

Press Release

Jul 10, 2008 | ID: 16380

Volvo XC70, Model Year 2009

VOLVO XC70: THE RUGGED GO-ANYWHERE PREMIUM ESTATE CAR

OVERVIEW

- Ultimate all-road capability
- Latest version of Volvo's pioneering 'crossover'
- Ideal for those who lead an adventurous lifestyle
- More luxurious, elegantly styled and dynamic than outgoing XC70
- Second-generation D5 diesel
- Engineered to be the safest car in its sector
- All-Wheel Drive (AWD) and Hill Descent Control (HDC) are standard

Volvo's boldly styled and intelligently configured Volvo XC70 AWD (all-wheel-drive) estate offers significantly improved levels of all-road-all-weather ability and an engaging driving experience combined with class-leading safety features, load-carrying versatility and refined passenger comfort.

It's eye-catching new sporty design, headlined by its raked windscreen and tailgate angles, blacked-out side pillars and C30-inspired taillights, are complemented by its tough and practical off-road styling.

Externally, the Volvo XC70 is higher than the V70 estate by 57mm and longer by 15mm and the car features hard-wearing scratchproof cladding which runs along the XC70's flanks and around the wheelarches. Other external features include chunkier redesigned bumpers and chromed front and rear scuff plates that shield the cars nose and tail during more arduous off-road work.

The Volvo XC70 is designed to be the perfect motoring accompaniment to an outdoor lifestyle. It offers great comfort and luxury for five adults yet has more than enough carrying space for items such as mountain bikes, skis and other sporting equipment.

This unique blend of abilities has made the XC70 range a great success since it was first introduced in 1996, pioneering a whole new type of car.

The latest version gets stronger performance, better handling, greater carrying capacity and versatility, more cabin space and comfort, and greater off-road ability. It is also the first XC70 available with a six-cylinder engine, boosting performance and mechanical refinement. The most elegant and upmarket XC70 yet, it has improved styling, cabin luxury and equipment.

For negotiating muddy forest tracks, wading rivers or powering up icy roads to ski chalets, the all-new XC70 gets electronically controlled All-Wheel Drive (AWD) as standard. Volvo's unique Active Four-C chassis, which automatically adjusts dampers to provide flatter and more secure behaviour, is standard on SE Sport versions, improving handling and stability both on and off-road. Hill Descent Control (HDC) - which limits speed down steep, slippery descents to 6mph going forward and 4mph in reverse and greatly improves low-speed control - further boosts off-road credentials.

'The all-new XC70 is our main off-road adventure vehicle,' says the president and CEO of Volvo Cars, Stephen Odell. 'More than the XC90, this is the vehicle chosen by those who genuinely lead an active and sporty lifestyle and really do go off-road regularly. It might be into a forest before unloading the mountain bikes, up a snowy road to the ski slope, or towing a boat down a steep and mossy slipway. No matter what the challenge, the XC70 is designed to perform.'

While most crossovers - like SUVs - are rarely used in the rough stuff, XC70 owners do exploit their cars' capabilities. 'The XC70 has primarily been created to get you to the end of the road. But it has also shown its ability to take you further if you want to and dare to,' says Odell.

'We had a winning concept from the very outset with the XC70 and we have refined it continuously. The all-new model maintains its tough, capable attitude while at the same time growing more comfortable. What is more, our design team has given the car a more elegant, more luxurious look.'

The latest version has fewer plastic protection panels, favouring body-colour panels instead. 'We have dialled up the premium feel,' says design director Steve Mattin. 'The chunky protection panels are used only where necessary. They include noticeable corner pads - we call the front ones "the boxing gloves" - that give the car a chunky and rugged feel. Other tough touches include lower side body cladding and front and rear alloy skid plates underneath the car. But the whole vehicle does look more elegant. We have visually turned up the sophisticated side of the XC70 while also mechanically improving its go-anywhere ability,' says Mattin.

The XC70 is available with the second-generation, turbocharged, five-cylinder, common-rail D5 engine. This ultra-clean, 185 PS, 400Nm engine, first shown on the S80, has a self-cleansing particulate filter as standard. Fuel economy is 37.7mpg in the combined cycle, which equates to 199g/km - a fine performance for a car with so much carrying capacity and on- and off-road potential.

The D5 diesel engine is available with a six-speed manual gearbox or six-speed Geartronic automatic, which also has a manual facility.

Safety innovations include a new design of child car seat with two-stage height-adjustable booster cushions that ensures optimal seatbelt geometry for maximum safety and protection but also offers good visibility out of the windows - making children (and parents) happier. 'When children complain less, parents drive more safely,' says Ahlborg. Small children would use the higher booster setting, which allows them to see out of the windows. Larger children, who still need a boost, now ride in unmatched safety.

Primary safety is also improved thanks to an innovative new Adaptive Cruise Control with Distance Alert and the new Collision Warning with Auto Brake, which warns drivers when they are getting dangerously close to the car in front and then primes the strong disc brakes for maximum braking force.

Other safety features include numerous electronically controlled braking systems such as HBA (Hydraulic Brake Assist), RAB (Ready Alert Brakes), FBS (Fading Brake Support) and OHB (Optimised Hydraulic Brakes). These all ensure that the all-new Volvo XC70 stops in the shortest possible distance. DSTC (Dynamic Stability and Traction Control) prevents skids and slides (especially useful on slippery surfaces). Improved SIPS side protection now uses superior twin-chamber airbags (the lower chambers inflate with much more pressure than the uppers, because the hips are tougher than the torso) and larger side curtain airbags. 'We're convinced this is absolutely the safest car in the premium estate class, along with the all-new Volvo V70,' says Ahlborg.

The Volvo XC70 is roomier and more comfortable than the outgoing model. Rear carrying capacity has grown by 55 litres and entry to the load area is improved by a new larger tailgate design that incorporates the tail-lights.

Comfort, a cornerstone of the outgoing XC70, has been improved, partly by all-new seats based on those of the luxury S80. Volvo is renowned for superb seats that allow for hours of pampered motoring. The new seats are further improved by the availability of internal ventilation, in which fans and perforated leather boost seating comfort on hot days. For more typically Swedish weather, the Volvo XC70 is also available with heated front and rear seats.

The Volvo XC70 comes in three luxury trim levels - SE, SE Sport and SE Lux.

DESIGN CONCEPT

- All-new, rugged, sporty design
- Tough - but more elegant than outgoing XC70, with more body-colour panelling
- Designed to be equally appropriate for the café or the campsite
- Body protection in all the right places
- New tailgate design improves loading

The Volvo XC70 is the sportiest of all the XC models and the most capable off-road, so it has to look the part. Its design is tough, rugged and sporty. 'But we have also tried to make the design of the all-new XC70 more elegant and premium,' says Volvo Cars design director Steve Mattin. 'So it's more appropriate than ever for a luxurious night out in the city.'

'It's a car with two characters - sporty and adventurous on the one hand, refined and premium on the other. Our design goal was to show these two appealing sides to its personality.'

The Volvo XC70 model also represents Scandinavian design at its best. Every little detail has been designed with 100 per cent focus on clean lines and intelligent functionality.

Background to the design

Volvo invented the premium estate when the PV445 was launched in 1953 - a conventional saloon that could double as a capacious van.

