

1983 Audi Turbo Diesels

... from Bavaria, the ultimate luxury and sports sedans.



1983 Audi 4000/5000

TURBO-DIESEL

Front-wheel-drive leadership... plus the impressive efficiency and performance of turbocharged diesel engines—5-cylinder and 4-cylinder.

Of all the automobiles made or sold in America, **only one** has 50 years of front-wheel-drive experience. Audi. Audi engineers have been at the forefront of front-drive development for the past half century. Any wonder then, that today's **ultimate combination** of superior front-wheel-drive directional control, greater interior space efficiency and weight reduction, and sophisticated turbo-diesel economy* comes from Bavaria—from Audi: the art of engineering.

You must not be intrigued by the turbo-diesel alone. For it is the **entire vehicle package** that is so right for our times. So right for the ways you use your automobile.

Two distinct choices. Discover which one suits your lifestyle most ideally.

The Audi 4000 turbo-diesel is offered in a four-door sports sedan body style. Its 1.6-liter, 4-cylinder diesel delivers 68 (SAE, net) horsepower, at 4500 rpm. This will provide you with very satisfying performance: zero-50 mph in 8.8 seconds, with 5-speed manual transmission (in 10.9 seconds with the optional automatic). Top speed is 98 mph (5-speed) or 96 mph (automatic).

In terms of fuel efficiency, the 4000 turbo-diesel is EPA-rated **38** estimated mpg*/52 highway estimate (5-speed), and **33** estimated mpg*/42 highway estimate (automatic).

The Audi 5000 turbo-diesel is a very luxurious four-door sedan. Its turbo-diesel is a 5-cylinder engine, with 2.0-liter displacement, delivering 84 horsepower (SAE, net), at 4500 rpm. The 5000 turbo-diesel is offered only with automatic transmission. Top speed for the 5000 turbo-diesel is 100 mph. Zero-50 mph performance is a snappy 10.1 seconds. And, for mileage ratings: **28** estimated mpg*/36 highway estimate.

Two ideal, long-range Audis.

Using the EPA estimates, the Audi 5000 turbo-diesel, with its 19.8-gallon fuel tank, has an estimated touring range of over **550** miles* and an estimated highway range of 700 miles.

The Audi 4000 turbo-diesel, with 5-speed transmission and its 15.8-gallon fuel tank, has an estimated touring range of over **600** miles* and an estimated highway range of over 800 miles.

Now, none of these long-legged, single-tank driving ranges would be worth much if the comfort wasn't there for you and your passengers to enjoy on long trips. Rest assured, Audi interior designers and engineers have done everything feasible to provide a very high degree of riding comfort in orthopedically correct seats that are widely adjustable, in front. In addition, visibility for everyone aboard is superb and virtually without

"blind spots". Moreover, the passenger compartment ventilation is most-efficient. And, because a turbocharger "quiets" an engine even more, there is always a serene, almost uncanny, silence for you and your passengers to savor.

A very brief discussion of turbocharging. How it works. Why it works. And why it's better.

Exhaust turbocharging is not a new concept. However, turbocharging the diesel engine (for passenger cars) is a relatively new development. The most obvious benefit of turbocharging is increased engine performance. The turbocharger uses exhaust energy (normally wasted) to push **more air** into the engine. This process increases the amount of air the engine can take in.

The diesel engine is generally more efficient than gasoline engines. This is because the diesel engine operates at a higher "compression ratio", and uses diesel fuel (which contains about 10% more energy than gasoline). Diesel engines are also "unthrottled". This allows them to take in an **unrestricted** amount of air.

When the Audi diesel is turbocharged, even this level of efficiency is increased. The result is a diesel engine that produces a **higher maximum torque**, at lower engine speed, than the Audi gasoline engine. At the same time, the diesel produces **nearly the same horsepower**. The increased torque of the diesel allows you to use high gear more often, resulting in further increased economy*. (An added benefit is a reduction in engine noise. Further reductions in engine noise levels occur because the turbocharger reduces intake and exhaust resonance.)

In summary, the Audi turbo-diesel gives you the performance of the gasoline engine, while retaining the economy* of the diesel.

Audi 5000 gasoline turbo led the way for turbo-diesel.

The turbocharger system used on the Audi diesels is similar to the system used on the Audi 5000 gasoline turbo. Exhaust gas from the exhaust manifold drives the **turbine** in the turbocharger. The turbine drives the **impeller** which pressurizes the air entering the intake manifold—thereby **increasing** the amount of air supplied to the engine.

