Quality

What's it all about?

Sooner or later...

One of the last things you should think about when you collect your brand new shining car is that sooner or later it will end up at the scrapyard. And yet you are well aware of this. Just as you are well aware that some makes of car reach the scrapyard quicker than others. There are statistics to prove this.


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Quality gets it there later

The scrapyard is where every car will end up – sooner or later. Quality cars get there later because quality lengthens the life of a car. The entire car. Quality also implies that all the integral parts of the car are designed to last for the same length of time. It's no good having a car body that can withstand rust for twenty years if the works give up the ghost after five years. Nor is it economic to pay for an engine which runs like a clock for 200,000 miles if it's pulling a body around which was full of rust holes after 30,000 miles.

At Volvo we try to give the same lease of life to all the vital parts of our cars. At the same time, our philosophy is to give Volvo components a longer life expectancy than corresponding components in other makes of car.

In Sweden there is a government organization called the Swedish Motor Vehicle Inspection Company which is authorized to carry out the annual compulsory inspection of motor vehicles. Each year they publish figures which show the average life expectancy of a motor car. In other words how long it takes for the cars involved to reach the scrap heap. Here are the latest figures:

Volvo	14.2 years
VW	13.2 years
Mercedes	12.4 years
Peugeot	11.8 years
Saab	11.6 years
Opel	11.4 years
Ford	11.2 years
Vauxhall	10.8 years
BLMC	10.2 years

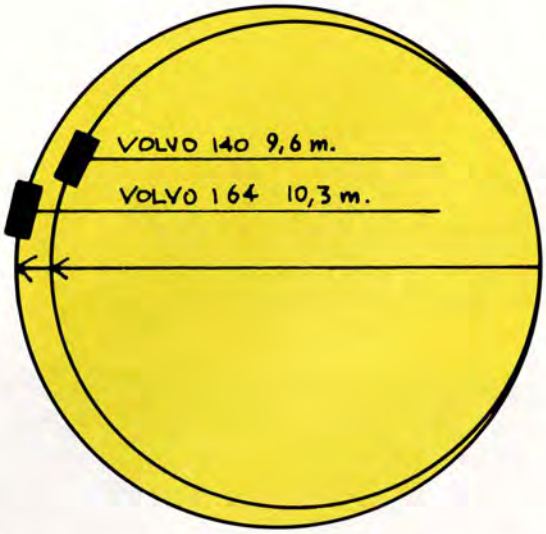
According to these figures the probable life expectancy of a Volvo is no less than 14.2 years. Few people keep a car that long. But the lasting value of a Volvo has a great deal of influence on the trade-in value. Car buyers know that a used Volvo nearly always gives many more miles of service than the average car. To practically all car owners quality means that a car lasts and lasts well. But Volvo quality goes deeper than this. Volvo quality isn't just skin deep. It can be felt, for example, in the ride and road holding of the car. We believe that a quality car must be a safe car which is why we build them safe. Our emphasis on the quality of our cars saves your money in the long run.

This, in large, is what we mean by quality. Lasting, money-saving, eye-catching Volvo quality.

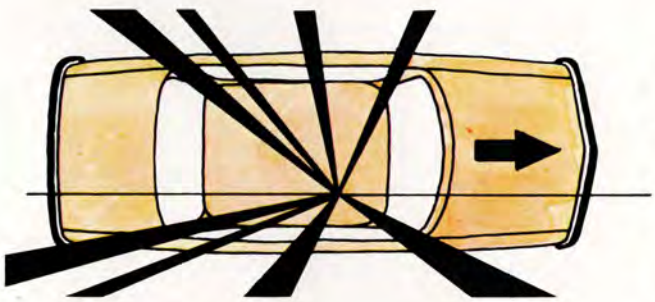
Quality lets you drive

relaxed-in safety

Good driving comfort is one of the built-in terms of quality. No car is a good quality car if driving it doesn't give a feeling of well-being. We want you to sit relaxed and comfortable behind the wheel of a Volvo, because only then is it an efficient and safe means of transport.
We have worked hard in developing the many areas of motor car design to ensure that Volvo cars give good driving quality. The layout of the driving area is one example. We have designed the main controls so that they are easily reached, even when wearing a safety belt.
The way the car reacts to the driver's action is another important area. Light pressure on the brake pedal should give exactly the amount of braking intended just as hard pressure should give the same powerful braking action time and time again. The car must not have a will of its own which requires continuous correction by the driver. And if the driver calls for quick acceleration to drive out of a troublesome traffic situation, then the car should respond immediately – even if the driver does not have time to change-down.



