

The Audi 5000



“Designing a new automobile from the ground up gave us the chance to create one of the best-engineered luxury cars in the world.”

This is the team of automotive engineers who developed the new Audi 5000, a new kind of luxury car for the radically different needs of today. Starting clockwise at the bottom of the picture and ending in the center, they are:

Ferdinand Piëch,

Project Director: I designed racing cars before coming to Audi. But the Audi 5000 was a bigger challenge. A racing car can be designed to last for a few races only. That is its job. A passenger car has to do much more. Besides performing well, it must last a very long time. I knew we had assembled remarkable engineering talent. But they surprised even me.

Werner Schulze,

Interior Design: A high-performance car doesn't have to have an interior like the cockpit of a fighter plane. I felt it was important for the Audi 5000 to have a comfortable atmosphere that was not distracting, the same as a driver would find in his home. It makes him a calmer, better driver.

Dr. Anton Wimmer,

Structural Safety: A man named Timoshenko had a theory of construction which could help make safe cars. Yet no one had ever tried it. I did try it, and the results were remarkable. I believe it will take our competitors years to utilize this theory. Someday, perhaps, this construction could save your life.

Dr. Franz Behles,

Assistant Director: The Audi 5000 is the largest German car for the money. Yet for all its size, it is also surprisingly lively. For the money, we feel there is no other car with our combination of room, handling, acceleration, and comfort.

Jörg Bensinger,

Prototype Evaluation: We have been testing 100 cars in the United States and Canada for months before offering the first one for sale. It was the only way we could truly know how they perform in all weather conditions here. Other imports do not do this.

Hartmut Warkusz,

Styling: It looks the way it does because it is functional. It is aerodynamically efficient, so it requires less machinery to move it. Beauty is one thing. But if the design had not worked in the wind-tunnel, it would have been thrown out.

Joseph Eibl,

Chassis Design: It is better to pull a car than to push it, so I insisted on front-wheel drive. You have no idea the difference this can make, especially on wet or slippery roads. When you test-drive the Audi 5000, save it for a rainy day.

Dirk Bösenberg,

Acoustics Testing: If you have grown accustomed to noise in imported high-performance cars, you must try the Audi 5000. It gives you superb performance, yet it will

surprise you with its quietness. This is why I insisted on true high fidelity equipment as an option, instead of a simple radio.

Franz Hauk,

Engine Design: When I proposed the 5-cylinder gasoline engine, my colleagues smiled. I insisted, even though no one had ever done it before. It wasn't easy. But now, I believe we have an engine that offers outstanding performance like a 6,

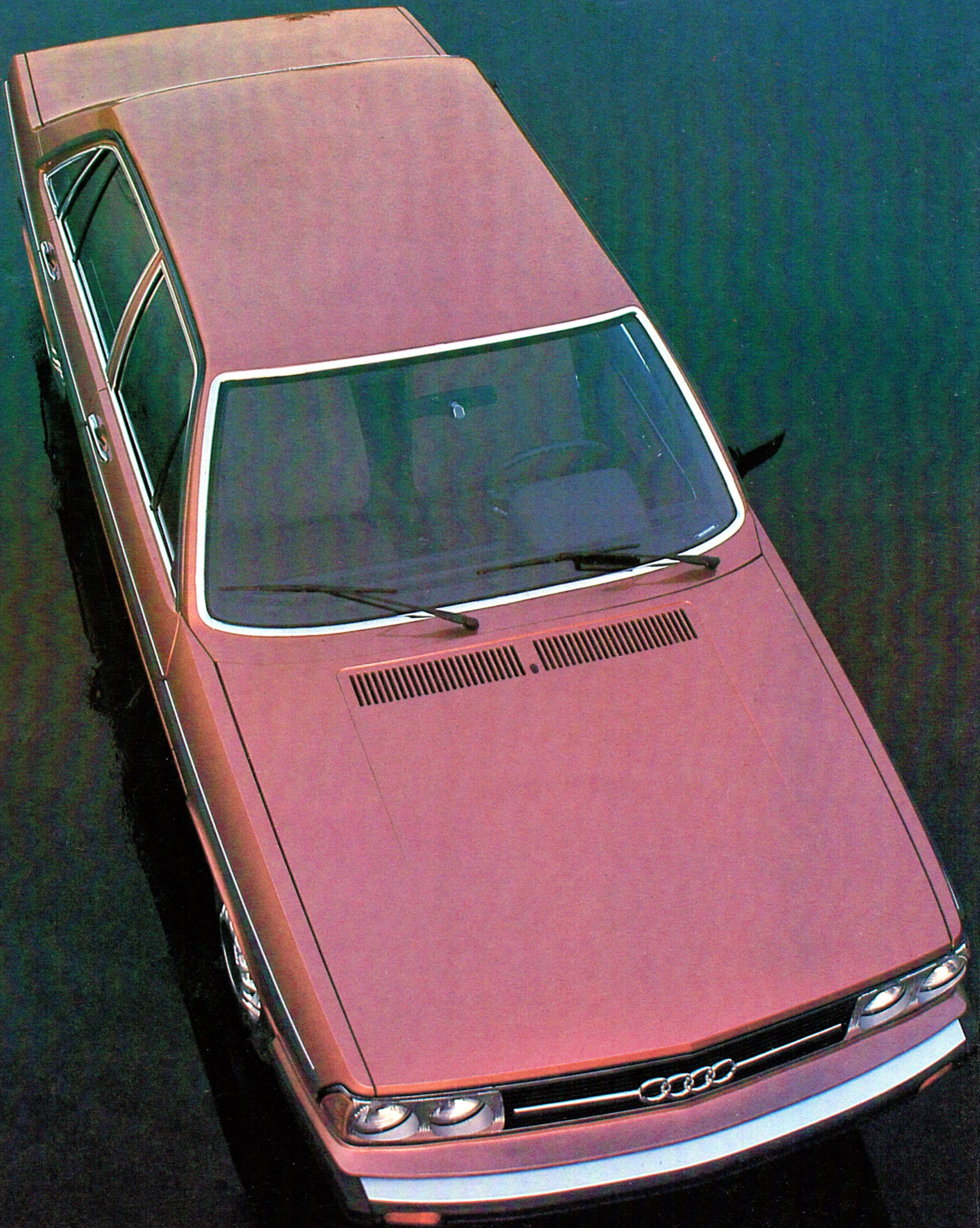
and great efficiency like a 4. They smile a different smile now.

Dr. Fritz Naumann,

Power Train Testing: We designed the Audi 5000 with as few moving parts as possible to make it reliable. Parts that are not in the car can never break. It wasn't easy. Sometimes I think they call the car the Audi 5000 because that's how many dinners I missed. Please come in and drive it. It was a lot of work.

To reach their goals, these Audi engineers broke new ground in many areas of automotive design. They successfully realized their design concept, with a car that is new in the sense of being totally newly engineered. They employed countless technical innovations. But more important, the Audi 5000 is a new automobile which is superb in total—a new kind of luxury car.





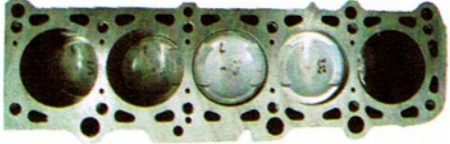
“The new five-cylinder engine in the Audi 5000 is the best answer yet to the modern need for a luxury car with good fuel economy.”

In pursuing the goal of the ideal modern luxury car—light in weight, economical to operate, yet performing like a larger, more powerful car—the most difficult question Audi engineers had to face was the choice of an engine.

Initially, they were torn between the need for lightness and economy, which four cylinders could provide, and the need for the more powerful and quiet performance of six cylinders. The debate was resolved with a revolutionary new approach: they determined to develop the first five-cylinder gasoline engine.

Why Five Cylinders?

Audi engineers were challenged by the possibilities of five cylinders.



They hoped to combine the advantages of four- and six-cylinder designs. Their calculations showed that five cylinders would provide ample power, yet generate far less vibration than four, which are typically noisy. And, of course, five cylinders would mean less weight and fewer moving parts than six.

But what was attractive in theory

had to be proven in practice. After four years of intensive development, a new five-cylinder engine evolved, which more than lived up to the expectations of its designers. (While a five-cylinder design had been successfully employed in diesel trucks, and cars, Audi is the first to apply it in a gasoline engine.)

Compared with an in-line six-cylinder type, the engine of the Audi 5000 is lighter in weight and more efficient because it has fewer moving parts.

A Minimum Of Vibration

Advantages of the new engine over four cylinders are even more dramatic. The noise of an engine is primarily a function of the amount of vibration transmitted through the engine mountings.

In designing the engine from the ground up, Audi engineers were able to incorporate every important new feature of modern engine technology. The shape of the combustion chamber, the helical inlet ports, and the preheating system—every detail is of the most advanced and efficient design.

Simplicity Fosters Reliability

Perhaps the most striking aspect of the Audi 5000 is its simplicity of design, which has reduced the

number of fan belts, intermediate shafts and cooling-system hose connections. (The water pump is integrated right into the cylinder block.) Components such as the oil pump and distributor are driven directly by the crankshaft or camshaft. The spur belt that drives the camshaft is also used to drive the water pump. By reducing the number of moving parts, this simplified design removes possible trouble spots and enhances engine reliability.

The new engine is a 2.2 liter, 103 hp overhead cam type with CIS (Continuous Injection System) fuel injection. This method of fuel injection is the most reliable, because it has fewer moving parts than other systems. (An airflow sensor connected to an hydraulic valve mechanically controls injection quantities.) It is a highly dependable system particularly suited to easy startups and quick response in cold winter weather.

Remarkable Acceleration Rate

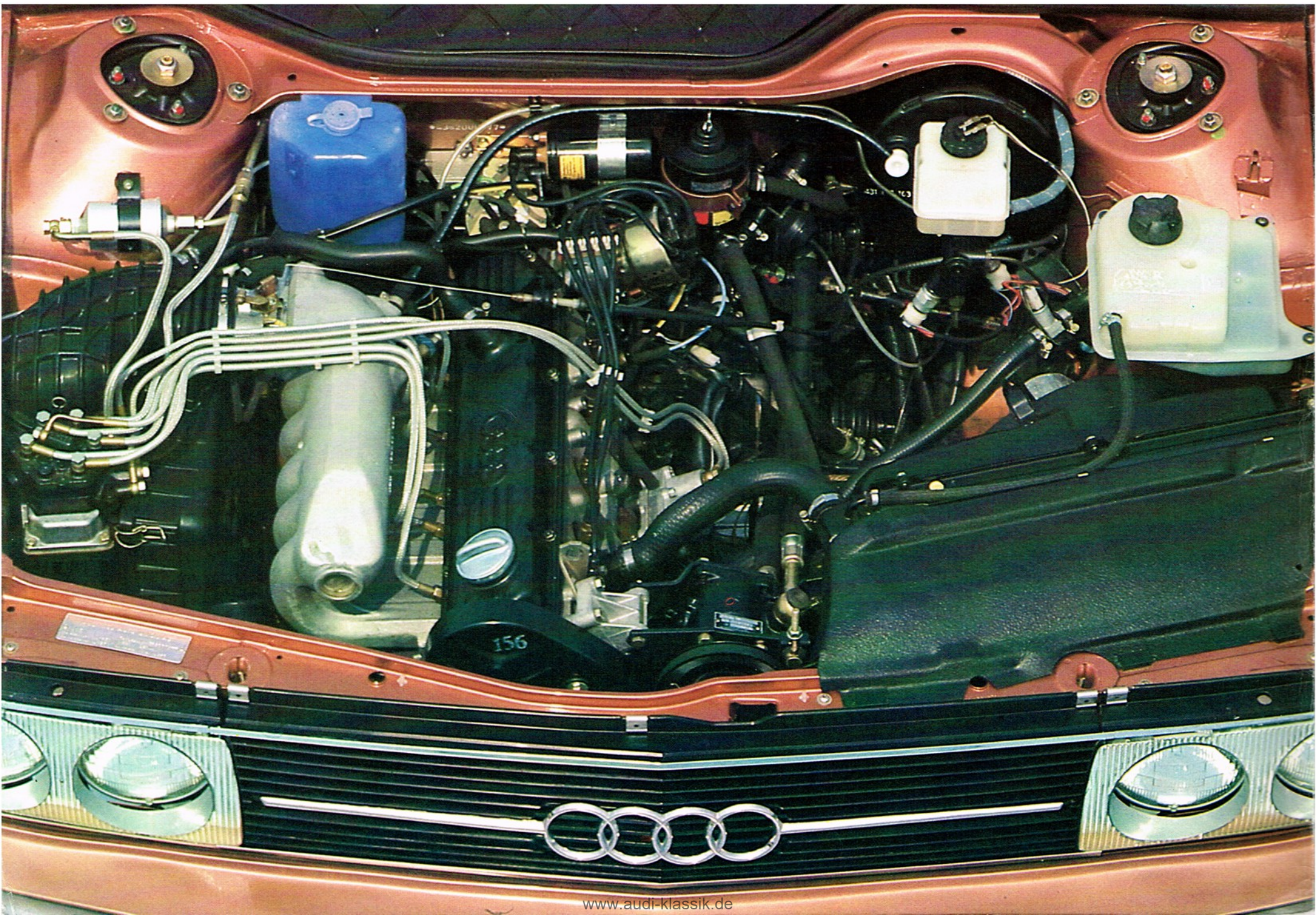
While fuel injection, in general, is superior in many respects to carburetion, the CIS type is noted for highly accurate metering, which results in clean exhaust emissions and efficient use of fuel. EPA*

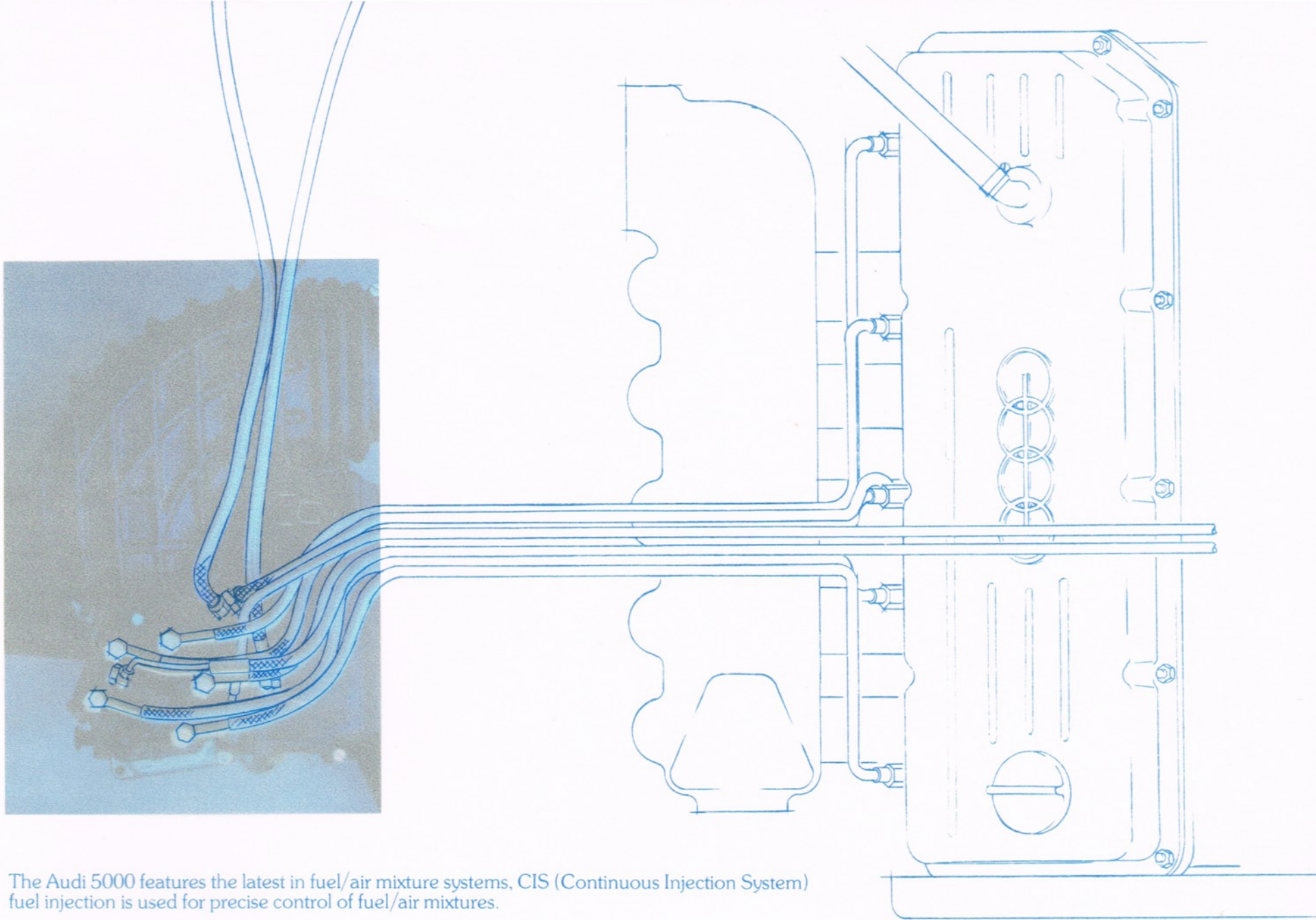
estimates rate the Audi 5000 at 24 mpg on the highway and 17 mpg in the city with automatic transmission. Yet it accelerates from 0 to 50 mph in 8.4 seconds and has a top speed of 103 mph.

