

**Where your  
money goes  
when you buy  
a Volvo**

**VOLVO**

Information based upon specifications of September 15, 1973. Specifications are subject to change from time to time without further notice.

SAFETY

COMFORT

VALUE

RELIABILITY

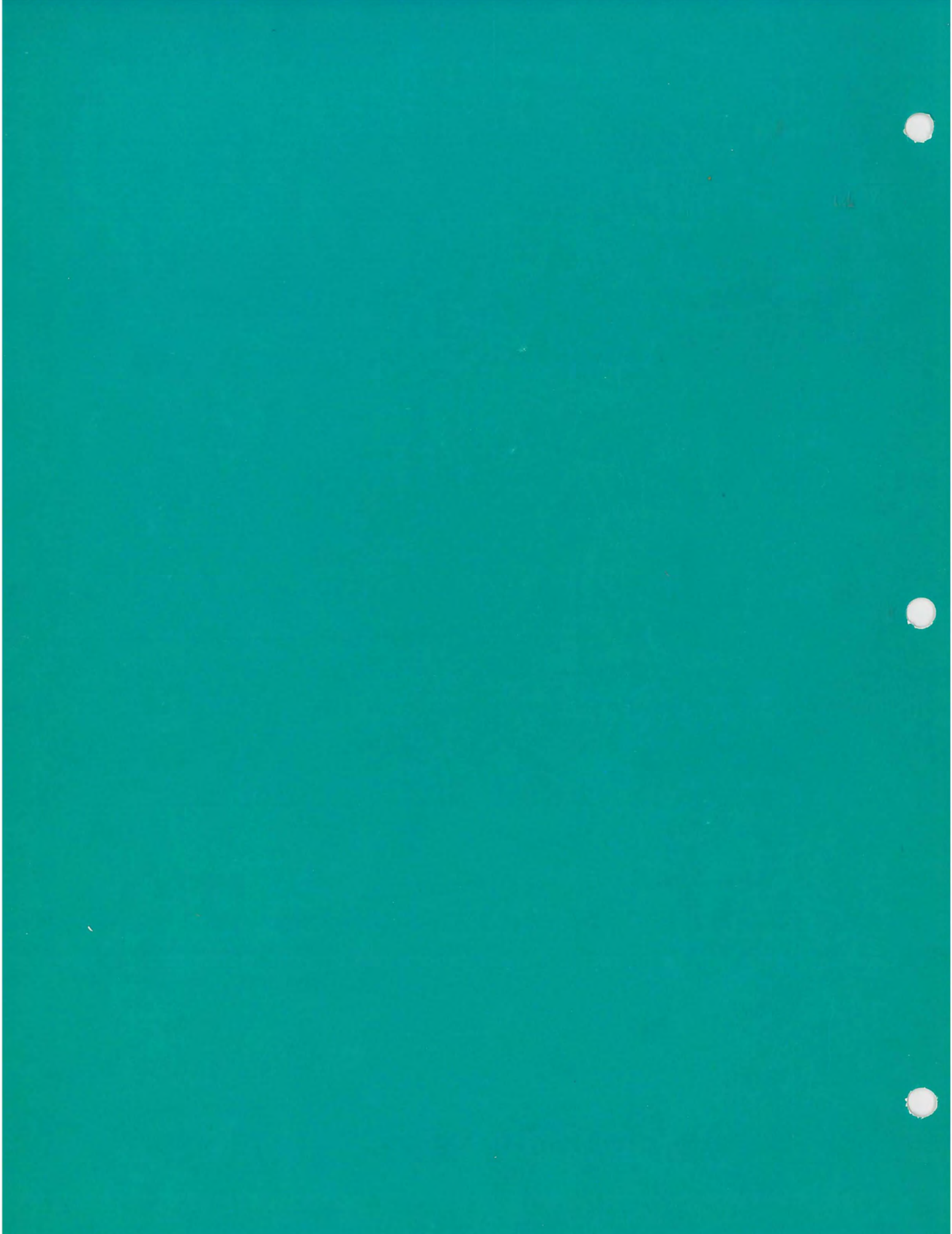
DURABILITY

The purpose of this book is to describe the major features of a Volvo and the benefits that a Volvo owner can expect to realize from these features.

On the outside of each page, you will see colored tabs with one or more of the following titles: Safety, Comfort, Value, Reliability, and Durability.

These colored tabs indicate the benefit offered by the feature described on the page. Therefore, if you are particularly interested in one benefit, such as safety, flip through the book to those pages where you see the red tab, Safety.

These colored tabs should help you identify quickly those features that offer the benefits that interest you most.



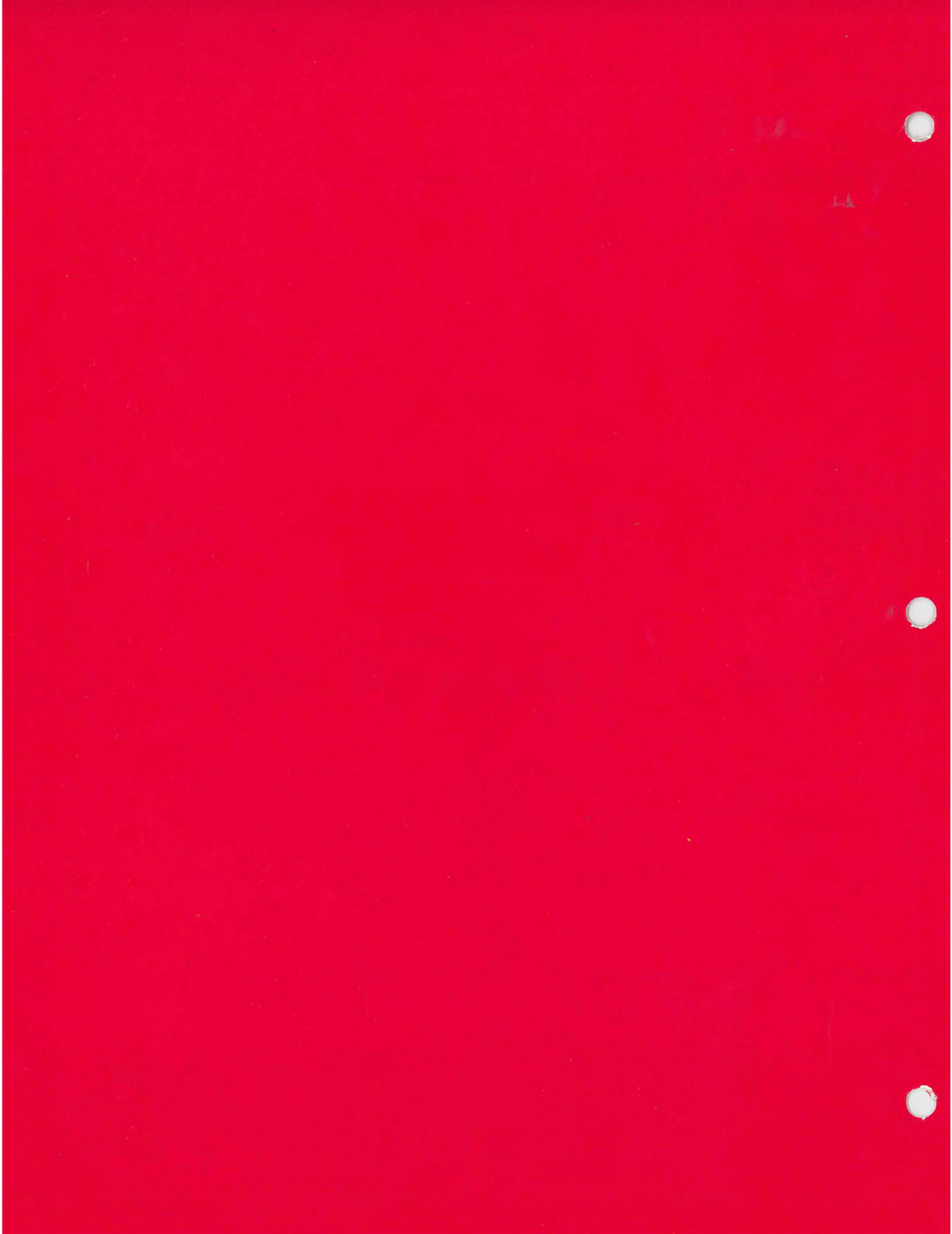
**THE 1974 VOLVOS**



**164E** One of the world's distinguished cars, luxuriously appointed for exceptional driving comfort and ruggedly constructed to withstand the ravages of the road. Air conditioning, leatherfaced upholstery, and an electrically heated driver's seat are just a few of its standard luxury features. A six-cylinder, electronically controlled fuel injection engine, a choice of automatic transmission or overdrive, power steering, and power-assisted disc brakes, all as standard equipment, give the 164E its outstanding driving qualities.

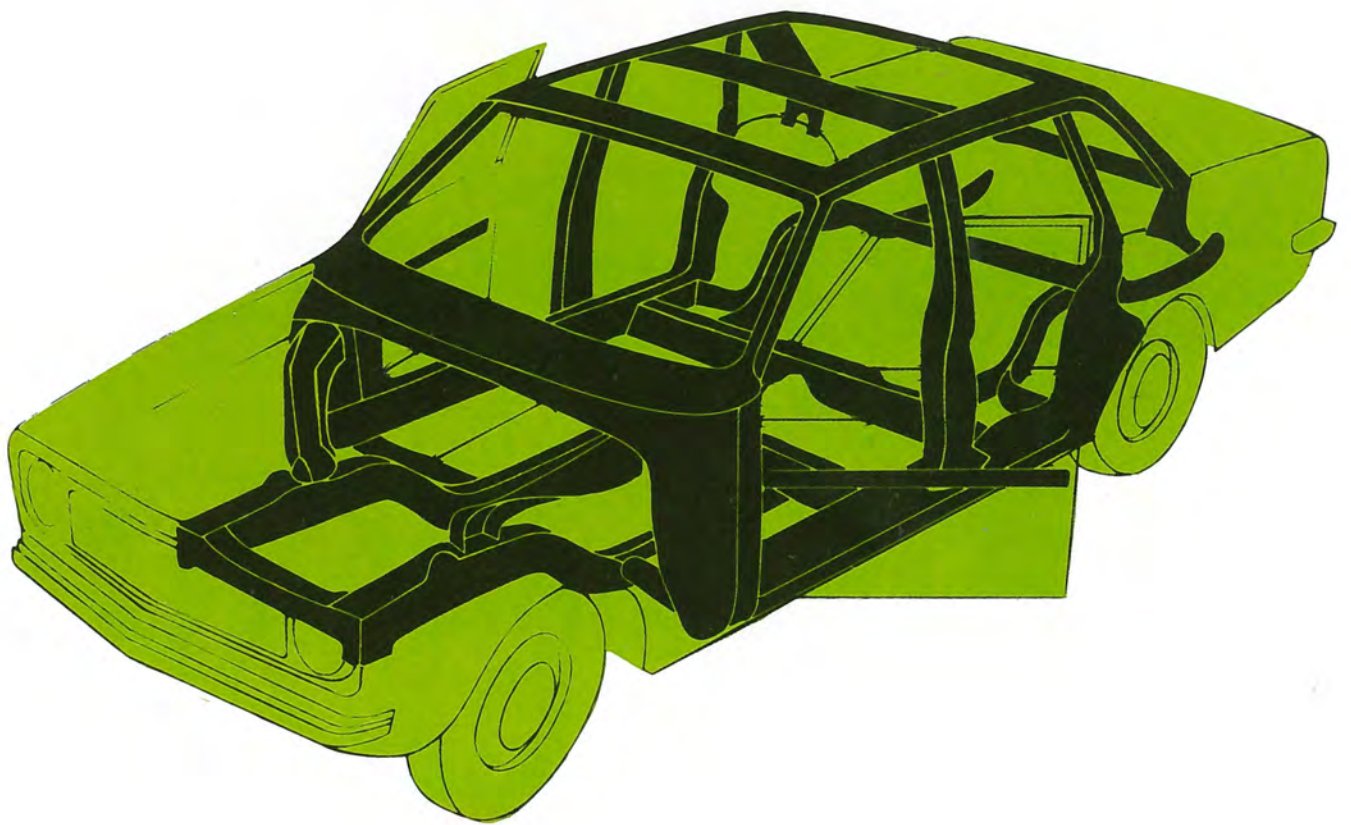
**140 AND 140 GL** Smartly styled inside and out, the 140 and 140 GL models offer a sensible solution to today's driving problems. Built with Volvo's traditional concern for durability, safety, and superior handling, the 140 and 140 GL's are an exceptional value with standard equipment features seldom found in their price class. Available as a 2-door sedan (142), 4-door sedan (144), or station wagon (145). For some added luxury touches, a 142 GL and 144 GL are also available.







**BODY**



## BODY CONSTRUCTION

### *Welded body*

The Volvo body consists of large pressed steel panels welded together. Large to minimize the number of joints. Welded to ensure a rigid body with unusual structural strength. The use of welds, rather than bolts, eliminates the problem of bolts loosening to cause annoying squeaks and rattles. A Volvo body has thousands of spot welds. Each spot weld is strong enough to support the weight of the entire body.

### *Box-shaped pillars*

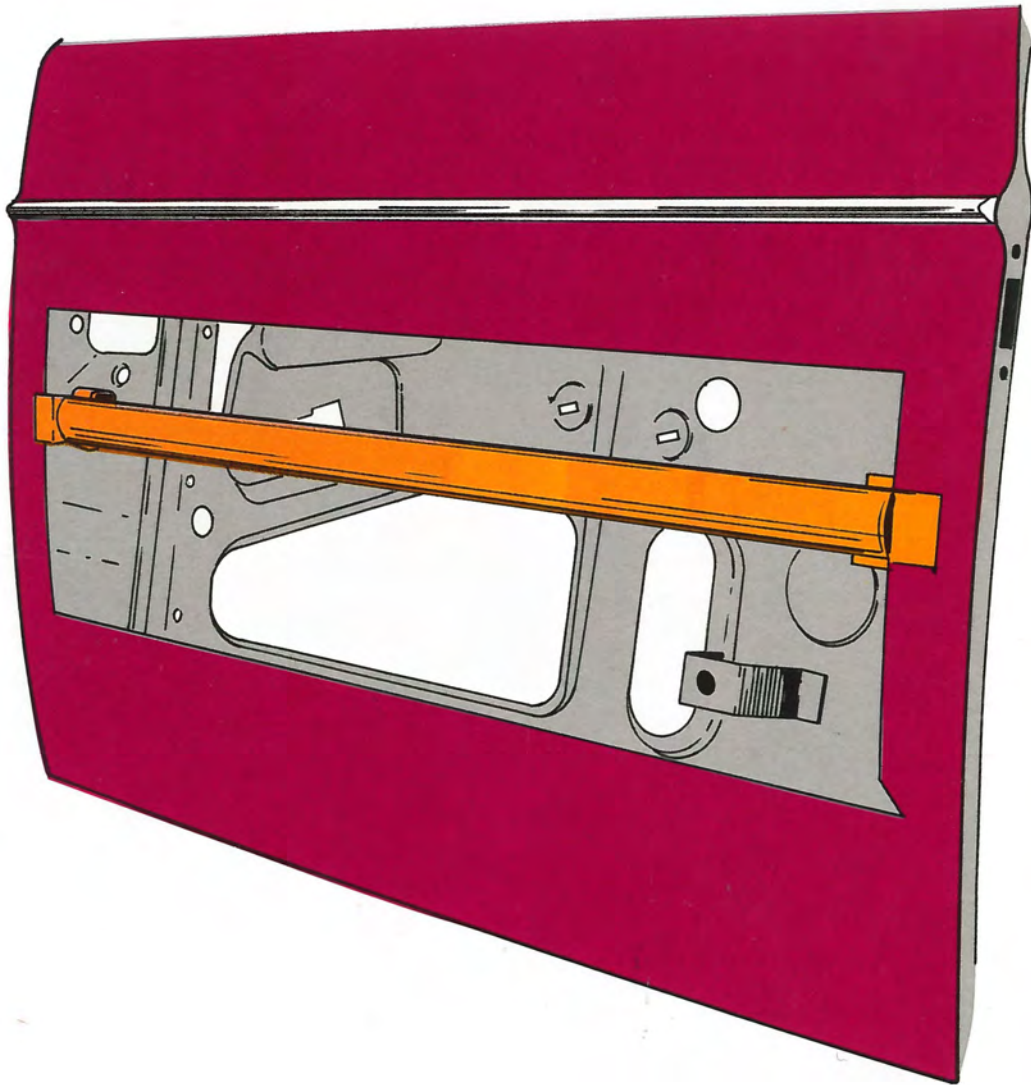
The body is reinforced by box-shaped pillars that combine exceptional strength with a narrow profile. The exceptional strength has been demonstrated by stacking six Volvos on top of each other. The narrow profile permits maximum glass area to increase the driver's field of vision and enhance safety.

### *Sheet metal thickness*

Volvo sheet metal is a little thicker than the sheet metal used on many other cars. The extra thickness, just 0.1 mm, may not sound like much, but it provides 40% greater resistance to buckling.

### *Energy- absorbing sections*

Volvo front and rear sections are designed to absorb the energy of a collision at a controlled rate. This energy absorption reduces the amount of collision force transferred to the passenger compartment. This system is so effective that Volvos have withstood barrier collisions up to 50 mph without serious deformation of the passenger compartment.



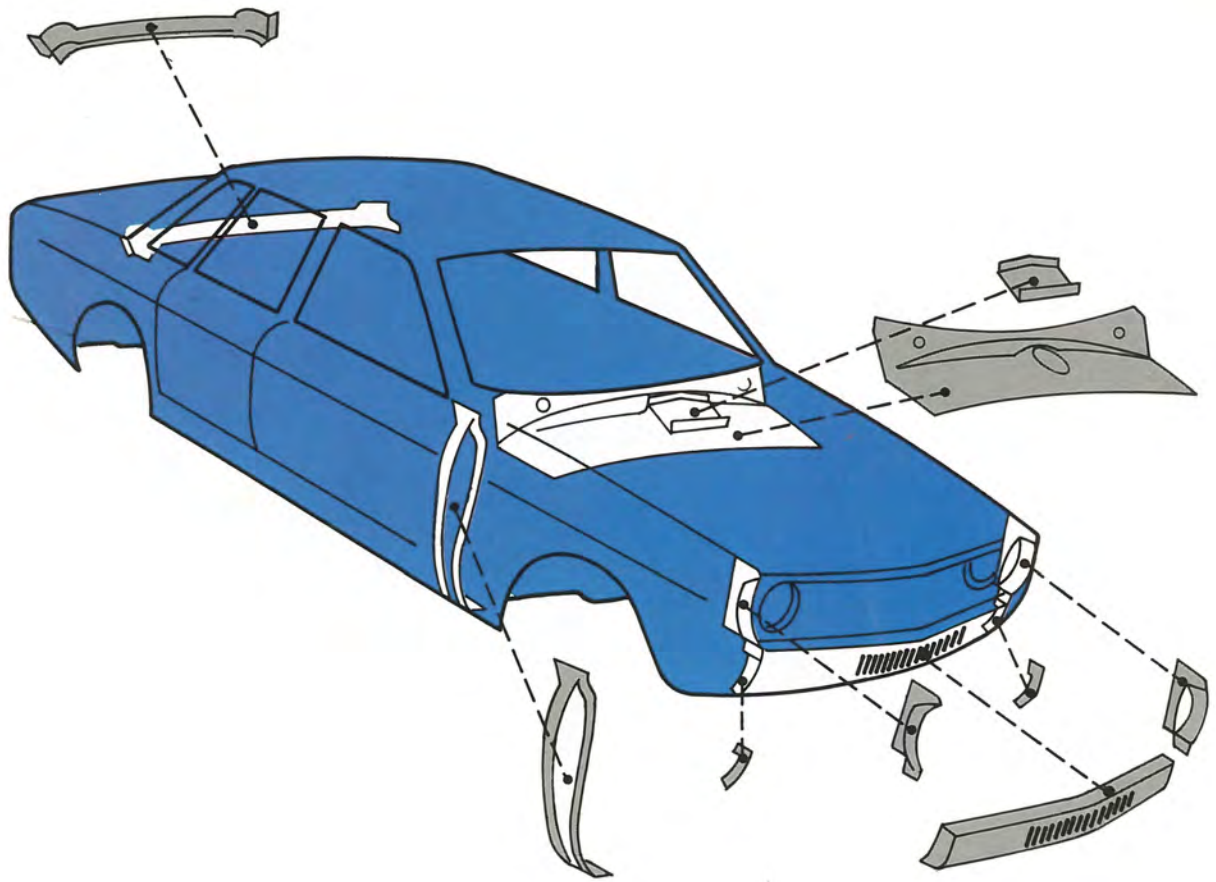
## PROTECTIVE SIDE MEMBERS

*Extra side  
protection*

Front and rear end collisions are probably the most dramatic, but collisions from the side can often be the most dangerous. The driver or his passenger are just inches away from the impact when struck on the side and require extra protection.

*Side  
member  
in doors*

To offer this protection, all Volvos are equipped with side members in all doors. The side member runs from pillar to pillar so that it is fully braced and designed to withstand reasonable impact without yielding.



## GALVANIZING

*Highly  
exposed  
body parts*

The entire Volvo body receives several coats of finish. This deep finish not only provides the body with a brilliant luster but also protects it from the elements. However, certain parts of the body are more frequently exposed to moisture than others. And these highly exposed parts require extra protection.

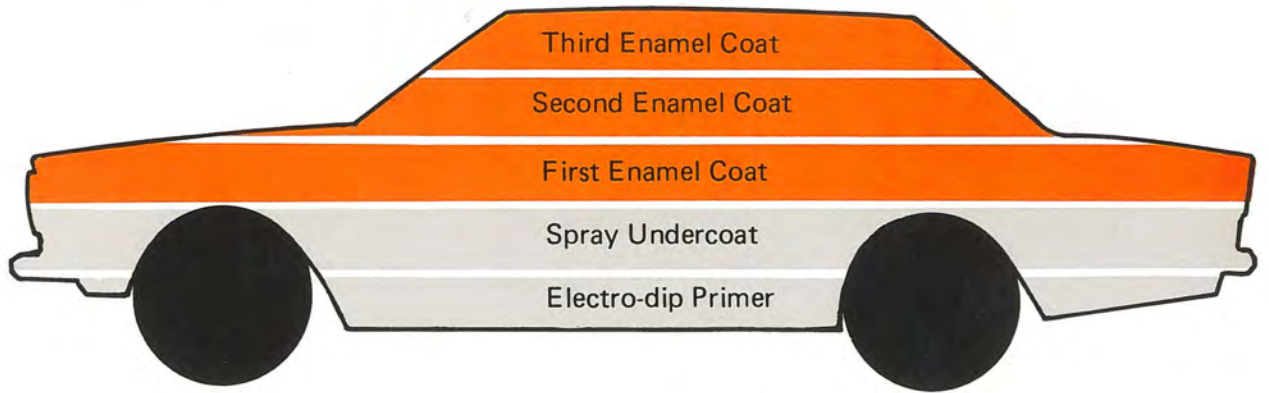
*Zinc coating  
resists  
corrosion*

So certain body parts are galvanized. Galvanizing adds a coating of zinc to the sheet metal before the rust-proofing is applied. Zinc is highly resistant to corrosion and has another unique property. It tends to be self-healing. Small nicks and scratches that penetrate the finish to the zinc may heal themselves as the surrounding zinc closes in on the scratch.

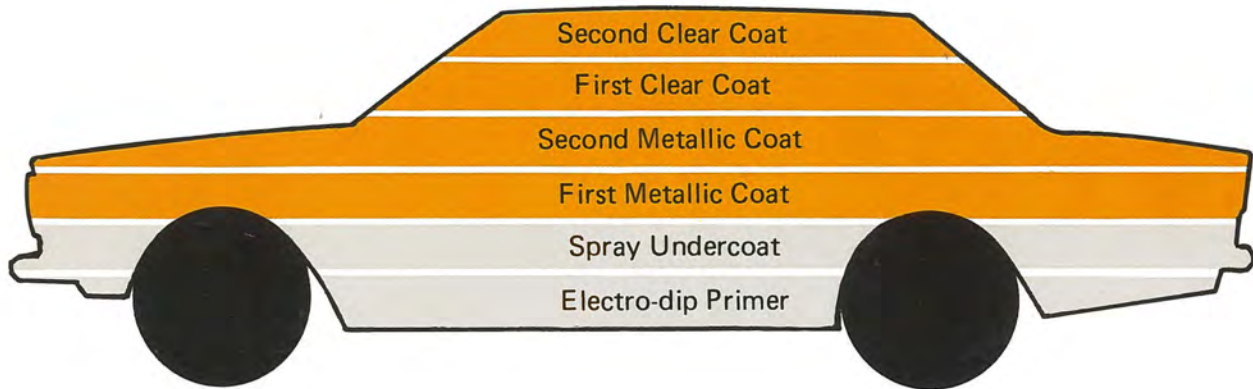
*Extra  
protection*

Galvanizing gives the Volvo body extra protection where extra protection is needed. This extra protection retards rust formation and extends body life.

ENAMEL FINISH



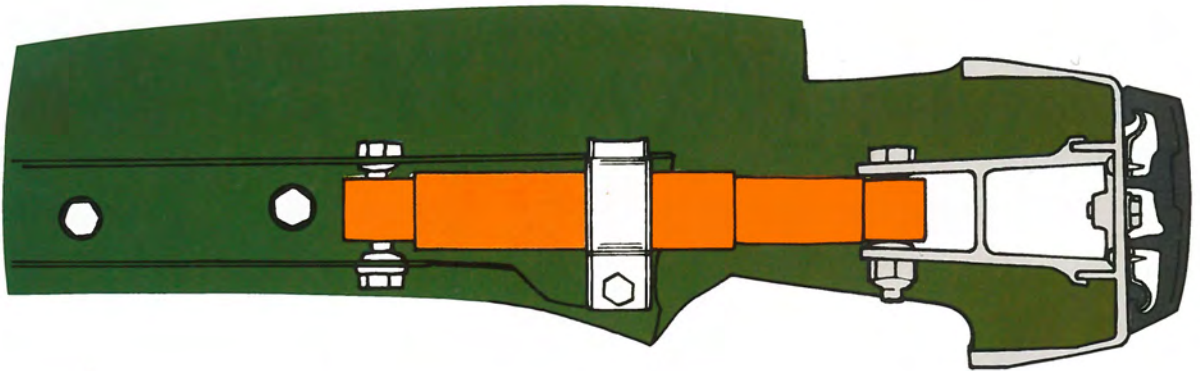
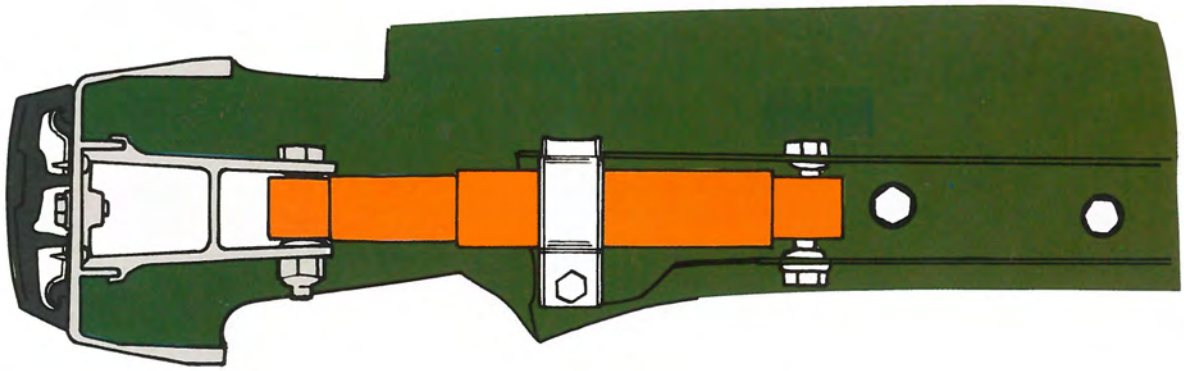
METALLIC FINISH





## PROTECTIVE FINISH

<i>Multi-coat finish</i>	Since Volvos are designed to last a long time and age gracefully, the protective finish is applied slowly, carefully, and abundantly. Volvos receive several coats of protective finish to resist the ravages of snow, sleet, mud, stones, and salt.
<i>Phosphating</i>	The finishing process begins with phosphating to remove dust and any particles picked up on the sheet metal during body assembly.
<i>Electro-dip primer</i>	Next, the car is dipped in a primer bath. Dipping permits the primer to cover the entire body, including the smallest internal cavities. To assure a thick coating of primer and tight, uniform bonding to sheet metal, the primer is applied electrically at 250 volts. The electro-dip process is completed by baking in an oven, followed by sanding and rigorous inspection.
<i>Spray undercoat</i>	Following the electro-dip, a spray undercoating is applied. This undercoating is rubbed, washed, and thoroughly inspected.
<i>Finish coats</i>	Finally, three enamel finish coats give the Volvo its deep and durable finish ready to resist corrosion and scratching while retaining its brilliant luster.
<i>Metallic finishes</i>	Volvos with metallic finishes receive a slightly different treatment. After the electro-dip primer and spray undercoating have been applied, the body receives two finish coats of metallic paint. These are followed by two clear finish coats that seal in the metallic paint, provide extra body protection, and bring out the full brilliance of the metallic paints below.
<i>Double undercoating</i>	For further protection against the elements, the underside of a Volvo is coated with two highly efficient protective compounds that are familiarly known as gook and glop.
<i>Durability</i>	It takes many hours to apply the finish on a Volvo. But these hours should protect your investment in your Volvo.



