

VOLVO
for life



VOLVO
XC90



SAFETY

'CARS ARE DRIVEN BY PEOPLE. THE GUIDING PRINCIPLE BEHIND EVERYTHING WE MAKE AT VOLVO, THEREFORE, IS - AND MUST REMAIN - SAFETY;'

ASSAR GABRIELSSON AND GUSTAF LARSON,
THE FOUNDERS OF VOLVO.

DUAL-STAGE AIRBAG

Registers the collision force and adjusts inflation accordingly - with full pressure for high crash forces, or with reduced pressure if the crash force is lower. If the airbag is not needed, only the safety belt pre-tensioners will be deployed.

IC INFLATABLE HEAD-PROTECTION CURTAINS

Offer protection irrespective of whether you are sitting in the front or rear. Inflate in a side-impact or roll-over accident to protect the heads of all the occupants. The curtains remain inflated long enough to contribute to continued protection in complex collision sequences and to help keep the occupants within the car.

REAR MOST SEATS

Head restraints, three-point safety belts with pre-tensioners, IC inflatable curtain, generous rear crumple zone - two passengers ride as safely here as in any other seat. The seat's position above the rear axle contributes to added side-impact protection.

SAFETY CAGE

The sturdy safety cage surrounds all the car's occupants and is dimensioned to withstand extreme physical stress.

SIPS SIDE-IMPACT PROTECTION

Distribute crash forces in a side impact across a large part of the car's body so as to help minimise the strain on the occupants. IC inflatable curtains for all the occupants and the front seat side airbags offer head and chest protection.

RSC ROLL-OVER PROTECTION

RSC (Roll Stability Control) helps you keep control over your car. If the car rolls over, the IC inflatable curtains and safety belt pre-tensioners are triggered by an electronic sensor. The windscreen frame, roof and door pillars all feature extra reinforcement to serve as a roll-over cage.

LOAD SAFETY

Loads are secured most safely using the eyelets in the luggage compartment floor. In addition, all the seats are designed to withstand considerable pressure from unsecured loads. A cargo net or protective cargo grille helps improve load safety still further (optional).

CRUMPLE ZONES

The front and rear crumple zones dissipate and distribute incoming collision forces so as to reduce the physical strain on the car's occupants.



PROTECTIVE SYSTEMS FOR OTHER ROAD-USERS

The front structure and bonnet are designed to help reduce the risk of injury to unprotected road-users. For occupants of other and smaller cars, there is an additional lower cross-member below the front bumper that activates the second car's own crumple zones more quickly.

PERSONAL SECURITY

An electronic immobiliser and door locks that withstand most break-in attempts help protect against theft. Approach and Home Safe lighting light up your path to and from the car at the touch of a button on the remote control. A remotely controlled alarm is fitted as standard.

WHIPS WHIPLASH PROTECTION

Volvo's own system for reducing the strain on the spine and neck if the car is hit from behind at low speed. Built into the front seats, and activated by a sufficiently severe impact.

CHILD SAFETY

An integrated booster cushion in the centre rear seat ensures that the safety belt is correctly positioned on the child (standard). For younger children, there are Volvo's rearward-facing child seats with the ISOFIX attachment system for the outer rear seats and the front passenger seat if no airbag is fitted (accessory).

ENERGY-ABSORBING INTERIOR

All the panels and door sides are padded with energy-absorbing materials to help reduce the risk of injury to the car's occupants.

SAFETY BELTS WITH PRE-TENSIONERS

All seats have head restraints and three-point safety belts with pre-tensioners. In a crash or roll-over accident, the safety belt is pulled tight to help provide maximum protection. The front safety belts then slacken slightly so that the occupant is cushioned by the airbag in a controlled way.

THE THRILL OF EXCITEMENT FOCUSES THE SENSES AND ENHANCES THE SENSATION OF BEING ALIVE. THE FEELING OF BEING SAFE ADDS TO BALANCE AND HARMONY - ALLOWING YOU TO ENJOY THE EXPERIENCE TO THE FULL. SO THE NEW VOLVO XC90 IS ALSO THE MOST SAFETY-MINDED CAR IN ITS CLASS.

