4</a>
Active yaw control - AYC	<a href="#">113</a>
Airbag system	<a href="#">14</a>
Alarm	<a href="#">94</a>
Anchoring eyelets in trunk	<a href="#">83</a>
Antifreeze	<a href="#">159</a>
Anti-lock Brake System (ABS)	<a href="#">2, 34</a>
Approach lighting	<a href="#">51, 87</a>
ASC - speed compensated volume, audio system	<a href="#">177</a>
Audio system - introduction	<a href="#">176</a>
Audio system menus, list of	<a href="#">185, 186</a>
Autolock	<a href="#">51</a>
Automatic transmission - Geartronic	<a href="#">108, 109</a>

### B

Battery drain - avoiding	<a href="#">99</a>
Battery maintenance	<a href="#">162</a>
Battery replacement	<a href="#">163</a>
Battery replacement, remote control	<a href="#">92</a>
Battery, conserving electrical current	<a href="#">99</a>
Battery, specifications	<a href="#">193</a>
Bi-Xenon headlights	<a href="#">165</a>
Black box (Vehicle Event Data)	<a href="#">154</a>
Brake fluid	<a href="#">160</a>
Bulbs	<a href="#">164</a>

### C

Capacities, fluids	<a href="#">190</a>
Catalytic converter, three-way	<a href="#">194</a>
CD player	<a href="#">182</a>



Central locking system, remote controls	<a href="#">86</a>
Changing oil	<a href="#">158</a>
Changing wheels	<a href="#">138</a>
Charge air cooler	<a href="#">192</a>
Child safety	<a href="#">28</a>
Clock setting button	<a href="#">32</a>
Cold weather precautions	<a href="#">99</a>
Collision status	<a href="#">26</a>
Compact disc care	<a href="#">184</a>
Compartments, storage	<a href="#">79</a>
Compass in rearview mirror	<a href="#">49</a>
Convertible top -- buttons for operating	<a href="#">72</a>
Convertible top -- emergency operation	<a href="#">73</a>
Convertible top -- temporary cover	<a href="#">73, 75</a>
Coolant	<a href="#">159</a>
Cover, temporary	<a href="#">75</a>
Cruise control	<a href="#">42</a>
<b>D</b>	
Dimensions	<a href="#">189</a>
Disabling the passenger's side front airbag	<a href="#">18</a>
Display, instrument panel	<a href="#">32</a>
Door mirrors	<a href="#">50</a>
Door open warning	<a href="#">36</a>
Double locking	<a href="#">91</a>
Driving after a collision	<a href="#">26</a>
<b>E</b>	
Economical driving	<a href="#">98</a>
Electrical current - conserving	<a href="#">99</a>
Electrical sockets, 12 volt	<a href="#">47</a>
Electrical system	<a href="#">193</a>
Electronic Brake Force Distribution (EBD)	<a href="#">112</a>
Emission inspection readiness	<a href="#">156</a>
Engine compartment	<a href="#">157</a>
Engine oil, changing	<a href="#">158</a>
Engine specifications	<a href="#">192</a>
Environment	<a href="#">2</a>
Equalizer, audio system	<a href="#">177</a>
Eyelets in trunk	<a href="#">83</a>
<b>F</b>	
Federal Clean Air Act	<a href="#">154</a>
Flash, high beam	<a href="#">40</a>
Floor mats	<a href="#">105</a>
Floor mats, cleaning	<a href="#">150</a>
Fog lights	<a href="#">38</a>

Front airbags	<a href="#">15, 16</a>
Front fog light, replacing	<a href="#">167</a>
Front fog lights	<a href="#">38</a>
Front seats	<a href="#">66</a>
Front seats, manual adjustment	<a href="#">66</a>
Front seats, power	<a href="#">68</a>
Fuel filler cap	<a href="#">2</a>
Fuel filler door	<a href="#">2, 102</a>
unlocking	<a href="#">38</a>
unlocking manually	<a href="#">39</a>
Fuel gauge	<a href="#">32</a>
Fuel requirements	<a href="#">101</a>
Fuel system	<a href="#">192</a>
Fuel tank capacity	<a href="#">102</a>
Fuse box in the passenger compartment, accessing	<a href="#">172</a>
Fuses	<a href="#">170</a>
Fuses in the engine compartment	<a href="#">171</a>
Fuses in the passenger compartment	<a href="#">173</a>
<b>G</b>	
Gasoline	<a href="#">101</a>
Geartronic (manual shifting)	<a href="#">108</a>
Generator	<a href="#">193</a>
Generator warning light	<a href="#">35</a>
Glossary of tire terminology	<a href="#">132</a>
Glove compartment	<a href="#">80</a>
Glove compartment, locking	<a href="#">90</a>
<b>H</b>	
Hazard warning flashers	<a href="#">46</a>
Headlight housing, removing	<a href="#">165</a>
Headlight washers	<a href="#">44</a>
Headlights	<a href="#">38</a>
High beam bulb, replacing	<a href="#">166</a>
High beam flash	<a href="#">40</a>
High beam headlights	<a href="#">40</a>
High beam indicator	<a href="#">32</a>
Home safe lighting	<a href="#">40, 51</a>
Hood, opening	<a href="#">157</a>
<b>I</b>	
Immobilizer	<a href="#">86, 105</a>
Indicator and warning symbols	<a href="#">32</a>
Inflatable Curtain	<a href="#">22</a>
Inflation pressure tables	<a href="#">130</a>
Information display	<a href="#">32</a>
Information display, messages in	<a href="#">37</a>