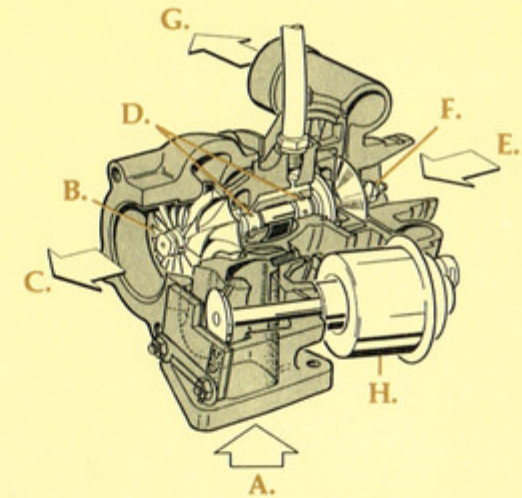
One important difference with the turbo-diesel is that, as the normally-aspirated diesel, the intake manifold is unthrottled. This helps maintain the speed of the turbine and improves "throttle response". The turbine and impeller (connected by a common shaft) can turn up to 100,000 rpm—depending on the exhaust flow. A "wastegate" limits the boost pressure from the turbocharger. There is also a "safety valve" in case the wastegate sticks.

A new automatic transmission: The E-Mode.

The new E-Mode automatic is a modified fuel-saving version of the normal automatic transmission. You will notice, on the

console, a special "E" position for the selector lever. When the transmission is placed in the "E" position, the drive between the transmission and differential is **disengaged whenever the accelerator pedal is released**. The engine will have no "drive load" on deceleration and at idle, because the transmission will be in neutral.

If the selector lever is placed in any position—other than "E"—the transmission will operate just like the normal automatic transmission. The new "E" mode is standard equipment on the Audi 5000 Turbo-diesel, and is available as an option on the Audi 4000 Turbo-diesel (which is offered with a 5-speed manual transmission, standard).



- A. Exhaust gases from engine enter here. (These gases are normally wasted.)
- B. Turbine is driven by the hot exhaust gases; can reach speeds up to 100,000 rpm.
- C. After driving turbine, gases travel out via regular exhaust system.
- D. Turbine-shaft bearings are pressure lubricated, using engine oil.
- E. Outside-air intake. (In a diesel, outside air is taken directly into the combustion chamber, without mixing with fuel.)
- F. Impeller compresses intake air, provides greater oxygen charge to combustion chambers for increased power and performance. (Impeller is driven by exhaust-gas turbine on the same shaft.)
- G. Pressurized air enters intake manifolds.
- H. Wastegate. When turbo "boost" pressure exceeds a predetermined amount, this gate opens, allowing exhaust gases to bypass the turbine and flow directly to the exhaust system. The wastegate helps to limit the speed of the turbine and the "boost" pressure created by the spinning impeller.

*Use "estimated mpg" and "estimated touring range" for comparison to other cars. Your actual mileage may vary with speed, weather, and trip length. Your actual highway mileage and highway range will probably be less.

Audi turbo-diesel performance: it can only be defined as a feeling that is unquestionably unique.

In today's market of "look alike/drive alike" motorcars, you will find the concept and execution of the Audi turbo-diesel not only exhilarating, but genuinely luxurious. Even stately. But never stodgy or sluggish. An engineer would tell you that our turbo-diesels "deliver greater torque and greater engine flexibility." To you, this means less shifting. Better passing power. And better fuel economy* if measured under equal load and speed conditions as normally-aspirated diesels.

When you examine the new Audi turbo-diesels—like the two shown here—you will find each of them offers you more of what you have been looking for in your next car. For over 50 years, Audi has been among the leaders in front-wheel-drive development. Audi is noted for its advanced engineering and outstanding craftsmanship. Moreover, both Audi 4000 and 5000 turbo-diesel models provide you and your passengers with surprising amounts of room for long-trip comfort.

In summary, we are certain you will find our new turbo-diesels **exceptionally competitive**. Outpacing lesser automobiles that may be priced with—or far beyond—them. The details in this brochure and your own thoughtful analysis can lead you to choose Audi as the most satisfying, worthwhile investment you can make.



Audi 5000, five-cylinder turbo-diesel, in foreground. Background: Audi 4000, four-cylinder turbo-diesel. The light alloy wheels shown are standard for each model.





Audi 5000 turbo-diesel in optional Gobi Beige Metallic. Front spoiler, front vent windows, air conditioning, and much more, are standard.



