NO BULL
RideTech's Bret Voelkel built a Super-car-Shaming '33 Hot Rod, and We Tested It.
Poor little Italian supercars. We just can't stop picking on them. Are we bullies? Is it just meaness that makes us beat up a Lamborghini Gallardo with Bret Voelkel's RideTech '33 Factory Five Hot Rod? Nah, we just want to show you that it isn't just imported supercars that can tear up a track, and sometimes a kit car and some clever upgrades are all you need to build a formidable bullfighter.

Suspension company RideTech has a whole stable of impressive R&D cars. A quick web search brings up a long list of the company's muscle cars, from Mustangs and Camaros to wagons and even AMGs, all of which have claimed trophies and honors at various autocross and Pro Touring events around the country. Bret wanted more. He wanted to build something more traditional in appearance but with all the modern handling and power that Pro Touring muscle-car owners have embraced.

What he ended up with was a '33 Ford Factory Five kit car that went way beyond the initial plan, becoming a serious racing machine capable of tackling Italian grudge matches as well as our most recent HOT ROD Flog Test. This is the car that outran the Lamborghini Gallardo LP-550-2 on Exotic Racing's test course in Las Vegas, as seen in the test of Factory Five cars in last month's issue. We had to know how it was done.

Originally, Bret planned to just "build something light, throw something together, and go fast," so he started with a Factory Five '33 chassis and body and some leftovers from the RideTech shop. Of course, Bret's leftovers tend to be a little more exotic than most—unless you happen to have aluminum blocks, NASCAR transmissions, and six-piston brakes just lying around in your storage shed. The car very quickly succumbed to what Bret calls "the 'what-if' syndrome." What if we tried this? What if we changed that? The RideTech team made many changes from the original Factory Five kit, some for more performance, some for increased safety, and some just to show off. You do these sorts of things when you have a complete CNC machine shop, sheetmetal fabrication facilities, and a group of talented builders who never know when to stop.

The fiberglass body kit and custom sheetmetal interior pretty much covered the "light" part of the original build plan—the complete car is a featherweight 2,590 pounds—but Bret still needed some horsepower. He found it in a 427ci Ford small-block built by Sunset Racecraft. Bret says the focus of the engine was a "big, fat torque curve," and we saw that in our dyno results—where the torque topped 400 rear-wheel lb-ft from 3,240 rpm all the way up to nearly 6,000 rpm—and in the track tests, where our driver reported that the car pulled well at both low- and high-rpm ranges. The basics of the engine are an aluminum Dart block topped with hard-core Brodix/Al Neal heads and a Holley Dominator EFI. RideTech did some custom work on the fuel rails, accessory drive,
and cooling system since there was little chance of finding off-the-shelf parts to fit in the chassis. Fabricators Greg Schneider and John Hochegeng built the mounts for the alternator, power steering, and the thermostat-housing mechanism. Brake and clutch reservoirs are Ring Brothers components on more custom mounts. Greg built the stainless headers and the oval, stainless exhaust system and then turned it over to Kurt Blackgrove for the stainless exhaust tips. Even Flowmaster did custom work for the car, providing Bret with a set of specially sized mufflers, also in stainless steel.

These days, nobody wants an automatic in their race car, but we aren’t all so lucky as to have a spare magnesium-cased, clutchless four-speed on the shelves. The Rankin transmission came from Jasper Engines to Bret’s shop as a leftover from Jasper’s NASCAR racing days. “Clutchless” is sort of a misnomer: A driver still uses the clutch pedal to start the car moving, or around tight corners, but most shifts can be done without use of the pedal. Bret took some time figuring out the best clutch disc to use in the car; the original choice of a 5.5-inch carbon unit seemed cool, but the light clutch and the high horsepower made the power delivery hard to control. “It was a conscious effort to not spin the tires on corner exit,” Bret explains. “It made the car accelerate violently.It was interesting, but unpredictable.” Eventually, he replaced the finicky, small disc with a Centerforce DYAD dual-disc, and says it made all the difference; the car became a well-behaved racer—which isn’t to say that it’s mild mannered, as HRM staffer Brandon Gillogly found out when he got behind the wheel in Las Vegas before the Lamborghini natchup. “I had no idea I was approaching the limits of the car,” Brandon says. “It just kept getting faster and faster, and then the rear end decided it wanted a better view of the race track, so it came around.” This is why we don’t let Brandon drive. Our official driver, pro drifter Mike Essa, found the ’33 to be nicely balanced, with neutral steering characteristics and a flat, even cornering ability.

