REPORT NUMBER 118-GTL-08-006

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 118 POWER-OPERATED WINDOW, PARTITION AND ROOF PANEL SYSTEMS

VOLVO CAR CORPORATION
2008 VOLVO XC90, MPV
NHTSA NO. C85900

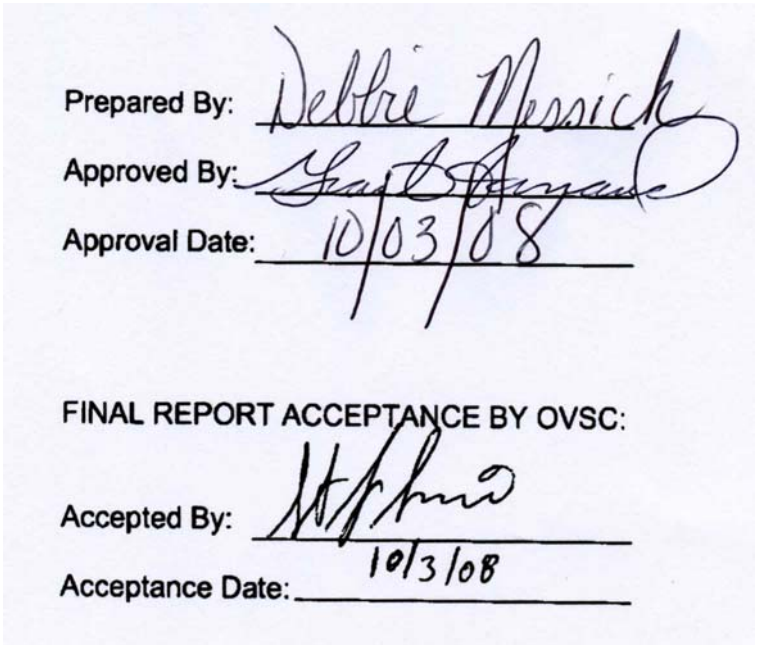
GENERAL TESTING LABORATORIES, INC.
1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443

OCTOBER 3, 2008

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
1200 NEW JERSEY AVE., SE
WASHINGTON, D.C. 20590



Technical Report Documentation Page

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12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Admin. Enforcement Office of Vehicle Safety Compliance (NVS-220) 1200 New Jersey Ave., S.E., Washington, DC 20590		13. Type of Report and Period Covered Final Test Report September 26, 2008 14. Sponsoring Agency Code NVS-221
15. Supplementary Notes		
16. Abstract Compliance tests were conducted on the subject 2008 Volvo XC90 MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-118-06 for the determination of FMVSS 118 compliance. Test failures identified were as follows: None		
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SECTION 1

PURPOSE OF COMPLIANCE TEST

1.0 PURPOSE OF TEST

A model year 2008 Volvo XC90 MPV was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 118 testing to determine if the vehicle was in compliance with the requirements of the standard. FMVSS 118 specifies requirements for power-operated window, partition, and roof panel systems to minimize the likelihood of death or injury from their accidental operation.

1.1 The test vehicle was a 2008 Volvo XC90 MPV. The vehicle was identified as follows:

A. Vehicle Identification Number: YV4CN982281432584

B. NHTSA No.: C85900

C. Manufacturer: VOLVO CAR CORPORATION

D. Manufacture Date: 08/07

E. Color: White

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 118 testing on September 26, 2008.

SECTION 2

TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 TEST PROCEDURE

All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure TP-118-06 dated 12 April 2006 and General Testing Laboratories, Inc. (GTL) Test Procedure, TP-118-03A, “Power Operated Window, Partition and Roof Panel Systems”.

FMVSS 118 Compliance Testing was performed in the following sequence:

A. Test Vehicle Identification/Documentation
B. Power Window, partition and roof panel identification/documentation
C. Interior, exterior and remote control switch identification/documentation
D. Pre-test operation of all power windows, partitions and roof panels
E. Photograph vehicle and interior, exterior and remote control devices
F. Perform Interior Locking System Off Test
G. Perform Interior Locking System with Key Removed Test
H. Perform Exterior Locking System Test
I. Perform Remote Actuation Device Test
J. Perform Occupant Compartment Actuation Device Test(Sphere Test/Pull up or Pull Out Test)
K. Perform Automatic Reversal System Test

Above tests H and I were not required on this vehicle due to no exterior or remote actuation devices. Tests J and K were performed for information purposes only.

2.1 SUMMARY OF RESULTS

The power window operational test resulted in no anomalies being noted. Test data indicate the FMVSS 118 requirements appear to have been satisfied. All test data resulting from the tests were recorded on test data sheets in Section 3.

SECTION 3

TEST DATA

3.0 TEST RESULTS

The following data sheets document the results of FMVSS 118 testing on the 2008 Volvo XC90.