Volvo also pioneered the crossover estate concept when the first V70 Cross Country was launched in 1996. Here was a car that had all the comfort and load-carrying ability of a Volvo estate together with real off-road credibility. The Cross Country - which became known as the XC - was not just a toughened wagon; it had more genuine off-road ability than many SUVs. The second-generation XC70, launched in 1999, refined the concept. Today, the Volvo XC70 sits in a market by itself. No other estate offers the same blend of premium features, comfort and rugged off-road skills. It is now Volvo's most off-road-orientated vehicle, despite the arrival of the XC90. Although the Volvo XC90 has clear mud-and-rocks ability, it is used almost exclusively on-road. Drivers of the Volvo XC70, by comparison, genuinely spend a good deal of their time off the beaten track, often pursuing sporting hobbies such as skiing, mountain biking, surfing, fishing or sailing.

'It's not an SUV'

The XC70 looks rugged. But it does not look like an SUV. 'The fact that it's not an SUV - yet can offer SUV-like skills - makes it very attractive to many people,' says Tomas Ahlberg, project director. 'Many people just don't want the bulk or stigma of an SUV. They want a conventional car. But one that can do the unconventional.'

'The Volvo XC70 is seen as more environmentally friendly, more fun to drive. Lots of our XC70 customers say they would never buy an SUV. But they want all the features of an SUV - such as go-anywhere ability and versatility - that make it possible for them to carry out their hobbies and interests.'

'Like a rally car'

'When we started work we came up with a vision for the car,' says Stefan Jansson, responsible for exterior design. 'Imagine a normal car driving on the road. Behind, in your rear-view mirror, you see a trail of dust. Beside you, off the road, you are being overtaken by an XC70. That was the image we created.'

Jansson said he was inspired by rally cars. 'Rally cars are like normal cars but tougher and sportier. That sums up the XC70 too. It's a car that's meant to go on all types of roads and tracks but can drive at normal speed. It's a smaller, lower, faster SUV but with at least as much practicality and versatility.'

Elegant yet rugged design

The XC70 has less hard plastic protective cladding than the outgoing model. At the front, the characteristic tough plastic nose has been abandoned and replaced with a new, unique, softer nose, mostly body-coloured. The headlamps and grille have grown and now have the same trapezoidal shape that was first seen on the XC60 Concept in Detroit in early 2007.

'The dark-coloured plastic panels at the bottom are less obvious than on the outgoing model,' says design director Steve Mattin. 'But as with exclusive outdoor clothing, the protection is placed exactly where it needs to be to withstand the rough stuff.'

In order to retain the rugged stance, the plastic cladding at the corners has been emphasised around the front fog lamps, which are now more clearly pronounced. 'Those corner pads - nicknamed the boxing gloves - are distinctive and practical,' says Stefan Jansson. 'The protection is exactly where you need it - on the front corners.'

At the rear, the corners are also clad in tough plastic, protecting against rocks and trees. The wheel arches are also finished in tough plastic.

The shape of the front air intakes is inspired by a jet engine's front profile. These lines are echoed around the red reflectors at the rear, which look like the extractors on a jet engine.

The chromed protective skid-plate at the front has been widened and integrated to take on a spoiler-like shape. 'It looks like a rally car sump guard and fulfils exactly the same role - to protect the engine and underside of the front of the car,' says Jansson. A chromed skid-plate also protects the tail.

The large and distinctive dark-coloured protective plastic panels on the outgoing XC70 have mostly been replaced with painted surfaces. In combination with the all-new, 'nose down' stance, this gives the latest XC70 a more elegant and luxurious appearance.

'The result is a more premium-looking vehicle but one that has just as much practical body protection as the outgoing XC70,' says designer Jansson.

A sportier design

'We worked hard on getting the stance of the car just right. This is a sports estate - fun to drive and aimed at a sports-minded customer base - so we wanted to give the car more of a sporty wedge, that feeling of movement even when it's stationary. We lifted the rear of the car a little. That climbing waistline gives a forward-leaning, dynamic stance.'

A more reclined windscreen adds to the sporty feel, and so do the blacked-out roof pillars and the more steeply raked upper tailgate. The outgoing XC70 had a flat tailgate but the all-new model has a distinctive kink. 'It looks sportier but does not compromise load-carrying or load access one single bit,' says Stefan Jansson. Load-carrying space is actually bigger, by 55 litres, and boot access is better than on the outgoing XC70. This is partly because the upright tail-lights have moved from the rear pillars to the tailgate, so the opening is bigger than ever. The tailgate glass is also deeper at the sides, improving rearward visibility. A powered tailgate - for both lift and closing - is standard for extra convenience on the SE Lux and an option on the other models. The extended XC roof rails are standard, further improving potential carrying capacity.

At the rear, the Volvo name on the tailgate has more pronounced lettering, with wider spacing than before - a new feature first shown on the XC60 Concept in Detroit in January 2007.

All the rear lights above the waistline - including the high-mounted third brake light - are LED lights, which are brighter and react faster than conventional tail-lights. If the load is so large that the driver is forced to drive with the tailgate slightly open, the lower lights on the body sides become supplementary brake lights.

Externally, the Volvo XC70 is higher than the V70 (by 57mm), longer (by 15mm) and has a different grille, special fog lamps and comprehensive protective cladding. The steel body panels, however, are the same, except for the front wings, and the glazing is also shared.

Although the Volvo XC70 is more practical and stylish than ever, it is still an extreme vehicle - one that looks visually arresting and has a clear function and role. 'The worst thing would be if no-one had any emotions about it,' says technical project leader Karl-Johan Ekman.

INTERIOR DESIGN

- Sporty, luxurious cabin
- Roomier than the outgoing XC70, with a higher-quality feel
- Great versatility including rear seats that fold in a single easy motion
- Front passenger seat also folds, for greater carrying capacity

- Highly functional luggage area includes under-floor storage space, side rails to secure items and adjustable fasteners
- Perfect for carrying mountain bikes, skis or other sporting equipment
- Superbly comfortable seats offer internal ventilation as well as front and rear heating - so the seats are comfortable no matter what the weather
- Innovative two-stage booster seat improves child safety

The all-new Volvo XC70 is designed to be the perfect motoring accompaniment to an outdoor lifestyle. It offers great comfort and luxury for five adults yet has more than enough carrying space for items such as mountain bikes, skis and other sporting equipment.

Despite the enormous rear load area and the versatility of the cabin, the XC70 is also a supremely comfortable luxury car, able to transport five people across continents in great refinement.

'The XC70 has a dual personality,' says Jonathan Disley, who designed the interior. 'On weekdays it's a sophisticated and elegant car for an active urban life. Come the weekend, it transforms into a rugged partner for all kinds of exciting adventures.'

Improved carrying capacity and even greater functionality

The outgoing Volvo XC70 was recognised for its legendary spaciousness and versatility. Yet the all-new XC70 is even better. Rear load area is increased by 55 litres to a vast 575 litres. Rear access is improved by a bigger aperture, thanks partly to locating the rear tail-lights on the tailgate rather than the rear pillars. Total load length, with rear seats folded, is 1878mm (up 30mm).

The ingenious new 40:20:40 split rear seat offers unrivalled versatility. Unlike conventional 60:40 or 50:50 split rear seats, the new set-up means that long items such as skis can be accommodated while two adults sit in comfort in the rear. When all three seats are folded, the load area is completely flat. The backrest of the front passenger seat can also be folded, further improving carrying capacity.

'The new and innovative 40:20:40 split rear seat is one of the cleverest features of the all-new XC70,' says Tomas Ahlberg, project director. 'With normal folding rear seats, a long load such as a pair of skis reduces your car to a three-seater. With the XC70 you still get two good full-size seats in the rear.'

