

Five cylinders. The logical alternative.

In designing the Audi 5000, the most difficult decision facing Audi engineers was the choice of an engine.

A four-cylinder power plant would be light and economical. A six offered more power and quieter performance. The question was how to achieve all of these characteristics in a single engine.

Their answer was to develop the first successful five-cylinder gasoline engine.

A favorable ratio of power to weight.

Audi engineers calculated that a fivecylinder engine would provide ample power, yet generate less vibration than a



four. And, of course, five cylinders would mean less weight and fewer moving parts than a six.

After four years of intensive development, what looked attractive in theory proved successful in practice.

Reliability through simplicity.

In conventional engines, items under continual stress—particularly fan belts, intermediate shafts, and hose connections—account for many of the problems encountered by drivers. In the Audi 5000, a number of these have been "engineered out" by eliminating the parts themselves.

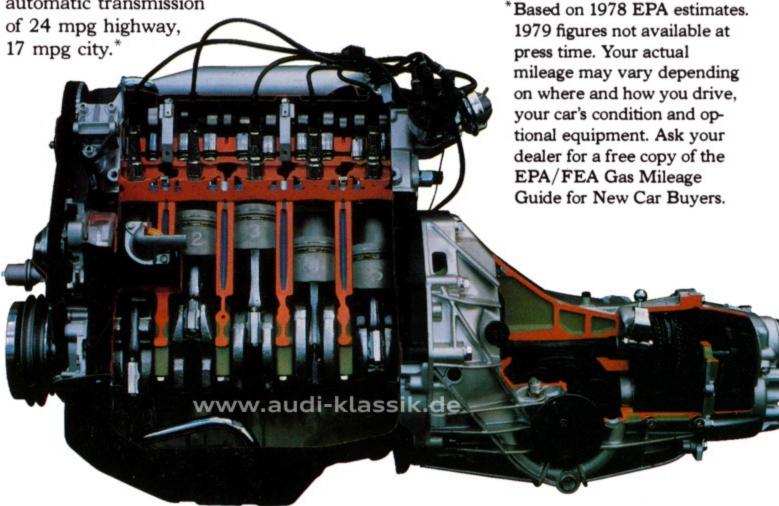
The water pump, for example, is integrated into the cylinder block. The oil pump and distributor are driven directly by the crankshaft or camshaft. The spur belt that drives the camshaft also drives the water pump.

Each of these represent a reduction in the number of moving parts, simplified design, and increased reliability.

Fuel injection for smoother performance, easier starting and efficient use of fuel.

A highly reliable CIS (Continuous Injection System) fuel injection is used instead of a carburetor.

Found on many of Europe's finest luxury cars, CIS has achieved an enviable record of reliability through its use of fewer parts than earlier systems. CIS fuel injection is noted for its highly accurate metering, resulting in clean exhaust emissions and efficient use of fuel. Coupled with the car's relatively light weight, this efficient system helps the Audi 5000 achieve an EPA estimated mileage with automatic transmission



transmission.

The innovative Audi 5000.

Audi 5000 is a new kind of luxury car, a new application for front wheel drive. Many of its basic handling traits derive from front wheel drive and placement of the engine forward of the front wheels. The relatively short length of the five-cylinder power plant made possible a proper balance and weight distribution for improved tracking and directional control. At full payload, the weight is distributed approximately 50/50 front and rear.

Low unsprung weight improves both handling and ride.

Unsprung weight, the amount of

weight between the suspension and the ground, is kept to a minimum in the Audi 5000. The front wheels are evenly powered through constant velocity joints and suspended through McPherson struts for low unsprung weight in front. The light rear axle, without the weight of a differential, neatly follows the contours of the road without the disturbing "road hops" typical of cars with heavy rear axles.

Power-assisted rack and pinion steering keeps you in touch with the road.

The precise road "feel" of the Audi

5000 must be experienced to be fully appreciated. Critical parts of the power-assisted rack and pinion steering mecha-

Good fuel economy for a spacious

five-passenger sedan. Even more note-

worthy for a car that accelerates from 0 to

50 mph in 9.8 seconds with automatic

transmission; 8.5 seconds with manual

nism are Teflon®-coated to ease friction and minimize maintenance. The power assist is proportional; that is, it diminishes assistance at higher speeds. Steering response with this superb system can best be described as precise and direct.



A grand touring suspension.

In front, long-travel, shock absorber/coil spring suspension struts give good road shock absorption. Front end geometry is based on Audi's time-tested and proven negative steering roll radius, combined with dual diagonal brake circuits, for added directional control when braking on an uneven road surface (e.g. wet/dry) or front tire blow out.

The rear axle utilizes the proven torsion beam principle. A Panhard rod has been added to the system to provide lateral stability and assure proper trailing. And tracking and handling characteristics are further enhanced by the car's wide track, long wheelbase and low and forward placed center of gravity.



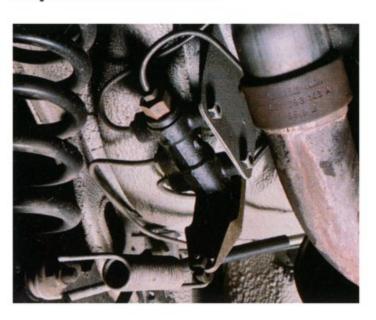
Improved braking through automatic load sensing.