The owner of an Audi 5000 has the satisfaction of driving a car equipped with a technically advanced engine of a new five-cylinder design. Yet far from experimental, the engine has been thoroughly proven in thousands of hours on the test stand, and 875,000 hours of test-driving under the most extreme conditions.

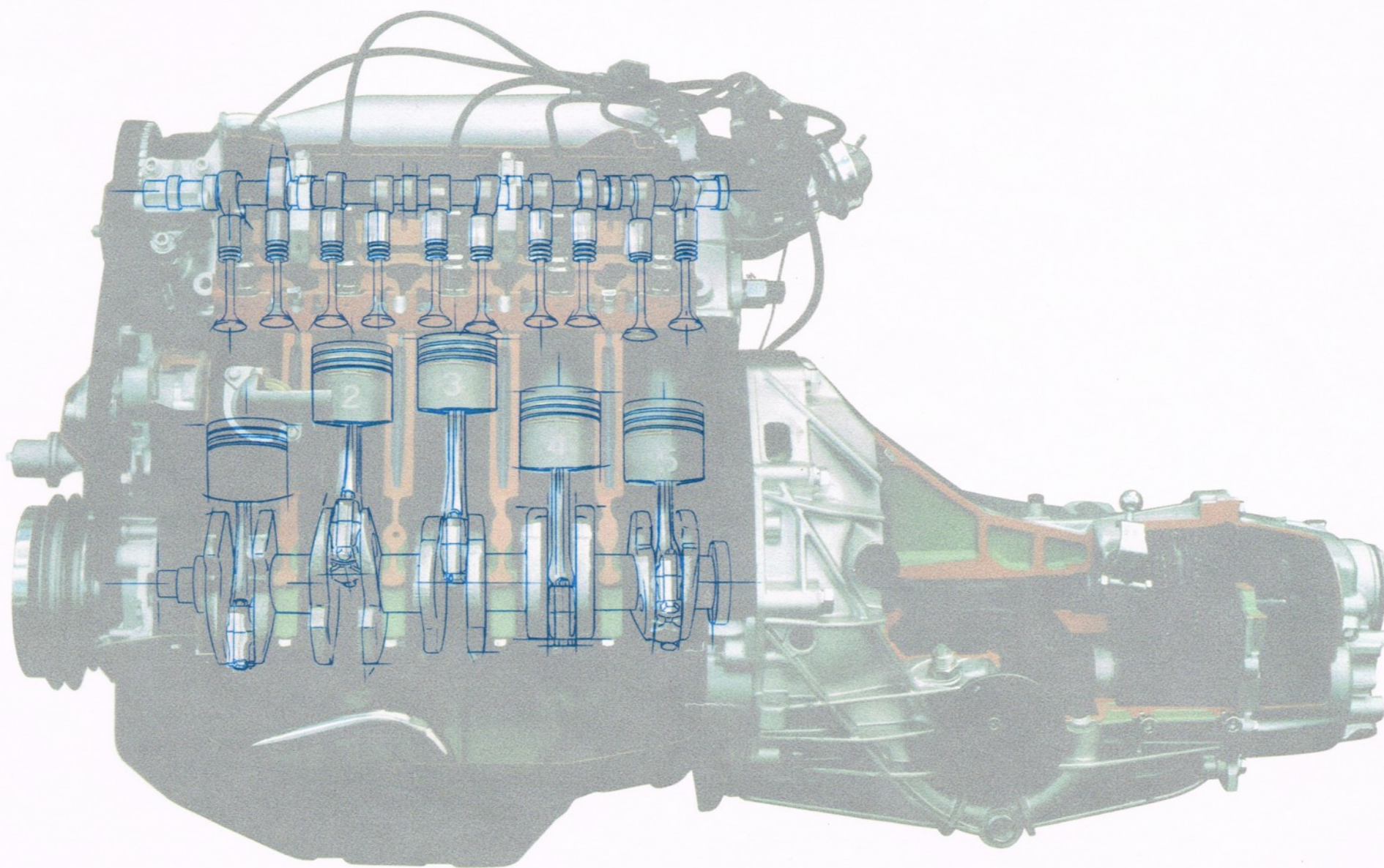
The engineers who developed this new engine are naturally excited by the interest stirred in the automotive design community by the idea of five cylinders. But they quickly remind any inquiring reporter that it is not the novelty that is important—but the design of an engine ideally matched to the performance requirements of a new kind of luxury car—the Audi 5000.

*Based on 1978 EPA estimates, 24 highway, 17 city mileage with automatic transmission. Your actual mileage may vary, depending on where and how you drive, your car's condition and optional equipment. Ask your dealer for a free copy of the EPA/FEA Gas Mileage Guide for New Car Buyers.

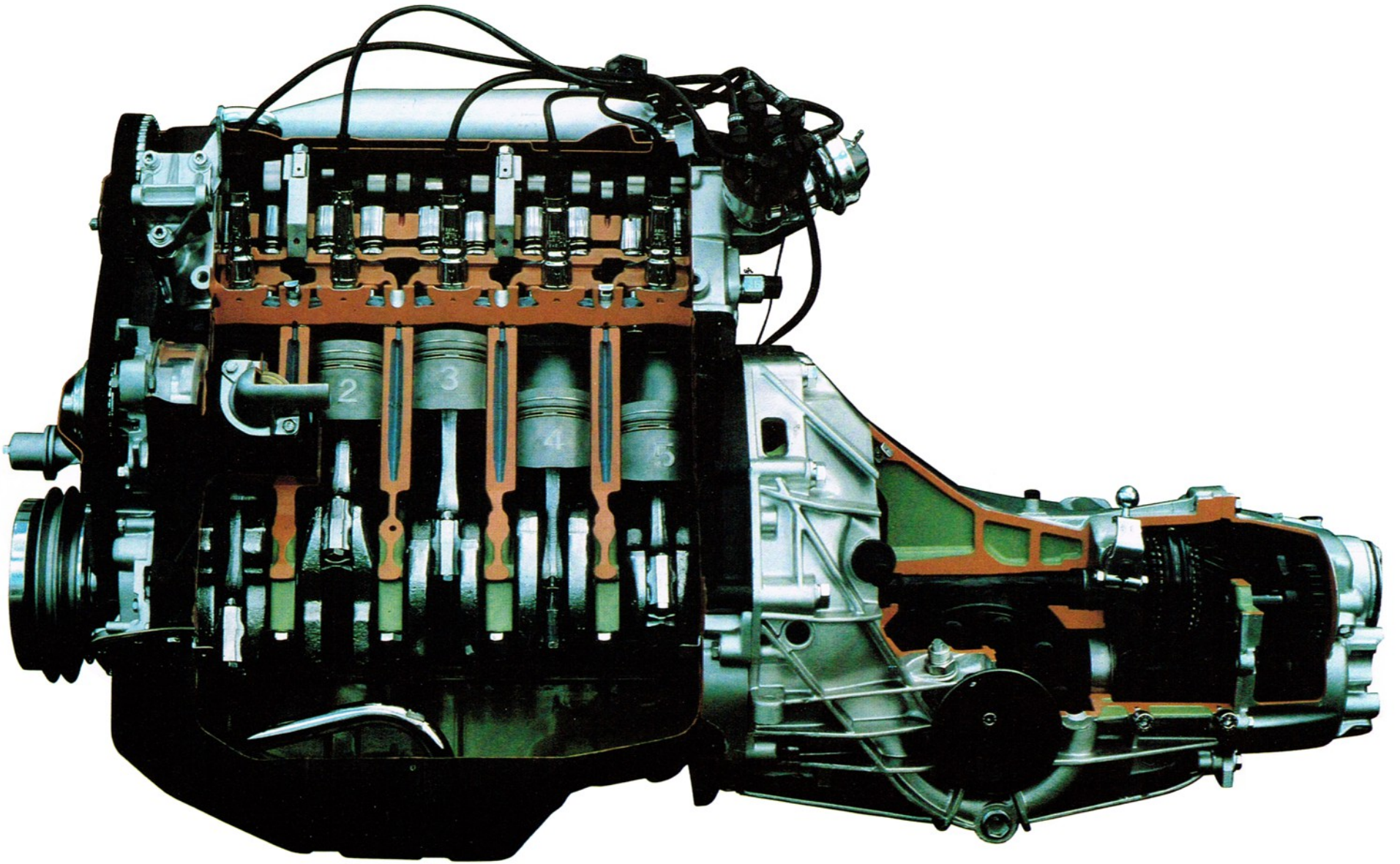
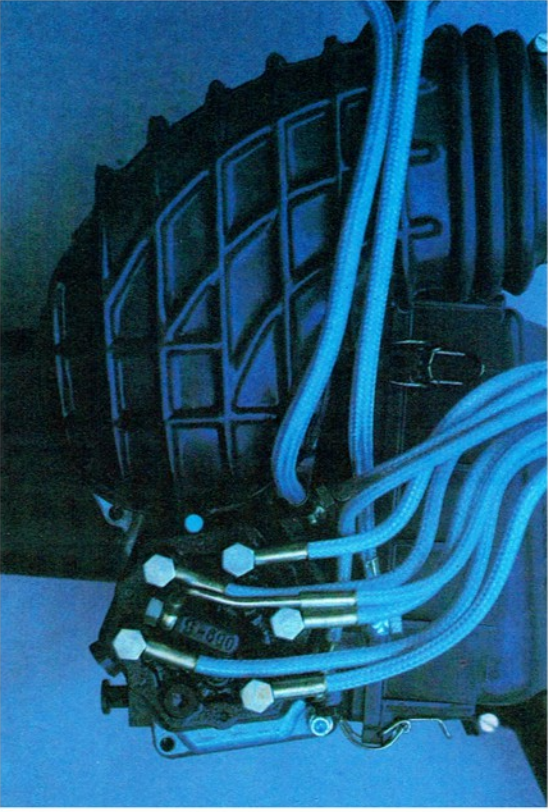




The Audi 5000 features the latest in fuel/air mixture systems, CIS (Continuous Injection System) fuel injection is used for precise control of fuel/air mixtures.



The five cylinder engine is an advanced design incorporating a six main bearing crank shaft for maximum durability, overhead camshaft for lightweight, quick, precise valve action, aluminum cylinder head for lightweight, transistorized ignition system for reduced maintenance, improved cold starting and reliable high engine speed performance.



“We have the most experience in producing front-wheel drive automobiles, and the Audi 5000 is our ultimate achievement in steering, tracking and braking.”



Audi has been building front-wheel drive cars for over 40 years. So it is only natural that Audi should be the company to apply front-wheel drive to a new kind of luxury car—the Audi 5000.

Many of the basic handling traits of the car derive from front wheel drive and placement of the engine forward of the front wheels. This provides a weight distribution of 61% on the front wheels and 39% on the rear wheels without passengers. When fully loaded, the weight is distributed 50/50. The greater proportion of weight on the front wheels gives the driver better tracking stability.

Light Axle Eliminates “Road Hop”

Front-wheel drive through constant velocity joints gives the Audi 5000 a low unsprung weight (amount of weight between the suspension and the ground), which improves both handling and ride quality. Since the rear axle does not carry the weight of a differential, it is far lighter than that of cars with rear wheel drive. This light axle neatly follows the contours of the road without the “road hops” typical of cars with heavy rear axles.

In the new Audi, front-wheel drive is combined with power-assisted rack-and-pinion steering and superb front and rear suspension systems to give a ride and “feel” on the road that must be experienced to be fully appreciated. Critical parts of the steering mechanism have been

Teflon-coated to ease friction and minimize maintenance. Steering control is precise and response is immediate.

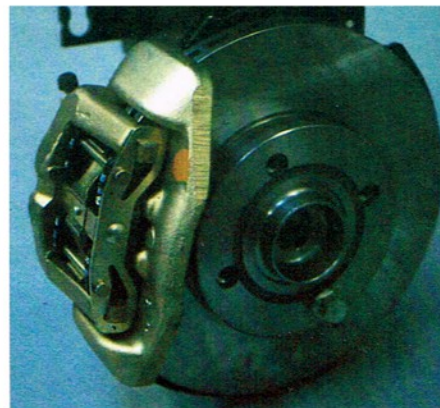
An Elegant Suspension Geometry

Designers of the Audi 5000 have created a suspension system that relies on well balanced coil springs, front and rear. The front uses the long-travel, good road shock absorbing coil spring strut suspension strut. This is assisted by a stabilizer bar to minimize body lean and properly control weight transfer. Front end geometry also includes time-proven negative steering roll radius. Even the camber has been chosen at a rate of -1° to further stabilize cornering and handling and to improve tire wear.

The rear suspension has individually located springs and shocks, to simplify servicing. The axle consists of the proven design of the torsion beam principle. Light in construction, it has a low unsprung weight for superb handling and ride quality. A Panhard rod has been added to provide lateral stability and assure proper trailing. The total suspension geometry of the car also includes two well known Audi engineering features: negative steering roll radius and large caster angle. Both tracking and handling characteristics are further enhanced by the car's wide track, long wheelbase and low and forward placed center of gravity.

Under certain circumstances, the

front-wheel suspension design also influences the braking behavior of the car. When slippery road surfaces (or a front-wheel blowout) cause one front wheel to brake harder than the other, a factor known as “steering roll radius” comes into play. The Audi 5000 is designed with what is known as negative steering roll radius (see diagram at right), which in cases of uneven braking of the front wheels, helps maintain directional stability. Under the same circumstances, a conventional car (with positive steering roll radius) will steer in the direction of the



greater braking friction — which aggravates the situation instead of correcting it.

The brakes of the Audi 5000 are ventilated discs on the front wheels and finned drums on the rear wheels. This combination results in the ideal braking system to meet the requirements of Audi's front-wheel drive.

Automatic Sensing of Loads

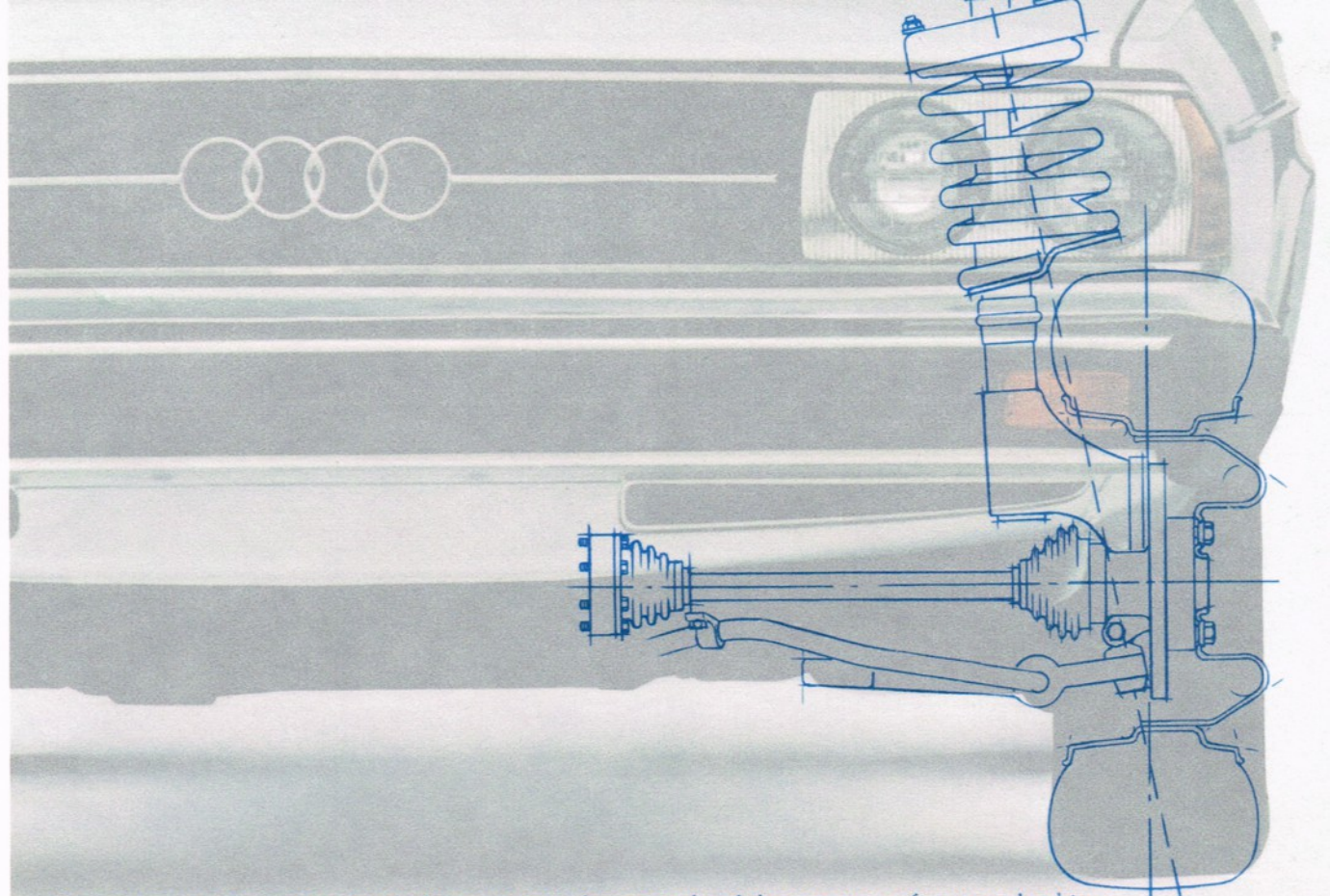
To compensate for varying rear

loads, the 5000 is equipped with an effective load-sensing pressure regulator, which automatically changes the pressure on the rear brakes. Thus the proportion of brake pressure on the front and rear wheels is adjusted to match the distribution of weight. The two separate brake circuits are linked diagonally, rather than front and back.

