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# SPORT RIDDER

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## POWER?!

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## RACE TECH

THE SCIENCE OF SUSPENSION

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Product evaluations by the staff of *Sport Rider* magazine

## RACE TECH SUSPENSION FOR SUZUKI GSX-R600

WITH AN INCREASING NUMBER OF AFTERMARKET SUSPENSION COMPANIES offering complete drop-in cartridge kits for sportbike forks, it was only a matter of time before Race Tech, creator of the original Gold Valve cartridge emulator, jumped into the fray. The company recently completed development of a 25mm kit and has also been working on some interesting internals for stock rear shocks. We sent over parts from a GSX-R600 racebike belonging to friend-of-the-magazine and racer Corey Neuer and asked Race Tech to install its latest upgrades.

The 25mm cartridge kit includes replacement base units that are interchangeable between practically any sportbike fork. Adapter kits, used to match the base units with the bike's fork caps and bottom mounts, are provided separately; the idea is that you can buy the cartridges for one bike, then transfer them to a new bike and only have to purchase the adapter kit. The cartridges incorporate some innovative features, such as a combination of O-rings and bumpers for bottoming rather than a hydraulic stop, and digressive valving (in which the shims on the valves are preloaded to provide a very specific damping curve). Each fork was buttoned up with a Race Tech fork spring and the company's own fluid. Total cost for the rebuild was \$1575, including the cartridges, adapters, springs, fluid and labor.

The stock rear shock was disassembled and rebuilt with a Gold Valve, also with digressive valving. The company has recently changed its approach to road-race shock valving as a result of extensive on-track testing that is still ongoing. An interesting addition to the shock was a rebound separator, which stops changes in the compression damping adjuster from affecting the rebound adjustment (as is the case with many shocks and forks). Another change was to the top-out springs in both the fork and shock. While many stock

and aftermarket setups use long, soft top-out springs in an effort to keep the tires on the ground under acceleration or braking, our GSX-R setup had short, stiff top-out springs intended to keep the bike from jumping off the ground in quick transitions. The shock rebuild cost \$453, including the Gold Valve, rebound separator, spring, collar, fluid and labor.

Conveniently, Neuer has two almost-identical GSX-R600s. One bike is set up with Öhlins 25mm cartridges and an Öhlins shock, and we used that bike as a baseline while the other bike was fitted with the modified fork and shock. We rode both bikes at a Buttonwillow track day hosted by The Track Club ([www.thetrackclub.com](http://www.thetrackclub.com)) with Race Tech's Lenny Albin providing track-side support for both bikes. As with practically any aftermarket suspension, both bikes were set up much stiffer than stock, with the 25mm cartridges providing more support on the brakes. Overall, we were impressed with the Race Tech components, which in our limited test offered benefits compared with even the Öhlins suspension on the second bike.

The Race Tech bike felt stiff in general, but big hits were easily soaked up. The suspension performed better the harder it was worked, which Albin says is a characteristic of the digressive valving. Stability was excellent over Buttonwillow's increasingly bumpy surface, with the bike tracking straight over bumps that would unsettle the Öhlins-suspended bike. Surprisingly, the modified stock shock didn't fade at all, even in 90-plus-degree heat and over the course of multiple 20-minute sessions. Albin noted that traditional fluid breaks down when the polymers shear, but the Race Tech fluid has a different base with no polymers—hence no shearing and no fading.

Our man went close to a second quicker around Buttonwillow's full circuit on the Race Tech bike than on the Öhlins bike, citing more confidence and better stability as the major factors. That's impressive for a stock-based shock and first-run cartridges against long-developed Öhlins parts. Certainly a one-day test on one bike is not an all-encompassing evaluation when it comes to the nuances of suspension, but we would definitely consider the Race Tech parts a viable alternative to the established players in the market.

**Race Tech**  
**(951) 279-6655**  
**[www.racetech.com](http://www.racetech.com)**



*This rebound separator valve, at left, and Gold Valve, above left, assemble on the shaft of the Suzuki's stock shock, below left. The separator keeps rebound damping adjustments from affecting compression damping.*



*Race Tech's 25mm fork cartridge kit has a modular design that allows the base cartridges to be installed with adaptors in almost any fork.*