

VOLVO V70

MARKET POSITIONING

The award-winning Volvo V70 redefines the parameters by which estate cars are judged by mixing quality and flair with comfort, practicality and versatility.

Styled by Volvo's British designer Peter Horbury (now Executive Director of Design for the whole Premier Automotive Group), the Volvo V70 echoes the shape of the Volvo S80 and S60, while asserting its own identity. Inside, the handsome fascia is ergonomically efficient and there's room for a quintet of adults.

Folding the rear seats creates a vast, flat load bay that's enhanced by clever design features, such as the unique shopping bag holder. Couple all this with an outstanding safety, security and environmental package, and it's little wonder that the Volvo V70 has achieved such critical acclaim.

The latest, award-winning Volvo V70 launched in 2000, is the market leader in the large estate car market and has redefined the parameters by which estate cars are judged. Building on almost half a century of experience in the field, it has all the qualities expected of a Volvo estate, but it also reflects the quality, design, flair and charisma that characterises Volvo's latest models.

Styled under Volvo's British Director of Design, Peter Horbury (now Executive Director of Design for the whole of the Premier Automotive Group), it's instantly recognisable as a Volvo. The V-shaped bonnet, strident grille and prominent shoulder lines echo the acclaimed style of the Volvo S80, but the Volvo V70 also asserts its own identity. The rounded curves in the side profile are a particular highlight and disguise the square, practical design of the rear. The almost vertical tailgate is another feature synonymous with Volvo estates and it helps to provide a spacious, well-shaped load area.

A broad range of engines ensures there's a Volvo V70 to suit every motoring need. The regular petrol engine line-up consists of five, five-cylinder units, ranging from 140bhp, 2.4 to the latest, awesome 300bhp of the 2.5 V70 R. These have been joined by two other five-cylinder 2.4 litre alternatives: Volvo's frugal and refined 163bhp, D5 common rail turbodiesel, and a Bi-Fuel engine which can be specified to run on either LPG or CNG with petrol as a back-up fuel, and have lower, cleaner emissions output.

The Volvo V70's ride and handling belies the view that choosing an estate car means sacrificing driving pleasure. MacPherson strut front suspension and a sophisticated Delta-link system at the rear provide an entertaining drive with a high level of active safety. An optional Sports pack is available on some models offering larger 18in wheels and lowered, load-compensating suspension.

The T5 model comes as standard with a stiffer, 'Dynamic chassis', while the Volvo V70 R features Volvo's unique 'Four-C' (Continuously Controlled Chassis Concept) technology, enabling the suspension to be switched between Sport, Advanced Sport or Comfort settings at the touch of a button. This model, like the Volvo V70 AWD and XC70, also features Haldex all-wheel drive.

The key to the success of any estate car, though, is its versatility, and the Volvo V70 does not disappoint. The passenger compartment offers plenty of space for five adults and the fascia is ergonomically efficient. The luggage bay is vast and well shaped and the rear seats split and easily fold down to leave a flat load bay. To accommodate items up to 3.05m long, the front passenger seat also folds forwards.

This space is made more useful by a number of clever storage facilities. The boot floor, for example, lifts up to reveal a unique shopping bag holder that keeps items upright and secure. Many variants also feature a waste bin for rear passengers and it's even possible to specify a folding table or child seat that pops out of the centre rear armrest.

As you'd expect, the Volvo V70 is also packed with the latest safety features, which it shares with the Volvo S60 and the Volvo S80. Volvo's acclaimed SIPS (Side Impact Protection System) and WHIPS (Whiplash Protection System) are complemented by twin front 'intelligent' airbags, three-point safety belts with tensioners for all five occupants, and an Inflatable Curtain (IC) to protect against head injuries in a side impact.

Volvo's 'clean inside and out' programme reflects the company's continuing commitment to improving the environment. Several engines in the range already meet the stringent EU 2005 and ULEV (Ultra Low Emission Vehicle) emissions requirements and every new Volvo is backed by an environmental declaration examined and verified by Lloyd's Register Quality Assurance Limited (LRQA) of London.

There's little wonder that the Volvo V70 has won an array of awards, including being named as *What Car?*'s 'Estate Car of the Year' in 2001 and again in 2002.

DESIGN CONCEPT

The award-winning Volvo V70 has been styled to reflect the active lifestyles of a new generation of estate car owners. The nose and the strong shoulder lines echo the award-winning shape and new Volvo styling introduced in the S80 but, from the windscreen back, the Volvo V70 asserts its own identity.

Despite its handsome lines, Peter Horbury and his team have not allowed function to follow form. The upright side windows and near vertical tailgate, for example, are traditional Volvo styling cues and help provide the Volvo V70 with a well-shaped, versatile load space.

- Designed to reflect the lifestyles of a new generation of estate car buyers

- Styling echoes Volvo S80 saloon, with V-shaped bonnet, upright grille and strong, shapely shoulder lines
- Near-vertical tailgate and upright rear windows are classic Volvo design cues and help provide a vast load bay
- Styled by the British designer, Peter Horbury
- Excellent CD figure of 0.30

Gone are the days when Volvo estates looked like they'd been designed only with the aid of a set-square. The Volvo V70 reflects the extraordinary, dynamic advances in Volvo design over the last decade and has been styled to reflect the varying lifestyles of a new generation of estate car owners. It follows many of the design cues introduced in the award-winning Volvo S80, but form has not been allowed to take precedence over function - the Volvo V70 is still a true load carrier, with unmatched versatility and practicality.

