

AUDI 5000 Pressemappe 1977

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11300 Playa Street
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213-390-8011

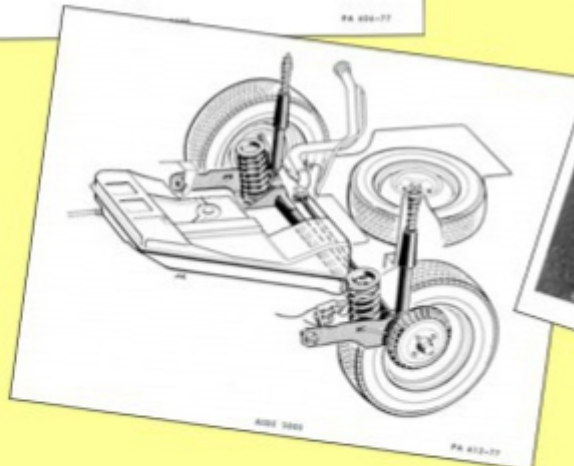
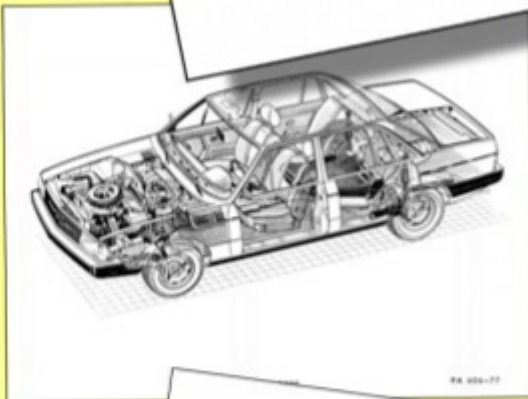
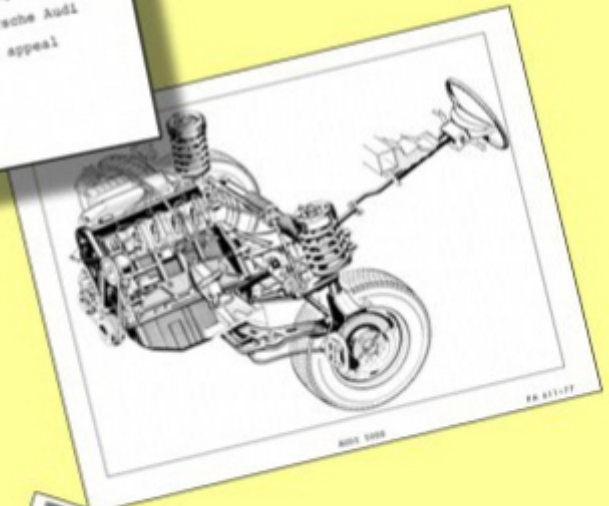
AUDI 5000 SLATED FOR
U. S. INTRODUCTION IN SEPTEMBER

BRETTON WOODS, N.H., Aug. 18 -- Audi today unveiled a new model, the Audi 5000. Powered by a unique five-cylinder gasoline engine, the 5000 will set new standards for luxury and economy when it goes on sale next month.

Alexander E. Breckwoldt, vice president in charge of the Porsche Audi Division of Volkswagen of America, said, "The new 5000 continues the Audi tradition of quality, comfort and fuel-efficient performance with the addition of significant technical and safety innovations. It is larger and more luxurious than any Audi we have offered here in the past and is also the most powerful, equipped with the world's first mass-produced five-cylinder gasoline engine.

"Joining the Fox, the Fox station wagon and Porsche sports cars in the line-up, the 5000 gives the more than 400 Porsche Audi and Audi dealers a variety of distinctive cars that will appeal to a broad segment of the driving public."

(more)



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In typical Audi fashion, the 5000 uses the proven principle of front wheel drive. The location of the engine ahead of the transmission provides greater interior space, better highway stability and improved traction.

-- Low Aerodynamic Drag --

Using the latest computerized technology and wind tunnel testing, the Audi 5000's body was designed for maximum aerodynamic efficiency. The result is a functional and stylish design whose low wind resistance helps fuel economy and acceleration. The aerodynamic design also minimizes wind noise and helps keep the body clean when driving in the rain. The large window area and low beltline give driver and passengers good all-around visibility.

-- Safety - Active and Passive --

The Audi 5000 is equipped with a dual diagonal braking system which, in conjunction with the "self-stabilizing" front suspension, always provides at least 50 percent braking should either brake system fail. The "self-stabilizing" system, or negative offset steering, assures straight-line braking, even when the front wheels are on surfaces with unequal coefficients of friction such as ice or sand patches.

For safety in collisions, Audi engineers have incorporated a little-known theory of controlled deformation into the structure of the Audi 5000. Based on the Timochenko Theory, certain steel members of the body deform in regular folds, dispersing energy in a shorter length than is the case when body sections are allowed to crumple. Audi is the first automobile manufacturer to apply this principle in mass production. It permits lightweight construction while providing increased safety.

(more)

Other features which add to passive safety are adjustable front- and rear-seat headrests and a padded steering wheel. The car's fuel tank is located forward of the rear axle, reducing the possibility of damage in rear-end collisions.