## BUMPERS

### *Purpose of bumper*

Volvo has always held some rather old-fashioned ideas about bumpers. They should withstand bumps, protect the grille and sheet metal, and emerge unscarred. To perpetuate this idea, Volvo bumpers are designed of a thick zirconium alloy that is highly resistant to corrosion.

### *Bumper protection*

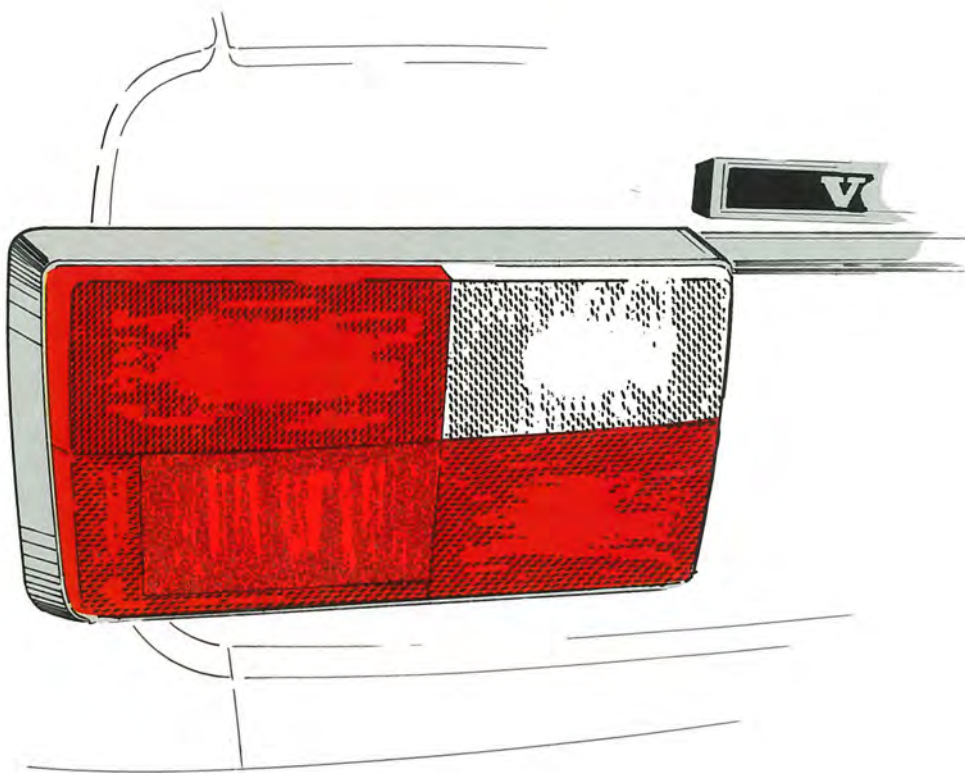
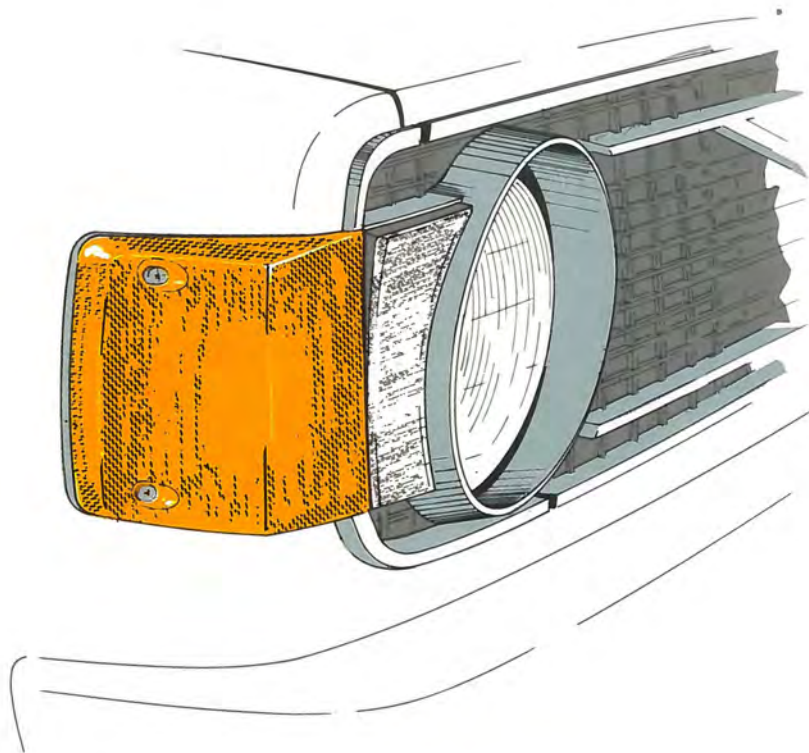
A rubber insert spans the entire length of the bumper to protect it from nicks and scratches. Hydraulic impact absorbers are designed to let the bumpers take collisions up to 5 miles per hour when driven straight into a wall in front or rear. Low speed parking lot bumps should no longer damage your car's body or your own wallet.

### *Gel-filled absorbers*

The impact absorber design is unique. A gel within the absorber liquefies upon impact so that collision energy is absorbed hydraulically.

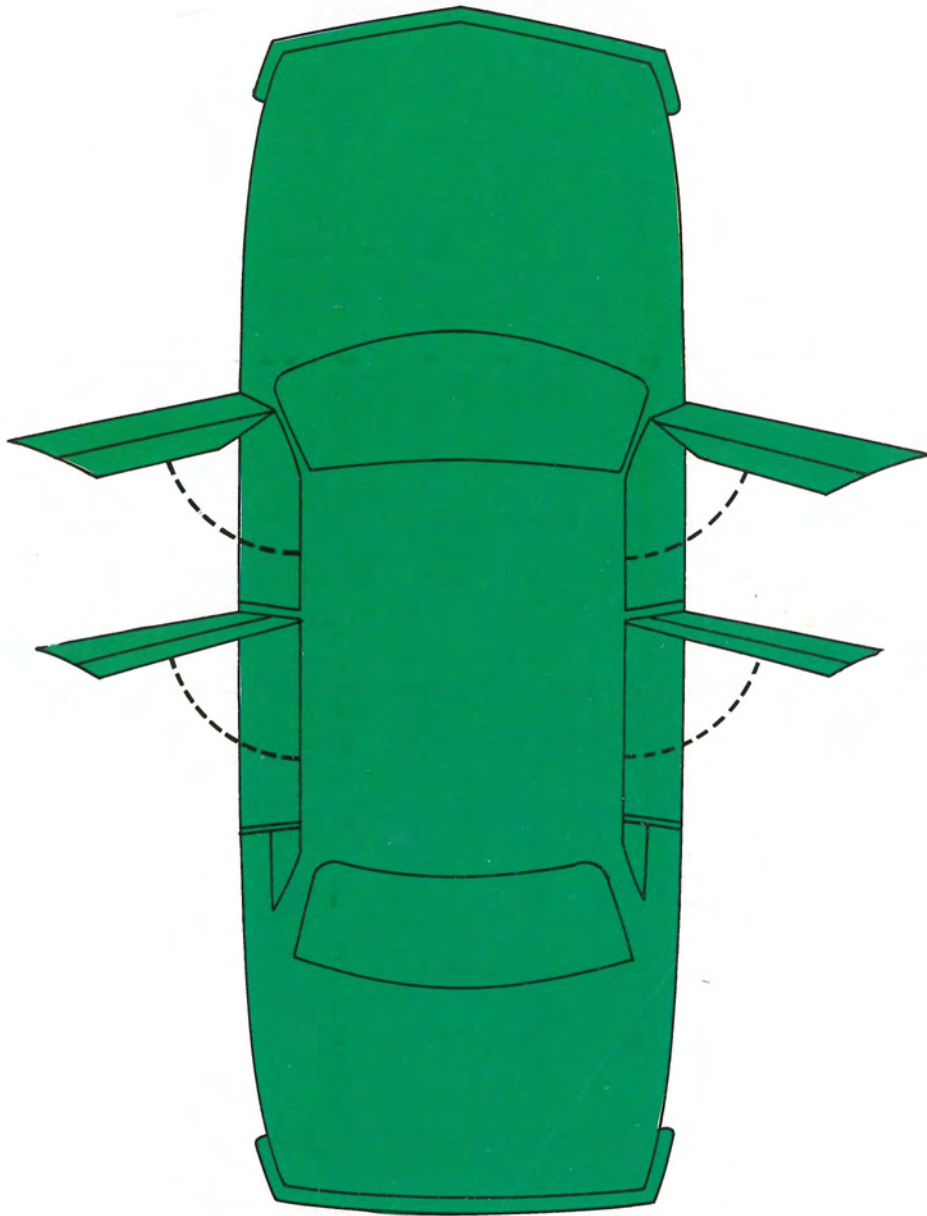
### *Insurance savings*

The effectiveness of the Volvo bumper system is such that 1974 Volvos qualify for the 20% bumper discount offered by a major United States insurance company.



## LIGHTING AND LIGHT INTEGRITY SENSOR

<i>Improved visibility</i>	Volvo lighting is designed to let the driver see more of what is around him and to let what is around him see more of the Volvo.
<i>Front lights</i>	In front, 140 Series headlights are flanked by turn indicators and parking lights with a wraparound design for improved visibility from the side. The 164E has turn signals and parking lights mounted on the bumper.
<i>Sedan taillights</i>	In the rear, large taillight assemblies incorporate four separate lights, readily visible with separate functions that are easily identified.
<i>Directional</i>	The upper section, towards the outside of the car, is the directional signal.
<i>Backup</i>	The upper section, towards the inside of the car, is the backup light.
<i>Taillight</i>	The lower section at the outside of the car is the taillight and rear reflector.
<i>Brake light</i>	The lower section at the inside of the car is the brake light.
<i>145 taillights</i>	The 145 taillights have the same functions as the sedans but are arranged in a vertical configuration.
<i>Lighting control lever</i>	Volvo's turn signals are controlled by a convenient lever located on the left-hand side of the steering column. Besides the conventional full on and full off positions, it also features intermediate positions for lane changing. In the intermediate positions, the directional lights are turned off as soon as the driver releases his finger from the lever.
<i>High beams</i>	By flicking the lever towards him the driver can switch from low beams to high. Flick it again and he is back to low.
<i>Light integrity sensor</i>	Like all light bulbs, those on a Volvo eventually burn out. To let you know when it happens, a dashboard warning lamp, called the light integrity sensor, will glow if any parking light, brake light, or low beam fails. To let you know that the bulb in the light integrity sensor is working, it will glow momentarily whenever you turn on the ignition.



## DOOR OPENING ANGLE

*Open to 80°*

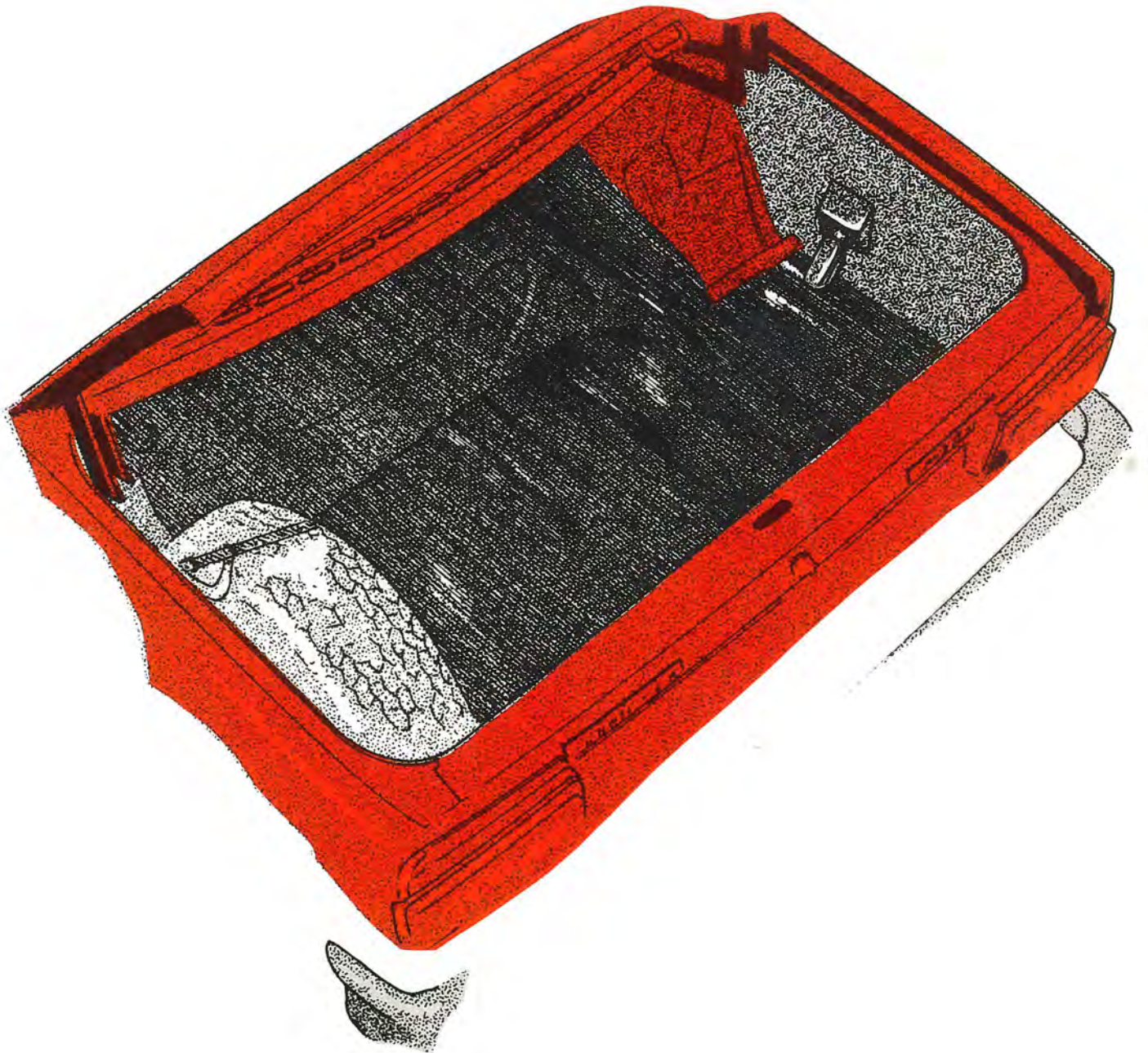
Volvo combines some of the newest and best ideas in automotive technology with some of the oldest and best ideas that have withstood the test of time. One of these is the idea that a car should be easy to get in and out of. To make sure it is easy, Volvo doors are designed to open wide — to an angle of approximately 80 degrees.

*Intermediate  
stop*

In a concession to the modern world, and the all too familiar crowded parking lot, the Volvo door has an intermediate stop. This stop lets the door remain half-way open for ease of entry and exit even when space is too limited for the door to open all the way.

*Ease of  
entry*

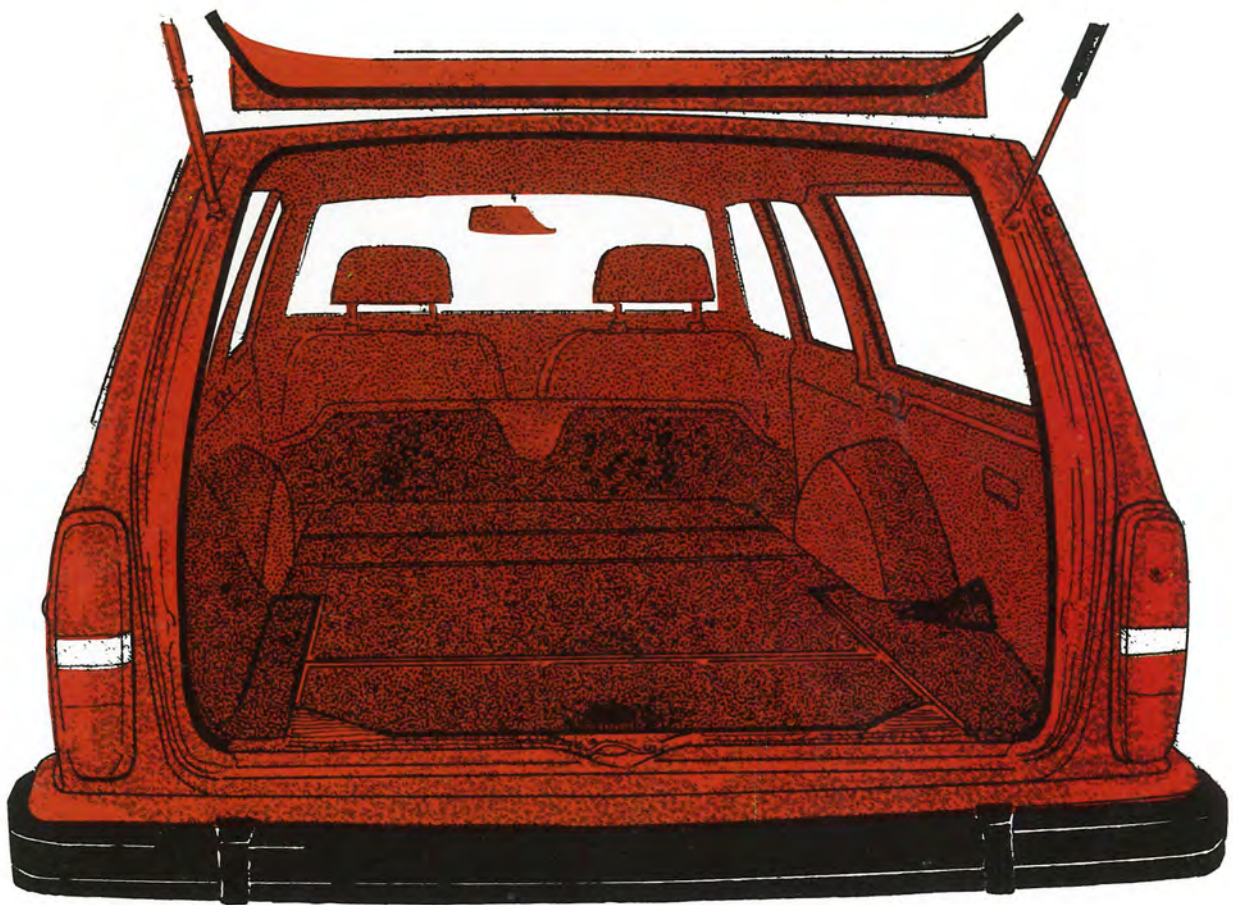
Half-way open or all the way open, it's easy to get in or out of a Volvo. Wide doors, high seats, and a small diameter steering wheel eliminate the contortions required to enter and exit so many other cars.





## TRUNK

<i>Shape</i>	The Volvo has nearly everything you want in a trunk. Lots of usable space within easy reach. Volvo engineers have designed a clever shape to provide maximum usable space and easy access. They simply shaped it like a box. A big box.
<i>Size</i>	Volvo's 21.5 cubic foot trunk is bigger than most other cars on the road, including some of the biggest luxury cars. It's a deep trunk with a high lip to enhance the body's structural strength. Luggage can be stored vertically so that the one suitcase you want can be removed without first moving all the others.
<i>Spare tire accessibility</i>	When you need a spare tire, you probably have enough aggravation already. A car full of kids clamoring to reach the cottage, a hot day, a crowded highway, and a trunkful of luggage. To give you some relief, the spare tire in Volvo sedans is stored vertically at the side. It can be lifted straight out without disturbing your luggage. A tool kit holds the tools you need for the job. Except the tranquilizers.
<i>Concealed storage</i>	Beneath the floor mat you will find a small concealed storage area to keep valuables out of sight. Or, if you prefer, a specially designed Volvo optional spare gasoline can, contoured to the shape of the compartment, can be neatly and conveniently stored away.
<i>Illumination</i>	With the parking lights on, the trunk area is illuminated. No fumbling in the dark or crying over a flashlight gone dead.



## 145 CARGO AREA

*Sedan  
comfort;  
wagon  
versatility*

The Volvo 145 station wagon offers all the benefits of the 142 and 144 sedans plus unusual cargo carrying capacity. The 145 owner enjoys the comfort and driving qualities of the 140 sedans plus the versatility of a large wagon.

*Up to 67  
cubic feet  
of space*

With the rear seat up, the cargo area has a capacity of 54 cubic feet. With the rear seat folded down, this capacity is increased to 67 cubic feet. The floor area, over 6 feet long and 4 feet wide, offers plenty of space for carrying large and bulky items.

*Easy access*

For easy access to the cargo area, the rear door is raised with the assistance of a gas cylinder lift mechanism.

*Spare tire  
location*

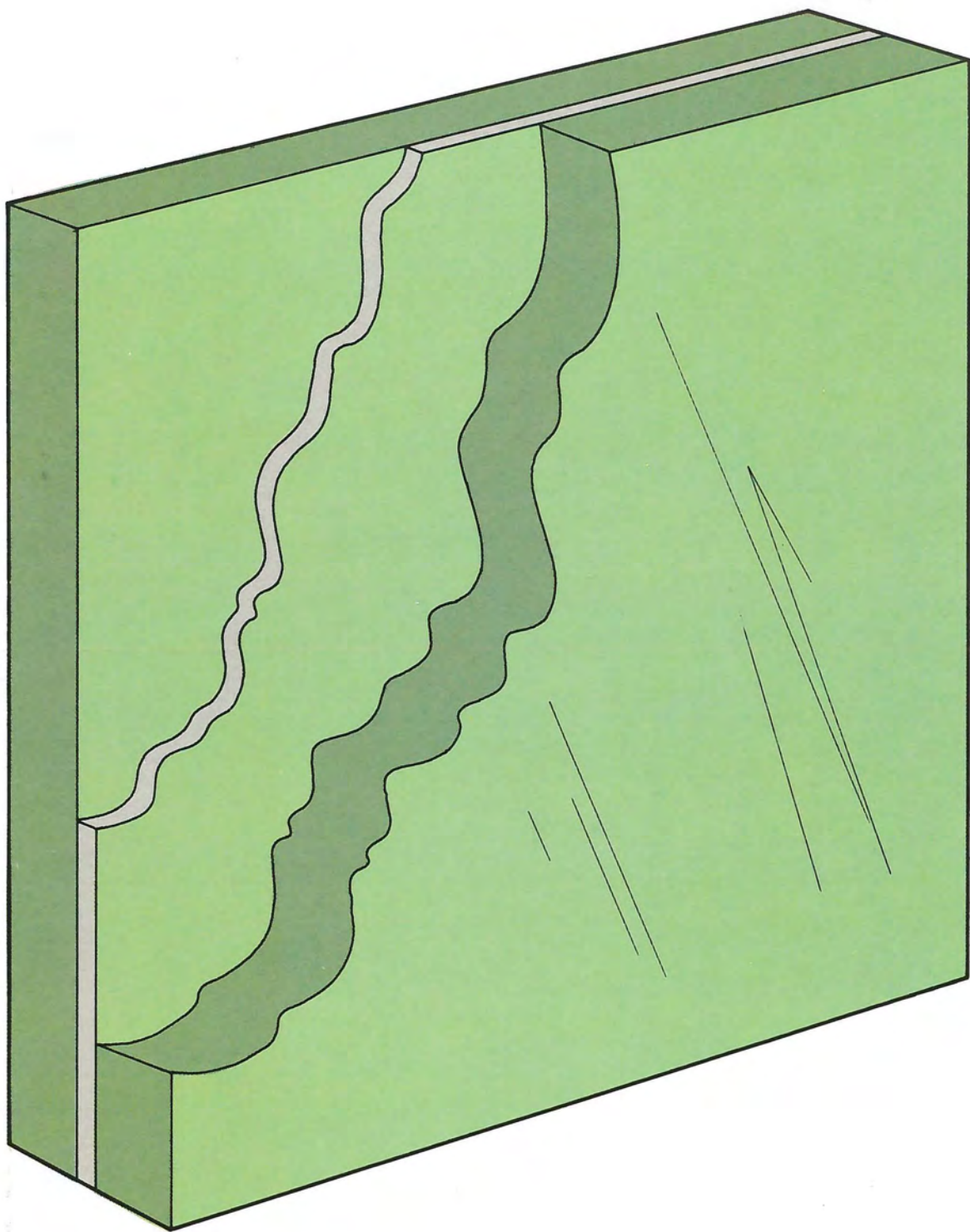
To keep the spare tire out of sight but easily accessible when needed, it is stored vertically at the side of the cargo area behind a cover.

*Concealed  
storage*

Beneath the floor there is a concealed storage compartment — perfect for storing a coat, books, briefcase or other valuables.

*Carpeted  
storage  
area*

And the entire floor area is carpeted. The carpeting is not only attractive and easy to clean, but also functional since it prevents cargo from sliding about. Volvo tries to think of everything.



## WINDSHIELD

### *Laminated construction*

Since 1944, all Volvo windshields have featured a laminated construction. Today, the Volvo windshield consists of a layer of vinyl sandwiched between two layers of glass. The tough vinyl film sharply reduces the possibility of a crack or break on one side of the windshield being transmitted all the way through.

### *Resist damage*

The design is highly resistant to impact damage so that the driver and his passengers should be in less danger from broken glass caused by flying stones or other objects. The three part laminated construction lets the windshield flex a little, so that it can absorb modest impact without damage. For added safety, all glass used in a Volvo is laminated.

### *Windshield flexibility*

Volvo windshields have unusual flexibility that offers the driver and his front seat passenger added protection in a collision. Volvo has tested the safety effect of this flexibility in windshield impacts during panic stops from speeds as high as 35 miles per hour. In these tests, the windshield flexed sufficiently upon impact so that no serious injury would have occurred to an average passenger.

### *Standard tinted glass*

Volvo offers tinted glass as standard equipment, an optional feature on most other cars. Tinting filters certain rays that could cause temporarily blinding glare and, over a period of time, could fade upholstery fabric. Still another advantage of tinting is improved air conditioning efficiency, for increased comfort.

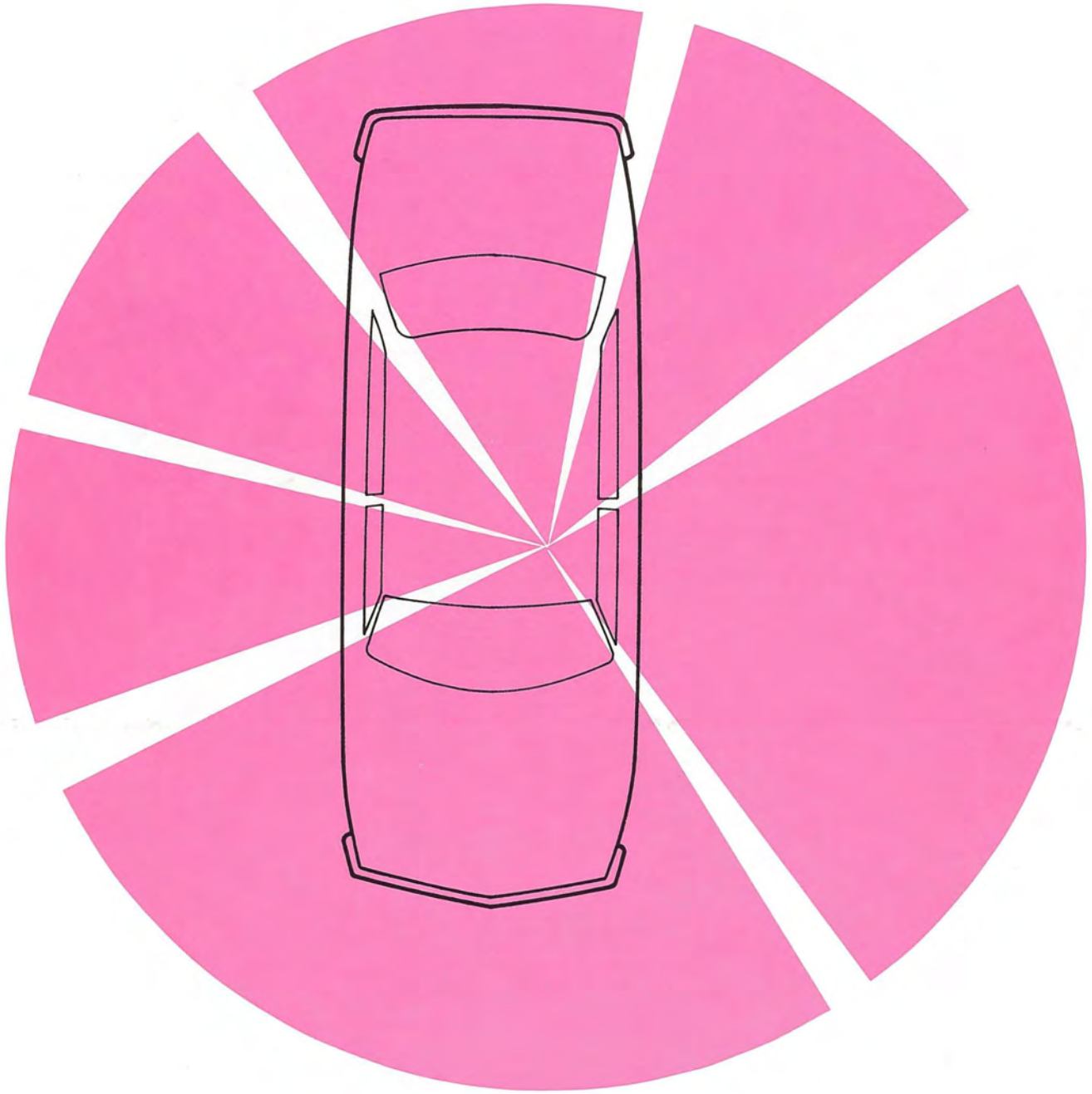
### *Hidden antenna*

The radio antenna is imbedded in the front windshield. This eliminates corrosion that could occur at the base of fender-mounted antennas and antenna damage from carelessness or vandalism.