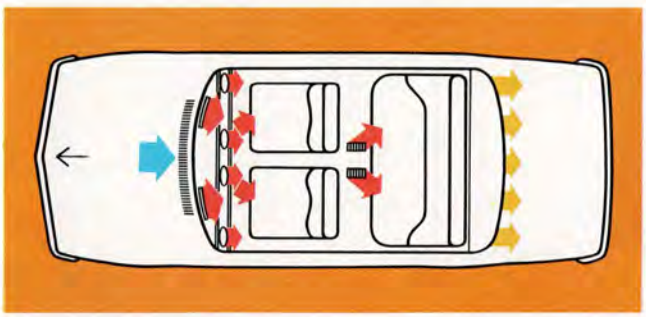
When you see how a Volvo can do a U-turn in a space where other cars must reverse – drive forward – reverse again and so on, then you'll understand how the tight turning circle of a Volvo is an important part of its quality. You can drive in and out of parking spaces in one smooth movement. You can use cramped parking spaces which you would never dare to drive into with a car of less manoeuvrability. The Volvo 144 and 145 can turn around – in one go – in a street which is only 9.6 metres wide between kerbs. The Volvo 164 does the same thing in 10.3 metres. This means that a Volvo can out-manoeuvre many smaller cars.



Good visibility is essential for your safety. A Volvo has excellent all-round visibility.

But good visibility is not just big windows. It's having efficient heating and ventilation so you can actually see out of the big windows.

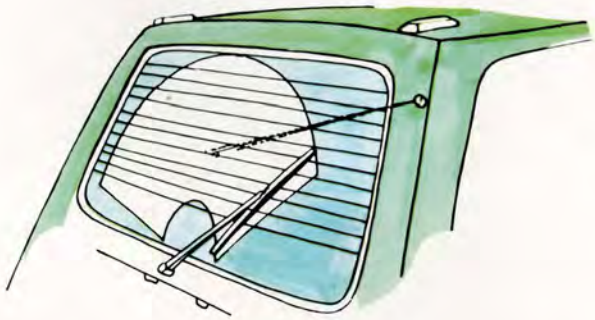
The Volvo designers know from their own experience what the Nordic winter demands of a car's heating and ventilation system – Volvo has the advantage of a realistic test chamber in its own backyard.
The big windows in a modern car result in a considerable loss of heat. To counteract this, the occupants must be surrounded by a steady flow of comfortably heated air. This stream of air must also flow over the cold areas of glass to prevent condensation. The humid air exhaled by the occupants must be quickly replaced by drier air taken from outside the car and heated up. And all of this must be done in a way which does not make the occupants feel as if they are sitting in a draught.



To achieve an efficient spead of air Volvo's heating and ventilation system has no less than ten outlets. Two of them feed the rear seat area. The dashboard holds four adjustable outlets. The outer two can be aimed towards the side windows to ensure that they are kept free from mist and to prevent the accumulation of chilled air. Large defroster nozzles spread a curtain of air over the windscreen. On the 140-series the two centre dashboard nozzles can be used to blow a mixture of warm and fresh air. This is independent of the settings of the other outlets and therefore allows you to keep your feet warm and a cool head at the same time.
In the Volvo 164 the heating and ventilation system has other features. One worthy of mention is that it is adapted ex-works for the addition of an air conditioning system. The heating and ventilation controls are of the vacuum-servo type which gives the driver fingertip control via a number of push-button switches.

Volvo saloons have through-flow ventilation by means of air extractor vents at the rear. On our estate car, the extractor vent is located below the rear offside window. In both cases, the extractor vents have a check valve which allows air to pass through in one direction only, so exhaust gases can never penetrate.

A heated rear window is standard in all Volvos. It quickly dispels mist and frost. And quite naturally, cars built for the Scandinavian winter have a large heater. The latest Volvo models feature a large capacity heater with a fan which has three speeds. As you'd expect from Volvo, the temperature of the air leaving the heater is controlled by means of a thermostat.

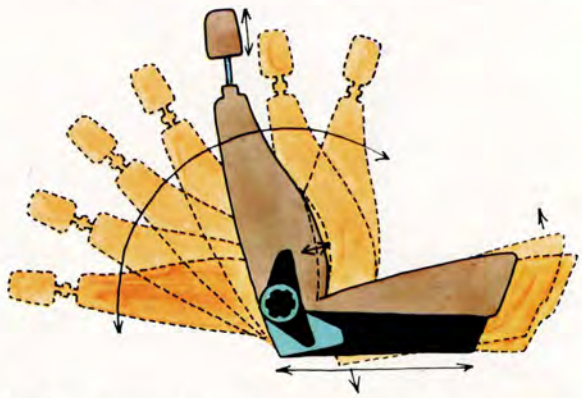


Efficient wipers and an electrically powered washer for the windscreen are things we take for granted. On a Volvo they are lever-controlled from the steering column. And on our estate cars we also have a washer and wiper on the tailgate window. What other estate car do you know of that can boast of that?

