



Novitec's 600-hp Supercharged 360

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**DAN GURNEY,
FERRARI RACER**

**BIRTH OF THE BARCETTA:
THE 166 STORY**



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Heavy Breathing

When snow fell just before his scheduled road test, IAN KUAH could only salivate at the prospect of driving Novitec Rosso's 360 Modena. Until the ice melts, here's a preview of this 606-hp supercharged special.





A recent encounter with a supercharged Ferrari 360 Modena reminded me of two fundamental truths: First, no matter how fast a car is, there will always be someone who wants it to go even faster. Second, if you want to go faster, there will always be a tuner like Novitec ready to oblige.

Novitec has built a reputation as one of Germany's foremost tuners of Alfa Romeo and Fiat cars since it was founded in 1989 by Wolfgang Hagedorn, a former employee of Porsche tuner Ruf. Today, the company sells parts in 30 countries and is the official Alfa Romeo dealer in Stetten, a small village in deepest Bavaria. It also tunes Ferraris under the name Novitec Rosso.

"Calling the Ferrari business 'Novitec Rosso' makes the relationship with our existing company immediately clear," Hagedorn explained, "while the 'Rosso' suffix encapsulates the fact that we have moved to the next level with Ferrari."

The jump from Alfas and Fiats to Ferraris may sound like a big leap, but Hagedorn said it grew naturally out of the company's existing customer base. "Many of our customers started with an Alfa Romeo, tuned their car and then moved up to a Ferrari as they became more successful in business," he said. "Some still drive an Alfa as their daily car and use the Ferrari on weekends, although one or two use their Ferraris almost all the time. Since Fiat is the parent company of both Alfa and Ferrari, we consider the Ferrari tuning program a logical extension of the service we offer our customers.

"But tuning Ferraris was not something to be taken lightly," Hagedorn concluded. "We were determined to offer only

Sadly, tire chains won't fit in this 360's wheel wells!

parts that were as good as or better than factory components. Because of this, these parts are expensive for us to buy. But quality was our priority, a fact appreciated by everyone who came to our stand at the Frankfurt show."

After spending a day with Novitec Rosso's 360 Modena Bi-Kompressor, we too, can appreciate the company's commitment to quality. Consider the bespoke stainless-steel exhaust: It looks amazing, from the equal-length mandrel-bent manifolds to the round-edged silencer. Even the welded joints are perfect, which leads you to imagine the system was made by a Formula One supplier—but that's most definitely not the case.

"In fact, the exhaust is made by an Italian firm called Capristo, which specializes in metal working for engineering companies!" said Hagedorn. "They are not in the auto

exhaust business at all. It just so happens the owner has a few Ferraris and made an exhaust system for his own car. Through good fortune, we were introduced to him and he agreed to do the exhausts exclusively for us. A unique thing is that the guts of the system are made to the same amazing standard as the outside."

That's not the end of the exhaust story, however. Novitec has found that some customers are fussy about the size and shape of the exhaust outlets, so the company offers three different versions for its 360 system: 80mm polished Sport, 85mm carbon-fiber tips or 90mm polished Supersport. 100-cell metal catalysts are used to keep back-pressure to a minimum, and all three systems are available with or without the factory exhaust's active flap, depending on the noise regulations of the destination country.

That sort of thoroughness also appears in the car's most

exciting feature, a twin supercharger system available in both Sport and Supersport versions. Novitec claims the Sport version delivers 555 bhp at 8,100 rpm and 415 lb-ft of torque at 6,250 rpm, which is good for a zero to 62 mph time of only 3.9 seconds and a top speed of 209 mph (in combination with a taller final drive). The Supersport version uses modified supercharger turbines to produce 606 bhp at 8,600 rpm and 454 lb-ft of torque at 6,250 rpm. Zero to 62 mph times drop to 3.7 seconds while top speed climbs to 215 mph.

Despite making 150-plus horsepower more than stock, the Sport system uses only 7 psi of boost while the Supersport system runs at 9 psi. "The idea was to run the chargers at relatively low boost to avoid having to open the engine and fit low-compression pistons," said Hagedorn. "Not only is that costly, but you also lose throttle response when you drop the compression ratio.