Audi 5000 turbo-diesel: once you've driven it, no other diesel will please you as much.

Look around. You will find a growing number of diesel motorcars in the luxury category. From Europe, from America, even from Japan. Despite this growing competition, we are confident the Audi 5000 turbo-diesel is one of the finest you can own. At any price.

What makes this turbo-diesel so satisfying to own . . . to drive?

It is an appearance and a capability that work well together. First off, the Audi 5000 turbo-diesel puts forth a gleaming aura of meticulous "fit and finish". Something often missing in other cars. Then, the genuine, ergonomic comfort. You will quickly learn to appreciate all of the painstaking emphasis our engineers have placed on the design and positioning of controls, seats, armrests, knobs, and in its unflappable suspension system. Even the turbine's unique sound adds panache to this fine car.

We think you'll appreciate Audi's thoughtful luxuries.

Few people realize that a carefully engineered driving compartment can actually fit you like a well-made suit. Audi 5000's seats are superbly comfortable. As an option, you can order yours upholstered in genuine leather. Even with electric heat, in front.

Your rear-seat guests will appreciate the center folding armrest, the assist handles, the power windows (with illuminated switches), even the rear ashtrays (right and left) complete with individual lighters and lights.

Above all, you will find the Audi 5000 turbo-diesel an uncommonly complete machine. (The listing of its standard features bears this out. See page 7.)

Finally, you will discover one, rare gauge labelled "boost". Not very many other cars have it. But then, only very few others are turbo-diesels.

Audi 5000 turbo-diesel interior, shown in optional Sierra Beige genuine leather. The automatic transmission is standard. (As an option, front seats can also be electrically heated, and electrically adjustable—even for height.)

Audi 4000 turbo-diesel: very sporting performance together with long-range economy.

What other corporate car maker offers turbo-diesels? Mercedes-Benz, Peugeot, and Audi. Audi, of course, offers front-wheel drive. And, currently, the only one offering both four- and five-cylinder turbo-diesel engines in passenger cars. All of which makes our 4000 turbo-diesel a member of a very select group!

This is our sports sedan. The turbo-boost gives you surprisingly brisk performance—especially for a 1.6-liter “four”—zero - 50 mph in 8.8 seconds (5-speed). Zero - 50 in 10.9 seconds with the optional automatic. (Now you can order an Audi diesel with either 5-speed or new E-mode automatic transmission.) Top speed with manual is 98 mph... with automatic, 96 mph.

And, the 4000 turbo-diesel's touring range is phenomenal. Based on 1983 EPA estimates*, you could drive an

estimated [600] miles between fill-ups**. Performance and economy aside, the Audi 4000 is an exceptionally capable and comfortable car. Like every Audi, it is built to an exacting high standard of quality and precision. Engineered like few other cars you can buy.

And, as with every car claiming the designation “sport sedan”, the 4000 turbo-diesel must earn it... from nobody less than its ultimate buyer. A test-drive lets it live up to every facet of that claim.

* 1983 EPA estimates, Audi 4000 turbo-diesel: [38] estimated mpg/52 highway estimate (5-speed); [33] estimated mpg/42 highway estimate (automatic). Use “estimated mpg” and “estimated touring range” for comparison to other cars. Your actual mileage may vary with speed, weather, and trip length. Highway mileage and highway range will probably be less.

** Audi 4000 turbo-diesel, single-tank estimated touring range based on 15.8-gallon fuel tank capacity multiplied by [38] estimated mpg (600 miles), and 52 highway estimated for an estimated highway range of 821 miles.



Audi 4000 turbo-diesel. Available with either 5-speed manual or optional E-Mode automatic transmission.

Standard Audi 5000/4000 Turbo-Diesel appointments, plus options to let you further personalize your Audi.

Standard for Audi 5000 turbo-diesel model:

UNDER THE HOOD

- Front-wheel drive
- 5-cylinder, OHC, turbocharged diesel engine
- Power-assisted, rack-and-pinion steering
- Power assisted brakes
- Cruise control
- Dual-tone horn
- Automatic transmission, with E-mode

EXTERIOR

- 185/70SR14 steel-belted radial tires
- Light-alloy wheels (6 x 14)
- Halogen headlamps (dual)
- Intermittent windshield wiper
- Wide, protective body-side molding
- Lockable gas cap
- Large front spoiler