FMVSS 118
COMPLIANCE DATA SUMMARY SHEET

VEHICLE MAKE/MODEL/BODY STYLE: 2008 VOLVO XC90

VEHICLE NHTSA NO: C85900 VIN: YV4CN982281432584

VEHICLE TYPE: MPV DATE OF MANUFACTURE: 08/07

LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 09/26/08

REQUIREMENT	PASS	FAIL	N/A
S4 Interior Locking system in Off Position(s)	X		
S4 Interior Locking System with Key Removed	X		
S4 Exterior Locking System			X
S4 Remote Actuation Device			X
S6 Occupant Compartment Actuation Devices (Sphere Test/Pull Up or Pull Out Test)	X*		
S5 Automatic Reversal System	X*		

REMARKS: * Compliance not required

RECORDED BY: G. Farrand DATE: 09/26/08

APPROVED BY: D. Messick

WPRP PRE-OPERATIONAL CHECK

VEHICLE MAKE/MODEL/BODY STYLE: 2008 VOLVO XC90

VEHICLE NHTSA NO: C85900 VIN: YV4CN982281432584

VEHICLE TYPE: MPV DATE OF MANUFACTURE: 08/07

LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 09/26/08

Identify power-operated WPRP and WPRP actuation devices

	LEFT FRONT	LEFT REAR	RIGHT FRONT	RIGHT REAR	TAIL GATE	LEFT VENT	RIGHT VENT	ROOF PANEL
Power WPRP Installed	X	X	X	X				
Individual Interior Actuation Devices	X	X	X	X				
Master Control Panel Actuation Devices	X							
WPRP Operated by Exterior Locking System								
WPRP Operated by Remote Control								
WPRP with Auto-Reverse Capability	X		X					
WPRP with Express-Up Capability	X		X					

Master Control Panel Location: DRIVER'S DOOR PANEL

Exterior Locking System Location: _____

Remote Control Type: ( ) Line of Sight (X) Non-line of Sight

WPRP Actuation Device Design (Toggle, Rocker, Push/Pull (Lever) or describe other):

Master Control Panel Push/Pull
Individual Window Push/Pull
Roof Panel _____
Vents _____

Interior Locking System Key Positions (clockwise): LOCK, ACC, DRIVE, START

All WPRP open/close cycles are satisfactory with key in "ON" position:
(X) YES ( ) NO

All WPRP open/close cycles are satisfactory with key in "ACCESSORY" position:
(X) YES ( ) Not Applicable –No power to WPRP's

REMARKS:

RECORDED BY: G. Farrand DATE: 09/26/08
APPROVED BY: D. Messick

DATA SHEET 1
INTERIOR LOCKING SYSTEM TEST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 VOLVO XC90

VEHICLE NHTSA NO: C85900 VIN: YV4CN982281432584

VEHICLE TYPE: MPV DATE OF MANUFACTURE: 08/07

LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 09/26/08

Key lock position at start of test execution: (X) ON ( ) ACCESSORY, Then to:
Key lock off position during test execution: (X) LOCK (X) OFF ( ) ACCESSORY

ACTUATION DEVICES	DOORS CLOSED		LEFT DOOR OPEN		RIGHT DOOR OPEN		PASS/ FAIL
	INOP.	OPER.	INOP.	OPER.	INOP.	OPER.	
MASTER CONTROL PANEL ACTUATION DEVICES							
Left Front (LF)		X	X		X		P
Right Front (RF)		X	X		X		P
Left Rear (LR)		X	X		X		P
Right Rear (RR)		X	X		X		P
Tail Gate (TG)							
Vents							
Roof Panel (RP)							
INDIVIDUAL ACTUATION DEVICES							
Left Front (LF)		X	X		X		P
Right Front (RF)		X	X		X		P
Left Rear (LR)		X	X		X		P
Right Rear (RR)		X	X		X		P
Tail Gate (TG)							
Vents							
Roof Panel (RP)							

REMARKS:

RECORDED BY: G. Farrand DATE: 09/26/08

APPROVED BY: D. Messick

DATA SHEET 2
INTERIOR LOCKING SYSTEM WITH KEY REMOVED TEST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 VOLVO XC90

VEHICLE NHTSA NO: C85900 VIN: YV4CN982281432584

VEHICLE TYPE: MPV DATE OF MANUFACTURE: 08/07

LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 09/26/08

Key lock position at start of test execution: (X) ON ( ) ACCESSORY, Then to:
Key lock off position during test execution: (X) LOCK ( ) OFF ( ) ACCESSORY

