

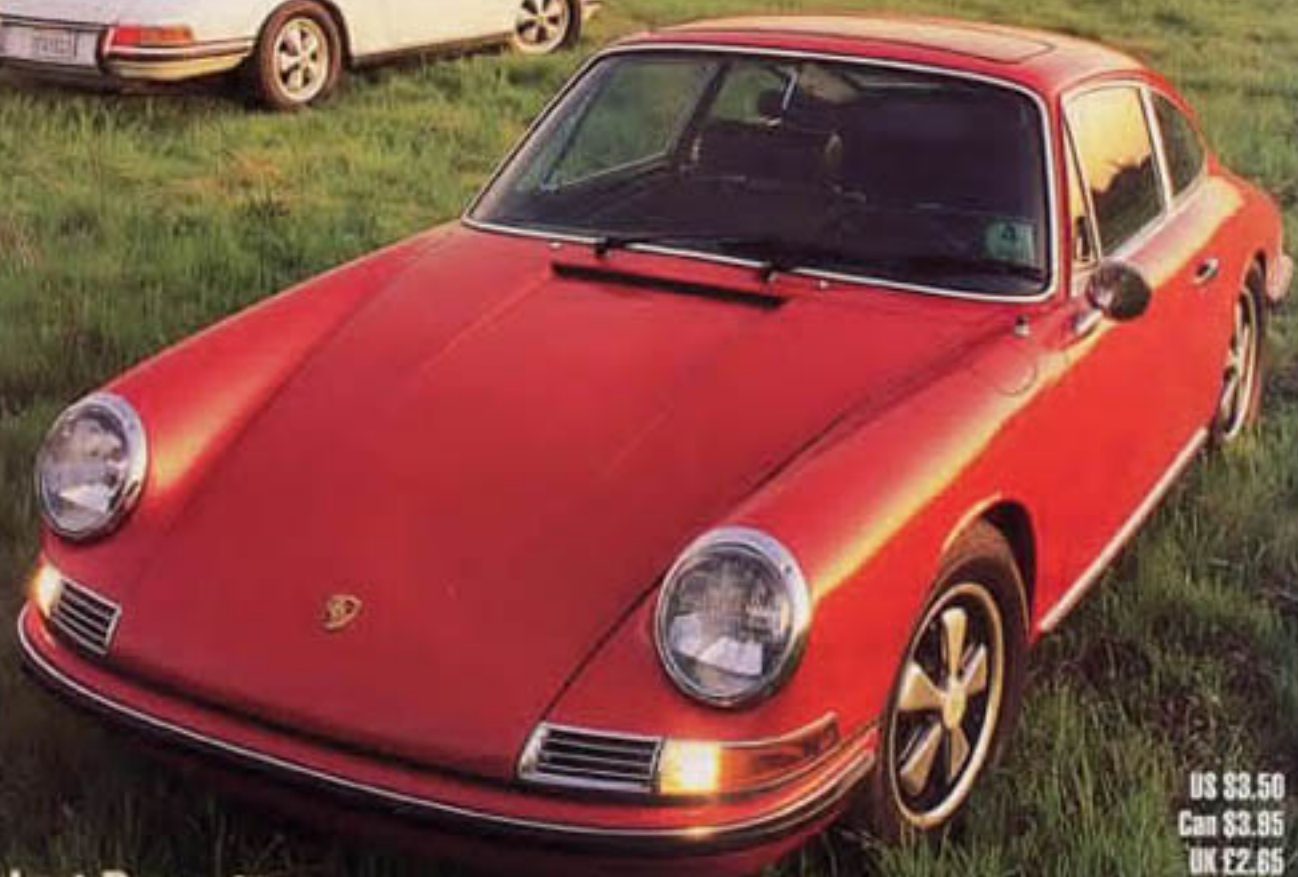
World's Fastest Compact—Schnitzer S33.0



EUROPEAN CAR

# EUROPEAN CAR

## 911S SPECIAL



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**Project Reports:**  
Alfa GTV-6 Shift Linkage  
1974 MGB Introduction

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# EUROPEAN CAR

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# thug mentality



*"If it doesn't kill you first, it'll just make you stronger."*

—Joey DeFalco  
Brooklyn, New York

There's one in every neighborhood.

Older kids avoid him. Parents despise him. The cops have a file on him. He's not necessarily the biggest or strongest kid on the block; he's just the craziest.

That kid from my neighborhood was Joey DeFalco. He'd do anything on a dare. Our last caper together involved my father's 65-lb compound bow and a razor-tipped arrow. Joey pointed the bolt straight up, drew the string back, and let the arrow fly. We stood there for what seemed like hours, mesmerized as the arrow continued upward, finally disappearing. Problem was, at some point the stupid thing had to come down; I ran into the house and didn't feel safe for days afterwards.

This GTI left me with the same feeling. Thrilling acceleration that borders on panic's edge. I wanted to hide, but I also wanted to see how far it would go. At the same time that I considered it a pointless exercise in pressurized performance, it's still a car you want to try on... at least once.

Using the first of the second-generation GTIs as a base, Jeff Moss at Velocity Tuning has just recently worked out the nagging little bugs that can plague a car putting 245 bhp through the front wheels. Things like transmissions and clutches were obviously a challenge, but so was fueling, lubrication and cooling. Moss borrowed heavily from VW's parts bin and aftermarket to get the job done, and the results are unlike any we've encountered.