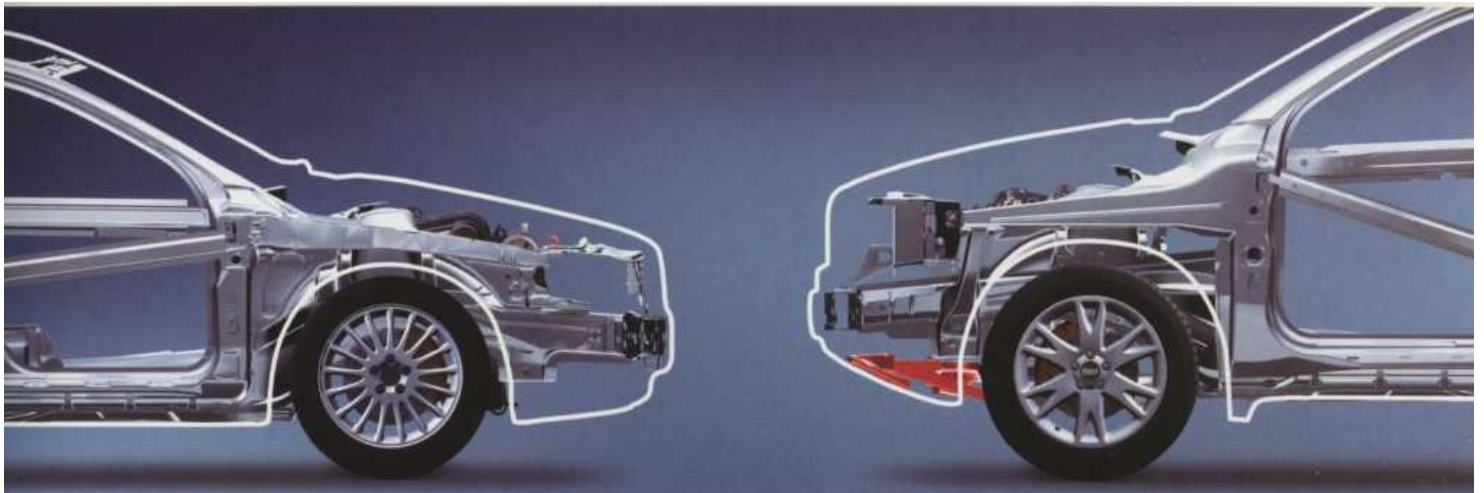
The Volvo XC90 raises safety to a new, higher level. The high seating position and superb visibility make it easier to look ahead and avoid potentially threatening traffic situations. A low centre of gravity, all-wheel drive and a sophisticated chassis combine to help give you full control in all situations. Active stability systems boost the safety margins still further, for instance if you are forced to take extreme evasive action. And if an accident simply cannot be avoided, you and your fellow occupants have the benefit of added protection by the same world-leading safety systems that save lives in other Volvo cars - as well as by Volvo's unique roll-over protection system.



The car's angle and the roll-over risk are both registered by an electronic sensor. At a predetermined risk level, the RSC (Roll Stability Control) system is immediately activated, helping you to maintain control.



If you nonetheless end up in a situation in which the car rolls over, the inflatable curtain is deployed to help protect the heads of all the occupants and keep all within the car. At the same time, the safety belt pre-tensioners are activated in all the seats, keeping you firmly in the seat.



THE VOLVO XC90 EMBODIES CONSIDERATION FAR BEYOND THE NORM, NOT LEAST FOR THOSE OUTSIDE THE CAR ITSELF. IT IS THE FIRST CAR IN ITS CLASS THAT MEETS THE DEMANDS FOR GENEROUS DIMENSIONS, WORLD-CLASS CRASH PROTECTION, ENVIRONMENTAL CONSIDERATION AND - NOT LEAST - A CONSTRUCTION THAT IS NOT UNDULY AGGRESSIVE AGAINST OTHER ROAD-USERS IN A COLLISION.

FOR OCCUPANTS OF OTHER CARS

The Volvo XC90 is designed and built from the very outset as a modern passenger car with a monocoque body and the same type of crumple zones as found in the rest of the Volvo range. Despite the high ground clearance, the body structure itself is still at the same height as the bumpers of most other passenger cars. In a frontal collision or side impact, the additional lower cross-member below the front bumper activates the other car's own crumple zones more quickly. This saves vital milliseconds - time that may also save lives.