The Audi 5000 is available with a long list of standard features for both luxury and convenience. Power-assisted rack and pinion steering, as well as power disc/drum brakes head the list. For added driving comfort, automatic cruise control is also standard.

The interior features deep pile carpeting and fully reclining front bucket seats. Passenger assist handles are standard, as are storage pockets in the front doors. The rear bench seat has a center armrest and the rear parcel shelf is carpeted.

Among the options available are air conditioning, electric windows, heated front seats and a four-speaker stereo system with the speakers mounted in acoustic chambers for excellent sound. An electrically powered sliding sunroof and a central locking system are also available.

The Audi 5000 is powered by a unique five-cylinder fuel-injected overhead cam engine, the first five-cylinder gasoline engine in a mass-produced automobile. The five-cylinder engine delivers 103 horsepower at 5500 rpm (SAE Net) and gives the car a potential top speed of over 100 miles per hour. A four-speed manual transmission is standard with a three-speed automatic an option.

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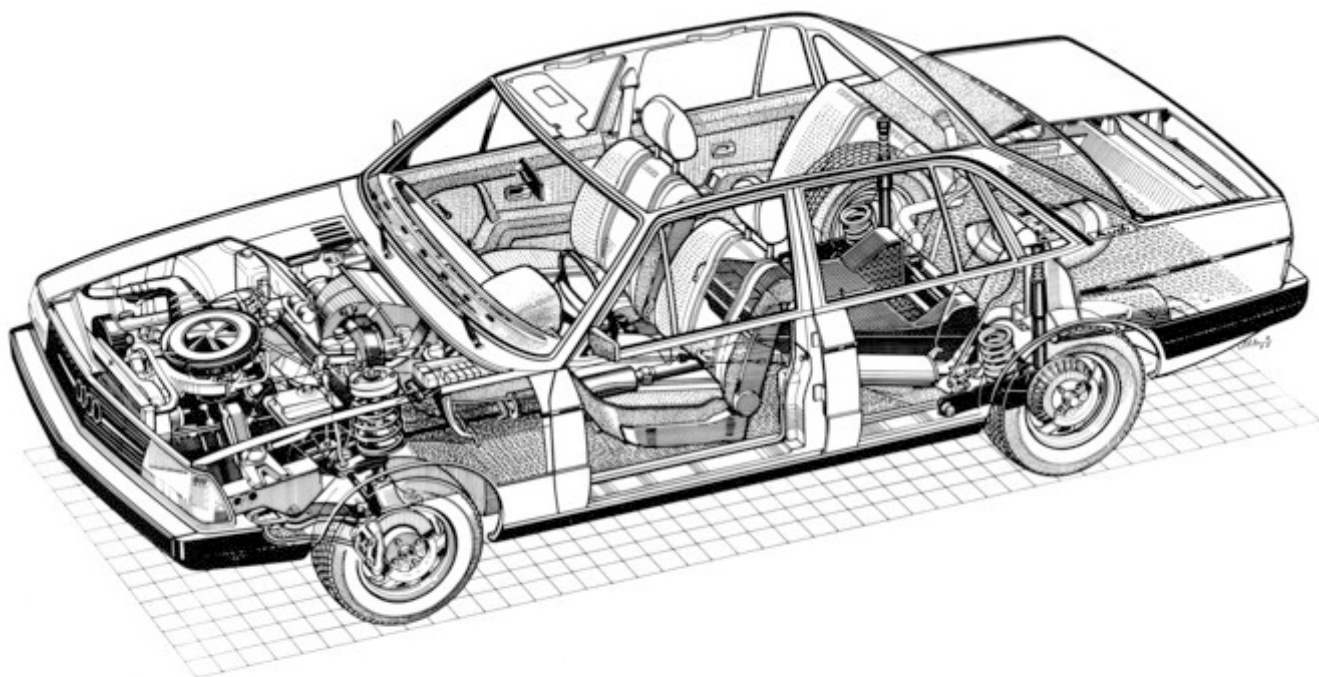
ed 27 degrees for easy access to service parts and for a
d line, the five-cylinder engine is cooled by an offset
or coupled with thermostatically controlled electric fan.
Service intervals are every 15,000 miles, with oil changes
recommended every 7,500 miles.

-- Plenty of Usable Space --

Modern engineering and innovative design makes the Audi 5000
practical and efficient luxury car. With a large, 22.6-cubic-
foot trunk and comfortable seating for five adults, the new Audi
is certain to meet the future energy goals: light weight con-
struction (2,700 lbs.), efficient body shape and advanced engine
design.