While superchargers are engine-parasitic, turbo systems are not. The boost they produce is derived from the exhaust end of the motor. In Europe, VW had extensively developed its turbo-diesel for many years, though they were not aggressively marketed in the States. Still, there are lots of TDs out there, and Moss capitalized on that fact. The exhaust manifold, including the turbocharger exhaust housing, is from a 1987 Jetta TD. "Replacement parts are always available through any VW dealer, and it's hard to beat OEM quality," said



By Vincent Donizetti  
PHOTOGRAPHY: LES BIDRAWN

a claimed efficiency up to 270 hp. Oil feed to the turbo is the G-60's banjo-style unit, which receives oil from the side of the cylinder head for a cleaner installation; Earls Teflon-lined hosing carries the cooling feed. Oil is recirculated via an O.E. TD return line to an O.E. TD oil pan, so tapping into the block was not necessary.

Moss. In order to decrease back pressure, the exhaust turbine wheel was clipped, while the Turbonetics compressor wheel and housing have



An especially important part of any efficient turbo system is the intercooler; the unit here hails from a 944 Turbo and features 2.5-in. piping. Remarkably, there are two compressor bypass valves used—an HKS unit and a Greedy/Trust. The sound alone is enough to scare the competition to death.

The motor is based on a 1.8 16-valve block, which features factory oil squirters to help maintain ring and piston life and an Audi 36mm oil pump. The block was also O-ringed to lock the head gasket into place under the extreme pressure. Oettinger's 90.5mm crank is linked to early 1.6 Rabbit rods capped with forged 82.5mm JE Turbo pistons. Above the block resides a 2.0-liter cross-flow head featuring Velocity's Stage 3 port and polish, match-ported exhaust manifold



and Velocity's big bore throttle body. The cross-flow head was used primarily because of fitment concerns. This allowed the use of the OE turbo and manifold, which would not have been possible with a 1.8 8-valve head. The main bearings, rods and the head are all held in place with



RaceWare fasteners.

Engine management is augmented with Electromotive's Tec-II fuel injection and crank-fired ignition system. This programmable assembly was dialed in at AEM in Gardena, California, and features Lucas 42 lb/hr injectors balanced to less than 1% deviation. Although the intake needed to be modified to accommodate

are plentiful and easy to replace. A 210mm VW Motorsport pressure plate and 210mm four-puck clutch transfers power to the shafts. This is strictly an in-and-out program and not much fun in city driving, but it is effective. Even coupled with Velocity's own effective version of a diff locker, 1st gear is a pointless exercise in wheel spin. At speed, however, the torque band is quite linear; there's not much wrestling with the wheel to keep it straight.

At a mere 2800 rpm and running 10 psi, the GTI is pumping out 140 bhp. Increase the boost to 12 psi and bhp peaks at a whopping 245. The turbo is claimed to maintain efficiency to 17 psi, which would place output near 260 bhp, but Moss is obviously reluctant to push it that far. "Running between 13-15 psi and the thing won't hook up in second gear. There's really no point in pumping it up any higher," said Moss.

The Poly-Marine silver GTI rides on Bilstein dampers augmented with VR6 upper strut bearings. Neuspeed race springs and 25mm/28mm front and rear anti-roll bars enhance transitional response, and polyurethane bushings help keep the suspension geometry tidy. Additional rigidity comes through an Autopower cage, Eibach's upper front stress bar and Velocity's rear tie bar. Running gear is the no-nonsense Japanese Volk Racing NE-R 15 x 7-1/2 wheels wearing 205/50 ZR15 Dunlops.

The GTI was upgraded with a Rally Golf headlamp system, and the remaining running lights are smoked Hella units. The nose is a 1990 Golf/Jetta modified to include the 944 intercooler; the tail features a European bumper and a flippant Abt rear wing.

The driver sits in a Sparco race seat and is held in place by four-point Diest belts. A Momo Champion steering wheel and Speedline shift knob fill the hands. Additional instrumentation includes VDO's oil (150 psi) pressure, oil temp and water temp gauges, Greddy's boost and exhaust temp gauges, an HKS boost gauge, and Haltech's air/fuel ratio monitor. A Vortex center console gauge panel and an Abt unit hold the extra dials. A trick



Andial intercooler temp gauge keeps a running tab on the compressor discharge temp before and after its passage through the intercooler. An HKS Turbo Timer keeps the turbo happy after a hard workout.

We spent enough time behind the wheel of this animal to realize its enormous capabilities and appetites...chalk up one transmission for me. Still, it was big fun; a great big, raucously rude, wild ride that would leave Mr. Toad begging for a Xanax.

Unlike that arrow Joey shot into the sky (it ended skewering the neighbor's Delta 88), this GTI is still flying around. **S**



these injectors, the trouble was worth it; their capacity is more than double the VR6 units.

As stated before, this motor has a real appetite for transmissions. For now, the setup consists of the factory's close-ratio 1st and 5th gears, although the remaining ratios have been custom-spaced to take advantage of midrange power. An 8-valve mainshaft is used primarily because they



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