INTERIOR, FRONT

- Air conditioning
- Leatherette-covered steering wheel
- Manually adjustable outside mirrors, left and right (tinted)
- Passenger vanity mirror, illuminated
- Thick, cut-pile carpeting
- Power windows, illuminated switches
- "Heidelberg" digital readout, seek and scan, AM/FM stereo, radio/cassette player, with power antenna
- Center console with storage compartment and illuminated ashtray
- Reclining bucket seats, with adjustable headrests
- Manual height adjustment, both front seats
- Front-opening vent windows
- Lighted, lockable glove compartment
- Passenger assist handle
- Central door-locking system
- Trip odometer
- Tachometer
- Coolant temperature gauge
- Oil temperature gauge
- Turbo-boost gauge
- Digital clock
- Cigarette lighter
- Front door storage pockets, left and right
- Storage trays (two) under dash, left and right
- Day/night rearview mirror
- Sun visors, left and right
- Tinted glass, all around
- Inside hood release
- Electric rear-window defroster

INTERIOR, REAR SEAT

- Center armrest, folding
- Passenger assist handles
- Carpeted rear parcel shelf
- Power windows, with illuminated switches
- Rear ashtrays with lighters and courtesy lights
- Rear-seat, open-style headrests
- 3-point rear seat belts, outboard
- Thick, cut-pile carpeting

LUGGAGE COMPARTMENT

- Courtesy light, automatic
- Fully-carpeted
- Central locking system for trunk
- 15 cubic-foot luggage capacity
- Space-saver spare

These items of optional equipment can be ordered individually for your Audi 5000 turbo-diesel

- Electric sunroof
- Genuine leather upholstery
- Heated front seats
- Electrically-powered, adjustable front seats
- Electrically adjustable and heated outside mirrors, L & R
- Metallic paint
- Fog lamps (two)
- Floor mats

Standard for Audi 4000 turbo-diesel model

(offered in four-door bodystyle only):

UNDER THE HOOD

- Front-wheel drive
- 4-cylinder, OHC turbocharged diesel engine
- 5-speed manual transmission (automatic, optional)
- Rack-and-pinion steering
- Power-assisted brakes
- Dual-tone horn
- Electronically controlled "Upshift Light" (with 5-speed)

EXTERIOR

- 175/70SR13 steel-belted radial tires
- Light-alloy wheels, (5 1/2 x 13)
- Halogen headlamps (dual)
- Intermittent windshield wiper
- Protective body-side molding
- Lockable gas cap

INTERIOR, FRONT

- Air conditioning
- Adjustable outside mirror, left
- Passenger vanity mirror
- Thick, cut-pile carpeting
- Reclining bucket seats, with open style headrests
- Driver-seat, manual height adjustment
- Lighted, lockable glove compartment
- Trip odometer
- Voltmeter
- Coolant temperature gauge
- Oil temperature gauge
- Quartz-crystal electronic chronometer
- Cigarette lighter
- Front door storage pockets, left & right
- Storage tray, under dash
- Day/night rearview mirror
- Tinted glass, all around
- Front-opening vent windows
- Inside hood release
- Electric rear-window defroster
- Sun visors, left and right
- Front ashtray

INTERIOR, REAR SEAT

- Child-safety locks, rear doors
- Thick, cut-pile carpeting
- Rear ashtray
- Carpeted rear parcel shelf
- 3-point rear seat belts, outboard

LUGGAGE COMPARTMENT

- 12 cubic-foot luggage capacity
- Space-saver spare

These items of optional equipment can be ordered individually for your Audi 4000 turbo-diesel

- Manual sunroof
- Sport bucket seats, front
- Cruise control
- Comfort package includes power-locking systems (doors/trunk), power windows, cruise control
- Power antenna
- Adjustable, outside mirror, right
- Electrically adjustable and heated outside mirrors, L & R
- E-mode automatic transmission (5-speed manual, std.)
- "Heidelberg" digital readout, seek and scan, AM/FM stereo radio/cassette player, with power antenna
- Metallic paint
- Fog lamps (two)
- Power steering
- Floor mats