Car seats must meet many requirements. They should provide the correct driving posture. They should give correct support for the entire body. They should retain their form and tension. And since each person has his or her own special shape and sitting habits a car seat should have as large a range of adjustment as possible. Here again Volvo proves its quality – with large, generous and orthopaedically-designed seats featuring a wide range of adjustment which makes it possible for everyone to sit comfortably and drive safely. Most car seats can be moved backwards and forwards. But Volvo seats also have a special feature for long legged drivers. The seat frame can be loosened and the entire range of adjustment can be moved to a more rearward position.

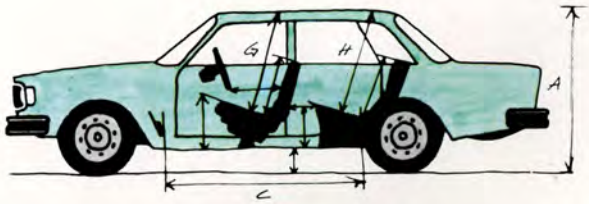
Correct support in the right places is achieved by using different densities of foam padding. The seat cushion for example supports the thighs, all the way out, and the front edge of the cushion is just right to give the correct support without applying undue pressure.

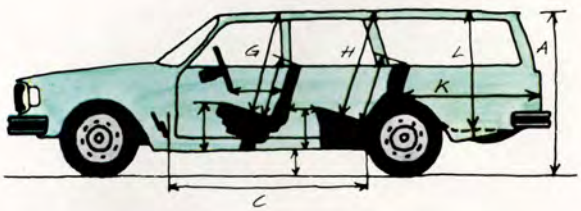
In addition, the driving seat in the Grand Luxe and the 164 E has built-in heating units which operate automatically in cold weather.

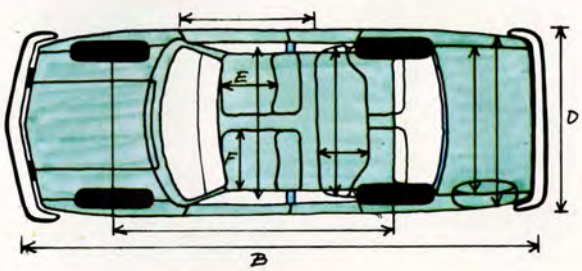


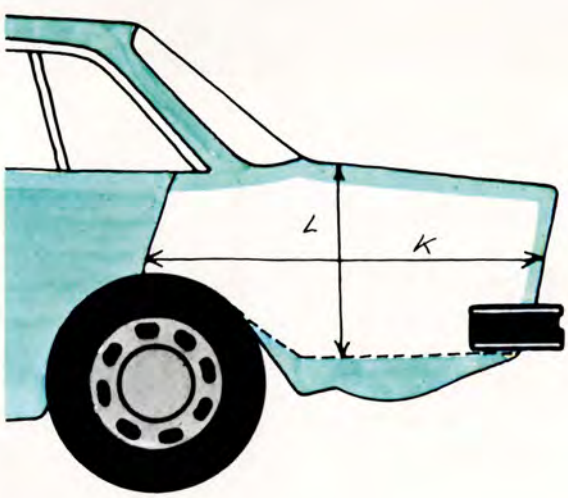
The front seat backrests can be reclined until they rest against the rear seat. This is a feature offered by many cars. However, Volvo is just about unique in having a separate adjustment for lumbar support. Its setting is knob controlled and infinitely variable. Seat features not to be found on other cars: height can be adjusted to three positions. On the 140-series you will need a couple of tools to do this. On the Volvo 164 it is done quickly and conveniently by a lever. On both cars even the seat cushion rake is infinitely variable, and so is head restraint height.

Quality is comfort and space to spare









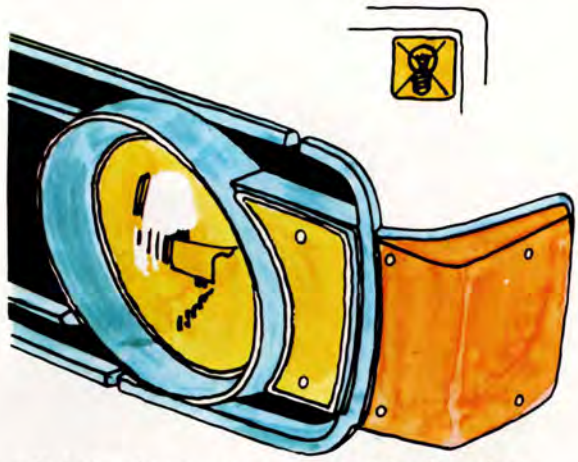
The spaciousness of a car cannot be judged by the outer dimensions alone. A Volvo does not have an especially impressive overall length, but if you compare its inside space with that of other cars you will find that a Volvo is unusually large. And since the rear seat is often empty and at least one front seat is always occupied we arranged an extra large amount of leg room in the front seat area – but still offer good comfort at the rear. Even with five people in the car generous amounts of luggage are easily housed within the boot. Its depth is such that your cases can be packed handles up. In our estate car you can arrange an extra large cargo area by folding down the rear seat backrest. We also give you a very large tailgate opening to help you load and unload your things.