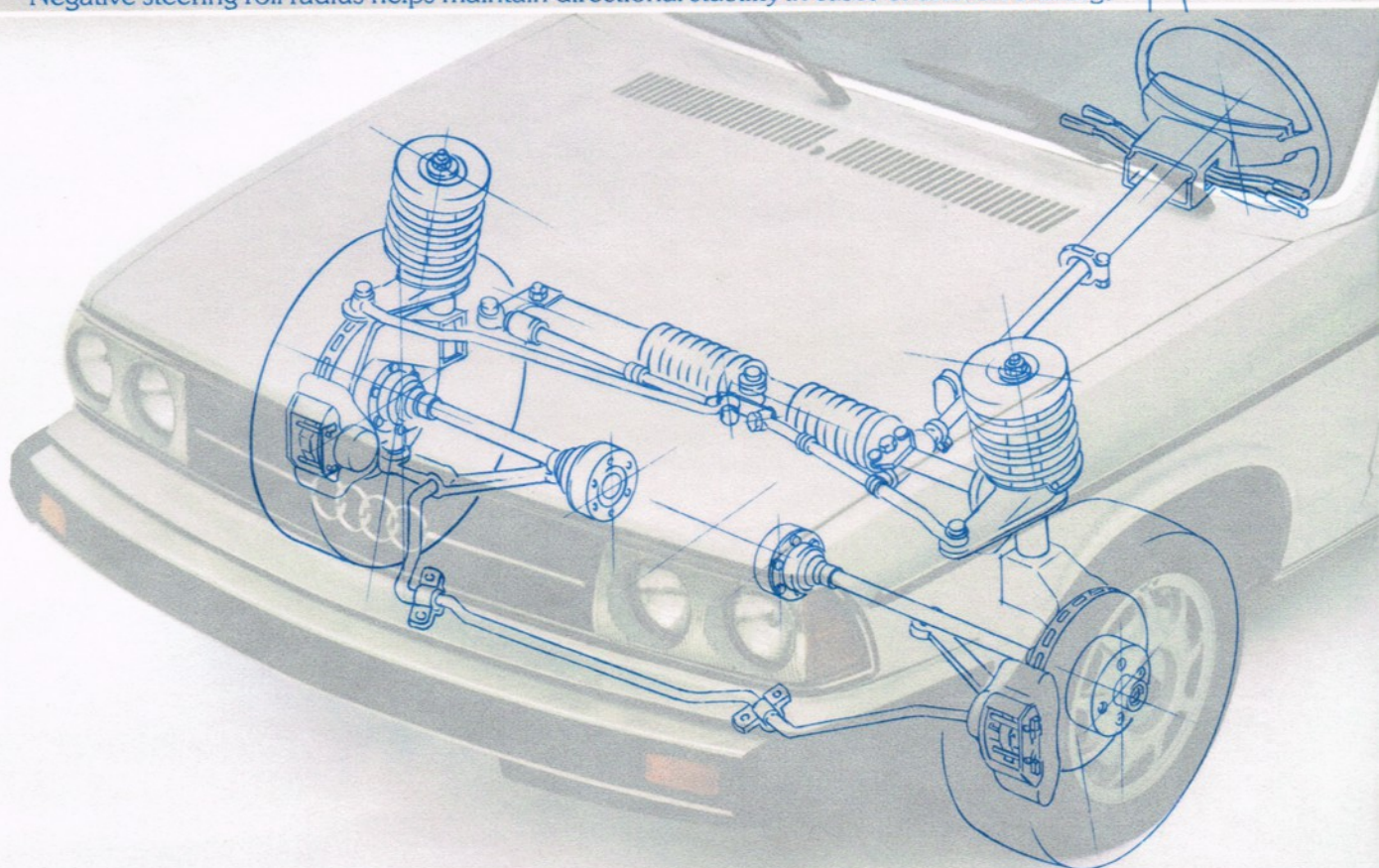
In the highly unlikely event that one brake circuit fails, the driver will still have both front and rear braking power. And the car's negative steering roll radius will counter-steer to help maintain direction.

While the details of suspension, steering and braking are important, the real test is how these details combine into a single, high-performance entity. In the Audi 5000, the blend of complex technical specification delivers a degree of response to the driver's every wish that is truly astonishing. At speeds above 60 mph, as demonstrated on test tracks, even the shape of the car contributed to its ease of handling. Audi engineers conducted 260 hours of wind-tunnel experiments to achieve a wind-drag coefficient of .40 — extremely low for a car of this size.

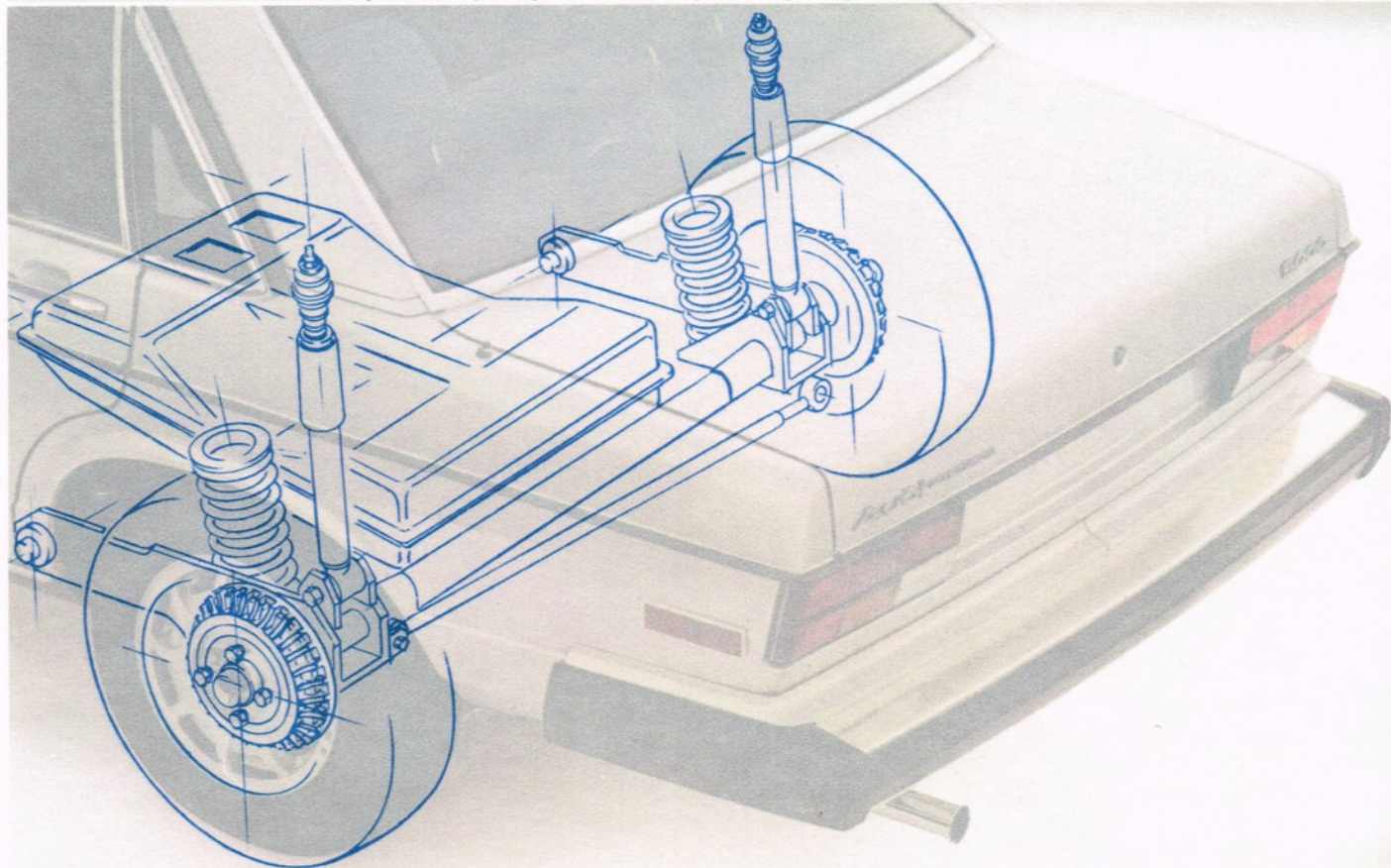
“Ultimate achievement” might appear to be an overblown description for the Audi 5000. But for the team of automotive designers and engineers who developed this new kind of luxury car, it is not an exaggeration.



Negative steering roll radius helps maintain directional stability in cases of uneven braking.



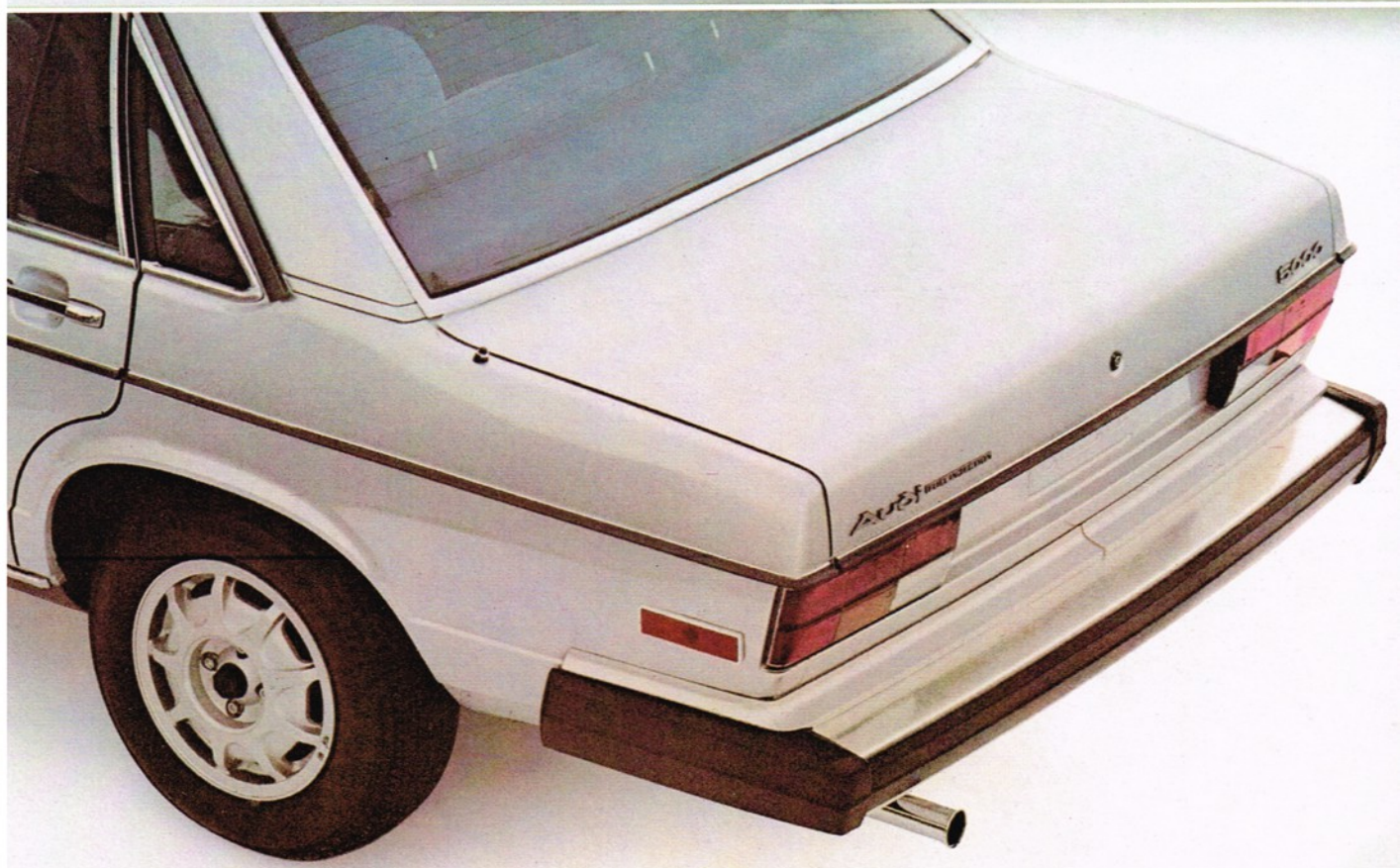
Front-drive wheels are independently suspended incorporating long-travel coil springs and a stabilizer bar.



Torsion crank rear axle helps keep wheels in firm contact with the road for better comfort and handling.



Two separate brake circuits are linked diagonally for directional stability in the event of a failure in one braking circuit.



“By uniting the car with the driver, the controls of the Audi 5000 communicate a sense of quick response and high performance.”

Seated in the Audi 5000, a driver is immediately impressed with the simple, sensible arrangement of the dashboard. The car's designers have placed their emphasis on functionality rather than “show”—using the results of time-and-motion studies to position instruments and controls for maximum ease and convenience. All warning lights, for instance, are centralized. Steering column controls are grouped according to the anatomy of the hand. The Audi dashboard is intentionally designed to look unimposing—not complicated like the cockpit of an airplane. Instruments and controls are as reassuring and relaxing in appearance as the car is to drive.

Controls on the steering column are mounted on four stalks, which operate the lights, turn signals, emergency flasher, windshield wiper and washer—and the cruise control. The driver uses the cruise control



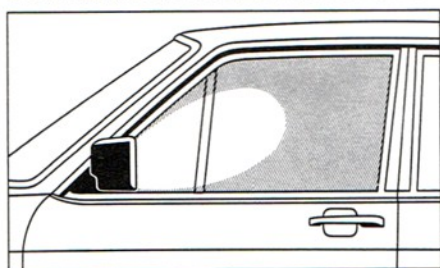
stalk to set the speed for automatic cruising, which will disengage when either the brake or clutch is operated.

Steering of the 5000 is easy but firm in the hands. The rack-and-pinion mechanism itself is maintenance-free and self-adjusting. Its operating rod is Teflon-coated for

low-friction, noiseless operation. Standard power steering employs an assisting device that diminishes with higher speed, automatically maintaining an even steering response.

Contours Aerodynamically Designed

The driver's line-of-vision during every kind of maneuver determines the placement of every component. Even the contours of the outside rear-view mirror are aerodynamically designed so that rain or snow will blow off the front-side window and



the outside mirror can be seen clearly. A heated rear window assures visibility in inclement weather.

Enormous Heating Capacity

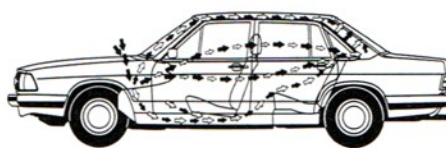
The car's heater has a heat output which can maintain the inside temperature of 86°F when the outside temperature is -40°F. While heating systems of other cars have a similar output, these conventional heaters are controlled by adjusting the flow of hot water, providing a slow response to changes in temperature setting. The interior temperature in cars with this type of heater also varies considerably with air flow (road speed) and pump pressure

(engine speed).

On the other hand, the heater of the 5000 operates by constantly passing hot water at full flow through a heat exchanger. The temperature of the air used to heat the car is varied by mixing warm and cool air. Thus the heater inside the car is virtually unaffected by engine speed and road speed. This eliminates the need for frequent temperature adjustments that are necessary with other systems.

Double The Amount of Air-Flow

Careful attention was also given to temperature distribution in the design of the ventilation system. A wide array of air outlets at dashboard height “stratify” the air flow so that the upper air layer is kept cooler and the lower layer warmer—an arrangement that promotes clear heads and warm feet. Air is also directed to the side windows to



prevent misting. The circulation of air is powered by a newly developed radial fan of large diameter completely encased to dampen noise. This fan develops an air flow throughout that is double the amount of earlier conventional systems, with a noise level that is 50% less. It can change the air in the car's interior approximately every 15 seconds.