Peter Horbury, who became Volvo's Design Director in 1991, gives an enigmatic response when questioned about the concept for the Volvo V70. "Imagine the front end of an E-type Jaguar married to the back end of a Ford Transit van," he says. "With the Volvo V70, we have tried to combine the two."

Thankfully, the end product is rather more handsome than Horbury's image suggests. The Volvo V70 offers a brilliant synthesis of the latest Volvo dynamic design cues, while retaining the practicality and versatility expected of a proper Volvo estate. It's also a shape that's exceptionally efficient – the CD figure is just 0.30 – and this helps both high-speed stability and fuel consumption.

The front end echoes the award-winning design of the Volvo S80 and the sporting Volvo S60. The V-shaped bonnet is instantly recognisable and it frames a traditional Volvo chrome grille. Strong shoulder lines also reflect the design of the Volvo S80 and help to give the car a sense of solidity, purpose and premium quality.

From the windscreen back, though, Horbury and his team have developed unique themes for the Volvo V70, befitting its status as a versatile alternative. The complex rounded curves in the side profile underline its dynamic nature and help to disguise the practical square shape of the rear end. “We tried to make the car appeal to saloon car buyers as well as traditional estate drivers,” says Horbury. “It has the same dramatic front as the Volvo S60, but while the body of the Volvo S60 tapers to the rear, the Volvo V70 is vertical to the third window.”

Upright rear side windows and an almost vertical rear door are classic Volvo design features and vital elements in making the Volvo V70 such a practical machine. The result is a cargo area that’s both spacious and easy to load, even when the luggage is bulky.

Horbury continues: “The vertical rear door is crucial – a sloping tailgate means sacrificing a big triangular tube of space. And the third window has to be longer than the second for it to be a Volvo estate car.”

At the rear, the shapely tail-lights have been developed from those found on the Volvo S80, helping to retain a family look, but they are also stacked alongside the rear door, reflecting a Volvo styling theme that began with the 850 estate.

The exterior detailing has also been engineered to reflect the practical or sporting lifestyles of Volvo V70 owners. The dark grey side mouldings and bumpers are scratch-resistant and the top of the rear loading panel is finished with a protective plastic material, which prevents the paintwork from being damaged during loading and unloading. Such attention to detail helps the Volvo V70 stand out against some talented opposition.

DRIVING DYNAMICS

ENGINES

The Volvo V70 is available with a wide range of engines reflecting the varying needs and aspirations of customers in this sector.

There's a choice of six different, five-cylinder petrol units, from the frugal and responsive 2.4 litre with 140bhp, to the 300bhp, 2.5 litre turbo engine fitted to the exciting, new Volvo V70 R.

They are complemented by the D5 turbodiesel and Bi-Fuel models introduced in 2001. The D5 uses direct injection, common rail technology to combine effortless performance and refinement with fuel consumption of 42.2mpg on the Combined cycle. The 2.4 litre Bi-Fuel engine can be specified to run on LPG or CNG as well as petrol, and with lower, cleaner emissions reflects Volvo's commitment to the environment.

- Wide range of engines reflects lifestyle aspirations of the owners
- Six different five-cylinder, all aluminium petrol engines with power outputs ranging from 140bhp to 300bhp
- D5 turbodiesel uses direct injection, common rail technology to combine strong performance with Combined consumption of 42.2mpg
- 2.4-litre Bi-Fuel engine can be specified to run on either LPG or CNG, with petrol as the reserve fuel

The Volvo V70 is available with a wide range of engines that reflect the lifestyle aspirations of its owners. From the ultra-frugal and refined D5 turbodiesel and the environmentally friendly Bi-Fuel, to the tarmac-wrenching 300bhp Volvo V70 R, this practical estate caters for every motoring need.

Volvo's 'RN' range of five-cylinder, all-aluminium petrol engines feature four valves per cylinder, a twin cam head, centrally mounted spark plugs and continuously variable valve timing (CVVT). The latter helps optimise the combustion process and operates in two ways. On normally aspirated engines, it works on the inlet cam in order to improve low-end torque and driving characteristics. But on engines fitted with a turbo, it operates on the

exhaust cam in order to minimise emissions, especially when the engine is cold.

The 2435cc normally aspirated five-cylinder petrol engine is available in two states of tune. In the entry-level car it develops 140bhp and 220Nm of torque, mixing impressive refinement with ample performance – 0-62mph takes 10.5sec and it reaches 127mph.

A step up in performance is offered by the 170bhp version of the same engine. The peak torque output rises to 225Nm and the 0-62mph time is reduced to 9.0sec, with a 137mph top speed. Both of these engines average over 30mpg on the official Combined cycle and meet the strict European EU 2005 emissions requirements, which is of particular benefit to tax-conscious company car drivers.

A more powerful 2.4T version of this versatile powerplant employs a low-pressure turbo to develop 200bhp and an impressive 285Nm of torque, which is available from 1800-5000rpm. Developed to appeal to sportier drivers, it powers the Volvo V70 from 0-62mph in 7.9sec and on to a maximum speed of 140mph. But despite this impressive performance, it still manages to return an average of 30.4mpg on the Combined cycle.