FOR UNPROTECTED ROAD-USERS

The front structure and bonnet are designed to help reduce the risk of injury to unprotected road-users. The front is gently rounded and the headlamps are integrated flush with the body. The low position of the engine has made it possible to give the bonnet additional energy-absorbing properties. It serves as a crumple zone if a pedestrian is hit, thus helping to reduce the risk of serious injuries.

FOR THE ENVIRONMENT

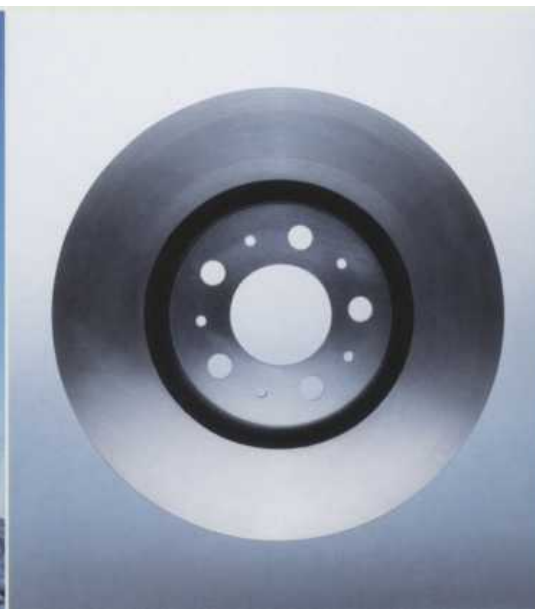
The very latest engine technology and highly efficient exhaust treatment ensure that the Volvo XC90 meets the toughest of international environmental standards. At the same time, fuel consumption is kept down so as to minimise emissions of carbon dioxide. In fact, the Volvo XC90 actually has a positive environmental effect: the radiator has a special coating, PremAir which converts harmful ground-level ozone into fresh oxygen as the car drives by.

EMPOWERMENT

IF THE REASON FOR GETTING THERE IS QUITE SIMPLY BECAUSE IT IS THERE... OR BECAUSE YOU WANT TO CHALLENGE YOUR OWN CAPACITY AND LEARN SOMETHING ABOUT YOURSELF... OR BECAUSE YOU WANT TO HAVE A GOOD TIME IN THE COMPANY OF GOOD FRIENDS IN THE OPEN AIR. THE NEW VOLVO XC90 IS ABOUT DOING THINGS YOUR OWN WAY - WHETHER YOU TAKE THE HIGHWAY, THE TWISTING COUNTRY ROAD OR THE REMOTE FOREST TRACK KNOWN ONLY TO A FEW.



The AWD system and the generous 218 mm ground clearance contribute to the car's excellent get-you-there ability in all road conditions.



You can fully enjoy the response of an agile chassis and a smooth six-cylinder petrol or five-cylinder diesel turbocharged engine of 272 bhp or 163 bhp. When needed, a powerful anti-lock braking system featuring all-round ventilated discs and EBA (Emergency Brake Assistance) is at your disposal.



Power is in your hands. In Automatic mode, the Geartronic transmission adapts its gearchanging pattern to suit your driving style. And if you want to drive more actively, just switch over to Manual mode.

The Volvo XC90 is an exceptionally rewarding all-road driving experience. The low centre of gravity and the weight distribution contribute to its stable road behaviour. Multi-link rear suspension provides excellent ride comfort and well-balanced, consistent road manners. Driving stability is further aided by the electronically controlled AWD system. Drive is automatically distributed between the front and rear wheels within fractions of a

second, as current conditions demand. DSTC (Dynamic Stability and Traction Control) automatically detects and counteracts any tendency to skid. And should you be forced to take extreme evasive action whereby the car risks rolling over, the RSC (Roll Stability Control) system steps in and brakes the wheels until the car regains its poise, helping you to stay in control.

INTELLIGENT FOUR WHEEL DRIVE

THE VOLVO XC90 HAS BEEN CREATED FOR VERSATILE USE. IT HAS THE PERFORMANCE THAT RESULTS IN GOOD DRIVING CHARACTERISTICS UNDER EXTREMELY VARIED CONDITIONS. THE INTELLIGENT FOUR-WHEEL DRIVE UTILISES THE ENGINE'S POWER OPTIMALLY. THE DRIVING EXPERIENCE IS ENHANCED BY THE PASSENGER CAR CHASSIS AND THE GRACEFUL BODY.