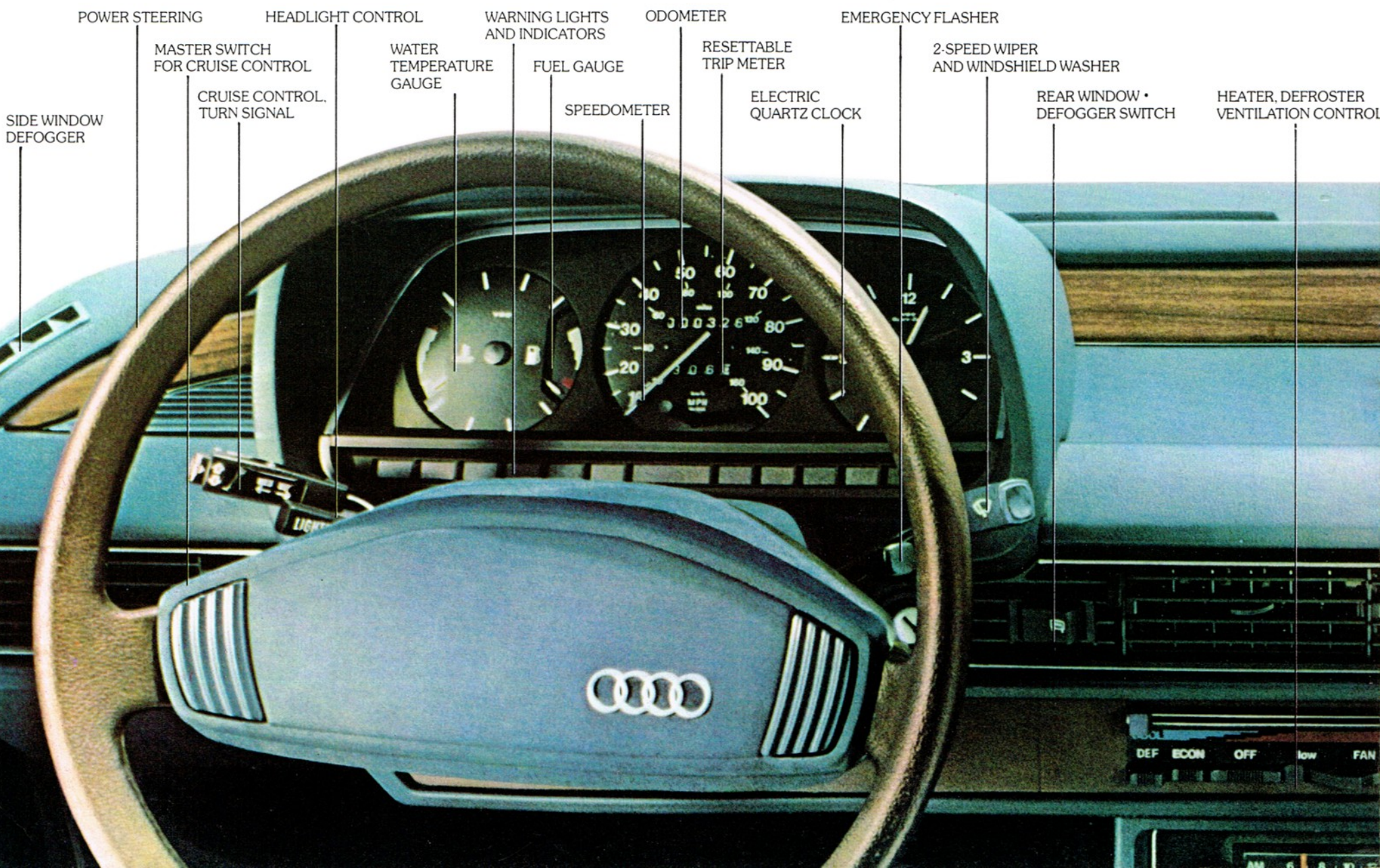
The optional air conditioning system in the Audi 5000 was

developed as an integral part of the car's comfort concept, rather than as an “add-on” accessory. The system has numerous outlets for faster, more even cooling of the interior. It dries the air as well as cools it. As part of the hundreds of thousands of miles of road tests, Audi 5000 was driven at top speed with full air-conditioning across the Sahara Desert in summer, and its occupants remained comfortable. (Similar tests of the heating system were conducted in Finland during the winter.)

Acoustic Chambers For Stereo

Before designing the sound system for the Audi 5000's stereo radio, Audi engineers made a basic study of the special problems of hi-fidelity sound reproduction inside an automobile. They found that the superiority of high fidelity systems in the home is largely due to the resonance chambers in full-sized stereo speakers. By creating acoustic chambers around the stereo speakers, they found they could enhance sound reproduction enormously. This new advance in automobile high fidelity is now found in the new Audi 5000.

Engineering improvements inside the passenger compartment of the Audi 5000 actually rival the technical advances made in the car's power train. Only behind the wheel will a driver fully appreciate the interior atmosphere its designers have created—for safe and relaxed, yet exciting driving experience.



POWER STEERING

HEADLIGHT CONTROL

WARNING LIGHTS AND INDICATORS

ODOMETER

EMERGENCY FLASHER

MASTER SWITCH FOR CRUISE CONTROL

WATER TEMPERATURE GAUGE

FUEL GAUGE

RESETTABLE TRIP METER

2-SPEED WIPER AND WINDSHIELD WASHER

SIDE WINDOW DEFOGGER

CRUISE CONTROL, TURN SIGNAL

SPEEDOMETER

ELECTRIC QUARTZ CLOCK

REAR WINDOW • DEFOGGER SWITCH

HEATER, DEFROSTER VENTILATION CONTROL



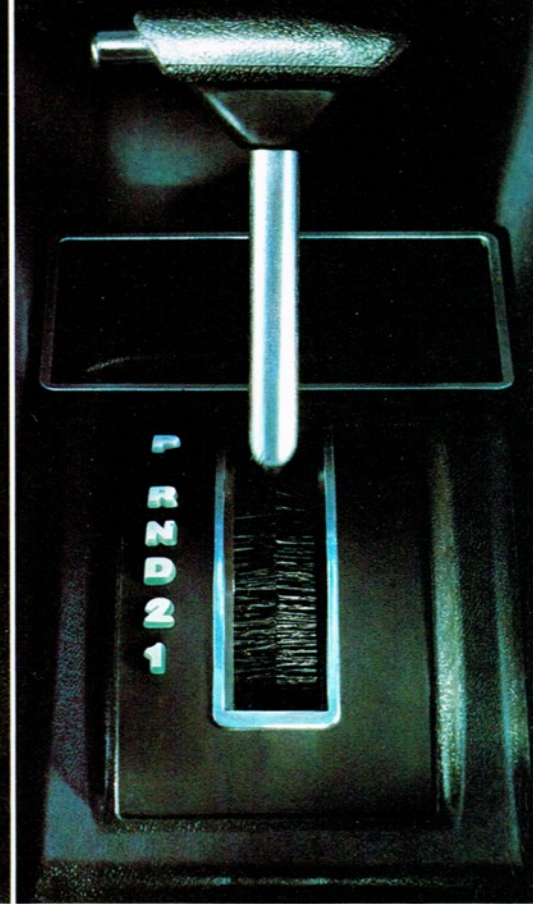
Simple to operate heating and ventilation controls assure a comfortable driving environment.



Instrumentation is logically arranged for convenient scanning. Warning lights and indicators are arrayed in a single row.



Four-speed fully synchronized manual transmission.



Three-speed automatic transmission.



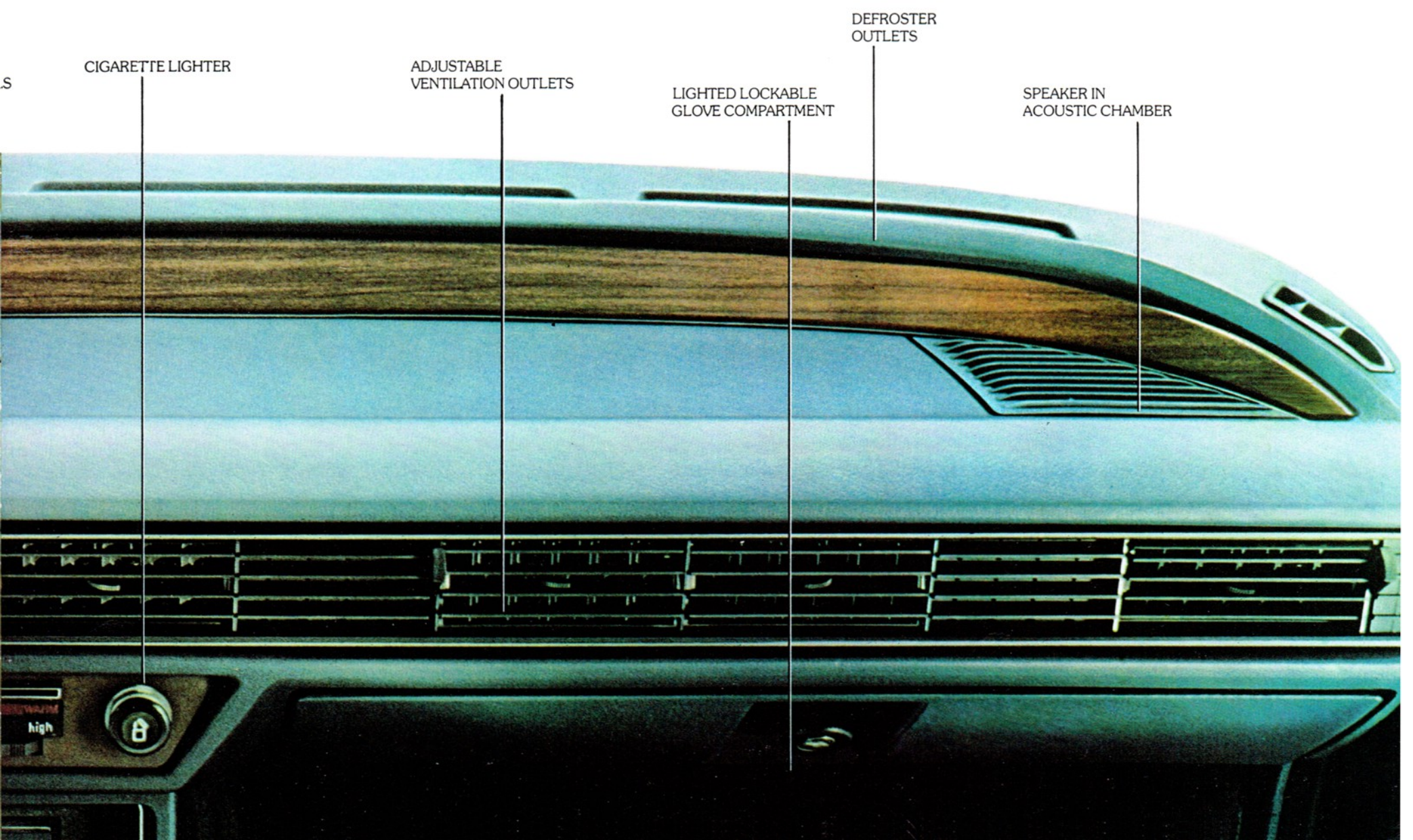
Large rear lights for visibility and safety.



Speedometer with white on black lettering for easy reading.



Tinted side view mirror is adjustable from inside.



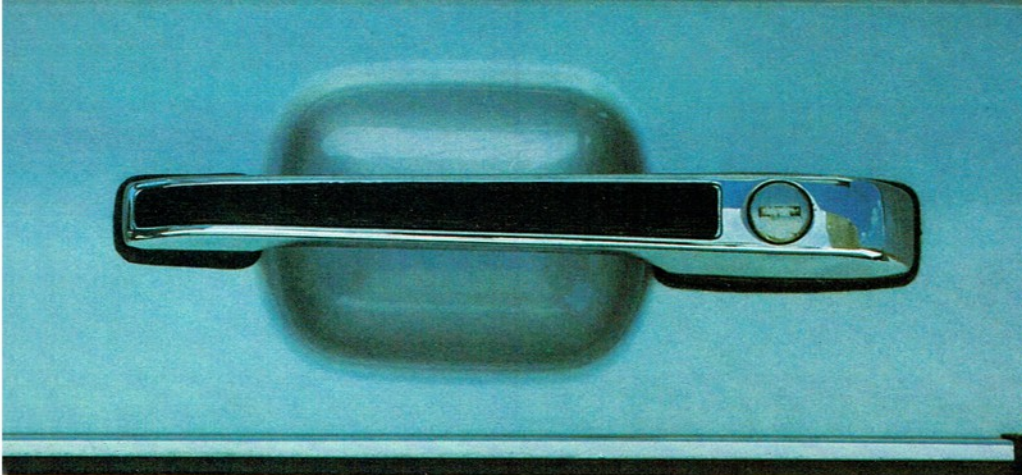
CIGARETTE LIGHTER

ADJUSTABLE VENTILATION OUTLETS

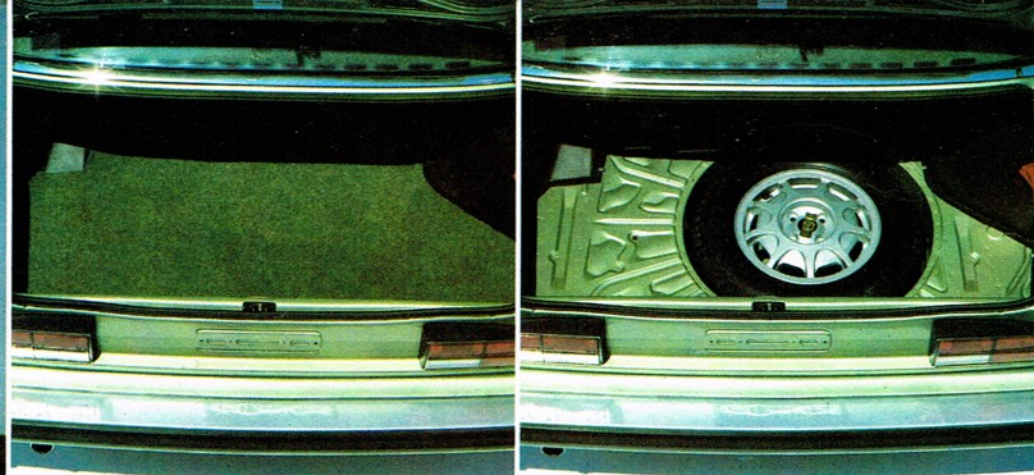
LIGHTED LOCKABLE GLOVE COMPARTMENT

DEFROSTER OUTLETS

SPEAKER IN ACOUSTIC CHAMBER



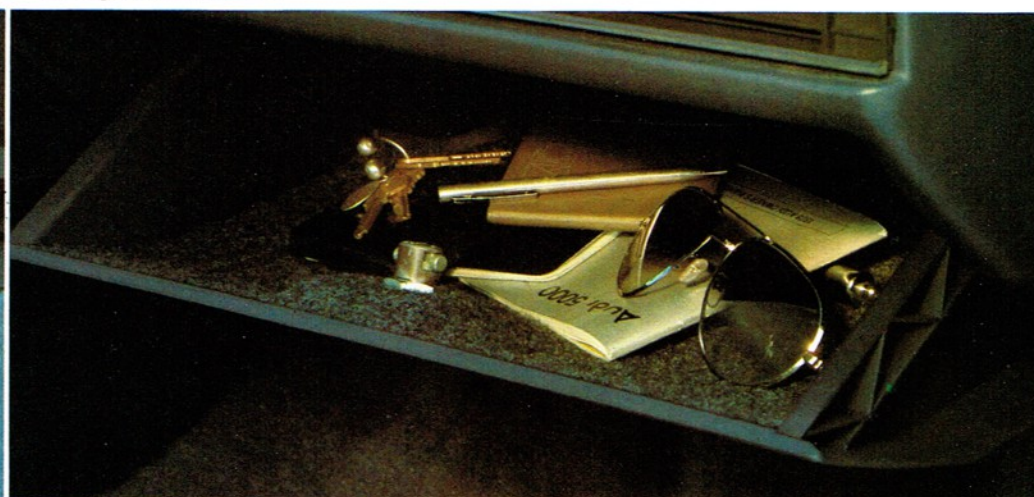
Attractive and easy to grip door handles.



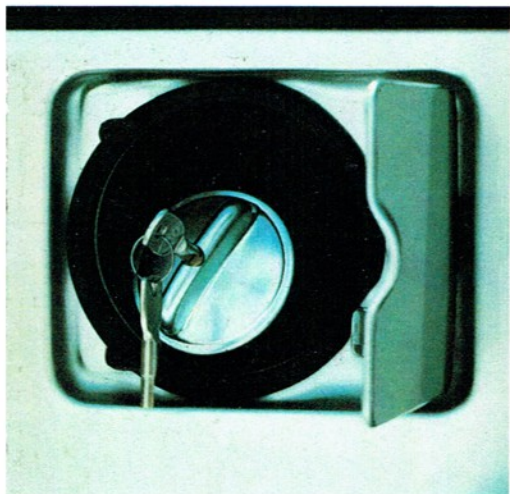
Fully carpeted 22.7 cu. ft. luggage compartment with spare tire under compartment floor.



Above: cruise control, turn signal indicator, headlight dimmer, flasher stalk. Below: Headlight control stalk.



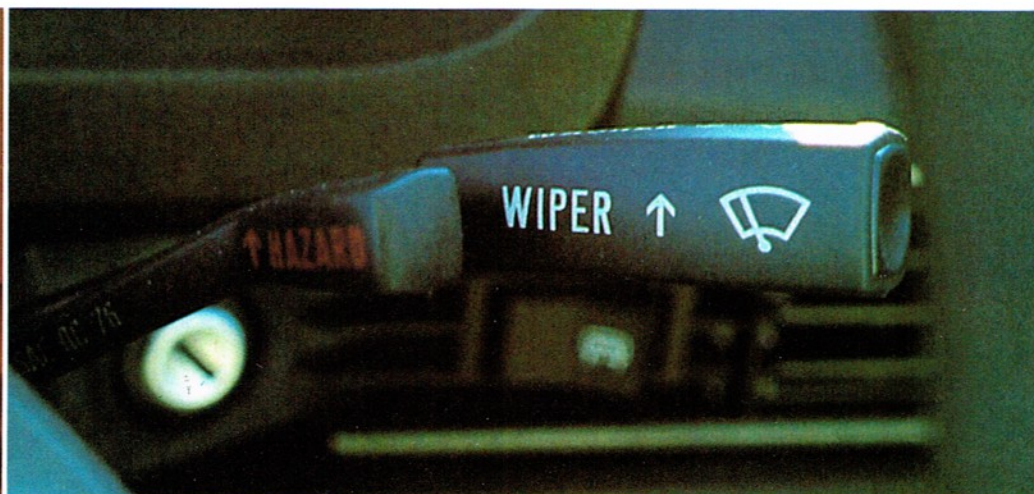
Spacious lighted glove compartment.



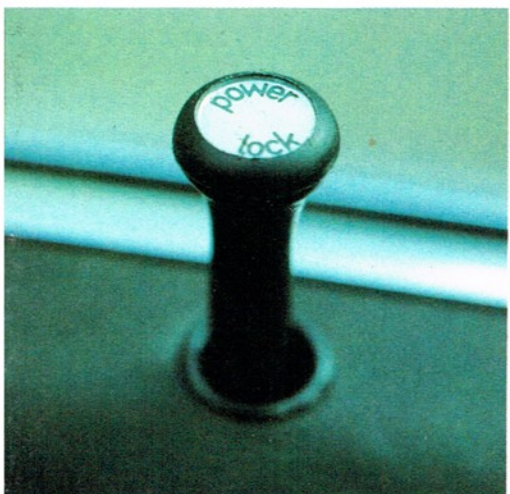
Lockable gas cap.



