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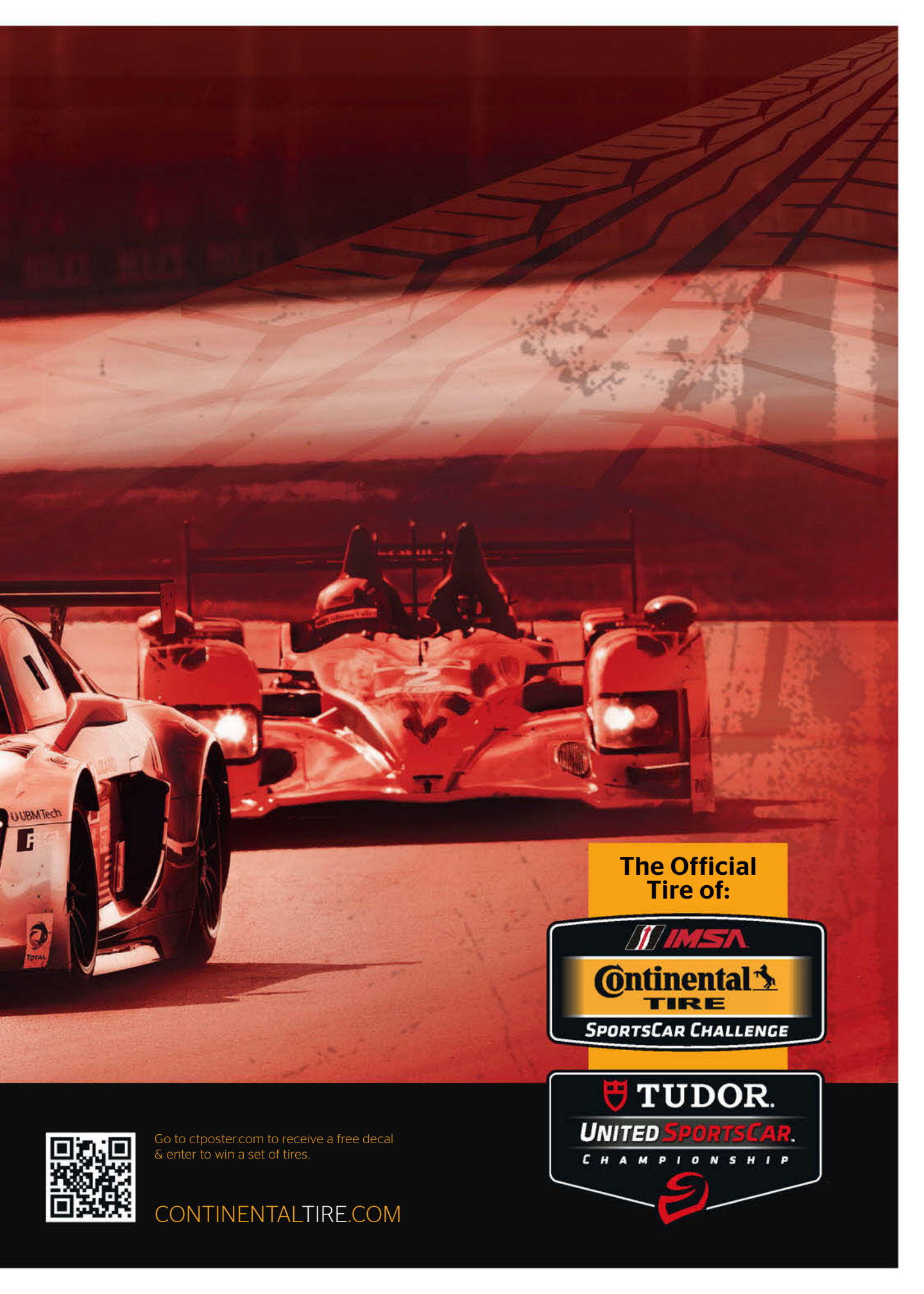




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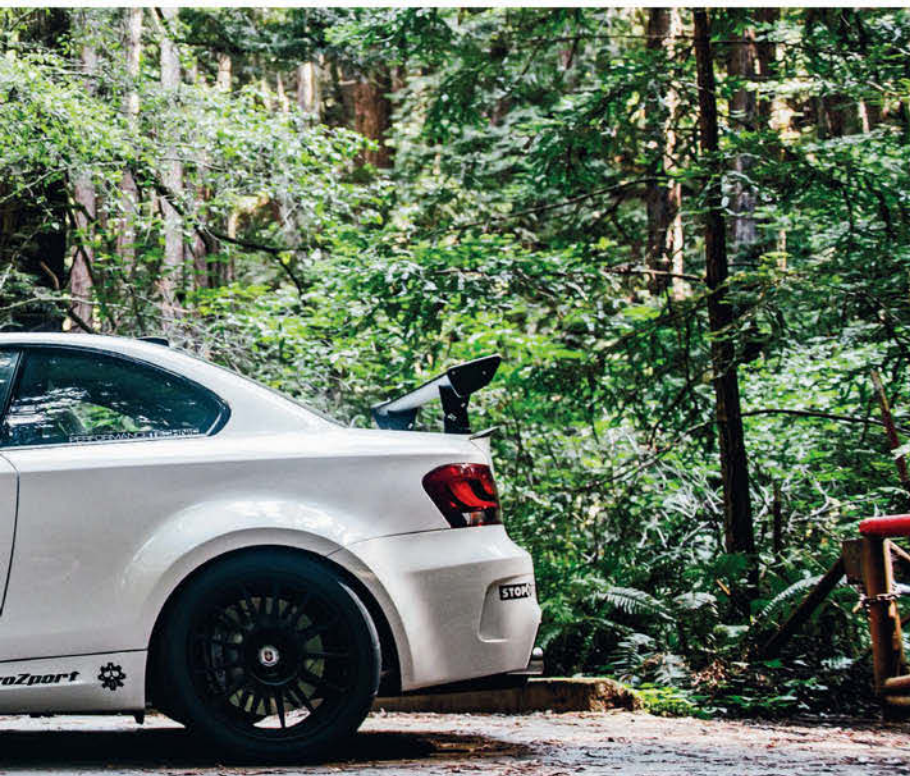
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behind the wheel



MARCO'S 135i TAKES THE 1M TO ITS LOGICAL CONCLUSION

WHEN WE FIRST DROVE THE CLUMSILY NAMED BMW 1 SERIES M COUPE, it was obvious that the M3 underpinnings and widebody styling missed one vital element—the M3's V8 engine. And while the upgraded 335hp N54 biturbo motor was a peach and perfectly suited to the chassis, we all know the 4.0 V8 would have made it impeccable.

"There's no point installing the S65 motor and not letting everybody know about it."

Joe Gaffey from Performance Technic in Dublin, California, certainly felt the same, and his crew set about building Marco the ultimate BMW hybrid—using the 135i as the base model, adding the M3's V8 as well as the 1M's widebody styling for good measure. After all, there's no point installing the S65 motor and not letting everybody know about it. Admittedly, it might surprise a few owners of the genuine BMW 1M with its snarling exhaust note, but it should also bring a smile to everybody's face.

When we first stumbled across the car, it was parked in the Toyo Tires booth at Bimmerfest and could have easily been overlooked, since it looked like a mildly warmed-over 1M. However, we're happy we peered under the open hood because this car is a gem and thoroughly deserving of the front cover.

You can read more about the build and our driving impressions in the full feature elsewhere in this issue.

FEBBO

Some of you might be surprised to be reading my words again, since I bid farewell in the last issue. However, I'd offered to complete another issue while the company took time to find my replacement—I was going to suggest I was irreplaceable, but that was clearly false...

The good news is that Michael Febbo was persuaded to return to *EC*, having formerly been the magazine's engineering editor before taking some much-needed time to relax on the staff of *Motor Trend* magazine.

You'll definitely be in good hands with Mike at the helm because he's anxious to maintain the magazine's mix of high-performance European cars and

ground-breaking editorial that makes us unique in magazine publishing, choosing to find our own path rather than follow in the footsteps of everybody else.

With Mike's technical bent, you can be sure he'll continue to build some affordable project cars and isn't afraid to give his opinions from behind the wheel of supercars and modified machines alike.

Mike will be in charge of the next issue and can be reached at european.car@sorc.com in the meantime.

TEN

As you might have noticed from the email address, the company has had a shake-up. Formerly Source Interlink but now The Enthusiast Network, the company is focused on maintaining quality print magazines but increasing its online presence. By now you should be part of our 1.8 million followers on Facebook and among the million or so who visit europeancarweb.com each month, but if not, we'd encourage you to take a look at the web exclusive features and videos and join the online conversation.

You can also buy a digital subscription to the magazine via the dropdown menu on our home page at europeancarweb.com—it guarantees you get each issue on time and in high-resolution. If you're like us, however, you still like to feel something solid in your hands when reading in the bathroom library, so our print subscriptions continue to offer a very competitive price.

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bilsteinus.com



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hawkperformance.com



POWERFLEX AUDI DIFF BUSHING

Powerflex has released an addition to its Audi A4 quattro models, including the S4 and RS4 for the B6 and B7 chassis. The rear differential's front mount bushing has been redesigned to address the common clunking and knocking issues associated with the original rubber bushing. The Powerflex bushing reduces movement at the rear diff, resulting in a reduction of initial torque lost during acceleration. It also provides greater stability under acceleration and gear shifts. The bushing is easy to install and fits the stock cast-aluminum bracket. The Powerflex polyurethane bushing is backed by the brand's lifetime warranty.

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eastwood.com



AMSOIL CVT FLUID

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amsoil.com



FORGE GTI INLET HOSE KIT

Forge Motorsport released its race-quality intake hose for VW's newest Mk7 Golf GTI. Designed as a direct replacement for the factory part, the Forge upgrade is an enhancement over the originals. They have a greater resistance to heat-cycling, fatigue, and will dramatically outlast the original part, making them ideal for tuned or competition cars. Each hose was designed and developed in the U.K. and uses fabric reinforcement inside the finest quality European-sourced silicone. Each part precisely replicates its OEM counterpart, following the factory routing, and is a direct replacement with no modification required, fitting in a few minutes. \$85

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NORDSCHLEIFE REDLINE EDITION CHRONOGRAPH

This Nordschleife timepiece is made in Germany and stands out with its distinctive design that features a black, XL-sized, stainless-steel case. It provides the backdrop to the fire-red face that sports a white "Nordschleife est 1927" logo. The watch not only keeps time with quartz precision but also has true chronograph functions like a stopwatch, 60-minute split-time display, as well as a 24-hour display and date function. The matte black Nordschleife Redline Edition chronograph is available online. \$190

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GEAR



AWE AUDI SUBFRAME ALIGNMENT TOOL

AWE Tuning has released another piece for its growing toolbox. The Subframe Alignment Tool was designed as a complement to AWE's Wiring Harness Relocation Kit and SPC Control Arms. It works on the B8/B8.5 Audi A4/A5 and S4/S5 and helps to precisely realign the subframe, which can be a difficult task without the proper tools. It takes advantage of the factory-machined holes in the chassis to help center the aluminum subframe under the front of the car. The tool itself is CNC-machined from billet aluminum. \$39.95

awe-tuning.com



FORGE GTI RADIATOR

Forge Motorsport has just announced its "OEM+" radiator for the Mk6 Golf GTI. The engineering team created an uprated, larger part that still fits on the stock mounts, without cutting or trimming required. This new radiator uses a 43mm-thick core with greater thermal efficiency to improve the capacity of the cooling system. It's said to be ideal for tuned or competition vehicles, or where an uprated intercooler has been installed that might restrict airflow to the water radiator. As standard, the radiator comes with black end tanks and a silver core to replicate the OEM look, but owners can choose an even stealthier all-black finish. \$925

forgemotorsport.com



ROCKFORD FOSGATE T3-BMW2

Rockford Fosgate recently launched a new vehicle fitment guide to show BMW owners which speakers fit their specific vehicle. Made in Germany to precise specifications, the Power BMW direct-fit speakers are designed to replace or upgrade factory models installed in vehicles from 2004 and newer. The speakers have a 1-inch treated-fabric tweeter with neodymium motor and a woofer that uses a tri-laminate injection-molded fiber cone. The line also features an inline passive crossover and BMW factory connector for easy plug-in installation. Each speaker is a 4-inch, two-way component system with 50/100-watt power performance. \$599.99

rockfordfosgate.com



F30 BMW 328i AIR INTAKE

This stage 2 cold-air intake system is claimed to have resulted in 11hp, 15-lb-ft maximum increases. It was also said to outflow the factory intake by 38 percent on the 2012-2014 F30 BMW 328i N20 turbo. The system includes a durable 18-gauge, powdercoated heat shield and features a washable conical Pro 5R air filter element for maximum flow. A 3-inch, one-piece, mandrel-bent, wrinkle-black, powdercoated intake tube is supplied along with a mounting bracket. The tube maximizes air velocity, providing enhanced throttle response. The intake is a bolt-on part that requires no cutting or drilling to fit. The filter also uses a unique flange retention design that requires no hardware to mount it to the heat shield. \$364.35

afepower.com



BRABUS MERCEDES GLA-CLASS

In conjunction with the release of the Mercedes GLA-Class, Brabus has presented its exclusive refinement program that not only includes a designer outfit with distinctive off-road highlights, but it has 21-inch Brabus Monoblock wheels as well. Brabus can also offer suspension components that will either lower or raise the vehicle to suit the owner's preferences. In addition, there's a 400hp engine tuning program as well as a stainless steel quad exhaust.

brabus.com

POWERFLEX BMW SWAY BAR LINKS

Powerflex announced rear antiroll bar links to fit BMW E24, E28, E30, and E36 models. Once fitted, the links will provide greater stability and control. The stainless steel link rod houses two polyurethane bushings, which replace the original rubber bushings that perish over time. The Powerflex bushings offer improved durability over the original parts and carry a lifetime warranty. From \$30

powerflexusa.com





NORDSCHLEIFE T-SHIRT

The Nordschleife (North Circuit) of the Nürburgring in Germany's Eifel Mountains is undisputedly the most demanding racetrack in the world. Fans of the 12.9-mile track might enjoy this new T-shirt with its "Nordschleife Adults Only" theme. The quality shirt makes a strong statement with its white print on the front and comes in sizes S-3XL. The T-shirt is available exclusively online. \$28

nordschleife.us



DEWALT ROLLING STORAGE SYSTEMS

DeWalt storage system solutions for the automotive industry include a 36-inch six-drawer top chest and a 36-inch five-drawer roller cabinet. Combined, the chest and cabinet deliver up to a 1,400-pound load capacity. After extensive end-user research, DeWalt built the rolling Metal Storage system to feature auto-return closing drawers, 100-pound-capacity ball bearing drawers, a 200-pound-capacity extra-deep bottom drawer, and fully extendable drawers. The Metal Storage products were designed to be durable and tough. From \$249.99

dewalt.com

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GEAR



PLYLE HD SPORTS CAMERA

Ensuring every action-packed detail is captured, this compact camcorder boasts 20 megapixels and CMOS image sensor technology. Recording at 60, 50, 30, or 25 frames per second, the camera produces 1080p videos fit for any production.