The rear end is a Winters quick-change, with a 4.56:1 ring-and-pinion and spur gears that can alter the final drive from 3.01:1 to 6.11:1. Bret chose the quick-change more for his own amusement than out of actual need. “I’d never used a quick-change before,” he tells us, “but I wanted to try one for the light weight and the tunability of quick gear changes. In reality, we’ve only changed gears two or three times and have found the current 3.04s to perform the best.”

The brakes use more goodies from previous projects, with Baer six-piston calipers fitted with Hawk blue pads and 14-inch rotors. They are quite effective, with Bret reporting 110-foot stops from 60 mph. He won the Speed-Stop Challenge at the Optima Invitational in 2012 and regularly brings the ’33 back down to cornering speed on straightaways from up to 150 mph. “Every time I do that, I
want to give Hal Baer a big "Baer Hug," he says.

Inside the car, a Racepak dash gives the driver all the necessary info once he's parked in the modified and leather-trimmed aluminum Kirkey seats. Bret says he has yet to explore the full potential of the system's options, choosing mostly to leave it in "street mode," which displays basic mph, rpm, oil pressure, water temp, and fuel level. He doesn't even bother checking oil pressure because he says it never changes. The car is controlled via Tilton pedals and an ididit tilt steering column, and passengers feel nice and safe enclosed in the full stainless rollcage.

RideTech offers a bolt-in stainless cage for muscle cars (see TiltCage at RideTech.com) but had to fab up the bars in the '33 from scratch. The rest of the interior is also one-off, and Bret estimates they have more than 500 hours in the insulated aluminum panels, trim, hinges, bezels, and cage. Positioning the steering wheel, pedals, and shifter were also time-consuming elements. There's nothing kit-car about anything inside the Factory Five shell.

So we know the car is fast and that the interior should be featured in a Steampunk decorating magazine, but what really makes it special is the handling. Bret used the '33 as a test bed for some suspen-

| The original shifter linkage was too close to the driver, so the shifter is moved back 8 inches and toward the right, just over the front U-joint. |
| On the other side of the triple masters is a Tilton floor-mount clutch and brake-pedal assembly. |
sion ideas he'd been mulling over. The rear wishbone design consists of two bottom links and a single A-arm on the top to control both lateral and axial rotation. On paper, the rear roll center seems a bit high, something that engineering students would tell you causes instability, yet in practice the car is stable, predictable, and fast. This willingness to experiment with setups that seem outrageous on paper is one of the reasons RideTech systems can be found on so many winning builds. Bret says these kinds of results are why they build and test cars rather than relying solely on computer data.

In the front, the original Factory Five mounting points are kept, but Bret wanted to showcase the suspension, so Ride-Tech built lovely, lightened upper and lower control arms with Delrin bushings and replaceable ball joints. A huge change from the Factory Five setup was altering the steering system from a manual rear-steer rack to a Woodward front-steer power-steering system. Because it was a completely custom installation, the guys were able to rearrange the rack location and steering arm design to reduce the bump steer to less than 0.050 of an inch through 6 inches of suspension travel. The result is more than capable of bossing around the 315mm Falken Azenis on 18x12 Forgeline CF3C wheels.

01 Bret says the original engine plan for the car was an Ecotech four-cylinder, but when they realized the 427 Dart block was nearly as light, they had to go V8. We’re glad they did.

The Factory Five setup uses heavy spring rates to control roll, and no sway bars. Bret felt that created a sacrifice in road comfort, so his team cut the recommended spring rate in half and built front and rear sway bars. The result is that the car not only performs well on the track, but it also rides comfortably and is very tunable to a variety of track conditions via shock, sway bar, and tire-pressure adjustments. Since the car is mostly used on autocross tracks, that is its usual setup, but for our dragstrip date, the guys adjusted the shocks and tire pressures to softer settings.