ACTUATION DEVICES	DOORS CLOSED		LEFT DOOR OPEN		RIGHT DOOR OPEN		PASS/ FAIL
	INOP.	OPER.	INOP.	OPER.	INOP.	OPER.	
MASTER CONTROL PANEL ACTUATION DEVICES							
Left Front (LF)		X	X		X		P
Right Front (RF)		X	X		X		P
Left Rear (LR)		X	X		X		P
Right Rear (RR)		X	X		X		P
Tail Gate (TG)							
Vents							
Roof Panel (RP)							
INDIVIDUAL ACTUATION DEVICES							
Left Front (LF)		X	X		X		P
Right Front (RF)		X	X		X		P
Left Rear (LR)		X	X		X		P
Right Rear (RR)		X	X		X		P
Tail Gate (TG)							
Vents							
Roof Panel (RP)							

REMARKS:

RECORDED BY: G. Farrand DATE: 09/26/08

APPROVED BY: D. Messick

DATA SHEET 3
OCCUPANT COMPARTMENT ACTUATION DEVICE TEST
SPHERE TEST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 VOLVO XC90
VEHICLE NHTSA NO: C85900 VIN: YV4CN982281432584
VEHICLE TYPE: MPV DATE OF MANUFACTURE: 08/07
LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 09/26/08

ACTUATION DEVICES	APPLICABLE (YES/NO*)	SPHERE ACTIVATED ACTUATION DEVICE CLOSES WPRP (YES/NO)	TEST RESULT PASS/FAIL	COMPLIANCE REQUIRED (Y/N**)
MASTER CONTROL PANEL ACTUATION DEVICES				
Left Front (LF)	Yes	No	Pass	No
Right Front (RF)	Yes	No	Pass	No
Left Rear (LR)	Yes	No	Pass	No
Right Rear (RR)	Yes	No	Pass	No
Tail Gate (TG)				
Vent Window(s)				
Partition (P)				
Roof Panel (RP)				
INDIVIDUAL ACTUATION DEVICES				
Left Front (LF)	Yes	No	Pass	No
Right Front (RF)	Yes	No	Pass	No
Left Rear (LR)	Yes	No	Pass	No
Right Rear (RR)	Yes	No	Pass	No
Tail Gate (TG)				
Vent Window (s)				
Partition(P)				
Roof Panel (RP)				

*This requirement does not apply to actuation devices that are mounted in a vehicle's roof, headliner, or overhead console and that can close a window, partition, or roof panel only by continuous rather than momentary switch actuation or actuation devices that comply with the reversing requirement of FMVSS 118, S5.
** Requirement is effective 1 October 2008. Early compliance is voluntary and test results are used for information only.

RECORDED BY: G. Farrand DATE: 09/26/08
APPROVED BY: D. Messick

DATA SHEET 4
OCCUPANT COMPARTMENT ACTUATION DEVICE TEST
FOR POWER-OPERATED WINDOWS ONLY
PULL UP OR PULL OUT TEST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 VOLVO XC90
VEHICLE NHTSA NO: C85900 VIN: YV4CN982281432584
VEHICLE TYPE: MPV DATE OF MANUFACTURE: 08/07
LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 09/26/08

ACTUATION DEVICES	SWITCH ORIENTATION A – horizontal B – vertical C - angled	CLOSES POWER-OPERATED WINDOW ONLY IF: PULL UP OR PULL OUT	TEST RESULT PASS/FAIL	COMPLIANCE REQUIRED (Y/N**)
MASTER CONTROL PANEL ACTUATION DEVICES				
Left Front (LF)	C	Pull Up	Pass	No
Right Front (RF)	C	Pull Up	Pass	No
Left Rear (LR)	C	Pull Up	Pass	No
Right Rear (RR)	C	Pull Up	Pass	No
Vent Window(s)				
INDIVIDUAL ACTUATION DEVICES				
Left Front (LF)	C	Pull Up	Pass	No
Right Front (RF)	C	Pull Up	Pass	No
Left Rear (LR)	C	Pull Up	Pass	No
Right Rear (RR)	C	Pull Up	Pass	No
Vent Window(s)				

** Requirement is effective 1 October 2008. Early compliance is voluntary and test results are used for information only.

RECORDED BY: G. Farrand DATE: 09/26/08
APPROVED BY: D. Messick

DATA SHEET 5
WPRP PHYSICAL CONTACT REVERSAL CAPABILITY

VEHICLE MAKE/MODEL/BODY STYLE: 2008 VOLVO XC90
VEHICLE NHTSA NO: C85900 VIN: YV4CN982281432584
VEHICLE TYPE: MPV DATE OF MANUFACTURE: 08/07
LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 09/26/08

Window, Partition, Roof Panel	Test Rod Placement In Window, Partition or Roof Panel	Test Rod Size (mm)	Window, Partition or Roof Panel Opening Before/After Closing (mm)	Maximum Force Measured on Test Rod (Newtons)	Window, Partition or Roof Panel Reversing Distance (mm)	Pass/Fail *
L.F	Center Top	50	91 / 123	148	32	**
R.F.	Rear Top	50	125 / 175	163	50	**

*WPRP must reverse direction before contacting or exerting a squeezing force of 100 Newtons. Upon such reversal, the WPRP must open to one of the following positions.