The rear seats now fold easily. In one movement they fold flat into the floor without the need to remove headrests or separately fold the seat squabs.

The rear load bay itself is also extremely versatile. There is a large, 46-litre, lockable storage area under the floor for valuable goods. Aluminium rails are fitted to the floor and their adjustable anchorage points make it easy to secure items. The anchorage points can be tucked down into the rails when not in use. The boot's side panels also have built-in load anchorage eyelets, further to help fasten goods. In addition, the side panels can be fitted with multifunctional rails to attach hooks, load-anchoring nets and cargo space dividers, to name just a few of Volvo's many loading accessories. In effect, the Volvo XC70 offers a 3D load-securing system. A sliding floor is also available.

Cabin has greater length, shoulder-room and legroom

The longer cabin means more room for all passengers. 'One of the goals was to ensure that all five occupants travel first-class, not just the two people in the front,' says Tomas Ahlberg.

Rear legroom has increased by 48mm, rear knee clearance by 21mm and front shoulder-room by 30mm. The longer cabin also means the distance between the front and rear occupants is extended by 21mm.

Volvo has an excellent reputation for seating comfort. The seats on the Volvo XC70 are new and even better than the outgoing model's and the electrically operated front seats can be upholstered in perforated and ventilated leather. Front seat ventilation is supplied by the car's air-conditioning system: the air flows through the upholstery and seat cushion, reducing any stickiness caused by warm weather. The system also comes with heated front seats for chilly days, while heated rear seats are now available.

The brilliantly versatile cabin allows you to have a five, four, three, two or even single-seater as the

seats fold and carrying space increases. The standard roof racks further increase carrying capacity.

Integrated two-stage child booster cushions

Another major seating innovation is Volvo's new integrated, two-stage child booster cushions.

'Modern cars tend to have higher belt lines [where the bottom of the windows meets the body] so younger children tend not to be able to see out of the window in the back these days,' says Karl-Johan Ekman, technical project leader. 'It's a big problem because if they're bored and causing trouble then you won't drive so well.' The two-stage booster allows small children to sit higher and larger children still to receive a height boost. In both cases seatbelt angles are optimised, so safety is improved. The booster can be fitted to either of the outer rear seats.

Luxury cabin befitting a premium saloon

Though the Volvo XC70 has been designed as an adventurous go-anywhere vehicle, it is also a consummate long-distance luxury car. It epitomises Scandinavian luxury. The cabin is simple, elegant and functional, and seamlessly combines beauty and technology. 'It is a more youthful cabin than the V70's,' says design director Steve Mattin. 'The special stitching and trim of the seats, plus new colours, give the cabin a sportier and more outdoor feel. It is also a less complex and warmer environment than that typically found in German premium cars, as befits its Swedish design heritage.'

Premium materials are used extensively, including different grades of leather, two different types of wood and two different styles of aluminium, one unique to the XC70. Leather-faced upholstery is standard on all models with ventilated leather-faced standard on the SE Sport, typical of the generous equipment levels.

One of the most elegant pieces of interior design is the sleek, ultra-slim centre console, which contains most of the important switches and controls. It contributes to the understated simplicity of the interior, avoiding a plethora of confusing switchgear.

There are three interior colours: soft beige, off black and espresso brown. 'There is more contrast on the XC70's interior than in most premium estates as a reflection of its more youthful customer base,' says Boel Hermansson, head of colour and material design for the all-new Volvo XC70.

An unusual and distinctively Swedish touch is the 'Virrvar' ('chaos' or 'confusion' in Swedish) detailing used for the stitching of the seats, the cross-brushed aluminium panels and the rear mesh pockets. It is inspired by the busy, almost tangled patterns of the well-known Swedish designer (and prince) Sigvard Bernadotte.

DRIVING DYNAMICS: ENGINE

- Turbocharged, diesel five-cylinder
- Located transversely for improved safety
- Has standard particulates trap for especially clean running

The second-generation, 2.4-litre, five-cylinder, diesel D5 is a cleaner and more advanced version of the engine fitted to the outgoing XC70. It gives superb performance (130mph) allied to fuel economy more typically found on smaller, less capable cars (37.7mpg on the combined cycle).

Volvo's second-generation, 2.4-litre, five-cylinder, common-rail diesel D5 engine is an advanced unit featuring double overhead camshafts and four valves per cylinder for optimised breathing. The D5 unit is substantially revised over the outgoing XC70's unit and has a new electronically controlled turbocharger, refined multi-throttle injection technology and a more powerful engine management system, among many other changes. It is one of the cleanest and most advanced diesel engines in the world. The improvements have resulted in an entirely new driving experience with considerably higher performance and improved drivability. At the same time, there has been a sharp reduction in emissions. The engine easily exceeds Euro 4 emissions requirements. Particulates are only 0.001g/km compared with the Euro 4 standard of 0.025. A particle filter requiring no servicing is fitted as standard.

The D5 produces 185 PS and a massive 400Nm of torque from 2000-2750rpm. Maximum speed is 130mph in manual form and 0-60mph takes only 8.8 seconds. Yet average fuel economy on the

official combined cycle is 37.7mpg for the manual version.

	D5
Type	2400cc, 20v, 5 cyl
Power	185PS
Torque	400/2000-2750
0-60 mph (seconds)	8.8 man 9.4 Gear
Top speed (mph)	130 man 127 Gear
CO ₂ (g/km)	199 man 219 Gear
Fuel tank	70
Mpg: urban	29.4 man 26.9 Gear
Extra-urban	44.8 man 40.4 Gear
Combined	37.7 man 34.0 Gear
Ins group	15E
Min kerb weight (kg)	1861 man 1877 Gear
Towing limit braked (kg)	2100 man 2100 Gear

DRIVING DYNAMICS: CHASSIS

- Torsional rigidity of new body increased by 15 per cent
- Active Four-C chassis standard on SE Sport
- 74mm more ground clearance than V70 for better cross-country ability
- Impressive 300mm wading depth
- Hill Descent Control for safe driving on steep descents
- All-new chassis architecture with fully independent suspension for a compliant ride and good handling
- DSTC (Dynamic Stability and Traction Control) is standard to prevent slides and skids

The Volvo XC70 is equally adept at powering down muddy slopes, towing a boat up a slippery ramp or cruising on the motorway. 'Here is a cross-country vehicle that is extremely capable off-road yet drives just like a car on the tarmac,' says Tomas Ahlborg, project director. 'No SUV can offer this balance of abilities. As with any Volvo, it is also predictable, stable and safe, no matter what the surface or weather.'

Greater torsional rigidity aids ride and handling

The most important single factor in good dynamics is a rigid body platform. If the platform twists and bends, then the handling will become unpredictable, the ride quality will deteriorate and the car will lose primary safety. Rigidity is also very important in punishing off-road conditions, when uneven roads can induce 'chassis twisting', which destabilises the vehicle.

The Volvo XC70 has all-new chassis architecture that offers a very high degree of structural integrity. Thanks to its careful, computer-aided design and the use of different grades of high-strength steel, the Volvo XC70 has 15 per cent greater torsional rigidity than the outgoing model, itself an immensely strong and stiff car.

The suspension has been set up to give a comfortable low- and high-speed ride, ensuring great agility and feedback from car to driver. The all-new steering system - speed-sensitive power steering is standard on the SE Sport version - and carefully honed, fully independent suspension help give what Tomas Ahlborg calls a 'high-class driving feel and superb control whatever the situation'.