NORMAL DRIVING

During normal driving on a dry surface, nearly all tractive force goes to the front wheels (> 95%).

ACCELERATION

During acceleration, the AWD system distributes engine power between the front and rear wheels so that the greatest amount of power is transferred to the ground and can be utilised to propel the car forward. Thus, the AWD system contributes to the car's good acceleration capacity, particularly on rough surfaces.

ELECTRICALLY CONTROLLED HYDRAULIC COUPLING

Engine power is distributed automatically between the front and rear pairs of wheels with the help of an electronically regulated, hydraulic coupling. This new type of hydraulic coupling reacts very quickly and can transfer full torque before the wheels have even turned much. This quick reaction reduces the risk of the front wheels digging down into e.g. loose sand.

QUICK AND SMOOTH REACTIONS - ALL-WHEEL DRIVE

Tractive force is automatically distributed.

between the front and rear wheels.

This is regulated electronically, and is affected by the road surface and driving style.

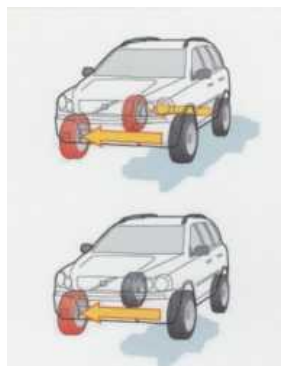


IF THE FRONT WHEELS SPIN

If the road surface is such that the front wheels begin to spin, more tractive force is distributed proportionately to the rear wheels. This redistribution of force takes place very quickly, without the driver being aware of it.

TRACS

Distribution of power between wheels on the same axle is controlled by the anti-spin system TRACS. If one of the wheels begins to spin, TRACS ensures that power is transferred to the other wheel on the same axle. This contributes to the best possible starting and driving characteristics, particularly on slippery surfaces.



INTELLIGENT AWD

The Volvo XC90 has been developed with permanent drive to all four wheels. Tractive force is automatically distributed between the front and rear wheels. This is regulated electronically, and is affected by the road surface and driving style.





ENGINE AND TRANSMISSION

VOLVO XC90 T6 (272 BHP)

An in-line six-cylinder 2.9-litre petrol engine, remarkably smooth and with overwhelming power. The engine pumps out its full torque potential (380 Nm) from just 1800 revs a minute, and then continues to pull like a turbine across the full rev range. Dual turbochargers and variable inlet valve timing promote superb performance. Low internal friction and variable exhaust valve timing help keep the lid on fuel consumption and ensure that the engine meets strict environmental standards.

MANUAL GEARBOX

If you prefer a more involving driving style and do not normally need to haul heavy loads in awkward situations, you will enjoy the smooth and distinct all-synchromesh manual gearbox which is available on the Volvo XC90 D5 from mid-2003.

GEARTRONIC TRANSMISSION

With Geartronic automatic transmission, you get two gearboxes in one: firstly, an adaptive automatic transmission for relaxed driving, and secondly a manual gearbox for when you want to drive more actively. In Automatic mode, the transmission registers your driving style and adapts the gearchanging pattern accordingly. The auto transmission is also perfect if you need to get the car to crawl slowly with a heavy load under difficult conditions. A separate Winter mode makes it easier to get under way when conditions are slippery. In Manual mode, you change up by pushing the gear lever forwards, and down by pulling the lever towards you. (A four-speed Geartronic transmission is standard in the Volvo XC90 T6. Five-speed Geartronic is available in the Volvo XC90 D5.)

ALUMINIUM ENGINE PROTECTION SHIELD*

Protects the engine, sump and transmission from bottoming when driving on really rough terrain.

AUTOMATIC LEVELLING

For more stable roadholding, better comfort and unaffected ground clearance when driving with heavy loads or using the car for towing. The shock absorbers are automatically adjusted up to the level the car would have been without the extra load. When the load is removed, the shock absorbers automatically return to their original position.