	Volvo 144	Volvo 145	Volvo 164
A Overall height, cm	144	145	144
B Overall length, cm	478	478	487
C Length, pedal to rear seat backrest, cm	183	183	183
D Overall width, cm	171	171	171
E Cushion depth, front seat, cm	49	49	49
F Cushion width, front seat, cm	57	57	57
G Head height, front seat, cm	95	95	95
H Head height, rear seat, cm	89	95	89
K Min. length of boot/cargo area, cm	121	113	121
L Height boot/cargo area, cm	56	83.5	56

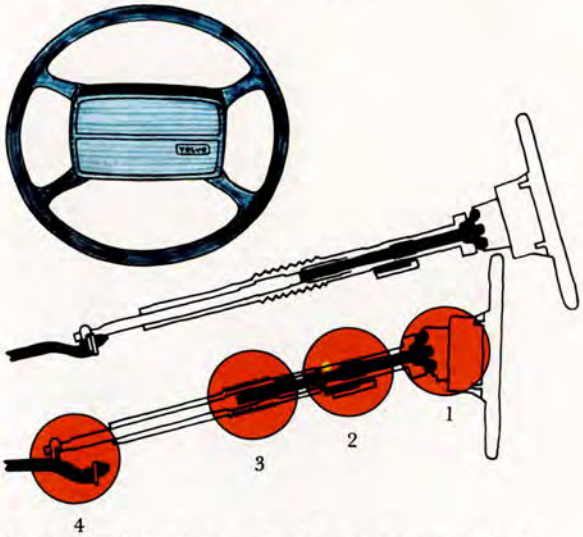
Quality is travelling safely

As an experienced motorist you know that you are exposed to traffic risks no matter how careful you are. No car can give you one hundred per cent safety. But a car can be designed to reduce the risk.
In automotive terminology one speaks of "active" and "passive" safety features. The "active" group are those which assist the driver in avoiding accidents. Brakes which always react as the driver intended, a precise steering system, a body design which enables the driver to keep a check on the surrounding traffic, and a design and layout of controls which cut the chances of making mistakes.
The "passive" group consists of those which prevent or lessen the extent of injuries if an accident takes place. Most important in this group is the design of the body and its interior fittings and furniture.

Within both of these areas Volvo has proven its quality. And on the next few pages we would like to give you a few examples.



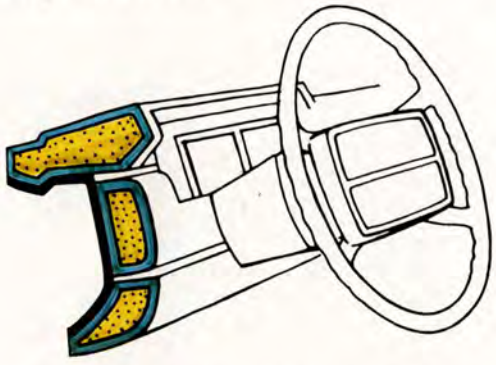
Poor lighting is an unnecessary risk after dark. Which is why Volvo cars have a very efficient electrical system which is designed to give a minimum of voltage drop. The H4 headlights have halogen bulbs which retain full lighting power throughout their life of use. And should any bulb in the dipped headlights, tail lights or brake lights cease to function, a Bulb Integrity Sensor immediately lights up a warning lamp on the dashboard.



A feature of all Volvos is the large safety hub in the centre of the steering wheel. But there are also other hidden safety features in the steering system.

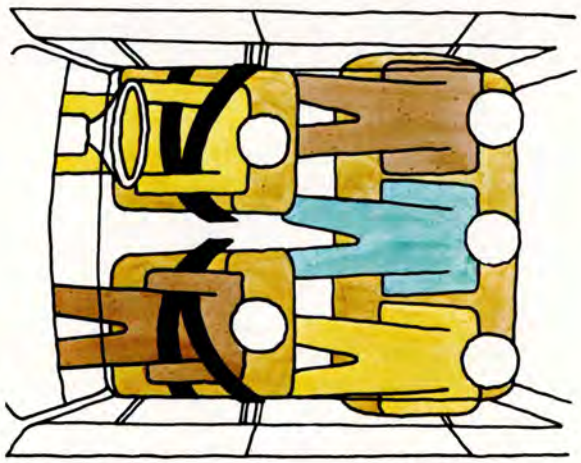
1. The attachment of the steering wheel to the steering column incorporates a crumple zone, which collapses under heavy impact and allows the wheel to align with the driver's body.
2. A slip joint in the steering column's anchorage to the body permits it to move downwards towards the engine, but not backwards towards the driver.
3. The telescopic joint of the steering rod is matched by a bellows type casing in the steering column. This allows the column and rod to collapse under heavy impact.
4. A slip coupling allows the two halves of the steering rod to separate under impact from the front. On the Volvo 164 and models of the 140 Series which have power steering, this section of the steering is of a different design, and does not require this feature.