A. A position that is at least as open as the position at the time closing was initiated.
B. A position that is not less than 125 mm more open than the position at the time the window reversed direction, or
C. A position that permits a semi-rigid cylindrical rod that is 200 mm in diameter to be placed through the opening at the same location as the test rod.

REMARKS: **Not required to meet reversal requirements. This test was performed only to gather data.

RECORDED BY: G. Farrand DATE: 09/26/08
APPROVED BY: D. Messick

SECTION 4
TEST EQUIPMENT LIST

VEHICLE MAKE/MODEL/BODY STYLE: 2008 VOLVO XC90
VEHICLE NHTSA NO: C85900 VIN: YV4CN982281432584
VEHICLE TYPE: MPV DATE OF MANUFACTURE: 08/07
LABORATORY: GENERAL TESTING LABORATORIES TEST DATE: 09/26/08

ITEM	MFR	MODEL	S/N	CAL. PERIOD	DATE OF LAST CALIB.	REMARKS
SLR DIGITAL CAMERA	NIKON	D50	N/A	N/A	N/A	
PINCH FORCE SENSOR	SENSOR DEVELOPMENTS, INC.	10293	179104	12 MO.	06/08	

REMARKS:

RECORDED BY: G. FARRAND DATE: 09/26/08

APPROVED BY: D. MESSICK

SECTION 5

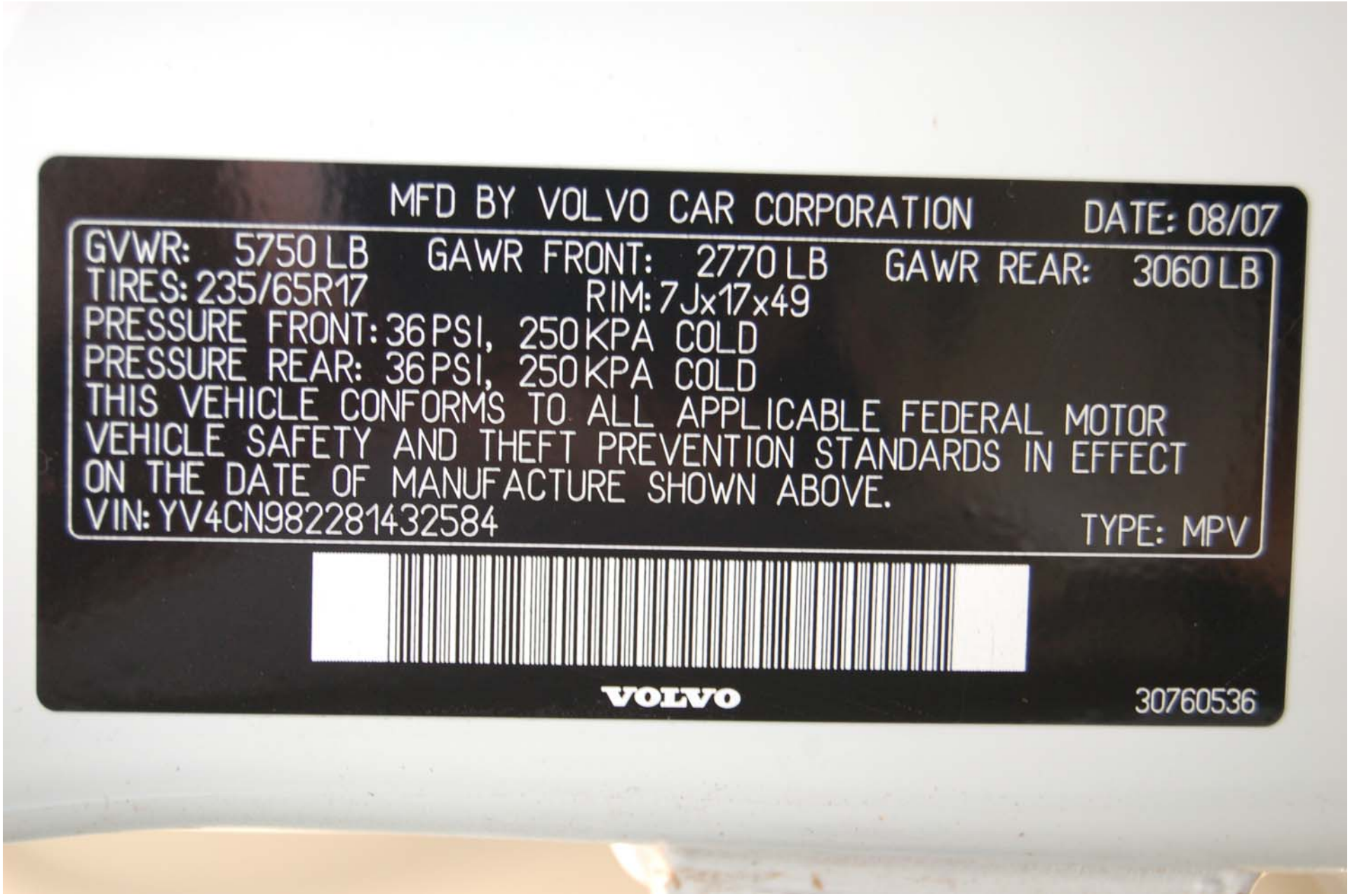
PHOTOGRAPHS

2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.1
¾ FRONTAL VIEW FROM RIGHT SIDE OF VEHICLE