A 2521cc version of the engine was introduced in the Volvo V70 AWD model for 2003, which also uses a light-pressure turbo to develop 210bhp and 320Nm of torque. The latter is available all the way from 1500-4500rpm, providing exceptional mid-range flexibility. Even allowing for the additional weight of the AWD system, the manual Volvo V70 AWD sprints from 0-62mph in 7.6sec and reaches 140mph, while returning an average of 27.7mpg on the Combined cycle.

The ultimate in performance and driving experience is offered by the T5 and V70 R models, which employ a high-pressure turbo to devastating effect. The 2319cc five-cylinder unit fitted to the T5 produces a mighty 250bhp at 5200rpm, while 330Nm of torque is available all the way from 2400-5200rpm.

It enables the Volvo V70 T5 to sprint from 0-62mph in 7.1sec and yet it can still return over 30mpg in normal driving conditions.

The five-cylinder, 2.5-litre turbo engine in the Volvo V70 R provides dramatic performance, capable of worrying rivals such as the Mercedes C32 AMG estate. The peak power output is 300bhp and there's 400Nm of torque available from just 2100rpm, ensuring that the engine is as flexible as it is potent. This exciting performance flagship rockets from 0-62mph in around 5.7sec and on to an electronically limited top speed of 155mph.

In 2001, Volvo's own 'D5' turbodiesel joined the V70 engine line-up, featuring the latest common rail and direct injection technology. A common rail system enables the fuel to be distributed under very high pressure via a single 'common' fuel line or 'rail'. The combustion can be controlled very precisely, reducing emissions and maximising performance and refinement.

The D5 engine develops 163bhp at 4000rpm and 340Nm of torque from 1750-3000rpm. This engine offers excellent mid-range flexibility and a useful turn of speed - 0-62mph takes 9.8sec and it will reach 130mph. But despite its pace, the Volvo V70 D5 manages 42.2 miles on a gallon of diesel on the Combined cycle and its carbon dioxide emissions of 177g/km means a low tax bill for company car drivers. The D5 was introduced with Geartronic transmission to the V70 AWD for the 2003 model year, offering 33.2mpg on the Combined cycle and emissions of 226g/km.

Low emissions and running costs are also a major benefit of the Bi-Fuel engine. In contrast to some of its rivals, Volvo's Bi-Fuel cars are built on exactly the same production line as the petrol and diesel models, are fully crash tested, and enjoy full type approval as well as Volvo's three year/60,000 mileage warranty.

The provision of Bi-Fuel power was also integral to the V70's original design and so the additional fuel tank has been accommodated beneath the boot floor without a diminution of luggage capacity.

The 2435cc, five-cylinder Bi-Fuel engine can be specified to run on either LPG (Liquefied Petroleum Gas) or CNG (Compressed Natural Gas), with a smaller tank of petrol as the reserve fuel. The power output is unchanged at 140bhp, whether the car is running on petrol or gas, but the torque figures do alter slightly.

In petrol form, the V70 Bi-Fuel develops 220Nm of torque, which compares with 214Nm for LPG and 192Nm for CNG. This is reflected in the performance figures. Equipped with a manual gearbox, the Volvo V70 Bi-Fuel sprints from 0-62mph in 10.5sec in petrol mode, while it takes 10.6sec when powered by LPG. The CNG version covers the same increment in 11.0sec.

The benefits of Bi-Fuel, though, can clearly be seen in the exhaust emissions. In petrol mode, both variants emit 219g/km of carbon dioxide, but while operating on LPG and CNG, the Volvo V70 emits 197g/km and 171g/km respectively. This is beneficial both to the environment and to the pay packets of company car drivers, who will enjoy lower Benefit in Kind taxation. All owners will also benefit from reduced fuel bills as both LPG and CNG are taxed less heavily than petrol.

CHASSIS

The Volvo V70 rubbishes the theory that choosing an estate car means sacrificing driving pleasure. The combination of high torsional rigidity and a sophisticated chassis provides a cushioning ride with entertaining handling and a high level of active safety.

Standard on the T5 and an option on the D5, 2.4T and T5 models is the Sport Pack, which lowers the suspension to provide sharper responses for the enthusiastic driver. Customers seeking the ultimate all-rounder, though, are now offered the 'R-concept' Volvo V70 R, which employs Volvo's unique 'Four-C' active chassis technology and all-wheel drive.

The Volvo V70 R uses a Haldex all-wheel drive system that's also standard on the Volvo V70 2.5T AWD and provides additional grip in slippery conditions.

- Entertaining, composed handling with high level of active safety
- High torsional rigidity benefits safety and chassis dynamics
- Sophisticated Delta multi-link rear suspension
- Long wheelbase and wide track provide stability and control
- Stability and Traction Control (STC) standard on every model. DSTC (Dynamic Stability and Traction Control) standard on turbocharged petrol variants.
- Volvo V70 AWD and Volvo V70 R use sophisticated Haldex all-wheel drive system, which maximises traction in all conditions
- Volvo V70 R employs 'Four-C' chassis technology to maximise driver enjoyment and control

The Volvo V70 is proof that owning an estate car does not mean sacrificing driving pleasure. High torsional rigidity, and a sophisticated suspension system shared with the Volvo S60 and Volvo S80, provide an unbeatable combination of comfort, refinement and handling finesse. And in the shape of the new 'R-concept' Volvo V70 R, Volvo has a load carrier capable of outperforming many so-called sports cars. It really does bring new meaning to the word 'versatile.'