Features such as its 4X zoom and an invertible screen display are controlled via a 2-inch LCD touchscreen. The camera can also be operated by a Wi-Fi remote control to wirelessly snap photos or record video. The versatile Pyle Audio eXpo Hi-Speed HD Action Camera comes with a variety of accessories, including a waterproof case and multiple mounts and clips, allowing the compact camera to be mounted to bike handlebars, armbands, helmets, snorkel masks, and more. \$249.99

pyleaudio.com



BMW M3 THROTTLE BODY SPACER

aFe Power released its throttle body spacer for the 1992-1999 BMW M3. The "Silver Bullet" spacer has been constructed from machined 6061-T6-billet aluminum and was designed using a serrated/helix design to create turbulence in the airflow just prior to entry into the engine, thereby optimizing the combustion cycle. The turbulence also helps the air/fuel charge burn more effectively, providing increased power and improved throttle response. The design is also claimed to reduce intake whistle that can occur with other helix-only spacers. \$188.95

afepower.com



911 TURBO EXHAUST

AWE Tuning has introduced its Type-991 Porsche 911 Turbo and Turbo S Performance Exhaust System. It represents an entirely new system designed for the 2014 models, using German-made 200-cell HJS HD metal-core catalytic converters. The system itself is made from 3.0-inch T-304 mandrel-bent stainless steel tubing with an H-pipe crossover. It is a direct bolt-on fit, and the kit includes gaskets and hardware. From \$4695

awe-tuning.com

AC SCHNITZER TYPE VIII WHEELS

The AC Schnitzer Type VIII wheels are available in an anthracite finish, which supplements the Type VIII wheel range that currently also includes the Type



VIII forged racing wheel, a lightweight forged wheel and the Type VIII Bi-color in black and silver. The new one-piece wheel is easy to clean and is made in a low-pressure casting process before being subjected to a heat treatment.

acschnitzer-us.com



iLEVEL WIRELESS

AccuAir's iLevel air suspension controller provides wireless control of your e-Level air suspension system through both Apple iOS and Android devices. The app is available for free download through the Apple App Store. The iLevel app is designed to look and operate just like the popular e-Level TouchPad interface. Your mobile device provides instantaneous wireless control of the AccuAir air suspension from more than 100 feet away. \$350

accuair.com



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2015 Lamborghini Huracán LP610-4

THE GALLARDO REPLACEMENT HAS A GREAT DEAL TO LIVE UP TO

Words Basem Wasef
Photos Lamborghini,
Basem Wasef

HIGHLIGHTS

- › All-new chassis and drivetrain
- › Naturally aspirated engine
- › Increased performance, better fuel efficiency
- › Standard carbon-ceramic brakes
- › All-wheel drive

TECHNOLOGY

- › Lambo's first dual-clutch transmission
- › Lambo's first user-adjustable damping
- › New start/stop function

ELECTRONICS

- › Three-setting "ANIMA" controls engine, trans, AWD, stability control, and suspension
- › 12.3-inch TFT screen with three display modes
- › Navigation integrated in driver's instruments

THE OUTGOING LAMBORGHINI GALLARDO was a juggernaut of a supercar, moving 14,022 units over its decade-long production run. The wedge-shaped V10 sports car enjoyed a fervent following among those disinterested (or priced out of) the flagship scissor-doored 12-cylinder models. Its success spawned a myriad of high-performance, limited editions, including a final rear-drive 50th Anniversary model that nostalgically hat-tipped the past with an old-school, three-pedal metal-gated manual transmission.

Despite the Gallardo's strong following and even stronger horsepower, Lamborghini was looking to the future when it embraced the all-new Huracán—named after a Spanish fighting bull known for its courage and valor.

This Gallardo replacement packs a slew of technological firsts for the Sant'Agata Bolognese brand, yet the Huracán's soul remains intact—thanks to its signature, naturally aspirated, V10 configuration. And in an era when Ferrari, McLaren, and Porsche have all embraced turbos, it sets the Italian brand philosophically apart from the crowd.

We can't think of another marque (apart from Aston Martin) that has stuck to its naturally aspirated guns, and that's a good thing for those who love a quick throttle response and a lusty exhaust note.

Second, and perhaps equally significant, is the introduction of Lamborghini's first dual-clutch transmission and electronically adjustable damping system, which aims to expand the Huracán's bandwidth into everyday-driver territory.

Our first drive of the Huracán took us to the rolling hills of Southern Spain, with Ascari Race Resort's 3.36-mile circuit serving as the backdrop for the car's newfound performance.

Climb inside the latest Lambo, and you're surrounded by a more delicately proportioned interior that features high-concept design enhancements. It includes switchgear incorporated into the flat-bottomed steering wheel—Ferrari style.



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“The chassis and suspension have a new level of refinement, enabling easier rotation and more feedback when the fat Pirellis start to give up the ghost.”

Motorcyclists will appreciate the turn signal setup, which mimics the left/right/press-for-reset arrangement found on bikes.

The most crucial switch is for the “ANIMA” (short for Adaptive Network Intelligent Management). It’s positioned at 6 o’clock on the steering wheel and accesses three modes: Strada, Sport, and Corsa. Anima means “soul” in Italian, and the settings do indeed affect the Huracán’s personality at a fairly deep level, with each mode offering sharper damping, throttle response, suspension, and stability control settings.

Immediately out of pit lane, the dual-clutch transmission’s smoothness reflects a dramatic departure from Gallardos of old: smooth, clean, and quick. These shifts remind us of the transformation

enjoyed by the Audi R8 when it switched from the maddening R-Tronic gearbox to its dual clutch.

Also remarkably different is the Huracán’s driver interface, which now fills the driver’s instrument cluster with a configurable TFT screen.

In its sportiest setting, a big digital depiction of an analog tachometer (refreshed 60 times a second) sits front and center, just as you’d expect in a high-dollar supercar. Switch to a less aggressive setting, and the navigation screen becomes juxtaposed next to smaller speedo and tach indicators.

When negotiating the first few corners of Ascari in manual transmission mode, it takes time to adjust to the tachometer’s refresh rate; as the “needle” shoots toward the 8,500-rpm redline, split-second reflexes are required to anticipate taps of the large, cool-to-the-touch paddles before the screaming V10 bangs against the rev-limiter.

Once you become accustomed to the blink-of-an-eye timing, the Huracán starts to feel spiritually similar to—but friendlier and more capable than—its predecessor.

The chassis and suspension have a new level of refinement, enabling easier rotation and more feedback when the fat Pirellis start to give up the ghost. Reassuringly, the V10 still roars with a deliciously saucy scream, delivering a sonic quality that would be sorely missed if Lamborghini ever deigned to fit turbochargers.

Several sessions later, the Huracán still feels like it retains an air of edginess at the limit, with the tail kicking out under heavy throttle and the nose tucking during mid-corner brake stabs, but it’s on the road where the other side of its personality becomes evident.

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—Paul Rivera (Quattro Quarterly Magazine)

"The P3Cars gauge is ready to go straight out of the box... It's been helpful to read boost and EGT, with the adjustable shift light being another handy option. It's certainly a useful tool for modified car owners."
—Greg Emmerson (European Car Magazine)

"They've designed a simple plug-in harness, and a really clean display that reads all sorts of info, and it's in view of the driver and passenger while not cluttering the steering wheel or center console. Better yet, it's affordable in comparison to all those ancient analog gauges as just the desired boost, oil and water temperature and battery gauges would set you back over twice what the retail of P3 Car's VIDI gauge does at it's MSRP!" —Barry Brazier (MC2 Mini Magazine)

With this one gauge I can now read turbo boost pressure, engine coolant temp, intake air temp, exhaust gas temp, battery voltage, rpm, vehicle speed ... Hell, the new gauge even gives me the ability to read and reset engine trouble codes! I was sold the minute I saw it, and all the willpower in the world couldn't prevent me from plunking down my hard-earned cash for this marvelous instrument."
—MJ Calabrese (Roundel Magazine)

At P3Cars we've been producing the highest quality instruments for some of the world's finest cars since 2009. Our fundamental goal is to retain the gorgeous design of the OEM interior, and also accentuate it by providing an extended cache of metrics to the discerning driver. A new kind of interface was created, and new ways of thinking brought about a revolutionary new product.

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+ PROS

- › Dual-clutch transmission
- › All-day comfort from adjustable suspension
- › New infotainment system

- CONS

- › No manual option
- › Variable-ratio steering to be avoided
- › ANIMA manages settings together, but not individually



TECH SPEC

2015 LAMBORGHINI HURACÁN LP610-4

LAYOUT

mid-engine, AWD

ENGINE

5,204 cc V10 40v with direct-injection

DRIVETRAIN

seven-speed dual-clutch transmission

BRAKES

six-piston calipers, 380mm rotors f, four-piston, 356mm r

SUSPENSION

aluminum double-wishbone f&r

WHEELS & TIRES

20x8.5" f, 20x11" r wheels; 245/30 R20 f, 305/30 R20 r

PERFORMANCE

MAX POWER

602 hp at 8,250 rpm

MAX TORQUE

413 lb-ft at 6,500 rpm

0-62 MPH

3.2 seconds

TOP SPEED

201 mph

WEIGHT

3,650 pounds

ECONOMY

15/21 mpg (est)

MSRP

\$245,000 (inc D&D, est)



After an obligatory tire change and brake fluid bleed by Lamborghini mechanics, we hit Spain's rambling country roads with a heavy right foot and an eye for local law enforcement. Strada mode, it turns out, is a bit too tame, even for the street; in order to optimize smoothness, the shifts are a tad lazy, and the steering feels slow and somewhat dull.

Sport, on the other hand, offers a sharper and satisfying middle ground, delivering crispness without the razor's edge reactivity of Corsa. We still prefer a traditional, non-variable steering setup (thankfully, the variable steering assist and adjustable suspension setups are optional), but the Huracán's greater power, lower weight, and more tractable road manners certainly make it feel like a significant evolution from its Gallardo ancestors.

The adjustable, adaptive suspension is also one of the new Lambo's winning formulae, as it removes the bone-jarring, always-on calibration with a setup that softens the miles during long-haul driving.

Sharp, angular, and viscerally satisfying, the Huracán manages to fill the Gallardo's big shoes with a decidedly high-tech yet familiar cocktail of performance, soul, and adjustability. But the best is yet to come: We anticipate that when the inevitable Huracán Superleggera is unveiled, we'll see this entry-level Lamborghini shine at its brightest. **EC**

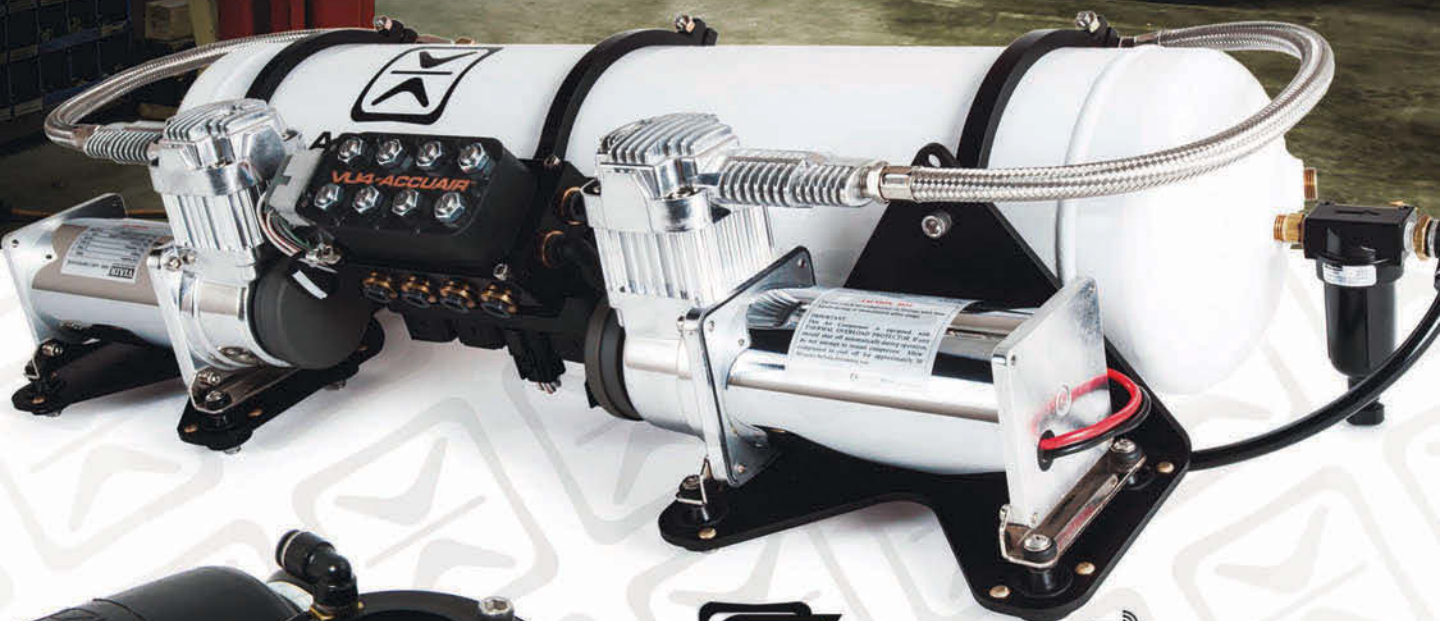
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2015 Ferrari 458 Speciale

FERRARI TAKES THE MAGNIFICENT 458 TO THE NEXT LEVEL

Words & Photos Ian Kuah,
Thomas G

HIGHLIGHTS

- › More power, lighter, better handling
- › Ferrari's most powerful engine of its kind
- › 1-min., 23.5-sec. lap of Fiorano

TECHNOLOGY

- › 605 hp, 400 lb-ft
- › 14:1 compression ratio
- › 9,000-rpm rev limit
- › Underbody flaps produce downforce or reduce drag as needed
- › Faster gear shifts than ever before
- › LaFerrari carbon-ceramic brakes

ELECTRONICS

- › Side Slip Angle Control is perfect drift aid

ONE POINT FIVE SECONDS: While driving in traffic on your way to work, this small segment of time takes longer to describe than actually experience. Yet at Fiorano racetrack, Ferrari hallowed home circuit of, 1.5 seconds is an eternity.

Ferrari originally built Fiorano in 1972 to give the company a benchmark for development and testing. The 1.86-mile circuit has 12 curves, and it takes a good driver in a very good car to lap 1.5 seconds quicker than the established class lap record.

Officially clocked at 1 minute, 23.5 seconds around Fiorano, the 458 Speciale was exactly 1.5 seconds faster than the standard 458 Italia, and 1.4 seconds faster than the legendary Ferrari Enzo.

There's not much wrong with the 458 Italia to start with, and the improvements Ferrari has wrought for the Speciale are in the same vein as the 360 Challenge Stradale and 430 Scuderia. They are derived from the classic trifecta of increased power, less weight, and better handling.

The Italia's naturally aspirated 4497cc flat-plane crank V8 motor has been heavily revised, turning it into the most powerful engine of its kind that Ferrari has ever produced.

Boasting a specific output of 135 hp/liter, the engine features a new crankshaft, pistons, rod bushes, combustion chambers, camshafts, and a host of mods that strengthened the internals. With its incredible 14:1 compression ratio and 9,000-rpm rev limit, it demands a strict diet of top-quality fuel.





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“Quite frankly, shift speed is now at the point where any further improvement is only of academic interest.”

The result is a power hike from the Italia's 570 hp to 605 hp at 9,000 rpm. Torque also improved across the board, even if the peak of 400 lb-ft at 6,000 rpm remains unchanged.

Acceleration always felt strong, but in the Speciale it feels almost explosive. And the enhanced seven-speed F1 dual-clutch gearbox now fires 20 percent faster upshifts and 44 percent faster downshifts.

Between the first three ratios, the rev counter needle races around the dial so rapidly, the eyes and brain are grateful for the red warning flashes that arrive a split second before the rev limiter arrives.

Quite frankly, shift speed is now at the point where any further improvement is only of academic interest, but it all helps, and full noise through the gears delivers 0-60 mph in 2.8 seconds.

At the other end of the scale, the 398mm front and 360mm rear carbon-ceramic brakes the engineers

say are almost straight from LaFerrari bring a new meaning to the phrase “throwing out the anchor”!

They work so well, it feels as if the standard-fit four-point harnesses are going to leave a permanent impression on your shoulders. Meanwhile, the steering is so direct and precise, it makes the remarkable 458 Italia's responses feel relatively sedate.

Aerodynamic fine-tuning reduced drag and increased downforce. Depending on speed, one horizontal and two vertical flaps in the front end move to increase radiator airflow at low speeds and reduce lift above 105 mph.