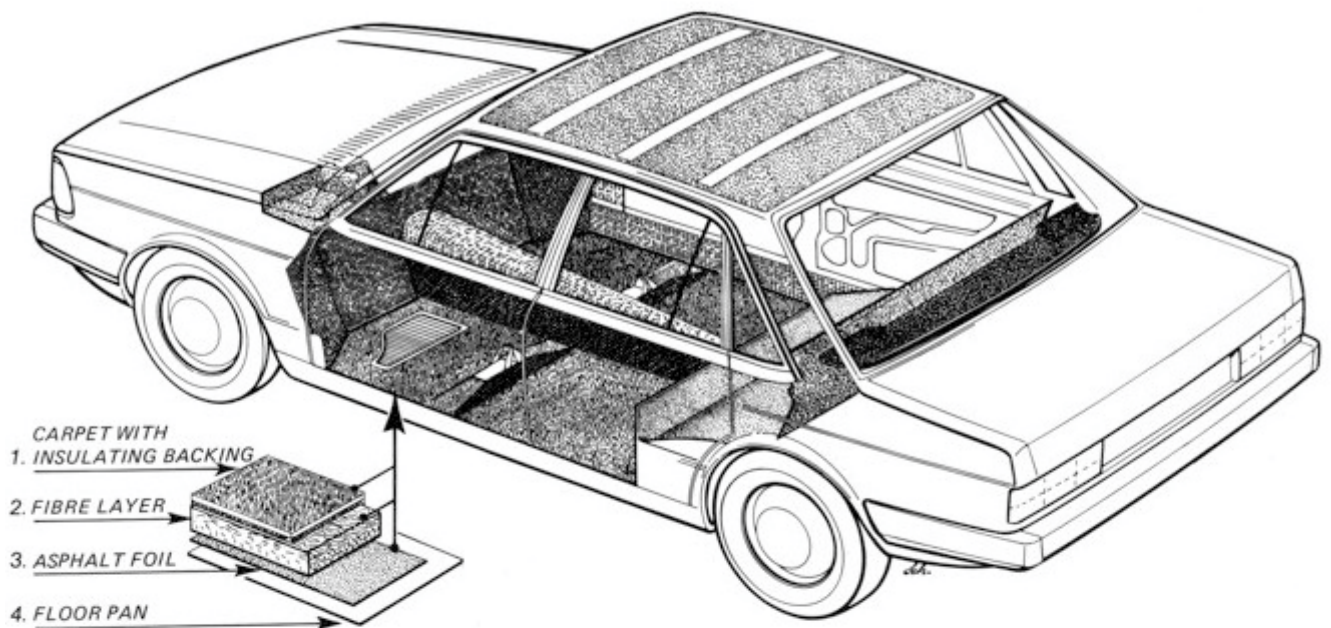
The Audi 5000 will go on sale in September through a nation-
wide network of 400 Porsche Audi dealers who also sell and service
the Audi Fox and Porsche sports cars.