Brakes on the Audi 5000 are ventilated discs in front, finned drums in rear.

Because rear loads can vary greatly, an effective load-sensing pressure regulator is integrated into the braking system. This automatically alters the proportion between front and rear wheel braking pressures to compensate for changes in the weight distribution.

The Audi brake system consists of separate braking circuits, linked diagonally to ensure that the driver will have partial front and rear wheel braking in the unlikely event of one circuit failing. If this

should occur, the car's negative steering roll radius provides counter-steering to help maintain direction.



An engineered interior that soothes and relaxes you.

Everything strategically placed to unite driver and the controls.

Slip behind the wheel, and you're immediately impressed with how simply and sensibly the dashboard is arranged.

Instruments and controls positioned for maximum ease and convenience. Warning lights centralized for easy viewing. Steering column controls grouped according to the anatomy of your hand.

The emphasis is on functionality rather than "show". Decisions are based on time-and-motion studies rather than whim. The dashboard is intentionally unimposing and uncluttered.

On the steering column, four stalks control lights, turn signals, emergency flasher, windshield wiper/washer, and cruise control. The latter lets you set the speed, lift your foot off the gas, and continue at a constant speed. Touch the brake or depress the clutch, and the unit automatically disengages.

with conventional systems.

A cool head and warm feet.

A wide array of dashboard air outlets "stratify" air flow. The result is a cooler upper layer to keep you alert, and a warmer lower layer for foot comfort. Side vents direct air to side windows to prevent misting.

A newly developed, large diameter radial fan provides highly efficient air circulation. Noise level is 50% below that of blade type fans, while air flow is doubled. A complete change of air inside the car can be provided approximately every 15 seconds (at 55 mph and with maximum blower speed).

An air conditioning system that survived in the Sahara.

Developed as an integral part of the car's comfort system, rather than as an "add on" accessory, the optional air conditioning actually dries the air as it cools it.



Heating and ventilating: An engineered design, not an afterthought.

Even when outside temperatures drop to $-4^{\circ}F$, the heating system can maintain an average interior temperature of about 80° . Temperature inside the car is virtually unaffected by either engine or road speed. And there is no need for the frequent temperature adjustments required

Numerous outlets provide fast, even cooling throughout the interior.

As part of the hundreds of thousands of miles of road testing, Audi 5000 was driven at top speeds across the Sahara in summer with full air conditioning. Everyone inside stayed cool. Similar tests of the heating system made in Finland during the winter, provided equally gratifying results.



Audi redefines the luxury car.

In the country where they build some of the best cars in the world, there's a waiting list for the new large Audi.

In Germany, automotive magazines are even more widely read than in the U.S. And some consumers are highly aware of engineering advances and the design philosophy behind their cars. Competition in the luxury car class of the Audi 5000 is intense, and drivers can choose from a number of highly acclaimed cars.

The Audi 5E (the European designation for the Audi 5000) was introduced in German showrooms in 1977 amid glowing reports in leading magazines.

Demand for the car was immediate and intense. And even fourteen months later, in mid 1978, prospective owners were waiting up to six months for their cars.

When Audi 5000 arrived in the U.S., it won instant acclaim from drivers and driving journalists, alike.

From the outset, Audi 5000 was designed with close attention to American needs and desires.

A highly efficient optional air conditioning system was incorporated in the basic design. Luxurious amenities abound in an interior noted for its quiet ambience. And a smooth operating, optional 3-speed automatic transmission is available.

Nine months prior to its U.S. introduction, a fleet of Audi 5000s was driven thousands of miles over American roads. When the car was finally unveiled, the response was enthusiastic.

Road & Track called it "A promising blend of luxury, innovation and logic." From Car & Driver* magazine: "The dominant trait of the new Audi is German engineering excellence ... American influence has boosted comfort to an area of major concern for the first time in a German car ... A functional masterpiece and yet one of the most sumptuous sedans ever to leave Germany."

Equally impressive was the response from the driving public, itself.

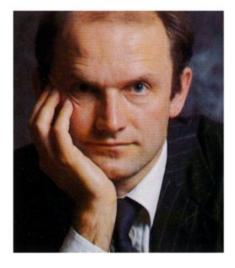
Car & Driver editors, in the magazine's Annual Reader's Choice Poll, nominated the Audi 5000 as one of the most significant new imported cars for 1978. And readers of the magazine seconded the motion with enthusiasm.

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Ferdinand Piëch designed six world championship sports cars. Then he turned his attention to something really challenging.

An interview with Ferdinand Piech, Audi 5000 Project Director.



Sir, how long did you design racing cars? Piëch: Ten years in all. I brought six cars from the drawing board to the race track and all six

went on to win world championships. It was all very exciting.

And you say designing a passenger car was more of a challenge?

Piëch: It was for me. A racing car can be designed to last for a few races only. But a passenger car obviously has to be designed to do much more and to last much longer. In addition to excellent performance and handling I had to consider things like room, comfort and price.