SAFETY

COMFORT

DURABILITY



## ALL-AROUND VISIBILITY

### *Hardtops*

In the era of the hardtop, some manufacturers chose styling over visibility, adding glass where steel pillars should be and adding steel panels where glass should be. Styling was sporty, but structural strength was reduced, and the driver's field of vision was often obstructed.

### *Minimum steel areas*

Volvo has gone to unusual lengths to hold steel areas to a minimum so that glass areas can be at a maximum, but without sacrificing structural strength. Volvos are designed with narrow box-shaped pillars. The shape of the pillars gives them unusual strength — enough strength so that one Volvo sedan can support the weight of six others.

### *Large glass areas*

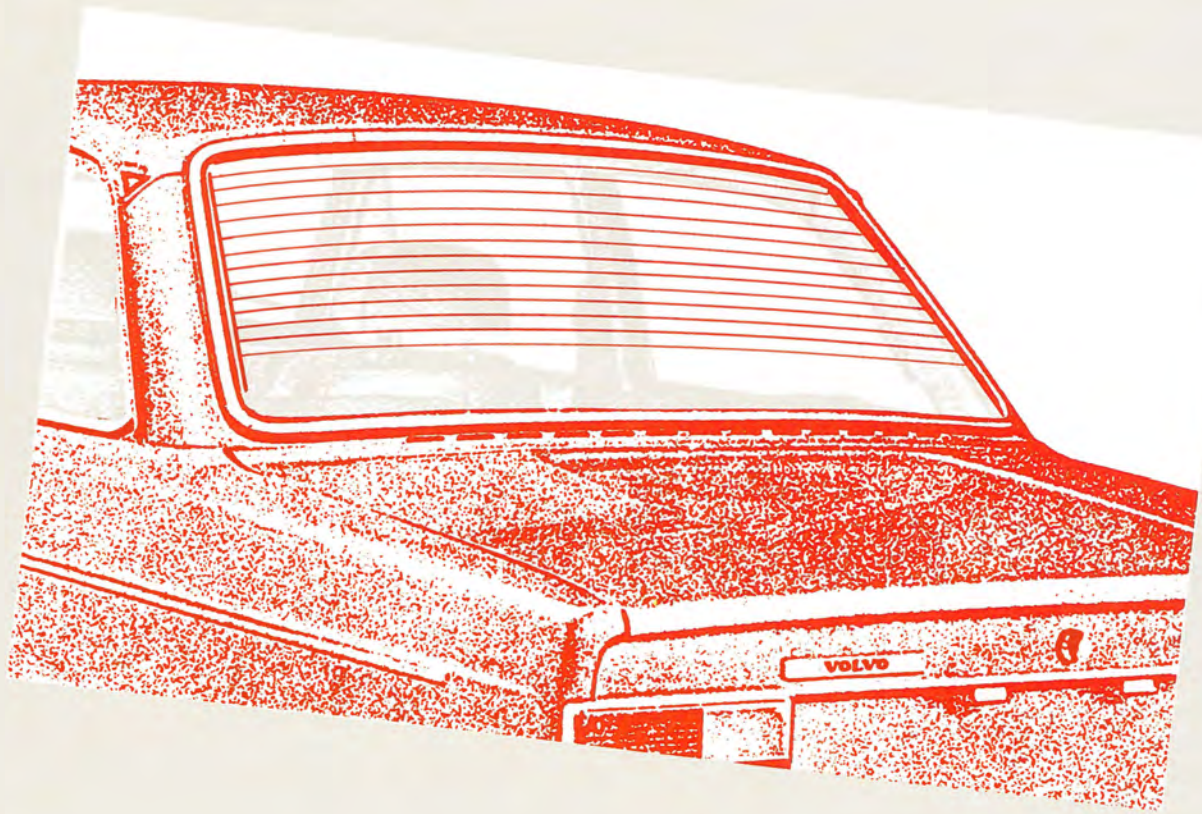
But the narrow pillar profile permits the use of large glass areas that let the driver see everything around him with a minimum of obstruction. And in today's driving conditions, all-around visibility is particularly important for safely entering busy roads, passing on crowded highways, or parking in a tight spot.

### *Wiper/washer*

The Volvo wiper/washer system is designed to keep the windshield clear in rain or snow. A new, enlarged, translucent plastic container in the engine compartment lets you easily check the level of washer fluid and, if necessary, fill it up quickly and conveniently.

### *Wiper operation*

The Volvo windshield wipers have a sweep area designed to ensure the driver an excellent view of the road around him, in fair weather or foul. Windshield wipers are cable driven from a motor housed within the engine compartment for quiet, reliable operation. Wipers and washers are activated by a lever on the right side of the steering column so that the driver can clear the windshield without taking his eyes off the road.





## REAR WINDOW DEFROSTER (STANDARD EQUIPMENT)

*Defrosting  
can be tough*

The Volvo owner wants comfort. One way Volvo provides him with comfort is by letting him avoid those discomforts associated with other cars. One such discomfort is leaving the car to clear the rear window in snow, sleet, or freezing rain.

*Defrosting  
can be simple*

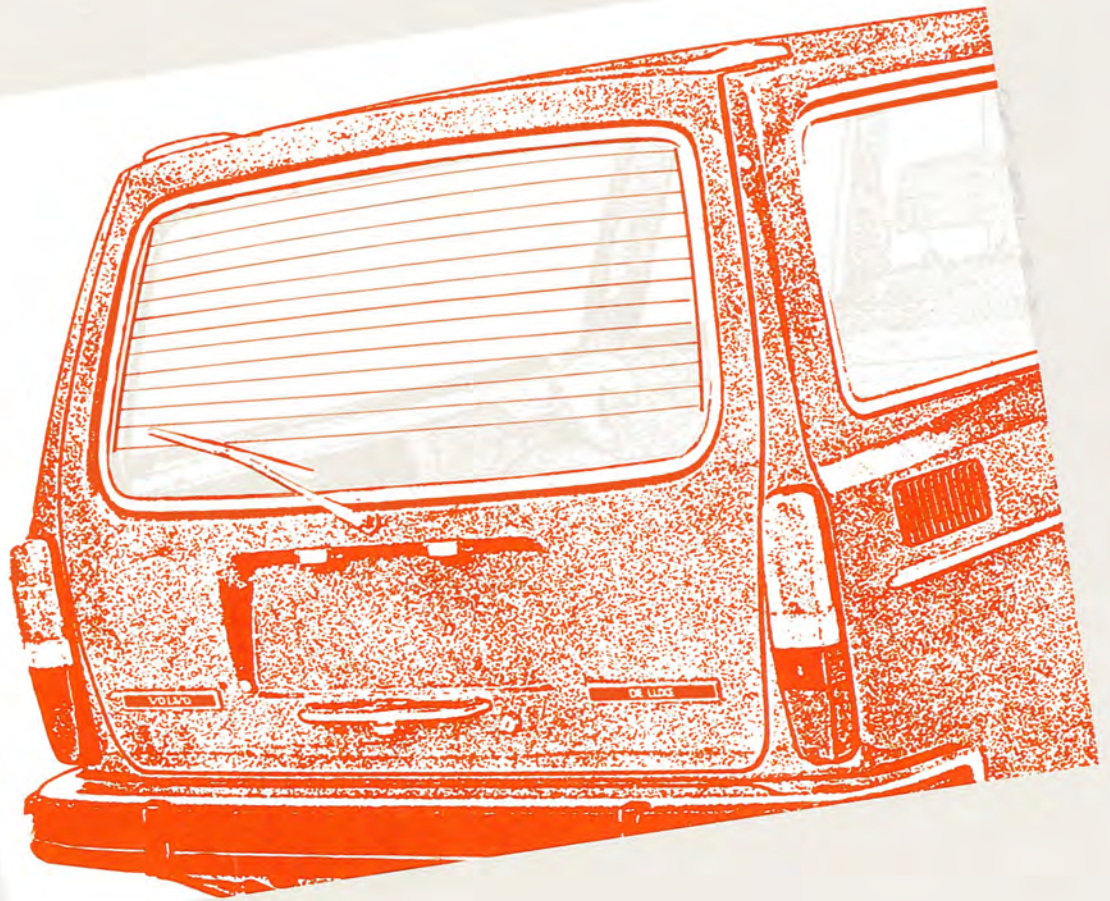
In most cars it is a tough, cold, miserable job. In a Volvo it is as easy as flicking a switch. Depress a rocker switch on the instrument console and 150 watts flow through a printed circuit silk-screened on the window surface to clear ice, snow, or mist, just as simply as that.

*Increased  
safety*

But comfort is not the only consideration. A clear rear window makes driving safer because the driver has excellent visibility all around, even in the worst weather conditions, when you need it most.

*Standard  
equipment*

On a Volvo, the rear window defroster is standard equipment. Volvo is not the only manufacturer to offer this feature. Many of the others do. Usually at additional cost.



## 145 REAR WINDOW WIPER/WASHER

*Rain tends  
to cling*

At first glance, it probably looks strange. But like a lot of things that look strange, it's highly practical. Station wagons have unusual aerodynamic properties. The flow pattern of air around the rear of the wagon can prevent the rear window from clearing itself of falling rain as rapidly as a sedan. Therefore, Volvos are equipped with a rear window wiper/washer, an unusual feature to meet an annoying condition.

*Switch on  
console*

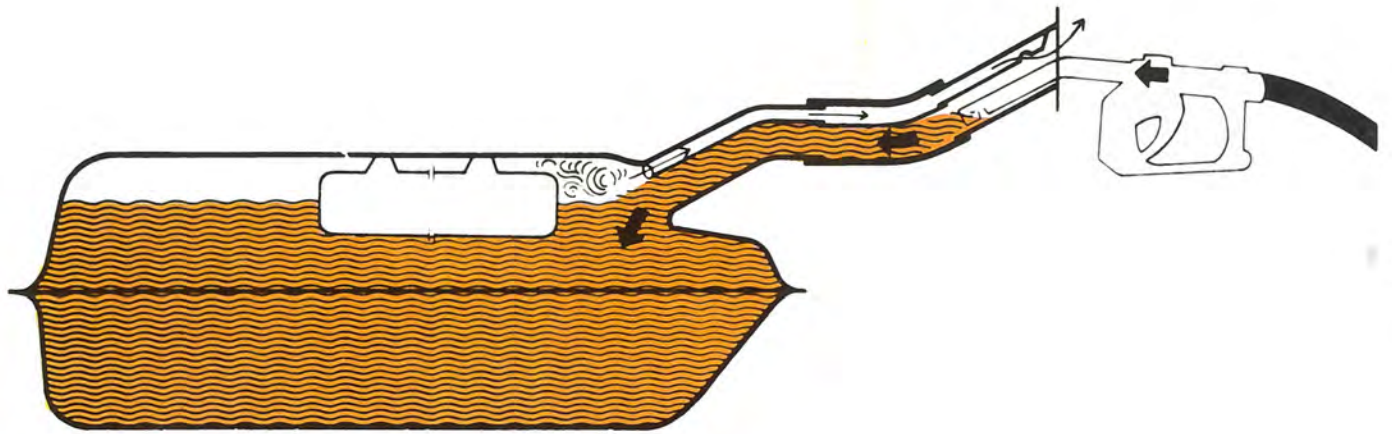
The wiper/washer is conveniently controlled by a switch located on the instrument console beneath the dashboard.

*Improved  
visibility*

Like the rear window on all Volvos, the 145 also has a standard equipment electric defroster. Both the wiper/washer and the defroster improve the driver's visibility in foul weather, when he needs it most.

SAFETY

COMFORT



## GASOLINE TANK

### *Volvo engineering*

Volvo engineers have a lot of clever ideas. Sound and practical, offering real advantages to Volvo owners, but often discouraging to Volvo salesmen. Because they are often impossible to see.

### *Expansion chamber*

Such as the expansion chamber for the fuel tank. A tank within a tank. With more than a gallon capacity, it can easily accommodate the expansion of a full gasoline supply on the hottest day. Without wasteful and dangerous spilling on the pavement.

### *Capacity*

The gasoline tank holds 15.8 gallons exclusive of the expansion tank. That's a lot of miles between refills at the stingy rate a Volvo engine uses gasoline.

### *Hidden filler pipe*

Refills are less of a problem with the concealed filler pipe and gasoline cap. The new filler pipe is ventilated for rapid filling. Its concealed location beneath a fender flap minimizes the possibility of sloppy fender stains caused by the occasional sloppy service station attendant.



INTERIOR



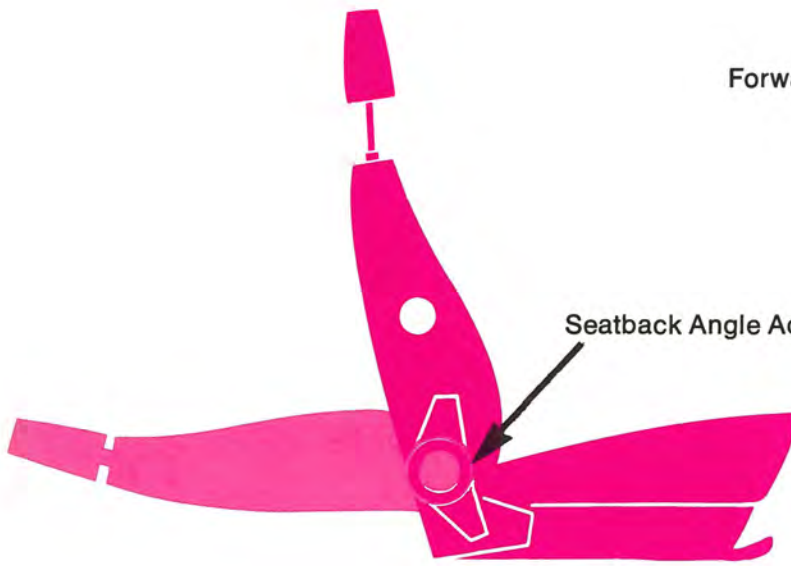


## SEAT CONSTRUCTION

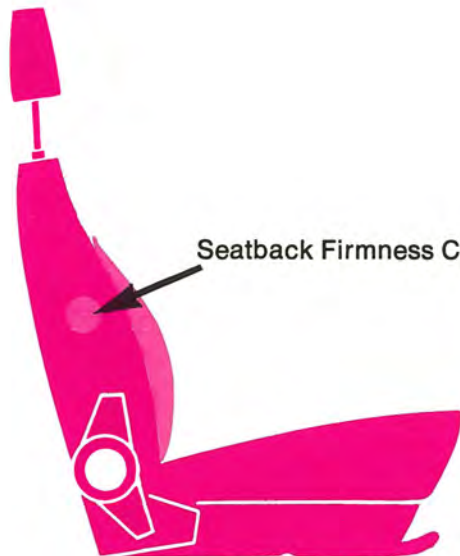
<i>Orthopedic design</i>	At Volvo, seat design is considered too important a job to be left exclusively to engineers. So we got some help from orthopedic physicians. They show little concern for cost control but they know a lot about the human body and how to make it comfortable.
<i>Pullmaflox</i>	Volvo's seat begins with a mat of flexible, but strong, steel wires called Pullmaflox attached to a steel frame. The flexibility lets you adjust the tension in the wires to suit your preference for a firm or soft seatback. The strength assures you that the seats will retain their shape for many miles of comfortable driving.
<i>Polyurethane foam</i>	Above the Pullmaflox there is a bed of three different densities of polyurethane foam. The varying densities are selected to meet the needs of different parts of the body. The foam is raised at the sides to support the hips, and raised in front to support the thighs. The various densities and contours of these foams shape the seat to meet the shape of your body.
<i>142, 144 fabric</i>	Upholstery fabrics are selected to meet the needs of each model. The 142 and 144 have a cloth fabric. Attractive and durable, it is easy to clean and resistant to sharp temperature changes. You can sit comfortably in summer or winter, even after the car has been parked for hours. The cloth, like all Volvo upholstery fabrics, is specially treated to be fire retardant.
<i>145 vinyl</i>	The 145 has a vinyl fabric that offers extra resistance to the unusual abuse that seems to be the fate of so many station wagons. As the workhorse in the Volvo line, the 145 interior requires an unusually rugged and easily cleaned upholstery fabric that can emerge unblemished from the ravages of oil, grease, mud, and kids.
<i>164E, 140 GL leather</i>	All 164E seats and 140 GL bucket seats have leather seating surfaces for a look of luxury that grows old gracefully — like a Volvo should.
<i>Heated driver's seat</i>	To give the driver extra comfort in winter, the 164E and 140 GL's have an electrically heated driver's seat. At temperatures below 57°, thermostatically controlled heating elements warm quickly and automatically to raise seat temperature to 79°. The driver is seated comfortably even before the quick and powerful Volvo heating system has warmed the passenger compartment.
<i>Head restraints</i>	Adjustable head restraints let front seat passengers relax while reducing the possibility of serious injury in a rear end collision.



Forward Travel Adjustment



Seatback Angle Adjustment



Seatback Firmness Control

## FRONT SEAT ADJUSTMENTS

<i>Wide range</i>	Short or tall, slim or stout, with military posture or a casual slouch, Volvo seats should please them all. A wide range of adjustments lets you pick the seating position you find most comfortable, not just the one position an engineer considered best for everybody.
<i>Forward travel</i>	The forward travel adjustment permits front seats to be moved backward or forward so that both the short and the tall can adjust the seat to the precise amount of leg room that they prefer.
<i>More forward travel</i>	And, for the extra tall, simply loosening and resetting a few bolts moves the seat rails back to provide even more leg room.
<i>Seatback angle</i>	The seatback angle is adjusted by turning a convenient knob. This lets you tilt the seatback to the angle you find most comfortable — bolt upright, fully reclined, or some place in between.
<i>Seatback release</i>	Two-door models have a convenient seatback release for ease of entrance and exit of rear seat passengers. Releases located on the outside of the seats can be operated by the passenger. When released, a helper spring moves the seatback slightly forward. From there it can be moved forward with an elbow, a shoulder, or whatever.
<i>Inboard seatback release</i>	As an extra, releases are also located on the inside of the seats so that they can be operated by the driver. If you've ever tried to tell a 10-year old how to release the seatback, you will appreciate how convenient this little feature can be.
<i>Firmness control</i>	Seatback firmness can be adjusted with the "Firm/Soft" control knob. Turning this knob adjusts tension in the wires supporting the seatback.
<i>Headrest adjustment</i>	Headrests can be adjusted to the height that offers the best protection for the driver or his passenger. The relatively narrow design provides protection with minimum obstruction of the driver's rearward vision. With the headrests removed, seatbacks can be fully reclined to let you take time out for a relaxing and refreshing nap on long trips.



## LEG ROOM FRONT AND REAR

### *Front seat*

Many cars offer ample front seat legroom and Volvo is no exception. Over 40 inches of legroom in front, with lots of fore and aft seat travel, provide comfortable seating for all.

### *Rear seat*

To provide ample legroom in front, many cars steal it from the rear. But Volvo engineers have a different idea. They think rear seat passengers may be just as tall as front seat passengers. And they deserve to be just as comfortable. So they provide them with an extraordinary amount of legroom. For a little extra comfort, the rear seat has a standard equipment folding center armrest.



## SAFETY BELTS AND IGNITION INTERLOCK

### *Volvo pioneer*

Today, all cars are equipped with 3-point safety belts in the front seat. Because they are effective. And the law demands them. At Volvo, they were standard equipment long before the law demanded them. Because safety demanded them.

### *Three point advantages*

Without a safety belt, the driver could be thrown violently forward in a collision. With a lap belt, his upper body could be thrown forward. With a three-point belt, he is restrained from a collision with the steering wheel, dashboard, or windshield.

### *Easy to use*

Volvo has made seat belts that are easy to use. One piece. Self-adjusting. With an inertia reel. Whatever that is.

### *Inertia reel*

The inertia reel stores the seat belt when not in use. Neatly and out of the way. To put it on, you take the clasp with one hand, draw it across your body, and secure the clasp in the anchorage. The inertia reel adjusts the belt to fit you. Automatically and conveniently.

### *Freedom of motion*

The reel also lets the belt move with you so that you can ride comfortably with normal freedom of motion. But if you are suddenly thrown forward in a panic stop or collision, the reel seizes the belt and holds you. Securely, safely. Away from the steering wheel, dashboard, and windshield.

### *Rear seat*

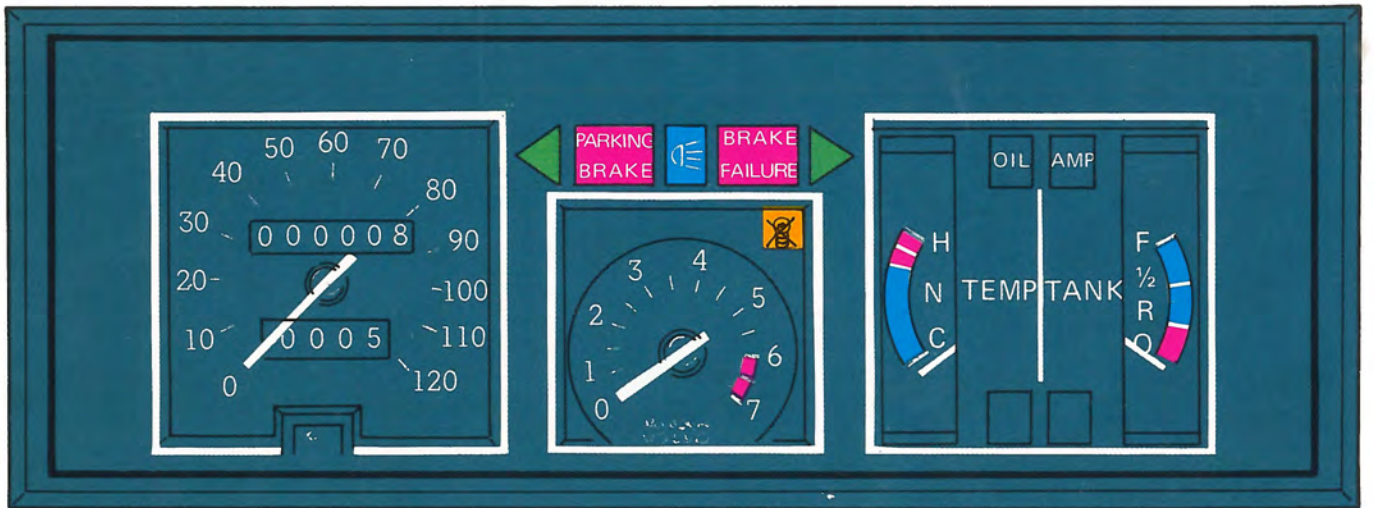
Volvos have three point safety belts as standard equipment for the two outside rear-seat passengers as well as the front seats. A lap belt is provided for the middle passenger in the rear seat.

### *Ignition interlock*

Front seat safety belts have an ignition interlock so that the engine cannot be started with either front seat occupied until the safety belts are fastened. If the safety belts are disengaged with the engine running and the transmission in a forward gear, a warning light will light and a warning buzzer will buzz. Just as a reminder.

### *Reduce injuries*

Volvo has analyzed thousands of accidents and found that safety belts sharply reduce the chances of serious injury at all speeds. That's why Volvo has featured them for years. And wants you to use them. And made it easy and comfortable for you to use them.





## DASHBOARD

### *Safety features*

Volvo dashboards are designed not only for easy reading and convenient controls but also for driver and passenger safety. The Volvo dashboard is heavily padded to cushion impact in a collision. Surfaces are non-reflective so that the possibility of distracting glare is sharply reduced. As further protection against glare, illumination can be controlled by a rheostat conveniently located on the instrument console. Critical controls are illuminated for quick identification, particularly in night driving.

### *Speedometer and odometer*

The large circular speedometer housing is easily read even at night. Within the speedometer housing there is an odometer with a range of 0 to 999,999 miles, — an expression of Volvo's confidence developed through years of experience. Beneath the odometer, there is a trip odometer which can be reset to 0 by depressing a button.

### *Tachometer*

To the right of the speedometer there is a provision for a tachometer so that the serious driver can be constantly informed of his engine speed for better performance and economy. The tachometer, standard equipment on the 164E and 140 GL, is optional on the 140 Series Volvos.

### *Brake warning lights*

Above the tachometer, two separate warning lights indicate that the parking brake is engaged or that one brake circuit has failed.

### *High beams; directionals*

Between these two warning lights you will find the blue high-beam indicator. On either side of the warning lights, you will find the directional signal indicators.

### *Temperature; fuel*

Temperature and fuel gauges are located to the right of the tachometer. The fuel gauge is highlighted by a red reserve area that calls a low fuel supply to the driver's attention.

### *Oil pressure; alternator; clock*

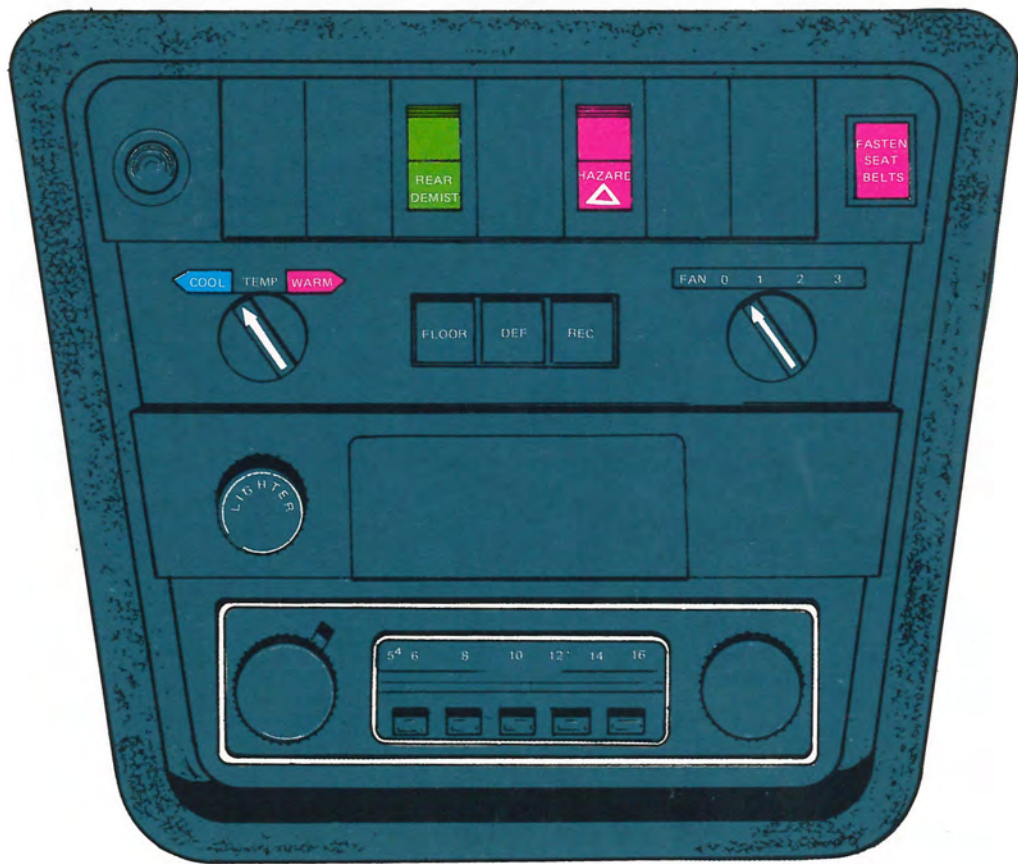
Between these two gauges there are warning lights for oil pressure and the alternator. To the right of the instrument cluster, you will find the standard equipment clock, an option on many other cars, even at higher prices.