The suspension uses coil springs all round. The front uses MacPherson struts while the rear has a multi-link arrangement. Anti-roll bars are fitted front and rear.

Specially designed for off-road

To improve driving performance on rough roads, or when off-road, the Volvo XC70 has excellent ground clearance. Its minimal overhangs mean it can also cope with very steep ascents or descents.

Helped by the generous ground clearance - it's 74mm higher than the Volvo V70 with two occupants on board - the XC70 has an effective clearance from the track beneath of 210mm. Wading depth is 300mm, so it can stride easily across shallow rivers or fords.

Although longer than the outgoing XC70, the all-new vehicle is still more compact than the premium estate norm. This contributes to its ability to clamber up or down steep slopes. With ramp angles of 19.2 degrees approach, 19.8 degrees break over and 24 degrees departure, the new XC70 betters its predecessor (16, 18 and 20 respectively) in all three areas.

Active Four-C chassis

The SE Sport versions of the XC70 get Volvo's innovative active Four-C chassis as standard. This is an advanced, self-adjusting chassis where electronic sensors continually monitor the car's behaviour and the dampers readjust in a fraction of a second. This technology reduces the car's tendency to squat, dip or roll under firm acceleration, hard braking or fast steering manoeuvres.

The advanced multiplex control systems update the suspension settings an almost unbelievable 500 times every second. The system is especially useful when the car's handling balance is naturally upset - for example, during fast take-off (with Four-C, the rear dampers are set to maximum stiffness to reduce squat and optimise front-end traction), during hard braking (the front dampers are stiffened to reduce nose dive) and when cornering (outside dampers are stiffened to reduce roll and improve road holding).

Dampers are also automatically stiffened as speed increases. During quick steering manoeuvres, the XC70 takes on an agility and composure that belie its size and carrying capacity. 'With an active chassis, the car's driving behaviour improves in all situations,' says project director Tomas Ahlborg. 'It is both safer and more entertaining to drive.'

Though dampers are adjusted automatically, drivers can also programme in their desired road behaviour. Three chassis settings, all at the touch of a button, alter the car's responses. Available settings are:

- Comfort - which provides the most comfortable ride with calm, harmonious body movements
- Sport - for more tightly controlled body movements and a firmer, 'hunkered down to the road' feel. Steering response is sharpened, body roll is reduced
- Advanced - the maximum sports choice that noticeably firms up dampers and would be the desired setting for brisk drives on smooth, winding roads

In an emergency situation - when the driver needs maximum control - the ingenious Four-C system overrides the personal settings to deliver maximum stability and tyre grip. Equally, as speed builds, the dampers automatically become firmer to improve handling, response and safety.

The Active Four-C chassis is especially useful on uneven or gravel roads where the unpredictable nature of the surface may catch out unwary drivers.

Hill Descent Control for safer downhill driving

Slippery downhill tracks are among the most dangerous of all off-road situations. The Volvo XC70's Hill Descent Control (HDC) allows drivers to descend slippery slopes with complete peace of mind. Speed is modulated irrespective of conditions. The electronic one-touch system, standard on automatic or manual gearboxes, utilises the ABS anti-lock brakes to control speed and maintain stability, ensuring a steady and safe 6mph throughout the descent. Touching the brake will slow the car but won't disengage the HDC. The HDC also works in reverse maintaining a steady 4mph, making it ideal for tricky manoeuvres such as launching a boat on a steep slipway.

'Some off-road cars have an extra-low gear for crawling or an extra-low range,' says Tomas Ahlborg. 'We believe that Hill Descent Control is a more sophisticated solution that better suits the XC70. Combined with our All-Wheel Drive system it gives great control at very low speeds, helped by the torque and throttle response of both the six-cylinder and turbocharged five-cylinder engines.'

DSTC (Dynamic Stability and Traction Control)

This is standard on all Volvo models. An electronic stability and traction system that stops skids

and slides, it uses sensors to detect if any of the wheels is losing traction or grip. If so, power is cut to the relevant wheel. If the sensors detect early signs of a skid, the system automatically brakes the relevant wheel to reduce speed and regain control. It's an important primary safety aid, especially on the loose-surfaced tracks on which the XC70 may frequently be used.

DRIVING DYNAMICS: STEERING, BRAKES AND TRANSMISSION

- Speed-dependent power steering is offered, ensuring good high-speed feel and easy parking
- Easy-to-use Power Parking Brake
- Highly advanced braking system includes HBA (Hydraulic Brake Assist), RAB (Ready Alert Brakes), FBS (Fading Brake Support) and OHB (Optimised Hydraulic Brakes) - all to ensure shortest possible stopping time and maximum control
- Collision Warning with Auto Brake reduces risk of rear-end collisions
- All-Wheel Drive (AWD) standard for great grip and stability

All XC70 models get Volvo's innovative AWD (All-Wheel Drive) transmission as standard. This advanced system, which automatically apportions torque front-to-rear depending on need, improves the XC70's handling and stability on the road. But it also improves traction and handling when the road runs out.

The Volvo XC70 has sharp and agile handling irrespective of conditions. The strong, large disc brakes are supplemented by a host of advanced electronic features to ensure that the XC70 always stops in the shortest possible distance, whether you're driving on the motorway or in the mud. A number of new primary safety technologies are available on the XC70, including Volvo's innovative Collision Warning with Auto Brake, which monitors the distance to the car in front and then optimises braking strength to help you avoid accidents.

All-Wheel Drive standard

The Volvo XC70 is a rugged car aimed at people who really do use their cars off-road. 'It's an all-road car, good on the road and good off the road,' says Tomas Ahlborg. 'Far more than most SUVs, customers genuinely use their XC70s to go into the wild. But as we say at Volvo, you use an XC70 to drive to nature not to drive over nature.'

The XC70's AWD system improves handling and road holding by apportioning torque to all four wheels. The computer-controlled BorgWarner Coupling automatically sends torque to the wheels with most grip, ensuring maximum possible traction and primary safety. The front-to-rear torque split changes constantly, as the sophisticated electronics control a hydraulic clutch that determines the most effective distribution of torque.

Sensors monitor the road (or off-road) surface and the positions of the steering, brake and accelerator. In normal conditions on a dry tarmac road, almost all the power is distributed to the front wheels. However, as soon as slippage occurs, such as in muddy off-road conditions, torque is diverted to the rear wheels to boost grip.

This unique system also features Volvo-patented Instant Traction, which detects loose or slippery surfaces and switches drive from front to rear (or vice versa) to help with standing starts.

AWD improves traction on all slippery surfaces, such as gravel, mud, snow, sand or ice, and it allows the car to go anywhere, since all four wheels provide grip. But it also improves the handling balance of the car on the road. Unlike many mechanical systems fitted to SUVs, Volvo's electronic AWD system is light - reducing unsprung weight and improving both fuel consumption and on-road handling balance.

Six-speed automatic or manual gearbox

The D5 gets a choice of six-speed manual or six-speed Geartronic automatic transmission.

The modern Geartronic transmission can be used either as a full automatic or as a clutchless manual. In automatic mode, gear changes are so smooth as to be almost imperceptible.

The six-speed manual improves both performance and fuel economy, and is a smooth-shifting clutch-and-stick shift aimed at those who prefer changing gear themselves.

