

**FIRST LOOK: VW QUANTUM TURBO DIESEL**

# VW PORSCHE

ARGUS WPS

DECEMBER 1982

37414

\$2.25

**GTI-HOT**  
**NEW HARE**  
**FOR U.S.**



**NEW FOR EUROPE:**  
**RE-STYLED AUDI 100**  
**ZIPPY POLO GT**

**PORSCHE GALA**  
**at LAGUNA SECA**







GTI exterior features blacked-out trim, bumpers and side moldings, deep front spoiler and standard rear washer/wiper.

# RABBIT GTI

A first  
look at VW's hot hare

BY GREG BROWN

**T**he long wait is over. The Rabbit GTI has arrived. This is the car that will mark the resurgence of VW as an automotive leader. It's the car that previews VW's renewed emphasis on performance as an integral part of a quality motoring experience. The GTI is an answer to the consumer's pleas for a car designed not in response to OPEC's greed, but in response to the need for good old-fashioned fun on the road. The GTI is a driver's Volkswagen.

A word now on exactly what the GTI designation means: To quote Duane Miller, Vice President of Engineering for VWoA, "GTI, above all else, means balanced performance." It is the combination of economy and available engine power that will make the GTI stand out from the competition, as well as the finer points such as braking distance, handling and passenger comfort.

VW did not simply increase engine displacement to make a faster Rabbit. Nor did they feel that turbocharging the inline four-cylinder engine would be the answer to the call for a snap-



pier powerplant. The rationale behind the decision to put out a marginally larger, but far "torquier" engine has to do with American driving habits, and our speed laws. Whereas in Germany top speed driving is a necessary reality, U.S. enthusiasts get more thrills out of acceleration and high-speed cornering. It was for this same reason that VW did not simply work on "federalizing" the German GTI engine. Its 1.6-liter displacement precluded its use because of the U.S. Rabbit's heavier weight, and the fact that smog equipment would seriously

deplete the European's 110 hp.

So, VW was faced with building virtually a new model of Rabbit. But engine development was not really the first order of business for the U.S. engineers. The suspension that could safely carry the increased power was developed using the Rabbit "S" as the testbed. The Golf GTI suspension was tried on the heftier Rabbit and was found to be quite disappointing. Spring rates, shock valving and roll stiffness all had to be revised from GTI European specs.

The engineers came up with a front



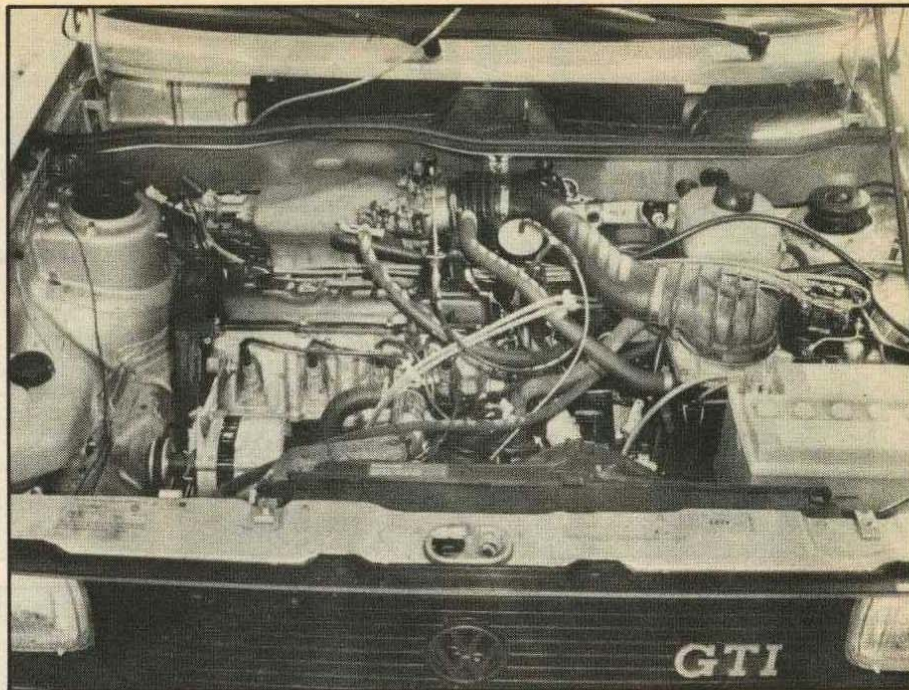
spring rate that is 22 percent stiffer than that found in the Golf GTI, and new rear springs that are linear, rather than progressive, in nature with a 29 percent stiffer rate. The front struts are taken from the Golf GTI and provide two-thirds more rebound control than from a regular Rabbit, and the rear shocks are GTI design but with stiffer valving.