### *Lockable glove compartment*

Finally, at the far right of the dashboard there is a lockable glove compartment, the perfect spot for storing your Owner's Manual, Warranty and Maintenance Record, and other valuables or documents.

### *Light integrity sensor*

The light integrity sensor will glow if any brake light, parking light, or low beam should fail. Just to let you know that the sensor lamp is functioning properly, it will glow momentarily whenever the ignition is turned on.



## INSTRUMENT CONSOLE

### *Convenient controls*

Conveniently located below the center of the dashboard, the instrument console houses many of the controls for your Volvo's comfort and safety systems.

### *Dashboard dimmer*

At the top left, a dimmer lets you set the dashboard illumination at the intensity you find safest and most comfortable.

### *Rocker switches*

To the right, there are several rocker switches. Two of these control the rear window defroster and four-way flasher. Another is the on/off switch for air conditioning on cars so equipped. On the 145, a fourth switch controls the rear window washer/wiper.

### *Safety belt warning*

To the right there is a safety belt warning light that will light up if your seat belt is not fastened.

### *Climate controls*

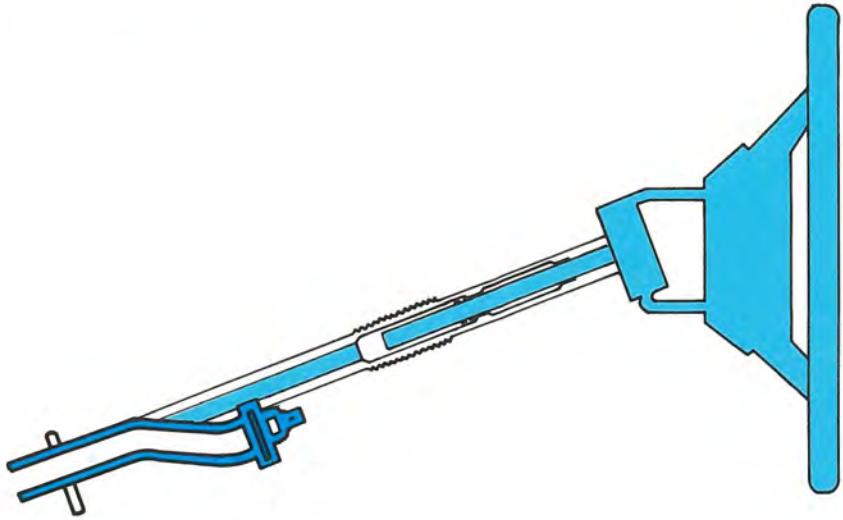
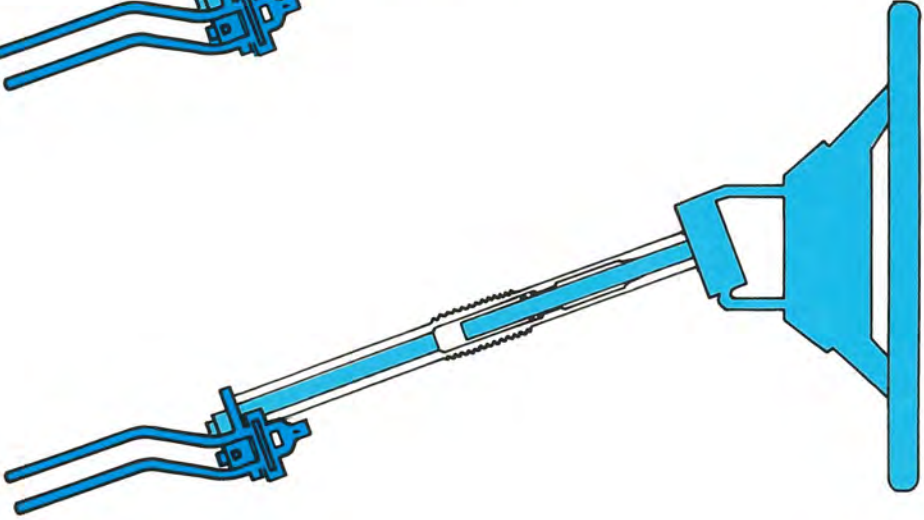
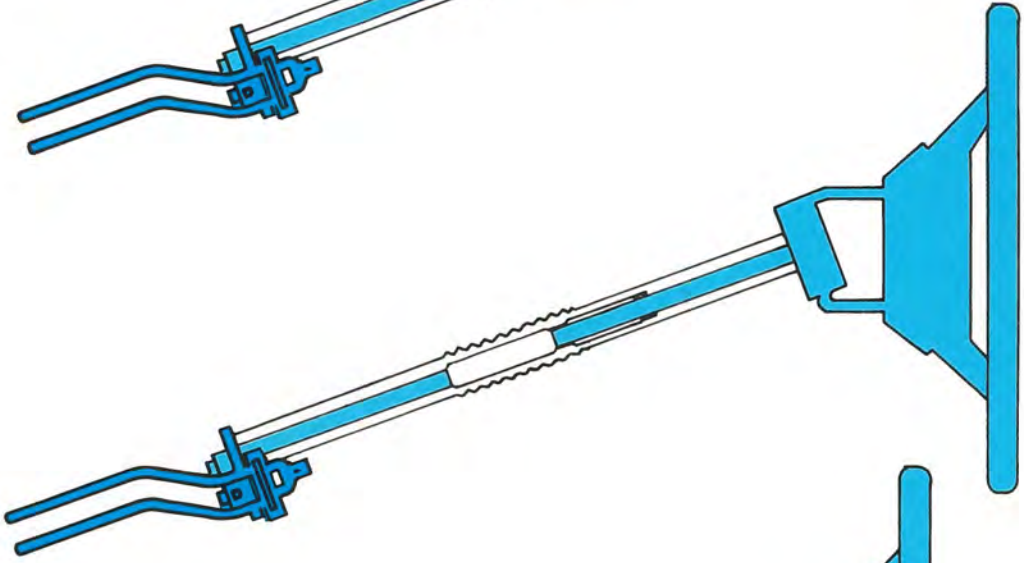
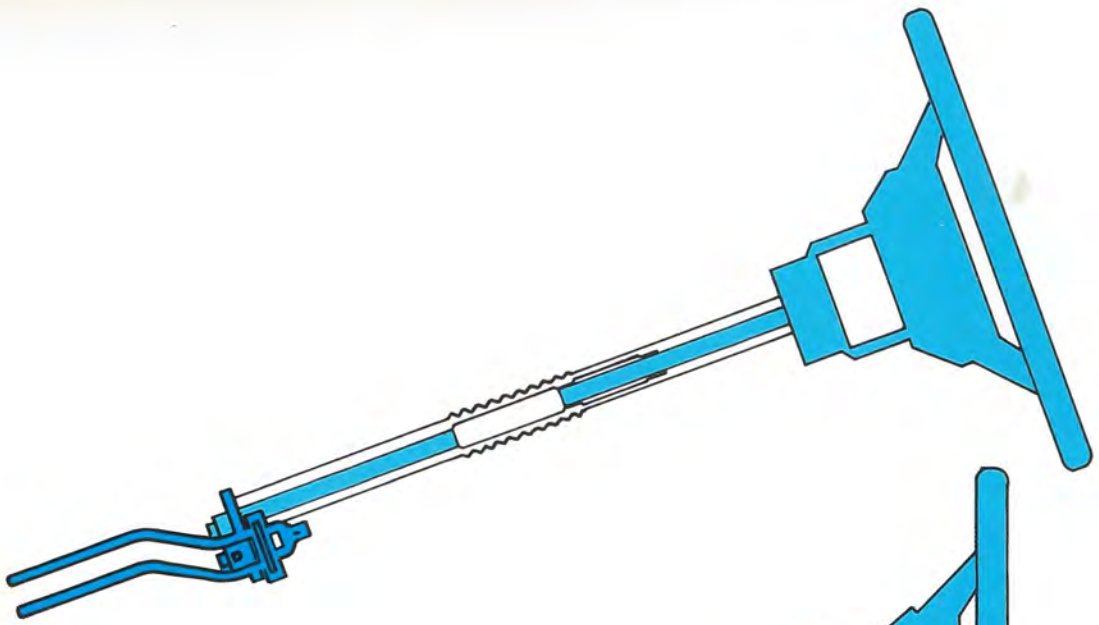
The next row of instruments begins with the temperature control that lets you select the temperature you find most comfortable. The next three push button switches let you distribute heat to the floor, to defrost the windshield, or to recirculate air in the passenger compartment. To the right of these three buttons, a three-speed fan control lets you select the flow of fresh air, whether warmed or cooled.

### *Lighter, ashtray*

A cigarette lighter is conveniently (and logically) located next to the ashtray. The console lamp illuminates the ashtray to remind the careless and to protect the carpet.

### *Radio*

At the bottom of the console space is provided for the radio of your choice — an AM radio, an AM/FM, or the AM/FM stereo. All of which are available as Volvo accessories. Any of which will enhance your driving pleasure.



## STEERING WHEEL AND COLUMN

### *Multi-stage protection*

Volvo steering columns offer several stages of protection to minimize the possibility of serious injury caused by impact between the driver and the steering wheel. Each stage provides protection from injury at increasing levels of severity.

### *Padded steering wheel*

In the first stage, the driver is protected by the large and heavily padded hub of the steering wheel itself.

### *Steering wheel deformation*

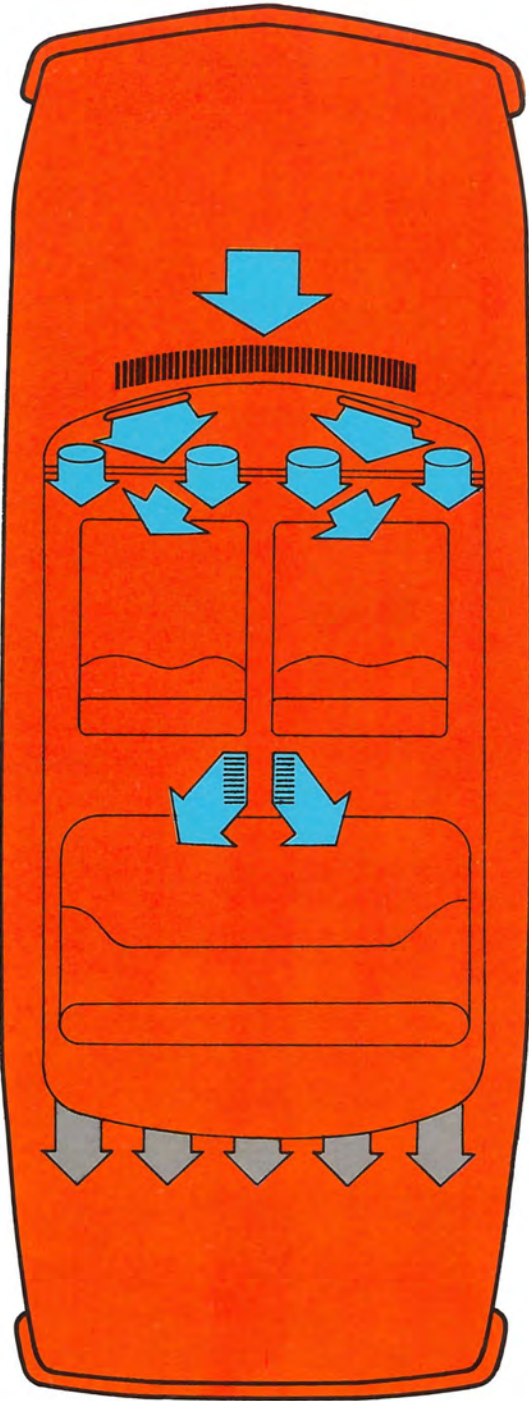
In the second stage, when impact is greater than the padding can absorb, the wheel itself is designed to deform slightly so that the possibility of serious injury is substantially reduced.

### *Collapse control*

If impact is even more severe, the upper section of the steering column will collapse. This permits the wheel to slide down and away from the driver while cushioning impact.

### *Shear pins*

In a front-end collision with severe body damage, the steering column wheel could be forced toward the driver. To prevent this, the upper and lower sections of the Volvo column are fastened with shear pins. The pins are released under heavy front end impact so that the lower section of the column slides harmlessly along the upper section without transmitting the collision shock to the steering wheel and the driver.



## HEATING AND VENTILATION

### *Thermostatic control*

In Sweden, where winters are long and cold, an efficient heating system is a must. So Volvo developed an advanced thermostatically controlled heating system capable of warming your car in minutes.

### *Delivery and distribution*

But this ability to provide a lot of heat just isn't enough. The system must also be able to deliver heat and fresh air rapidly and distribute it where you want it.

### *Three fan speed settings*

For rapid delivery, the Volvo "fan" actually consists of two fans with your choice of three speed settings. The use of two fans increases delivery capacity at relatively low fan speeds, eliminating unnecessary noise.

### *Ten outlets for directional control*

Besides providing a steady stream of heat and fresh air, Volvo makes sure that it is evenly distributed for maximum comfort for all passengers. This is accomplished through a system of 10 outlets in the passenger compartment. Two wide defroster outlets above the dashboard keep the windshield clear. Four outlets along the dashboard let the driver and the front seat passenger direct warm and fresh air as they like it. These outlets can be opened or closed and the direction of air flow can be varied as desired. Finally, two front seat floor outlets keep your legs warm and two rear seat floor outlets deliver extra heat to rear seat passengers.

### *Stale air exhausts*

The stale air exhaust at the base of the rear windshield (or the right rear panel of the 145) has a one-way flap valve that lets stale air out while keeping unpleasant smells from getting in.

### *Adaptable to air conditioning*

Volvo's heating and ventilation system, with its high capacity thermostatic control, and advanced distribution system is readily adaptable to air conditioning, standard equipment on the 164E and optional on other models.



**Percentage of United States-built cars  
with factory air-conditioning**



## AIR CONDITIONING (STANDARD EQUIPMENT ON 164E, OPTION ON OTHER MODELS)

### *Rapid growth in U.S.A.*

Throughout the United States, summer heat can be every bit as uncomfortable as winter cold. So, automobile air conditioning has grown in popularity in recent years. In fact, about 70 percent of new cars built in the United States are now equipped with factory installed air conditioning, and that percentage is growing rapidly.

### *Recirculation*

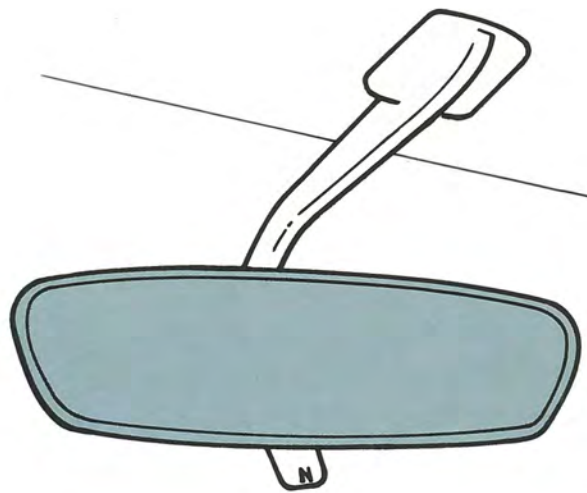
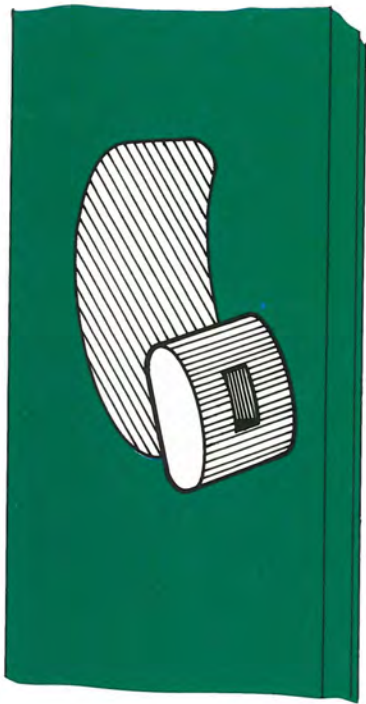
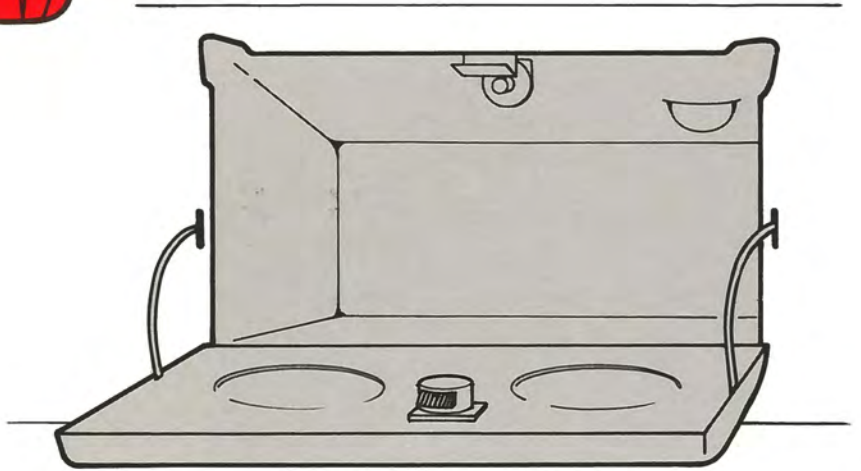
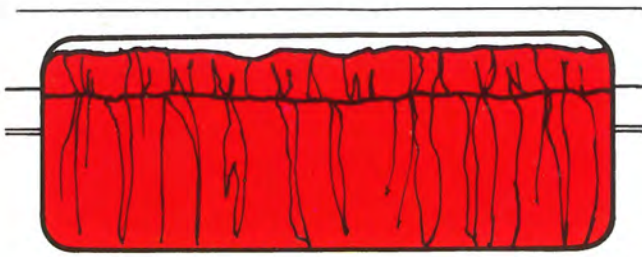
Volvo offers an advanced air conditioning system that includes a recirculation feature for rapid cooling. With recirculation on, air within the passenger compartment is constantly recycled through the air conditioner and supplemented with 20% fresh outside air. When the temperature has reached a desirable level, you can turn off the recirculation so that a steady supply of cooled fresh air flows into the passenger compartment and stale air is exhausted.

### *Summer comfort*

With air conditioning you can drive in comfort and enjoy your radio, tape deck, or just a pleasant conversation. Or, if you prefer, just plain quiet. Air conditioning lets you ride all summer with the windows up, eliminating road noise, unpleasant drafts, and road dust. Being more relaxed, you can drive more safely and you and your clothes will still be fresh when you arrive at your destination.

### *Winter comfort*

Even in winter, the air conditioning system can be used to dehumidify the air, increasing your year round comfort.



## LITTLE THINGS

### *Small features*

Besides the major interior features, there are many small features that demonstrate Volvo's concern for comfort, convenience, and safety.

### *Anti-glare mirror*

For example, the inside rear view mirror is an anti-glare mirror with a night setting, controlled by a small lever, that sharply reduces headlight glare from following traffic.

### *Child-proof door locks*

Four door models have child-proof door locks on the rear doors. When activated, the doors can only be opened from the outside.

### *Assist handles*

Assist handles permit easier entry and exit, particularly for the elderly or anyone with a physical disability.

### *Storage pockets*

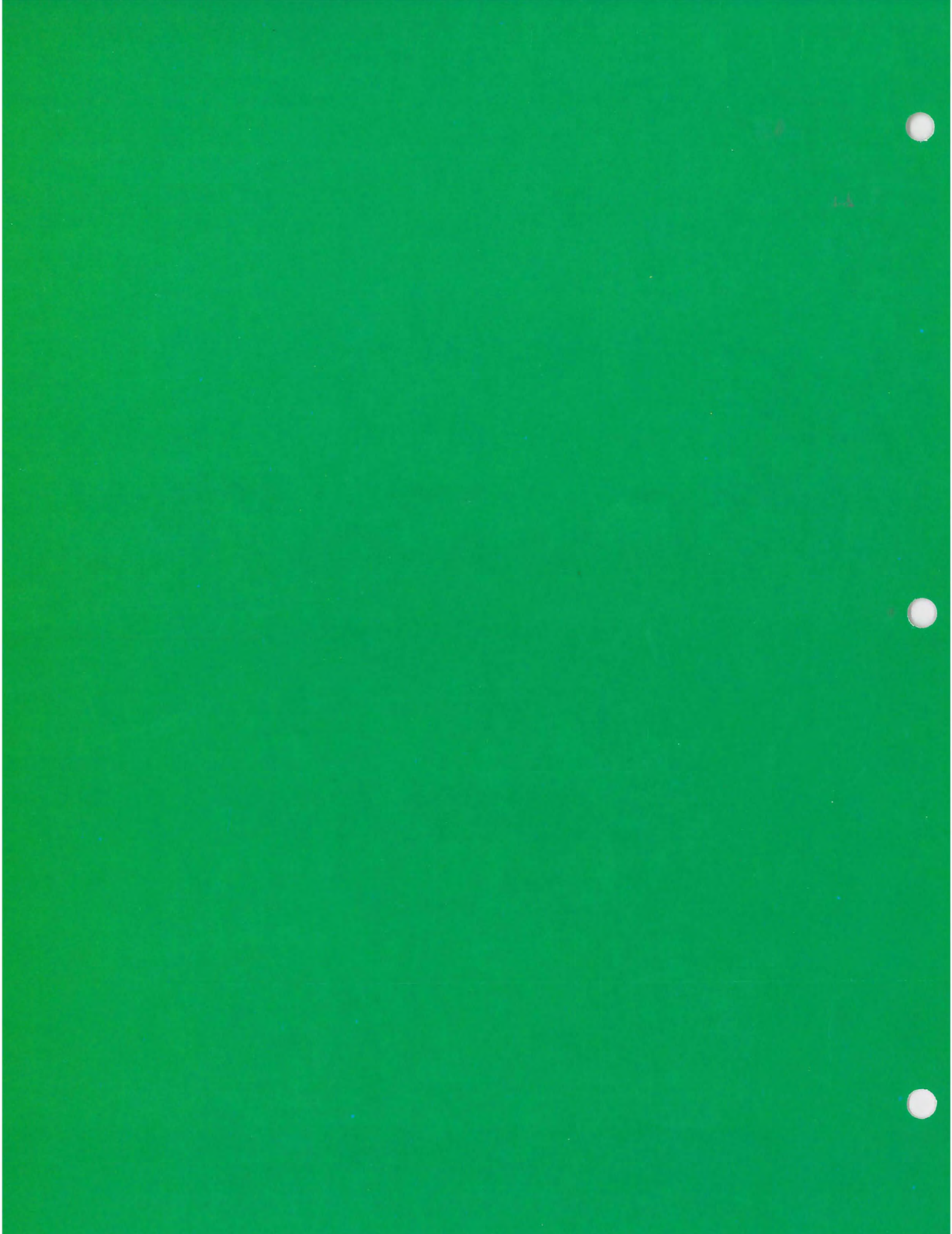
Convenient storage pockets on the front door panels hold maps, toll tickets, etc.

### *164E net pockets*

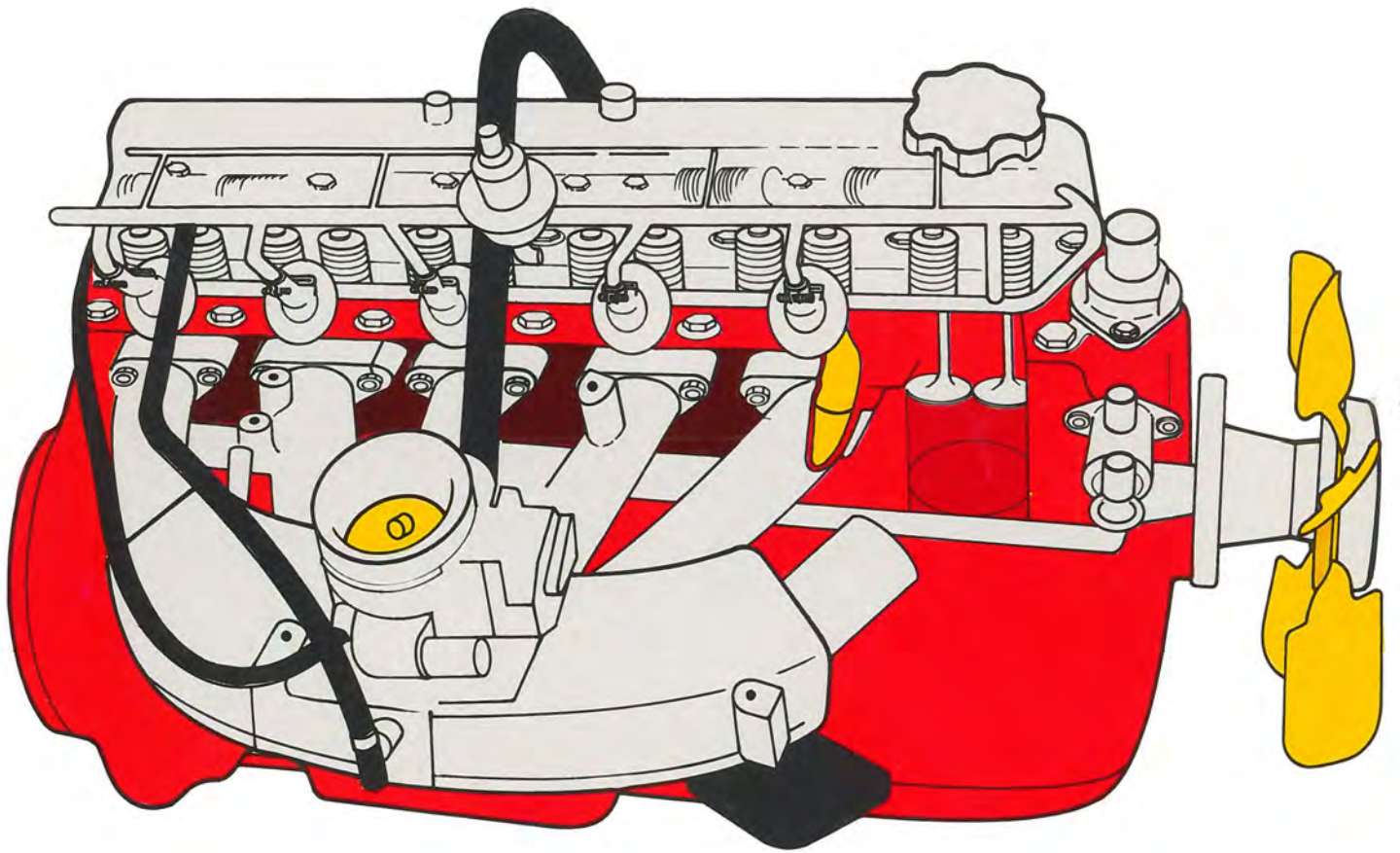
Rear seat passengers in the 164E have large, net storage pockets to carry magazines, papers, and similar items.

### *Glove compartment*

For carrying valuables, every Volvo has a convenient lockable glove compartment.



# POWER TRAIN



## ENGINES

*Reliability  
in all weather*

Chances are, you expect a lot from an engine. Like reliability. The ability to start quickly in all weather conditions, cold or hot, dry or humid. That is why every Volvo engine is rigidly inspected during its manufacture and then bench tested before being installed in your new Volvo.

*Proven  
durability*

You probably expect an engine to be durable, to last a long time even under tough driving conditions. Before it was ever introduced on a production model, the Volvo engine was tested for the equivalent of 60,000 miles at 90 miles per hour, a test that no engine will ever realize on the road.

*Economy  
through  
design  
efficiency*

You probably expect an engine to be economical, to keep your fuel and maintenance costs reasonable. Volvo's design permits operation on regular 91 octane (leaded) gasoline. Durable construction should give you economical performance for years, with proper maintenance. Since the one basic engine is designed for ease of service, Volvo's extensive dealer organization is thoroughly familiar with it and ready to provide efficient service.

*Safety*

You should expect an engine to enhance your driving safety by giving you the acceleration that you need to pass safely or to enter a crowded highway. That's why Volvo's engines are designed to have plenty of power available at medium engine speeds.

*One basic  
engine*

Volvo's basic engine is available in two versions, the 109 SAE net horsepower, 4-cylinder B20F on the 140 Series and 140 GL's plus the 138 SAE net horsepower, 6-cylinder B30F on the 164E. With a 121 cubic inch displacement in the B20F and 182 cubic inches in the B30F, Volvo's engines are big enough to provide 50 percent more horsepower than they do. But all this extra power would mean less mileage and shorter engine life. Instead of this, Volvo's engineers have concentrated their efforts on developing an engine designed for reliability, economy and long life while providing all the power you need for safety on the highway.