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AUDI 5000

PA 606-77



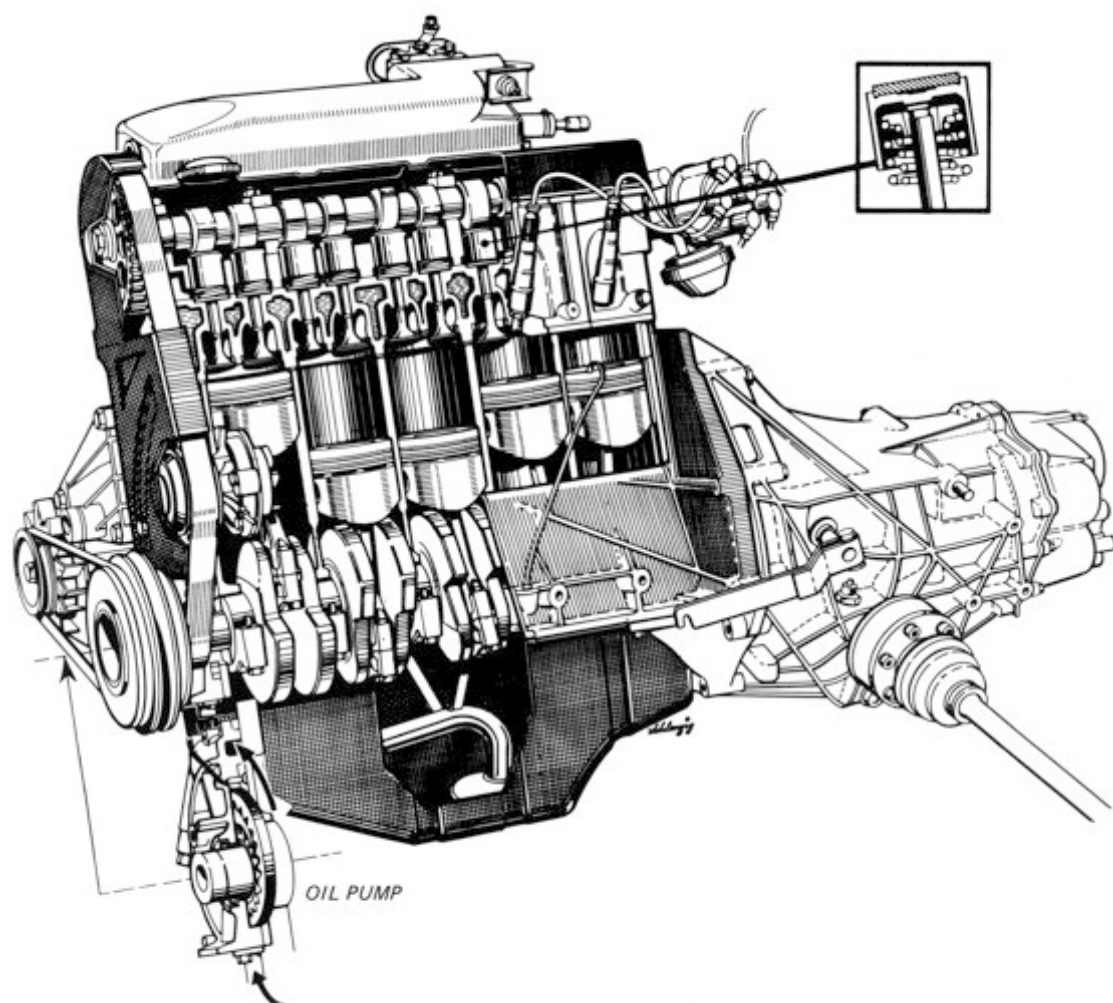
AUDI 5000

PA 607-77

In order to reduce road noise and give passengers a quieter ride, passenger compartments on the 1978 Audi 5000 have three different layers of sound deadening material. Asphalt foil is used to cover the floor pan followed by a thick layer of fiber insulation which is covered by deep pile carpeting. Even the rear parcel shelf is carpeted for added sound absorption.

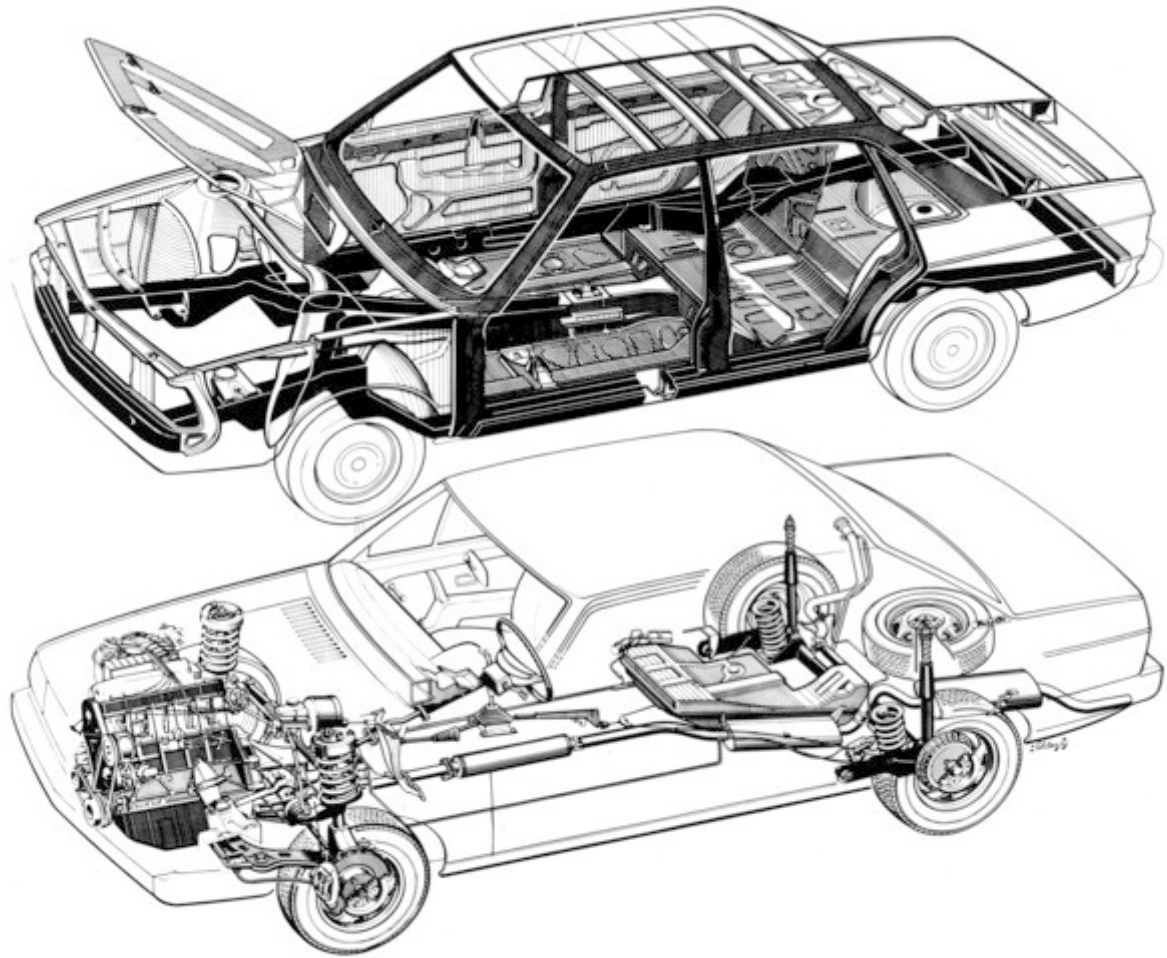
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AUDI 5000