The larger rear spoiler increases downforce over the rear axle at speed, while active underbody rear flaps are adjusted as required to either produce more downforce or reduce drag by stalling airflow to the rear diffuser.

In the cabin, non-essential items such as the glovebox, leather interior trim, door panel armrests, and the standard center console were removed. Even the sound insulation was replaced with thinner, lighter materials. Lightweight race seats and thinner rear glass added to the list of weight-pruning measures.

The weight saving trail even led to the more effective air intake system, cutting 176 pounds off the 458 Italia intake. The result was a total weight reduction of 198 pounds and a much more intense soundtrack for occupants, even if the external levels remain EU regulation-friendly.

In Sport mode, the re-calibrated magnetorheological frequency-dependent damping is noticeably firmer than the standard 458, but Comfort mode can be used to dial some semblance of normality back into the ride when you're sauntering along. The Comfort setting also retards the engine and gearbox reflexes back from Defcon Two, lowering your adrenaline rush at the same time.

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- › Better handling
- › More power
- › Awesome brakes
- › Drift control

CONS

- › Nothing we could think of...

TECH SPEC

2015 FERRARI 458 SPECIALE

LAYOUT

Mid-engine, RWD

ENGINE

4497cc 90-degree V8 DOHC

DRIVETRAIN

seven-speed F1 dual-clutch transmission, third-generation electronic differential

BRAKES

Brembo six-piston calipers, 398mm carbon-ceramic rotors f: four-piston, 360mm r

SUSPENSION

Double wishbones, magnetorheological control with frequency analysis and twin solenoids

WHEELS & TIRES

20x9" f, 20x11" r wheels, 245/35 ZR20 f, 305/30 ZR20 r Michelin Pilot Sport Cup 2 tires

EXTERIOR

Active flaps front and rear to increase drag or downforce

PERFORMANCE

MAX POWER

605 hp at 9,000 rpm

MAX TORQUE

398 lb-ft at 6,000 rpm

0-62 MPH

3 seconds

TOP SPEED

202 mph

WEIGHT

2,844 pounds (curb weight)

ECONOMY

19.9 mpg

MSRP

\$298,000



public roads, its natural environment is the racetrack, where full throttle and full braking—with little else in between—is the order of the day.

While Pirelli continues its long-standing partnership on most Ferrari models, the Speciale's 20x9-inch and 11-inch forged wheels wear 245/35 and 305/30 Michelin Pilot Sport Cup 2 rubber. This is the very first time track day tires have featured on a production, street-legal Ferrari—with these allowing the Speciale to pull 1.33 g of lateral acceleration.

While some rival manufacturers are adopting similar footwear for their limited edition lightweight models, Ferrari has always been wary of the reduced tread depth that makes hydroplaning more likely if the driver pushes too hard in wet conditions. However, the Italians were finally convinced that Michelin's latest Cup 2 tires won't relinquish their grip within the bounds of common sense. So Ferrari adopted the bespoke rubber to maximize the car's steering response, handling, and grip.

In my experience, track day rubber is worth a second or two a lap, so I was frankly surprised that the performance trifecta didn't actually produce an even larger gap between the two 458 variants. Looked at another way, rather than being an indictment of a more expensive Speciale, it's actually a testament to how good the standard Italia is, more than three years on.

It also shows—and you'll only realize after driving both cars—that the extra money isn't for purely empirical improvements against the stopwatch. Your cash pays for the more visceral experience that reaches out to you through the steering wheel,

grabs the seat of your pants, and hammers at your eardrums when you're in attack mode.

The Speciale delivers a level of involvement few cars at any price can match, and in an accessible way, even if you're only piloting this low-flying machine at two thirds of its ability.

An extra setting on the familiar Manettino controls a new function with addictive potential. Ferrari's rather tortuous name for the system is Side Slip Angle Control (SSC). It allows you to drive sideways under power with the ESP fully engaged by balancing the interplay between the ESC stability control, third generation E-diff, and engine torque. Unofficially, it's the perfect drifting aid.


The high-resolution sensors and ECU mapping were designed to differentiate between a situation in which the car is running out of grip, and one in which the driver is deliberately provoking oversteer.

In the latter situation, the sensors ascertain the optimum steering angle, throttle position, engine revs, and tire slip for a given point in a bend. As most drivers tend to apply too much throttle when a car begins to lose adhesion at the driven wheels, by reacting in milliseconds, the system removes exactly the right amount of throttle as required, while adjusting the E-differential's locking action to help you achieve the most suitable cornering attitude.

Working seamlessly, you never feel the SSC is intrusive or abrupt like some traction control systems used to be. Smooth and progressive, it makes an average driver look good, and a good driver look like a hero.

Of course, you can still turn everything off, but then you're on your own with a good chance of spinning if you overcook things.

While electronics play a major role in the Speciale's dynamic makeup, making them transparent and ensuring they support the car's immense speed, excitement, and driver involvement is a major achievement. Retaining the user friendliness and driving ease of the basic Ferrari 458 is another. The Ferrari 458 Speciale is certainly well named.

The 458 Speciale will be coming to North America later this year, which is great news because it represents one of the finest driver's cars currently available. 

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2015 Mercedes-Benz C-Class

NEW C-CLASS PLAYS TO THE BRAND'S STRENGTHS

Words Paul Healy

NO REVIEW OF THE ALL-NEW MERCEDES-BENZ

C-CLASS would be complete without mentioning its rival from Bavaria. Let's get it out of the way early: The W205 (to give the new Benz its internal designation) isn't trying to win the BMW 3 Series' best-driving compact sport-luxury sedan crown, which is a good thing.

Having spent years attempting to match the 3 Series in dynamic terms, the Mercedes engineers finally realized that in doing so, they've not been playing to their own strengths. Arguments over the AMG versus M will be had but, in truth, Mercedes used to be a byword for luxury, something that was overlooked while chasing dynamic ability.

The 2015 C-Class returns to that old standard from the moment you open the door. The light, airy cabin boasts the kind of construction and design owners of the previous W204 could only hope for. The buttons and switchgear have come from the time when Mercedes over-engineered its cars for the hell of it. It's created an interior that eclipses not only the 3 Series in terms of quality, but also the excellent Audi A4. Unfortunately, it's marred by the 8.4-inch infotainment screen, which appears to be something of an afterthought. Yet this can be forgiven because the rest of the dashboard is so much more cohesive.

Five round vents dot the dash, the middle three sitting above a single-piece center console that flows seamlessly to the COMAND controls. Here the traditional rotary dial is joined by what appears to

be a protective shroud, but is actually a touch pad with haptic feedback that allows operation of the infotainment like a smartphone.

Move from the front to the rear and you'll find more legroom than before, thanks to an extra 3 inches of wheelbase. Overall, the car has grown in length by 3.7 inches, with another 1.6 inches added in width. Even the trunk is bigger, yet on the road the sedan doesn't feel cumbersome.

This can be attributed to it being almost 220 pounds lighter through extensive use of aluminum.

HIGHLIGHTS

- › Gorgeous cabin
- › C-Class returns to its luxury roots
- › Expected to cost less than \$40k
- › Introduction of Airmatic suspension to the segment
- › More spacious than before

TECHNOLOGY

- › 329 hp, 354 lb-ft
- › V6 twin-turbo motor
- › Standard seven-speed automatic
- › Agility Select changes driving modes

ELECTRONICS

- › 8.4-inch infotainment screen with haptic touch pad
- › Digital heads-up display
- › LED lighting



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PROS

- › Baby S-Class looks
- › Baby S-Class tech
- › Spectacular interior

CONS

- › Four-wheel drive only at launch
- › Auto can be slow to downshift



TECH SPEC

2015 MERCEDES-BENZ C400 4MATIC

LAYOUT
front-engine, AWD

ENGINE
2996cc twin-turbo V6

DRIVETRAIN
seven-speed automatic transmission

BRAKES
Single-pistons calipers f&r, 13" rotors f, 11.8" r

SUSPENSION
multi-link f&r

WHEELS & TIRES
18x7.5" f, 18x8.5" r wheels, 225/45 R18 f, 245/40 R18 r all-season tires

PERFORMANCE

MAX POWER
329 hp at 5,500 rpm

MAX TORQUE
354 lb-ft at 1,600-4,000 rpm

0-62MPH
4.8 seconds

TOP SPEED
155 mph

WEIGHT
(est) 3,600 pounds

MSRP
TBC

There's also new four-link front and five-link rear suspension and an aero package that gives the car a class-best drag coefficient of 0.24, allowing it to scythe through the air.

This aerodynamic package comes on a body that bears more than a passing resemblance to the S-Class. Following the current Sensual Purity design theme, the classic long hood and set-back cabin hallmarks have been joined by shortened overhangs and a stubby trunk almost borrowed from the CLA. The look screams rear-drive executive sedan, but that's not how the cars will arrive initially.

When the new C-Class goes on sale in September 2014, it will only be offered in C300 and C400 guise, both with 4MATIC all-wheel drive. The C300 RWD and C63 AMG models will follow in early 2015.

Wearing a C300 badge, the entry-level car uses a 241hp, 229-lb-ft, 2.0L turbocharged four-banger that's virtually identical to the unit in the CLA, but flipped longitudinally. We've only driven the Euro-spec 208hp C250 and would advise it's worth holding out for the V6-engined C400 twin-turbo.

Churning out 329 hp and 354 lb-ft, the V6 is more in keeping with the luxurious nature of the C-Class than the frenzied four-banger. While the V6 can feel coarse at high revs, you don't really need to wring its neck. With peak torque available between 1,600-4,000 rpm, it has more than enough punch in the lower rev range for most drivers.

Whatever the engine, and no matter what wheels are driven, all C-Class will be offered with the Mercedes seven-speed auto. Left to its own devices, this transmission can be slow on the downshift, but play around with the new Agility Select switch and the transmission can be tailored to suit your needs. Parameters include Eco, Comfort, Sport, Sport Plus, and an individual program; the latter allows adjustment of throttle response, steering-assist, and damper firmness.

While steel springs are standard, Mercedes will, for the first time in this segment, offer optional air suspension. It, too, can be played with; stiffer in Sport mode and softer in Comfort. In truth, we found it best in Comfort mode while dialing the engine, gearbox, and steering to Sport. The stiffer suspension setting can lead to a fidgety ride. Even in Comfort, the C-Class still responds well to being pitched into a tight canyon corner.

Feedback is a thing of the past thanks to the electric steering assistance, but the variable ratio rack does tighten things up as you add lock. It's not what you would call sporty—leave that to the BMW—but enthusiastic drivers may still exit the Benz with a smile on their face.

That's unless they've been bamboozled by the technology, much of it coming straight from the recently launched S-Class. These include the Intelligent Drive suite of safety gear that includes DISTRONIC Plus radar adaptive cruise control and steering assist, a stereo-camera-based lane-keeping assist function, and BAS Plus brake assist with cross-traffic function. If that's not enough to keep owners busy, they can opt for Active Parking Assist and a 360-degree camera that provides a bird's-eye view, among others.

As a complete package, the new C-Class is a compelling one; by returning to its luxury roots and forgetting about the "dynamics" game, Mercedes has produced the best car we've driven in this segment. Considering it includes not only established rivals but also the likes of the Cadillac ATS and Lexus IS350, that's an impressive feat. **BC**



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2015 BMW X4 xDrive35i M Sport

MUNICH BUILDS A MINI-X6

Words Shane O'Donoghue
Photos Richard Newton

HIGHLIGHTS

- ▶ Latest SUV coupé crossover
- ▶ Sportier drive than X3 sibling
- ▶ Fantastic dynamics for high-riding vehicle
- ▶ Pair of turbocharged engines

TECHNOLOGY

- ▶ 306hp 3.0L turbo six-cylinder
- ▶ xDrive AWD across the range
- ▶ Eight-speed Steptronic sport auto standard
- ▶ M Sport trim includes switchable driving modes
- ▶ 245hp 2.0L turbo four-cylinder as entry-level

ELECTRONICS

- ▶ New-generation BMW graphic controls
- ▶ Automatic tailgate opening standard
- ▶ Efficient Dynamics technology package reduces consumption

WE ALL THOUGHT IT WAS THE CAR NOBODY

NEEDED, the answer to a question that hadn't been asked. And yet the BMW X6 coupe Sports Activity Vehicles (SAV) has been phenomenally successful since its arrival.

Ever since the Spartanburg, NC-built X5 was launched in 1999, the big SAVs have been a huge hit in showrooms worldwide. So in order to capitalize on its popularity, the X5 was followed by the smaller X3, then the oddball X6, before the baby X1 arrived on our shores last year.

And with a certain inevitability, once the 4 Series range of cars was announced, an X4 has followed close behind, offering a mini-X6 for people who admire but can't afford the fullsize truck.

The X4 is supposedly a more stylish, sportier version of the X3, upon which it's heavily based. It's a little longer, quite a bit lower, and possesses a sweeping roofline that, as with the X6, should remind you more of a coupé and less of an all-terrain workhorse.

Whether you like the X4 styling is down to personal taste, but it's one of those contentious designs that looks far better in the metal than in photographs. And with more than 250,000 buyers putting cash down for an X6, we suspect the X4 will be equally popular.

From a stylistic standpoint, the X4 M Sport we tested wasn't perhaps the best example of the new car. The problem is that all the aggressive styling elements that differentiate the front end from the X3 are color-matched. So we preferred the lesser models, with the front end in either silver

or black, depending on the model, to better define the X4's face.

You'll pay significantly more for the less-capacious X4 than the X3. The X4 xDrive28i (2.0T) is \$4,300 more than the equivalent X3, while the larger xDrive35i commands a \$2,900 premium thanks to an extra standard kit offsetting the price hike.

With a starting sticker of \$45,625 for the 2.0L, it might be pricey in some people's eyes, although premium-branded products always tend to sell well. It puts the X4 right in Range Rover Evoque territory, for example, which sells from \$42,025.

You do, at least, get some extra toys over the X3 to mitigate the cost, if the styling and driving dynamics aren't enough. BMW will throw in an automatic opening tailgate—which can be further optioned up with the Smart Opener, allowing you to pop the trunk with your foot under the car. It also gets a sports



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PROS

- Striking looks
- Interior space not as compromised as you might expect
- Mammoth grip
- Sublime engine and transmission pairings
- Something different in the midsize SUV sector

CONS

- Not as much fun as expected
- Significant premium over X3

TECH SPEC

2015 BMW X4 xDrive35i M Sport

LAYOUT

front-engine, xDrive AWD

ENGINE

2979cc six-cylinder 24v with twin-scroll turbocharger and direct injection

DRIVETRAIN

eight-speed ZF automatic transmission

BRAKES

cornering brake control, dynamic brake control, 328 mm rotors f, 330 mm rotors r, floating single-piston calipers f and r

SUSPENSION

double-joint struts f, five-link r

WHEELS & TIRES

18x8" wheels (optional 19" on M Sport), 245/50 R18 tires

PERFORMANCE

MAX POWER

300 hp at 5,800-6,400 rpm

MAX TORQUE

300 lb-ft at 1,200-5,000 rpm

0-62MPH

5.5 seconds

TOP SPEED

130 mph

WEIGHT

(est) 4,300 pounds (xDrive35i)

ECONOMY

28.3 mpg

MSRP

\$48,925 (plus \$1,900 M Sport package)



leather steering wheel with paddle shifters, variable sports steering assistance, Performance Control, and rear Park Distance Control.

Compared to an X3, the front occupants sit roughly 0.8 inch lower, with the rear bench dropped 1.1 inches to offset the 1.4-inch-lower roofline of the X4. This has a twofold return, not just in trying to preserve headroom but also in making the center of gravity lower for a sporty drive.

BMW hasn't done a bad job, as the coupe doesn't feel cramped. The cargo area remains usable, with a flat floor, 177 cubic feet of load space with the 40:20:40 split rear seats up, or a generous 49.4 cubic feet with them down. Naturally, the X3 beats it for loading capacity.