A high level of torsional rigidity is crucial to providing a consistent ride and handling balance, and it also enhances a vehicle's crash performance. Volvo's engineers met their rigidity targets through the extensive use of High Strength Steel (HSS) and the application of bonding techniques in place of the more usual spot-welding. Bonding, unlike spot-welding, produces a continuous join that increases the rigidity of the structure and also steals less space in, for example, the luggage area. The technique clearly works, as the latest Volvo V70 is 50 per cent stiffer than its predecessor.

The estate shares its basic suspension set-up with the Volvo S60 and S80. The MacPherson strut front suspension employs dampers and coil springs combined in a single unit and positioned asymmetrically in relation to the strut. Beneath the spring struts are triangular lower links, with an anti-roll bar attached directly to the bottom of the struts themselves. Anti-lift and anti-dive technology also enhances the car's stability in all conditions.

At the rear, a sophisticated Delta multi-link system is mounted in a chill-cast aluminium subframe. This is attached to the body at four points via insulating rubber bushes to keep noise and vibration to a minimum. The use of aluminium helps keep the weight down, while the compact design ensures that there's no encroachment on passenger or luggage space.

Four links on each side – hence multi-link – comprised of two trailing arms, upper and lower links, a track rod and an anti-roll bar, control the movement of the wheels. As with the front suspension, the coil springs and dampers form a single unit. This system permits a small degree of passive rear-wheel steer when cornering, to aid stability. Load-compensating suspension can also be added as an option across the range.

This self-levelling system is also an integral part of the new Sport Pack, which was introduced for the 2003 model year. Available on D5, 2.4T and T5 models, it features a lowered chassis with 18in 235/40 Nebula alloy wheels, which are supplied by BBS. These changes provide more responsive handling for the enthusiastic driver.

The carefully honed mechanical set-up is backed by sophisticated traction control systems. Stability and Traction Control (STC) is standard on every model and prevents wheelspin by either braking the wheel that has lost traction (up to 25mph) or, at speeds above 25mph, by reducing engine power. It ensures that the driven wheels get exactly as much power as they can transfer to the road.

Standard on turbo petrol models is DSTC (Dynamic Stability and Traction Control). This features all the benefits of standard STC but also uses an array of extra sensors to detect the onset of a skid. The system then automatically slows the appropriate wheel to restore control. Vehicles fitted with this system also benefit from Electronic Brake Assist (EBA), which senses an emergency stop and automatically brings the car to a halt in as short a distance as possible.

For driver's seeking additional control on a variety of road surfaces, Volvo has developed an all-wheel drive system, which is fitted to the V70 2.5T AWD, the D5 AWD and the V70 R. Developed in conjunction with the Swedish specialist Haldex, it operates independently of driver input, distributing torque automatically between the front and rear wheels for the best possible grip in all conditions.

The intelligent AWD system uses a variety of sensors to monitor the road surface and the steering wheel, brake and accelerator pedal positions. In normal driving conditions on dry roads, almost all the power is distributed to the front wheels. However, if the sensors detect slippage, torque is proportionately diverted to the rear wheels to maximise traction. This system, which was part of the enhancements for the 2003 model year, responds in just one-seventh of a wheel turn, making an outstanding contribution to active safety and driver enjoyment.

In the new Volvo V70 R, this technology is allied to Volvo's unique 'Four-C' (Continuously Controlled Chassis Concept) active chassis system, which brings a unique character to the car's performance. The advanced electronics allow all of the car's dynamic systems to communicate and work in unison for maximum driver control, choice and enjoyment.

The car's speed, wheel movement and steering are continuously monitored via Multiplex computer controlled systems that update the suspension settings 500 times per second and monitor the electronic control of the All Wheel Drive (AWD) system for maximum traction, road-holding, safety and stability.

For 'performance on demand', three buttons on the dashboard give the V70 R driver a choice a choice of suspension set up. These are:

Sport – Standard mid-setting for sporty driving. ('Sky hook' control technique)

Advanced Sport – Uncompromising sports car handling, prioritising maximum driving pleasure using 'direct road contact' control technology. ('Sky hook' control technique)

Comfort – Optimises ride comfort using 'Sky Hook' control technology to make the car feel like it is suspended from an artificial horizon ('Road Contact' control technique).

STEERING, BRAKES AND TRANSMISSIONS

The Volvo V70's steering and braking systems have been tuned to maximise driver enjoyment and safety. The rack and pinion steering is linear in response and offers plenty of feedback, while the anti-lock brakes are boosted by Electronic Brakeforce Distribution (EBD).

A five-speed manual gearbox is standard across the range, with the exception of the Volvo V70 R, which benefits from a sixth ratio. But for those who prefer to let a computer take the strain, Volvo offers two five-speed automatic transmissions. Both adapt their shift points to suit individual driving styles, but the Geartronic also permits sequential manual changes for added control.

- Power-assisted rack and pinion steering tuned to optimise feedback and response
- ABS with Electronic Brakeforce Distribution (EBD) fitted as standard
- Six-speed manual gearbox standard on Volvo V70 R. Five-speed manual standard on all other models
- Spaceball gearlever standard on T5 and V70 R. (optional on others)

- Five-speed adaptive automatic available as an option
- Geartronic adaptive auto with a sequential manual shift facility available on turbocharged petrol and D5 AWD models

The V70 uses a power-assisted rack and pinion steering system that has been developed to optimise driver feedback and response. The steering feel has been improved through careful tuning of the torque build-up during cornering and this helps the driver place the car accurately on the road.