PA 609-77



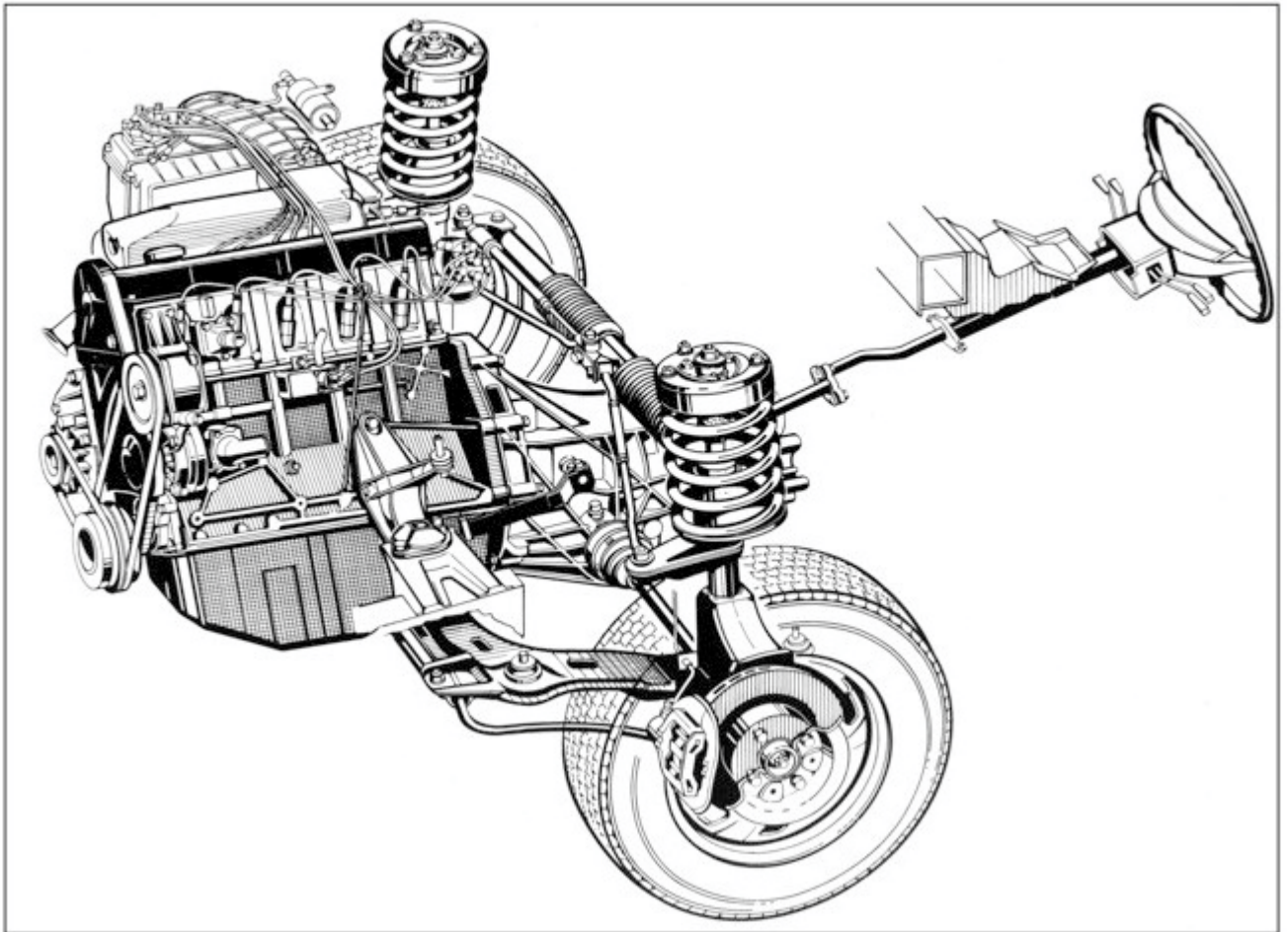
AUDI 5000

PA 610-77

The Audi 5000's unitized body was designed to be lightweight while at the same time provide maximum strength. Deformation zones are built in front and rear which absorb energy in the event of a collision.