BMW showcased its new generation of switchgear, which we can expect to see across all other product offerings soon. There are fresh graphics alongside revised controls for the climate system, and it all feels suitably premium.

Trying to offer sharper handling than the X3 could

be viewed as an exercise in futility, because the midsize SAV is already one of the finest driving vehicles in its class. However, BMW has managed to pull it off, with the X4 getting its own spring, damper, and antiroll bar rates, plus a unique steering rack to polish the X3 chassis further. The outcome is an SAV that just grips and grips, and then grips some more.

The X4 doesn't have the torque-vectoring rear diff of the X6, but it remains phenomenally agile for something this weighty and tall. The speed it carries on a twisty road is further aided by this wonderful drivetrain; the eight-speed 'box blips the revs on downshifts and offers whip-crack ratio swaps at all times. The mighty straight-six turbo endows it with plenty of straight-line pace, and the brakes are mighty capable, which allows you to hustle with ease.

Sadly, the X4 isn't perfect. In the more sporting modes offered via the Performance Control switch, the ride can be harsh—a consequence of the taut body control. But, more importantly, the chassis is inert, offering little involvement beyond that monster traction and hampered by lifeless steering. So while you can cover ground at an indecent rate, it's unlikely you'd take the X4 out for the hell of it.

Logically, the X4 was inevitable once the X6 proved its fiscal worth. And the execution is, as you'd expect, almost faultless. The X4 sits in a unique position—it offers something different to potential X3 buyers who don't need to move tons of gear around. Yet you can't ignore the substantial price premium over its sibling, the presence of the excellent 3 Series Touring (also available in xDrive), as well as the healthy competition from the capable Evoque. **BC**

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1M3

WORDS GREG EMMERSON PHOTOS ADRIAN JON
MARCO SVIZZERO'S **BMW 135i** TAKES THE 1 SERIES M COUPE
TO ITS LOGICAL CONCLUSION WITH AN M3 V8 ENGINE SWAP



THE 2011 BMW 1M—or 1 Series M Coupe, to use its official title—rapidly earned iconic status, and deservedly so. First of all, it's incredibly rare, with only 1,000 cars available in the U.S. Secondly, it was equipped with the M3's chassis to give it superb handling, while having the benefit of the lighter, torquey 3.0L turbo motor. And thirdly, it looked badass with its widebody styling.

Of course, there were those who felt BMW should have gone the whole hog and used the 4.0L M3 V8 engine as well, but that would have overshadowed the M3 itself and required more extensive development, pushing up the cost.

With that said, it was inevitable the aftermarket would execute the swap, and German BMW specialist G-Power duly obliged with the G1 V8 Hurricane RS. We featured it in the 3/14 issue of *European Car* magazine, and can be found at europeancarweb.com.

Boasting 600 hp, thanks to an ASA supercharger, and finished in chocolate brown, it was magnificent but thousands of miles removed. What we wanted was something similar on U.S. soil. And if it was evading the Highway Patrol while running moonshine, so much the better!

Sadly, such a scenario wasn't realized, but we were still delighted to see, hear, and touch a similar conversion at this year's Bimmerfest West show in Pasadena, California (see page 106 for the show report).

It was housed in the Toyo Tires booth, and we initially paid it little attention since it looked like a 1M with aftermarket wheels. It was only after poking around it for a few moments that the full extent of its modifications became apparent.

We quickly tracked down the owner, Marco Svizzero from San Francisco, California, as well as the tuner, Joey Gaffey from Performance Technic in Dublin, California. The pair was slightly overwhelmed by the response the car received from Bimmerfest visitors and confessed it was barely finished in time for the show.

1M CONVERSION

Creating a project such as this is always a confluence of circumstances and happenstance. For Marco, he was lucky to find a company willing and able to install the M3 V8 into his 2008 135i, while Joey was lucky to be in the right place, at the right time when Marco was ready to pull the trigger.

When speaking to Joey, it was apparent he had been building up to this car over the past five years. It all began when he walked away from his job as a marketing executive at his father's software firm in order to follow his passion. As a lifelong BMW enthusiast, he established his new business to work on Munich's finest.

Where happenstance intervened was that Joey didn't want to simply install suspension and exhaust systems. "I wanted to create a company capable of doing custom swaps. It's not something many shops are prepared to do, but it's what I really love," he told us.





His first major project was a manual transmission conversion on a BMW 540i M Sport Touring. The car had a number of M5 exterior pieces and attracted a lot of local and Internet attention, helping the company grow rapidly.

Performance Technic would make a name for itself by carrying out 6MT conversions to E46 M3 SMG cars. In fact, the company created a kit of parts to allow customers to make it a DIY conversion.

The custom creations were building steam and would culminate in Performance Technic's biggest achievement to date: Marco's 135i. "It's undoubtedly our most significant undertaking," Joey confirmed.

If we backtrack slightly, Marco had been a Performance Technic (PTech) customer for a year or so, having several of his early modifications fitted on-site and taking part in several of the shop's track days.

At this point, the coupe already wore its shiny new suit: Marco had decided to give his 135i more muscle and ordered the genuine 1M body kit, fitting the front end himself, with its distinctive front bumper and wider front fenders.

At the rear, he had DTM Autohaus in El Monte, California, fit the wider rear fenders since these necessitated cutting away the original metalwork and grafting on the new fender flares. They also added the 1M rear bumper and side skirts to complete the transformation.

With the car painted in BMW's Alpine White 3, Marco approached composite specialists Revozport and partnered with them to complete the exterior. Based in Hong Kong, the company's 1M Raze package is regarded by Marco as "The most complete aftermarket aero kit for the car and some of the best carbon fiber I've ever seen."

The Revozport 1M Raze components comprised the large front splitter (with APR supports) as well as the lightweight hood and trunk, trunk lip, rear diffuser, and GTS rear wing.

Once fitted by Marco, the hood and trunk were painted by DTM, but the owner opted to leave the Revozport carbon-fiber roof in its natural weave. As it happens, it has a 1x1 glossy weave, mimicking the factory E92 BMW M3 roof. The rest of the parts were made in 2x2 satin weave to Marco's specification.

To further reinforce the little coupe's track prowess, it had been fitted with a rollbar built by TC Designs. "I had them make a 'cage similar to the M3 GTS as a nod to my OEM+ theme," Marco explained. He would also install carbon/kevlar Recaro Profi SPA seats for the same purpose.

ENGINE SWAP

Moving forward in time again, the 135i was experiencing turbo problems after several track days, so Marco was discussing turbo upgrades when Joey dropped the bomb: "I suggested we install the S65 M3 4.0L V8 engine. I'd never done it before but figured it had to be

possible," Joey explained. "I was sure BMW must have fitted one into the 1M when they were developing the car. They had to wonder what it would be like," he continued. "It would have undoubtedly outshone the M3, so it never made it into production, but I wanted to give it a try."

The team didn't rush at the task at hand. They worked methodically to acquire the vast number of parts needed to complete the task. It started by sourcing a salvaged M3 in England, a solution that made the best economic sense. They lucked out by finding a 2009 M3 that had only covered 27,000 miles before meeting its untimely end. So the PTech crew made a list of the parts they would require, which were dismantled from the car and shipped over.

"The toughest task was actually the wiring," Joey explained. "We had to get the M3 wiring harness and hook up the engine, DME, CAS (key transponder), and ensure all its functions were operational, including things like the ABS, traction control, MDM, stability control, etc. Then it had to be spliced into the 135i harness to make everything work."

Since they didn't know the condition of the donor engine, it was stripped and fitted with WPC rod bearings and ARP hardware to avoid any problems from the S65's Achilles' heel.

When reassembling, PTech added a baffled oil pan to avoid oil starvation on the track, as well as Turner Motorsport pulleys and an iND intake plenum. The exhaust would be a combination of M3 headers and cats with a 1M rear section and muffler. It was assembled in such a way that the cat-back system can be easily replaced at a later date if Marco feels the need. Interestingly, the guys chose to retain the stock emissions equipment to ensure the car would pass California smog regulations since the owner will be driving it to shows, track days, and work on a regular basis.

The engine block was fitted from underneath the car in order to clear the headers. It would sit on solid M3 engine mounts that were bolted to the M3 front subframe. Clearance was very tight, but once a custom oil cooler bracket and oil lines were fitted, the installation looked like stock. And it's just as well it wasn't a difficult operation because the team would fit and remove the V8 a total of six times to fit the exhaust, check the wiring, etc.

Once the wiring was complete, the engine started and ran on the M3 DME, but it triggered several check engine lights. So BPM Sport from Los Angeles was enlisted to work on the coding so the DME could recognize items such as the oil level and brake sensors. They also coded the airbags, gauges, and EDC delete before flashing the ECU with its Race software, designed for a car with full exhaust mods, which may soon follow...

CHASSIS & TRANS

Retaining the M3's six-speed manual transmission, Performance Technic had a custom driveshaft built to fit the shorter



TECH SPEC 2008 BMW 135i

Marco Svizzero

Location: San Francisco

Occupation: Commercial Editor

ENGINE

S65 4.0L V8 with WPC-treated rod bearings, BPM Sport custom tune and 8,600-rpm redline, IND intake plenum, Dinan intake, Turner Motorsport pulleys, custom X-pipe, Meistershaft 1M axle-back exhaust system, VAC Motorsports baffled oil pan, BlackForest Industries motor mounts, 21-pound Braille battery

DRIVETRAIN

six-speed M3 manual transmission, differential and axles, Turner Motorsport transmission bushings and aluminum diff bushings, Rogue Engineering short-shift kit

BRAKES

StopTech Trophy kit with six-piston calipers, 380mm grooved rotors f, four-piston, 355mm r, OEM BMW GT4 brake ducts

SUSPENSION

BMW M3 subframes f&r, M3 suspension with PSI/Öhlins Raceline coilovers, Racing Dynamics sway bars, Dinan carbon-fiber strut braces, adjustable toe arms and monoball kit for front control arms, Bimmerworld rear wishbones, Turner Motorsport aluminum subframe bushings

WHEELS & TIRES

18x9.5" ET25 f, 18x10" ET25 r HRE R43 wheels, 265/35 R18 f, 275/35 R18 r Toyo R888 tires

EXTERIOR

OEM BMW 1M widebody conversion comprising wider fenders, bumpers, and side sills, Revozport carbon-fiber 1M Raze hood, trunk, trunk lip, roof with sunroof delete, front splitter (with APR splitter supports), diffuser and GTS rear wing, Macht Schnell tow straps

INTERIOR

Recaro Profi SPA seats, VAC hardware and floor mounts, Schroth six-point harnesses, TC Design harness bar and rollbar, Alumalite rear seat-delete panel, BMW Performance steering wheel (v1), shifter, e-brake boot and lever, carbon-fiber trim, Revozport carbon-fiber 1M Raze door cards with alcantara inserts, BMW E82 armrest delete kit, P3 Cars vent gauge, OEM BMW 1M anthracite headliner and pillars, BPM Sport coding for airbags, gauges, and EDC delete

THANKS

Performance Technic (performancetechnic.com), Revozport (revozport.com), BPM Sport (bpmsport.com), StopTech (stoptech.com), Recaro (recaro.com)

body. It was attached to the M3's differential that sat in the M3 rear subframe, which was solidly mounted to the 135i bodyshell. A series of solid rear bushings and Heim joints were used to ensure the car would be competitive on the track and allow camber, castor, and toe adjustment.

With the subframes fitted front and rear, PTech proceeded to install the M3's knuckles, wheel bearings, and brake assemblies. The brakes would be upgraded to StopTech's Trophy kit, boasting six-piston calipers up front with 380mm grooved rotors, while four-piston calipers and 355mm rotors live in the rear.

Again, these were part of PTech's track preparations, ensuring the car could be fully exploited in its natural environment. As such,

it also received PSI/Öhlins Raceline coilovers as well as Racing Dynamics sway bars, monoball kits for the front control arms, and Bimmerworld rear wishbones.

We don't want you to think this car is either about show or straight-line performance. The tuner and owner have been very deliberate in preparing the car for any situation, and we're confident it will excel at whatever it does.

With the M3 subframes and suspension components installed, the wheel offsets were altered to avoid rubbing issues. As a result, the car has rather unique 18x9.5-inch front and 18x10-inch rear HRE R43 wheels, both with a 25mm offset. These were wrapped in track-ready Toyo R888 R-compound tires for the reasons stated above.



THE REAL WORLD

EVER WONDERED WHY the big, bold numbers on the window sticker of the car you bought have yet to be achieved. Sure, "your mileage may vary" is the mantra, but *Motor Trend* went to work with Emissions Analytics to help consumers. With Sam Boyle (pictured) and Jesus Flores doing all of the hard work, RealMPG has proven to be a component of *Motor Trend* testing and evaluation that consumers can count on.

1. STRENGTHS & WEAKNESSES:

Motor Trend has been testing cars since 1949 and as Frank Markus noted in his Technology column (bit.ly/MTTesting) of *Motor Trend*, "...a big weakness of ours: measuring fuel economy." With Emissions Analytics expertise, *Motor Trend* has invested where no other automotive media evaluation has gone.

2. BE COMFORTABLE.

Before and after each city/highway test, Sam Boyle conducts a calibration that zeroes out the gas analyzer with nitrogen (pictured here) The test includes multiple drive sessions as well as installing and removing the equipment for as many as 25 tests per week. To stay comfortable yet meet their



job demands, the Dickies Regular Straight Fit 5-Pocket Jean (bit.ly/Dickies5Pocket) provide casual, Built To Work comfort.

3. SCIENTIFIC DISCOVERY.

To determine economy, the special calibrated Chevron test fuel remains constant in each and every test. The carbon mass sampled through monitoring tailpipe emissions allows Emissions Analytics to continuously compute

instantaneous fuel consumption. Check out bit.ly/MTMPG101 for more on the test process.

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March 21-23

Daytona International Speedway – Daytona, FL
May 23-25

Auto Club Speedway – Fontana, CA
June 13-15

Road America – Elkhart Lake, WI
June 20-22

Gateway Motorsports Park – Madison, IL
July 18-20

Portland International Raceway – Portland, OR
Aug 1-3

Michigan International Speedway – Brooklyn, MI
Aug 22-24

Sebring International Raceway – Sebring, FL
September 19-21

Pittsburgh International RaceComplex – Waupum, PA
October 3-5

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We learned Marco intends to swap the rear wheels to the front and go wider on the back to put more rubber on the road, but for now the HREs are allowing him to put some valuable miles on the rebuilt engine. Before it heads onto the track, Marco and Joey have a series of car shows scheduled, allowing them to show off their work and maybe attract new clientele. As such, they made some concessions to comfort and style, including some very nice Revozport carbon-fiber door cards with alcantara trim panels to match the OEM BMW 1M anthracite headliner.

Insisting on only fitting the best products, Marco specified the steering wheel, shifter, e-brake boot and lever, as well as full carbon-fiber trim from BMW Performance. He also added a P3 Cars vent-mounted gauge and used

an Alumalite rear seat-delete panel to hide the bare floor once the rollbar was fitted.

You can read our driving impressions in the separate sidebar, but we did ask Marco to summarize his experience: "The guys at PTech had already exceeded my expectations with their previous work on my car, so once we decided to do the swap, I had full confidence they could tackle the task and produce a solid, factory-quality car with working electronics," he said. "The finished car is a masterpiece in my eyes and couldn't be more perfect."

Joey was also very pleased with the outcome: "It's a great car; very rigid but not harsh. It feels track-bred and is a good-looking car."

So what would it cost to replicate something similar? Joey estimated his company would

DRIVING IMPRESSIONS

The CHP cruiser ahead wasn't what we wanted to see, but its presence gave us time to warm the V8 as we climbed Angeles Crest Highway's slithering switchbacks. The Meisterschaft exhaust echoed off the canyon walls as the Toyo R888s got steadily stickier.