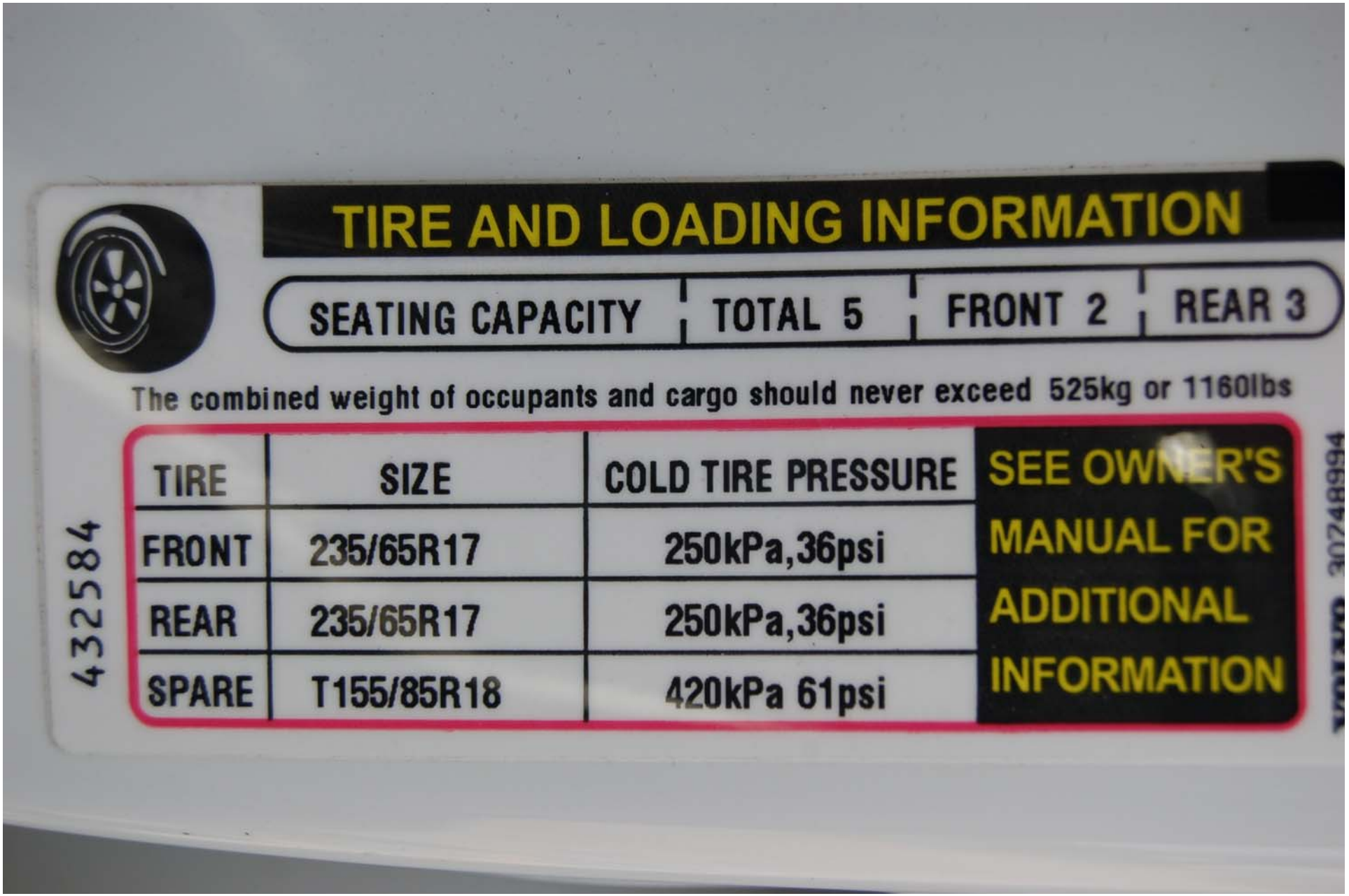
2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.2
¾ REAR VIEW FROM LEFT SIDE OF VEHICLE



2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.3
CLOSE-UP VIEW OF VEHICLE CERTIFICATION LABEL



2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.4
CLOSE-UP VIEW OF TIRE INFORMATION LABEL