Large disc brakes, which are ventilated at the front, deliver a firm and consistent response, whatever the payload, while the V70 R is equipped with Brembo brakes to firmly control its added performance. As you'd expect from Volvo, an anti-lock braking system is fitted as standard and this is joined by Electronic Brakeforce Distribution (EBD). EBD constantly distributes braking power between the front and rear wheels to ensure maximum retardation regardless of the road conditions or how the car is laden.

Volvo V70's equipped with DSTC (standard on turbocharged petrol models), also feature EBA (Emergency Brake Assist). This system automatically senses when an emergency stop is required and adjusts the braking pressure so that the car comes to a halt in the shortest possible distance.

Every model, with the exception of the Volvo V70 R, is supplied as standard with the M56 five-speed manual gearbox. This compact unit uses a three-shaft (one input/two layshaft) system in place of the more traditional two-shaft design, which contributes to the smooth, positive shift quality. The awesome V70 R upgrades this further to a six-speed gearbox, providing the ultimate in flexibility and control for its 300bhp. Like the T5, it also comes as standard with Volvo's unique Spaceball gait, to emphasise its sporting appeal.

For drivers who prefer to let a computer take the strain, Volvo offers a choice of two automatic gearboxes. The entry-level unit is fully adaptive, offers five-speeds and automatically adjusts its shift patterns according to an individual's

driving style. A special 'W' (for winter) mode can be selected manually. This starts the car off in a higher gear to prevent wheelspin on slippery surfaces.

On V70 models equipped with a turbocharged petrol or the D5 AWD engine, this is upgraded to a Geartronic system. This is a fully adaptive five-speed automatic that also offers the driver the opportunity to select gears manually. Gears are chosen sequentially by tipping the lever forwards to change up and backwards to change down.

INTERIOR DESIGN CONCEPT

Maximised for convenience, comfort and practicality, the interior of the V70 has been designed to reflect the active lifestyles of a new generation of estate car buyers. The handsome fascia is ergonomically efficient and there's ample room for a quintet of adults.

The rear seatback reclines to the benefit of passenger or parcel, and it splits and folds to create a flat load space with a capacity of 1641 litres. The versatility of this area is improved with a number of clever features: head restraints that simply fold away rather than needing to be removed before folding the seats down, a unique shopping bag holder in the boot that keeps items upright and secure, and most models also feature a rear waste bin.

- Interior maximised for comfort, convenience and practicality
- B pillar ventilation on all models
- Ergonomically designed fascia with multi-adjustable driving position and steering wheel controls
- Ample space for five adults, with three-point safety belts and head restraints for each occupant
- Angle of rear seat backrest can be adjusted through 30 degrees
- Rear seats split/fold to leave flat load bay. Front passenger seat also folds forwards to accommodate loads up to 3.09m long
- Luggage volume of 1641 litres with seats folded

- Unique shopping bag holder integrated into the boot of every model
- Rear waste bin fitted to most models with the option of a fold-out table for back-seat passengers

The interior design of the Volvo V70 has been maximised for comfort, convenience and practicality. It reflects the contrasting lifestyles and requirements of a new generation of estate car drivers, and mixes typical Swedish design simplicity with impressive attention to detail. The designer's goal was to provide a large, practical load bay that's also impressively versatile, and good to look at.

The fascia architecture echoes that of the Volvo S80 and S60 and careful attention has been paid to the ergonomics. The large, easy to use buttons are spread logically across the fascia and the controls for the stereo, air-conditioning and dynamic systems are grouped together and fall naturally to hand.

Additional controls for the audio unit, cruise control and optional Road Traffic Information (RTI) system have also been cleverly integrated into the steering wheel and can be operated without the driver taking their hands off the wheel. All the car's primary functions are therefore grouped sensibly around the driver, helping to make the Volvo V70 an easy and satisfying car to use.

The front seats were orthopaedically designed and praised for their high level of comfort and support, particularly over long distance. They are multi-adjustable and this, coupled with a steering wheel that adjusts for reach as well as rake, provides an ideal driving position for people of all shapes and sizes.

Customers opting for the Select leather Sport, Anholt leather/textile or Tistlana woven/vinyl trim options are provided with a more sporting seat design. Both the front and rear chairs are more deeply contoured to provide enhanced lateral support for an enthusiastic driving style.

Volvo has always been committed to providing exceptional comfort for all the car's occupants. For example, rear passengers have their own air vents in the 'B' pillars so they can also benefit from the air conditioning and ventilation system. Peter Horbury explains:

"Nobody rides tourist class in a Volvo; everybody rides at least business class. All five seats are a priority."

By opting for a transverse engine layout, Volvo's engineers have helped maximise the available passenger space. There's ample room in the rear for a triplet of adults and every occupant benefits from a proper head restraint and a three-point safety belt with tensioners. The angle of rear-seat backrest can also be adjusted through 30 degrees to maximise either rear passenger comfort, or load space.

The size of the area behind the rear bench is, of course, crucial to the appeal of an estate car. The V70 does not disappoint, as Volvo's trophy cabinet of 'best estate' awards for the V70 testifies. With the rear seats in place, it offers 485 litres of space to the glass line or, with the seats folded down, 745 litres to the glass line and a mighty 1641 litres to the roof.