*Five main  
bearings*

To extend your engine life, the 4-cylinder B20F engine is equipped with a five main bearing crankshaft. This minimizes the excessive wear on any one bearing that can be caused by the 3 tons of pressure exerted on the crankshaft during the ignition stroke. The 6-cylinder B30F has 7 main bearings.

*Low octane*

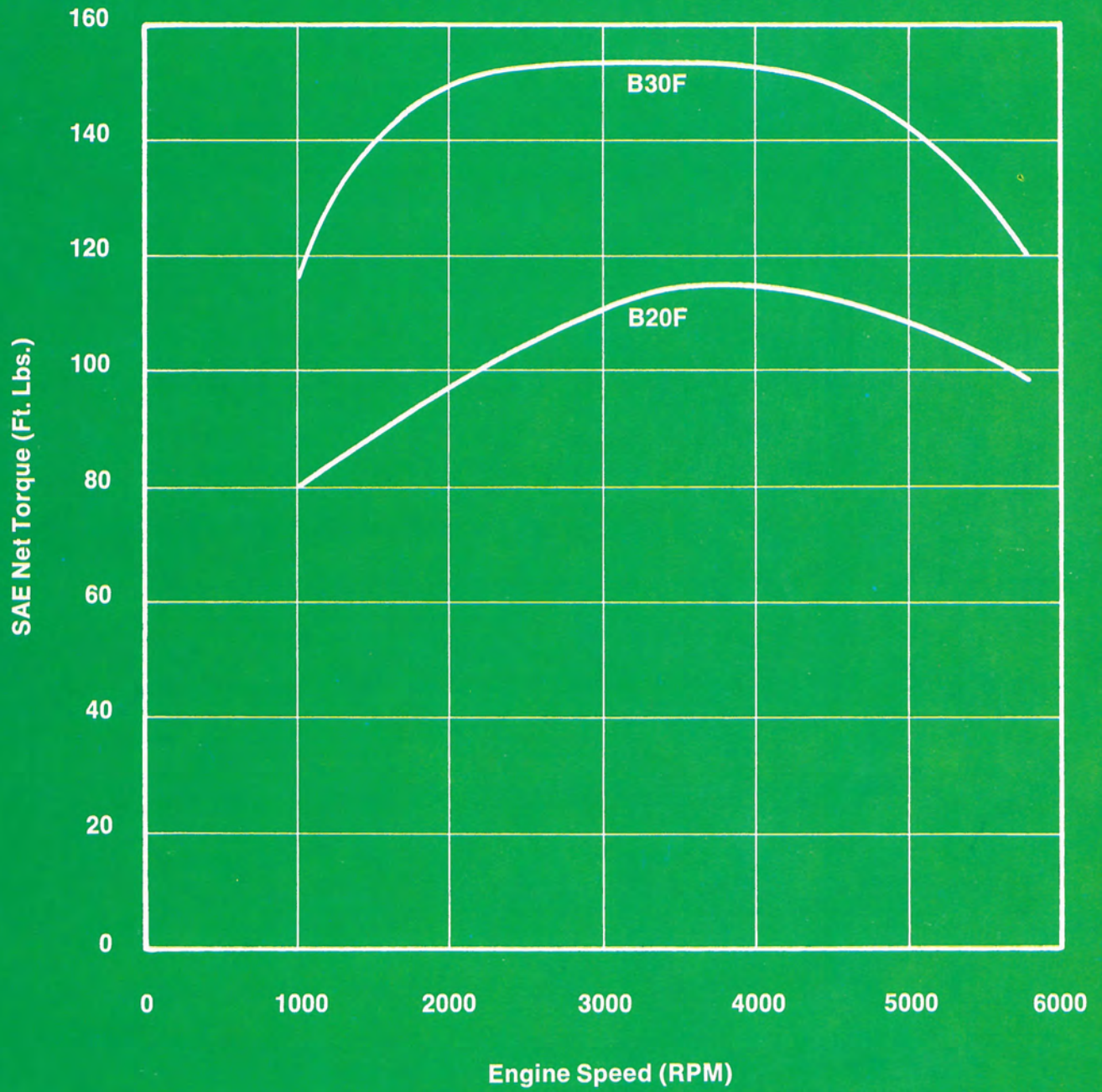
The Volvo engine is designed to run on 91 octane (leaded) gasoline, so that your gasoline bills will be a little lower.

SAFETY

VALUE

RELIABILITY

DURABILITY





## TORQUE

*Torque  
versus  
horsepower*

The most familiar measure of engine capability is horsepower. The most familiar, but not necessarily the best. A more useful measure is torque, the turning force that the engine exerts on the drive-shaft. Engine torque is similar to the turning force that you exert on a nut with a wrench. It is not simply the sheer muscle that you provide, but a combination of that muscle and the leverage provided by the wrench.

*Available  
power*

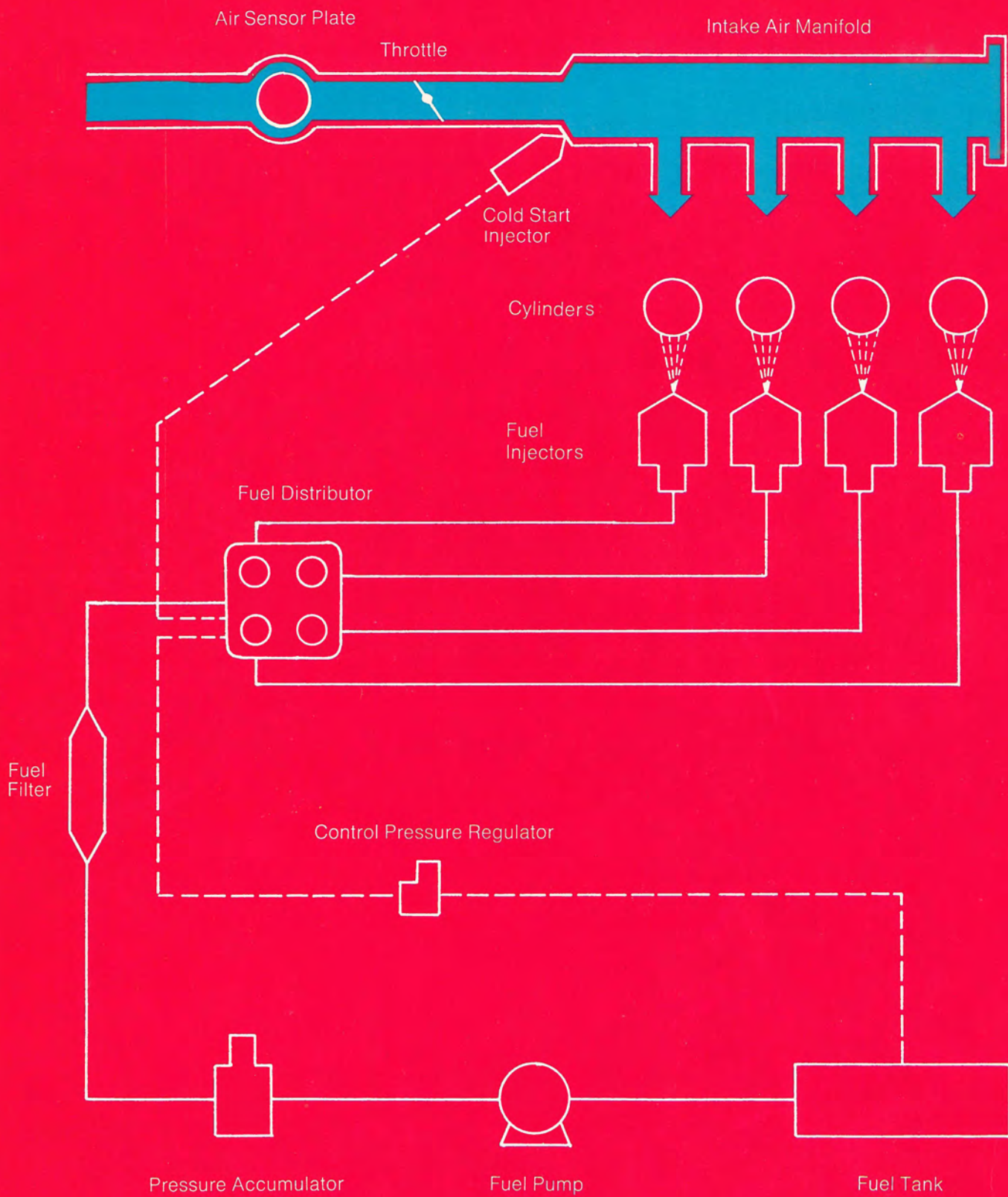
In an automobile, engine torque is delivered through the transmission to the rear axle. High torque means more power available for quick acceleration to pass trucks safely or to enter a busy highway.

*Maximum  
torque;  
medium  
engine  
speeds*

As the curves show, Volvo engines develop maximum torque at those medium engine speeds where most driving takes place. This means that at speeds like 30, 40, or 50 mph, your Volvo will accelerate quickly and safely. The curves are relatively flat, indicating that maximum passing power is available over a fairly wide range of engine speeds.

*Reserve  
power*

So that when you're driving a Volvo, you can rest your mind with the knowledge that should you need extra power, it's there in reserve.



## CONTINUOUS INJECTION (STANDARD ON ALL 140 MODELS)

### *Precise distribution*

Fuel economy, engine performance, and exhaust emission control are largely dependent upon the precise distribution of fuel-air mixtures to the cylinders.

### *Fuel-air mix control*

To achieve precise control of mixtures and even distribution among the cylinders, Volvo has introduced a system of continuous injection as standard equipment on all 140 and 140 GL models. In continuous injection, the flow of fuel to the cylinders is automatically adjusted as changes occur in the volume of incoming air.

### *Fuel distributor*

When the throttle is depressed, an air baffle opens to increase air flow. The increased air flow deflects a sensor plate which then opens fuel slits in the fuel distributor. The fuel distributor has four separate chambers, each leading to a single cylinder. At each cylinder, an injector sprays a fine mist of fuel which is mixed with intake air to form a combustible vapor.

### *Pressure control*

Fuel is carried to the distributor from the fuel tank under pressure provided by the fuel pump and regulated by a pressure accumulator. Before fuel enters the distributor, a filter removes impurities.

### *Cold starts*

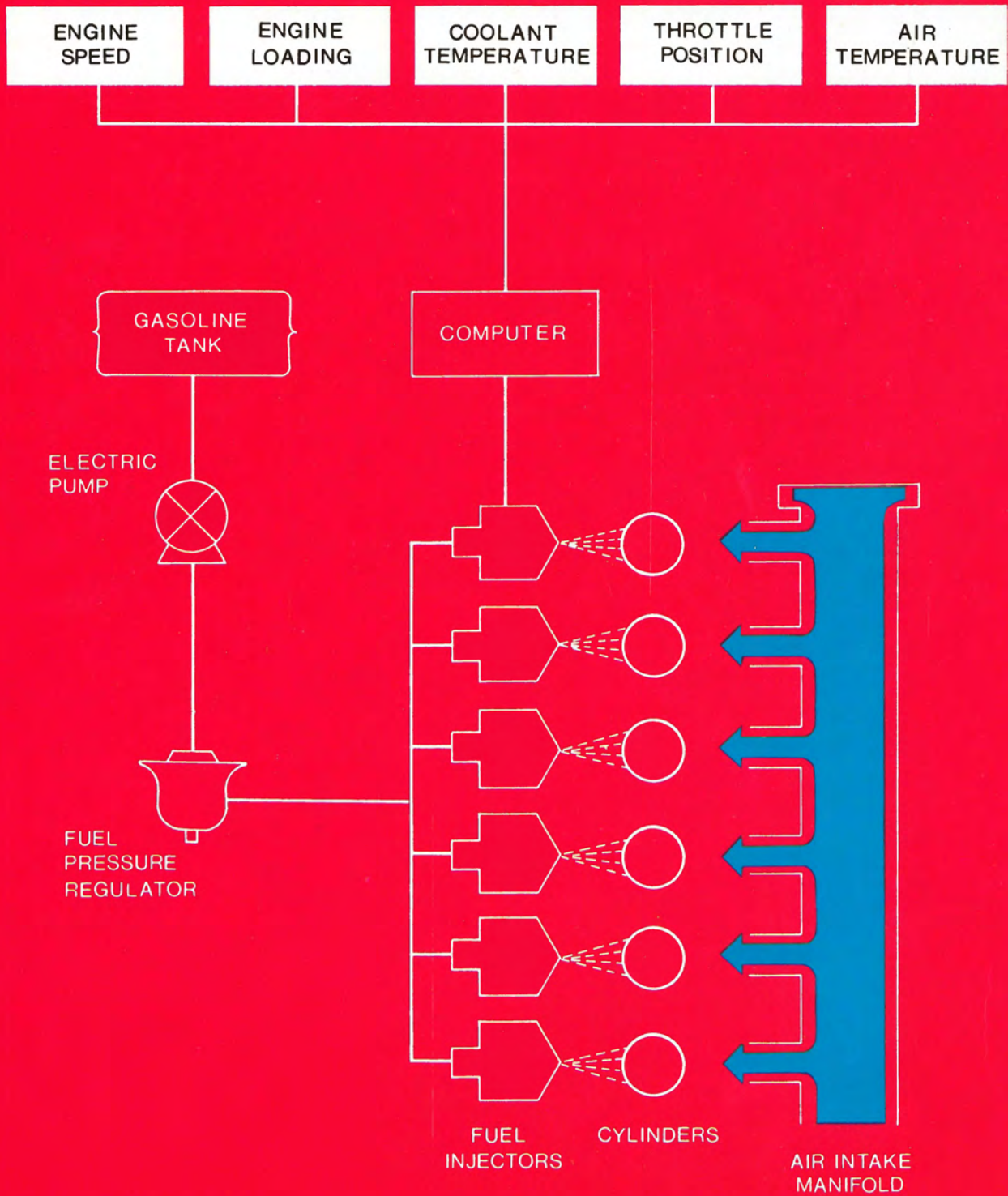
For efficient cold starting, a control pressure regulator automatically enriches the fuel-air mixture at engine temperatures below 160°. A cold start valve, automatically activated at low engine temperatures, bypasses the distributor and injects fuel directly into the intake air manifold.

### *Exhaust emission control*

The continuous injection system is well suited to a wide variety of driving conditions. It offers a sensible solution to the problem of exhaust emission control, cleaning the air without damage to your engine's performance or your fuel dollar.

VALUE

RELIABILITY



## ELECTRONICALLY CONTROLLED FUEL INJECTION (STANDARD ON THE 164E)

### *Electronically controlled fuel injection*

The 164E has an unusually precise system of controlling fuel-air mixtures to the cylinders. The system, electronically controlled fuel injection, considers several factors such as throttle position, engine speed and loading, coolant temperature, and air pressure and temperature.

### *Sensors and the brain*

Sensors (measuring devices) continuously monitor all of these factors and relay the information to a mini-computer that analyzes the data and determines exactly how much fuel each cylinder requires at the time.

### *Fuel injectors*

Each cylinder has its own fuel injector. The injector holds fuel under pressure from an electric pump precisely controlled by a pressure regulator. On a signal from the computer, the injector opens and sprays fuel into the cylinder.

### *Time controlled*

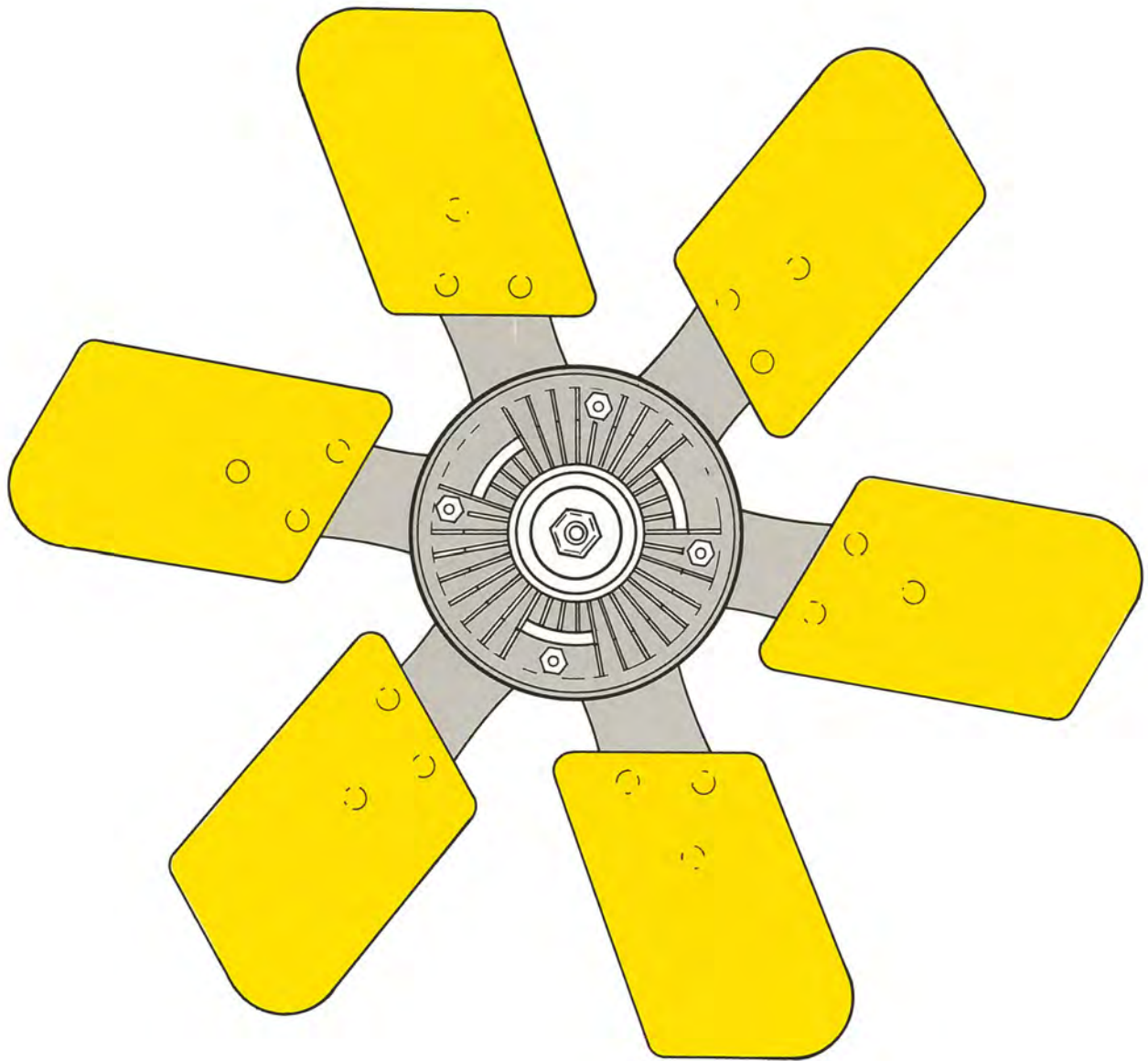
The amount of fuel sprayed into the cylinder is controlled by the time that the computer instructs the injector to remain open. This time varies from about 2 to 12 milliseconds (one thousandth of a second).

### *Exhaust emission control*

Precise fuel control not only improves performance and reliability while minimizing fuel waste, but also reduces exhaust emissions. Many exhaust emission control devices increase fuel consumption. Electronically controlled fuel injection directs itself to three critical contemporary problems — air pollution, the energy crisis, and the shrinking fuel dollar.

VALUE

RELIABILITY



## SPEED CONTROLLED FAN

*Cooling air  
requirement*

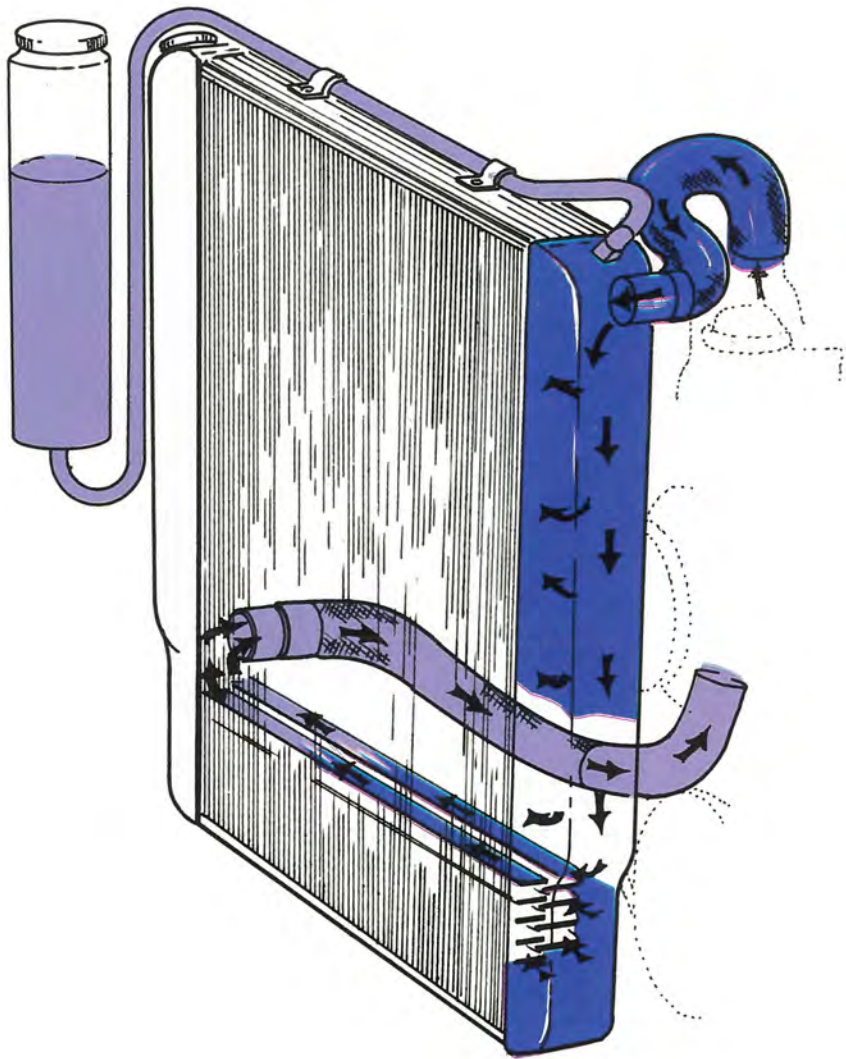
*Fan  
speed  
limited*

The purpose of a fan is simple enough. It draws in air to cool the radiator. In most cars the faster the engine goes, the faster the fan goes. But the faster the engine goes, the less you need the fan. Because at high road speeds, the motion of air past the vehicle provides all the radiator cooling that you need.

Volvo engineers decided it was a little foolish to have a fan drawing power from the engine, using fuel, and creating a lot of noise at times when there was really nothing useful for the fan to do. So Volvo fans have a slip coupling that limits fan speed to 3,000 revolutions per minute. Above this speed the fan is not needed. The slip coupling lets the fan relax at high speeds. This reduces the power required to drive the fan and reduces engine noise so that you can relax and enjoy driving your Volvo more quietly and comfortably.

COMFORT

DURABILITY





## RADIATOR

### *Causes of corrosion*

In combination, air and water are natural enemies of steel. The most severe steel corrosion is caused by alternate wetting and drying. If steel is kept continuously wet, there is no corrosion. If steel is kept continuously dry, there is no corrosion.

### *Radiator corrosion*

An automobile's radiator is a web of steel tubing containing coolant. If the level of coolant within the radiator is allowed to rise and fall through expansion, contraction, or leakage, the steel tubes could corrode and leak, causing more serious damage and costly repairs.

### *Full radiator*

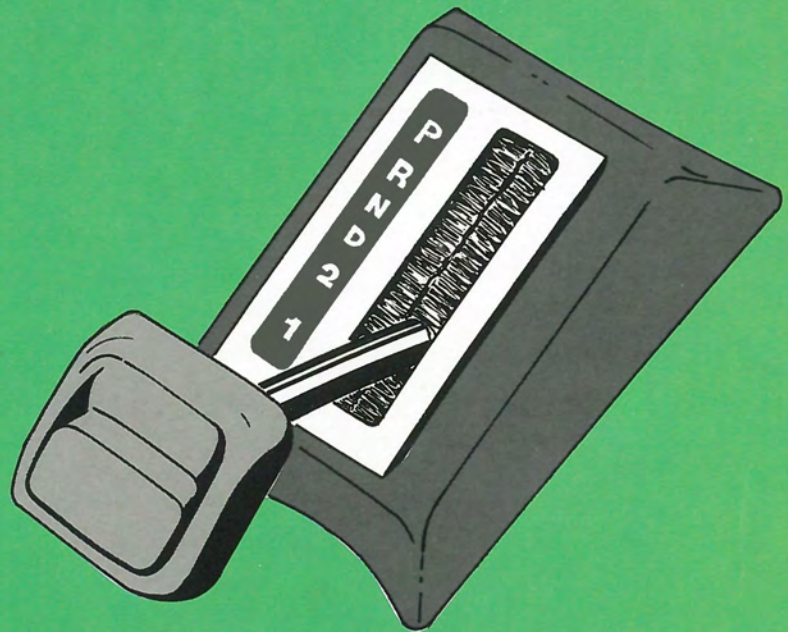
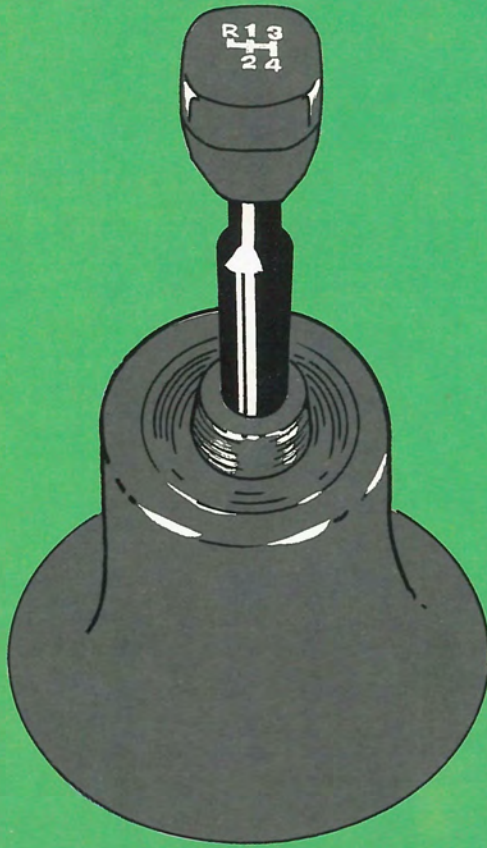
To avoid this problem, the Volvo radiator is designed to remain full of coolant at all times. To accommodate changes in coolant volume that are bound to occur, the radiator is equipped with an expansion, or over-flow tank. The radiator is always full and changes in coolant volume cause the level of coolant in the expansion tank to rise and fall. With the radiator always full of coolant, air cannot enter the radiator to cause corrosion.

### *Expansion tank*

In most cars, the thermostat prevents the coolant from circulating until the engine has run for a while. However, any engine operation without cooling can damage the temper of piston rings and shorten engine life. To prevent this, Volvo radiators have a bypass valve that permits partial circulation of coolant through the block and cylinder heads whenever the engine is operating. This preserves ring temper, extending engine life.

### *Constant circulation*

The expansion tank is subject to alternate wetting and drying. To keep it from corroding, Volvo made it of plastic. As an extra, you can see through it and check the coolant level at any time. Conveniently and safely. Without scalding your hands on a hot pressure cap or unleashing a hot spray of coolant.



## TRANSMISSIONS

### *Four-speed fully synchronized*

Volvo offers the owner a choice of transmissions. For the driver who always prefers the fun and control of shifting, Volvo offers the 4-speed fully synchronized transmission. The floor-mounted stick with a short, sure throw helps the driver change gears quickly and accurately.

### *Overdrive availability*

Overdrive is available as standard equipment on the 164E and 140 GL's with manual transmission.

### *Overdrive advantages*

Overdrive may be considered a fifth gear for turnpike and highway driving. With overdrive, fuel usage and the load on the engine are reduced. Volvo overdrive is electrically controlled. Flicking a lever on the steering column automatically shifts from fourth gear to overdrive, quickly and conveniently.

### *Automatic transmissions*

For the buyer who prefers an automatic transmission, there is a choice within a choice. Volvo's automatic transmissions let the driver enjoy the sport of shifting or the convenience of an automatic. The illuminated floor shift console has six positions — Park, Reverse, Neutral, Drive, Position 1 and Position 2. The pushbutton at the top of the lever gives the driver precise control and prevents accidental shifting to Reverse or Park.