2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.5
CLOSE-UP VIEW OF VEHICLE IGNITION SWITCH

2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.6
CLOSE-UP VIEW OF LEFT FRONT POWER WINDOW SWITCH

2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.7
CLOSE-UP VIEW OF RIGHT FRONT POWER WINDOW SWITCH

2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.8
CLOSE-UP VIEW OF LEFT REAR POWER WINDOW SWITCH

2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.9
CLOSE-UP VIEW OF RIGHT REAR POWER WINDOW SWITCH

2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.10
CLOSE-UP VIEW OF POWER WINDOW MASTER SWITCH

2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.11
TYPICAL SWITCH/SPHERE TEST SET-UP

2008 VOLVO XC90
NHTSA NO. C85900
FMVSS NO. 118

FIGURE 5.12
TYPICAL FORCE/DEFLECTION TEST SET-UP

SECTION 6
OWNER'S MANUAL INFORMATION

Power windows

The power windows are controlled by buttons in the arm rests. The ignition switch must be ON[1] (ignition key in position I, II or the engine running) for the electrically operated windows to function.

To lower: Press down the front edge of the button to the first detent ("stop").

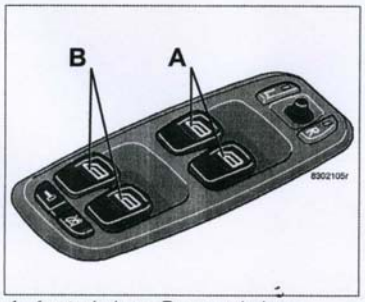
To raise: Lightly pull up the front edge of the button to the first detent ("stop").

Auto up/down function (front doors only):
Either front door window can be opened or closed automatically.

Auto down: Press the front part of the button as far down as possible and release it immediately. To stop the window at any time, pull the button up.

Auto up: Pull the front part of the button up as far as possible and release it immediately. To stop the window at any time, press the button down.

[1] The power windows will also function after the ignition has been switched off as long as neither of the front doors has been opened.



A - front windows, B - rear windows

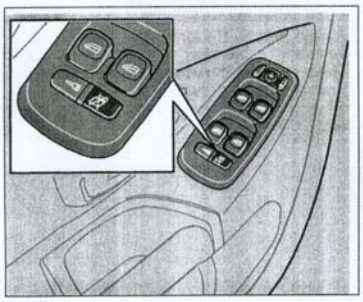
NOTE

If a window is obstructed during auto-up, it will automatically reverse direction and return to its starting position. If a window is repeatedly obstructed during auto-up operation, an overload protection circuit breaker will temporarily halt window function. The window will return to normal function after a brief cool-down period.

WARNING

Always remove the ignition key when the vehicle is unattended.
Make sure that the windows are completely unobstructed before they are operated.
Never leave children unattended in the vehicle.

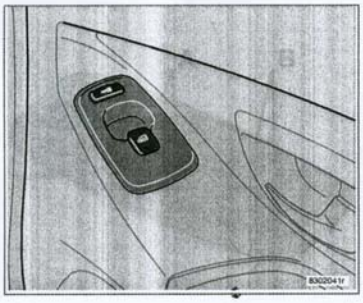
Power windows



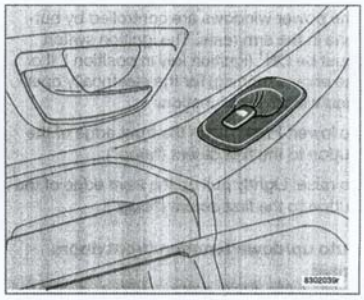
Lockout switch for rear windows
The power rear door windows can be disabled by a switch located on the driver's door (see illustration).

If the light in the switch is OFF: The rear door windows can be raised or lowered with the buttons on the rear door armrests or with the buttons on the driver's door armrest.

If the light in the switch is ON: The rear door windows can only be raised or lowered with the buttons on the driver's door armrest.

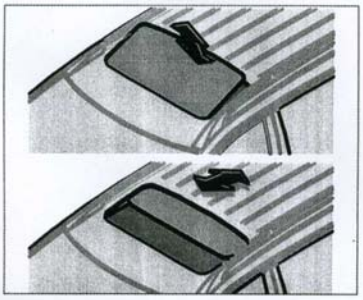


Power window on the front passenger's side
The control for the power window in the front passenger's seat operates that window only.



Power windows in the rear doors
The rear door windows can be operated with the control on each door and the switch on the driver's door. If the light in the switch for blocking power windows in the rear doors (located in the driver's door control panel) is on, the rear door windows can only be operated from the driver's door.