The road from build to build-beater wasn’t smooth. The team ground the teeth off distributor gears, wasted a clutch, chattered tires in the front, and suffered electrical gremlins as they tested the car at various Goodguys events, Optima races, and road trips. One of the reasons we at HOT ROD encourage people to drive so vigorously is because it’s the best way to find and fix all the weak points in a project car, a philosophy Bret completely agrees with. By the time we had the car at our Flog Test, the Ride-Tech guys knew it inside and out, and Bret had no doubts that it could match up against any supercar. "Heck, I’d run it against an F1 car just to see how well stack up," he says. Think we can get one in time for our next test?

behind the flogging

Our HOT ROD Flog Test series of car reviews began in the March '13 issue, and up until this month, the handling portion of the program was held at our autocross on the old runways of the former Marine Corps Air Station El Toro. Our deal there is kaput, so handling testing has been moved to the Streets of Willow track at Willow Springs International Raceway, which has been in Rosamond, California, since 1953. We run the short version of the track. Having this facility will give us much more consistent results as well as a better point of reference for cars' performance. Our dragstrip testing happens at Auto Club Famoso Raceway near Bakersfield, California (site of the March Meet), and the chassis-dyno testing is at Westech Performance in Mira Loma, California.—David Freiburger
WE'D like to thank our friends at Bratton Brothers Collision for their generosity in letting us use their shop and equipment for this test. The '11 Lamborghini Gallardo LP550-2 was a dream come true, and the experience was unforgettable.

**RideTech**

RideTech had to move the radiator and grill shell forward 5 inches to clear the front steer rack. On the road course and the skidpad, Teri says the '33 was responsive, with little body roll in the corners and good, even power delivery in the straightways.

**Whit's Cuts**

Whit's cuts had never been in the event of the RideTech car before the Lamborghini matchup in Las Vegas, but he's a quick interview.

**Performance as Tested**

Rear-Wheel Horsepower: 440 at 7,444 rpm
Rear-Wheel Torque: 479 at 6,500 rpm
Time on Hot Rod Road Course: 01:17.4
420-foot slalom: 1.17 seconds at 45.56 mph
Skidpad: 0.98 lateral g
Quarter-Mile: 11.4 at 121.5 mph
60-0 Braking: Hot Rod didn't test this. RideTech claims 110 feet.

**HMM Staff Average Ranking on a Scale of 1-10; 10 Being Best**

Competence vs. Purpose: 9
Bret built the '33 to showcase RideTech products at events. It certainly makes them look good.
Performance vs. Potential: 9
With a custom build, there's always more possible, and given the low weight and high horsepower, it would be easy to see quarter-mile times that are quicker by almost a second. We wouldn't be surprised to see Bret better our numbers the next time out.

**Dares to be Different: Building a '33 Ford rolling hot rod isn't so rare, but campaigning it on autocrosses and road courses (and winning) is pretty unique!**

**Summary:**

The '33 is a solid car, but there's not much on it that you could find on a shelf. Every detail has been worked over, modified, and optimized.

**Fit and Finish:**

The build quality is brilliant, far above the average race car. We're getting a little over red-blood, though.

**Cool Factor:**

75 points of these points are because Bret offers rides at Goodguys shows and other events, and there is nothing cooler than seeing someone get out of the car laughing. The rest are ones we report who get a better ride than most, shaking and twirling.

**Bang for the Buck:**

Big decision: Bret estimates that with parts and labor, it would cost close to $300,000 to replicate the car. A '11 Lamborghini Gallardo is $190,000 to $250,000.

**Practical Streetability:**

You could certainly take it on the road every day, and the interior is comfortable and insulated, but the transmission is loud. The brakes are set up with road-course pads and the visibility is near car-expect. You probably wouldn't want to brew city traffic on a daily basis.

**Overall Score:** 7.25/10