Highly advanced interactive braking system

The Volvo XC70 has ABS anti-lock brakes to stop skids and aquaplaning on- and off-road, and big disc brakes - ventilated at the front - all round. The brakes are 316mm in diameter at the front and 302mm at the rear. The new model also has a suite of advanced, interconnected braking features to deliver the best possible stopping performance. They include:

- HBA (Hydraulic Brake Assist). This is an update of Volvo's previous EBD (Electronic Brakeforce Distribution) and EBA (Emergency Brake Assist). This new-generation system, first shown on the latest S80, helps the driver to stop in the shortest possible distance in emergency situations. Unlike the previous system, which only used vacuum assistance to boost braking strength, HBA reinforces brake pressure hydraulically. In an emergency, when the driver does not press the pedal sufficiently firmly or quickly, HBA ensures that maximum braking pressure is applied, always giving the driver the greatest chance to reduce the likelihood, or seriousness, of an accident.
- OHB (Optimised Hydraulic Brakes). In heavy braking, vacuum pressure in the brake servo can become low, reducing braking effort. OHB compensates by using hydraulic pressure to boost braking effort.
- RAB (Ready Alert Brakes). If the accelerator is released suddenly or the adaptive cruise control registers an obstacle in front of the car, RAB is deployed. The brake pads are instantly positioned very close to the discs, reducing braking response time and braking distance.
- FBS (Fading Brake Support). In long, hard braking, such as on a lengthy, mountainous descent, there is a risk of brake fade. FBS uses the hydraulics to gradually build brake pressure, maintaining pedal feel.

Collision Warning with Auto Brake

This clever new technology, first shown on the latest Volvo S80 and now also available on the Volvo XC70 and V70, reduces the risk of rear-end accidents; where an impact is inevitable, it should reduce its severity.

A radar sensor, fitted behind the grille, continually monitors the area in front of the vehicle. If the sensor detects that the car in front has braked suddenly, that you are too close to the vehicle in front, or that there is an obstacle in your path, a red warning lamp flashes on the windscreen and a warning buzzer sounds. In many situations, this will be sufficient to alert the driver and the danger will pass. However, if the risk of collision increases, the brake support system is activated. The pads move very close to the brake discs and the hydraulic brake pressure is increased. Thus the brakes are fully prepared for a panic stop. Even if weak pressure is applied to the brake pedal, maximum brake pressure will be automatically used to cut stopping distance. The driver's reactions remain crucial, however - the car will never apply the brakes automatically.

To warn traffic behind, the brake lights will start to flash when the brakes have been applied in this way. Once the speed drops below 30km/h (19mph), the hazard warning flashers are also automatically activated.

The sensitivity of the collision warning system can be adjusted via the car's settings menu. There are three different positions that can be set according to driving style or road conditions.

Adjustable, speed-dependent power steering

All Volvo XC70s get sharp, power-assisted rack and pinion steering as standard. On the SE Sport, speed-dependent power steering is standard. This provides extra power assistance at low speeds, for example to make parking easier. The power assistance gradually declines as road speed increases, disappearing entirely at high cruising speeds. To give all drivers their own optimum road feel, the level of steering servo assistance can now be adjusted via the car's set-up system. Power steering assistance can be set at one of three levels, depending on personal taste.

Power Parking Brake

This smart parking brake is released automatically once the accelerator is pressed (and the driver's seatbelt is fastened), making hill starts easier, especially for cars fitted with manual gearboxes. The parking brake is engaged by pushing a lever to the left of the steering wheel and can be manually disengaged by pulling the same lever. The parking brake is automatically engaged once the key is removed from the ignition or, for models with keyless drive, when the driver's door is opened.

QUALITY AND EQUIPMENT

- High level of standard equipment, even on entry-level SE
- Unique trim on XC70 including tougher, more colourful fabrics
- High-quality cabin materials and trim, all of which are emissions- and allergen-free

- SE, SE Sport and SE Lux trim levels
- Superb in-car entertainment offers some of the best sound on the road
- Three-year/60,000-mile warranty

Scandinavia is renowned for its great interior design and Volvo is no exception. Volvos manage to combine high-quality functionality, easy-to-use design simplicity and premium materials. Volvos come much better equipped than rival German premium cars and they last, too. Independent studies invariably conclude that Volvos are among the longest-lived and most durable of all cars.

XC70 SE

The entry-level Volvo XC70, the SE, is extremely well equipped. Standard features include leather-faced upholstery, electrically adjustable driver's seat with pre-fixed memory, an eight-speaker High Performance audio system with 160-watt output and automatic rain-sensing wipers. Volvo's electronic climate control air conditioning is standard and so are cruise control, power-adjustable and heated door mirrors with Autofolding function, electric windows front and rear, reading lights front and rear, leather steering wheel and gear knob and the full suite of Volvo safety features, including dual-chamber SIPS side airbags and inflatable side curtains. All Volvo's state-of-the-art electronic traction and braking controls, such as DSTC (Dynamic Stability and Traction Control), ABS (Anti-lock Brakes) and HBA (Hydraulic Brake Assist) are standard, as is remote-control central locking. The SE uses a unique XC70 cross brushed aluminium dash and door trim for a sporty yet tough finish.

Further examples of the extremely high standard of equipment include load-adaptive front and rear lights, the 3D cargo load system for tethering all sorts of different objects in the cargo area and a 12V power output in the rear (perfect for camping or outdoor pursuits).

XC70 SE Sport

The SE Sport takes all the luxury fittings of the SE and enhances them with sportier styling and handling. Speed-dependent power steering - which firms up as speed builds - is standard and so is Volvo's innovative Active Four-C chassis system, which electronically firms up dampers to reduce body roll, pitch or yaw. A rear spoiler clearly signals that this is the sports model in the XC70 range.

Interior upgrades include ventilated leather-faced upholstery with in-seat ventilation and seat heaters. There are seven cooling and heating settings ensuring 'just right' levels of comfort. The passenger seat is electrically adjustable, while the sporty XC cross brushed aluminium trim is the same as that in the SE.

XC70 SE Lux

The SE Lux is the most luxurious model in the XC70 range. Standard features include modern wood trim (walnut wood trim is a no-cost option) and heated and powered leather-faced front seats. Active bending headlamps are standard with active Bending Lights, there's chrome window trim, a powered tailgate for easier opening and closing, and rear park assist for simple reverse parking. Load compensating suspension and seventeen-inch alloy wheels are standard.

Audio systems

The Volvo XC70 has been designed to offer a superb sound experience. The standard audio is Volvo's acclaimed 'High Performance' sound audio system featuring eight speakers and 160-watt output. The top-of-the-range Dynaudio Premium Sound audio system - optional (for £1000) on all models - is one of the very best in the automotive world, irrespective of price. It uses an Alpine digital 5x130-watt amplifier, Dolby Pro-Logic II Surround and 12 speakers from renowned Danish speaker manufacturer Dynaudio. It's a 5.1 channel system that provides a true stereo effect. Thanks to the digital amplifier, the system automatically adjusts both volume and tone to compensate for outside noise. The amplifier has a very high damping factor, thanks to the ICEPower technology from Danish hi-fi expert Bang & Olufsen. This system contributes to the powerful sound, which remains clear all the way down to the deepest bass notes.

The Dynaudio speakers are of exceptional quality. The front doors have well dimensioned three-way loudspeakers. The rear doors feature two-way loudspeakers with a tweeter and a mid/woofer. The tweeter diaphragm is made of textile (known as a silk dome tweeter), a Dynaudio speciality that helps create crystal-clear sound. Each loudspeaker has a passive crossover filter to provide a harmonious total sound experience with the best possible bandwidth and dynamics.