The adjustable head restraints safeguard the neck and spine from whiplash injuries should your Volvo be hit from behind. Height adjustment of the restraints is infinitely variable and quickly carried out.



The entire occupant area is free from projecting controls and all hard surfaces are clad with safety padding.

Volvo has long been a leader in safety belts. We introduced safety belts as standard long before there was any legislation.

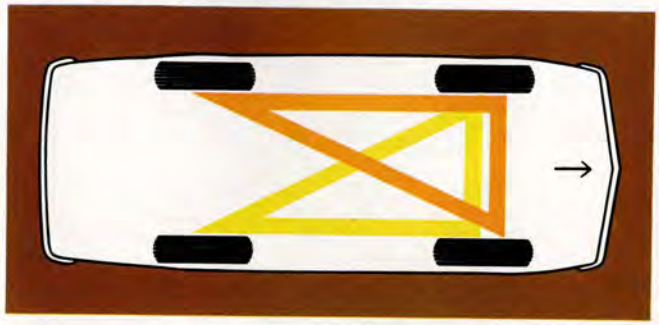


Today, all Volvo cars are equipped with three-point front seat safety belts. And the rear seats have safety belt anchorage points.

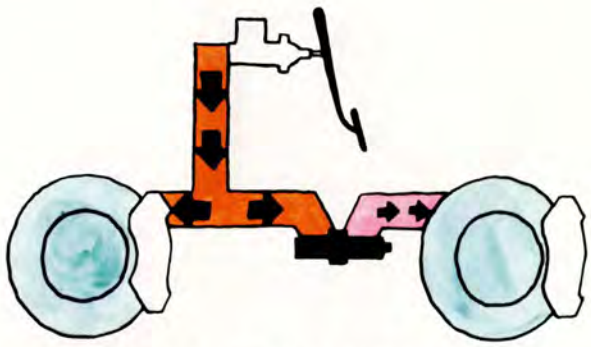
We also fit a "fasten seat belts" warning system which reminds the driver and front seat passenger to use this vital safety item.

Reliability is the most vital quality feature of a car's brake system. This means, for example, that it must provide sufficient braking power even if the brakes are red hot through continuous use. It also means that the brakes should not lock-up and cause a skid if you panic and press the pedal too hard. And it also means that it should still be possible to stop the car even if a brake line should fracture.
If you are in the market for a quality car, then you have a right to demand quality brakes. Brakes that give full brake performance from moderate pedal pressure. The action of the brakes should be in direct proportion to the pressure applied to the brake pedal. Volvo cars have a brake system designed to meet these requirements.

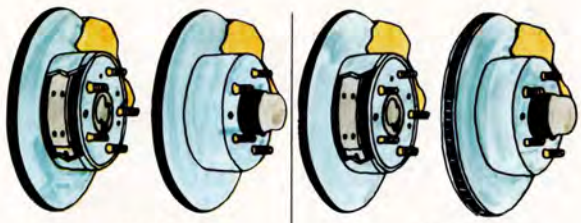
The various types of dual circuit brake systems give varying degrees of safety. Volvo's triangle-split dual circuit brake system is one of the safest available.



Each front wheel has a double set of brake cylinders and plungers, one set for each circuit. Therefore, each circuit brakes both of the front wheels and one each of the rear. Which is why we call it a triangle-split system. You could lose 50 % of your braking system and still retain about 80 % of your braking power.



A relief valve in each of the brake circuits ensures the best division of braking power between the front and rear. This prevents the rear wheels from locking before the front wheels and therefore assists you in keeping the car under control even in emergency situations.