Folding the rear seats has also been made as easy as possible. There's no need to remove the head restraints – they simply fold out of the way first – and lowering the seats leaves a totally flat cargo area that makes loading and unloading as convenient as possible. The rear seat splits 60/40 to allow awkward loads to be accommodated alongside passengers, and for transporting long objects, the front passenger seat can be folded forwards, creating a luggage compartment that's 3.09m long.

The boot also benefits from a 12 volt power point and a unique shopping bag holder, which is fitted as standard to every model. A series of hooks, straps and clips helps keep bags upright, ensuring the contents of a supermarket shop won't end up spread over the boot floor. And when it's not needed, the

holder folds out of the way into the luggage compartment floor. Other neat features fitted as standard, or available as an option, include integrated booster seats, a waste bin and a foldable table that pops out of the rear centre armrest.

For drivers who require occasional seven-seater versatility, Volvo offers a pair of rearward-facing seats in the load area for children. Both of these seats benefit from a three-point safety belt and head restraints. And when they're not in use, the seats fold away beneath the luggage compartment floor.

QUALITY AND EQUIPMENT

A passion for premium quality lies at the heart of the Volvo brand, which is reflected in the choice of trim materials and build quality.

The standard specification is equally impressive, with Electronic Climate Control, electric windows and mirrors, cruise control, alloy wheels, a superior sound system with CD player and at least eight speakers, plus a unique shopping bag holder fitted to every model. There's more luxury for SE models, plus a wide range of options and accessories available, reflecting the varied lifestyles and requirements of V70 owners.

Additional peace of mind is provided by a comprehensive warranty package that includes a full three year/60,000 mileage mechanical warranty.

- High standard of trim and build quality
- Interior trim materials conform to Öko-Tex standards and are allergen-free
- Standard specification includes Electronic Climate Control (ECC) with Volvo's Air Quality System, premium sound system, cruise control and alloy wheels
- DVD-based Road and Traffic Information System (RTI) available as an option – with or without TV

- Vast range of accessories to meet all lifestyle requirements
- Three year/60,000 mileage warranty package

A passion for premium quality lies at the heart of the Volvo brand. It's inherent not only in the build quality that reflects the durability and reliability for which the marque is renowned, but also in the choice of body and trim materials. From the exquisitely crafted door handles to the versatile load bay, the Volvo V70 exudes a feeling of quality and well-being. The switchgear has a solid, chunky feel and the fascia is awash with soft-touch plastics, reminding occupants that they are enjoying a premium product.

Customers in this sector also expect a high level of standard equipment, and the Volvo V70 does not disappoint. The luxury specification of every model includes Electronic Climate Control (ECC) with Volvo's Air Quality System (AQS), all-round electric windows, electric/heated door mirrors, cruise control, alloy wheels, a premium sound system with CD player and eight speakers, plus the unique, boot-mounted shopping bag holder.

Upgrading to the SE version adds an electric driver's seat with a memory function for both the seat and the mirrors, front foglights, an information centre, an autodimming rear-view mirror, a rear waste bin and leather upholstery. The audio system is also upgraded to a dash-mounted four CD autochanger with a separate amplifier, nine speakers and Dolby Pro Logic Surround Sound delivering outstanding sound quality.

Interior trim materials conform to Öko-Tex standards and are allergen-free to reduce allergies and skin conditions (see Environment section).

Volvo owners are also encouraged to give their car a personal touch by choosing from a range of optional extras. They may be interested in the RTI (Road and Traffic Information System) which comprised of a large colour screen linked to a DVD system and displays information for the whole of Europe. Controls on the steering wheel make it easy for the driver to use or

there's a remote control unit for passengers. The screen can also double as a TV monitor, turning the Volvo V70 into a mobile multi-media centre.

There's also a vast range of accessories. A Volvo reversing sensor system, for example, activates automatically when reverse gear is selected. The system produces a pulsating buzzing note that rises when the obstacle is about 25cm from the rear bumper. Hands-free kits can also be supplied to fit most types of mobile phone and a broad range of load-carrying systems cater for families or those with an active lifestyle. Another neat feature is the bespoke dog gate that provides a dedicated compartment within the load area for a pet. All of these features help to enhance the Volvo V70's reputation for versatility.

Volvo's employees are justifiably proud of the quality of their products, but they're equally determined to offer the best customer service. In 2001, Volvo's management set a goal of becoming the 'Customer satisfaction no. 1' in the premium sector by 2004. To fulfil this ambitious target, the company has initiated a series of Quality Forums, which scrutinise information from a combination of internal and external sources, including independent rankings by companies such as JD Power. Having analysed the data, the Forums initiate action plans to improve performance in specific areas.

This quality assurance package is backed up by a comprehensive warranty. The standard mechanical warranty is three years/60,000 miles, there's a three year, unlimited mileage warranty on the paintwork and eight years' cover against rust perforation. In addition, all Volvos are covered by one year's free RAC cover, which provides full breakdown and recovery assistance, anywhere in Europe, 24 hours a day.

SAFETY

The Volvo V70 has been extensively tested in the Volvo Safety Centre and features a comprehensive safety package designed to protect occupants in a wide variety of accidents.

The SIPS (Side Impact Protection System) includes side and Inflatable Curtain (IC) airbags that protect both front and rear occupants. In a frontal collision, ‘intelligent’ front airbags work in unison with the safety belts, while the WHIPS (Whiplash Protection System) reduces the risk of back and neck injuries in the event of a rear impact.