SPECIFICATIONS

	Audi 5000/turbo-diesel	Audi 4000/turbo-diesel
ENGINE		
No. of cylinders/arrangement	5, in-line	4, in-line
Bore	3.01 in. (76.5mm)	3.01 in. (76.5mm)
Stroke	3.40 in. (86.4mm)	3.40 in. (86.4mm)
Displacement	121 in. ³ (1986cc)	97 in. ³ (1588cc)
Compression ratio	23.0 to 1	23.0 to 1
Horsepower @ RPM (SAE, net)	84 hp @ 4500 rpm	68 hp @ 4500 rpm
Maximum torque, @ RPM (SAE, net)	127 ft. lbs. @ 2800 rpm	98 ft. lbs. @ 2800 rpm
ENGINE DESIGN		
Cylinder block	Cast iron, canted 27°	
Cylinder head	Aluminum alloy	
Cooling system	Water-cooled, thermostatically controlled, radiator fans. Additional oil-system cooling through separate cooler.	
Fuel/air supply	Air: through exhaust turbocharger. Fuel: through high-pressure diesel injection pump	
Crankshaft	Forged, 6 main bearings	Forged, 5 main bearings
Valve train	Spur belt driven, single overhead cam	
Lubrication	Pressure lubrication with full-flow oil filter. Additional oil cooler.	
Fuel requirement	Diesel #2 (details in Owner's Manual)	
ELECTRICAL SYSTEM		
Battery	12V, 88 Amp/hr	12V, 63 Amp/hr
Ignition system	Self-ignition (by compression)	
POWER AND DRIVE TRAIN		
Engine/transaxle placement	Engine: front-mounted, longitudinal; mounted forward of the transaxle	
Number of gears	3-speed automatic, std.	5-speed manual, std.
Gear ratios	I. 2.55 to 1 II. 1.45 to 1 III. 1.00 to 1 (R) 2.46 to 1 Final drive 3.08 to 1	I. 3.45 to 1 II. 1.94 to 1 III. 1.29 to 1 IV. .91 to 1 V. .73 to 1 (R) 3.17 to 1 Final drive 4.11 to 1
FRAME/BODY		
	4-door sedan, unitized construction with high-energy-absorbing front and rear sections	
SUSPENSION AND CHASSIS		
Front suspension	Independent, MacPherson struts, with negative roll radius, coil springs, and stabilizer bar.	
Rear Suspension	Torsion-crank axle with Panhard rod and integral stabilizer, coil spring struts	
Service brake	Hydraulic, dual-diagonal, power assisted. (Vented disc, 5000TD) (Solid disc, 4000TD) in front. Finned drum (5000TD), smooth drum (4000TD), rear with load-sensing brake pressure regulator (rear).	
Parking brake	Mechanical, on rear drum brakes	
Rims	Light alloy, 6x14 (4)	Light alloy, 5 1/2x13 (4)
Tires, road	185/70SR14, steel-belted radials (4)	175/70SR13, steel-belted radials (4)
Tire, spare	Space-saver	Space-saver
Steering	Rack and pinion, power-assisted, std.	Rack and pinion, manual, std. (power-assisted, optional)
DIMENSIONS		
Wheelbase	105.5"	99.8"
Track, front (rear)	57.9" (56.9")	55.1" (55.9")
Overall length	188.9"	176.6"
Overall width	69.6"	66.2"
Height (unladen)	54.7"	53.8"
Turning circle, curb to curb	34 ft., 4 in.	32 ft., 6 in.
Trunk space	15.0 ft. ³ . Space-saver spare is stowed beneath trunk floor.	12.0 ft. ³ . Space-saver spare is stowed, vertically, on left, in trunk.
CAPACITIES		
Engine oil	5.3 US qts.	3.7 US qts.
Fuel tank	19.8 US gals.	15.8 US gals.
Radiator coolant	8.5 US qts.	7.4 US qts.
PERFORMANCE		
Zero-50 mph	10.1 seconds (with standard automatic)	8.8 secs. (5-speed) 10.9 secs.(automatic)
Top speed	100 mph (with standard automatic)	98 mph (5-speed) 96 mph (automatic)
Estimated mpg*	28 mpg	38 mpg (5-speed) 33 mpg (automatic)
Highway estimate	36 mpg	52 mpg (5-speed) 42 mpg (automatic)
Estimated touring range (Est. mpg) (single tank)	554 miles (19.8 gal. tank) (Hwy est.) 712 miles	600 miles (5-speed) 521 miles (automatic) (15.8 gal. tank) 821 miles (5-speed) 663 miles (automatic)

*1983 EPA estimates. Use "estimated mpg, and "estimated touring range" for comparison to other cars. Your actual mileage may vary with speed, weather, and trip length. Highway mileage and highway range will probably be less.

Porsche Audi Division, Volkswagen of America, Inc., believes the specifications in this brochure to be correct at the time of printing. However, specifications, standard equipment and options are subject to change without notice. Some options may be unavailable when your car is built. Please ask your dealers for advice concerning current availability of options and verify that your car includes the optional equipment you ordered.



Audi: the art of engineering