VOLVO XC90 D5 (163 BHP)

Volvo's direct-injected five-cylinder 2.4-litre all-aluminium turbodiesel engine harmonises with the dynamic properties of the Volvo XC90. The very latest diesel engine technology featuring common rail direct injection and variable turbine geometry results in alert response, exceptionally smooth operation, remarkable pulling power and, not least, superior fuel economy. High torque (340 Nm) from 1750 revs provides excellent performance whatever the driving conditions. The engine's low weight contributes to the low fuel consumption and the well-balanced road behaviour.

SUB-WOOFER

Provides really full bass reproduction at all volumes. With built-in 140 W amplifier. Placed behind the load compartment's left cover panel. Available for the Premium Sound and High Performance audio systems. Not in combination with third row AC.



REAR HEADPHONE SOCKETS

Allows four rear-seat passengers to listen to the radio or their favourite CD at the same time, without disrupting the car's other occupants. With separate controls for headphone volume and audio source. Also with controls for changing tracks or switching radio stations.



AUDIO AND ENTERTAINMENT

YOU CAN EASILY TRANSFORM YOUR VOLVO XC90 INTO A MOBILE ENTERTAINMENT FACILITY. YOU CAN CHOOSE BETWEEN TWO LEVELS FOR THE SPECIALLY DESIGNED AUDIO SYSTEM. DEPENDING ON WHICH AUDIO SYSTEM LEVEL BEST MEETS YOUR REQUIREMENTS, YOU CAN CUSTOMISE THE SYSTEM WITH A WIDE RANGE OF OPTIONS. AND FOR THE ULTIMATE EXPERIENCE, THERE IS THE OPTION OF A COMPREHENSIVE ENTERTAINMENT CENTRE FOR REAR-SEAT PASSENGERS.



REMOTE CONTROL FROM THE STEERING WHEEL

Makes it possible to adjust the volume, switch radio stations and play the previous or next track without taking your hands off the wheel. Also used for operating the integrated phone. With illuminated buttons.



REAR-SEAT ENTERTAINMENT SYSTEM

Compact entertainment system for rear-seat passengers. With DVD player and 7-inch widescreen that folds down from the inner roof. Wireless IR headphones allow the passengers to watch a DVD film, listen to a CD or play computer games without disrupting the car's other occupants. The system is easy to operate via menus and has a separate remote control. (Accessory - available 2003)



PREMIUM SOUND AUDIO SYSTEM

Uncompromising audio system of world class for the truly discerning music-lover. Premium Sound loudspeakers and the latest generation of Dolby Surround Pro Logic* give a unique sound experience with an authentic sense of presence whether you are sitting in the front or the rear - it's just like having your favourite orchestra along for the ride.

- 12 Premium Sound loudspeakers
- Dolby Surround Pro Logic 11*
- Premium Sound amplifier, 4x70 W, plus 25 W for the centre loudspeaker
- 6 CD changer
- RDS radio
- Can be supplemented with an integrated 6 CD changer, MD player, sub-woofer, separate remote control and rear headphone sockets.

HIGH PERFORMANCE AUDIO SYSTEM

High-class audio system to meet high demands on natural sound reproduction.

- 8 High Performance loudspeakers
- High Performance amplifier, 4x40 W
- RDS radio
- 6 CD changers
- Can be supplemented with an integrated MD player, sub-woofer, separate remote control and rear headphone sockets.

*The Dolby and Pro Logic trademarks are the property of Dolby Laboratories Licensing Corporation.
t Optional

FOR DRIVING FREEDOM

IN ORDER TO FURTHER ENHANCE THE DRIVING EXPERIENCE, YOU CAN SPECIFY A VARIETY OF SPECIALLY DESIGNED OPTIONS. THERE IS EVERYTHING FROM VOLVO'S ADVANCED COMMUNICATION AND NAVIGATION EQUIPMENT, TO FEATURES THAT MAKE YOUR TIME BEHIND THE WHEEL EVEN SAFER AND MORE COMFORTABLE.



INTEGRATED HANDS-FREE GSM PHONE

Allows you to make and answer phone calls using the buttons in the steering wheel or the integrated keypad in the centre console. You can also read and send SMS messages when the car is at standstill. The extra handset in the tunnel console allows you or one of your passengers to carry on a private conversation.