After the road cleared, it was time to let loose. Well, not completely because the engine wasn't fully broken in. There was a 5,000-rpm curfew imposed, which is where the M3's S65 V8 starts doing its best work, but we short-shifted and tried to rely on both the midrange torque and a heavy dose of restraint.

That meant our time behind the wheel was more about the handling, where this car excelled. I thought it might be nose-heavy, yet the M3 drivetrain, which is slightly heavier than the 135i's, didn't adversely affect weight distribution. This is because the balance is still good thanks to the addition of the rear differential.

Corner balanced, riding on M3-spec Öhlins coilovers, and using Dinan monoball front control arms, the turn-in was race-car quick. Where most cars need a moment to lean on the tires and compress the springs and bushings before taking a set, Svizzero's 1M V8 immediately starts hunting for the apex. The Toyo R888s hang on tenaciously, with the fronts eventually letting go slowly and predictably.

The combination of turn-in precision, grip, and predictability gives you the confidence to dive into corners faster than you might normally, making this machine one of the sharpest canyon carvers I've ever driven.

Even though we were limited to 5,000 rpm, the modified S65 had plenty of midrange tug out of the corners. Being nearly 400 pounds lighter than an M3 coupe was a significant factor.

Braking and downshifting before the turns was as equally satisfying. The Rogue Engineering short shifter felt deliciously direct and perfectly weighted, while a light touch on the StopTech Trophy anchors wiped off loads of speed.

Marco claimed he wasn't trying to build the world's fastest 1 Series—that title belongs to G-Power's supercharged G1 V8 Hurricane RS. What he wanted was a unique, well-sorted track-day weapon that makes M3s appear to be in limp mode. Job done. —PETER WU

charge \$80,000 to \$100,000 to conduct the engine swap, depending on final specification. He also quoted a construction time of two to three months but pointed out Marco's car had a great deal of work beyond the engine swap.

It's also worth pointing out the 135i doesn't have much room for wide tires under its stock fenders, so fitting the 1M body kit would also be a wise investment to ensure you get the power to the ground. So if you've got six figures burning a hole in your pocket, and you're looking for an awesome track car, we might suggest you visit Performance Technic and discuss your options. **EC**



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WORDS PETER WU PHOTOS GRANT COX



FERRARI 430 SCUDERIA BITURBO



"I JUST WANTED A NICE, FUN DRIVER THAT MADE ABOUT 700 HP," explained Sriyantha Weerasuria. It sounds reasonable. Like wanting to exclusively date supermodels, or making Friday casual beer day, or never having to visit an in-law for the holidays—all totally reasonable requests.

While we joke, Weerasuria's request sounds far more reasonable if put into context. You see, he's the owner of Elite Motorsports in Austin, Texas, and has been modding cars since before most of us were born. So his collection of tuned vehicles leaves us drooling every time we think about it.

While surveying the fleet in his garage, he walks past a 700hp Mercedes SL65 and this F430 Scuderia set up for the track. You'd think he'd get into his MP4-12C or the Aventador, but he might pass those to reach the 1,750-whp Underground Racing (UGR) Lamborghini Gallardo LP560 with the rare "R" package. But actually, Weerasuria passes them all and opens the door to his Ferrari F430 Scuderia twin-turbo.

Only the brave attempt to work on the 430's V8, but those intercoolers and heat wrap give the game away.





TECH SPEC

2009 FERRARI F430 SCUDERIA

Sriyantha Weerasuria

Austin, TX

Elite Motorsports

ENGINE

4.3L V8 with Underground Racing stage 1 twin-turbo system using billet Precision 67 turbochargers, water-to-air intercoolers, Tial wastegates and blow-off valves, larger injectors, upgraded fuel system and MoTeC 800 ECU, 3.5" exhaust tubing, Burns mufflers

TRANSMISSION

stock six-speed auto/semi-auto

BRAKES

stock 15.6" drilled, carbon-ceramic rotors f, 13.7" r

SUSPENSION

stock coilovers, lowered and corner balanced

WHEELS & TIRES

20x9" f 20x12" r HRE P47 wheels, 245/30 R20 f, 325/25 R20 r Michelin Pilot Super Sport tires

INTERIOR

Motec four-position boost controller



"It's my favorite by far," he told us. "The Scud is raw. The shifts are violent, it sounds like an F1 car, and it's a lot more nimble. I love the handling. It's just the perfect package."

He claims it's even better than the 458 Italia he once owned, but found it "too smooth" and lacked emotion.

When considering the options for his "700hp fun driver," Weerasuria test-drove an F430 enhanced with a Novitec twin-supercharger system, but apparently wasn't impressed. "They make 720 hp to the engine, but UGR makes 700 at the wheels and sounds much better," he told us.

So he shipped his '09 Scuderia to Underground Racing in Charlotte, North Carolina, for the company's stage 1 twin-turbo system. Noted for its work on Gallardos, such as Weerasuria's aforementioned 1,750-whp weapon, UGR branched out and started modifying the Audi R8 (which shares much



Custom exhaust has a distinct F1 sound.

Sat on 20" HRE wheels and lowered on its stock coilovers, the mild mods don't hint at the 430 Scuderia's 700hp biturbo potential.

of the Gallardo's DNA) before eventually turning to Ferraris. We assume this is because the Ferrari guys were tired of being beaten by Lamborghinis at high-speed shootouts like the Texas Mile or shorter half-mile events.


UGR doesn't adhere to the tenant that Ferraris are too precious or complex to be modified. In addition to F430s, they also offer packages for the 360, 599, and 458. For Weerasuria's Scuderia, they kept the internals stock and left the 11.9:1 compression ratio unchanged. As a result, the owner ensured the low-end power and torque didn't suffer. But once the turbos kick in, "it pulls like an 800ci big-block!"

The kit uses a pair of billet 67 turbos from Precision Turbo. These cram more air into the 4.3L V8's chambers, while the intake air temperature is lowered by UGR's water-to-air intercoolers and larger injectors. In fact, it has an upgraded fuel system and MoTeC 800 ECU to meter more fuel.

Tial wastegates and blow-off valves keep the pressures precise, and what doesn't flow into the chambers, flows out through 3.50-inch tubes and Burns mufflers. Peak boost on 93-octane is a "safe" 6 psi for 700 whp, or 900 whp on C16 race gas at 9 psi.

To sharpen the handling, the car was lowered on the stock coilovers and optimized through corner balancing.

In place of the stock wheels is a set of 20-inch HRE P47s, with Michelin Super Sport tires keeping it glued to terra firma. The axles and other driveline components were deemed sufficient and remain untouched.

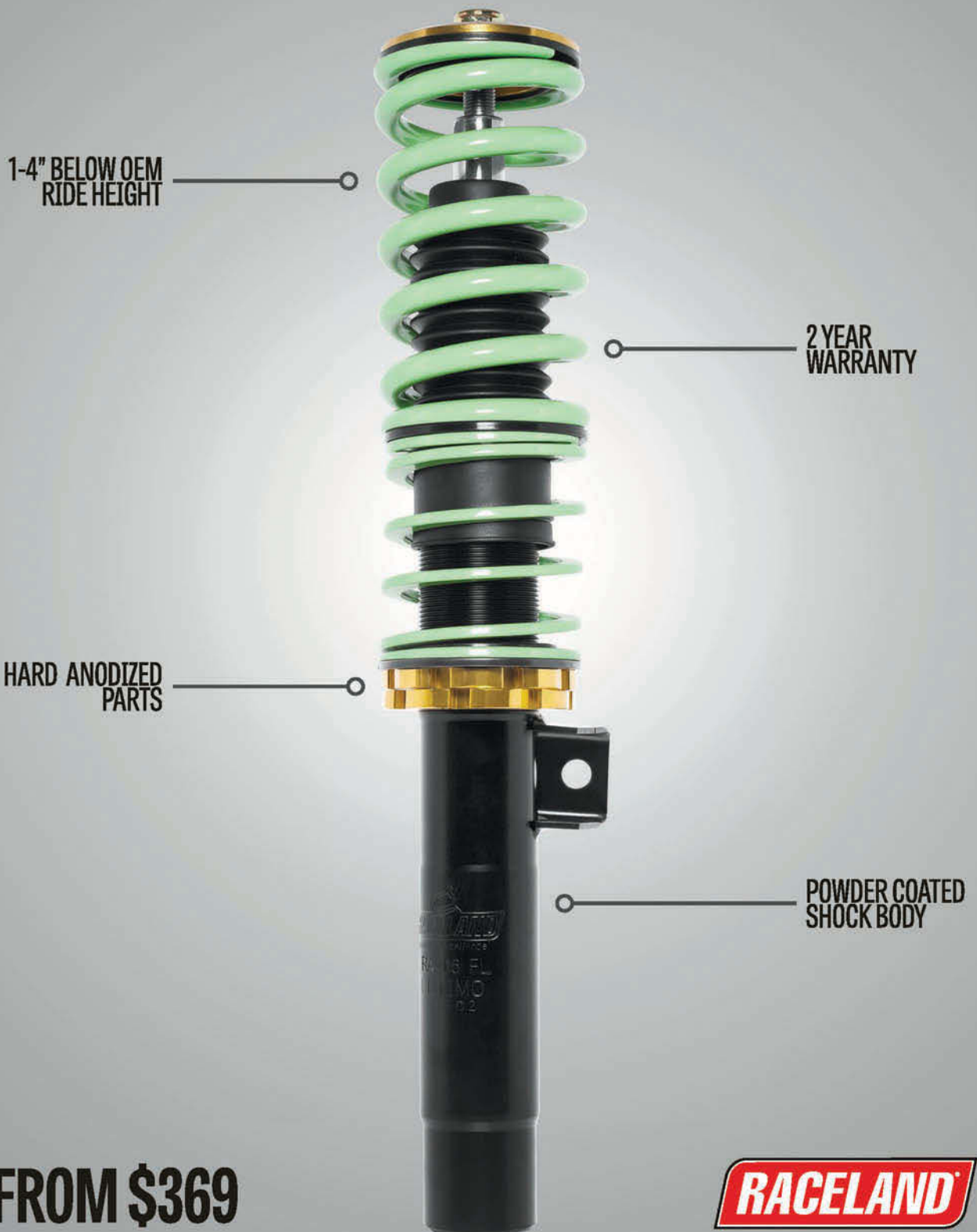
His car wears the license plate "TTSCUD," and if you were to see it take off under full throttle, you'd think it was powered by the same rocket engines in the Gulf War missiles of the same name. Those Scuds, however, were known for not going where they were aimed, something Weerasuria had a taste of when he put C16 in the tank. "I had race fuel in it once, but at 900 whp, it was just too much. It would spin the tires in Fourth and Fifth. It was crazy, but it was enormous fun!" 



Billet Precision turbo nestled under the intercooler.

Reservoir holds water for the air-to-water intercoolers.

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LAMBOCENTO

WHAT STARTED AS A 1971 FIAT 500 NOW HOUSES A 580HP LAMBORGHINI V12 AND ITS AWD SYSTEM

WORDS Ian Kuah, Thomas Geiger
PHOTOS Thomas Geiger

"IT'S IMPOSSIBLE!" argued father Gianfranco Dini and son Leonardo, but once again, Gianfranco wanted to show his over-enthusiastic offspring who possessed the mechanical know-how in the family.

The young Dini's mistake was to suggest to his father—a master mechanic and founder of the legendary Oemmedi Meccanica—that he should shoehorn a Porsche 911 flat-six motor into the rear of a 1970s Fiat 500. The challenge had been issued, and in true father/son rivalry, there was no backing down.

The exchange took place more than a decade ago, and the Porsche-engined Cinquecento has since been parked. Not because it didn't work, but because the old saying "Madness is hereditary; you get it from your children" runs particularly deep in this family.

You see, after building the Frankenstein Fiat/Porsche 500 and thus upholding his honor as a red-blooded Italian male, Signore Dini succumbed to a madness of his own making: he began work on a second car. This time, he eschewed the "foreign" motor for the flat-plane-crank V8 from a Ferrari 308, installed transversely in the 500's rear.

By the time we arrived at Oemmedi Meccanica's workshop on the outskirts of Tuscany, the Ferrari-engined Cinquecento had already been eclipsed by an even madder creation.



The 580hp 6.2L Lambo V12 can barely be seen behind the custom exhaust, rear subframe cradle, and suspension uprights.



We don't need to tell you it's loud in there!

As we walked the line in a corner of the workshop, it was apparent that while the gray, Porsche-engined machine didn't look too radical from the outside, the black, Ferrari-engined version definitely had the overtones of a pumped-up racer.

What we weren't prepared for was the car at the far end of the line. The sheer scale of the changes that this poor, unsuspecting 40-year-old Fiat 500 endured in the creation of Signore Dini's latest work left us speechless.

It was immediately obvious that the physical size of a 580hp Lamborghini Murciélago motor stuffed into the rear of the car had required a radical rethink of its structure and external appearance. This is, with no exaggeration, a *very* small car built around a *very* big engine.

"It was the result of a bet," Dini Senior confirmed. "Some smartass in Northern Italy, who knew about my two previous cars, suggested I put a 6.2L Lamborghini V12 into a Cinquecento. Ten years ago, I'd have laughed it off, but after my experience with the other two cars, it was a challenge I accepted with relish," he explained.

It wasn't easy, of course, but two years and 3,000 man-hours later, the Lambocento was rolled into the Italian sunshine.





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12-INTO-500

Since the Fiat 500 was inherently too short and narrow for the Lamborghini drivetrain, the specification called for both the wheelbase and track to be significantly extended. The result: a car nearly twice as wide as the original Fiat, with the hub centers of the huge Murciélago wheels now practically where the front and rear bumpers would sit on a stock 500.

A tailored space frame chassis was fabricated. It incorporated a subframe cradle to mount the engine and transmission. Significant torsional reinforcement came from the steel bulkheads front and rear, as well as a steel floorpan, whose box-section transmission tunnel acted as the car's backbone.

The relevant parts of the '71 Fiat 500 monocoque—in effect the side panels, roof, and its pillars—were welded to the new chassis and all the new body parts, including the huge wheel arches, were fabricated from steel.

As Gianfranco is allergic to plastic, the entire dashboard and center console were also fabricated from steel plate and covered in leather, further reinforcing the scuttle. Even the door mirrors are handmade from steel.

There was no way the car would be able to deploy 580 hp through its rear wheels alone, so Lamborghini's AWD transmission was adapted in its entirety, with a shortened propshaft and custom driveshafts.

The car has a flat bottom for aerodynamics, with cutouts to aid ventilation of the finned sump and gearbox, and an air diffuser at the rear under the stainless steel Lamborghini exhaust silencer.

The double wishbone suspension uses modified coilovers all round and an anti-roll bar at either end. The rear units are inclined 45 degrees and mounted to pickup points on the rear subframe, while the fronts are inclined at about 10 degrees and their top mounts are connected by a tubular steel strut brace.

The brakes are the Murciélago's 355mm rotors all around with four-piston calipers and even the working ABS system. There's also a giant Lamborghini master cylinder up front, taking up almost half the space in the tiny front compartment.

Details like the electrically opening engine cover and retractable rear spoiler add to the car's overall finesse, and you can't help but admire the attention to detail, even if some of it falls more on the practical side than the stylish.



The rev counter was carved into the steering wheel, but the 400-km/h speedo is center-mounted.

TECH SPEC 1971 FIAT 500

Gianfranco Dini
Acquapendente, Italy
owner, Oemmedi Meccanica

ENGINE

6192cc Lamborghini V12 DOHC 48v, custom exhaust and mounts

DRIVETRAIN

Lamborghini Murciélago six-speed manual transmission, AWD with central viscous coupling, shortened propshaft, and custom driveshafts

BRAKES

Lamborghini four-piston calipers, 355mm rotors f&r, ABS

SUSPENSION

Lamborghini double wishbones, electronically controlled dampers, antiroll bars

WHEELS & TIRES

18x8.5" f, 18x13" r Lamborghini wheels, 245/35 ZR18 f, 335/30 ZR18 r Pirelli P Zero tires

EXTERIOR

steel body panels around Fiat 500 monocoque, spaceframe chassis and rear subframe, steel floorpan and bulkheads, steel box-section transmission tunnel, retractable rear spoiler

INTERIOR

Sports seats, custom instruments, plexiglass engine cover

THANKS

Oemmedi Meccanica (www.oemmedi.it/en)



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With 600 hp/ton, even the Murcielago AWD system can't keep the four wheels under control



Installing the Ferrari V8 seems a relatively easy task compared to the V12...