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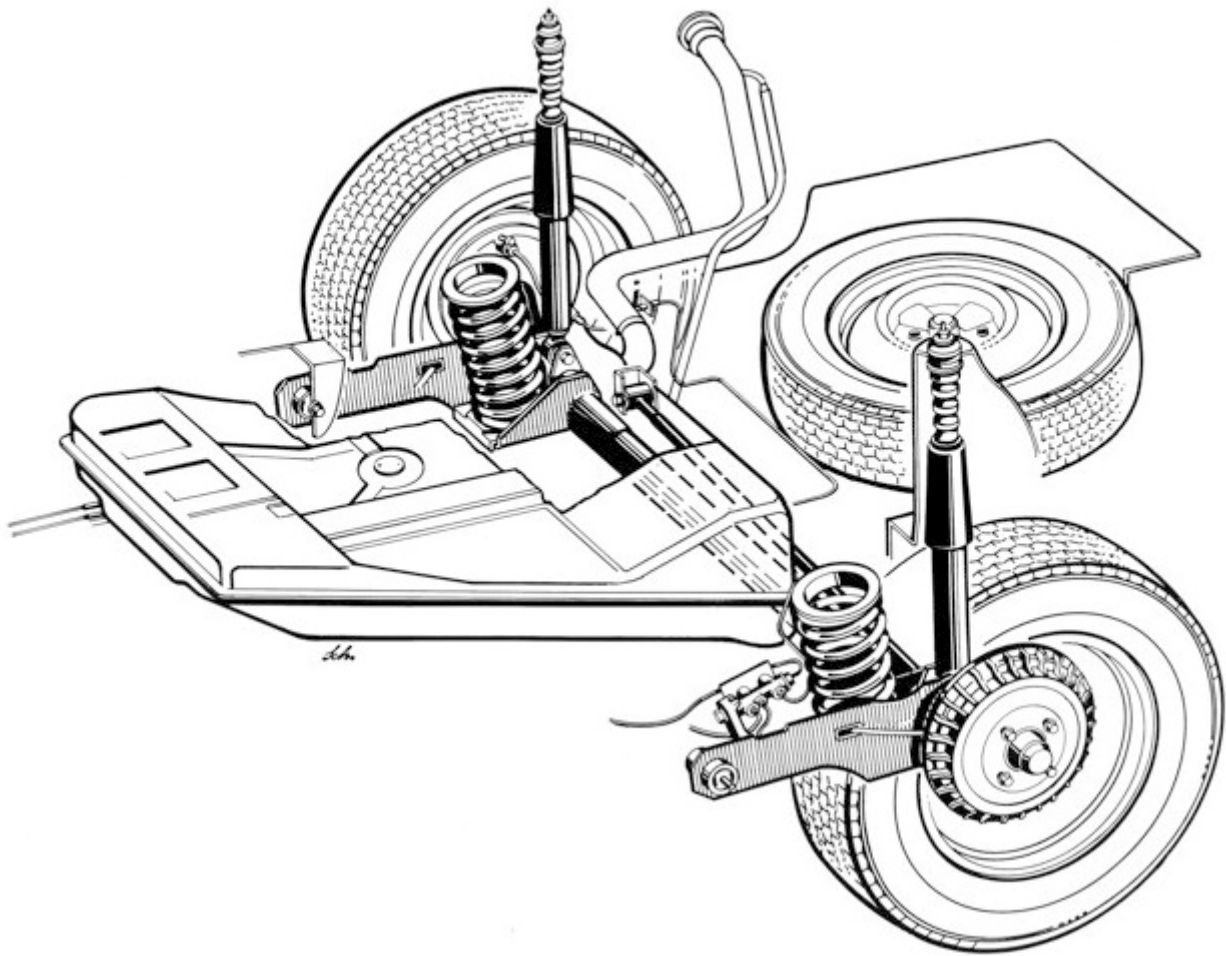
AUDI 5000

PA 611-77

Front wheel drive, an Audi hallmark for over 40 years, is used on the new and larger Audi 5000. The engine is mounted ahead of the transmission over the driving wheels for better traction and directional stability. Front wheel drive eliminates the need for a heavy drive shaft, giving greater interior space. Independent front suspension along with power assisted rack and pinion steering are standard on the Audi 5000.

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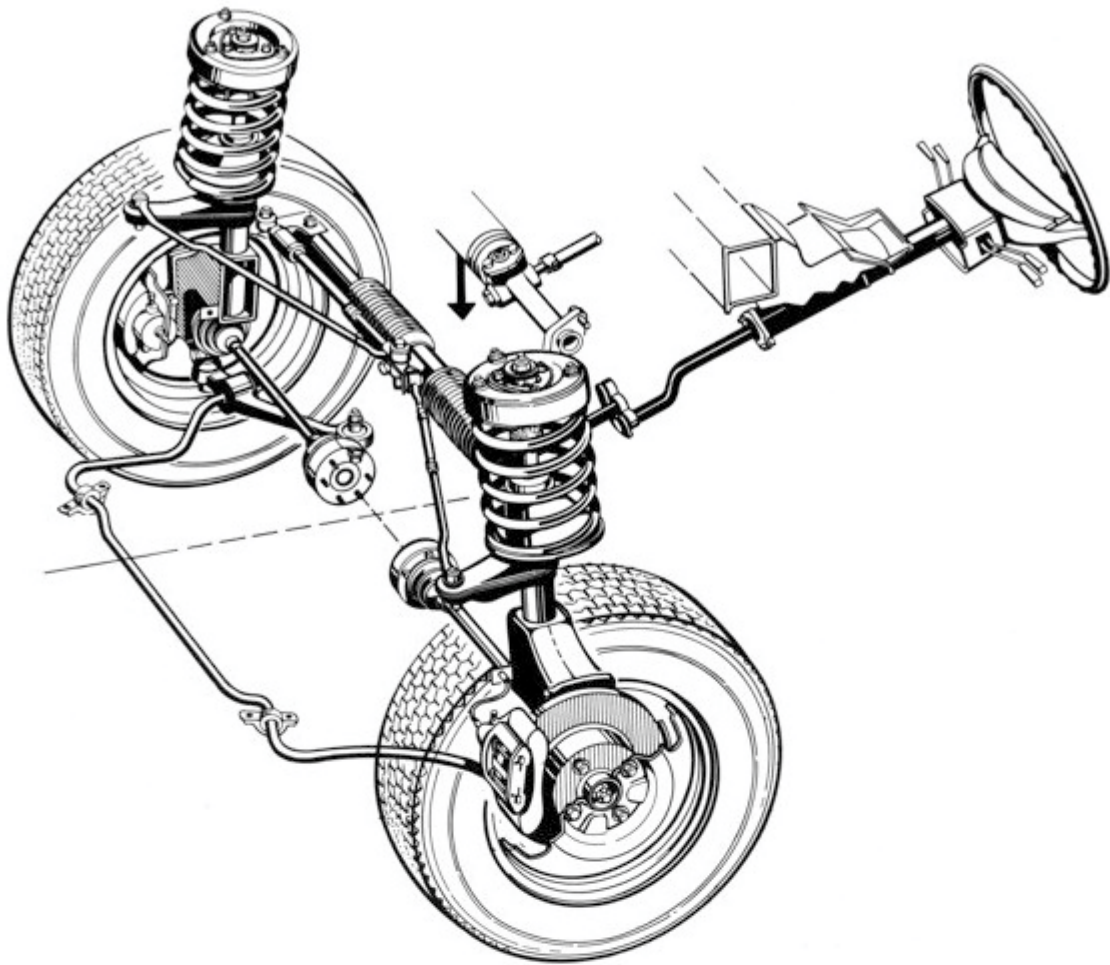
AUDI 5000