What about the price?

Piëch: The fact is, the Audi 5000 is the largest German luxury car you can buy for the money.

Well, you succeeded with price, but did that mean you had to compromise a lot?

Piëch: No. I don't think so. It was a question of eliminating unnecessary things. The greatest example of that is our five-cylinder engine. Five cylinders, because a four was too small for the weight of the car, and a six was too extreme. Designing the perfect engine for the vehicle can hardly be called making a compromise.

Your racing background? Did it come in handy?

Piëch: Yes, yes. Very much so. The way the Audi 5000 handles, for instance. The ride is not in the least bit mushy. Our suspension, our rack and pinion steering and our weight distribution have a lot to do with that. Which is why we suggest that people pick a rainy or snowy day to take a test drive. This car is at its best when the weather is at its worst.

Is it possible to build a car with a soft, mushy ride, and still retain great responsive handling?

Piech: No, not at all. They are exactly opposite. Some people feel that a soft, mushy ride is luxurious. We, the engineers at Audi, do not. We think it's tiring because you seem to be correcting the car's handling so often. We believe that a truly luxurious car is one that

does what you want it to do when you want it to do it. That's why we engineered the Audi 5000 to be so precise and responsive.

What do you think of American cars?

Piëch: Like everything else, there are good things and bad things. The good things we tried to incorporate in the Audi 5000. More comfort. More room. To be quiet. To give it cruise control as standard equipment. And you can order a powerful, American type air conditioning system for your places like Florida.

Quickly, what would you say to convince Americans to buy an Audi 5000?

Piëch: I would say they can now buy a European car that was designed with American needs in mind. What we have tried to build is the one car that's the best of both worlds. I hope that doesn't sound, ah, what do you say ... corny?

Dr. Ferdinand Piëch, Audi 5000 Project Director.

Audi 5000. Crowning achievement in a 75-year history of innovation.

By 1910, Horch was dominating European road racing.

August Horch built his first Audi in 1903. Seven years later, he and his Audis began dominating road races, rallies, and motor shows throughout Europe. Two prime examples of these vintage classics—the 1910 Audi Doppelphaeton and the



1913 Wanderer Zweisitzer—are pictured here. Like many other sports cars, the Zweisitzer has room for only two occupants. But in this case, one is seated in front of the other, rather than side by side.



1913 Wanderer Zweisitzer.

By 1911 Audi had won the Austrian Alps Run—one of the most grueling and famous races of its day — not once, but three times. Three years later, in the 1914

Alpine Rally, five Audis finished ahead of a field of 33 competitors.



While he was winning races, Horch also found time to make engineering history. As early as 1921, he produced an Audi model with an aluminum engine block, ball-selector transmission and four-wheel brakes. In 1933, Audi built its first front wheel drive car, and has continued to perfect this concept to the present day.

An Audi Chronology.

- 1903 August Horch builds his first automobile, "The Tonneaux".
- 1921 Audi produces first car with aluminum engine block, ball-selector transmission, and four-wheel brakes.
- 1932 Merger of Audi, Horch, DKW, and Wanderer into Auto Union AG.
- 1933 First "Front" Cabriolet produced.
- 1950 Auto Union begins production of DKW "Meister".
- 1977 Audi 5E introduced in Europe.
- 1977 Audi 5000 introduced to America.

AUDI 5000 1979 SPECIFICATIONS.

ENGINE:	No. of cylinders Displacement Compression ratio	5 cylinders, in-line water cooled 130.8 cu. in. (2144 cc) 8.0:1
ENGINE DESIGN:	Cylinder block Cylinder head Cooling system	Cast iron Light alloy Cross-flow radiator with thermostatically
	Lubrication Fuel/Air supply	controlled electric radiator fan Full pressure system CIS—Fuel injection
ELECTRICAL SYST	EM: Rated voltage Battery Ignition	12 volt with alternator (75 Amp.) 12V 63 Amp. hr. Breakerless transistor ignition
DRIVE TRAIN:	Location of engine Clutch	Front, ahead of front axle Single dry plate, hydraulically operated, Automatic Trilok torque converter
	Transmission Location of shift lever	5-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 steering roll radius
	Rear suspension	Torsion crank axle with built-in stabilizer bar and Panhard rod
	Front springing Rear springing	Coil springs and shock absorber 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 Rims Tires	Mechanical, on rear wheels $5\frac{1}{2}Jx 14$ 185/70 SR14 Radial ply steel-belted
	Steering	Rack and pinion, power assisted
CAPACITIES:	Engine Fuel tank Radiator	5.3 U.S. qts. 19.8 U.S. gals. 8.5 U.S. qts.
DIMENSIONS:	Wheelbase Front track	105.5 in. 57.9 in.
	Rear track Overall length Overall width	56.9 in. 189.5 in. 69.6 in.
0	verall height (unloaded) Turning circle	54.7 in. 33.8 ft. (curb to curb)
PERFORMANCE:	Trunk space	15.0 cu. ft.
ERFORMANCE:	Top speed	103 mph (Automatic 100 mph)

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