DRIVING

Opening the door, you drop into the custom bucket seat and can immediately tell Gianfranco is a wheelman: Every instrument, including the frighteningly optimistic 250-mph speedometer, is located on the console, while the large, yellow rev counter is positioned in a hole carved into the MOMO steering wheel.

As with the Murciélago, the redline starts at 7,500 rpm, but with the Lambocento's power-to-weight ratio of around 600 hp/ton, you'd have to be extremely brave or stupid to wind out the motor in each of the six ratios.

A bog-stock Fiat 500 isn't a spacious car, and sitting in the tiny cabin with the Lamborghini V12 in a plexiglass case behind your head is like sharing the bomb bay of a B-17 with a full load of high-explosive bombs.

The sound of the engine is deafening yet spine-tingling at the same time. The din is tremendous but sends waves of delight passing through every cell in your body. The Lambocento melds

heaven and hell into an infernal machine.

Paddle shifters? That would be too easy. No, this is a driver's car, so you have a heavy clutch and a proper gearstick to row, the old-fashioned way, before you can scare yourself silly.

The massive wave of V12 torque throws the car down the road; you instinctively short-shift into Second, and then Third out of both fear and wisdom. Even at a mere 4,000 rpm, the car—which carries 1,544 pounds less dead weight than the Murciélago—gives the impression that its 335/30 ZR18 Pirelli tires are trying to either rotate on their wheels or melt the asphalt. This is stark-naked insanity in its finest form.

"The speed potential is there, but the problem is the driver not the car," Gianfranco shrugged. "It reaches 187 mph so easily, but I've never dared to open it up all the way!"

We burn rubber through the Oemmedi Meccanica compound, imagining what it would be like to drive the car at Imola or Mugello. On track, it would be open season

on Ferraris. You could probably pass them on opposite lock with all four tires smoking.

Unfortunately, our courage faltered between the workshop sheds, where the road surface is as crumbly as an old Parmigiano.

At sane speeds, we have the chance to see the reaction of other drivers to this mutant Bambino Mostro, as the locals have nicknamed it... At a stop sign, other cars come to a stop, their drivers staring in shock and awe. As we pull away, eyeballs follow, their brains still paralyzed. If Batman were Italian, this would be his daily driver.

Word of this car has spread beyond Tuscany. Since Gianfranco exhibited it at the '12 Bologna Auto Show, he's had plenty of good offers from Russia, China, Japan, America, and the Middle East. However, he's not sure he wants to be separated from the machine he built with blood, sweat, and tears. He considers the Bambino Mostro part of his family.

"A small production run of similar cars is a possibility," he told us. The years of developing the Frankenstein Fiats have resulted in a formula for creating miniature monsters. "We have a special double-frame platform that's stable enough to withstand insane power. It's also dimensionally flexible so we can fit any engine into the Cinquecento.

"Even a Bugatti Veyron W16?" we asked in parting. "As soon as somebody brings me one, I'll fit it!" he said with a laugh. We looked at him in surprise before Gianfranco uttered the immortal words, "You want to bet?" **EC**



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WORDS SHANE O'DONOGHUE PHOTOS MARIAN CHYTKA

THE FASTEST VERSION of the not-so-mini Mini Countryman is the John Cooper Works (JCW) version. John Cooper himself must have been spinning in his grave when he heard about that one: the first car bearing his name to have four-wheel drive.

Well, we're here to tell you about another version of the Countryman, and it, too, has all-wheel drive. And although you can't buy one from your local dealership, we suspect Mr. Cooper would approve. You're looking at the ALL4 Racing, an extreme race machine, purpose-built by X-raid in Trebur, Germany.

Admittedly, to call it a Countryman is stretching the point somewhat, as the only parts shared with the biggest Mini are the windscreen, lights, and door handles.

Instead, the race car chassis and steel rollcage are swathed in carbon-fiber bodywork that measures about 5 percent larger than the road car's. Don't think for a minute that it's a lightweight structure, though. In fact, it weighs a hefty 4,189 pounds.

When sizing up the ALL4 Racing, you begin to appreciate why it's so heavy. It towers over normal cars, thanks to huge ground clearance and comically big Michelin all-terrain tires. They

don't hide the special suspension; twin spring-damper units suspend each of the four wheels, bolted to chunky double wishbones at each corner. There's no adaptive trickery allowed, and that's probably not a bad thing in the name of reliability.

This very car won the 2014 Dakar rally—more than 5,500 grueling miles of competition through extreme terrain and high temperatures. It was, says driver Joan “Nani” Roma, faultless. That he, alongside co-driver Michel Périn, endured six-hour stints at the wheel in cabin temps up to 120 degrees F reveals just how mighty their achievement was.



#desertstorm FORGET WHAT YOU KNOW ABOUT THE MINI COUNTRYMAN:
WE TAKE THE WHEEL OF THE DAKAR-WINNING ALL4 RACING



It's a little cooler for our test in the middle of open desert not far from Dubai. It's above 100 degrees F, and it was only a matter of time before somebody asked if the racer had air conditioning. It doesn't, by the way, unless you count the roof-mounted airscoop that can be manually opened and closed from inside.

Nonetheless, there's too much to learn about the car to be worrying about comfort. I'm strapped into the Recaro seat by a six-point Sparco harness, and my co-driver shakes my hand before rattling through the controls.

I'll never complain again about a haphazard dashboard layout, because the Mini was plain bewildering. Very little is familiar.

I spot items such as the speed limiter control. It works much like a pit lane limiter and is used on the public road sections, where competitors must adhere to speed limits for safety. It's monitored in real time by the authorities via satellite tracking so you don't want to forget it.

There are controls for the lockable differentials and much more, including several display monitors, one of which wouldn't look out of place in an engine test cell. This has direct access to the bespoke ECU and allows the co-driver to monitor every aspect of the engine's health.

It will alert him if measurements go outside safe limits (temperatures and pressures mainly), allowing detailed analysis if needed, so he can talk to the team on the satellite phone to identify or rectify any issue. That's not allowed on the move, however, which is just as well, as we were about to discover...

The only controls that demanded my attention related to keeping the Mini going in approximately the right direction as fast as I could manage. I'm certainly not about to destroy the beast because this very car is due back in competitive action a few days after our run.

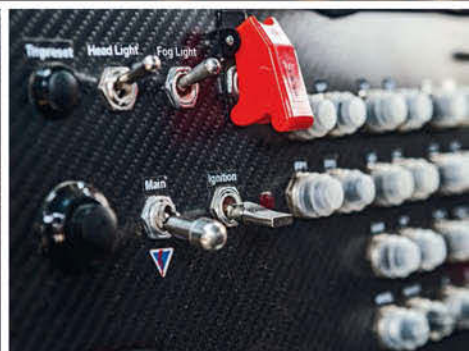
Despite its complexity and single-purposed construction, the driving controls are remarkably light and intuitive to use. That was created in a bid to reduce driver fatigue, no doubt. The steering wheel is normal, if detachable to ease entry, and there are three pedals in the footwell.

I'm told the clutch pedal is only needed to move away from a standstill, so that's one less thing to worry about. The Sadev sequential transmission is controlled by a substantial lever that sits next to the steering wheel—pull back to change up, push forward to go down. Easy. And it's light in operation.

I select First and feather the throttle. The revs flare. This doesn't sound like a typical turbodiesel engine... There's no need for revs to take off with so much torque on tap. This thing is designed to wade through mud and deep sand, or anything else that gets in its way, so the development engineers focused on torque rather than outright power.

At the heart of the engine, which is mounted deep in the chassis at the front, sat quite far back, is a straight-six BMW 3.0L turbodiesel. It uses twin sequential turbochargers, with the smaller turbo always spinning. That means there's no lag. A bypass valve is opened gradually to allow the exhaust gases to spin the larger turbo, helping it produce the 516 lb-ft of torque.

More impressively, perhaps, is that this happens at just 2,100 rpm, and it's plain weird to change up not long after that. The deep reserves of grunt at low revs make themselves known as we enter a 180-degree hairpin in soft, rutted sand. It feels like the car is going to bog down. My co-driver shakes his head and tells me to keep the gas pedal pinned. Sure enough, there's a gradual accumulation of boost and the car suddenly rises out of the ruts and





Our man Shane strapped in and about to terrify co-driver Michel Périn.

Dakar champion, Nani Roma, gave a master class in desert driving.



TECH SPEC 2014 MINI ALL4 RACING

X-raid TeamTrebur, Germany

ENGINE

2933cc straight-six diesel, aluminum head and block, twin-turbos

DRIVETRAIN

six-speed Sadev sequential transmission, AP Racing clutch

BRAKES

six-piston calipers, 320mm rotors with air and water-cooling f&r

WHEELS & TIRES

16x6.5" wheels, 245/80 R16 Michelin Latitude all-terrain tires f&r

EXTERIOR

double wishbone, coilover shock absorbers (two per wheel), adjustable roll valve and oil cooling system for the shock absorbers f&r

PERFORMANCE

MAX POWER

303 hp at 3,250 rpm

MAX TORQUE

516 lb-ft at 2,100 rpm

0-62 MPH

N/A

TOP SPEED

115 mph

WEIGHT

4,189 pounds

ECONOMY

3.9 mpg

MSRP

N/A



throws itself toward the nearest sand dune.

I sense my co-driver tense as he suggests slowing down for the jump rather late. We get some air, but my ego comes crashing down to earth with a bang as the car's weight conspires with gravity to bury us in the sand. It's no match for the Mini, though, and we emerge on the other side in a cloud of dust and a burst of revs.

If, like me, you expected this to be relatively comfortable, thanks to the soft sand, high-profile tires, and long-travel suspension, you'd be as surprised as I was to discover the ALL4 Racing has a hard, uncomfortable ride, jiggling its occupants on relatively smooth surfaces and pounding them mercilessly over rutted and broken terrain.

After 30 minutes at the wheel, I'm bruised but exhilarated.

After a breather and time to gather my thoughts, it's time to play the co-driver as Nani takes the wheel to show me what the Mini can really do. Within yards, it's clear I didn't scratch the surface of the racer's ability. Nani short-shifts through the gears until we're in Sixth and then seemingly doesn't let up until we approach the hairpins.

The stiff suspension suddenly makes sense as he commits 100 percent to corners, bumps, ruts, and jumps. It's not comfortable (in fact, it's violent), but it sure as hell is effective. Every time a wheel loses contact with the ground, it quickly returns to terra firma, allowing complete confidence in

where the car will be pointing afterward.

Nani hits the hairpins at much higher speeds, using the power and four-wheel drive.

Even in his hands, there are times I wonder if the racer is going to topple over, as it certainly pitches about when turned into a corner—it's a high vehicle. Yet Nani is in the zone and we're soon attacking a series of sand dunes at speed. Every landing is torture, but this is apparently normal for the car and driver, as neither seemed the least bit fazed at the end of the ordeal.

You might not be able to order a Mini ALL4 Racing from the factory, but if you have the cash, the X-raid team will gladly include you in their program. The drivers certainly deserve every cent they get. **C**



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DIAMOND IN THE ROUGH

WHEN THE NAYSAYERS SAID HE COULDN'T,
CHRIS CHEESEMAN PROVED HE COULD

WORDS: JUSTIN FIVELLA
PHOTOS: JOEL BOUCHER



THEY SAID IT COULDN'T BE DONE,

that it was impossible; thankfully, he didn't listen. You see, Chris Cheeseman, like many determined individuals before him, simply wouldn't take no for an answer.

"It had a colorful past, but was one of the nicest VWs I'd seen and was roughly 80 percent done; lots of untidy work needed to be re-done and the beautiful paint had too many blemishes to be considered a show car," Cheeseman explained. "But underneath the imperfection was a diamond in the rough," he said with a smile.

When he says the car had a colorful history, he wasn't kidding. The original owner decided to light a cigarette while fixing the fuel pump—seriously, you can't make this stuff up!

Luckily, he and the car weren't immediately annihilated; instead, the entire back end was a weenie roast. The subsequent damages were enough that Mr. Marlboro decided to part with his charred Forest Green '90 Corrado G60, rather than kick the ol' habit.

Like many VW groups, cars tend to make their rounds among a small circle of friends. "My good friend Brian Glogowski bought it, as well as an Aviator Gray Audi TT donor car. Originally, he was going to swap the motor, but when he saw the two cars next to one another, he realized an Aviator Grey Corrado was essential," Cheeseman said.

Glogowski had the car painted, the engine bay shaved, and the 225hp AMU 1.8T swapped into place. But like many ambitious projects,

he lost momentum midstream and eventually sold it to another member in the local VW scene. This marked the third owner in the local community. Denver Webb fixed some loose ends and got it running well enough for short drives, but the bad luck was never far behind.

"On the first drive with the new motor and fresh paint, it got a door ding," Cheeseman said. "On the second drive, an axle came loose and broke the transmission. On the third, the rear bumper fell off in traffic, and the last straw was another fire—except this time, it was the heater core that went up in flames."

While the fire claimed the life of an ultra-rare non-A/C heater core and other underdash parts, it didn't toast the car as badly as the first fire.

Fire has a knack of weeding out all but the most dedicated owners, and this one prompted Webb to sell it to another local, but not before he took a Sawzall to the heater core to remove the epicenter of the fire.

The new buyer happened to be the owner of the shop where Cheeseman works. After months of relentless badgering, he would buy the Corrado from his boss, fix it, show it, and then sell it back to his boss. Confusing? You bet, but such is the life of a modified VW.

So how did Cheeseman take a battered would-be show car and coax it into fruition?



Simple: He's a diehard VW guy with plenty of experience and patience, a virtue that's essential when modifying classic VWs. "I've owned a lot of VWs, both water- and air-cooled. My first car was a Beetle, and every car after that was a Mk2," he explained.

He also told us that while he's always owned fast VWs, (his daily driver is his 15th Mk2 VR6-swap—a 400-whp Jetta VR6T, no less!), none of them had been particularly clean, so owning a Corrado of this caliber was both an exercise in pride and patience. "It takes a lot of work and dedication to own a car like this Corrado," he explained. "You have to spend days keeping everything clean, polishing the wheels, and tons of time making it look nice since it sticks out like a sore thumb when it's anything less than perfect."

Speaking of less than perfect, when Cheeseman bought the Corrado, it was far from complete. "I had every panel except for the hood resprayed, and I even had more of the engine bay shaved because blemishes that go unnoticed on a daily driver draw massive attention on a car this clean," he said.

But Cheeseman's revival was far more than paying somebody for a respray. He spent hours under the dash, tidying the wiring and repairing fire damage. He also resolved other problems like a broken turbo and reworked the cooling system to address overheating issues.



The 1.8T dropped in a shaved bay is a thing of beauty that provides sufficient power to keep the driver entertained.



There's a purity to a classic VW in Aviator Grey with pulled fenders over color-matched BBS wheels.

ADVANTI



[BO] BELLO - 3-SERIES



[HY] HYBRIS *Flow Formed*

Silver w/ Machined Face
OR Gloss Black

17", 18", 19", 20"

[BO] BELLO

Matte Black w/
Undercut

18", 19", 20"

[FS] FASTOSO

Silver w/ Machined Undercut
OR Matte Black w/ Undercut

18", 19", 20"

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“The AMU 1.8T motor had 034 software, Kinetic intercooler, Techtonics 2.50-inch exhaust, custom downpipe, and turbo piping,” Chris continued. “When housed in a lightweight Corrado chassis, it makes for a surprisingly quick car, but considering how nice it looked, the Rota wheels that came on it just didn’t fit the bill.”