PA 612-77

The Audi 5000 rear suspension uses a torsion crank axle and separate coil spring and shock absorber. Lateral forces are controlled by a transverse mounted panhard rod. The fuel tank is located ahead of the rear axle for better protection from rear end impact. This position allows for the spare tire to be stored under the trunk floor for increased luggage space.

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AUDI 5000

PA 613-77

The independent McPherson strut front suspension is mounted on a sub frame to suppress road noise. Power assisted rack and pinion steering is standard while the steering column incorporates a detachable coupling for safety. Power assisted front disc brakes are also standard.

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1978 AUDI 5000

PA 614-77

The instrument panel of the Audi 5000 is both functional and practical. All controls are within easy reach and lights, directional signals, 4-way flasher and cruise control can be reached without the driver removing his hands from the wheel. The entire center portion of the dash is devoted to ventilation providing the air conditioning system a maximum of air flow with a minimum of noise.

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AUDI 5000

PA 625-77

TAKE FIVE

The Audi 5000 engine has -- as the young woman indicates -- five cylinders, the world's first five-cylinder gasoline engine in volume production. The power plant is tilted 27 degrees for easy service access and a low front end silhouette. It delivers 103 horsepower at 5500 rpm.

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AUDI 5000 HEATING AND AIR CONDITIONING SYSTEM

The Audi 5000 has a fully integrated heating and air conditioning system. It is the first Audi model which regulates air temperature by controlling the air flow through the heater core instead of varying the volume of coolant circulating through the heater core.

A series of "doors" regulating air flow through the heater core are controlled by a cable connected to the temperature slide control on the dash. The remaining controls are vacuum operated.

A temperature sensor circuit engages the air conditioning compressor whenever air temperature is above 34 degrees fahrenheit to ensure low humidity at all temperatures. The temperature "doors" direct cold air from the air conditioner evaporator through the heater core if heat is selected.

At the "full hot" position, the temperature doors provide maximum air flow through the heater core. Engine vacuum is supplied to the distribution door motor so that warm air flows through both the floor and windshield outlets. The maximum output of the heater is approximately 30,000 BTUs, enough to heat a small apartment.

(more)

During the "defrost" cycle, the blower fan is automatically switched on "high" and vacuum for the distribution door motor is cut off; the spring-loaded door closes, directing all air flow through the windshield outlets.

If less heat is needed, the slide control cable moves the temperature doors so that some air flow now bypasses the heater core - vacuum is also supplied to one connection on the deflector door motor so that air begins to flow through the dash outlets.

When the air conditioning is on, vacuum is supplied to the heater valve so that no coolant circulates through the heater core. Vacuum is applied to both connections on the deflector door motor so that all cold air flows through the dash outlets.

At the "full cold" position, the blower fan is automatically switched on "high" and vacuum is supplied to the intake air door motor so that outside air flow is cut off and cool air from the passenger compartment recirculates through the evaporator.

The dash of the Audi 5000 was designed to accept this new air conditioning/heating system and maximizes the amount of air reaching the passengers both front and rear. In simulated lab tests, the interior air in the 5000 is changed every fifteen seconds adding to driver and passenger comfort.

The increased grille area, for interior air distribution, for the heating and cooling systems minimizes the air turbulence and causes a quieter operation of the system. With the blower on high, the Audi air conditioning/heating system circulates about 165 cubic feet of air per minute.

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AUDI 5000

Specifications

ENGINE

Number of cylinders	5
Bore	79.5 mm (3.12")
Stroke	86.4 mm (3.40")
Displacement	2144 cc (130.8 cu.in.)
Compression ratio	8.0:1
Horsepower (SAE Net)	103 @ 5500 rpm (100 @ 5500 rpm - Calif.) SAE Net
Maximum torque (SAE Net)	110.3 ft. lbs. @ 4000 rpm

ENGINE DESIGN

Cylinder block	Cast iron, in-line, tilted 27°
Cylinder head	Aluminum alloy
Valve arrangement	Overhead with belt-driven cam
Cooling system	Water-cooled, thermostatically controlled electric fan
Fuel/air supply	CIS - fuel injection