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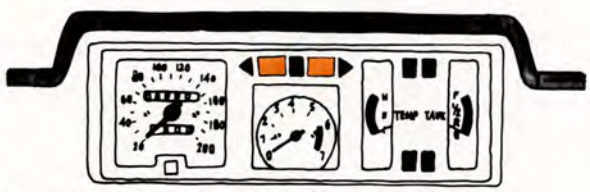
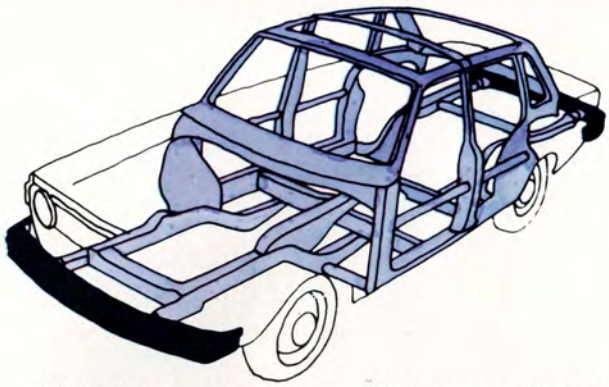
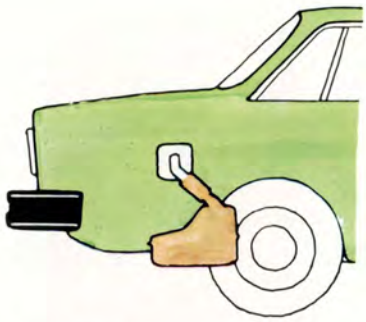
The risk of a drop in braking efficiency after repeated use of the brakes is caused by fading. Fading is the result of the brakes becoming hot. Which is why Volvo cars have disc brakes on all four wheels. Because disc brakes can be cooled more efficiently than drum brakes and, therefore, give smoother and more reliable braking. The Volvo 164 E even has built-in cooling ducts in the front wheel brake discs. On all Volvos, the disc brake system is power assisted.



Warning lamps on the dashboard light up when the handbrake is applied and also if a brake circuit should fail.
The handbrake operates on separate drums on the rear wheels fully independent of the footbrake system.

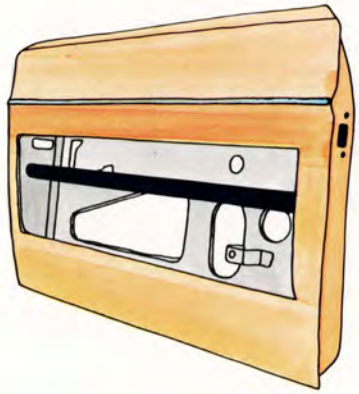


Volvo's very strong and wide bumpers feature energy-absorbing mounting points which can withstand impact up to about 3 mph/5 kmph without damage to the body.
The body of a Volvo is designed so that the occupants are surrounded by a strong protective cage. And strong profile members enclose all body openings.

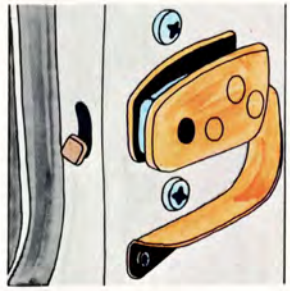


The fuel tank is now located immediately behind the rear axle and entirely beneath the floorpan. This very safe location protects the fuel tank in the event of a rear end collision.

The extremely strong passenger compartment is guarded by the energy-absorbing front and rear ends of the car. A substantial amount of the energy generated in a crash is absorbed before it reaches the occupant area.



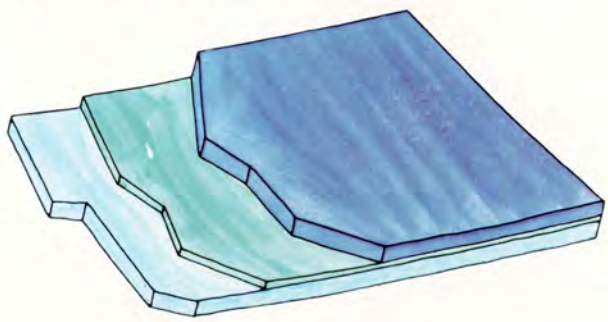
To give extra protection from side impact, the doors have a built-in anti-intrusion bar.



The door handles are recessed. This is not just styling – it is also a safety detail. Another safety details is that the rear doors can be locked so that they cannot be opened from the inside – which means you can have an easy mind with children in the car.

Volvo cars have door locks of burst-proof design which means that they stay closed even if the body is extensively deformed.

Volvo introduced laminated windscreens as standard in 1944, years before there was any legislation. Today all Volvos have high-



impact laminated windscreens. They can withstand flying stones without crazing into milky opaqueness.

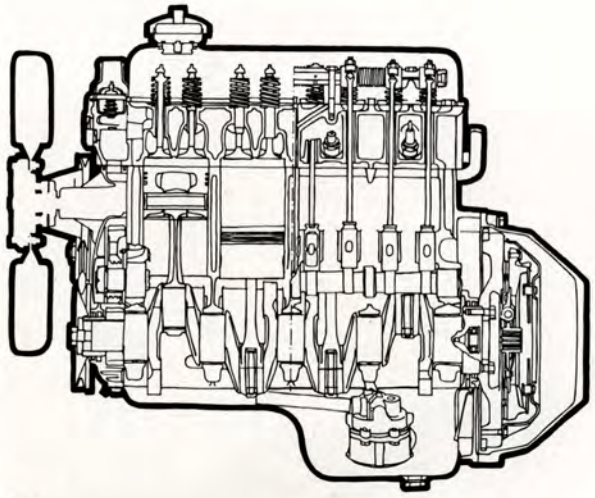
Volvo's high-impact windscreen is securely bonded to the body. This in combination with its laminate design means that it can absorb considerable impact and take the shock imposed by a passenger being thrown forward against it. The elasticity of the windscreen helps to reduce injury.