Adjustable reclining front seat controls.



2-speed wiper/washer with intermittent operation stalk.



Power lock on rear doors.



Lighted cigarette lighter.



Luxurious door panels with storage pockets.



AM/FM stereo radio with complete push button selectivity in either mode.



Front side window defoggers.





“We believe we have created the ideal degree of luxury for driving requirements as they exist today. In the conception and its technical fulfillment, the Audi 5000 is a thing of beauty.”



“The interior of the Audi 5000 will meet the needs of driver and passengers for two kinds of comfort...psychological as well as physiological.”

The interior of this new kind of luxury car was approached with as much innovative thinking as its moving parts. Through discussions with psychologists, Audi designers determined that a car interior resembling a living room is most conducive to safe, relaxed driving. A driver moving from the restful atmosphere of his own home into similar surroundings in his automobile tends to be a better, calmer driver.

So inside the Audi 5000, its designers have created a living room atmosphere and enhanced it with luxurious, tasteful appointments. Proven optical principles were applied to create the largest possible impression of size. Sharp contrasts, which are psychologically tension-inducing, were avoided in favor of muted surfaces, large areas of high-quality textured fabrics, and thick pile carpeting on the floor.

An End To Tiring Vibrations

Through scientific orthopedic

principles, the car's interior designers have contoured the modern all-foam seats to fit the anatomy of better than 90% of the population. The shape of the seats encourages a relaxed posture. Springs and cushioning are balanced precisely to eliminate tiring vibrations. And the exceptionally high bolsters of the seats provide side-support when cornering.

Both front seats recline to any position, up to full horizontal and they slide far enough back to accommodate a six-foot man while still allowing sufficient room for passengers in the back seats.

Interior Roominess And Safety

A sense of roominess in the Audi 5000 is furthered by its ample storage space. There is a large compartment in front of the shift console, an open compartment on the passenger side, and a big glove compartment.

Internal safety features also offer a sense of reassurance. Front

seats are securely anchored to the floor. Buckles of the inertia-reel seat belts are mounted directly on the seat frames instead of the floor, for extra passenger comfort and added emergency locking. Back-rests have unique impact protection for the knees of passengers in the back seats. Child-proof safety locks on rear doors, an energy absorbing instrument panel and the absence of dangerous corners and edges all contribute to the safest-possible interior design in the 5000.

Advances in Noise Insulation

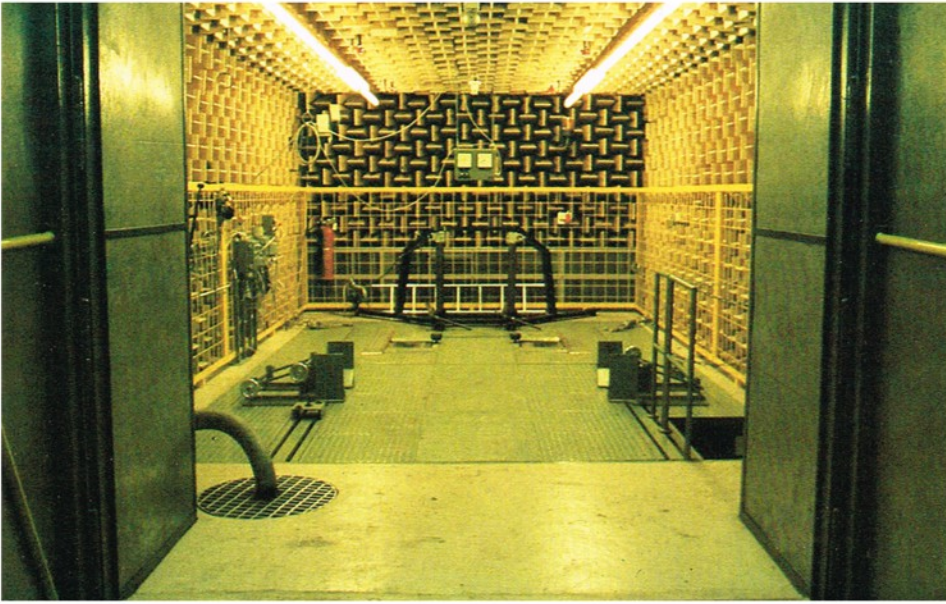
Perhaps the most important factor affecting psychological comfort is the amount of noise in the passenger compartment. In the pursuit of silence, Audi engineers subjected the Audi 5000 to two years of acoustical testing. They developed an entirely new testing procedure to measure the level of noise reaching the driver's ear when a noise or vibration is induced into the body or through the engine mounting.



This method, assisted by computer calculations, led to new advances in noise suppression and new insulation techniques.

In the 5000, suspensions for the engine, transmission and front axle are all doubly insulated against noise transmission from the engine





and drive train. A subframe prevents the transmission of engine and road noise into the body. The interior is insulated by a closed noise-absorbing shell comprised of four layers—bitumen, felt, matting and foam-backed carpeting. Thorough aerodynamics investigations led to a

substantial reduction of wind noise. These innovations, combined with the low vibration level of the new 5-cylinder engine contribute to the remarkably quiet operation of the Audi 5000.

Aesthetically Pleasing Design

While exterior styling is not

apparent to those inside a car, awareness of its beauty certainly influences the joy of ownership. The exterior colors have been chosen for serene and elegant beauty. The lines of the Audi 5000 follow the needs of aerodynamic design, which like mathematical curves, are also

pleasing aesthetically.

Above all, a luxury car should provide comfort. And the team of designers, stylists and engineers who created the Audi 5000 have omitted nothing that is technically feasible in delivering comfort to the car's driver and passengers.



“Starting with the advantages of front wheel drive and negative roll radius, we went on to engineer high standards of safety into every aspect of this automobile’s design.”



Working for an auto maker that invests a full one-third of its research and development efforts in the improvement of safety, the Audi 5000 engineering team were naturally motivated to set a new safety standard in this car’s design. Without doubt, they have succeeded in giving the occupants of the 5000 an unparalleled measure of security—both in *active safety* (the ability to avoid accidents) and *passive safety* (the ability to minimize injuries when they cannot be avoided).

Preventive safety depends primarily on a car’s performance. And the front wheel drive of the Audi 5000, with its favorable weight distribution over the front axle, gives it improved road traction, better cornering, and superior stability even in strong cross winds. And when braking on uneven surfaces, the Audi 5000 will help maintain direction—because of its negative steering roll radius.



An Advance in Pillar Design

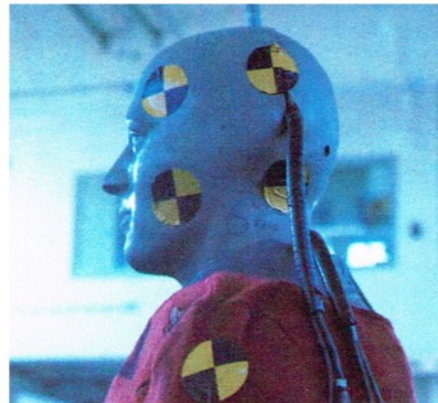
The high degree of stability, excellent maneuverability and precision steering response of the 5000 are combined with its brisk acceleration rate (0-50 mph in 8.4 seconds) to give it a high degree of active safety. Large window areas—actually 15% larger than a Cadillac Seville—give the driver high degree of visibility. Audi engineers have further increased visibility through the design of the rigid pillars supporting the roof. They are slim in the direction of the driver’s sight-line and wide (for strength and rigidity) in the other direction.

The Audi 5000 is equipped with radial ply steel-belted tires, size 185/70 HR 14. This size of tire, usually used on cars of considerably greater weight, improves the road behavior of the 5000 even further.

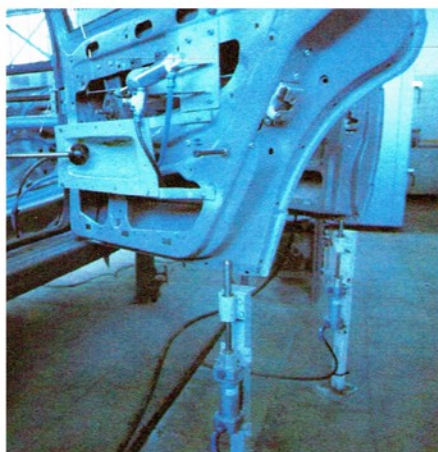
High Safety Standards

In the design of the 5000, Audi engineers demonstrated that a luxury sedan need not be excessively heavy to achieve a high standard in passive

safety. In fact, the car meets and actually exceeds American crush test requirements.



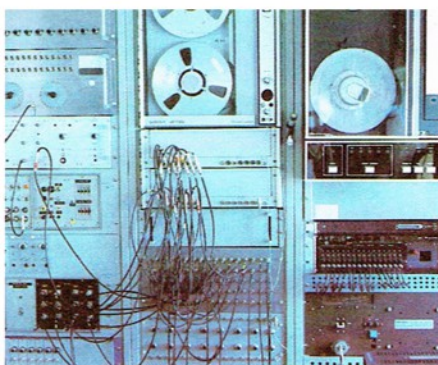
Key to the Audi 5000’s performance in crash tests is a type of body construction that places a rigid “passenger cell” between two impact areas, or “crumple zones,” front and back. These impact areas are designed to absorb the energy of a collision while the passenger cell remains intact. In the rear, Audi engineers have placed the fuel tank ahead of the rear axles, outside of the crumple zone.



Doors and sides have also been designed to provide impact areas between inner and outer shells for added passenger safety.

Durability of Components Tested

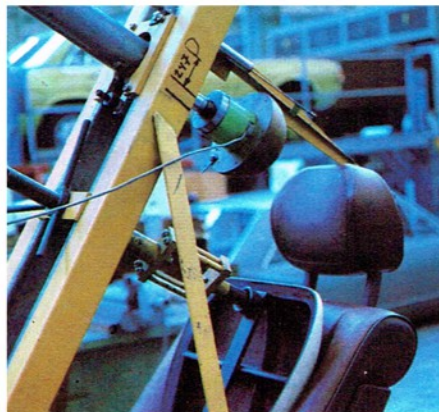
The impact areas of the new Audi 5000 yield in crash tests according to computer-calculated



data. A new type of structural member has been employed, which folds evenly instead of irregularly buckling and absorbs energy at a controlled rate, through a principle called the Timoshenko Theory (see box at right). In addition, the passenger compartment has been subjected to numerous “somersault tests,” where its ability to retain its shape under exceptional stress was confirmed.

Strength and durability of

materials are also extremely vital to a car’s safety. In the Audi 5000, choice of materials was made scientifically (by “finite element analysis”). And the design of each component was



perfected with the help of laboratory and bench tests, proving ground tests, and driving endurance expeditions from the Sahara Desert to the Arctic Circle.

Steering Column Precautions

To prevent the steering column from being pushed into the passenger compartment, it is mounted on a deformable bracket and connected to the front axle with a coupling that is designed to detach on impact.



Door locks are designed to hold fast on impact, and rear-door locks can be placed in a child-proof position so that they open from the outside only. Safety-belt buckles on the front seat are attached to the frames so that each seat and safety belt can only move as a unit—a more comfortable arrangement than is possible when the buckle is attached to the floor.



In sum, each detail of the Audi 5000 has been considered from the viewpoint of passenger safety, and every possible step has been taken to make the Audi 5000 a new kind of luxury car in the degree of safety it affords.

The Timoshenko Theory: A Major Design Breakthrough in Passenger Protection

The “Timoshenko Theory,” named for the physics professor who first proposed it, states that a rectangular (box-shaped) metal tube of a specific thickness will react to compression from the ends by buckling like an accordion, in regular folds equal to the width of the tube.



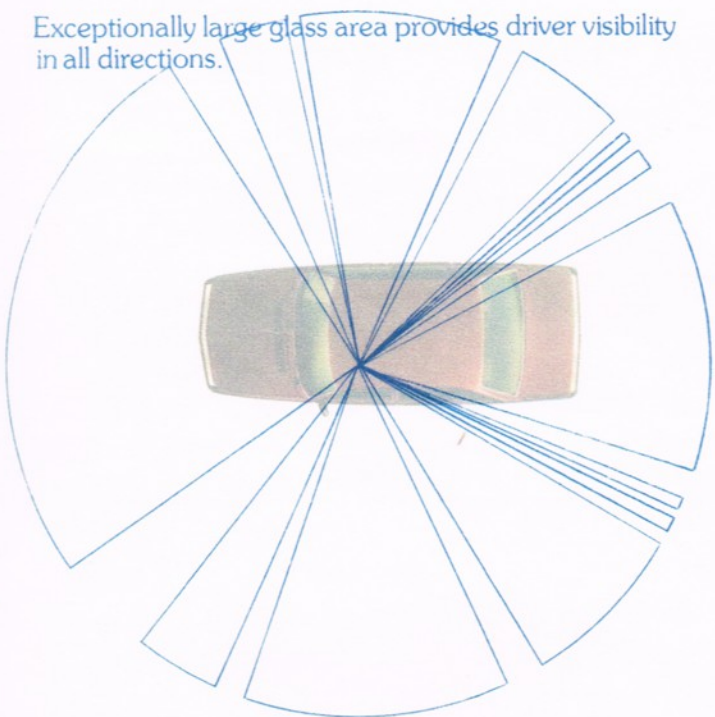
The theory remained hidden away in technical literature until Audi engineers uncovered it and applied it to their research work in automotive safety.

Their experiments not only confirmed the Timoshenko Theory but demonstrated that the regular folding of a box-shaped structural member absorbs five times more energy than a structural member that buckles irregularly. By using members of this shape in the crumple zone of test cars, Audi safety engineers proved that regular folding (also called controlled buckling) absorbs 60-70% of energy in 30 m.p.h. frontal barrier crashes.

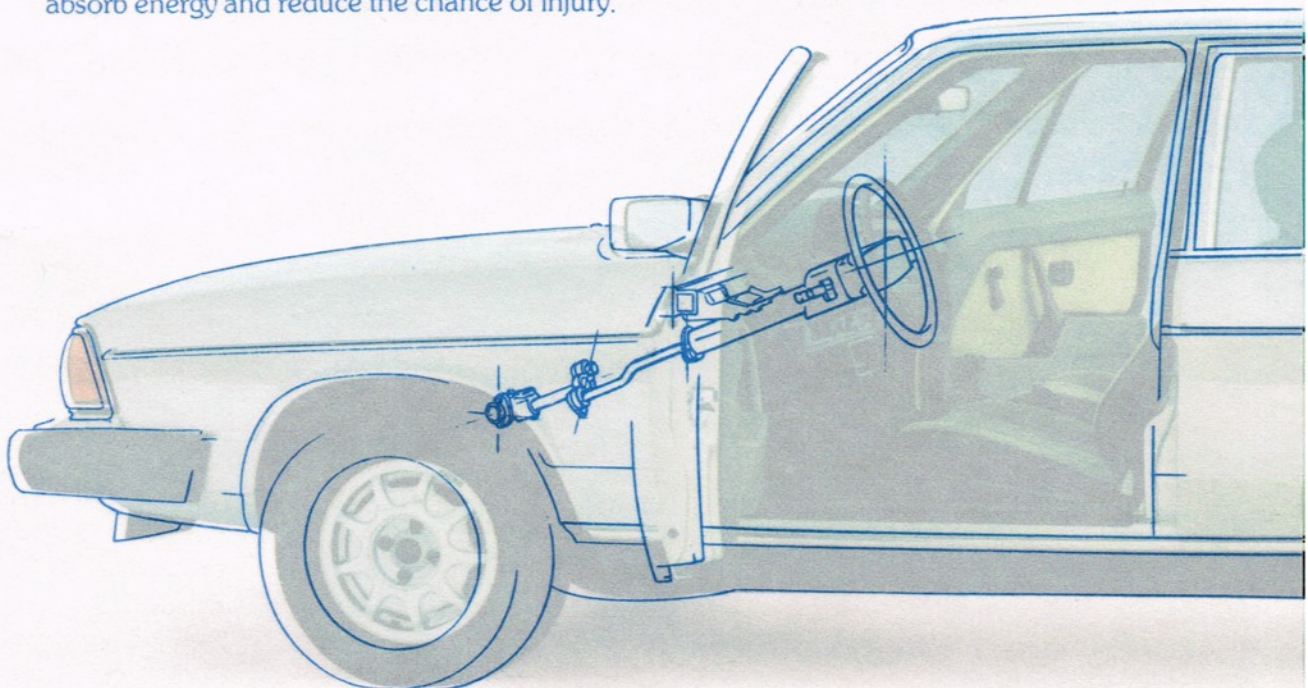
Controlled buckling also helps keep down the rate of deceleration by absorbing kinetic energy smoothly. The lower the rate of deceleration from road speed to zero the less likely are injuries to occur.

The Audi 5000 is the only car in the world which incorporates an important new safety advance based on the Timoshenko Theory. By being the first to apply box-shaped steel members to absorb the forces of collision, Audi engineers have created a life-saving revolution in automobile construction from an obscure theory never before made practical.