ELECTRICAL SYSTEM

Rated voltage	12V/65 Amp. max.
Battery	12V/63 Amp. h.
Ignition	Transistorized (breakerless)
Firing order	1-2-4-5-3

DRIVE TRAIN

Clutch	Hydraulic, single disc
Transmission	4-speed, fully synchronized, front drive
Transmission gear ratio	3-speed automatic (optional)
1st gear	3.60:1 2.55:1
2nd gear	2.12:1 1.44:1
3rd gear	1.36:1 1.00:1
4th gear	0.96:1 --
Reverse	3.50:1 2.46:1
Final drive ratio	4.11:1 3.90:1
Final drive	Ring gear and pinion, double-jointed drive shafts

(more)

Audi 5000 Specs -- 2

CHASSIS AND SUSPENSION

Frame	Unitized construction, energy absorbing sections front and rear
Front suspension	Independent McPherson struts with lower control arm and stabilizer
Front springing	Coil springs and telescopic shocks
Rear suspension	Torsion crank-axle, panhard rod and stabilizer
Rear springing	Coil/shock absorber
Foot brakes	Hydraulic dual diagonal, power assist vented discs, front; finned drums, rear
Hand brake	Mechanical on rear drums
Total brake swept area	76.4 sq.in.
Rims	5½J x 14
Tires	185/70 HR 14 steel belted radial
Steering	Rack and pinion - negative steering roll radius - power assisted

CAPACITIES

Engine	5.2 U.S. qts.
Transmission & differential	5.5 U.S. pts.
Fuel tank	15.8 U.S. gals.
Cooling system	8.5 U.S. qts.
Trunk	22.6 cu. ft.

DIMENSIONS

Wheelbase	105.7 in.
Front track	57.9 in.
Rear track	56.9 in.
Overall length	189.4 in.
Overall height (unloaded)	54.8 in.
Overall width	69.4 in.
Turning circle: curb to curb	33.8 ft.
wall to wall	37.4 ft.

PERFORMANCE

Top speed	103 mph (100 mph - automatic)
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ACCELERATION

0 - 50	8.5 sec. (9.8 sec.- automatic)
0 - 60	11.7 sec. (13.6 sec.- automatic)

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WHY FIVE CYLINDERS?

When the decision was made to develop and produce a replacement for the Audi 100 LS, many different power units were examined. A six-cylinder engine seemed, at first, the logical, if traditional, replacement; however, several considerations had to be taken into account.

First, the Audi research team was still committed to the concept of front wheel drive. It was apparent that the combined weight and length of a six-cylinder engine, with its transmission mounted ahead of the differential, would adversely affect handling and require redesign of the proposed vehicle's front end to accept the added length. A transverse installation would have required a new and more expensive transmission design. A V-6 layout was also considered, but it presented problems with radiator location and manifold configuration.

The decision to use five cylinders was strongly favored primarily because of its compatibility with front wheel drive. The Audi rear suspension -- a torsion crank axle, panhard rod and coil spring -- has already been highly refined. It is light weight and permits better use of interior space.

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Audi had already developed the highly regarded four-cylinder overhead cam Fox engine and engineering studies indicated the best solution for added power would be to add one cylinder to the existing Fox engine. The approach, however, would create a major problem: the balancing of the masses of a high revving (6000-plus rpm) engine.

In 1973, Audi began an extensive (theoretical) investigation of the difficulties involved in developing a five-cylinder engine. The first consideration was to adopt an even ignition spacing of 144 degrees ($5 \times 72^\circ$). This spacing creates pitching couples causing a bending action between the engine and gear box, but the primary and secondary inertia forces are reduced to zero. (These forces are the principle causes for the uneven running in a four-cylinder in-line engine.)

It was found that the remaining engine vibrations could be reduced by using counter weights and small balance weights (vibration dampers) on the front and rear of the crankshaft. Once these remaining vibration characteristics were determined, engineers could minimize the transmission of these vibrations by altering the locations of the engine mounts.

The advantage of the front wheel drive power train is that the entire unit; engine, transmission and differential; has a greater moment of inertia than the engine alone (as in the case of rear wheel drive) and is subject to smaller vibrations. To counteract the bending action caused by the pitching couples, heavy ribbing for stiffening was installed on the bell housing, the rear portion of the crankcase and adjacent surfaces of the

Why Five Cylinder? -- 3

With the problem of vibrations solved, the Audi engineers developed the five-cylinder engine as an extension of the Audi Fox unit. To reduce production and maintenance costs, many component parts were taken off the shelf. Some design features remain the same: cylinder spacing, bore, location of valves and spark plugs, injectors and drilling for head bolts. The location of the main bearings and the skirt of the crankcase below the center line of the crank also remained.

Because production called for new tooling for the head and crankcase, engineers incorporated some new design features. A crescent-type oil pump is now driven directly off the crankshaft while the distributor is driven by the camshaft.

The water pump is driven by the timing belt, eliminating the need for a separate V-belt. The pump is mounted in an eccentric bearing on the block so it can be rotated for correct tension on the timing belt.

In its U. S. form, the Audi 5000 engine, with 8.0:1 compression ratio, puts out 103 SAE net horsepower at 5300 rpm. The result is: the five cylinder has the power of a six and the economy of a four.

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