RTI NAVIGATION SYSTEM

Helps you find the fastest route to your destination and to the nearest parking-place, hotel, petrol station, restaurant, tourist site and so on. Audible instructions guide you when necessary. On the display screen, you can see where you are and how far you have left. The system is controlled via menus and you do not need to take your hands off the wheel. All map-based information covering Western Europe is stored on one single DVD disc.

BI-XENON LAMPS

Provide you with even better low and high beam in all conditions without dazzling oncoming traffic. Low beam is adjusted automatically to provide the best possible light pattern when the car is heavily laden.

ECC (ELECTRONIC CLIMATE CONTROL)

Maintains the set temperature inside the car, however much the temperature outside fluctuates or the sun shines in. The interior air quality system helps prevent exhaust gases and odours from entering via the ventilation system, the air inside the cabin is cleaner than the air outside.

ELECTRICALLY-OPERATED GLASS SUNROOF

Makes the interior feel extra light and *airy*. Touch a button - and you open or close the sunroof. And if the sun is too strong, you can always close the built-in sunshade.

INFORMATION CENTRE

Helps you to drive more economically. It shows the current and average fuel consumption, how far the fuel will take you, average speed and distance driven.

AUTOMATIC ANTI-DAZZLE REAR-VIEW MIRROR

Prevents you from being dazzled by headlights from behind.

REAR PARK ASSIST

Makes it safer and easier to reverse. A buzzer inside the cabin makes an increasingly intense sound the closer you come to an object immediately behind the car.

ELECTRICALLY-ADJUSTABLE FRONT SEATS

Make it particularly easy to adjust the seating position. The driver's seat is available with a memory function for three separate settings, including adjustment of the door mirrors - highly practical when taking turns at the wheel.

CRUISE CONTROL

Allows you to drive in extra safety and comfort without having to keep your foot on the accelerator. Easy to operate via buttons set into the steering wheel.

RAIN SENSOR

Activates the windscreen wipers as soon as it starts to rain or if water splashes onto the windscreen. The system's degree of sensitivity can be adjusted via a ring on the wiper stalk.



Consideration is noticeable down to the smallest detail.

For instance, it is so convenient to get into and out of the car - irrespective of where you are seated.

The centre console's rear section can be simply removed to provide added legroom for the passenger in the middle of the second row.

The middle seat in the second row of the seven-seat version features an integrated booster cushion and has extra forward adjustment so a child sitting in it is closer to the adults in the front.

All the upholsteries, interior fabrics and inside door handles are allergy-tested and meet the highest ecological standards.

ECC

Interior air quality system

Heat-reflecting windscreen

Electrically-operated glass sunroof

Cruise control

Information Centre

Automatic anti-dazzle rear-view mirror

Rear Park Assist

Electrically-adjustable front seats, driver and passenger

Electrically-adjustable driver's seat and manual height adjustable passenger seat

Memory for electrically-adjustable driver's seat and outer rear-view mirrors

Electrically-retractable outer rear-view mirrors with ground lighting

Illuminated vanity mirror for the driver

Integrated GSM phone

Hands-free for GSM pocket phone

RTI navigation system

PC table

Business bag

Rain sensor

Electrically-heated front seats

Headlamp cleaning system

Bi-Xenon headlamps

Auxiliary lamps

Fog lamps

Engine heater, electric

Cabin heater, electric

Residual heater

Engine and cabin heater, fuel driven

Snow chains

Mudflaps, front and rear

Adjustable ventilation and heating vents for the rear-seat passengers enhance comfort and help keep ice and mist off the side windows.



Rear headphone sockets allow several passengers to listen to their own choice of music without disturbing the others (optional).



Two people up to about 160cm ride in comfort and safety in the rearmost seats of the seven-seater version. For even greater comfort, this area can also be fitted with its own air conditioning system, including adjustable ventilation vents.



Volvo's entertainment system with a DVD player and pull-down widescreen display enhance every journey for those in the rear of the car (accessory only).



FUEL ECONOMY	CYCLE*	mpg	l/100km
	URBAN	15.3 – 23.7	11.9 – 18.5
	EXTRA URBAN	29.4 – 37.7	7.5 – 9.6
	COMBINED	21.9 – 31.0	9.1 – 12.9
	CO₂ EMISSIONS	242 – 309	

VOLVO

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