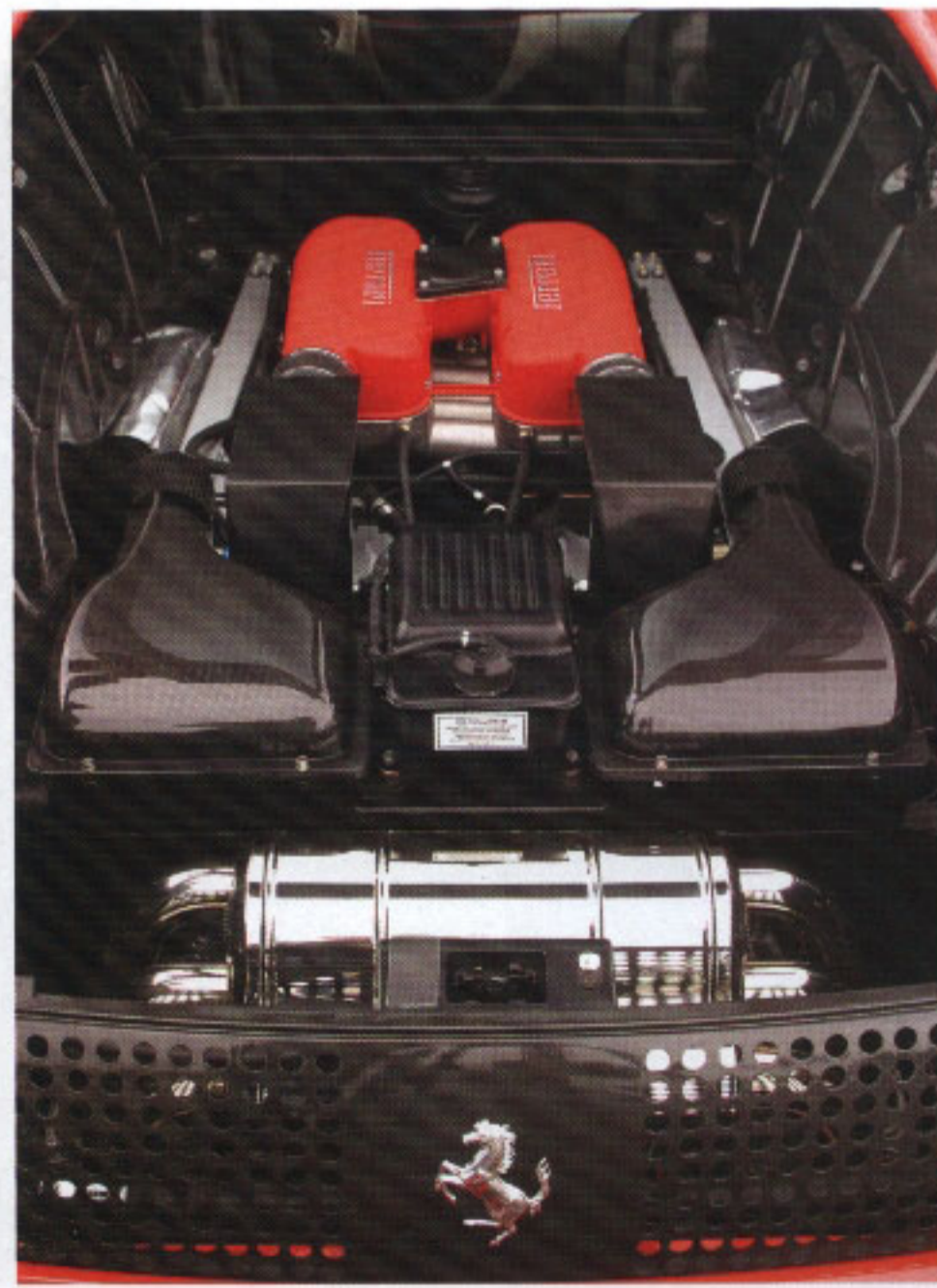
"We needed only to make up new intake manifolds, which improve the gas flow and incorporate an extra fuel injector per cylinder bank," he noted. "The injectors are activated by our piggy-back Tectronic ECU when the system goes into positive boost. The two Ferrari Motronic ECUs run the engine as per

normal when the superchargers are not boosting."

The pair of Rotrex SP30 superchargers sit at the bottom front of the engine (Novitec says using two smaller units makes the car run more smoothly than with one big unit). Each centrifugal supercharger has its own six-ribbed belt and pulley system driven off the crankshaft, as well as its own self-contained silicone oil supply to eliminate any chance of cross-contamination with the motor oil.

Twin water-cooled intercoolers reduce intake temperatures; their radiators sit in front of the standard radiators in the nose of the car. The intercoolers themselves reside in carbon fiber housings located high up between the intake manifolds and a pair of amazing-looking carbon fiber air boxes. Additional carbon fiber panels line the sides of the engine bay, giving it a neat, high-tech appearance.

While the modified car's performance numbers are impressive, we were curious why Novitec Rosso bucked the usual turbocharger trend. No less an authority than Ferrari chose turbocharging for the 288 GTO and F40, while aftermarket tuners have traditionally taken the turbo route as well. You can't beat a turbo for big power: Some tuners have





claimed 1,000 horsepower from their turbocharged monsters!

But turbochargers are not without their problems. Turbocharged Ferraris often have too much low-rpm torque, which leaves them scrambling for traction when putting the power down, and they can suffer from shock loading on the driveline. (Centrifugal superchargers, on the other hand, deliver more linear power as the revs rise.) But most important to Novitec

Rosso is the fact that turbochargers are *hot*.

"The 360 Modena's engine bay does not get much airflow and the temperatures are enormous, especially in summer. It's even worse with the 360 Spider," Hagedorn explained. "Turbocharging produces so much more heat that it becomes a really serious problem. That is the reason we ruled it out from the beginning."