### *Forward positions*

Position 1 is used for starting on unusually steep grades or pulling excessively heavy loads. Position 2 is used for engine braking when descending slippery or winding roads as well as stop-and-go driving in heavy city traffic. Drive is used for most normal driving. In Position 1 the transmission remains in first gear. In Position 2 the transmission shifts through first gear and remains in second. In Drive the transmission shifts through first and second gears.

### *Historic dilemma*

Volvo's automatic transmission provides a solution to the historic dilemma of men who prefer to shift, with wives who prefer an automatic.

### *Transmission selections*

The buyer of a 164E or 140 GL has a choice of an automatic transmission or manual transmission with overdrive at no extra cost. On the 140 Series, the buyer can select an automatic transmission as optional equipment.

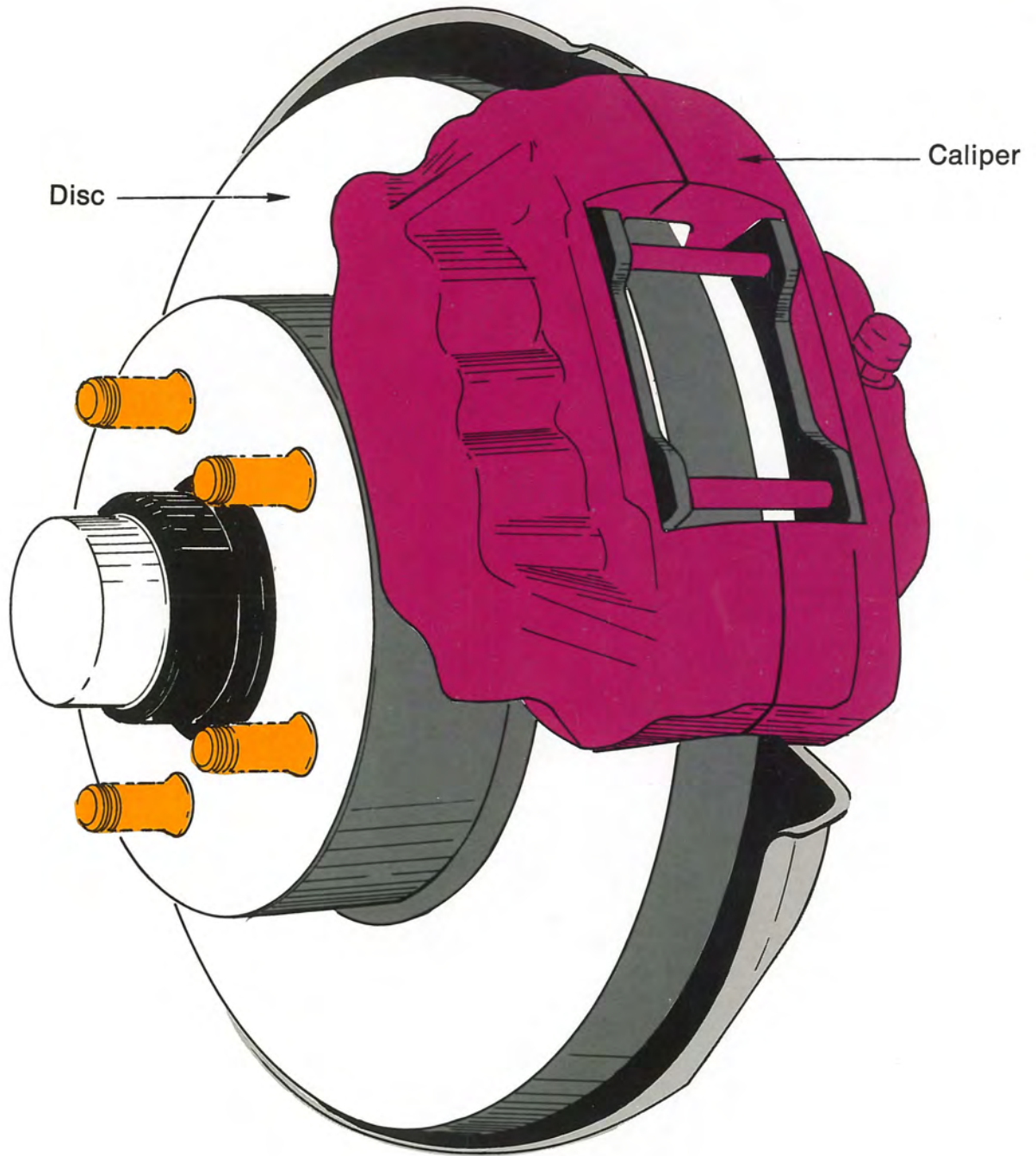
SAFETY

COMFORT

RELIABILITY



# BRAKING



## FOUR-WHEEL DISC BRAKES (STANDARD ON ALL MODELS)

*Standard  
equipment*

Some cars have optional front-wheel disc brakes. Others have standard equipment front-wheel discs. A few offer discs all around. Volvo is one of the few.

*Components*

Each brake consists of two main components, a disc and a caliper. Within the caliper there is a brake pad on each side of the disc. Pads that have been especially designed for Volvo.

*Friction*

All braking depends upon friction. On disc brakes, this friction is created when the pads are squeezed against the disc.

*Heat gain*

Friction generates tremendous heat. The friction generated in a panic stop from 60 miles per hour can cause temperatures to rise several hundred degrees. Temperatures this high could distort conventional drum brakes, particularly in repeated stops.

*Discs*

So Volvo uses discs which are designed to withstand tremendous heat. Volvo discs have been heated to 1100°F without noticeable deformation. Large cooling surfaces permit the rush of air by the disc to restore disc temperature to normal — quickly.

*Resist  
fading*

Because discs can dissipate heat quickly, Volvo brakes resist fading, the loss of braking effectiveness that can occur in repeated hard stops from high speeds.

*Withstand  
moisture*

Unlike drums, discs have no areas where moisture can gather to reduce braking effectiveness in damp driving conditions. Moisture on the disc is quickly carried away by the spinning of the disc and the airstream over the disc surface.

*Safe,  
reliable*

Volvo's disc brakes are designed to be safe and reliable, in all driving conditions, even in repeated panic stops.

*Large  
wheels*

The big 15 inch Volvo wheels permit the use of large discs on all models. Larger discs have larger cooling areas for faster dissipation of braking heat.

*164E  
ventilated  
discs*

The front discs on the 164E have an improvement that is even better still. The greater thickness of the 164E front discs provides extra space for ventilation slots cast through the center of the discs. With the ventilation slots, each disc has four cooling surfaces instead of two, permitting even more rapid dissipation of the heat built up during braking.



140 Series



164E



## POWER ASSISTED BRAKING (STANDARD ON ALL MODELS)

### *Reduced effort*

Braking should be safe; braking should be easy. To make sure it's safe and easy, Volvo reduces the effort required by the driver.

### *Power ratios*

A vacuum operated power assist unit acts as a lever to multiply the driver's foot pedal pressure. On the 140 Series, the power assist unit multiplies your foot pedal pressure three times so that an actual force of 30 pounds on the foot pedal is the equivalent of 90 pounds. On the 164E, your foot pedal pressure is multiplied four times.

### *Easier, safer*

Since the power assist unit provides most of the muscle, braking is easier. Easier braking means safer braking. And safety is what braking is all about.

### *Braking feel*

Unlike power brakes, power assistance lets the driver retain braking feel to stop the car safely, smoothly, and comfortably from all speeds, high or low.

### *Standard equipment*

With power assistance, the car does more of the work for you. That's why it is standard equipment on all Volvos.

SAFETY

RELIABILITY

DURABILITY



52% Normal Distribution 48%



60% Moderate Braking 40%



70% Heavy Braking 30%



## REAR WHEEL RELIEF VALVES

### *Weight distribution*

As you brake a car, the weight of the car shifts forward. The harder you brake, the more weight is shifted forward. In a hard stop from 60 miles per hour, up to 70% of a Volvo's weight is over the front wheels, and only 30% over the rear. Therefore, the front wheels need a lot more braking force than the rear.

### *Steering control*

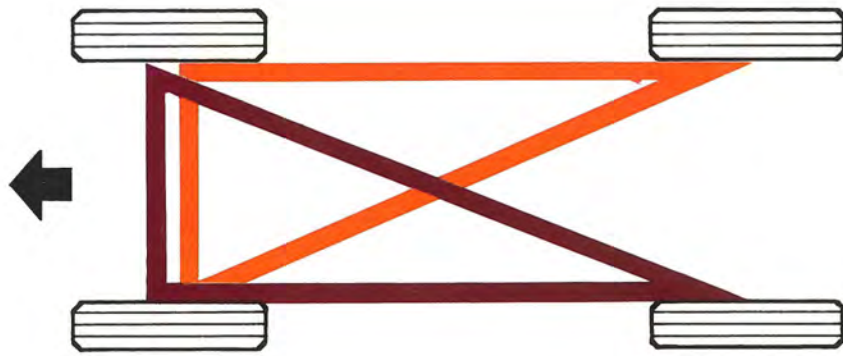
In a panic stop, the ability to control the car is just as important as the ability to stop quickly. Frequently, the driver will be steering away from trouble while he is applying the brakes. Rear wheel relief valves help him maintain steering control so that he can bring his car to a smooth, safe stop.

### *Hydraulic pressure distribution*

Without controls, a hydraulic system tends to transmit pressure equally in all directions. With 50% of the braking force but only 30% of the weight on the rear wheels, the rear wheels could lock before the front wheels are brought to a stop. This could cause skidding and swerving.

### *Pressure where needed*

To prevent this, Volvo has installed relief valves in the brake lines to the rear wheels. These relief valves restrict the hydraulic pressure transmitted to the rear wheels so that braking is more evenly balanced among all four wheels. Relief valves are designed to let your car stop safely and smoothly, reducing the risk of dangerous skidding and swerving.



## TRIANGULAR SPLIT BRAKING SYSTEM

### *Dual hydraulic systems*

The force required to brake a car is transmitted from the foot pedal to a master cylinder through a hydraulic line to each of the four wheels. One possible cause of brake failure is a hydraulic fluid leak which will interrupt the transmission of braking force. Therefore, all cars today are equipped with dual hydraulic systems. If one system fails, the other should still be operative. Although all cars have dual systems, some dual systems are better than others and Volvo's is tough to beat.

### *Weight distribution*

In heavy braking, up to 70% of the braking force is required at the front wheels. Only 30% is required at the rear.

### *Front-rear*

Several alternate dual braking systems are shown at the left. In the upper left, one circuit serves both front wheels, the other circuit serves both rear wheels. If braking is lost on the front wheels, only 30% of full braking effectiveness remains.

### *Diagonal split*

In the center, diagonal split, one circuit serves the left front and right rear wheel. The other circuit serves the right front and left rear. If either circuit fails, 50% of braking effectiveness is lost.

### *Four and two*

In the upper right, one circuit serves all four wheels, and a second serves the front wheels only. With the four wheel circuit out of operation, braking is still available on both front wheels, and 70% of full braking effectiveness is retained.

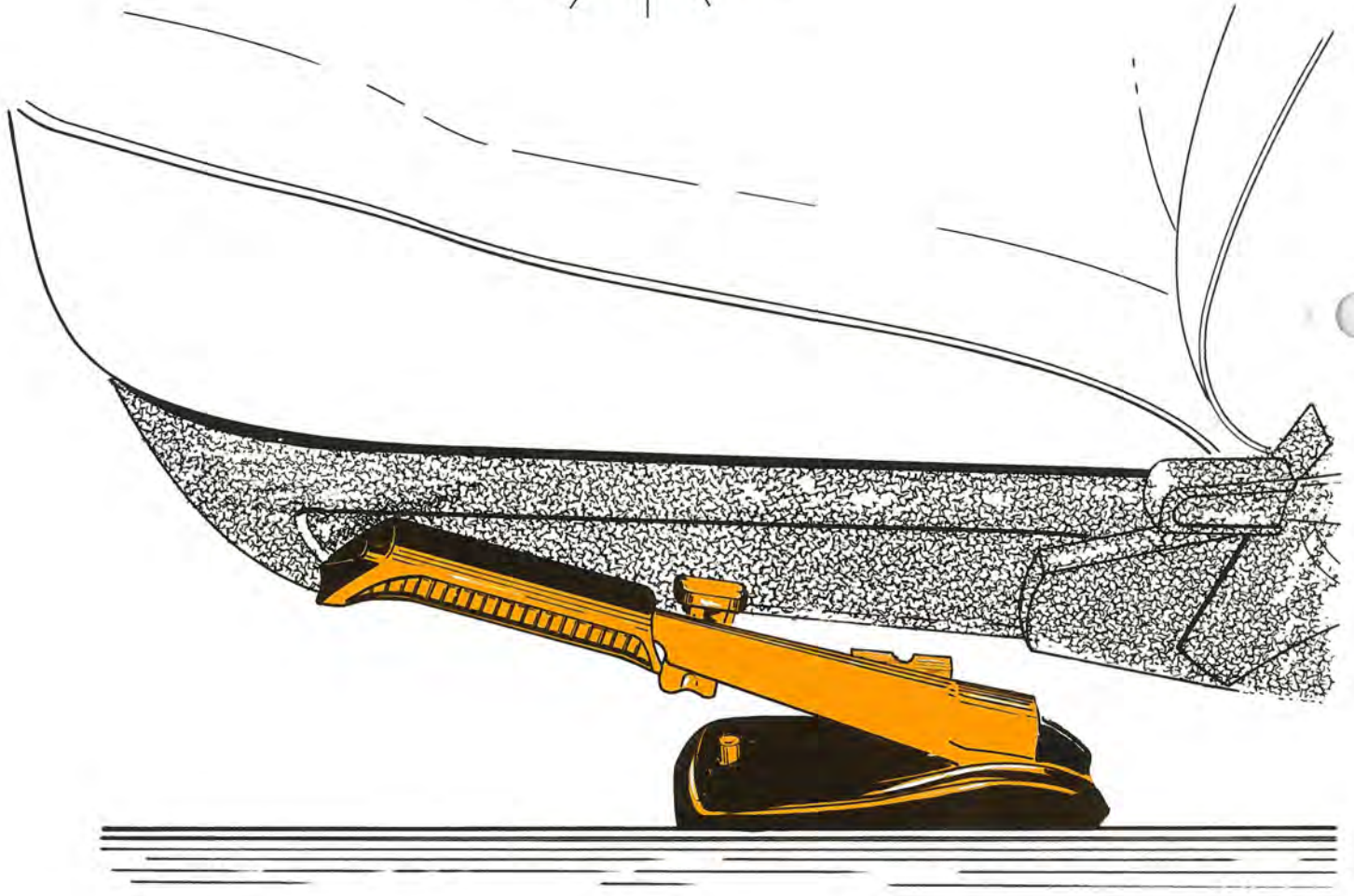
### *Volvo triangular split*

In the Volvo system, each circuit serves two front wheels and one rear wheel. Therefore, even with one of the circuits inoperative, your Volvo will always have about 80% of full braking effectiveness. According to a 1973 report prepared by the Department of Transportation, the 164E's loss of braking effectiveness due to an inoperative circuit is less than that of any other car. In many cases, Volvo's stopping distance from 60 miles per hour with one inoperative circuit is hundreds of feet less than many competitive makes.

### *Brake failure light*

If one circuit should fail, a brake failure light on the dashboard will glow. This little red light is your clue to take your car to your Volvo dealer for service — prompt and efficient. Braking on three wheels may be good, but braking on four wheels is better.

PARKING  
BRAKE



## INDEPENDENT PARKING BRAKE

*Rear  
wheel  
drum  
brakes*

In recent years, there has been a definite trend towards disc brakes, usually on the front wheels only. The use of discs on rear wheels normally requires a separate system of rear wheel drums for parking brakes, and most manufacturers prefer not to incur this extra cost. But Volvo feels that discs are most effective for stopping the car. So Volvos have discs on all four wheels and a separate drum brake in each rear wheel for parking.

*Avoid  
foot brake  
damage*

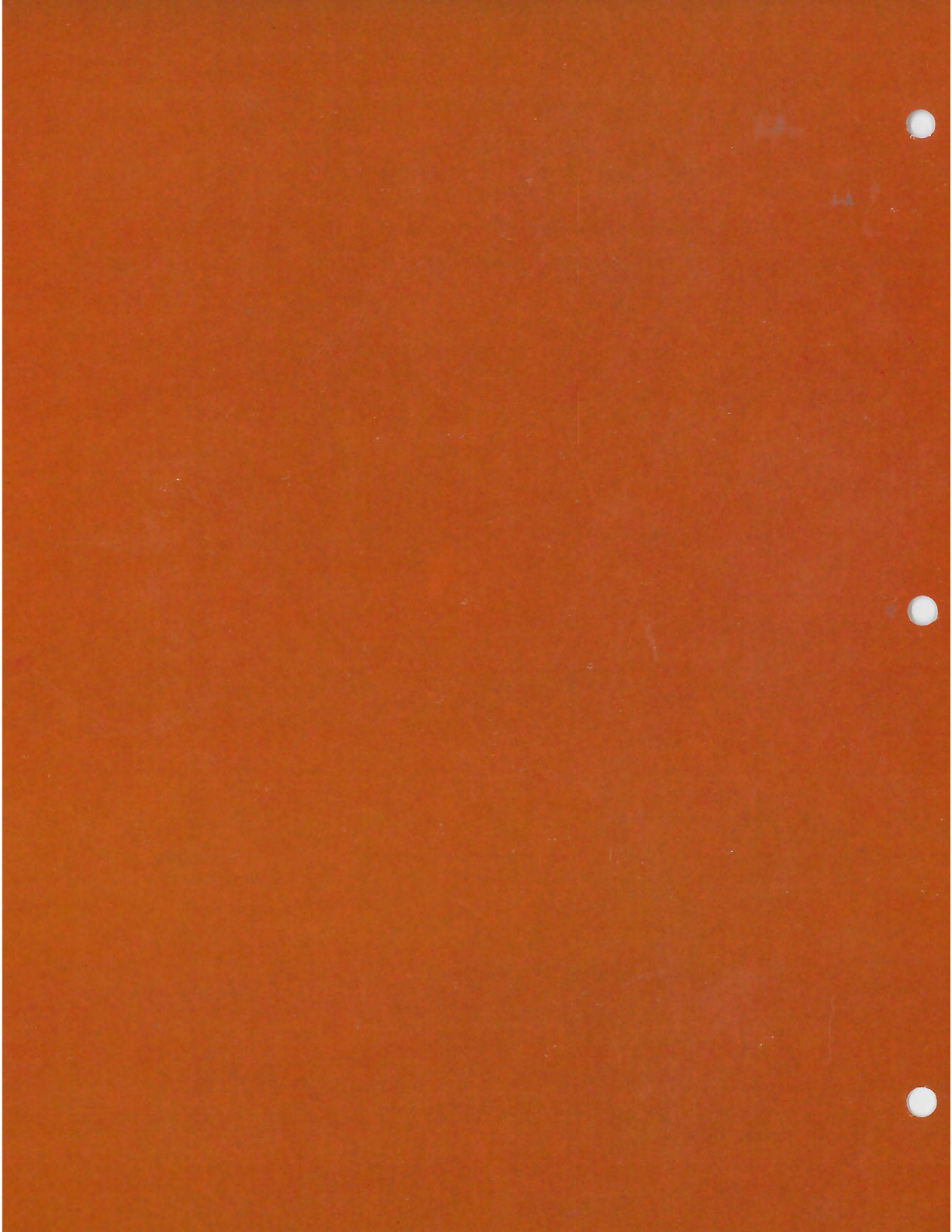
Since the parking brake is independent of the foot brake system, damage caused by overriding the parking brake should not affect the foot brakes. If you forget to release the parking brake, there is no need to fear the loss of foot brakes.

*Warning  
light*

To keep you from overriding the parking brake, a red warning light on the dashboard lets you know whenever the parking brake is engaged. This little hint is a reminder to release the parking brake before you drive off.

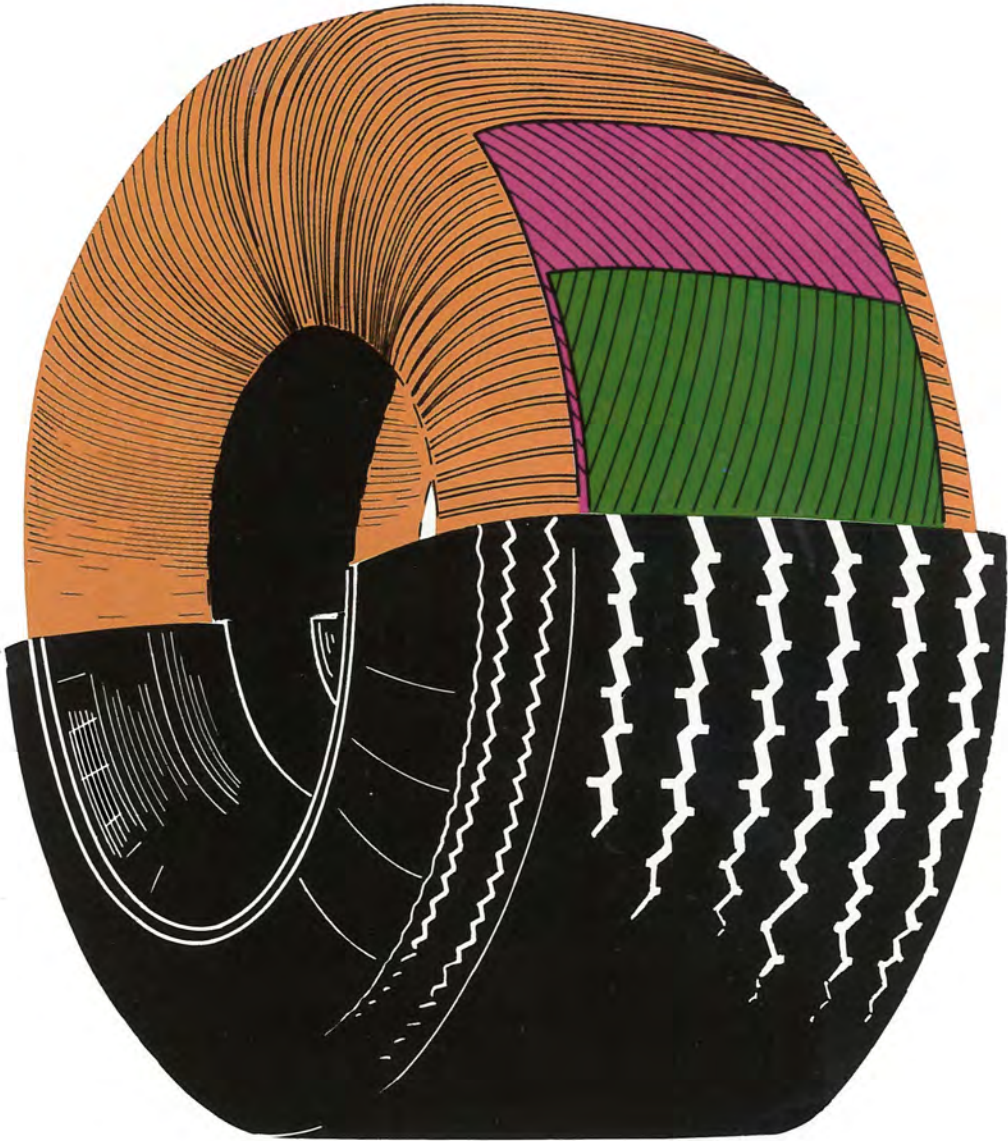
*Convenient  
lever*

To make it easy, the parking brake lever is conveniently located just to the left of the driver's seat. It is easily reached even when the driver is wearing a seat belt, so that it can be engaged or released with little effort. The design and location of the parking brake lever prevent accidental release or confusion with other levers.





# HANDLING



## RADIAL TIRES (STANDARD ON ALL MODELS)

*Radials  
are best*

It's unusual when experts agree. But many automotive experts consider radial tires to be the safest, longest lasting tires available today.

*Bias ply  
construction*

Tires are made up of layers of heavily corded fabric called plies. Conventional (bias ply) tires have two to four plies. The cords run at angles to the center line of the tire. The cords in successive plies run perpendicular to each other.

*Radial  
construction*

Radial tires have two or three plies. The cords in each ply run perpendicular to the center line of the tire. As a plus, radials have belts. Extra layers of rugged corded fabric. For extra mileage and extra protection.

*Steel-  
belted  
radials*

For even greater strength, the 164E and 140 GL's have steel-belted radials. Steel strands imbedded in the belts are long lasting and offer extra resistance to structural damage.

*Road  
contact*

Because of their design, radial tires contact the road on a wide area for better traction and safer handling in all weather conditions. The treads tend to open up for better traction and handling on wet or slushy or snowy roads.

*Economy*

In the replacement tire market, radials cost more, — quite a bit more. But they usually last longer — quite a bit longer. So in the long run they are usually more economical. Especially when they are included in the price of the car. As they are on Volvos.

*Whitewalls,  
standard  
on sedans*

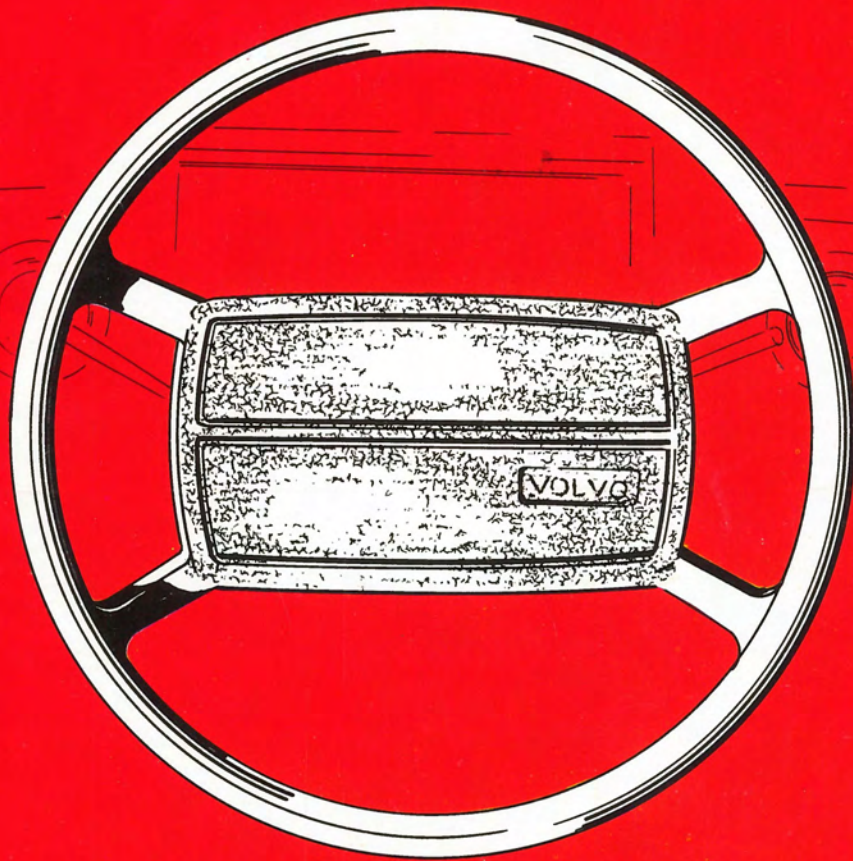
As a concession to stylists, Volvo sedans have whitewall radials. Again, as standard equipment. So your tires look better, ride safer, and last longer. That's about all you can ask of a tire.

SAFETY

VALUE

RELIABILITY

DURABILITY



## POWER STEERING (AVAILABLE ON MOST MODELS)

### *Volvo power*

Machines should provide the muscle for men. And for women. Whether you are stopping or turning, Volvo provides power units to do much of the work for you.

### *Availability*

Power steering is standard equipment on all 164E's. Buyers who select a 140 or 140 GL with automatic transmission will also receive power steering. Power steering is not available on 140's or 140 GL's with manual transmissions.