In the rear of the car, all three passengers benefit from three-point safety belts with tensioners, and there are ISOFIX fittings for child seats.

- SIPS (Side Impact Protection System) with side airbags and IC (Inflatable Curtain) airbags for front and rear passengers
- Twin front ‘intelligent’ airbags
- Five three-point seatbelts with pre-tensioners. Load limiters for front occupants
- WHIPS (Whiplash Protection System) for front seats
- ISOFIX fittings in rear and range of bespoke child safety seats protect next generation
- Extensively crash tested in Volvo’s Safety Centre

Volvo’s commitment to safety is as old as the company itself. As Assar Gabrielsson, one of the founders of Volvo, declared: “Cars are driven by people. The guiding principle behind everything we make at Volvo, therefore, is – and must remain – safety.” It’s a commitment that’s more than fulfilled with the Volvo V70, designed after extensive crash testing in Volvo’s Safety Centre. As a result, features an extensive safety package designed to protect occupants in the widest range of accident scenarios.

A quarter of all impacts are from the side, which is why Volvo developed the Side Impact Protection System (SIPS). A large part of the force of a collision that would otherwise penetrate through the side of the car is dissipated by SIPS via beams, pillars, the floor, the roof and other parts of the car body.

The side impact airbags then play an important role in protecting the chests of the occupants. They are fitted in the outer edge of the front seats, not in the door, which ensures that they're always securely positioned next to the occupant's side, whatever the position or angle of the seat.

Further protection is provided by the IC (Inflatable Curtain) airbag, which sits in the headlining and protects occupants in the front and rear. In the event of a side impact, IC inflates in a few thousandths of a second and then remains inflated for about three seconds in order to provide maximum protection throughout complex collision sequences. The Curtain is effective whether the window is open or shut and it absorbs up to 75 per cent of the energy developed when the head is thrown sideways in a crash.

The two front airbags are 'intelligent' and deploy in two stages according to the severity of the accident, alleviating the risk of facial injuries caused by the occupant's faces impacting with the airbag. They are complemented by three-point safety belts with tensioners, which are fitted for all passengers. The tensioners activate within a few thousandths of a second in the event of a collision and tighten the belt for maximum protection. The front seat safety belts then release a little so that the driver and passenger are cushioned by the airbags in a controlled manner.

The Volvo V70 also features the WHIPS (Whiplash Protection System) for those in the front seats, which helps prevent neck and back injuries in a rear impact. In the event of a collision, the entire backrest moves rearwards to reduce the strain on the occupant's back and neck. Then, when their back has been safely restrained by the backrest, it reclines in order to reduce the force that would otherwise throw their head forwards. WHIPS reduces acceleration forces on the neck by about a half.

Volvo's engineers have also made special provision for protecting the next generation. Every V70 comes fitted as standard with the provision for the fitment of ISOFIX child safety equipment, and a bespoke rearward-facing child safety seat can be specified as an option. An integrated booster cushion built

into the rear centre armrest is available, which has been specially designed for children aged between 4 and 10. A standard booster cushion with an adjustable backrest is also offered.

ENVIRONMENT

Volvo's commitment to the environment is reflected in its 'clean inside and out' programme. An air filter prevents dust, pollen and exhaust particles reaching the interior, while the Air Quality System ensures that the air inside the cabin is always cleaner than that outside. All the trim materials comply with Öko-Tex standards, helping to reduce the risk of an allergic reaction.

Another pioneering feature is the PremAir system, which converts 75% of the ground level ozone passing through the radiator into oxygen. Several of the engines in the range already also meet the stringent EU 2005 and ULEV (Ultra Low Emission Vehicle) emission requirements.

Little wonder that each new Volvo is backed by an Environmental Product Declaration from Lloyd's Register Quality Assurance Limited (LRQA).

- 'Clean inside and out' environmental commitment
- Cabin air filter removes dust, pollen and exhaust particles
- PremAir ozone system converts 75% of ground level ozone to oxygen
- Air Quality System ensures cleaner air inside than out
- Interior trim materials conform to Öko-Tex standards and are allergen-free
- Several of the engines already meet stringent EU 2005 and ULEV (Ultra Low Emission Vehicle) emission requirements
- Each new Volvo is backed by an environmental declaration examined and verified by Lloyd's Register Quality Assurance Limited (LRQA)

According to the 2001 RAC Report on Motoring, the typical private motorist

drives for over 250 hours each year, while in the same period, a company car driver spends an average of 425 hours inside their vehicle.

Yet, while most of us are aware of vehicle emissions and air quality issues, how many drivers know that the air inside their cars may also be harmful? Or that the metals, textiles and leathers used in car interiors can emit volatile substances, which activate allergies and skin conditions?

Many motorists don't realise their car could be increasing their risks of asthma, eczema, headaches, eye irritation or even a heart attack. In recent years, the number of people suffering from allergies and other forms of hypersensitivity has been growing rapidly.

Volvo's 'clean inside and out' programme to create emission-free cars is a healthy solution to the problem.

The Volvo PremAir system makes a major contribution to air quality. It's an industry first and is fitted as standard to every Volvo V70. PremAir features a catalytic coating on the radiator that converts 75% of the ground level ozone passing through it into oxygen. It therefore reduces harmful pollutants in the local environment.