Superchargers run cooler than turbochargers, continued

Hagedorn, but "we had never considered supercharging because of space considerations and noise. Then we were introduced to the new Rotrex SP30 supercharger, which is small and quiet, and the whole project took on a different complexion."

Engine compartment heat is still an issue, of course, so Novitec Rosso installs a heat shield above each exhaust manifold and around the catalytic converters to keep temperatures down around the intake mani-

folds. In addition, the carbon fiber rear panel incorporates vent holes to release hot air from the engine bay.

Novitec Rosso's handiwork continues outside the engine bay. By changing the materials that your eyes and fingertips encounter in the black and light silver-grey cabin, Novitec has turned a purely sporty interior into a sporty and luxurious one. While the factory covers most surfaces with



The Novitec Rosso 360's engine bay is dominated by the gorgeous stainless steel exhaust system by Capristo and Novitec Rosso's carbon fiber airboxes and heat shields. Brakes are 380mm Brembo ceramic discs behind 19-inch Novitec Rosso wheels. The interior has been treated to a generous helping of Alcantara for better grip and a luxurious feel.





It's clearly not stock, yet the NR 360's subtle look doesn't scream "aftermarket," either.

leather, Novitec uses Alcantara. This faux suede feels luxurious to the touch, and it's cooler in summer and warmer in winter than leather. It also provides better grip, so its use on the lightweight racing bucket seats and steering wheel is wholly appropriate. The wheel is flat-bottomed, F1 style, to provide more leg room for tall drivers.

A single piece of black Alcantara covers the compound-curve dashboard. "Believe me, this was difficult to do!" Hagedorn said. The carpets are also black, piped in light grey, while the black and silver alloy pedal set and passenger toe board are a nice touch.

Meanwhile, the instrument panel and heater/stereo surrounds, center console, door sills, door trim and map pockets are molded from carbon fiber. Compared to a plain black leather cockpit, this interior is warm and inviting—even though black and grey are fundamentally cool shades.

Cool also describes the car's exterior modifications. Rather than imitate the looks of the

360 N-GT race car, Novitec Rosso decided to create its new aerodynamic components from scratch. The new Supersport front bumper/spoiler is a one-piece unit that replaces the original front end using the same attachment points. There are actually two versions: The one you see on our featured car is the more aggressive, while the tamer front end (which appeared on a 360 Spider at Frankfurt) consists of a spoiler lip fitted to the bottom of the factory front section and a horizontal strake in the middle of each front air intake. Both are available in either carbon fiber and significantly cheaper but heavier GRP. Incidentally, the stock factory bumpers weigh around 40 pounds each compared to just under nine pounds for those in carbon fiber.

The revised rear-end look comes from a new undertray diffuser, a two-position adjustable Supersport wing on the engine cover and the aforementioned ventilated panel around the taillights. The lights themselves are available in white or the dark tinted look seen on this car. Additionally, small diffusers can be attached to the sills just in front of the rear wheel arches.

Filling those arches are one-piece center-lock alloy wheels measuring 12.5 x 19 inches and shod with 355/25ZR19 Pirelli P-Zero Rosso tires. Up front, the same design in 9 x 19-inch size wears 245/30ZR19 P-Zeros. The wheels' twin-fork, five-spoke design is clearly a Ferrari derivative, yet it's different enough to be distinctive, and spacers can be fitted to subtly alter the look. These wheels are a must if you opt for the big brake kit—and with up to 606 bhp on tap, the 360 Bi-Kompressor can make good use of uprated anchors!

Brembo makes the enormous 380mm ceramic discs that work with massive eight-pot calipers in front and four-pot calipers at the rear. The calipers are available in red, silver or black. For those who find these brakes too extreme, Novitec Rosso offers conventional iron discs—but the ceramic ones save a whopping 45 pounds and add an immeasurable coolness factor.

The 360 also features a bespoke triple-adjustable suspension system consisting of uprated springs and alloy-tubed dampers with race-style external reservoirs. These have rebound adjustment as well as

low- and high-speed compression adjustment at the reservoir end. Two other options are a coil-over suspension kit with separate compression and rebound adjustment or a simple progressive-rate sport spring kit. In all cases, however, ride height is lowered just 10mm from stock in order to keep the car usable on bumpy public roads and ramps. New anti-roll bars are 1.5mm thicker in front and 2mm thicker at the rear than the stock car's bars.

So what's it like to drive? It's painful to say, but we don't know. In the best journalistic practice, we spent the first day photographing the car "just in case" something were to happen on the second day. And something did—it snowed overnight, and the icy roads made it too dangerous to drive the car. The final part of this story will thus have to wait until clearer weather appears, but based on the Novitec Rosso 360 Modena Bi-Kompressor's looks, performance numbers and build quality, we are really looking forward to driving it. ●

For more information, visit www.novitecrosso.com. In the U.S., see www.cccwheels.com.