### *Responsive steering*

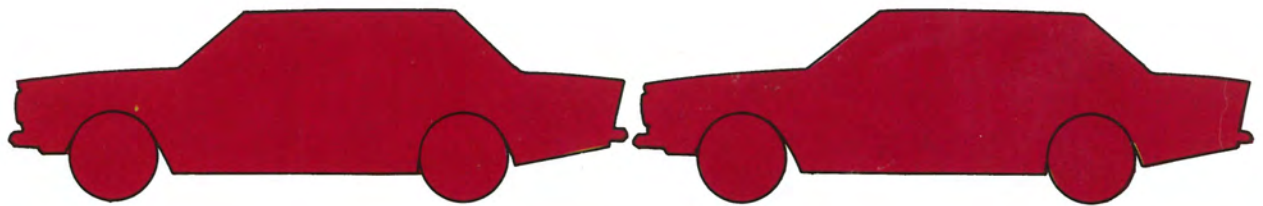
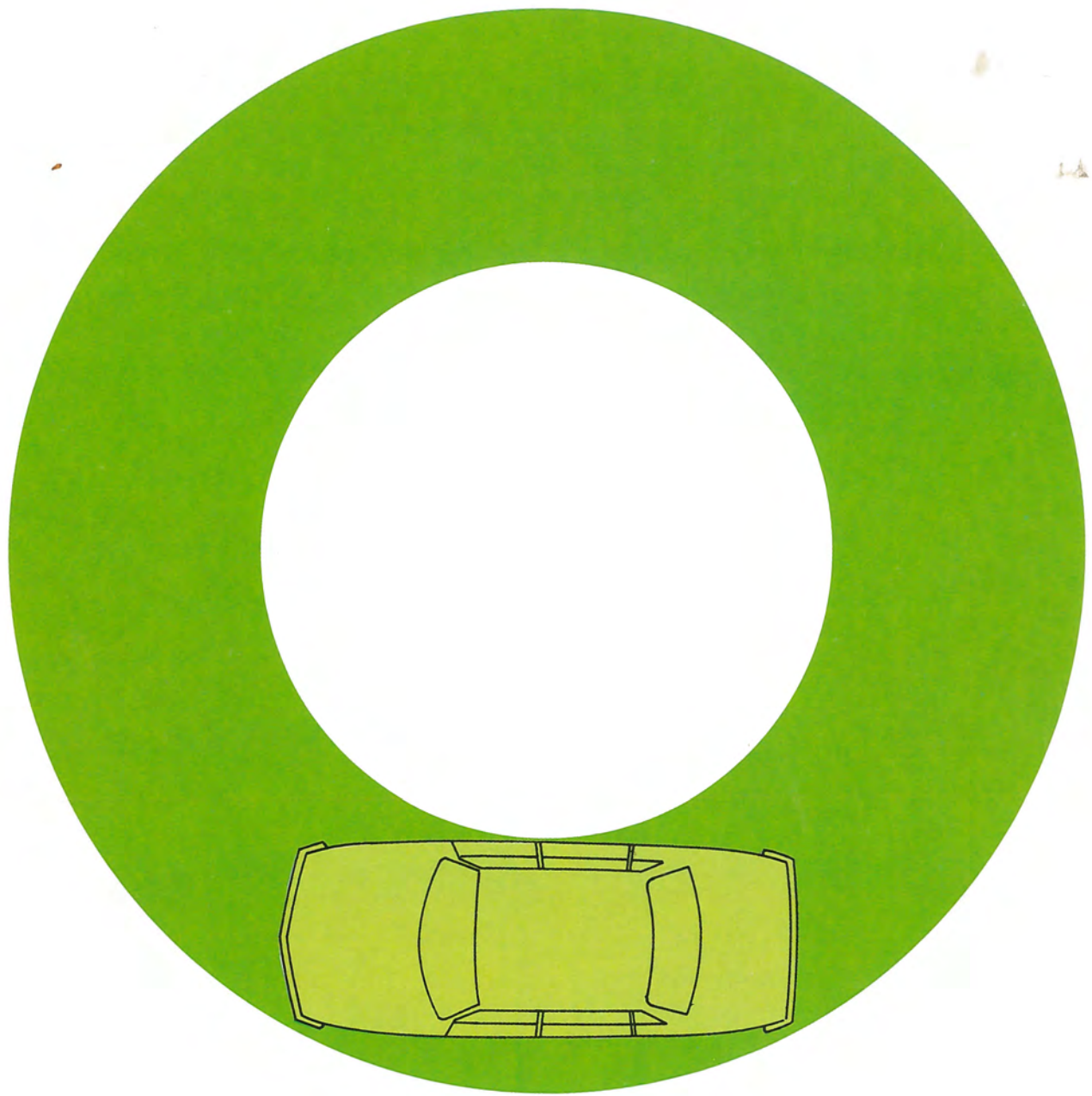
Volvo's power steering is designed to give you extra muscle when you need it. To make parking easier and safer. Without the loss of "feel" and control on the highway that is associated with many power steering systems.

### *Power in stall*

In the Volvo system, a stalled engine does not mean the loss of steering. Even with the ignition off, you can coast or be pushed to safety with a relatively small loss of steering ability, if the key is in the ignition.

### *Safety*

Proper steering is critical to safety. Cornering on a winding road, parking in a crowded lot, or swerving quickly to avoid an accident, you want a steering system that is responsive. And effortless.



## TURNING CIRCLE

*The big,  
the small*

What's big like the big cars, but small like the small cars? A Volvo, that's what! Lots of legroom and trunk space, but a small turning circle for easy maneuvering.

*Parking  
ease*

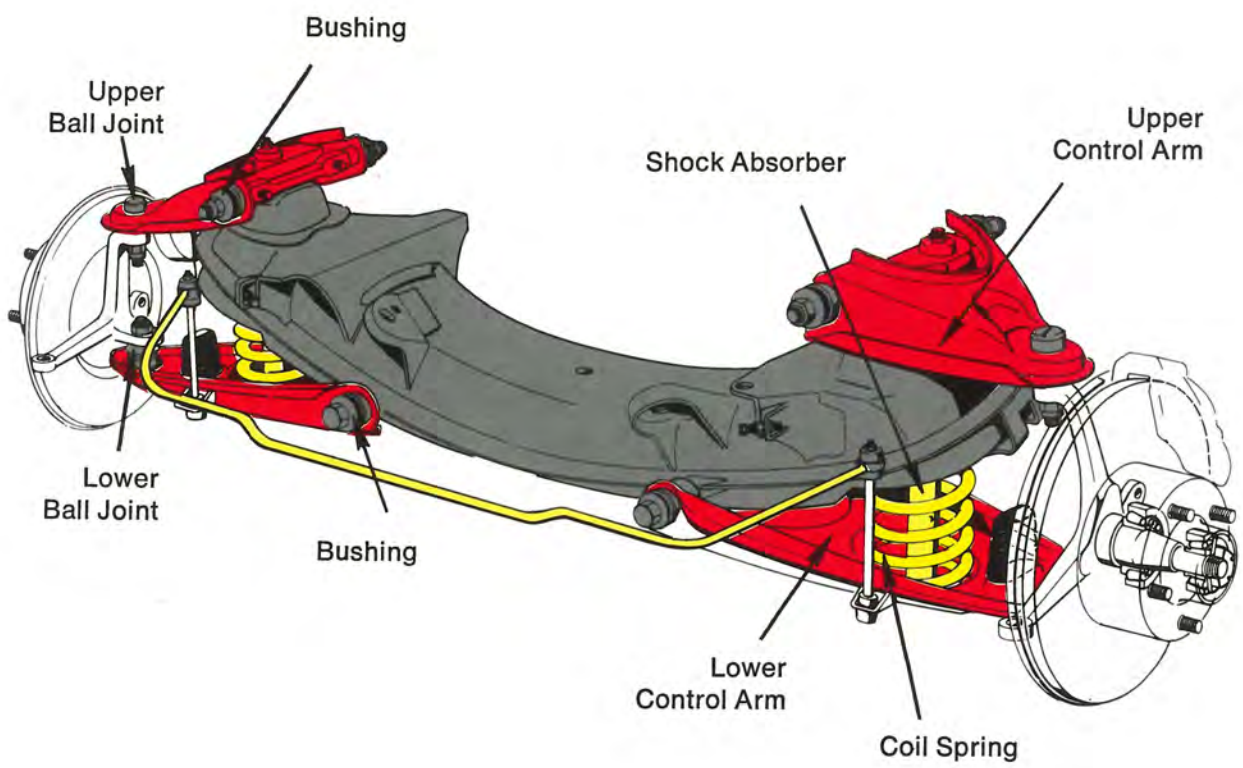
Volvo's tight turning circle makes tough jobs easy. Parallel parking on a city street or squeezing into a crowded parking lot, Volvo's tight turning circle increases your maneuverability to let you park easily and safely. Since a Volvo is neither too long nor too wide, parking is easier still.

*Turning  
quickly,  
safely*

U-turns are sometimes illegal and often dangerous. But the tight turning circle of a Volvo improves your chances of making it safely in one turn. All you do is turn the car around. Without stopping, shifting, backing up, stopping, shifting, and trying again, while the impatient and the irate growl and threaten.

SAFETY

COMFORT





## FRONT SUSPENSION

### *Suspension system functions*

A suspension system must do several things. First, it must provide a cushion between the wheels and the body to minimize the transfer of road shock from the wheels to the passenger compartment. Second, it must keep the wheels on the road so that the driver retains control, even on rough surfaces and hard turns. Finally, it must withstand a lot of abuse for a lot of years.

### *Independent front suspension*

To accomplish these objectives, Volvo front wheels are suspended independently. Road shock on one front wheel will not be transferred to the other.

### *Coil springs; shock absorbers*

Volvos have coil springs and double-acting hydraulic shock absorbers on each front wheel. Coil springs cushion the impact of road shock while shock absorbers dampen spring vibrations. Coil springs are equipped with rubber stops to prevent bottoming when driving on badly potholed roads.

### *Rubber bushings; ball joints*

Movement of upper and lower control arms is cushioned by rubber bushings and ball joints. Rubber stops prevent metal-to-metal contact for quiet operation with fewer vibrations.

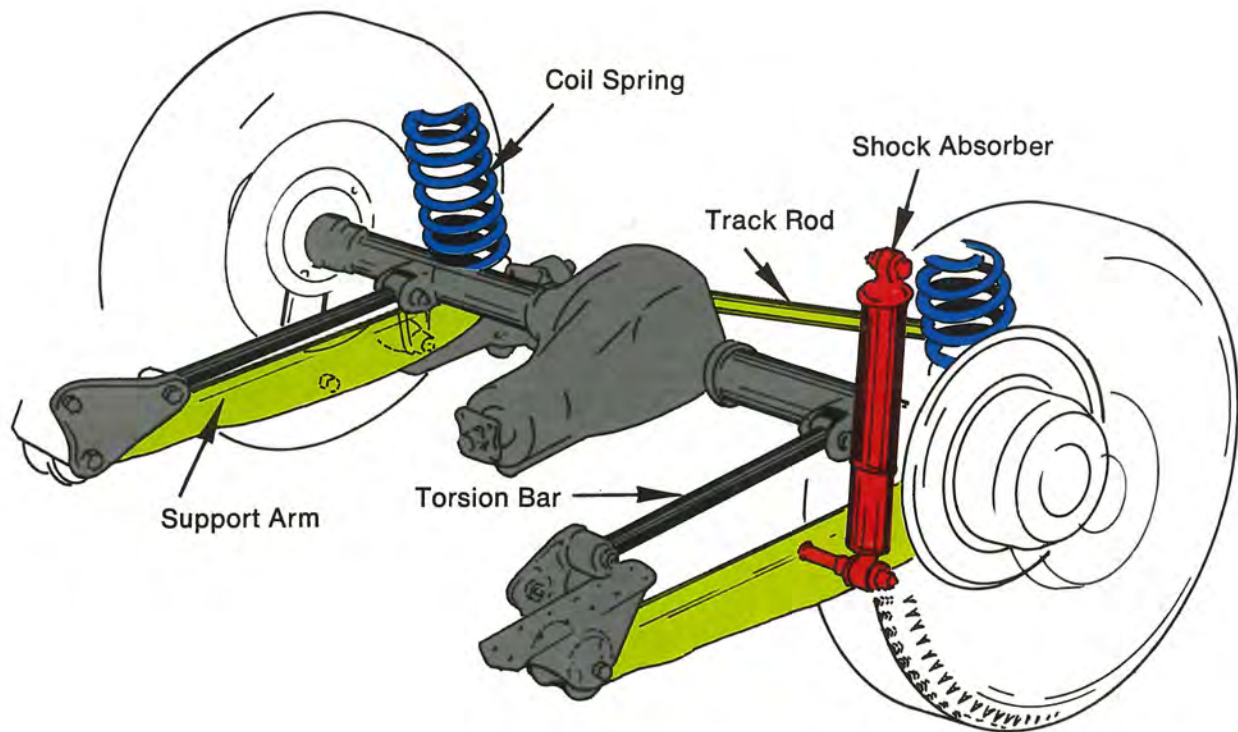
### *Stabilizer*

A stabilizer bar is provided to reduce body roll.

SAFETY

COMFORT

DURABILITY



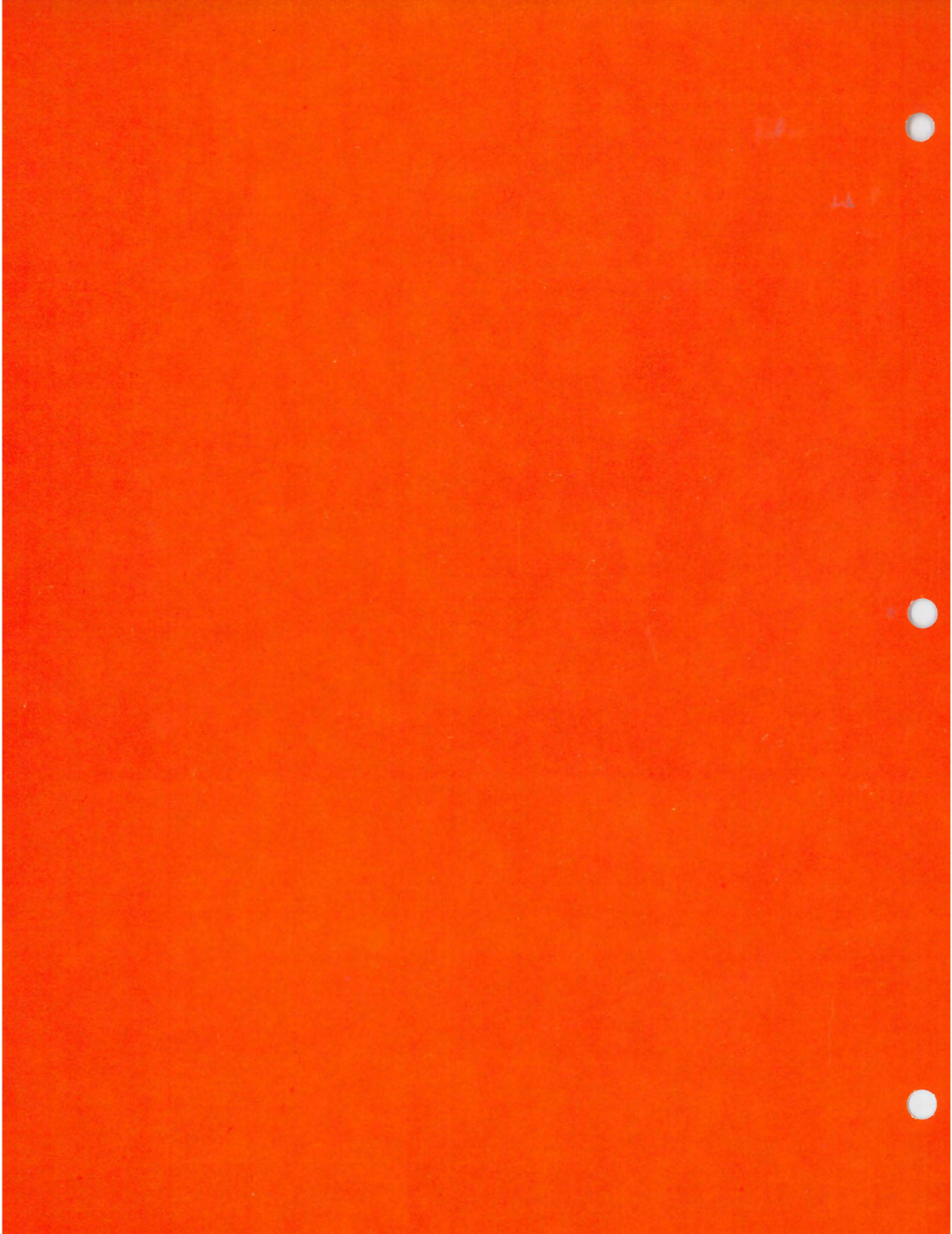
## REAR SUSPENSION

<i>Support arms</i>	In the rear, support arms hold the rear axle in position even as road bumps force the coil springs and shock absorbers up and down.
<i>Torsion bars</i>	Torsion bars absorb turning forces on the rear axle that can occur during braking and acceleration.
<i>Track rod</i>	The track rod limits body sway on curves by resisting the centrifugal forces that tend to swing the body outward.
<i>Springs and shocks</i>	Coil springs with rubber stops and double-acting shock absorbers minimize the effect of road bumps.
<i>Rubber housings</i>	All moving parts in the Volvo suspension system are housed in rubber blocks to decrease vibrations and noise.

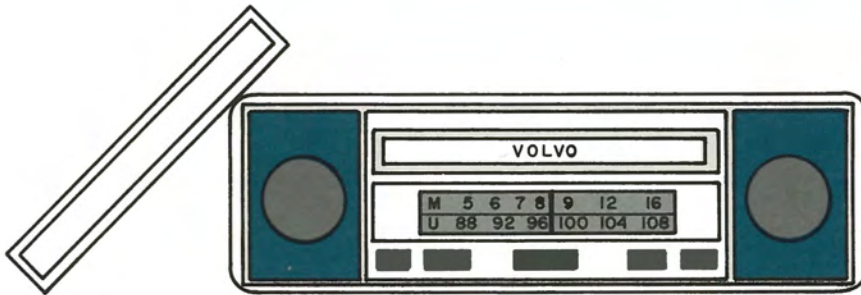
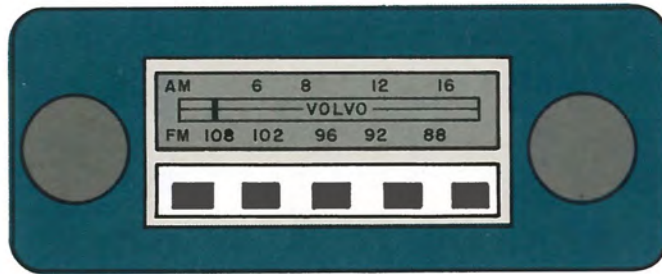
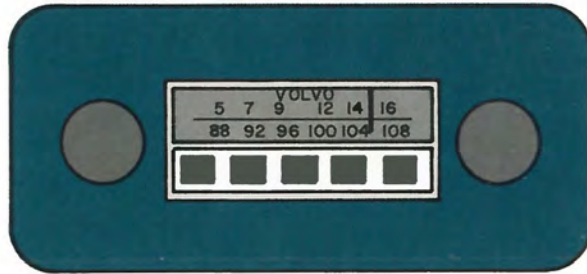
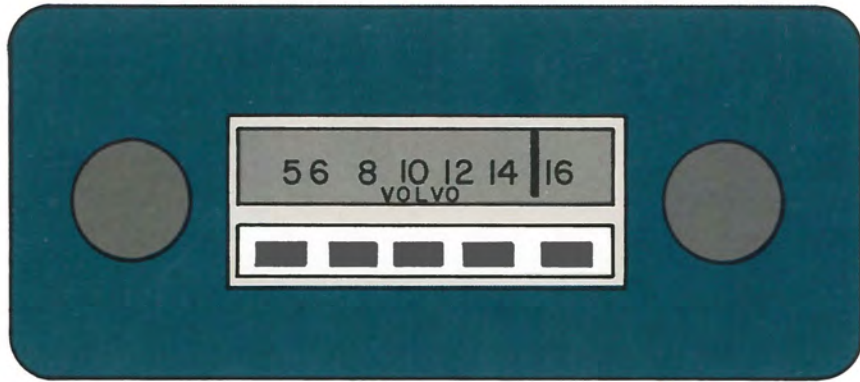
SAFETY

COMFORT

DURABILITY



# ACCESSORIES



## FOR YOUR DRIVING PLEASURE

*Enjoy  
your  
Volvo*

A Volvo is a car to enjoy. Free from the distractions, noises, and annoyances all around, you can drive your Volvo in year 'round comfort. At the temperatures you prefer. Enjoying the sounds that you like best.

*Air  
conditioning*

For the 140 Series Volvo, an optional air conditioning system is available. Quickly installed as an integral part of your car's flow-through ventilation system, it lets you ride in cool comfort. With the windows rolled up. And road noise, dust, and dirt outside where they belong.

*Radio  
selections*

To add to your driving pleasure, Volvo offers a variety of quality radios. All have push-button controls for quick selection of your favorite station.

*AM*

An AM radio if news, sports, and weather are your choice.

*AM-FM*

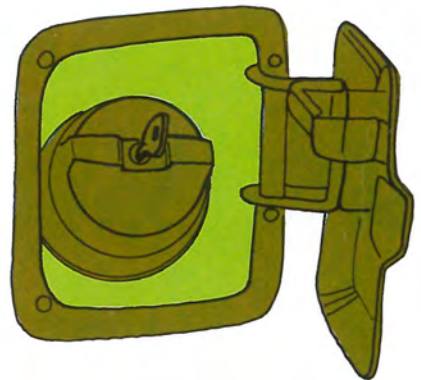
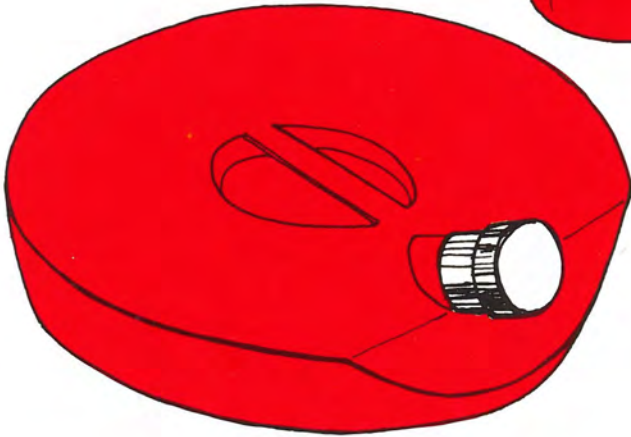
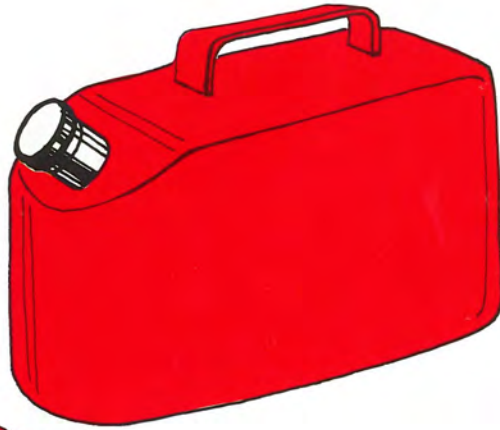
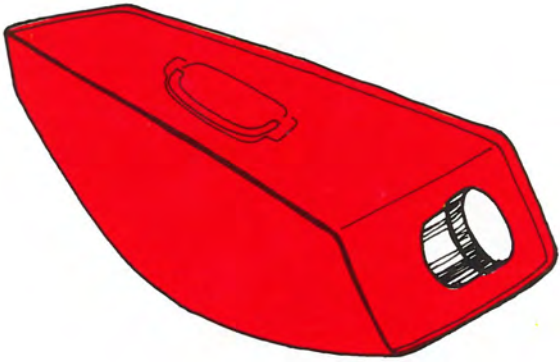
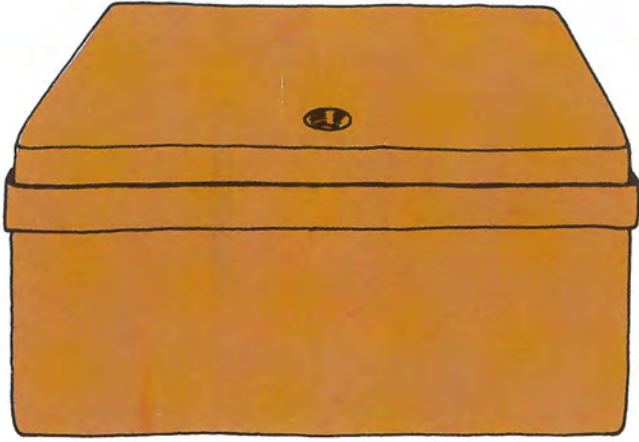
An AM-FM radio if you prefer a wide selection of music as well.

*AM-FM  
stereo*

An AM-FM stereo for those who appreciate the finest in sound — concert hall sound within your car.

*AM-FM  
stereo  
cassette*

Perhaps you prefer to choose your own music, whether five miles or 500 from the nearest station. An AM-FM radio with stereo cassette player is your car's entertainment center. The Beatles or Brahms; take your choice. Just slip in a cassette and you have your favorite artist, your favorite music. Instantly. Anywhere.





## AT YOUR CONVENIENCE

### *Convenience*

Life is filled with inconveniences. Minor annoyances but irritating when they occur. To let you avoid a few of them, Volvo offers several accessories that make driving more pleasant, more convenient, and more relaxing.

### *Tunnel tray*

A courtesy tray sits conveniently between the seats so that cigarettes, matches, toll change, and road maps are always in easy reach. Without removing your safety belt.

### *Spare gas cans*

With capacities from one gallon to three, a Volvo spare gasoline can should be stowed conveniently in your trunk. Right there when you need it. For your boat or your lawn mower. Or your own carelessness.

### *Spare wheel fuel can*

The gasoline you may need for an emergency. Held securely in a specially designed can that fits in the hub of your spare. Easy to reach, but out of the way.

### *Concealed fuel can*

Out of sight! A spare gas can that fits snugly beneath the floor of your trunk. A special can for a special compartment.

### *Lockable gas cap*

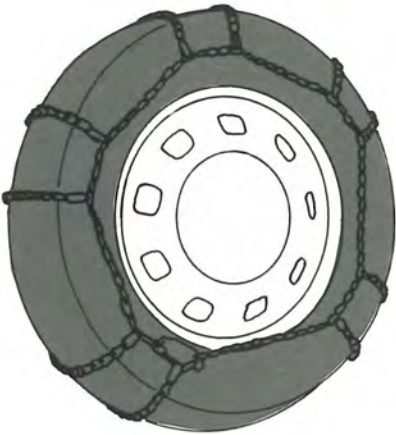
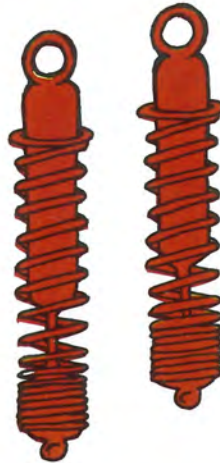
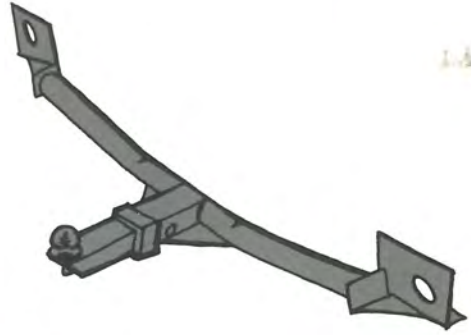
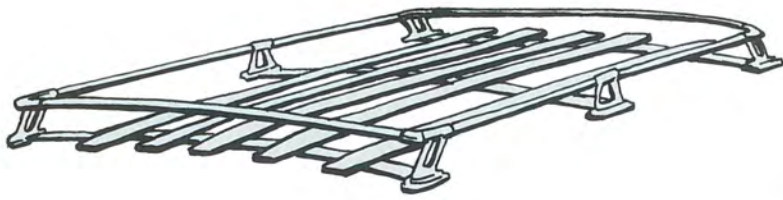
At today's prices, gasoline is precious. To protect it from pranksters or pilferers, try a Volvo lockable gas cap.

### *Remote control mirror*

Up. Down. Left. Right. Volvo's four-way outside rear-view mirror is easily adjustable for driving conditions. Adjustable from the inside. Without ever rolling the window down.

### *Trunk chest*

Your Volvo trunk can hold lots of things. Some clean. Some not so clean. To separate the two, use a Volvo trunk chest. Perfect for tools, rags, auto parts, and et ceteras.



## THE VERSATILE VOLVO

### *People and things*

Some Volvo owners are satisfied with a car that will carry people comfortably over the highway. But others expect more. They like to carry skis and extra luggage on the roof; tow boats or horse vans; travel on snowy and icy roads. For those owners who demand more, Volvo offers a selection of accessories to meet their demands.

### *Roof racks*

A variety of roof racks are available; some permanent, some easily removable. Some are specially fitted to carry skis — as many as four pair. Locked and secure.

### *Trailer hitch*

A sturdy trailer hitch lets the owner attach any kind of trailer. Fitted directly to the chassis, not just to the bumper, it offers extra security.

### *Trailer shocks*

For the owner who does a lot of towing, there are heavy-duty trailer shocks, specially adapted to the needs of a heavily laden Volvo.

### *Towing mirror*

For added safety as you tow, a towing mirror, oversized and extended well out from your car's body, will improve your view of the road behind.

### *Rear-facing seat*

If carrying extra people is your thing, a 145 with an optional rear-facing seat lets you carry two more.

### *Snow chains*

When the going gets tough, snow chains grab to give you the traction you need. Made of zinc coated steel but worth their weight in gold.