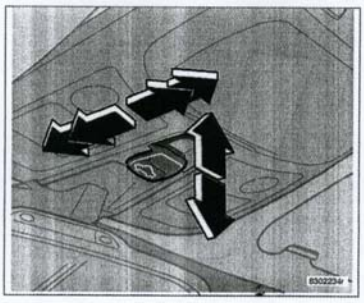
Power moonroof



To operate the moonroof, turn the ignition key to position I or II, or start the engine. The moonroof can be operated in two ways:

A. Tilt position

B. Sliding moonroof



A. Tilt position

Open: With the moonroof closed, push up the rear edge of the switch (position 5 in the illustration in the center column).

Close: Pull down and hold the rear edge of the switch (position 6 in the illustration in the center column) until the moonroof has closed completely.

B. Sliding moonroof

Manual open: Pull the switch rearward to position 3 and hold it until the moonroof has opened to the position of your choice.

Auto open: Pull the switch as far back as possible (position 4) and release it to automatically slide open the moonroof to the "comfort"[1] position. Pull the switch rearward again to open the moonroof completely.

Manual close: Push the switch to position 2 and hold it until the moonroof has closed completely or to the position of your choice.

Auto close: Push the switch forward as far as possible (position 1) and release it to automatically close the moonroof.

CAUTION

- Remove ice and snow before opening the moonroof.
- Do not operate the moonroof if it is frozen closed.
- Never place heavy objects on the moonroof.

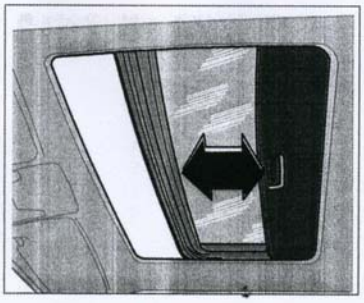
[1] A position where the moonroof is not quite fully open, which helps alleviate "rumbling" wind noise.

Power moonroof

WARNING

- Never open/close the moonroof it is obstructed in any way when in operation.
- Never allow a child to operate the moonroof.
- Never extend any object or body part through the open moonroof, even if the vehicle's ignition is completely switched off.
- Never leave a child alone in a vehicle.

If the moonroof is obstructed during auto-close operation, it will automatically reverse direction and return to its starting position. If the moonroof is repeatedly obstructed during auto-close operation, an overload circuit breaker will temporarily halt moonroof function. The moonroof will return to normal function after a brief cool-down period.



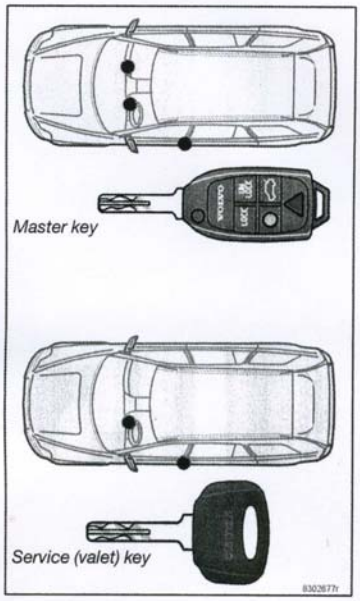
Sun visor

The optional moonroof also features a sliding sun visor. The visor slides open automatically when the moonroof is opened. The visor must be closed manually.

WARNING

The moonroof must never be obstructed in any way when in operation.

Keys and remote controls



Keys

Two types of keys are provided with your vehicle; master keys and a service (valet) key.

- The **master key**, the remote control, and the central locking button may all be used to lock and unlock all of your vehicle's locks.
- The **service key** will operate only the driver's door and the ignition switch. It is intended to help deter unwanted entry into the glove compartment.
- Turn the key once to unlock the **driver's door only**.
- Turn the key again (within 10 seconds) to unlock all doors and the tailgate.
- One turn with the key towards lock in the drivers door locks all doors and the tailgate.
- Use the switch on the driver's door armrest to lock/unlock the vehicle from the inside.

WARNING

If the doors are locked while driving, this may hinder rapid access to the occupants of the vehicle in the event of an accident. (Also see information on "Child safety locks"

NOTE

To help prevent accidentally locking the keys in the vehicle, the central locking system is designed to unlock the doors immediately if the key is left in the ignition switch, the vehicle is locked using the lock button on the door and the door is then closed. A sound from the lock will be audible at this time.

Please note that this function will not unlock the doors if the engine is running.

Immobilizer (start inhibitor)

Each of the keys supplied with your vehicle contains a coded transmitter. 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 vehicle will start only with a properly coded key.

Each key has a unique code, which your Volvo retailer uses if new keys are required. A maximum of six remote controls/keys can be programmed and used for one vehicle.

If you misplace a key, take the other keys to an authorized Volvo retailer for reprogramming as an antitheft measure.

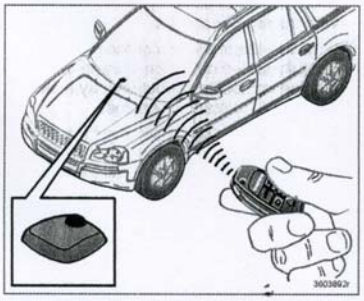
If two of the keys to your vehicle are close together, e.g., on the same key ring, when

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.