So he spun down the Patec Holeshot coilovers until the genuine BBS RM rims were tucked. The fronts measure 15x8 inches while the rears check in at 15x8.5 inches. The centers were color-matched, while the lips were polished and fortified with BFI gold bolts. The ensemble was then wrapped in Toyo rubber and fitted over Audi 90 two-piston front calipers and StopTech rotors, while the rear uses Mk4 calipers and StopTech rotors.

Once the build was complete, Cheeseman wasted little time reaping the rewards, hitting the best 2013 East Coast shows like Dubs on Defrost, Dustoff, SoWo, Waterfest, and H2O. He drove the once-cursed Corrado thousands of miles without trouble and proved to himself, and the naysayers, that sometimes classic VWs just need a little TLC from the hands of an appreciative enthusiast.

“I’m glad I was able to fix the remaining problems and get it running,” he said. “It was nice to finish a project that many of my friends had started. I was merely the last piece of the puzzle.”

Cheeseman is happy to report the car belongs to his boss and that he gets to admire it every day at work. As for keeping it show-car clean, well, he doesn’t miss that part at all! 



TECH SPEC

'90 VOLKSWAGEN CORRADO

Chris Cheeseman

Burlington, VT

VW/Audi tech

ENGINE

1.8L AMU four-cylinder 20v turbo with 034 Stage 1C software, custom 3-inch downpipe, and turbo piping; Techtonics 2.5-inch exhaust with Borla muffler and solid front mount; TDI rear mounts; Kinetic intercooler

TRANSMISSION

Stock 225hp Audi TT six-speed manual

BRAKES

Audi 90 two-piston calipers, StopTech drilled and slotted rotors f, Mk4 calipers r, Goodridge stainless lines

SUSPENSION

Patec Holeshot coilovers, TT rearward front control-arm bushings

WHEELS & TIRES

15x8-inch f, 15x8.5-inch r BBS RM wheels, 195/45 R15 Toyo Proxes T1-R tires

EXTERIOR

shaved front bumper and engine bay, 90mm front lip, rolled fenders, Euro headlights, painted Audi TT Aviator Grey

INTERIOR

Canadian Recaro seats and door panels, Euro seatbelt conversion and underdash trays (kneebar delete), MOMO steering wheel, custom aluminum three-gauge dash panel with oil pressure, oil temp, and boost gauges

AUDIO/VISUAL

Kenwood Excelon CD head unit and component speakers

THANKS

Jodi Doyle, Brian Glogowski, Jason Russell, Nate Crete and Nate's Automotive, Denver Webb



Recaro interior is from a Canadian car and includes the seats and door cards.



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MERCEDES S-CLASS W221 PD BLACK EDITION V2
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MERCEDES CLS W219 PD600
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PACIFIC GERMAN EXTRACTS EXTRA JUICE
FROM ITS SAMOA ORANGE R8 V8

WORDS ALEX BERNSTEIN PHOTOS ADRIAN JON





IT TAKES A certain kind of person to purchase a brand-new Audi R8 and start tearing into it a week after purchase. Shawn Setterstrom, the owner of Pacific German in Lake Forest, California, is exactly that person, finding himself slightly underwhelmed by his four-ringed beauty.

For the last 14 years, Shawn has established Pacific German as one of Southern California's premier VW/Audi tuners. In fact, it's one of only 16 independent repair facilities authorized to use the most up-to-date factory scan tools and software, verified by VW and Audi of America.

So it'll come as no surprise to learn that Shawn has owned a plethora of German projects, his latest being the 2014 R8 you see here: "I found it for sale on a Sunday and bought it on the spot," Shawn recalled. "The only reason I opted for the V8 was the color..."

Samoa Orange Metallic is extremely rare for the R8, and if you wanted to order it, there would be a six-month wait, but Shawn isn't the patient type. So Pacific German found itself with an orange R8 V8 with a rare six-speed manual transmission. "To be honest, I was a little disappointed by the car. The handling was better than most, but I felt my previous RS5 had a little more punch and midrange power," Shawn said.

So one week after rolling off the dealer's lot, the supercar was under the knife at VF Engineering to give it some boost pressure with its VF-550 supercharger kit.

Since his R8 was a new 2014 model, VF had to program the ECU from scratch, meaning countless hours of dyno- and road-testing. Finally, it was back in Shawn's possession, and he was literally blown away. "I'm extremely happy with the power now; it's more than I

expected and definitely faster than the V10!" he said with a smile.

Rather than take his word for it, we jumped behind the wheel and can attest to the suggested 550 hp the 4.2L V8 is now producing. There's torque everywhere, and the motor seemed wide awake.

Shawn wasn't the only one underwhelmed by the stock R8 V8. While it's an undeniably fantastic motor, we didn't think the V8 was able to match the appearance or handling balance the exotic R8 offers. But with the Eaton TVS1900 Roots-type supercharger developing 7.5-psi boost pressure, the car now feels as ferocious as it looks. Oh, and it sounds heavenly, too. Revving past 8,000 rpm and bouncing off the limiter is an intoxicating act.

It wasn't all plain sailing, however. Nik Saran from VF Engineering asserted, "One of the





aspects of creating the supercharger systems is to seamlessly integrate the kit into the car, and for the driver to drive as if it was a normal car, but not necessarily experience any quirks or driveability issues," we did notice a problem with the \$21,000 kit.

The joy of owning a manual car is being in control. This involves rev-matched downshifts, throttle blips, or simply being able to rev the engine at a stoplight. However, we noticed that the R8 had a tendency to hiccup and stumble during initial throttle input. This was apparent whenever you were pulling away, and, especially on downshifts where we had to press the accelerator pedal until the motor decided to respond. This made downshifts clumsy because of the unpredictable engine speed it would muster.

Granted, it's something that hasn't bothered Shawn excessively, and VF could probably





correct it with more dyno time, but the poor throttle response didn't suit the character of the otherwise stellar R8.

Without this issue, or perhaps once it's been corrected, we'd rate the VF-550 kit very highly. But for now, we'll have to reserve judgment.

If the Audi R8 V8 was offered this way in standard form, with a boosted V8 or naturally aspirated V10 to choose from, we'd be hard pressed to make a final decision. After all, the latter offers considerable savings. An R8 V8 paired with the excellent S Tronic dual-clutch transmission starts at around \$124,000, for example, while adding two extra cylinders for the V10 model makes the starting price \$160,300. So the V8 saves you \$36,300, and VF's supercharger kit is \$21,000. That leaves you enough leeway to fit some new wheels, suspension upgrades, and maybe bigger brakes, and still pay less than the V10 price while owning a car that practically matches its performance.

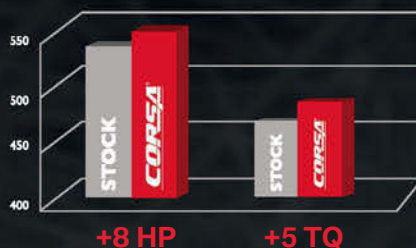


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TECH SPEC 2014 AUDI R8 V8

Shawn Setterstrom
Pacific German
Lake Forest, CA

ENGINE

4.2-liter V8 32v with VF Engineering VF-550 supercharger kit

DRIVETRAIN

stock six-speed manual transmission, quattro AWD system

BRAKES

EBC Yellow Stuff pads, Stasis stainless steel lines

SUSPENSION

H&R Sport springs, Stasis rear sway bar

WHEELS & TIRES

20x9" f, 20x12" r Klassen M51R forged wheels, 245/30 ZR20 f, 325/25 ZR20 r Michelin Pilot Super Sport tires

EXTERIOR

stock, Samoa Orange Metallic paint

INTERIOR

stock

CONTACT

pacificgerman.com



In Shawn's case, he opted to stiffen the rear-end with a Stasis sway bar, helping to cure the quattro's notorious understeer. H&R Sport springs were also installed, stiffening the ride, along with 20-inch Klassen wheels to fill the fenders.

To ensure it could stop promptly, Shawn also installed EBC Yellow Stuff pads and Stasis lines, although he plans to upgrade to Audi's carbon-ceramic brakes in the future. "I'd like to fit a rollcage as well," he laughed. "I don't baby the car. I track it, driving it as it was meant to be driven!"

It's always refreshing to find an enthusiast who isn't afraid to spend money on a car and use it as intended. And despite the obvious benefits of a manual V8, Shawn has an itch for a 10-cylinder and the lightning-quick shifts of the S Tronic transmission. "I was actually building an R8 V10 online before you walked in!" he admitted. "Our R8 is listed on AutoTrader right now, so if the right buyer comes along, we'll be looking for a new project car..." And if this one is anything to go by, the R8 V10 should be worth a return visit. 🚗



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FAMILY MATTERS

WARREN GOODMAN'S BAGGED AUDI Q5

WORDS MIKE MESZAROS PHOTOS JASON MANCHESTER

WARREN GOODMAN IS A FAMILY

MAN. As a husband and father, it's his job to make sure the household remains happy. When shopping for a vehicle with Mrs. Goodman, they decided the Audi Q5 would suit their needs. But after a few months on family duty, the vehicle was deemed too small and its future was in question. But being a car enthusiast, Warren's gears started turning and an idea for a fun family vehicle was born. Selling his 2014 Audi S4, Warren took over the little SUV and this interesting project began.

To kick-start the build, Warren turned to his second family—Canadian VW/Audi specialists RPI Equipped. They took the Q5 into the workshop, and it was soon hoisted onto a lift and disassembled. Warren wanted to bag the SUV but still wanted to use it for activities such as mountain biking. So in order to retain the factory suspension options, an AccuAir B8 Sport kit was purchased and installed. This kept the factory dampers, allowing the driver to retain the Audi Drive Select modes, while giving Warren the ability to adopt an aggressive stance and tuck the wheels when needed.

The next step was to transform the appearance of the family truck with a 10-piece Caractere widebody kit. It included four fender flares to give the vehicle some much-needed aggression, as well as a front spoiler, hatch spoiler, and a rear hatch blend. The latter eliminates the step between the tailgate and rear bumper, giving the tail a smoother appearance.

Initially, the Q5 also wore a set of 21x9.5-inch Caractere CW1 wheels with Dunlop Sport Maxx tires. More recently, however, Warren decided to change things up with a set of 22x10.5-inch Rotiform LHR wheels. Finished in black and with deep lips, they lend the Q5 a more intimidating stance on the road. They are fitted with Nitto NT420S tires in a generous 265/35 R22 size.

Since the VW/Audi scene loves its roof racks, and the Goodmans were looking forward to family road trips, Warren decided a Thule Atlantis roof box was the perfect storage solution—as well as an interesting style addition. And after color-matching the box to the Audi's paint, it was installed on the roof for all to see.

The extra luggage space up top compensated for the reduced trunk space once the AccuAir air tank was installed behind the rear seats. It's neatly mounted above ground, while the air suspension's twin compressor and management system are mounted in the spare wheelwell. The cover for these was coated in Dynamat to reduce the sound from the compressors when they're filling the air tank.

Since the Q5 would be putting some miles under its belt, and modifications are limited for the 2.0L TDI motor, it has remained unmolested for now. But they didn't resist the opportunity to add some interior sparkle with Audi's carbon-fiber dash trim. The team also equipped the car with a start/stop button and pedal set from the sporty Audi SQ5.







TECH SPEC 2014 AUDI Q5 TDI S-LINE

Warren Goodman
Vancouver, BC
RPI Equipped

ENGINE
stock 2.0L four-cylinder TDI diesel

TRANSMISSION
eight-speed automatic

BRAKES
stock

SUSPENSION
AccuAir B8 Sport kit using Audi electronic dampers, e-Level management system, trunk-mounted air tank, twin compressors under trunk floor

WHEELS & TIRES
22x10.5" Rotiform LHR wheels, 265/35 R22 Nitto NT420S tires

EXTERIOR
Carattere widebody kit with fender flares, front spoiler, hatch spoiler, hatch blend, color-matched Thule Atlantis roof box

INTERIOR
OEM Audi carbon-fiber dash trim, SQ5 start/stop button and pedal set, AccuAir e-Level touchpad remote control

CONTACT
RPI Equipped
rpiequipped.com

The only other interior addition was the AccuAir e-Level touchpad that is mounted on the center console, within easy reach of the driver. With this remote control, Warren can raise or lower the ride height according to the conditions or to clear any obstacles.

We have to concede that Warren has created a highly individual interpretation of the family SUV, one that still retains a great deal of practicality, while adding a dash of style and performance. It certainly makes you realize there are plenty of fun alternatives to the family minivan! **BC**



Mercedes CLS550 // BD-6



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BD-2

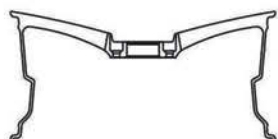


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BD-1



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HOPING TO CHALLENGE WHAT IT MEANS TO BE "MADE IN CHINA"

WORDS & PHOTOS SAM DU





FROM CLOTHES, ELECTRONICS, AND CAR PARTS TO WHATEVER ELSE YOU CAN THINK OF, it's common knowledge

that China is responsible for manufacturing most of the goods we use every day. And for decades, many of our preconceived ideas about the quality of “Made in China” have been negative—cheap, disposable, and fake are common views. This was especially true with car parts, but the reality has started to change in recent years, especially with companies like A Spec, which we visited earlier this year.

A Spec isn't a complete stranger to the automotive aftermarket community. It was founded in '02, and every enthusiast who ever modified a Japanese import knew the name. It was a leading distributor for premier Japanese car parts for many years. But there came a time when owner Lawrence Yip decided to roll the dice and pursue his long-term vision for the company. Instead of being known strictly as an importer and parts dealer, he decided to move to China and make his mark building high-quality exhausts and complete packages. When most people heard this, they thought he was crazy, but Lawrence proved us wrong as soon as we arrived in China for the first time.

We were there to experience A Spec's latest products but had no idea what to expect from our visit to the country more than 1.3 billion people call home.



On our first day, we soon realized major cities like Shanghai, Beijing, and Guangzhou are a hotbed for growth and technology. One of the biggest surprises was the roads. China has exceeded the miles of paved roadways of the U.S. This was to support the amount of car ownership—cars are everywhere, and it's not only Chinese domestic models or Japanese imports. European cars are becoming more popular for the more affluent owner. In fact, Lawrence told us it's as expensive to buy a Honda Accord as a BMW. With this in mind, it was an easy decision for him to shift the company's focus from Japanese to European imports. People wanted the status, comfort, and quality of a European car, and they wanted quality aftermarket products to match, which is where A Spec comes into play.

With 90 percent of Chinese not owning a garage, there aren't many guys attempting DIY work or even shops to get work done. They also don't go all out with the upgrades, preferring simple, functional, high-quality bolt-on parts.

This approach can be expensive when importing parts from Japan, USA, or Europe, so A Spec started by offering high-quality exhausts. We were fortunate to get a tour of the factory and were baffled by how many quality checks are made and how little was outsourced.

A Spec's bread and butter is the IDEAS exhaust (Intelligent Dynamic Exhaust Acoustic System). Seeing and hearing them firsthand, they appear to rival some of the top exhausts on the market, but the IDEAS system goes further by using a valve system in conjunction with an exhaust pressure sensor to give drivers the ability to have either a quiet or aggressive exhaust sound. It's selected with a touch of a button and is even customizable via a module that can be set to three different modes, including sport—which opens the flap at full throttle when it senses the exhaust pressure is high, yet keeps it closed at cruising speeds. Very advanced stuff!

But what we're most excited about was the introduction of A Spec's Lamborghini and



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Porsche conversions. Designed for the Gallardo LP560, the package was dubbed PPL600 for “Performance Project Lamborghini 600”—the number representing its horsepower.