## GROWING OLD WITH GRACE

### *Appearance preservation*

Sand and salt. Sleet and slush. All take their toll on a car. Inside and out. To keep your car looking like new, Volvo offers several items that help preserve your Volvo's brilliant luster and avoid interior wear and tear.

### *Floor mats*

Floor mats take the mud from your shoes without damage to your carpets. Reducing wear and tear. Protecting your investment in your Volvo.

### *Seat covers*

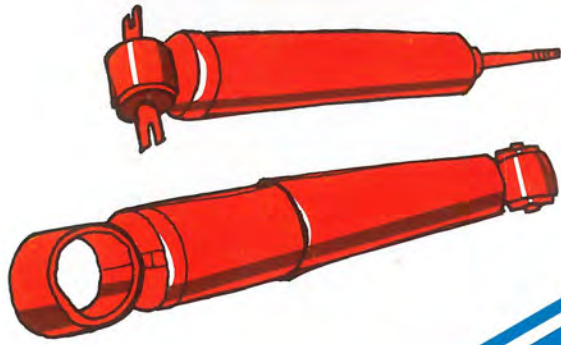
For extra colorful and comfortable interiors, there are specially designed seat covers in your choice of seven vivid colors. Easily coordinated with your Volvo's color scheme, they preserve upholstery while enriching the interior. Beautiful. And practical.

### *Touchup paint*

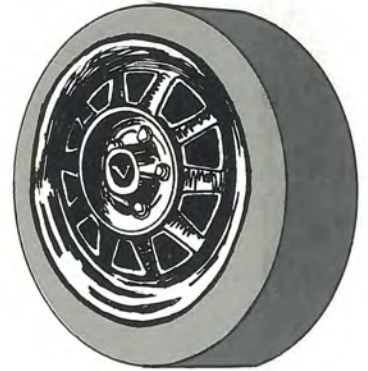
Touchup paints are available as sprays or wicks. Matched to your car's original color, they let you quickly and neatly undo minor damage to your car's finish caused by road debris or the inconsiderate driver parked next to you.

### *Waxes and polishes*

To preserve the finish of your Volvo, several polishes and waxes are available. Specially designed for a Volvo's finish, they bring out its depth and luster while protecting it from the ravages of the atmosphere.



# VOLVO



## YOUR VOLVO TO YOUR TASTE

### *Styling*

No two Volvo owners are exactly alike. You have your own style, your own personality, your own manner of expression. You express your individuality in the way you talk, the way you dress, or the way you furnish your home. You express it by buying a Volvo and the way you style it. So Volvo offers a host of accessories that let you appoint your Volvo to suit your own style.

### *Racing stripes*

Racing stripes for the young. Or the young at heart. The symbol of the performance-minded Volvo owner.

### *Tachometer*

And no performance-minded Volvo owner should be without a tachometer. This handy device keeps you informed of engine speed so that you can operate within the most efficient speed range and change gears at the optimum shift points.

### *Gearshift knob*

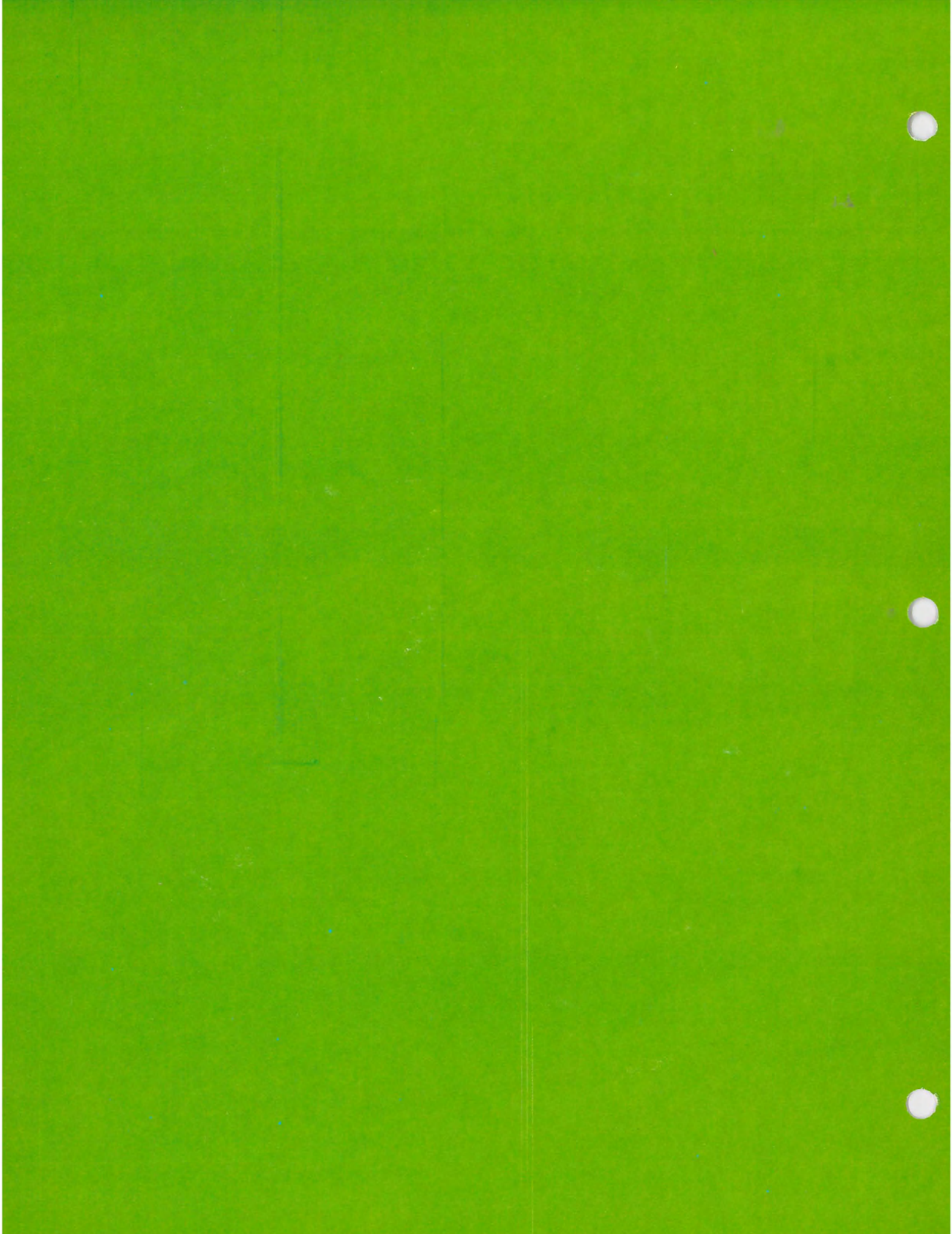
For that Gran Turismo feel while changing gears, Volvo offers a pistol-grip gearshift knob for standard transmissions.

### *GT steering wheel*

A GT steering wheel with an extra thick outer rim but a smaller overall wheel diameter enhances the sports-car feel of driving your Volvo.

### *GT shocks*

For the driver who likes to push it hard through the turns and navigate the roughest of roads, GT shocks give the suspension the extra firmness such driving skills demand.





**VOLVO IN 1974**

## Continuing Research

The 1974 Volvo is the product of many years of research and testing. That is why Volvo takes pride in its pioneering role in introducing many innovative features. Throughout the entire Volvo organization, research continues on the design and development of new and advanced features for Volvos in coming years. Before introduction on production models, every new idea is thoroughly tested from prototype testing in the laboratory and on the track to production model testing in actual driving conditions. To the Volvo buyer, this testing assures him that any new feature introduced by Volvo will measure up to Volvo's rigorous standards of quality, performance, and reliability.

The appearance of a Volvo changes little from year to year. Nevertheless, the car constantly undergoes significant improvement. Real engineering advances designed to make a Volvo a better and safer car to drive and a better value to buy.

To give you an idea of some of the advances that have been introduced in recent years, the table below shows the new features that have been introduced on the 140 Series Volvo in the last five model years. None of these features are cosmetic. All were designed to enhance your Volvo's reliability, durability, comfort, safety, or value.

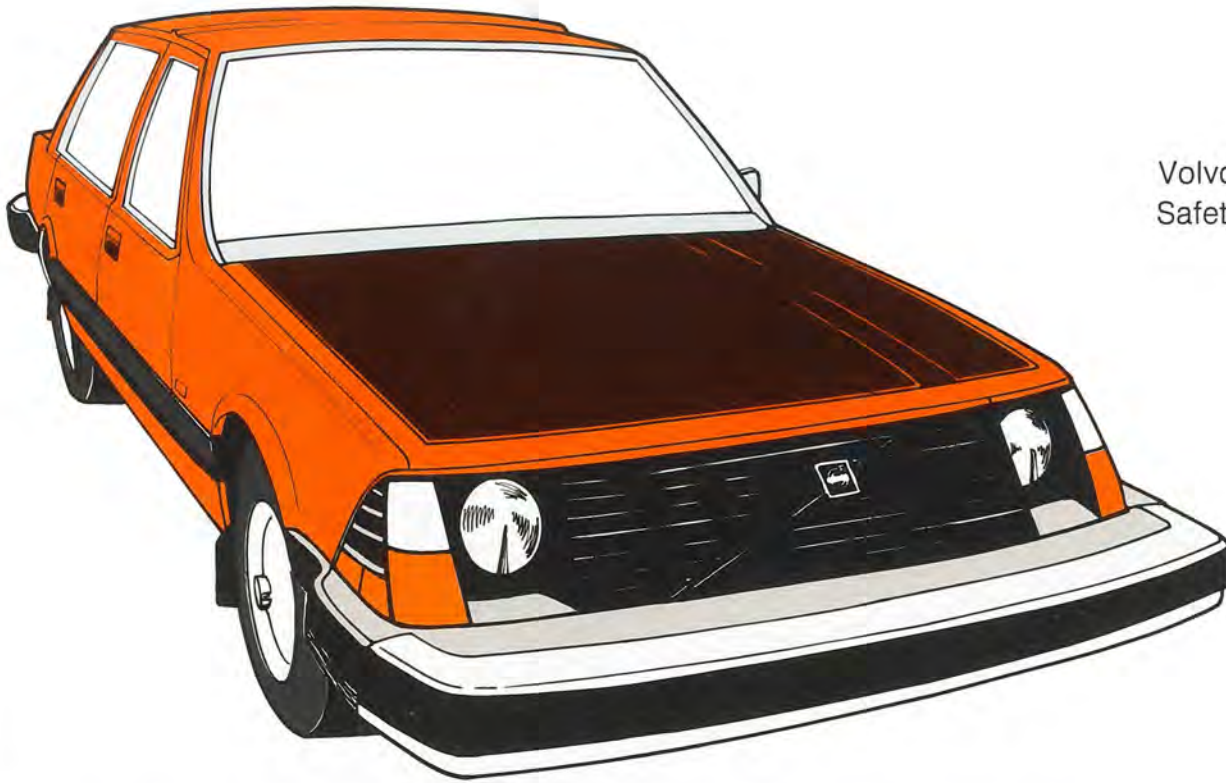
All of the improvements shown on the table have withstood the test of time and are available on the 1974 models. Perhaps you now own a 1971 Volvo. A 1974 Volvo will offer you all of the features you now enjoy plus those shown on the table for 1972, 1973, and 1974.

## Volvo Technical Center

At Volvo, research is a continuing responsibility. The Volvo Technical Center at Torslanda employs 1200 staff personnel who are constantly developing and testing new ideas to make Volvo a still better car. Built at a cost of \$46 million, the Technical Center lets Volvo's engineers simulate actual driving conditions that occur throughout the world. A climate laboratory permits testing at temperatures ranging from 100° below zero to 120° above. A wind tunnel is capable of producing wind velocities up to 110 miles per hour. A vibration laboratory used for body and suspension system testing can shake a car so violently that a few days on the shake rig is equivalent to a normal car's lifetime of abuse. Cars are crashed and cars are dropped, all to make sure that the Volvo you drive offers all of the safety protection that is reasonably possible.

### 140 Series Improvements By Model Year, 1970 through 1974

1974	<ul style="list-style-type: none"> <li>Continuous injection</li> <li>Ignition interlock safety belts</li> <li>Four stage safety steering column</li> <li>Energy absorbing, 5 mph bumpers front and rear</li> <li>Light integrity sensor</li> <li>Safety fuel tank</li> <li>Power steering on automatics</li> <li>GL model availability</li> </ul>	<ul style="list-style-type: none"> <li>Lower octane requirement</li> <li>55 ampere alternator</li> <li>One-hand seatback release</li> <li>Standard equipment radial tires (142, 144)</li> <li>Electric clock</li> <li>Redesigned shift levers</li> <li>New brake pad material</li> </ul>
1973	<ul style="list-style-type: none"> <li>Side impact protection</li> <li>Hidden antenna</li> <li>Improved lighting assemblies</li> <li>Padded, glare-free dashboard</li> <li>Instrument console</li> <li>Ten-outlet heating and flow-through ventilation</li> <li>Optional built-in air conditioning</li> <li>Fire-retardant upholstery</li> <li>Childproof rear door locks</li> </ul>	1971 <ul style="list-style-type: none"> <li>Inertia reel safety belts</li> <li>Wider wheel rims</li> <li>Acrylic upholstery (142, 144)</li> <li>Wall-to-wall carpeting</li> <li>Improved brake disc cooling</li> <li>Increased cooling system capacity</li> </ul>
1972	<ul style="list-style-type: none"> <li>Optional overdrive</li> <li>Optional fuel injection</li> </ul>	1970 <ul style="list-style-type: none"> <li>Tinted windows all around</li> <li>Flow-through ventilation</li> <li>Speed-controlled fan</li> <li>Electric rear window defroster</li> <li>145 rear window washer/wiper</li> <li>Ignition warning buzzer</li> <li>Illuminated side markers</li> </ul>



Volvo Experimental  
Safety Car (VESC)

### Volvo Experimental Safety Car

Looking toward tomorrow, Volvo has developed the VESC, the Volvo Experimental Safety Car. This prototype includes many forward-thinking safety features that should make tomorrow's Volvo even safer. Some of the safety features in the car are electronically controlled anti-lock four-wheel disc brakes, extra heavily padded interiors, a rear suspension leveling system, rear seat head restraints, automatic pop-up head restraints in front seats, semi-passive three-point safety belts, automatic air bags, and headlight wipers and washers. Some of the features included in the Volvo Experimental Safety Car have already been incorporated in production models. Other features will be introduced after they have been thoroughly tested to ensure their reliability and practicality.

Throughout its history, Volvo has taken pride in the many safety features that it has introduced on its own initiative, long before these same features became mandatory under the law. But safety is just one of several contemporary concerns. Another concern in recent years has been the problem of exhaust emission control.

### Exhaust Emission Control

In the past thirty years, the number of vehicles in operation in the United States has grown enormously. Automobile sales have increased in almost every year. Automobile usage has also increased as the city has moved to suburbia, people have expanded their leisure activities, and the two-car family has become almost commonplace.

California was the first state to attack the problem. In the early sixties, it became apparent that smog formation threatened human physical comfort and the quality of the environment. To combat the problem, the California legislature enacted a 1963 law requiring all new cars sold in the state to be equipped with certain exhaust emission control devices.

The California legislation was directed at the specific problem of unburned hydrocarbons (HC) which can form unpleasant, irritating photochemical oxidants in the presence of direct sunlight. But this was only part of the problem. Several other by-products of combustion can also create noxious emissions in the atmosphere.

Carbon monoxide (CO) is the most dangerous by-product. In small concentrations it adversely affects human response time. In higher concentrations it can cause suffocation.

Oxides of nitrogen ( $\text{NO}_x$ ) contribute to the formation of photochemical oxidants. One oxide of nitrogen ( $\text{NO}_2$ ) is toxic.

Early efforts to control exhaust emissions were concentrated on reducing the formation of unburned hydrocarbons. This was accomplished in several ways. One method was crankcase ventilation which took hydrocarbons that had bypassed the pistons and rings and returned them to the carburetor. In another step, gasoline vapors rising from the fuel tank and carburetor were accumulated and passed through an activated carbon canister before being burned in the engine. Still another step was the introduction of leaner fuel-air mixtures and intake air pre-heating for more complete combustion.

Although these steps were effective in limiting hydrocarbons and carbon monoxide, they increased the emission of nitrogen oxides, a particularly difficult substance to control. Higher com-

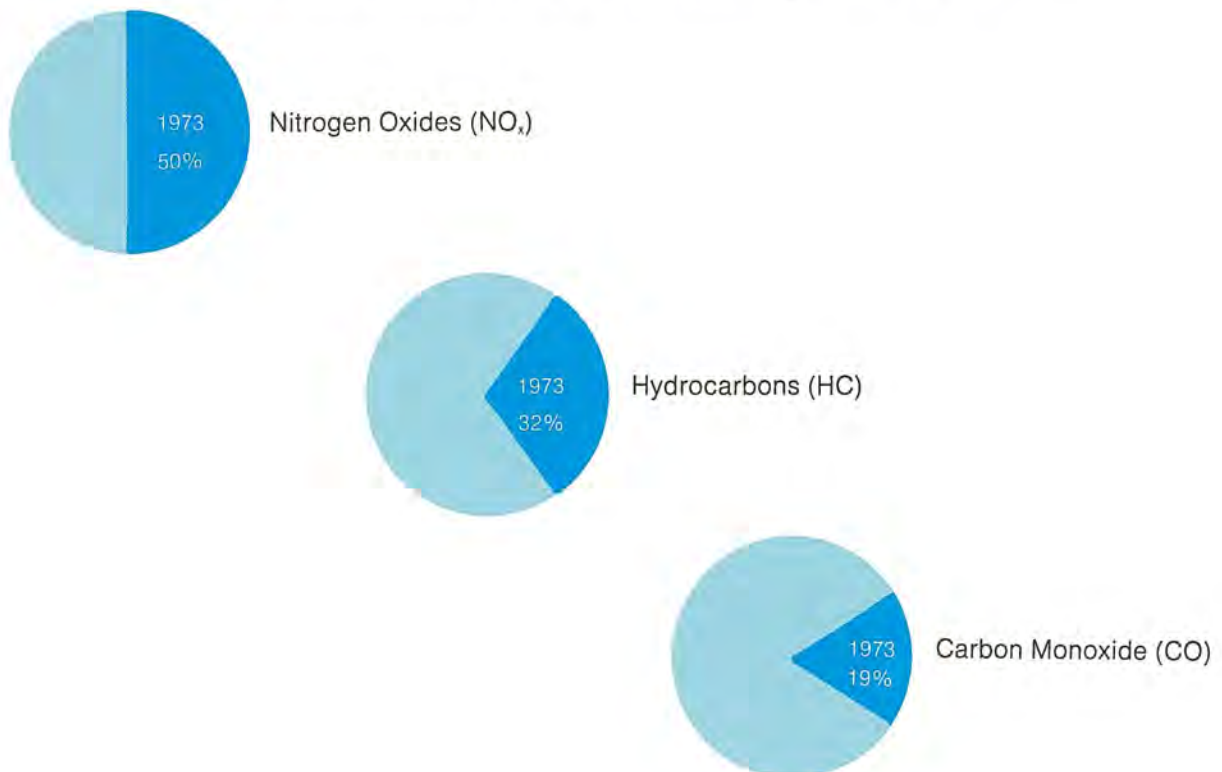
busion temperatures also created problems of after-running, the tendency of the engine to continue turning after the ignition has been turned off.

To control nitrogen oxides, many manufacturers reduced combustion temperatures by reducing compression ratios, retarding ignition, and recirculating exhaust gases. This helped to control the formation of nitrogen oxides but increased fuel consumption and reduced performance.

Volvo took another route. Fuel injection provided more precise control of fuel-air mixtures and more even fuel distribution among the cylinders. This virtually eliminated any need for ignition timing changes, induction air pre-heating, and exhaust gas recirculation. Thus, Volvo was able to meet existing standards with no material loss of performance or fuel economy.

Volvo research in exhaust emission control continues. Standards for 1975 and 1976 are even more stringent than those in effect today. To meet those standards, Volvo engineers are studying, designing, and testing a number of alternate approaches so that Volvo can provide a solution to the problem without creating other problems.

### 1973 Exhaust Emission Levels as a Percentage of 1967 Levels



## Quality Control

To be sure that every Volvo delivered to a new owner meets the quality standards of the Volvo organization, all manufacturing operations involve rigorous procedures for quality control. At all Volvo plants there are inspectors to inspect the car and inspectors to inspect the inspectors. Sweden is a land of engineers, and Volvo is the largest engineering company in Sweden. To satisfy the professionalism of Volvo's own engineers and the demands of the engineering public that comprise Volvo's home market, Volvos must be built to unusually high standards of engineering excellence.

## Human Factors

Quality depends upon more than just inspection. Quality depends upon the skill of the craftsman and his pride in his work. Automobile manufacturers all over the world have found that today's production workers are "turned off" by the repetitive demands of the traditional assembly line. To prevent this attitude from creeping into the manufacture of Volvos, Volvo has done extensive research in the social sciences as well as the physical. Volvo plants have improved working conditions and added machinery designed to eliminate physical discomforts associated with the assembly line worker's job.

Research in the human factors of automobile manufacture has shown that teamwork produces higher employee morale and better quality in manufacture. Much of your Volvo is manufactured by teams of workers who plan their own jobs and work on complete units of the car rather than individual components. This causes a greater sense of identification and personal satisfaction. Greater pride in completed work eliminates much of the dissatisfaction and tedium caused by the traditional assembly line.

## Volvo Service

The pursuit of quality continues long after the car has left the plant and been delivered to the owner.

A Volvo, like any fine machine, deserves a certain amount of regular care. A Volvo is a rugged machine that withstands the rigors of high-speed driving, high-performance handling, and the constant pounding of some of the worst roads the

world has to offer. It has been designed and built to take this sort of punishment in stride, but the miles eventually take their toll. For proper performance, an engine must be well tuned, and many parts require occasional adjustment to fine tolerances in order to function properly. Other parts, such as brakes and belts, are subject to normal wear. Still other parts may be damaged through neglect or mistreatment.

To provide your car with the maintenance that it needs, Volvo has established a systematic service program with four primary objectives.

The first objective is safe and satisfactory operation at all times. Volvo's best advertisement is the Volvo owner whose satisfaction leads him to buy another Volvo or encourage his friends to buy one. To ensure his satisfaction at all times, Volvo has established a maintenance schedule. The owner who adheres to this schedule will avoid the inconvenience and expense of premature wear or improper adjustment.

The second objective of the Volvo maintenance program is preventive maintenance to eliminate the need for costly major repairs. Every time your Volvo is brought to your dealer's shop for scheduled maintenance, the mechanic makes many inspections that help him anticipate problems and correct them before they become serious. Lubrication and adjustments at regular intervals reduce wear and tear on your car, extending its life and reducing your maintenance costs while eliminating the inconvenience and potential danger of breakdowns.

The third objective of the Volvo service program is compliance with all state and federal exhaust emission control laws. In recent years, automobile manufacturers have been required to make many engine modifications to reduce the quantity of noxious emissions released to the atmosphere. To be sure that these modifications are doing their job, special service is required from time to time. Many states have laws that require vehicles to be removed from the road if they fail to meet exhaust emission control standards. All cars sold in the United States must comply with these standards when delivered to the customer. But continuing compliance requires periodic inspection, adjustment, and minor service.

The fourth objective of the Volvo service program is to correct any defects in material or workman-

ship at no cost to the owner. This is accomplished through the Volvo warranty program. An automobile has thousands of parts. Most of these parts are checked individually before installation. They are further checked as the car is inspected at many stages in the manufacturing process. However, there is always some possibility that out of these thousands of parts one defective part is undetected. To correct these situations at no cost to the Volvo owner, a liberal warranty program provides for free replacement of any defective parts.

### Service Program

To accomplish all of these objectives, Volvo has initiated a service program. It includes a schedule of specific maintenance and inspection steps that begin before your car is ever delivered to you. Before a Volvo dealer can deliver a car to its new owner, it is subject to a rigorous pre-delivery service. This service is a continuation of the quality control effort that began when the car was on the assembly line. To be sure that the service is performed completely, the mechanic must check off each step on a form, sign it, and have his service manager sign it. A copy of the form is filed with your vehicle service history at the dealership. The vehicle history file is a continuing record of all service performed on your Volvo similar to the personal medical history that a doctor would maintain for a patient.

To be sure that you give your new Volvo the care that it deserves, it is extremely important for you to be familiar with its operation and maintenance requirements, as well as your own rights under the Volvo warranty program. Therefore, every Volvo salesman is expected to sit down with you when you take delivery and explain the maintenance schedule and warranty program while answering any questions you might have. He is also expected to explain any aspects of your new Volvo's operation that may be unfamiliar to you. To make the delivery of your new Volvo as pleasant as possible, we have also asked our salesmen to do all the work for you. Your signature should be the only effort required on your part to secure registration, titles, insurance, or any other documentation.

When you first get behind the wheel of your new Volvo, you can drive it to the limits of your plea-

sure and the law. All we ask is that you come back to your dealership after 1500 miles for a number of adjustments and minor service operations that should be performed at that time. At this time, your dealer will replace special breaking-in lubricants and final check your car to be sure that it is properly adjusted and ready for a lifetime of use. These adjustments will be performed by any authorized Volvo dealer at no cost to you except for lubricants, oil, and filters. The 1500 mile adjustments include the following:

- lubrication
- change engine, transmission, and rear axle oils
- adjust clutch free play and tire pressure
- inspect lights, horns, wipers and washers, brakes, transmission
- road test

Throughout the life of your Volvo, it should be brought to an authorized dealer for service under the Volvo maintenance schedule at intervals of 6,000 miles or six months, whichever occurs first. Adherence to this maintenance schedule is your best bet for years of safe and satisfactory operation.

The service operations performed at each 6,000 mile/6 month interval are described in your Owner's Manual and Warranty and Maintenance Record. This record is validated by the dealer each time that periodic maintenance is performed.

### Volvo Warranty

Your Volvo warranty is valid for 12 months from the time that you take delivery of your new car with no restriction on vehicle mileage. Under the terms of this warranty, any authorized Volvo dealer will replace, at no cost to you, any eligible parts that are found to be defective in material or workmanship. The 12 month warranty, with no mileage limit, is one of the most liberal in the industry. It is Volvo's expression of confidence in the quality of its product and a commitment to give the owner what he paid for — a car built to our rigorous standards of quality.

All systems required for the effective control of exhaust emissions have an extended warranty. This warranty is valid for five years or 50,000 miles, whichever occurs first.

Safety belts are warranted for five years for defects in material.

## Your Volvo Dealer

For the most efficient and economical service, we strongly recommend that you bring your Volvo to an authorized Volvo dealer. He knows Volvos like nobody else knows Volvos. He has immediate availability of virtually all required parts. Any parts that may not be on hand are quickly available to him through a modern and efficient parts distribution network.

He has factory-trained mechanics who regularly attend Volvo service schools conducted at many locations throughout the country. These service schools not only train new Volvo mechanics but also update the skills and knowledge of the most experienced mechanics in the organization.

The automobile is a complex machine. Technological advances and more stringent legal requirements have required the use of increasingly complex components. To be sure that mechanics' skills are constantly updated, all Volvo mechanics are urged to attend service schools at regular intervals.

Your Volvo dealer also has the advantage of constant information on the latest service procedures for the most efficient service of your Volvo. Specially designed Volvo tools help him service your Volvo quickly and economically. Diagnostic equipment helps him detect and locate any malfunctions in your car so that they can be corrected promptly.

The operation of your dealer's service department is supplemented by Volvo service representatives who provide technical assistance. They make frequent visits to every dealership to be sure that the latest techniques and equipment are being used, mechanics are being trained, and that customer complaints are being handled satisfactorily.

## Distributor Network

Volvo supports its dealers' operations through a system of five distributors located throughout the United States. Distributors in Rockleigh, New Jersey, Des Plaines, Illinois, Columbia, Maryland, Houston, Texas, and Torrance, California, provide technical assistance so that your dealer can serve you better. Warehouses at each location can ship parts so that there is no point in the United States that is more than 48 hours away from almost any part that might be required to service a Volvo.

## Volvo Parts

Wherever you have your Volvo serviced, be sure to insist on original Volvo parts. All original Volvo parts are manufactured to quality standards specified by Volvo. Other parts may fit your Volvo, but that does not necessarily mean they will perform as efficiently.

When your car is serviced with original Volvo parts at a Volvo dealership, you are protected by the Volvo parts and accessories warranty. Like the warranty on your new Volvo, any replacement part or accessory that you purchase which is found to be defective in materials or workmanship will be replaced at no cost to you up to 12 months from the date of purchase.

The service that you give your Volvo will reward you in many ways. It will ensure thousands of safe and pleasant miles of trouble-free driving. It will protect your investment in your Volvo so that when you buy your next Volvo, your present one will be worth a little more. That will make your next one cost a little less.

Volvo Distributors in the United States