Specially developed centre loudspeakers in the instrument panel work together with the door loudspeakers to create natural, homogeneous music. It sounds more like a concert hall than a car

interior.

A special set-up facility allows the sound to be optimised for the best possible audio experience. The profile can be set to optimise sound for the driver, for both front seat occupants or for the rear seat. 'A person driving alone in the car can set the audio profile with unashamed selfishness,' says project director Tomas Ahlberg. 'If the owner is riding in the back seat, it's just as easy to prioritise the audio experience there.'

The normal High Performance audio system, standard on the SE, SE Sport and SE Lux, also offers exceptional sound quality. It gets a single CD player, a 4x40 watt amplifier and eight speakers.

For even richer and deeper bass notes, both the Dynaudio Premium Sound and High Performance systems can be enhanced by a 12-litre, dual-chamber sub-woofer under the luggage floor, close to the rear seat backrest. This Alpine-developed sub-woofer includes two 6.5-inch bass elements and an integrated 2x130-watt amplifier. Designed to offer the best possible bass performance, it is a £180 option on all models.

All sound systems feature an extra input for connection to portable MP3 players, such as iPods, enabling them to be mated to the car's audio system.

Bluetooth compatibility plus improved satellite navigation

Bluetooth, the advanced wireless system, enables your mobile phone to be connected to the car's loudspeaker system. This allows for perfect sound and minimises the interference often experienced when a mobile is used while driving.

Volvo's RTI Navigation System - available as an option on all models - has a faster processor, which means alternative routes are plotted more quickly than before, and there is more detailed information, including local speed limits when a national border is crossed. A number of new countries have been added, mostly in Eastern Europe. This new sat-nav system features RDS-TMC (traffic message channel) which displays up-to-date information on traffic problems. The large colour screen display rises from the top of the dashboard, safely positioned in the driver's view. When not in use it retracts, helping to keep the car's interior design less cluttered and more Swedish minimalist.

Personal comfort settings

The XC70 driver can adjust the car's comfort functions to suit his or her personal needs. These settings are altered in the car's information system. The menu includes the seats, rear view mirrors, climate unit, audio unit, navigation system and, to a certain extent, the car's driving properties.

One of the selectable functions is automatic operation of the rear defroster. When this setting is chosen, the defroster is automatically activated when the outside temperature reaches 9 degrees C or below. Another example is the speed-dependent power steering - standard on the SE Sport - which can be set at one of three levels via the information system.

Rear seat DVD

The new XC70 can be fitted with an advanced RSE (rear seat entertainment) system. An integrated DVD player, eight-inch flat-screen monitors built into the front seat headrests, wireless headphones and remote control are all included. An extra socket means it is possible to connect an additional DVD player or video game. The two screens can then be used independently. Introduced in May 2008, a Digital TV option is also available to supplement the RSE system. This new option enables passengers to watch Freeview channels as well as providing a card slot that can be used for subscription services like SKY.

Extensive options list

The XC70 includes hundreds of options to allow owners to personalise their cars. For better value, some of these options are grouped in packs:

- Winter pack: heated front seats, headlamp cleaning system and heated washer nozzles
- Active Bending headlamps pack: active Bending headlamps, headlamp cleaning system, heated front seats and heated washer nozzles
- Family pack: two, two-stage, integrated booster cushions, power child locks (rear doors only) and passenger airbag cut off switch.

- Communications pack: RTI Navigation System with RDS-TMC, remote control, European DVD maps, PCC (Personal Car Communicator) with Heartbeat sensor and Keyless Drive and Bluetooth® handsfree system.
- Driver Support pack: BLIS (Blind Spot Information System), ACC (Adaptive Cruise Control) with Distance Alert and Collision Warning with Auto Brake and LDW (Lane Departure Warning) and DAC (Driver Alert Control).
- Security pack: PCC (Personal Car Communicator) with Heartbeat Sensor and Keyless Drive, 360° Laminated Windows including cargo area (front side windows are water repellent).

Warranty

The Volvo XC70 is backed by a three-year/60,000-mile warranty. There's a three-year, unlimited-mileage warranty on the paintwork and either 8 or 12 years against rust perforation. All Volvos have free RAC cover for one year, including breakdown assistance anywhere in Europe, 24 hours a day.

SAFETY

- Engineered to be the safest car in the segment
- Advanced electronic traction, stability and braking systems deliver superb primary safety - crucial on a car that will spend much time off-road or in slippery conditions
- Improved child safety with dual-stage booster cushions and extended inflatable curtain
- New, stronger side structure
- Second-generation WHIPS system avoids neck injuries
- Better pedestrian and cyclist protection
- Active bending headlamps 'see around corners'

Safety is the key quality of any Volvo. Ever since the first Volvo was built in 1927, the overriding priority has been to develop cars that help prevent accidents and, if the accident does happen, to offer maximum protection. 'Cars are driven by people. Therefore the guiding principle behind everything at Volvo is, and must remain, safety,' declared co-founders Assar Gabrielsson and Gustaf Larson.

'When we developed the all-new Volvo XC70, our goal - just as for the all-new V70 - was that it should be the safest car in the segment,' says Hans Nyth, director of Volvo Cars Safety Centre. 'The XC70 model shares the same sophisticated network of interacting safety systems as the Volvo S80. The patented body structure absorbs energy in a highly efficient way. And the interior safety system includes the latest generation of side airbags and whiplash protection. What is more, we are introducing a world innovation in the field of child safety.'

'The best way to stay safe is to avoid accidents'

The Volvo XC70 has the most comprehensive and sophisticated array of safety protection devices in its class, and its suite of accident avoidance and stability devices is no less impressive.

These include numerous advanced braking functions (see 'Driving Dynamics: Steering, Brakes and Transmission'), Volvo's DSTC (Dynamic Stability and Traction Control - see 'Driving Dynamics: Chassis') and Collision Warning with Auto Brake (see 'Driving Dynamics: Steering, Brakes and Transmission') - Volvo's clever new technology that reduces the risk of rear-end accidents.

Active bending headlamps

Good headlamps are essential for safe night driving, especially in a car that is designed to go to out-of-the-way locations, miles from any public lighting. The standard halogen headlamps give an excellent light spread on low or high beam and are automatically height-adjusted to avoid dazzling oncoming cars, irrespective of load.

For even better illumination, the Volvo XC70 can be equipped with Active bending headlamps - swivelling headlamps that follow the sweeps and bends of the road. The headlamps can be swivelled up to 15 degrees in either direction, totalling 30 degrees, and can light up a longer stretch of road as it twists and turns. In order to save wear and tear on the system, it is automatically deactivated in daylight.

Like the standard halogen headlamps, the Active bending headlamps are automatically adjusted depending on how heavily the car is loaded and also on whether the car is accelerating or braking. So the headlamps always point at optimal 'level' height.

The headlamps are cleaned using an electromagnetic, high-pressure system that washes one headlamp at a time - another ingenious Volvo safety feature - so as to always provide the best possible illumination under all conditions.

Advanced driver information systems boost safety

The Volvo XC70 can be equipped with BLIS (Blind Spot Information System) and LDW (Lane departure warning) with DAC (Driver Alert Control). Using cameras integrated into the door mirrors, BLIS registers whether another vehicle is in the blind spot offset to the rear of the car. If there is a vehicle there, a lamp lights up at the relevant mirror to alert the driver.