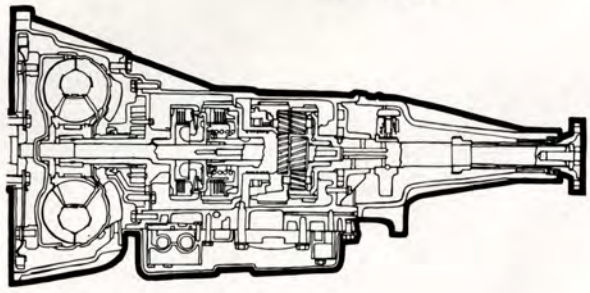
Quality is a reliable engine

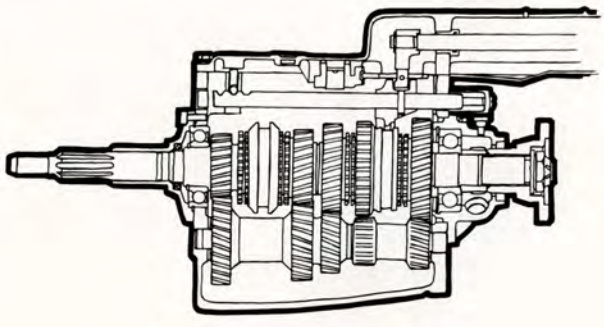
The Volvo engine is one of the most reliable of any modern car.

Volvo markets two basic engines: the four-cylinder B20, which is a two-litre unit, and the six-cylinder B30 which has a displacement of three litres. The B20 can be specified with a single carburettor or the CI fuel injection system (CI = Continuous Injection). The more powerful B30 E has an electronically-controlled fuel injection system. This range of engines offers output and temperament to suit all types of driving.

A feature of Volvo engines is that they give excellent torque even at moderate speeds which means good pulling power and less gear changing.
However, if you are a driver who conscientiously utilizes the engine's best speed range you will appreciate the Volvo gearbox. The short gear lever offers distinct selection and a really fast change. If you drive mostly in town your best choice is the automatic transmission – Volvo automatics have a six-position gear change which enables you to choose the ratio best suited to prevailing conditions.





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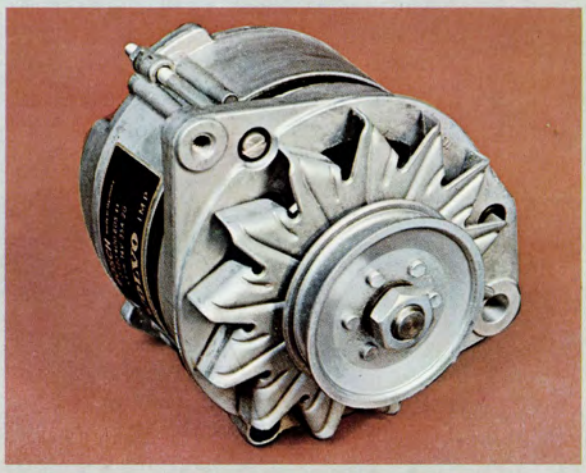
Quality is being indep

A sign of quality is a car that gives the same amount of comfort, safety and reliability all the year round.
We have already mentioned that the rough winter climate of Sweden has taught the Volvo designers what is required of a good heating system. These climatic conditions have also resulted in other features which make a Volvo well equipped to survive the ravages of an unforgiving climate.



Reliable starting in the depths of a cold winter demands a powerful starter motor – Volvo has one. With a 1 h.p. output. Matching this, Volvo has an alternator which charges the battery even at idling speed.