Information symbol	<a href="#">32, 33</a>
Inspection readiness	<a href="#">156</a>
Instrument overview	<a href="#">7</a>
Instrument panel	<a href="#">32</a>
Instrument panel lighting	<a href="#">38</a>
Interior lighting	<a href="#">77</a>
ISOFIX/LATCH anchors	<a href="#">29</a>
<b>J</b>	
Jack, positioning	<a href="#">140</a>
Jack, positioning correctly	<a href="#">140</a>
Jump starting	<a href="#">119</a>
<b>K</b>	
Key blade	<a href="#">88</a>
Keylock	<a href="#">2, 105</a>
Kickdown	<a href="#">109</a>
<b>L</b>	
Label information	<a href="#">188</a>
LATCH anchors	<a href="#">29</a>
License plate lighting, replacing	<a href="#">169</a>
Lighting panel	<a href="#">38</a>
Lighting, interior	<a href="#">77</a>
Load anchoring eyelets	<a href="#">83</a>
Loading the vehicle	<a href="#">133</a>
Locking (double locking feature)	<a href="#">91</a>
Long distance trips	<a href="#">100</a>
Low beam bulb, replacing	<a href="#">165</a>
Low beam headlights	<a href="#">40</a>
<b>M</b>	
Maintenance	<a href="#">154</a>
Malfunction indicator light	<a href="#">34</a>
Manual front seat adjustment	<a href="#">66</a>
Manual shifting (Geartronic)	<a href="#">108</a>
Manual transmission	<a href="#">107</a>
Mirror, rearview	<a href="#">49</a>
Mirrors, door-mounted	<a href="#">50</a>
<b>O</b>	
OBD II	<a href="#">156</a>
Occupant safety	<a href="#">10</a>
Occupant Weight Sensor (OWS), disabling front passenger's side airbag	<a href="#">18</a>
Octane rating	<a href="#">101</a>
Oil pressure warning light	<a href="#">35</a>
Oil, changing	<a href="#">158</a>
On Call Roadside Assistance	<a href="#">195</a>
Onboard Diagnostic System (OBD II)	<a href="#">156</a>

Opening the hood	<a href="#">157</a>
<b>P</b>	
Paint touch up	<a href="#">151</a>
Panel lighting, instrument	<a href="#">38</a>
Panic alarm, central locking system remote control	<a href="#">87</a>
Park assist	<a href="#">115</a>
Parking brake	<a href="#">47</a>
Parking light bulb, replacing	<a href="#">166</a>
Parking lights	<a href="#">38</a>
Passenger's side front airbag, disabling	<a href="#">18</a>
Personal settings	<a href="#">51</a>
PI (Program Information) seek	<a href="#">179</a>
Polishing	<a href="#">149</a>
Power door mirrors	<a href="#">50</a>
Power retractable hard top	<a href="#">70</a>
Power steering fluid	<a href="#">160</a>
Power windows	<a href="#">48</a>
Program Information seek	<a href="#">179</a>
Program type, audio system	<a href="#">180</a>
PROPOSITION 65 WARNING	<a href="#">162</a>
<b>R</b>	
Radio Broadcast Data System - RBDS	<a href="#">179</a>
Radio station formats	<a href="#">180</a>
Radio text	<a href="#">179</a>
Rain sensor	<a href="#">45</a>
Reading lights	<a href="#">77</a>
Rear fog light	<a href="#">38</a>
Rear seat, accessing	<a href="#">67</a>
Rearview mirror	<a href="#">49</a>
Rearview mirror with compass (option)	<a href="#">49</a>
Refueling	<a href="#">102</a>
Remote control functions	<a href="#">87</a>
Remote control, battery replacement	<a href="#">92</a>
Remote controls, central locking system	<a href="#">86</a>
Replacing fuses	<a href="#">170</a>
Reporting safety defects	<a href="#">10</a>
Retractable hard top	<a href="#">70</a>
Roll-over Protection system (ROPS)	<a href="#">25</a>
<b>S</b>	
Safety defects, reporting	<a href="#">10</a>
Seat belt maintenance	<a href="#">13</a>
Seat belt reminder	<a href="#">13, 35</a>
Seat belts	<a href="#">11</a>
Seats, front	<a href="#">66</a>