Rather than monitoring human behaviour (which varies from one person to another) DAC monitors the progress of the car on the road. Monitoring driving behaviour is more reliable as it assesses the impact that fatigue or distraction has on the car's movements and assesses whether it's being driven in a controlled, consistent manner. This system consists of a camera located between the windscreen and the interior rear view mirror, a number of sensors and a control unit. The camera measures the distance between the car and the road lane markings, while the sensors register the car's movements. This information is sent to the control unit which then calculates whether the driver is at risk of losing control of the car. If the risk is assessed as high, the driver is alerted via an audible signal, while a text message and coffee cup symbol appear in the cars information display to urge the driver to take a break. The driver has the opportunity to access driving information throughout a journey, the starting point is five bars and the less consistent the driving, the fewer bars remain.

Both the Driver Alert Control and Lane Departure Warning are activated when the car reaches 40mph and they will stay active as long as the speed exceeds 37mph. The availability of these systems depends on the number and quality of visible road markings. The lane markings must be clearly visible and poor light, fog, snow and extreme weather conditions can make the system unavailable.

IDIS (Intelligent Driver Information System) is standard on all Volvo XC70 models. IDIS is an electronic information system that helps prevent the driver from becoming distracted by irrelevant information in busy situations. By continuously monitoring certain functions in the car, such as brake application and movements of the steering wheel, accelerator pedal and turn indicators, IDIS can assess the complexity of the driving situation. The information is processed and at a certain level of complexity, any information that is not essential to safety is delayed, for instance incoming phone calls or SMS text messages.

ACC (Adaptive Cruise Control) with Distance Alert and Collision Warning with Auto Brake

To help the driver maintain a safe distance from the car in front, Volvo has developed Adaptive Cruise Control or ACC. It uses a radar sensor to measure continuously the distance to the vehicles in front and automatically adapts the speed of the car to help ensure the distance is not too short. This technology also forms the basis of several of Volvo's advanced driving and support systems, including Collision Warning with Auto Brake.

The driver activates the cruise control, setting the desired maximum speed at between 18 and 125mph, and chooses the minimum time interval to the cars in front. There are five different time intervals to choose from.

Distance Alert is another feature included in this option. The system helps the driver maintain a safe distance to the vehicle in front even when Adaptive Cruise Control is not in use. Activated via a button on the centre console, the driver can choose between five settings, similar to that of the ACC. If the time gap to the car in front gets shorter than the selected speed, the driver gets visual information in the head-up display on the lower section of the windscreen.

ACC with Distance Alert forms an option along with Collision Warning with Auto Brake.

Child safety improved with two-stage booster cushion

Volvo has also been a pioneer in child safety - an area of car design that is frequently overlooked. A world first for the Volvo V70 and XC70 is a height-adjustable booster cushion. Integrated into the rear seat, it can be set at two heights, allowing children of different sizes to see out of the car while also getting optimal seatbelt support. The lower setting is intended for children between 115 and 140cm in height and weighing between 22kg and 36kg. The upper setting is designed for children measuring 95-120cm and weighing between 15kg and 25kg. The integrated child booster cushions can be used on both outer rear seats.

The seats are specially designed so that the seatbelt geometry is optimum irrespective of the child's height. The safety belts also have specially adjusted force limiters so they restrain the child with just the right amount of tensioning force in a collision.

'It's a sad fact that the least well protected occupants in many cars are children,' says XC70 project director Tomas Ahlborg. 'This is because the child seats don't fit them properly, the seat is not properly secured or the belt does not fit them correctly. This new Volvo innovation optimises safety for children who have grown out of rear-facing baby chairs but who are too small to sit in a normal adult seat.'

SIPS side impact protection offers even greater safety

Volvo has also further developed its SIPS (side impact protection system) thanks to a stronger side body structure. The body's entire side structure is both stronger and lighter thanks to a well balanced combination of high-tensile steel of different grades (High Strength Steel, Extra High Strength Steel and the extremely strong Ultra High Strength Steel). The various components and grades of steel interact to reduce penetration into the passenger compartment.

The inflatable roof curtains in the Volvo XC70 have been extended by 60mm, offering greater head protection for children and adults alike.

The Volvo XC70 also gets a new type of side airbag. These new side impact airbags have two separate chambers - one for the hip section and one for the chest. The hips can withstand greater force than the chest, so the lower chamber inflates with up to five times more pressure than the upper section. The side impact airbags interact with the inflatable curtains and the car's network of safety beams to provide the most effective possible protection.

Crumple zones made using different grades of steel

The patented front body structure in the Volvo XC70 is divided into zones, each of which has a different task during the crash sequence. The outer zones are responsible for most of the deformation. The closer the collision forces get to the passenger compartment, the less the material deforms. In order to give each zone the right properties, different grades of steel are used in different structures. In all, there are four different grades. Apart from regular body steel, three different grades of high-tensile steel are used: High Strength Steel, Extra High Strength Steel and Ultra High Strength Steel.

These crumple zones are:

- Zone for deformation at low speeds: The front bumper is attached to a cross-member made of aluminium. The attachment points at the body's longitudinal beams are designed as collapsible 'crash boxes'. They absorb low-speed collision forces without damaging the rest of the body's beam structure.
- Zone for deformation at high speeds: The straight sections of the longitudinal beams are made of High Strength Steel, a very tough grade of steel optimised for high energy absorption. This zone accounts for most of the deformation.
- Back-up zone: The beam section that curves out towards the A-posts serves as a barrier protecting the passenger compartment and also as a back-up to reduce deformation. Its shape also helps minimise the risk of the front wheel penetrating the passenger compartment. Instead, the wheel helps absorb the collision forces. This section is very rigid and is made of Extra High Strength Steel.
- Three-point attachment: A rigid cross-member links the two A-posts and the lower side-members so that they form a particularly sturdy three-point attachment on each side. This design is particularly effective at protecting the passenger compartment in a severe impact.

Compact transverse engines improve safety

Like all other models in the Volvo range, the Volvo XC70 has a transverse driveline. A transverse installation gives the engine more space inside the engine compartment to allow the crumple zones and other safety systems to work more effectively. It also reduces the risk of the engine penetrating the passenger compartment in a frontal impact.

Second-generation WHIPS system

WHIPS (Whiplash Protection System) reduces the risk of neck injuries in a rear-end collision. The front seat backrest accompanies the passenger's initial body movement and dampens the incoming force rather like one's hand does when catching a ball.

The Volvo XC70 features the same generation of WHIPS mechanism as was launched on the S80 model and the V70. This generation was further developed to ensure that the damping motion is gentle and to provide good contact between the head and head restraint throughout the impact sequence.

Protection for pedestrians and cyclists

The new, rounder front end of the all-new Volvo XC70 has a large, energy-absorbing soft structure in front of the bumper that helps reduce leg injuries to other road users in the event of a crash. The spoiler's lower edge has also been reinforced and moved forward, almost on a level with the bumper. The area of contact on a pedestrian's or cyclist's leg should be distributed across a larger area, reducing their risk of injury.

The bonnet is raised on impact to help cushion any blow and its underside has a honeycomb structure that absorbs crash energy and reduces injury.

Protection for other motorists

With its high ground clearance, the Volvo XC70 has relatively high bumpers. This creates a greater potential risk of damage to an oncoming 'normal' passenger car. To reduce the risk of injury in a collision, the front suspension subframe in the Volvo XC70 is supplemented by a lower cross-member, positioned at the height of a conventional car's bumper. This lower beam is integrated into the XC70's structure and is neatly concealed behind the spoiler. In a collision, the lower cross-member should strike the oncoming car's protective structure, activating its crumple zone as intended so the occupants can be given the maximum level of protection.