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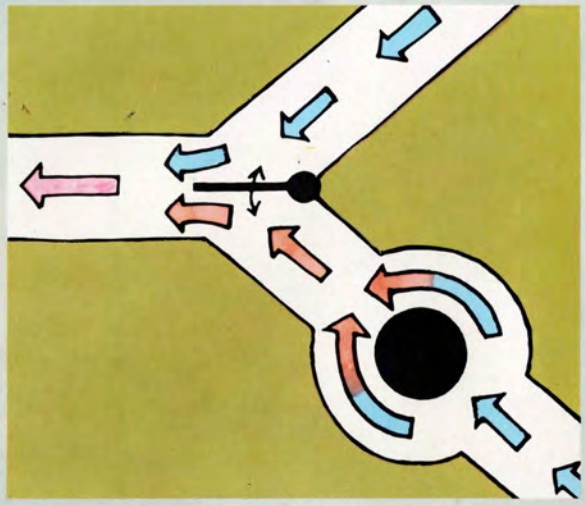
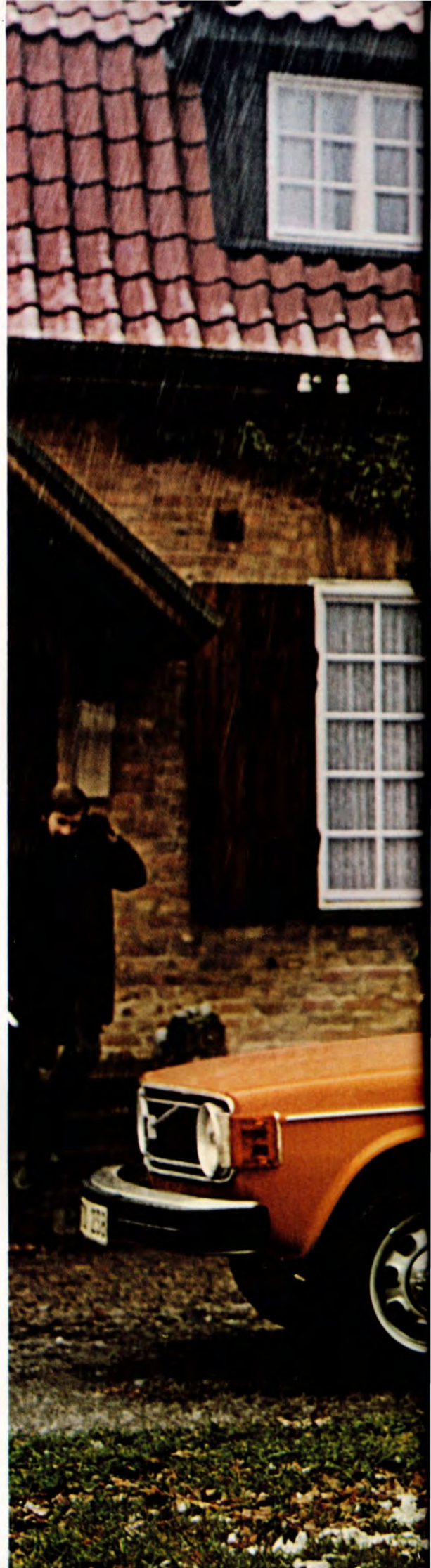


Volvo's carburettor engines have a feature which enables them to run smoothly and pull smoothly almost immediately after a cold start. The air fed to the carburettor is first pre-heated by the exhaust pipe. A thermostat controls the mixture of hot air – and when necessary mixes it with cold air – so that carburation is carried out at the correct temperature. On our fuel injection engines we have achieved the same results by fitting a small sensor which adapts the fuel injection to the ambient temperature.

A Volvo is safeguarded by an unusually extensive amount of rust-proofing. For example, exposed parts of the body are protected by a layer of zinc (hot-dip galvanized).
The door sills are cavity ventilated by the slipstream – a feature which is as unique as it is efficient in dispelling condensation and counteracting rust. Many body components are manufactured of rustproof materials. And the entire body is protected by attractive and carefully applied coats of paint. But even before painting, the entire body is etched and then specially treated in an electro-dip bath of primer paint.

Quality gives you less trouble

The quality of a Volvo – and the difference – is that a Volvo gets by with very little service and what needs to be done is done quickly and efficiently.
To start with we have designed your Volvo so that all items requiring service are easily accessible.
Secondly, Volvo and its dealer network have built up a service system which is being continually extended and improved. We are continuously at work providing special training for our service personnel throughout the world and our dealers invest in new and better workshops and equipment. It's never too far to an authorized Volvo service workshop, to genuine Volvo parts, to factory reconditioned replacement parts, to Volvo quality.



Quality sa
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To invest in a Volvo is to save money in a number of ways. All of them are the result of quality – quality as we at Volvo see it.

You get reliability. No need to pay large amounts for repairs or alternative transportation while your car is awaiting parts. With a Volvo your visits to the workshop will be few, routine maintenance is only required every 6,000 miles.

You won't need to change your car each year or every

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other year to ensure that you have a car you can trust. Changing cars too often always costs more, so it's wise to have a car that lasts longer. When it is time to sell your old Volvo you will find that it has outstanding trade-in value.

It is the quality of Volvo cars which gives the good total economy. And in principle it is the same basic quality which gives you safety on the road, reliability and enjoyment on your journeys and very few motoring troubles.

The purpose of this brochure is to show you that there are many sides to Quality. And all of them are just as important to us, the manufacturers of the car, as they are to you who buy our products. You will find the same quality awareness in all of our cars, even if the design and specifications vary. You can get more information from your nearest Volvo Dealer, or from our product brochures. Why not call in at your nearest Volvo showroom and get hold of a brochure now?

VOLVO

AB VOLVO GÖTEBORG SWEDEN

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