Also fitted were two stabilizer bars, not found on the Golf GTI, 16.5mm in front and 20.5mm in the rear. Roll stiffness was increased more than double from the Rabbit "S," also in response to the heavier GTI configuration.

Rounding out the suspension is the largest wheel and tire combination that has ever been available on stock Rabbits—standard 185/60 HR Pirelli P6 radials mounted on six-inch wide alloy wheels.

Although we drove the car only a couple of days, and the GTI we did have was a pre-production model, we were extremely impressed with the results of the suspension work. We have driven a multitude of after-market "GTI" setups, and we can say unequivocally that the factory setup is every bit as nice.

The ride is firm but not harsh; wheel hop, which is sometimes evident in stiff suspensions, is non-existent; corner lean is at a minimum and barely felt by driver or passenger; and handling is as neutral as can be found in a front-drive automobile. The feeling is that the Rabbit-GTI would be a very difficult car to lose control of except during extreme maneuvering. We will have a complete road evaluation next issue after



Driver area features full instrumentation, four-spoke padded wheel and "golf-ball" shift knob.

(Top) It's almost impossible to tell from the outside that this is the snappy GTI 90 hp engine.



Re-designed suspension system works well! Wide Pirelli P6 tires on six-inch alloys provide excellent road grip.

we drive a production model.

In keeping with the GTI's high-tech mechanicals, virtually every piece of exterior trim is finished in matte black, with the exception of the red GTI badge on front grille, and the "bright" Volkswagen and Rabbit lettering on the back. The black theme is carried through the front flexible urethane spoiler, the rubber body side moldings, plastic wheelhouse flares, to radio antenna to drip moldings. For a car that has been called





Sport seats provide a good compromise between bolstering and comfort. Fabric is specially designed for GTI.

the epitomy of boxiness, it's almost handsome. (We can hardly wait for the re-designed Rabbit to debut, hopefully in 1984.)

Only four exterior colors will be available: black, white, silver or red, and standard equipment includes remote-control outside mirrors and rear wiper/washer, a padded four-spoke steering wheel, the center console with instrumentation, map pockets, and more. And the really good news from VW is that the GTI will debut with a base price around \$8500. These days that's a bargain for a car that delivers sports car performance with economy car practicality.



## POWERTRAIN COMPARISON

ENGINE	RABBIT GTI	1982 RABBIT
Bore	81mm/3.19 in	79.5mm/3.13 in
Stroke	86.4mm/3.40 in	SAME
Displacement	1780cc/109 cu in	1715cc/105 cu in
Compression Ratio	8.5:1	8.2:1
Power Output	90 hp @ 5500	74 hp @ 5000
Torque	105 ft-lb @ 3250	94 ft-lb @ 3000