SEE MANUAL	<a href="#">37</a>
SERVICE REQUIRED	<a href="#">37</a>
Shiftlock	<a href="#">2</a>
Shiftlock override	<a href="#">110</a>
Side impact protection (SIPS) airbags	<a href="#">21</a>
Side marker light, replacing	<a href="#">167</a>
Sockets, 12 volt	<a href="#">47</a>
Spare tire	<a href="#">138</a>
Speedometer	<a href="#">32</a>
Spin control - SC	<a href="#">113</a>
SRS warning light	<a href="#">35</a>
Stability system	<a href="#">113, 114</a>
Start inhibitor (immobilizer)	<a href="#">86</a>
Starting the car	<a href="#">105</a>
Station formats	<a href="#">180</a>
Steering wheel adjustment	<a href="#">46</a>
Steering wheel lock	<a href="#">104</a>
Stone chips, paint touch-up	<a href="#">151</a>
STOP ENGINE	<a href="#">37</a>
STOP SAFELY	<a href="#">37</a>
Storage compartments	<a href="#">79</a>
Storing wheels and tires	<a href="#">126</a>
<b>T</b>	
Tachometer	<a href="#">32</a>
Tail light bulb holder, removing	<a href="#">168</a>
Technician certification	<a href="#">195</a>
Temperature gauge	<a href="#">32</a>
Temporary cover	<a href="#">75</a>
Temporary spare tire	<a href="#">138</a>
Three-way catalytic converter	<a href="#">194</a>
TIME FOR REGULAR SERVICE	<a href="#">37</a>
Tire inflation pressure tables	<a href="#">130</a>
Tire rotation	<a href="#">137</a>
Tires, changing	<a href="#">138</a>
Tires, general information	<a href="#">126</a>
Tires, storing	<a href="#">126</a>
Traction control - TC	<a href="#">113</a>
Transmission, automatic	<a href="#">108</a>
Tread wear indicator	<a href="#">127</a>
Trip computer	<a href="#">41</a>
Trip odometer	<a href="#">32</a>
Trunk, loading	<a href="#">82</a>
Trunk divider	<a href="#">71</a>
Trunk lighting, replacing	<a href="#">169</a>

Trunk, limiting access to	<a href="#">89</a>
Trunk, opening from the inside	<a href="#">91</a>
Trunk, opening mechanically	<a href="#">90</a>
Turn signal bulb, replacing	<a href="#">167</a>
<b>U</b>	
Uniform Tire Quality Grading	<a href="#">134</a>
Unlock (personal settings)	<a href="#">51</a>
Unlocking the fuel filler door	<a href="#">38</a>
Unlocking the fuel filler door manually	<a href="#">39</a>
<b>V</b>	
Valet locking	<a href="#">89</a>
Vanity mirror lighting, replacing	<a href="#">169</a>
Vehicle Event Data	<a href="#">154</a>
Vehicle Identification Number	<a href="#">188</a>
Vehicle loading	<a href="#">133</a>
Volvo and the environment	<a href="#">2</a>
Volvo Customer Care Center, contacting	<a href="#">1</a> , <a href="#">16</a> , <a href="#">19</a>
Volvo maintenance	<a href="#">154</a>
Volvo On Call Roadside Assistance	<a href="#">195</a>
<b>W</b>	
W Winter/Wet driving mode	<a href="#">109</a>
Warning flashers	<a href="#">46</a>
Warning symbol	<a href="#">32</a> , <a href="#">33</a>
Warranties	<a href="#">154</a>
Washer fluid	<a href="#">159</a>
Washing the car	<a href="#">148</a>
Waxing	<a href="#">149</a>
Weight distribution	<a href="#">98</a>
Weights	<a href="#">189</a>
Wheel nuts	<a href="#">136</a>
Wheels, changing	<a href="#">138</a>
Wheels, storing	<a href="#">126</a>
Whiplash Protection System (WHIPS)	<a href="#">23</a>
Wind blocker	<a href="#">76</a>
Windshield washer fluid	<a href="#">159</a>
Windshield wiper blades	<a href="#">161</a>
Windshield wipers	<a href="#">44</a>
Winter/Wet driving mode	<a href="#">109</a>
Wiper blades	<a href="#">161</a>