Other protective safety solutions

- Collapsing steering column that moves horizontally upon deformation for the best possible interaction with the airbag
- Pedals that limit the risk of penetration into the passenger compartment
- Driver and passenger airbags with two-stage function for superior cushioning and ultimate protection
- Seatbelt pre-tensioners for all five seats
- Seatbelt reminders for all five seats
- Force-limiters for the seatbelts
- Reinforced, transversely fitted tubular beam between the A-posts
- Strong SIPS tubes in the seats and a sturdy magnesium bracket in the middle of the car
- Diagonally fitted beams of Ultra High Strength Steel in the doors

SECURITY

- Volvo On Call rings for help automatically
- PCC (Personal Car Communicator) enhances security
- Electronic immobiliser
- Remote key fob activates alarm and deadlocks
- 360° Laminated windows available
- Home Safe and Approach lighting is standard

Volvo has an unmatched reputation for car safety. But personal protection is also of growing importance, which is why the Volvo XC70 has numerous features to give owners extra peace of mind.

Volvo On Call

In a car that can take you to places that normal cars can't, it's good to know that help is at hand in an emergency. Volvo On Call, available as an option, uses advanced telematics to call for help. The system uses the integrated GSM telephone and GPS satellite navigation to automatically call the emergency services when an airbag or seatbelt pre-tensioner is triggered during an accident. Alternatively, you can ring the emergency services by pushing a red SOS button on the GSM phone.

If the car breaks down or you need help, pressing the Volvo On Call button will put you straight through to a Volvo On Call operator who can offer roadside assistance.

Volvo On Call also offers vehicle tracking in the event of theft.

PCC (Personal Car Communicator)

This looks remarkably like a regular remote control but it can do a lot more than just activate the locks and alarm. A simple push of a button can, within a few seconds, tell the car owner if:

- the car is locked or unlocked
- the alarm has been triggered
- the alarm has been triggered and someone is inside the car (registered by a highly sensitive heartbeat sensor)

The information is available and up-to-date as long as the distance between the PCC and the car is 100 metres or less. In addition, the most recent data is logged so the owner can at any time and any place check whether the car really was locked when it was parked.

Home Safe and Approach lighting

By pressing a button on the remote controller when approaching the car, the driver can turn on the inside lights, the side marker lights and the lights in the rear-view mirror. On leaving the car, a tweak of the headlamp stalk activates the dipped beam headlamps for 30, 60 or 90 seconds (programmable), lighting the path to the door.

Laminated glass all round

To make break-ins more difficult, the Volvo XC70 can be specified with laminated glass in all the windows, including the rear side windows and the tailgate, giving the whole car, including the luggage compartment, effective protection.

The storage system under the luggage compartment floor has a capacity of 46 litres if the car does not have a spare wheel. It is locked automatically when the tailgate is locked.

Deadlocks, immobiliser and alarm

Standard features include a remote control key fob that activates an alarm and strong deadlocks. Even if a thief does break into the car, for instance through breaking the glass, the deadlocks make it impossible to open the doors from the inside. The key fob also activates an electronic immobiliser that makes starting the car impossible without the correct key.

ENVIRONMENT

- Particulate filter on D5 cuts 95 per cent of exhaust particulates
- New CZIP (Clean Zone Interior Package) gives extraordinarily clean air inside car and reduces risks of allergy
- Interior trim materials are allergen-free
- All new Volvos are 85% recyclable and 95% recoverable
- Cabin air filter removes dust, pollen and exhaust particles
- Each new Volvo is backed by an Environmental Product Information (EPI) analysis, available at www.volvocars.com/epi

Volvo Cars' commitment to environmental activities and continuous investment to help reduce its carbon footprint goes far beyond lowering CO₂ emissions. Volvo's 'Clean inside and out' programme represents a holistic approach to the environmental impact of the car. It focuses on health, resource utilisation and the ecological consequences of the production, use and disposal of the vehicle.

Volvo Cars' focus on other energy sources than oil has been going on for more than 25 years. Back in 1982 the company took the first step by using residual heat from the nearby refineries to heat the factory in Torslanda, Sweden. In 1988 Volvo started using natural gas, which was the main fuel for heating its European factories (Sweden and Belgium) and, from 1 January 2008, Volvo's European manufacturing units now only use green electricity - hydropower. This is Volvo's latest step in making its production climate neutral and future plans may also extend to other energy sources such as biogas and wind-power.

The XC70 offers more off-road performance than most SUVs yet is far more economical. Its lower, car-like shape also means it's lighter and more manoeuvrable yet it is also roomier than most 4x4s.

Economical, clean engine

The manual D5 diesel engine model has an official combined fuel consumption figure of 37.7mpg, which equates to 199g/km CO₂ emissions.

The D5 is one of the most advanced and cleanest diesel engines in the world. It has a particulate filter that reduces exhaust particulates by 95 per cent, and meets Euro 4 emissions by a comfortable margin. For instance, the D5 engine has less than half the permitted level of carbon monoxide, beats NOx (oxides of nitrogen) levels by 25 per cent and has only a fraction the permitted level of particulates (0.001g/km when the limit is 0.025).

Clean cabin environment

Environmental protection also extends to ensuring that XC70 occupants breathe the purest air possible.

Volvo's Air Quality System monitors the cabin, minimising odours and pollutants entering from outside. The air-conditioning system always ensures that the air is cleaner inside the car than outside. A cabin air filter prevents dust, pollen and exhaust gas particles from entering the car.

Furthermore, Volvo's new CZIP (Clean Zone Interior Package) features an automatic air-purging system. When the car is unlocked by the remote control, the passenger compartment is automatically ventilated for about one minute if the outside air temperature is above 10 degrees C. Carefully selected trim materials, which minimise emissions of harmful substances, further help to provide cabin air of a cleanliness approved by the Swedish Asthma and Allergy Association.

Corporate Citizenship

Volvo was one of the first manufacturers to use tools to evaluate the total life-cycle environmental impact of its products. The system, known as EPI (Environmental Product Information), enables Volvo to evaluate the impact of its products throughout their life on natural resources, ecosystems and human health. Volvo then makes every effort to reduce its total environmental impact. This information is available to the public at www.volvocars.com/epi.

As a result of this policy, the Volvo V70 is built in one of the automotive world's cleanest factories: emissions of solvents from the Volvo Torslanda plant in Sweden have been reduced by over 90 per cent since 1972. Volvo's annual Corporate Citizenship report is available at www.volvocars.com/citizenship.

Did you know?

- 1. Many of the cabin details are inspired by the designs of Swedish prince turned internationally renowned designer Sigvard Bernadotte
- 2. Volvo is the world leader in large estate car sales
- 3. Volvo expects to sell 40,000 XC70s worldwide a year
- 4. The UK (anticipated 2500 sales a year) is likely to be the second biggest market in Europe after Sweden. Germany is third
- 5. China is soon expected to be the world's third biggest XC70 market
- 6. The all-new vehicle is the first XC70 model to use a six-cylinder engine
- 7. The all-new Volvo XC70 is built in Torslanda near Gothenburg in Sweden
- 8. The first Volvo XC model was launched in 1996

-Ends-

Keywords:

Descriptions and facts in this press material relate to Volvo Car UK's car range. Described features might be optional. All information is correct at time of going to press and may be altered without prior notification.

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