Every Volvo V70 also benefits from Volvo's Air Quality System. This constantly monitors the cabin environment to minimise odours and pollutants entering from the outside. It ensures that the air inside the car is always cleaner than that outside. The air-conditioning system also incorporates a cabin air filter that prevents dust, pollen and exhaust gas particles entering the car.

The interior of the Volvo V70 complies to a strict standard called Öko-Tex, which sets maximum levels for dangerous substances contained in textiles and trim materials. All the leather upholstery and the trim fitted to the Volvo V70 meets Öko-Tex standards. The components on the Volvo V70 that most

frequently come into contact with the skin – the door handle, ignition key and safety belt locks – are also compliant with Öko-Tex and allergen-free.

The Volvo V70's impressive aerodynamics (Cd 0.30) and sophisticated catalyst and engine management systems help to keep fuel consumption and emissions to a minimum. Several of the engines in the range already meet the extremely stringent EU 2005 and ULEV (Ultra Low Emission Vehicle) emission requirements and the Bi-Fuel models, in particular, make a major contribution to improving environmental standards. Natural gas (CNG) powered cars cut the emissions of carbon dioxide – which contributes to the greenhouse effect – by about 20% compared with the same car running on petrol. An LPG-powered Volvo V70 reduces carbon dioxide emissions by around 10%.

Volvo's commitment also extends beyond the car's immediate environment. It was one of the first manufacturers to use tools to evaluate the life-cycle environmental impact of its products. The system, known as EPS (Environmental Priority Strategies in product design) enables Volvo to evaluate the impact of its products and processes on natural resources, ecosystems and human health. This information is available to the public at www.volvocars.co.uk.

It's a strategy that's clearly paid dividends - emissions of solvents from Volvo's Torslanda plant in Sweden have been reduced by over 90% since 1972 and virtually the entire car can be recycled at the end of its life. Little wonder that each new Volvo is backed by an Environmental Product Declaration examined and verified by Lloyd's Register Quality Assurance Limited (LRQA) of London.

SECURITY

Volvo is committed to protecting the car, its occupants, and their possessions. Every V70 is fitted as standard with a sophisticated alarm and immobiliser that can be switched on and off using the convenience of a remote controller on the key fob. The combination of deadlocks and

the availability of laminated side windows make the Volvo V70 a difficult car to break in to.

The remote control also operates the Approach lighting system, which illuminates the car and the surrounding area as the driver approaches. Likewise, a tweak of the headlight stalk activates the Home Safe system, switching on the headlamps for thirty seconds after the occupants have left the vehicle.

- Electronic immobiliser fitted as standard
- Alarm and deadlock system operated from remote control key fob
- Approach and Home Safe Lighting system fitted to every model
- Laminated side windows available

Volvo's passion for the safety of its owners also extends to issues of personal security. The Volvo V70 is fitted as standard with a wide range of features designed to protect occupants from burglary, theft and assault.

An electronic immobiliser makes it impossible to start the car without the right key, while the outer lock cylinder rotates, making it difficult to break in to. If the thief does manage to get in, via a window, for example, the deadlock system makes it impossible to open a door from the inside. The introduction of optional laminated side windows also makes it harder for thieves to gain access.

The deadlock system is activated by the remote control key fob, which allows the driver to open the car as they approach. This system can also be used to access the tailgate independently of the doors, which is a useful deterrent to opportunist thieves.

The same remote control system also switches on the alarm system, which is standard on every Volvo V70. The alarm is triggered if anyone attempts to open the doors, the bonnet or the boot lid. It also reacts to movement inside

the car or if a window is broken. As an option, this system can be upgraded to include a level sensor that activates the alarm if the car is jacked up in any way.

An important contribution to personal security is provided by the Approach and Home Safe lighting system. By pressing a button on the remote controller as they approach the car, the driver is able to turn on the inside lights, the side marker lights and the lights in the rear-view mirrors. On leaving the car, a tweak of the headlight stalk activates the dipped beam headlamps for 30 seconds, lighting a path to the door. It's a simple system that offers considerable peace of mind.

DID YOU KNOW?

- 1 The V70 is built in Ghent, Belgium and Gothenburg, Sweden.
- 2 The typical V70 customer is university educated, is either a company director, the owner of a small business, or retired, and is most likely to be in any age group between 35 to 64, with a family or is in the post-family stage*
- 3 The top hobbies of V70 customers are:
 - Football/rugby spectator (23.92%)*
 - Walking/hiking/hill climbing (23.86%)*
 - Gardening (20.96%)*
 - Golf (13.27%)*
 - Music/opera/choral singing (12.93%)*
- 4 There are V70 owners all over the world. The car is sold in South America, Australia, the Far East, and of course, USA and Canada.
- 5 Volvo built 90,799 V70s in 2001 (total Volvo global production, 420,000), making it Volvo's second best selling single model (behind the S60 at 106,079)
- 6 The latest V70 has consistently won awards for 'Best Estate' since it was introduced in 2000, including:
 - What Car? Car of the Year Awards, 'Best Estate', 2000, 2001 and 2002
 - Auto Express, New Car Honours, 'Estate Car', 2001 and 2002
 - Fleet World, 'Best Estate', 2001

Auto Express, Used Car Honours, 'Estate Car' 2002

Used Car Buyer, 'Best Estate' 2001, 2002

* Source: New Car Buyers Survey 2002