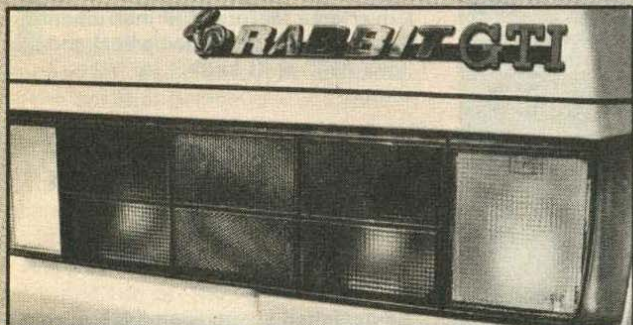
### ACCELERATION TIMES

Zero to 30 mph	3.5 sec	4.1 sec
Zero to 40	5.0	6.0
Zero to 50	7.2	8.7
Zero to 60	9.7	12.0
30 to 50 (4th gear)	6.0	8.9
40 to 60 (4th gear)	6.0	9.3
Quarter-mile	17.9 @ 80.8 mph	19.2 @ 74.0 mph
Top Speed	108 mph/174 k/mh	98.9 mph/159 k/mh

### FUEL ECONOMY

City	25 mpg (estimated)	27 mpg
Highway	37 mpg (estimated)	40 mpg

## RABBIT GTI



### VW Rabbit GTI

Base price ..... \$8500 (estimated)

#### ENGINE

Type: Four-cylinder, in-line overhead cam; water-cooled cast iron block, aluminum alloy cylinder head; CIS fuel injection  
 Bore x stroke ..... 81mm (3.19 in) x 86.4mm (3.40 in)  
 Displacement ..... 1780cc (109 cu in)  
 Horsepower (SAE net) ..... 90 (70 kw) @ 5500 rpm  
 Maximum torque (SAE net) ..... 105 ft-lb (142 Nm) @ 3250 rpm  
 Fuel requirement ..... Unleaded fuel only

#### DRIVETRAIN

Transmission ..... 5-speed manual, transverse, front-wheel drive

#### Gear Ratios:

First	3.49
Second	2.12
Third	1.45
Fourth	1.13
Fifth	0.91
Final drive ratio	3.94

#### SUSPENSION

Front ..... Independent, MacPherson struts, coil springs w/telescopic shocks; 16.5mm stabilizer bar  
 Rear ..... Independent stabilizer axle, coil springs w/telescopic shocks; 20.5mm stabilizer bar  
 Body construction ..... Unitized body/chassis; bolt-on front fenders; two-door hatchback

#### STEERING

Type: Rack and pinion  
 Steering ratio ..... 20.8:1  
 Turns, lock to lock ..... 3.85  
 Turning circle ..... 31.2 ft (9.5m)

#### BRAKES

Type: Dual diagonal circuits, self-adjusting, power assisted  
 Front ..... GTI ventilated discs (9.4 in)  
 Rear ..... Drum type (7.1 in)

#### DIMENSIONS

Wheelbase ..... 94.5 in (2400mm)  
 Front/rear track ..... 54.7 in (1390mm)/53.1 in (1360mm)  
 Overall length ..... 155.3 in (3940mm)  
 Overall width ..... 63.4 in (1610mm)  
 Overall height ..... 55.5 in (1410mm)  
 Ground clearance ..... 4.8 in (122mm)  
 Curb weight ..... 1976 lb (898kg)  
 Fuel tank capacity ..... 10 U.S. gal (37.8 ltr)  
 Engine lubricant ..... 4.7 qt (4.5 ltr)  
 Rated voltage ..... 12V  
 Battery ..... 54 amp/hr  
 Ignition ..... Electronic (breakerless)

#### PERFORMANCE

Top speed ..... 108 mpg (174 km/h)  
 Zero to 50 ..... 7.2 sec  
 Zero to 60 ..... 9.7 sec  
 Fuel economy ..... 25 city/37 highway (estimated)