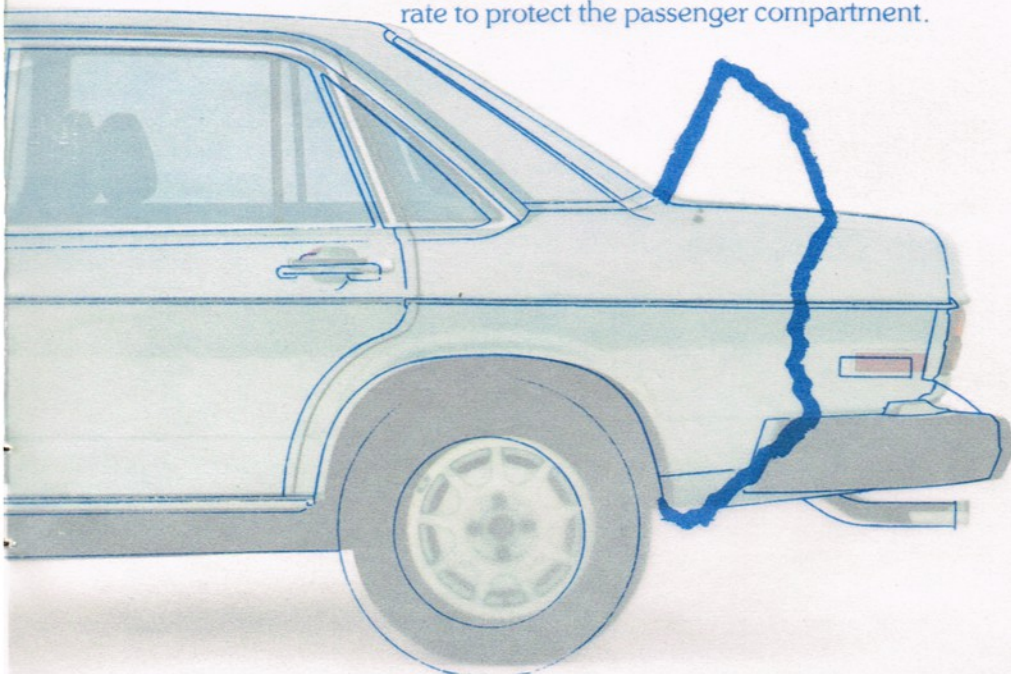
Exceptionally large glass area provides driver visibility in all directions.



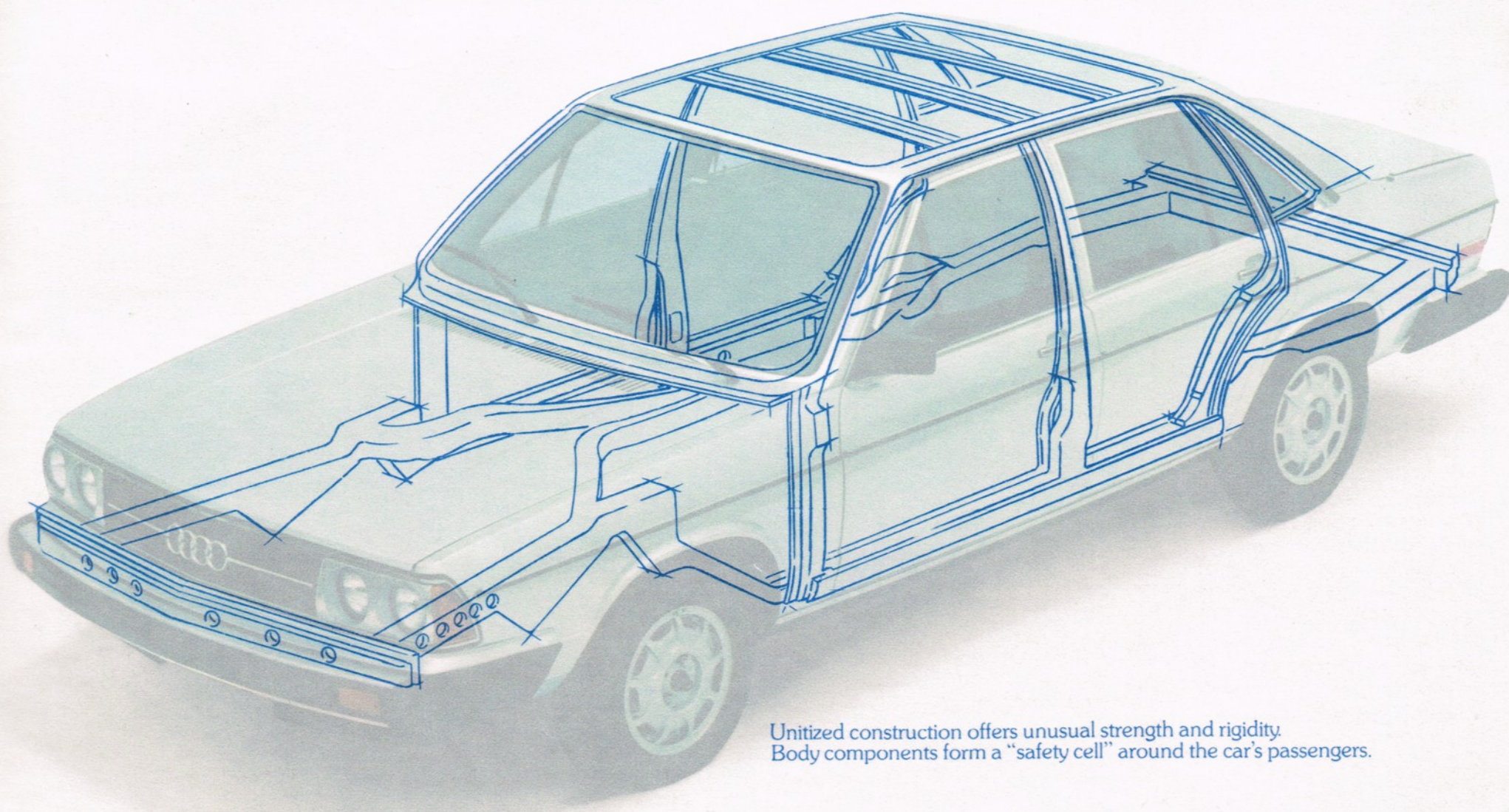
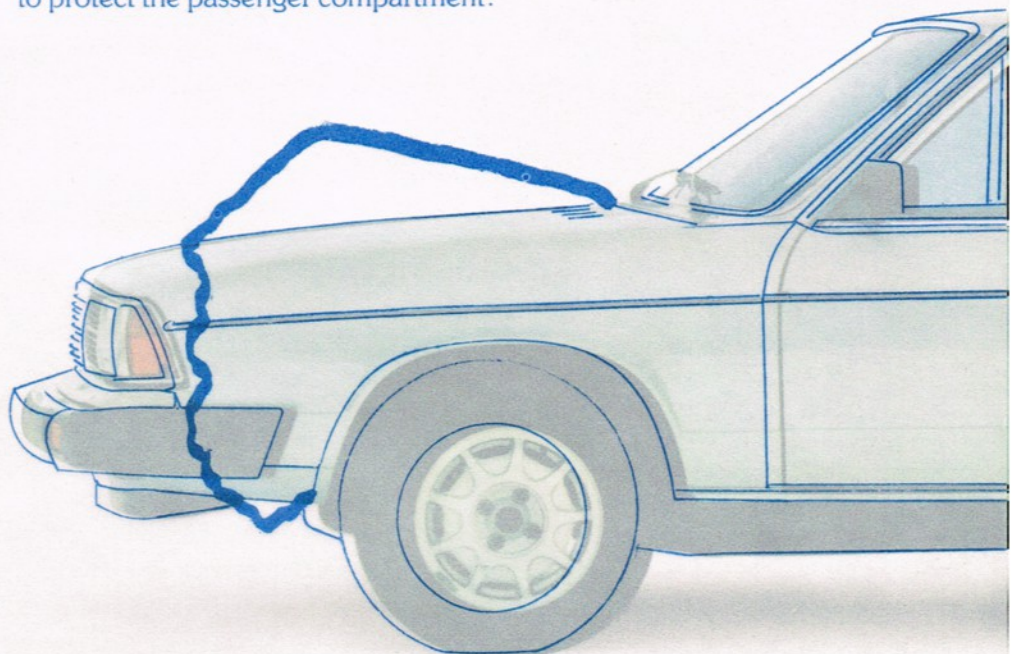
Steering wheel and column are designed to absorb energy and reduce the chance of injury.



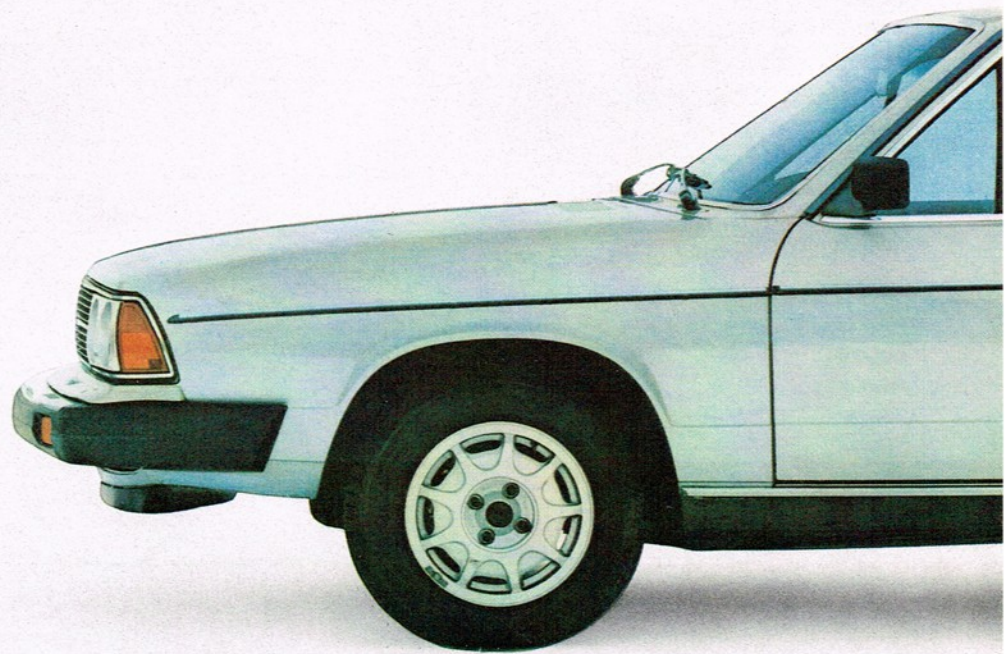
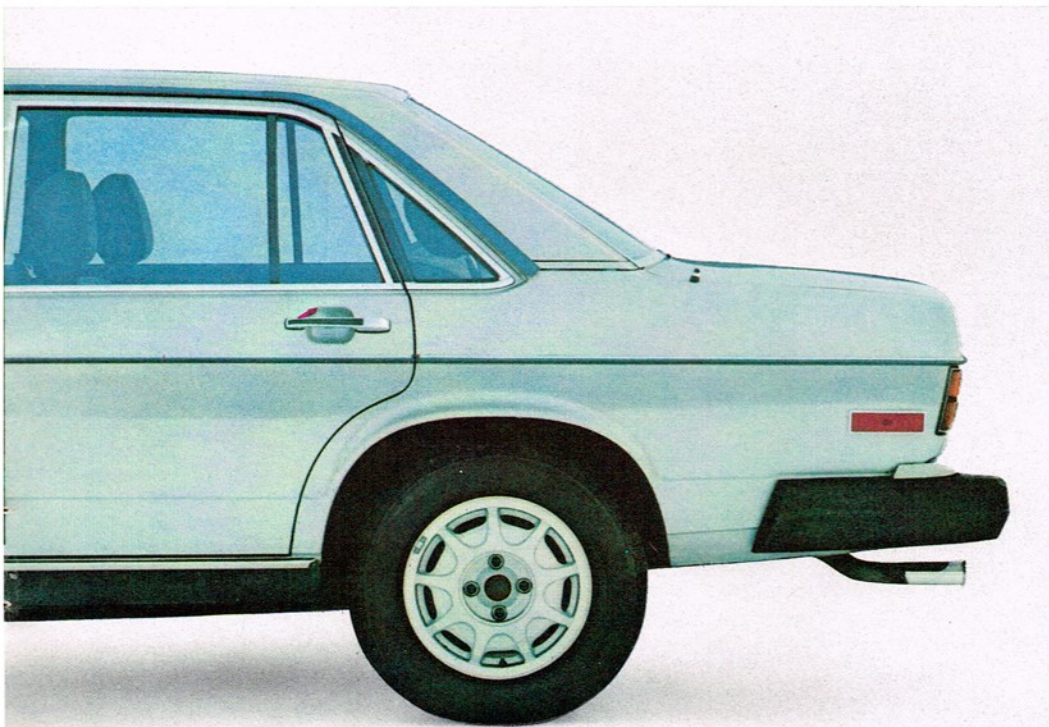
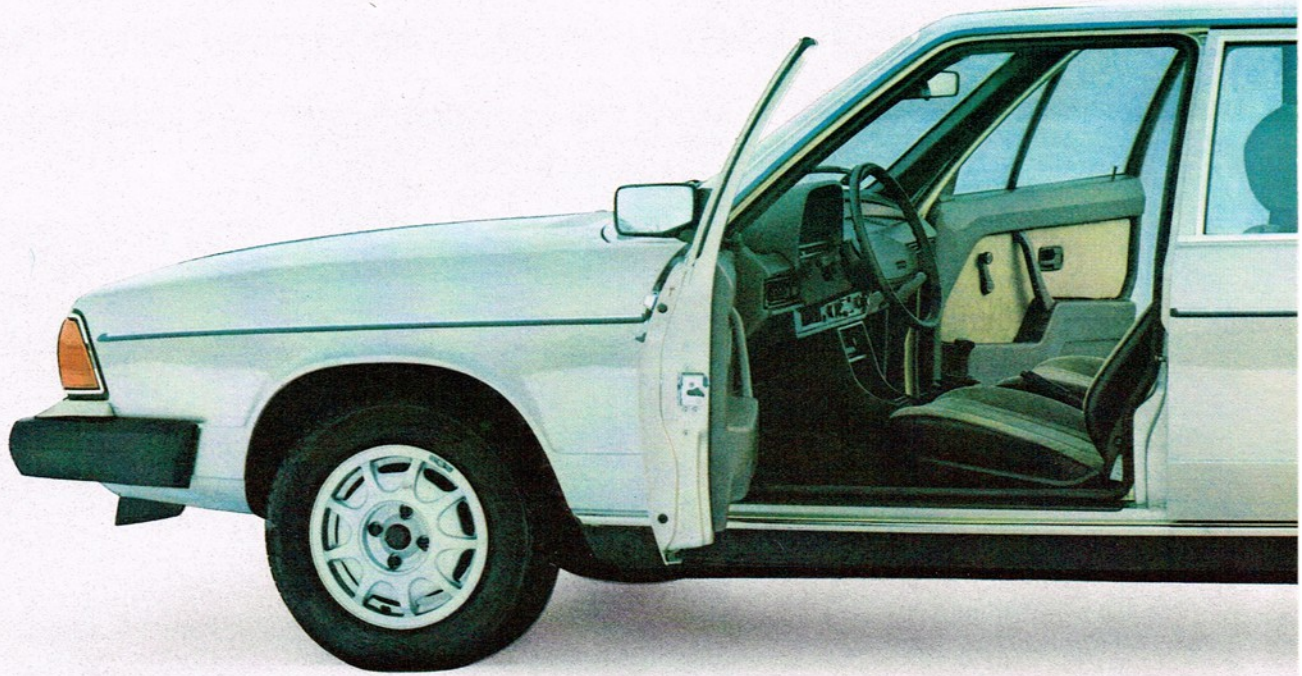
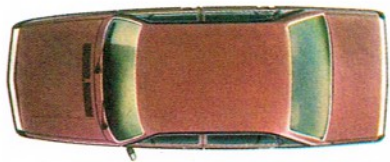
Rear end is designed to collapse at a controlled rate to protect the passenger compartment.



Front end is designed to collapse at a controlled rate to protect the passenger compartment.



Unitized construction offers unusual strength and rigidity. Body components form a "safety cell" around the car's passengers.



“A luxury car ought to deliver its essential refinements to the owner as basic equipment, with additions that are truly a matter of choice being optional.”

Audi 5000 Basic Equipment:

In outfitting the 5000, the car's designers pursued the philosophy of offering a complete luxury car. Many deluxe appointments, which are optional extras on other cars, come as standard equipment on the 5000. On the other hand, certain accessories which every owner does not require, such as air conditioning or fog lights, are available optionally. When comparing the Audi 5000 price with other luxury sedans, be sure to take into account the many features of the car which are included in the base price.