NOTE

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.

Remote controls



Your vehicle is equipped with two coded remote control transmitters with integrated ignition keys called Key Integrated Remote (KIR). These transmitters use a radio frequency that will enable you to lock/unlock all doors and the tailgate from a distance of 10-15 feet (3-5 meters).

The transmitters will also activate or allow "keyless" entry into the passenger compartment or the tailgate. They will also activate or deactivate your vehicle's alarm system(s). The vehicle can also be locked/unlocked with the key.

1. Fold key in/out
2. Lock
3. Approach lighting
4. "Panic" function
5. Unlock tailgate
6. Unlock

If one of the transmitters is misplaced, contact your nearest authorized Volvo retailer for replacement.

Using the remote control

Button 1: Press to extend the key. This button must also be pressed when the key is

Keys and remote controls

folded back into the slot in the side of the remote control unit.

Button 2 (Lock): Press once to lock all doors, and the tailgate.

Button 3 (Approach lighting): Press this button when approaching the vehicle at night to light up the interior courtesy light, parking lights, license plate lights and the lights in the door mirrors.

Button 4 (Panic): See page 127 for more information on this function.

Button 5 (Tailgate unlock): Press this button to unlock the tailgate (without unlocking the other doors).

This function will not open the tailgate.

Button 6 (Unlock): Press this button once to unlock the driver's door only. Wait for at least 1 second and press the button again (within 10 seconds) to unlock all doors, and the tailgate.

- If an airbag deploys, your vehicle's SRS control module will attempt to automatically unlock all doors.
- The keys may also be used to lock and unlock the doors, and to activate and deactivate the alarm system.
- To avoid leaving your keys in the vehicle, make a habit of always locking the vehicle with the remote control.
- If the key blade section of the remote is not fully folded out when starting the vehicle, the immobilizer function may make it impossible to start the engine.
- The vehicle can be locked even if a door is open. When the door(s) are closed, they will be locked. Please be aware that the keys could be locked in the car when this is done.

Automatic re-locking

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 tailgate has been opened. This helps prevent the car from inadvertently being left unlocked.

FCC ID:LQNP2T-APU
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.

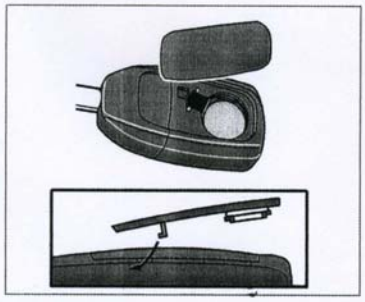
Canadian 2306104388
Model 504 2927 by Donnelly
Operation is subject to the following conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Canadian 2306104388A
Model 509 977 by Connaught Electronics
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.

WARNING

Never use the transmitter to lock the doors from inside the vehicle.

- Doing so would ACTIVATE:
- the break-in alarm, which would sound if one of the doors were opened
- the optional interior motion and inclination alarm sensors.
- Doing so would DEACTIVATE:
- the moonroof and interior courtesy light controls.
- the central locking buttons on the front door armrests, although the interior door handles would still function to allow occupants to leave the vehicle.
- Disabled features would remain disabled until the remote is used again to unlock the vehicle.
- In addition, locking an occupied vehicle would hinder rapid access to the occupants in an accident or emergency.



Replacing the battery in the remote control

If the range of the transmitter is noticeably reduced, this indicates that the battery is weak and should be replaced.

To replace the battery:

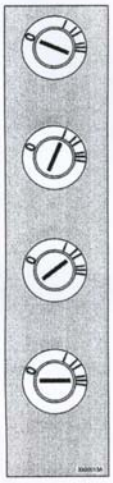
1. Carefully pry open the rear edge of the cover with a small screwdriver.
2. Insert a new 3-volt, CR2032 battery, with the battery's plus side up. Avoid touching the contact surfaces of the battery with your fingers.
3. Press the cover back into place. Ensure that the rubber seal is correctly positioned to help keep out moisture.

NOTE

The old battery should be disposed of properly at a recycling center or at your Volvo retailer.

Ignition switch and steering wheel lock

Ignition switch and steering wheel lock



0 – Locked position: Remove the key to lock the steering wheel[1].

I – Intermediate position[2] - "radio position": Certain accessories, radio, etc. on, daytime running lights off.

II – Drive position: The key position when driving. The vehicle's entire electrical system is connected.

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.

Autostart

This function makes it possible to start the vehicle without holding the key in the start position (position III) until the engine starts. 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.

Steering wheel lock

The steering wheel lock might be under tension when the vehicle is parked.

Turn the steering wheel slightly to free the ignition key.

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 **P** (Park) position (automatic transmission).

[2] Please be aware that leaving the key in this position will increase battery drain.