## 1983 EUROPEAN VWs

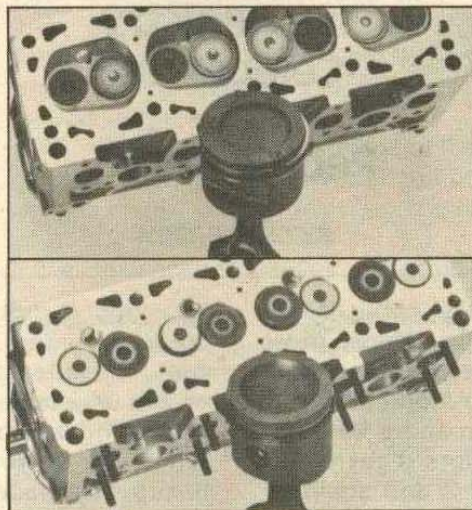
After the great rush of new models in the 1½ years—new Polo and Derby, Scirocco and Passat/Santana (Quantum)—it is not perhaps surprising that Volkswagenwerk has decided not to alter its range of cars too much for the 1983 model year, which was announced at the end of July 1982. At least, this applies to the Western market.

VW has also taken the opportunity to reduce the number of models on offer, thus to simplify the picture a little. Gone are the 60 hp engine options on the Golf (Rabbit) and Scirocco models—customers have usually opted for the more powerful 1.5 liter, 70 hp one. Gone too, is the 1.6-liter injection engine in the Jetta, the Jetta GTI and GLI. The offer of transmissions has also been simplified, particularly on the 4 + E and five-speed gearboxes on the Golfs and Sciroccos.

**Reduction of Servicing:** With all the models of the VW range (with the exception of the Beetle, which continues into 1983 unchanged) the interval for routine servicing has been increased to once per year, or once per 1500km (10,000 miles). Also on the new vehicles, with the exception of the Turbo-Diesel, the first service is due at 7500km (5000 miles). The previous half-yearly service has been abolished.

This improvement has been made possible by several important measures: new brake pads with a longer operating life-span (half-metallic brake discs); a new dynamic oil pressure warning system, with flashing lights and a buzzer, and a redesigned electrical circuitry. A coolant level indicator is another new feature on the '83 models. Due to the new electrical circuitry, it has become easier for the owner to replace a fuse, these fuses and holders being of a superior quality to those used before.

**New GTI Engine:** The 1983 Golf GTI and Scirocco GTI have new, enlarged motors of 1.8-liter capacity. This has been achieved with a bore and stroke of 81.0mm and 86.4mm respectively



New 1.8-liter Golf GTI engine (top) compared to old 1.6-liter version. Besides displacement gain, note new valve geometry and piston.

(previously 79.0 and 80.0mm), giving 1781cc. The new engine has the same basic block as the old 1.6-liter one, but is in fact lighter, and the moving parts have even greater refinement than before: lighter pistons, longer connecting rods, a lighter crankshaft with improved balancing and a torsional vibration damper. The valves have been moved apart in the cylinder head, and have been increased by 2mm in diameter. A new camshaft and a novel type of valve seat ring help with cylinder filling and emptying, and this is further optimized by a new combustion chamber pattern and a 10-to-1 compression ratio.

The net result of all these changes are: 112 hp at 5800 rpm (as opposed to 110 hp at 6100 rpm with the old



GTI dash features new Multifunction Indicator which will also be available on Scirocco GTI/GLI models.



Four-door GTI also makes its debut in Europe in '83. New 1.8-liter powerplant offers flexibility, power and economy.



Multifunction Indicator with clock, driving time, distance covered, average speed, gas consumption, oil temp and ambient temp.

engine) and a torque of 153Nm above 3500 rpm (old figure: 140Nm over 5000 rpm). So, although the power has been raised slightly, more important is the tremendous torque boost, giving an even more flexible engine. The acceleration figures and top speed are slightly improved on the old ones, but the whole process is done with much less fuss than before, a result of putting in a slightly longer final drive ratio. The noise levels have as a result dropped substantially, both inside and out!

The economy has also been further improved. For the Golf GTI the city cycle—if the driver acts on the advice of the gear-shift indicator—returns a figure of 22.8 mpg; at a constant 56 mph, 36.8 mpg is achieved; and at 75 mph, 28.7 mpg. These remarkably healthy set of figures for such a fast, sporty automobile are an average of about seven percent better than the previous ones, and once again put VW right in the forefront in the international economy stakes.

**The Multifunction Display:** On board electronics are really coming  
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