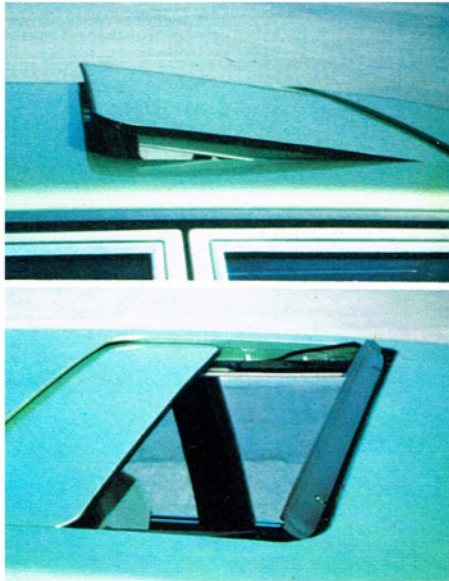
Audi 5000 Standard Equipment

- 4-Door sedan
- All steel unit-body construction
- 5-Cylinder fuel injected engine
- Front-wheel drive
- Transistorized breakerless ignition system
- Power-assisted rack & pinion steering
- Power-assisted brakes
- 4-speed manual transmission
- Cruise control
- 185/70 HR 14 steel-belted radial tires
- Electric rear window defogger
- Tinted glass
- Intermittent windshield wiper
- Electric clock
- Remote controlled outside mirror (tinted)
- Trip odometer
- Full wheel covers
- Passenger vanity mirror
- Dual headlights
- Dual-tone horn
- Protective side molding
- Adjustable rear headrests
- Thick-cut pile carpeting
- Carpeted luggage compartment
- Rear center armrest
- Center console w/ash tray and storage compartment
- Full reclining front seats with adjustable headrests
- Wood-grain dash
- Lockable glove compartment
- Leatherette steering wheel
- Passenger-assist handles, front and rear
- Carpeted rear parcel shelf
- Left and right door storage pockets
- Storage tray under dash
- Dash-mounted speaker grilles
- Cigarette lighter
- Lockable gas cap

Optional Equipment

(Selected options pictured at right)

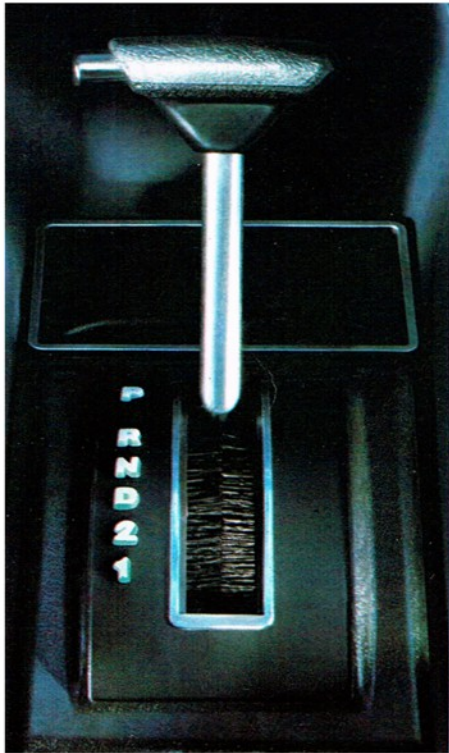
- AM/FM stereo radio; stereo speakers and antenna
- Air conditioning
- 3-speed automatic transmission
- 6J x 14 light alloy wheels
- Electric sun roof
- Rear stereo speakers
- Vent windows
- Heated front seats
- Power windows
- Central door locking system
- Power antenna
- Metallic paint
- Fog lights
- Floor mats
- Vent shades



Sun roof offers fresh air and open-roof capability.



High intensity Halogen fog lights are mounted close to the road for maximum effectiveness.



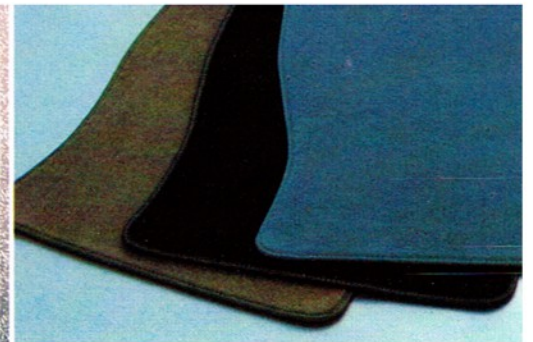
Floor mounted three-speed automatic transmission.



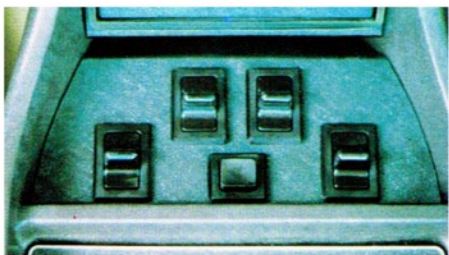
Attractive-light alloy wheels.



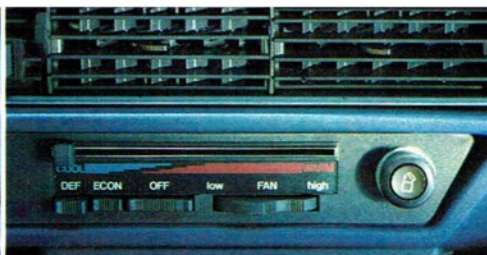
Sensitive AM/FM stereo radio assures true high fidelity performance.



Durable, easy to clean floor mats.



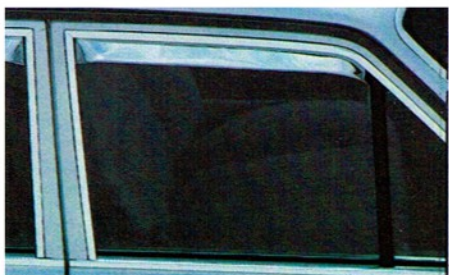
Power windows and power lock controls on center console.



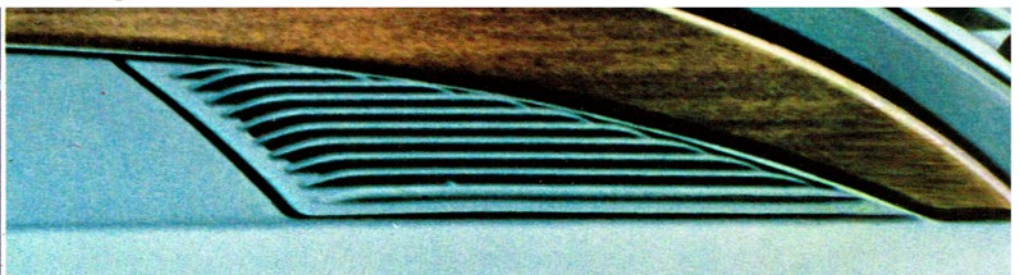
Air conditioning integrated into heating/ventilation controls.



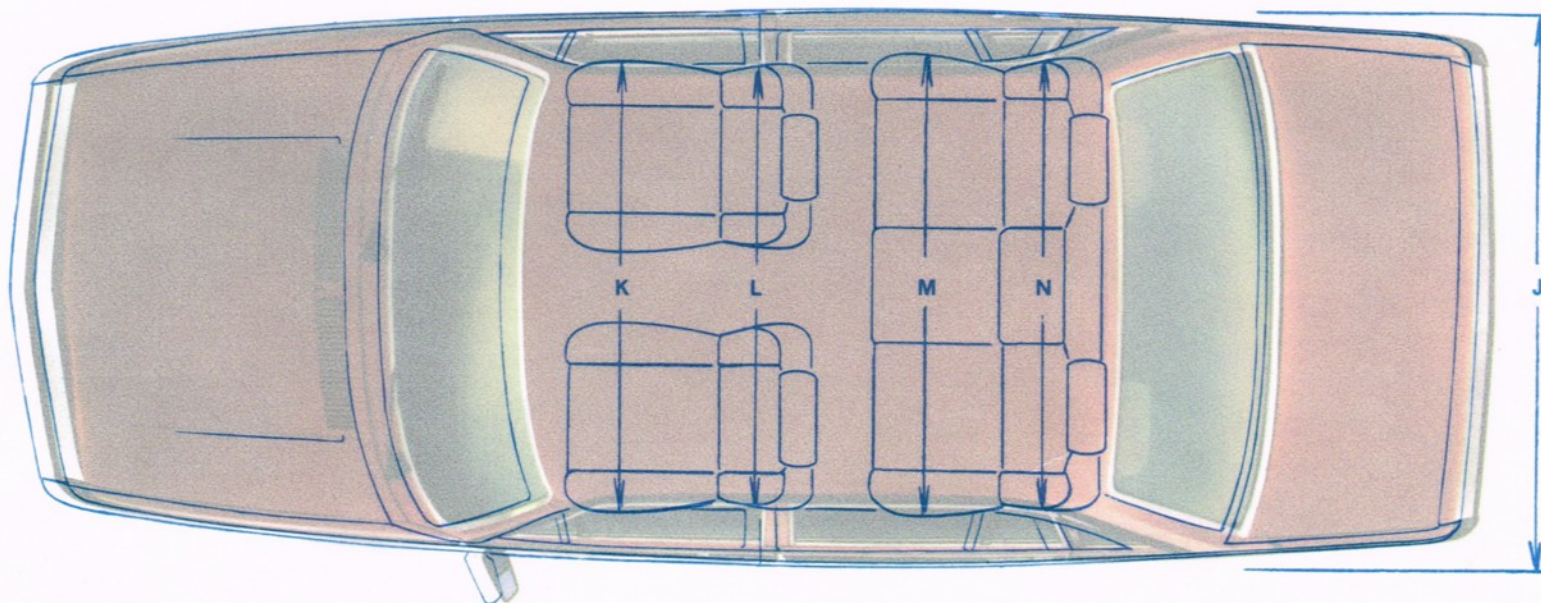
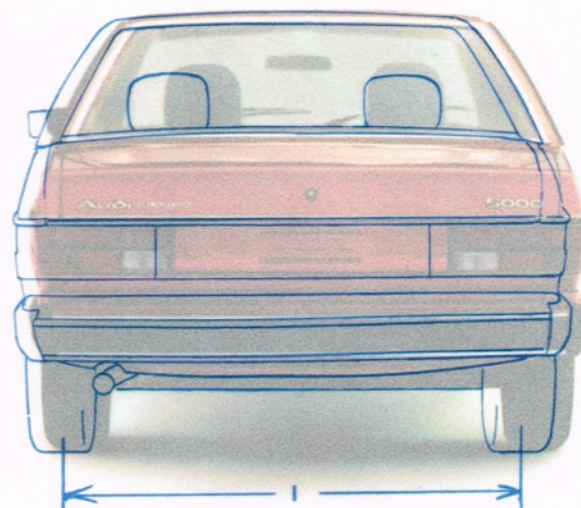
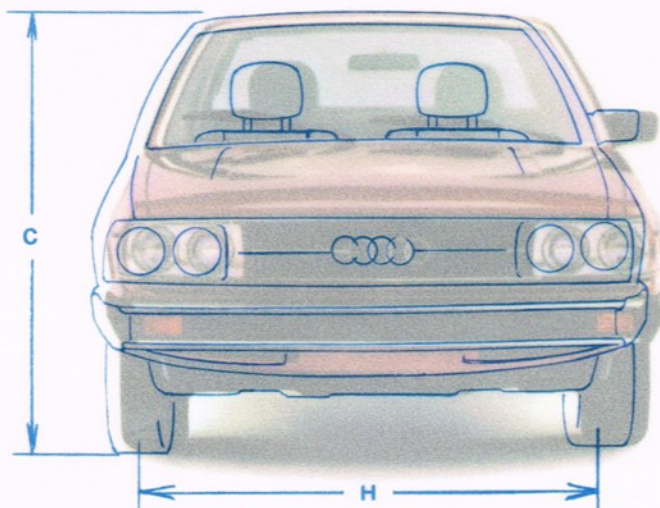
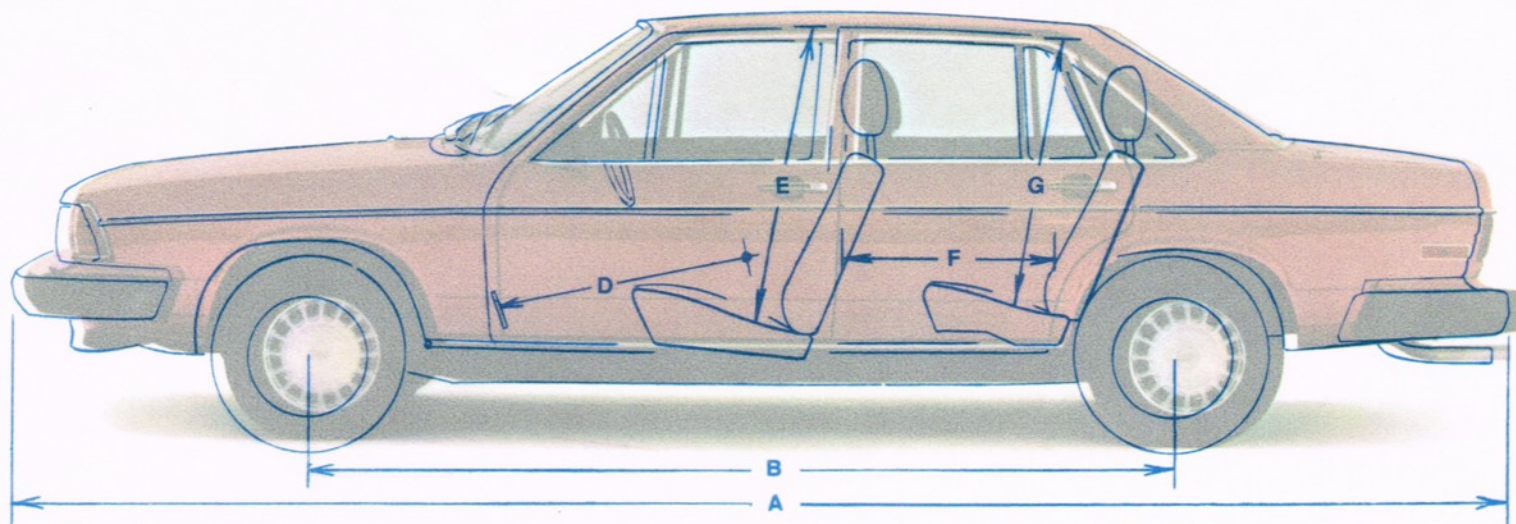
Electrically heated front seats.



Chrome plated vent shades.



Specially designed acoustic chambers in dashboard house stereo speakers.



A	Overall length	189.5 ins.
B	Wheelbase	105.5 ins.
C	Overall height, unladen	53.9 ins.
D	Maximum effective leg room/accelerator	40.6 ins.
E	Seat height, unladen, front	38.1 ins.
F	Driver's backrest to rear seat backrest	30.9 ins.
G	Seat height at rear	36.8 ins.
H	Wheel tread (front)	Measured at centerline of tires 57.8 ins.
I	Wheel tread (rear)	Measured at centerline of tires 56.9 ins.
J	Overall width	69.6 ins.
K	Overall seat width, front	53.1 ins.
L	Width at shoulder height, front	56.9 ins.
M	Overall seat width, rear	53.2 ins.
N	Width at shoulder height, rear	55.9 ins.

AUDI 5000 1978 SPECIFICATIONS

ENGINE:	No. of cylinders	5 cylinders, in-line water cooled
	Displacement	130.8 (2144 cc)
	Compression ratio	8.0:1

ENGINE DESIGN:	Cylinder block	Cast iron
	Cylinder head	Light alloy
	Cooling system	Water cooled with pump
	Lubrication	Full pressure system
	Fuel/Air supply	CIS—Fuel injection

ELECTRICAL SYSTEM:	Rated voltage	12 volt with alternator (75 amp)
	Battery	12V 63 Amp. hr.
	Ignition	Breakerless transistor ignition

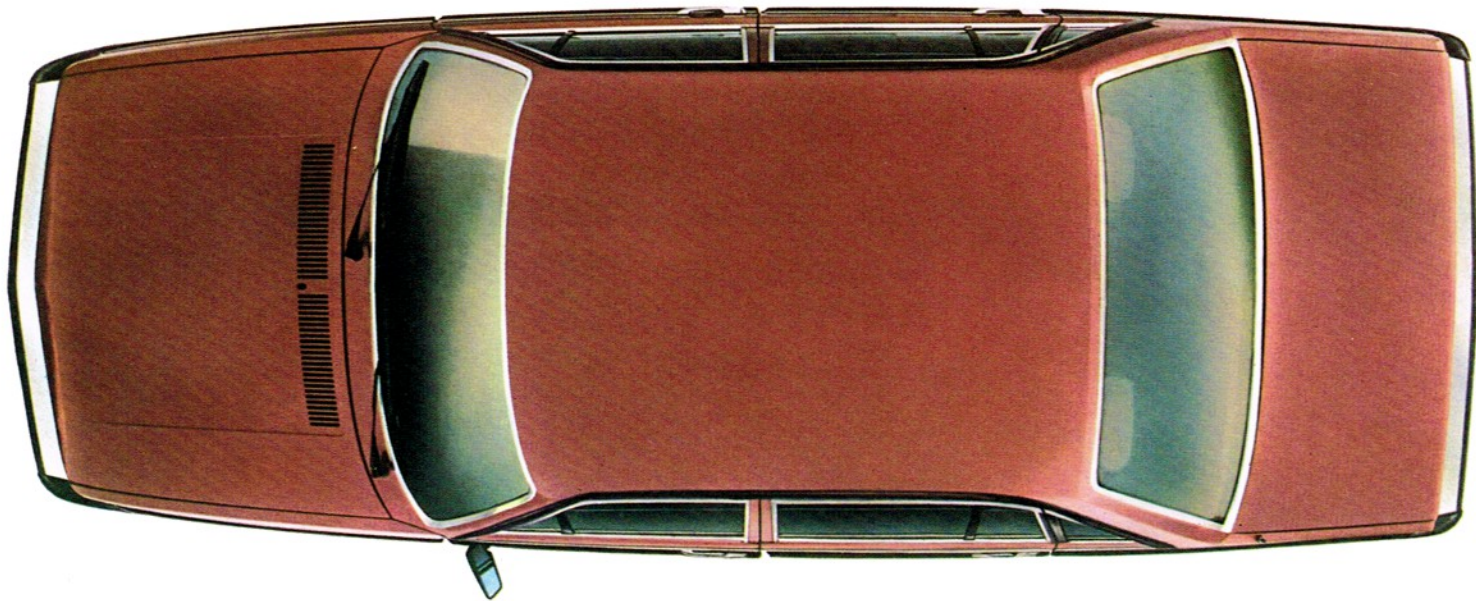
DRIVE TRAIN:	Location of engine	Front, ahead of front axle
	Clutch	Single dry plate, hydraulically operated.
	Transmission	Automatic Trilok torque converter
	Location of shift lever	4-speed, fully synchronized 3-speed automatic (optional) Floor console

CHASSIS AND SUSPENSION:	Frame	Unitized body construction with energy absorbing front and rear sections
	Front suspension	Independent coil/shock absorber struts, stabilizer and negative roll radius
	Rear suspension	Torsion crank axle with built-in stabilizer and Panhard rod
	Front springing	Coil springs and shock absorbers
	Rear springing	Coil springs and double-acting hydraulic shock absorbers, mounted separately
	Foot brakes	Power-assisted dual diagonal brake system Vented disc brakes front; finned drum brakes rear
	Hand brake	Mechanical, on rear wheels
	Rims	5½ J x14
	Tires	185/70 HR 14 Radial ply-steel belted
	Steering	Rack and pinion, power assisted

CAPACITIES:	Engine	5.3 U.S. qts.
	Fuel tank	15.9 U.S. gals.
	Radiator	8.5 U.S. qts.

DIMENSIONS:	Wheelbase	105.5 in.
	Front track	57.9 in.
	Rear track	56.9 in.
	Overall length	189.5 in.
	Overall width	69.6 in.
	Overall height (unloaded)	53.9 in.
	Turning circle	33.8 ft. (curb to curb)
	Trunk space	22.7 cu. ft.

PERFORMANCE:	Top speed	103 mph (Automatic 100 mph)
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73-89-86011 Litho in U.S.A. Specifications subject to change without notice.

“As an historic car maker, Audi has distilled three-quarters of a century of heritage and experience into the development of an astonishing new luxury automobile—the Audi 5000!”



Audi is a respected auto maker known throughout the world as an innovator in the design, engineering and construction of high-quality cars. The company's origins date back to the earliest days of car-building. The word *Audi* was selected as a brand name by the celebrated August Horch, one of Europe's most famous auto pioneers. He chose this name because it is the Latin equivalent of the German word *horch*: to listen.



From 1909, when Horch began building and racing sports cars, he and his speeding Audis dominated road races and motor shows all over Europe. In 1932, the makers of four German automobiles (Audi, Horch, Wanderer, and DKW) were merged into one large organization called Auto Union. It was this company that introduced the first modern car carrying the Audi name in 1966. The Audi 60L soon became one of the most prestigious automobiles in the European market, followed by the equally successful Audi 100 LS.

Road Tests – On And Off The Road

It is hardly surprising that the company who developed the 5-cylinder Audi 5000 is known throughout the industry as an innovator in automotive engineering.

In fact, a full 10% of Audi's workforce of 20,000 is employed in research and development activities. This work is directed by Ferdinand Piëch, well known for the design and engineering of numerous Porche models. Under Piëch's supervision, Audi engineers work in a creative atmosphere, where new ideas can be freely advanced, debated, and acted upon. It is this favorable engineering climate that spawned the many technical advances that made the new Audi 5000 possible.

Research and development engineers can carry an idea just so far—and then it must be thoroughly tested. Audi maintains extensive testing operations where the whole car and individual components are put through exhaustive tests. The company has pioneered innumerable testing devices and procedures. One example is a method of judging the durability of components on a statistical test basis. Another is the development of a unique vibration-simulator, which not only “road tests” the car, but subjects it to actual road conditions, from smooth to unbearably rough. This simulator is fed computer-generated data, and a test car is put through its paces for hundreds of hours while performance measurements are taken.

Testing Engines To Breaking Point

Audi places particular emphasis on the testing of engines, which are driven to the breaking point, subjected to extreme weather conditions in climate chambers, and rigorously tested for noise and vibrations. In addition to crash testing, car bodies are exposed to salt-water corrosion, high temperatures and other

excessive conditions. These tests are complemented by thousands of miles of road tests in many locations, including the Sahara in summer and Finland in the winter.

The Audi plant in Ingolstadt, Germany, is a facility large enough to take full advantage of modern, automated methods—yet small enough to allow the contributions of individual initiative. The Audi management encourages craftsmanship and pride in the work accomplished. On the engine production line, for instance, a single worker is responsible for a complex series of high-precision operations culminating in the completed engine.

Achieving Reduced Maintenance

An important objective of research, development and testing at Audi is reduced maintenance over the life of the car. Many working parts of the Audi 5000 are actually maintenance-free. After the initial 1,000-mile service, the entire drive train, including the standard transmission, does not require regular oil changes. Rear and front suspensions are permanently lubricated.

When service is necessary, however, Audi 5000 owners can call on a nationwide network of conscientious Audi dealers throughout the U.S. and Canada. These dealers have been given thorough and specialized training in every servicing requirement of the Audi 5000. They are stocked with a large supply of parts.

And for parts rarely required, they can draw on Audi's computerized inventory for quick delivery.

New Blend Of Automotive Qualities

At Audi, the team of engineers

who developed the new Audi 5000 look upon the company's previous achievements as preparing the way for this remarkable new car. Their experience with front wheel drive, their engineering prowess in engine development, their leadership in both preventive and protective safety—these and other company strengths were brought to bear on the technical challenges of the Audi 5000. The result is far from just another new car. A completely new blend of automotive space, handling, acceleration and comfort has been realized.

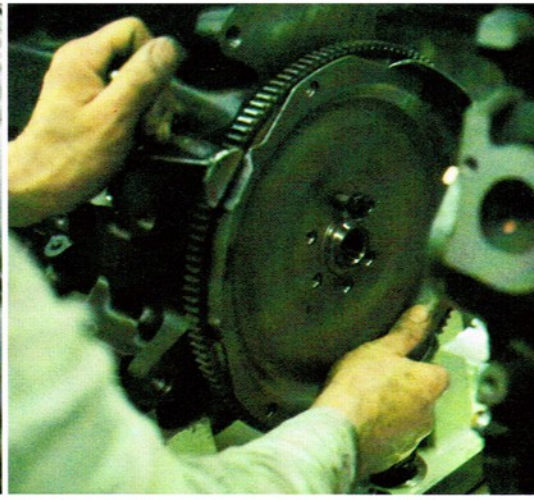
At the first opportunity, drive this new kind of luxury car—The Audi 5000.

Automobiles and Events: An Audi Chronology

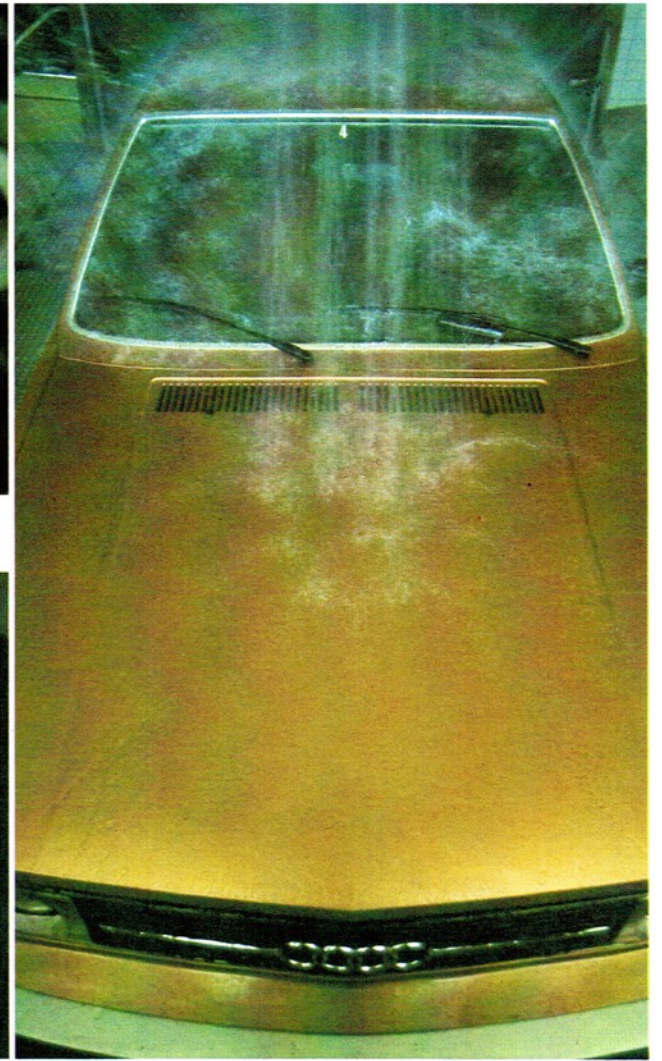
- 1903—August Horch builds his first automobile, “The Tonneaux.”
- 1910—Horch builds and races the Audi Doppelphaeton.
- 1921—Audi produces first car with aluminum engine block, ball-selector transmission, and four-wheel brakes.
- 1931—Audi 6-cylinder coupe introduced.
- 1932—Merger of Audi, Horch, DKW, and Wanderer into Auto Union AG.
- 1936—First “Sports Cabriolet” produced.
- 1937—Auto Union's 16-cylinder Grand Prix car captures racing honors.
- 1950—Auto Union begins production of DKW “Meister.”
- 1966—Audi 60L introduced.
- 1976—Audi 5000 introduced in Europe.
- 1977—Audi 5000 introduced to America.



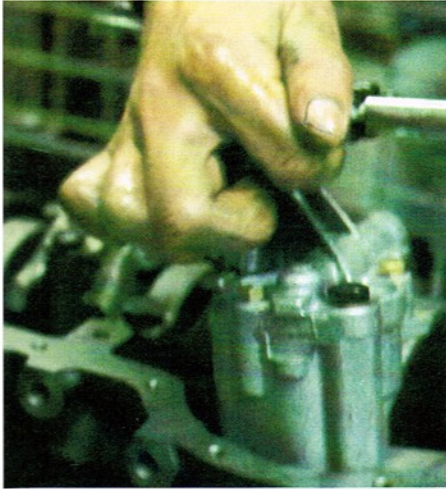
Every Audi engine is given a final check by a team of two Audi supervisors.



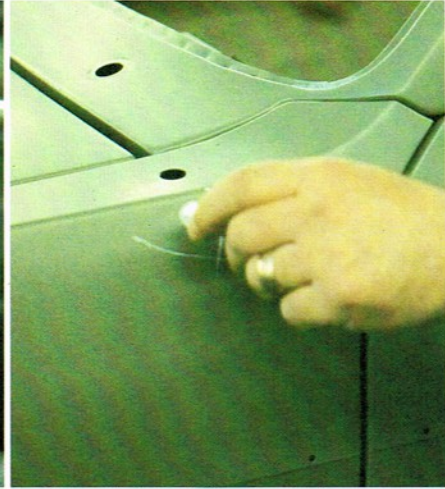
Fly wheel being assembled to rigid Audi specifications.



Water chamber test for sealing and tightness of fit.



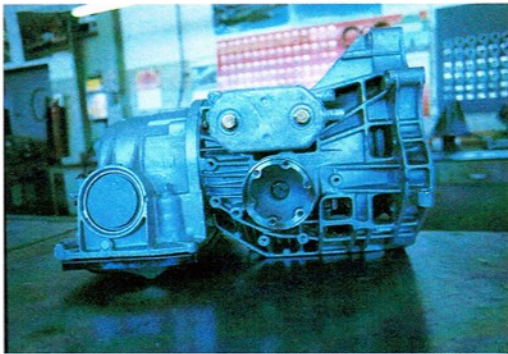
Engines are carefully hand assembled.



Hand check for paint flaws.



One of series of inspections during body finishing.



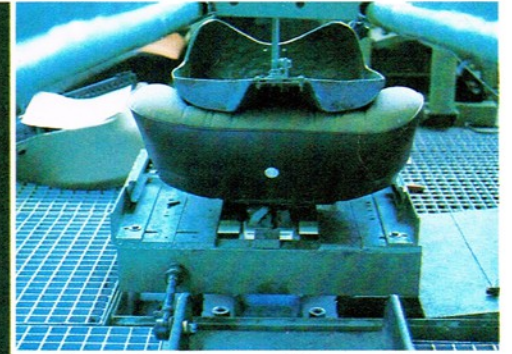
Transmissions are laboratory tested for quietness of operating.



One of several obstacle courses at the Ingolstadt test track.



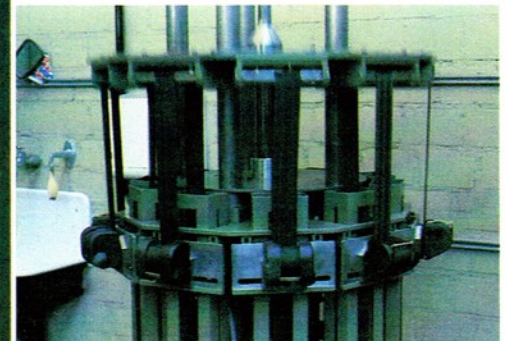
Small bulbs being tested to Audi standards.



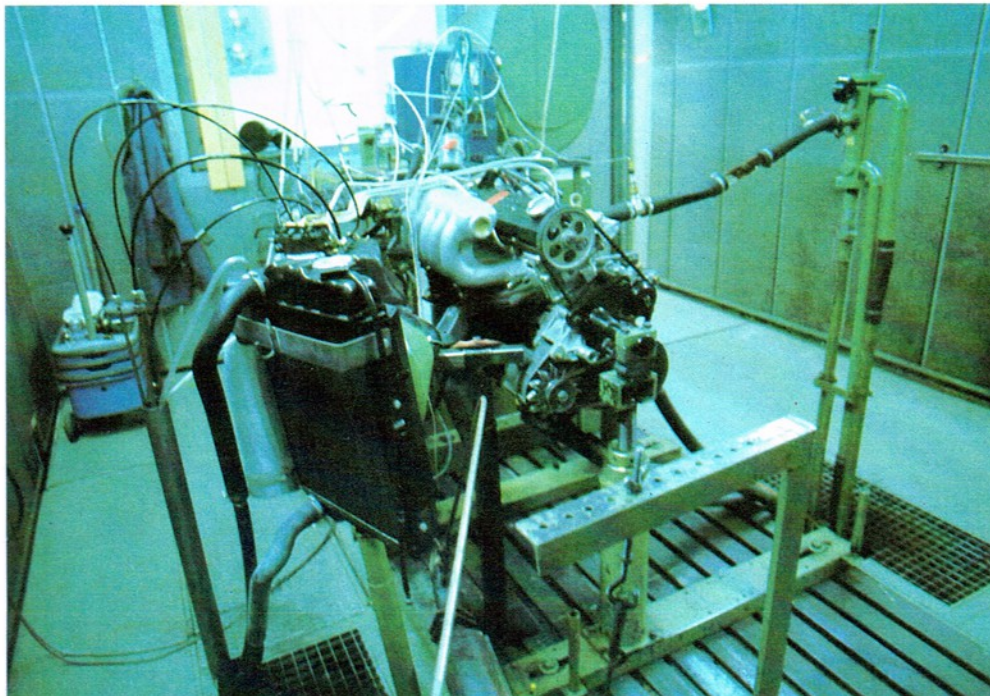
Special equipment "bounce" tests seats, to simulate years of hard use.



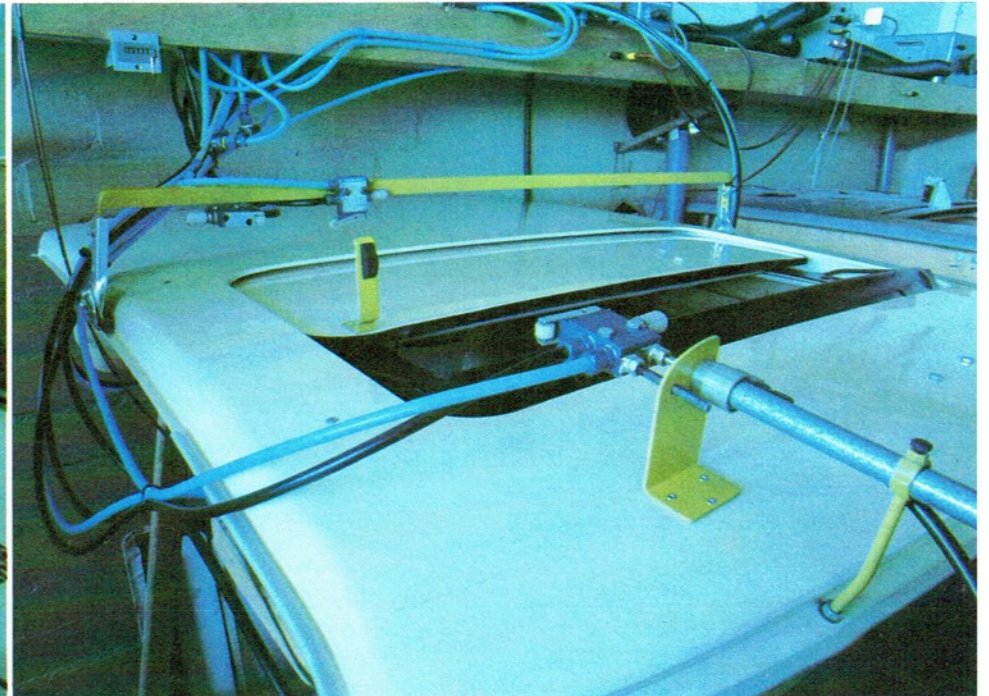
Doors are opened and closed thousands of times to simulate use.



Inertia reels undergo hundreds of hours of testing.



Engine dynamometer test stand.



Endurance testing of electrically operated sun roof.