The Gallardo was lowered, fitted with 20-inch three-piece forged A Spec wheels, the interior was upholstered in alcantara, and the car was fitted with the company’s IDEAS exhaust. More importantly, the exterior was fitted with its new 27-piece aero body kit made from carbon fiber (A Spec will also offer the entire kit in carbon Kevlar).

The design updates the Lamborghini with elements reminiscent of the Aventador, Huracan, and Sesto Elemento. The front end, for example, is a trendsetter with a menacing bumper and vented hood. Even the emblem



was moved from its original location on the hood to the bumper—a nice touch.

The side skirts feature wide air vents with carbon sills. You’ll notice large air outlets on the kit—all are functional. The rear follows suit with an aggressive diffuser, while the centerpiece takes cues from the Sesto Elemento and Veneno, with its triangular openings. Finally, the rear wing gives the Lambo a new personality, yet the centersection retains the factory adjustability.

The second car introduced in China was the A Spec Type-991 Porsche 911 Carrera S, nicknamed PPP430. It’s an older A Spec project car that already sported the company’s wheels, brakes, and exhaust. But now it’s been outfitted with an A Spec carbon/Kevlar body kit. Overall, it’s tamer than the Lamborghini and only includes a front lip, side skirts, rear diffuser, and decklid. Yet each piece, while simple, transforms the 991 into a more striking

road car. And with this example, A Spec opted to leave elements of the Kevlar weave visible for extra impact.

Both cars are just the beginning for A Spec. The Gallardo and 991 add to a solid foundation of cars, which also include the BMW 3 Series (featured in *EC* 5/14) and Audi A4/S4.

Lawrence’s goal is to continue expanding the exhaust line that is proving popular in Asia, but also offer more turnkey modified cars for the growing European aftermarket community in China.

After seeing its facility, project cars, and attention to detail, the company seems to be changing the game in China, and we’re happy to announce U.S. customers can also take advantage of many of these new performance products. 

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OVER LUNCH at a recent Buttonwillow test day, K-Pax Racing's president, Peter Nielsen, mentioned his delight at embarrassing Porsches with his track-tuned 2006 Volvo S60-R. Although fitted with a bigger turbo, Haldex software and a long list of enhancements, the car now sits idle as Nielsen tends to more pressing matters. Yet the essence of his S60-R—a good platform tweaked to overachieve—lives on in new performance packages for the current S60 T6 R-Design.

Nielsen confirmed he gets odd looks from people when he tells them he works at a Volvo race team. The manufacturer's reputation for safety is deeply ingrained, and not everybody is able to accept that even safe cars can keep up with the best of them. Those are the people who didn't see the T5-R wagon on two wheels in a BTCC race, or Volvo's ad campaign touting the S60's naughty behavior with e-brake turns and a soundtrack of squealing tires...

TUNING PAX

K-PAX RACING PRESENTS ITS GT6 PACKAGE FOR THE VOLVO S60

WORDS & PHOTOS PETER WU



Judged solely on its specification, the S60 can compete with anything in its class. Both the five- and six-cylinder turbo engines are as powerful and responsive as the competition, and the chassis is more agile than its predecessor. Add grip-enhancing AWD and you can see the potential is there.

So, what keeps the sportiest S60s from being mentioned in the same sentence as the Germans? The team at K-Pax Performance (the aftermarket division of K-Pax Racing) think they know, and its GT6 tuning package for the S60 T6 R-Design is their response to the problem. Nearly two years in development, and in the prototype stage when we drove their S60 T6, the full package should be finalized by the time you read this magazine.

The components include a set of lowered coil springs, a rear sway bar, 19x8.5-inch BBS wheels painted in anthracite and wrapped in 245/35 R19 Pirelli P Zero tires, plus a high-flow

exhaust system. The production models will get an anthracite grille and mirror caps plus K-Pax emblems inside and out. Optional extras will consist of a carbon-fiber rear spoiler, carbon interior pieces, and a Brembo four-piston big-brake package.

Owners of the five-cylinder T5 models will be pleased to hear K-Pax will also have a GT5 package especially for them. Customers can choose from either the "Touring" or "Track" suspension package, with the latter featuring firmer springs that are 0.5 inch lower than the Touring, which itself sits 1 inch lower than stock. Nielsen recommended the Touring springs for cars that are driven on a daily basis, especially where roads aren't particularly smooth... so approximately 90 percent of the country! The company won't be offering an ECU upgrade because the factory-approved Polestar software is more than good enough. In fact, the prototype GT6 we drove had the

Polestar tune, bumping power to the same level as the R-Design's 325 hp.

When you combine it with the K-Pax free-flow exhaust, you should get 340 hp and 370 lb-ft of torque, compared to the R-Design's 354 lb-ft. All the K-Pax performance parts will be sold exclusively through Volvo dealers who are authorized K-Pax Performance distributors. While parts can be bought independently, they must be installed by the dealer to maintain the tuner's dealer-matching five-year/50,000-mile warranty. The price of the GT6 Package is \$6,995 plus fitting. K-Pax worked closely with the key component suppliers that make the team's S60 race cars so successful. For example, the BBS wheels may look like standard 19-inch CK wheels, but were made especially for K-Pax, as were the Pirelli tires, Brembo big-brake kit, Borla exhaust, and Eibach springs. Put them together and you could apparently shave 8 seconds off your lap time!





TECH SPEC

2013 VOLVO S60 – K-PAX GT6

K-Pax Performance
Bay Area, CA

ENGINE

3.0L six-cylinder turbo with Polestar software, K-Pax/Borla exhaust

DRIVETRAIN

stock six-speed automatic transmission, AWD

BRAKES

Brembo four-piston calipers, 14.4-inch two-piece rotors f

SUSPENSION

K-Pax progressive springs, rear sway bar

WHEELS & TIRES

19x8.5-inch BBS CK wheels, 245/35 R19 Pirelli P Zero tires

EXTERIOR

anthracite grille and mirror caps, K-Pax emblems to come

INTERIOR

K-Pax emblems

CONTACT

kpaxperformance.com



TRACK TEST

Unfortunately, we weren't able to play with the K-Pax Racing S60 touring car they were shaking down at the track, so before we took the prototype GT6 on the circuit, we ran a few laps in a stock 2013 Volvo S60 R-Design to see how the factory's best would compare. While not exactly an apples-to-apples comparison, the differences were noticeable.

The S60 R-Design has the aforementioned 325 hp, with its power application impressive and the six-speed auto swapped gears crisply. It was easy to get up to speed, but the car would

understeer as it approached the limits, as you'd expect. Once past the limit, you had to wait for the tires to recover before getting back on the gas. After five laps, the R-Design's brakes started to fade, so we headed for the pitlane.

Getting up to speed in the GT6 was just as easy, with plenty of power throughout the rev range. Although it boasted 15 hp more than the R-Design, it had to spin larger 19-inch wheels, so performance was a wash between the two, with both cars hitting 60 mph in the low-5-second range.



This prototype had optional Brembo big-brakes. Production versions will get an anthracite grille and mirrors.



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We had a stock S60 R-Design for comparison. Both cars performed well, but the GT6 had several advantages, particularly the chassis.



Like the R-Design, the GT6 would understeer on Buttonwillow's fast sweepers, but the 245-section Pirellis gave up later than the R-Design's 235-section Continentals. Once past their limit, they were more progressive, requiring a quick lift off the throttle to get them back online and biting again. The way these cars recovered past the limit was one of the biggest differences between the two.

The GT6 felt more willing to rotate the rear end through the turns, and Nielsen credited that to the rear sway bar. The springs were progressive instead of the R-Design's linear rates, so they were more compliant for the first half of the compression stroke, stiffening under heavy loads. K-Pax was able to make its springs work with the electronic dampers for more controlled body motion under hard driving and also a smoother ride at normal road speeds.

Coming into the hairpin, the improvement from the GT6's Brembos was obvious. They didn't fade after five laps, with the pedal remaining consistently firm and easy to modulate. The shorter braking distance, the extra grip, and stable handling are where the GT6 shaved 8 seconds from the stock S60 T6 lap time.

K-Pax Performance got into the business of performance tuning while developing the K-Pax Racing Volvo C30 race car. Many of the parts they sourced from other companies either broke or failed to deliver. So they decided to build many parts themselves or work with suppliers to get them right. And now customers who buy a package like the GT6 know the parts have been continually tested on racetracks and fine-tuned by drivers and engineers with the same telemetry data used to set up their race cars.

You can feel the racing heritage in the GT6. It's a solid, sorted sleeper that's easy to drive quickly and definitely worthy of mention in the same sentence as the German competition. **EC**

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MFEST 8 LAS VEGAS

WE ATTEND THE ANNUAL BMW M OWNER'S SHOW AND TRACK DAY TO DISCOVER A CADILLAC INVASION

WORDS & PHOTOS PETER WU

WITH SPRING COMES THE NEW CAR SHOW SEASON and, if you're a blue-'n'-white propellerhead, it means MFest and Bimmerfest are on your calendar.

The annual MFest weekend gathering unites the faithful for drag racing, a track day, and car show. And once the sun goes down, participants can indulge in some Vegas nightlife.

The unique mix of cars and clubs almost didn't reach fruition this year. MFest founder, Chris Naguit, divulged that as a result of scheduling conflicts—and the resources required to create MFest Philippines about one month earlier—MFest 8 wasn't officially announced until six weeks before the show. Naguit apologized to this year's Vegas crowd and gave special thanks to Cadillac, the title sponsor, as well as Center BMW and Lexus—two other major sponsors that accommodated his schedule to make the event a reality.

We know what you're thinking: Why would Cadillac and Lexus sponsor an event for cars from Munich? It's the automotive equivalent of photobombing a family portrait. But you have to admire their balls, and as John Kraemer from Cadillac told the crowd, their involvement in MFest is about reaching enthusiasts, regardless of brand loyalties.

As a result, a number of stock Cadillac



Slek's impressive carbon-bodied Z4M won Best in Show. It was powered by a VF supercharger and rolling on RSV Forged wheels with Nitto tires, and they weren't afraid to run it on the track.



CTS-V cars took to the track. Cadillac also brought Johnny O'Connell's Pirelli World Challenge CTS-V R, which went on to lap the Las Vegas Speedway road course in record time. One of their Cadillac Challenge cars also clocked the fastest time in the Tuner Shootout. To top a fruitful weekend, Cadillac finished it off by winning trophies for Best Domestic car and Best Vendor, so the company clearly made an impression.

Naguit talked to us about the participation of Cadillac and Lexus: "They [Cadillac, Center BMW and Lexus] believe in us and the direction we're going, which is Pure Motorsport. Pure Lifestyle. Pure MFest."

With its new sponsors, the 2014 MFest was open to all enthusiasts, rather than being limited to BMW M owners, as in previous

years. Naguit encouraged enthusiasts to not view the festivities as solely a BMW M event. "That stigma is what we want to break," Naguit said. "Some members and fans have either changed cars or added another car to their lineup. We can't tell them not to come because they don't drive BMWs. I think that's very unfair and not what MFest was built on. We welcome everyone."

The only flaw we can see with this statement is that MFest originally wouldn't permit anything but M cars, which might explain the confusion among participants, but times change and everything moves on...

So in true MFest fashion, the event continues to evolve. Yet Naguit was adamant about maintaining the essence of MFest. "It's all about the people and the camaraderie

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Zima Motorsports drove from Chicago, and its cars spent most of their time on the road course and dragstrip.



Enemy in the ranks—as a 2014 MFest sponsor, Cadillac came out in force to win hearts and minds, setting a new lap record with Johnny O'Connell at the wheel of the CTS-V R Pirelli World Challenge racer.



Although formerly a BMW event, MFest is now open to all enthusiasts, no matter the marque. Here we see a supercharged C63 AM6 take on a Vette.



It might be an LF-A, but it still seems odd to see a Lexus at MFest.



This '02 deservedly won Best Classic in the car show.



Sitting on airbags and fenders stuffed with HRE wheels, this E28 was motivated by a twin-turbo Supra engine and was also part of the Eurosquad Las Vegas posse.



MFest founder, Chris Naguit, introducing John Kraemer from Cadillac.



This E92 M3 caught everybody's attention and was part of the Eurosquad Las Vegas club, which took the Best Team trophy.



Jowe Lee's M6, tuned by 1550 Racing, ran an 11.89-second quarter-mile.



This E92 M3 in rare Santorini Blue was decked out with Mode Carbon aero parts and had an ESS supercharger. The running gear included StopTech brakes, KW coilover, Apex wheels, and Toyo R888s.

and having a good time," he reminded us.

While this year's event saw fewer vendors, the lineup of show cars (600, according to Naguit) stretched as far as previous events. And as always, visitors came from as far away as the U.K., Dubai, Saudi Arabia, China, Korea, and the Philippines, as well as stateside attendees from the East Coast and Midwest.

As an indication of its influence on the Las Vegas BMW scene, Eurosquad Las Vegas presented an impressive line of cars, earning it the Best Team trophy.

Unfortunately, we struggled to find anything of note at the show, aside from a dazzling selection of wheels finished in bold or unusual colors. There was a lot of carbon, as usual, and plenty of custom bodywork.

The star of the show, according to both the show judges and many attendees, was Sleek Designs' carbon-bodied BMW Z4M with VF supercharger.

The future for MFest looks busy. Naguit explained in his welcome speech how he plans to expand the MFest brand on a national and global scale, with the aforementioned MFest Philippines joined by MFest U.K., Italy, China, and Korea. At this rate, we might have to make monthly reports! ☒

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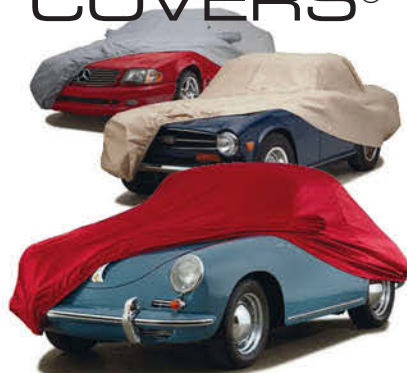
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WORDS & PHOTOS PETER WU

EVEN IF YOU KNOW WHAT TO EXPECT FROM BIMMERFEST,

you still can't help but be overwhelmed by the sheer scale of the event, variety of cars, and diversity of the performance gear that converges on the Rose Bowl's outer lawn every spring in Pasadena, California.

This year's Bimmerfest West was attended by more than 6,000 people, packing the parking areas with 2,400 BMWs and more than 80 vendors, delivering sensory overload that Bimmerphiles crave.

Attendees came from as far away as Japan, and another made the drive from Rhode Island. For those who couldn't make the trip, Bimmerfest's organizers encouraged everybody to share the experience via social media. Throughout the day, the show trended across the globe, from Europe to South America.

ESS Tuning was this year's headline sponsor, and they previewed a nearly finished project we can't wait to see: an E92 M3 with Liberty Walk widebody and fully built V8 fitted with the new ESS/Vortech supercharger. According to the company, it's capable of squeezing 1,000 hp from the 4.0L engine.

ESS also showed its 328i with supercharger conversion. This was designed for the 3.0L six-cylinder cars that proliferated before the 2.0T engine replaced it in the F30. Power figures weren't available because the software was still under development, but this will be able to give a 335i a very hard time, so owners looking for a much-needed power boost should contact the tuner for more details.

As always, Bimmerfest is a great way to experience BMW's past and present as well as a glimpse of the future. BMW North America displayed the brand-new i8 plug-in hybrid as well as the new M4—a car that will undoubtedly dominate Bimmerfest 2015...



ESS Tuning is taking the E92 M3 to another level. Outwardly, it boasts a very widebody Liberty Walk kit, but those monster tires will struggle to contain the projected 1,000 hp from the supercharged engine.



Felix the Cat's M3—expect a feature on this Liberty Walk/ESS supercharged M3 soon.



Race Precision Motorsport displayed its 4.6L M3 S63 stroker engine. The company is predicting 500 hp at the crank, but imagine what a supercharger could do...



Sleek Design's M3 body kit

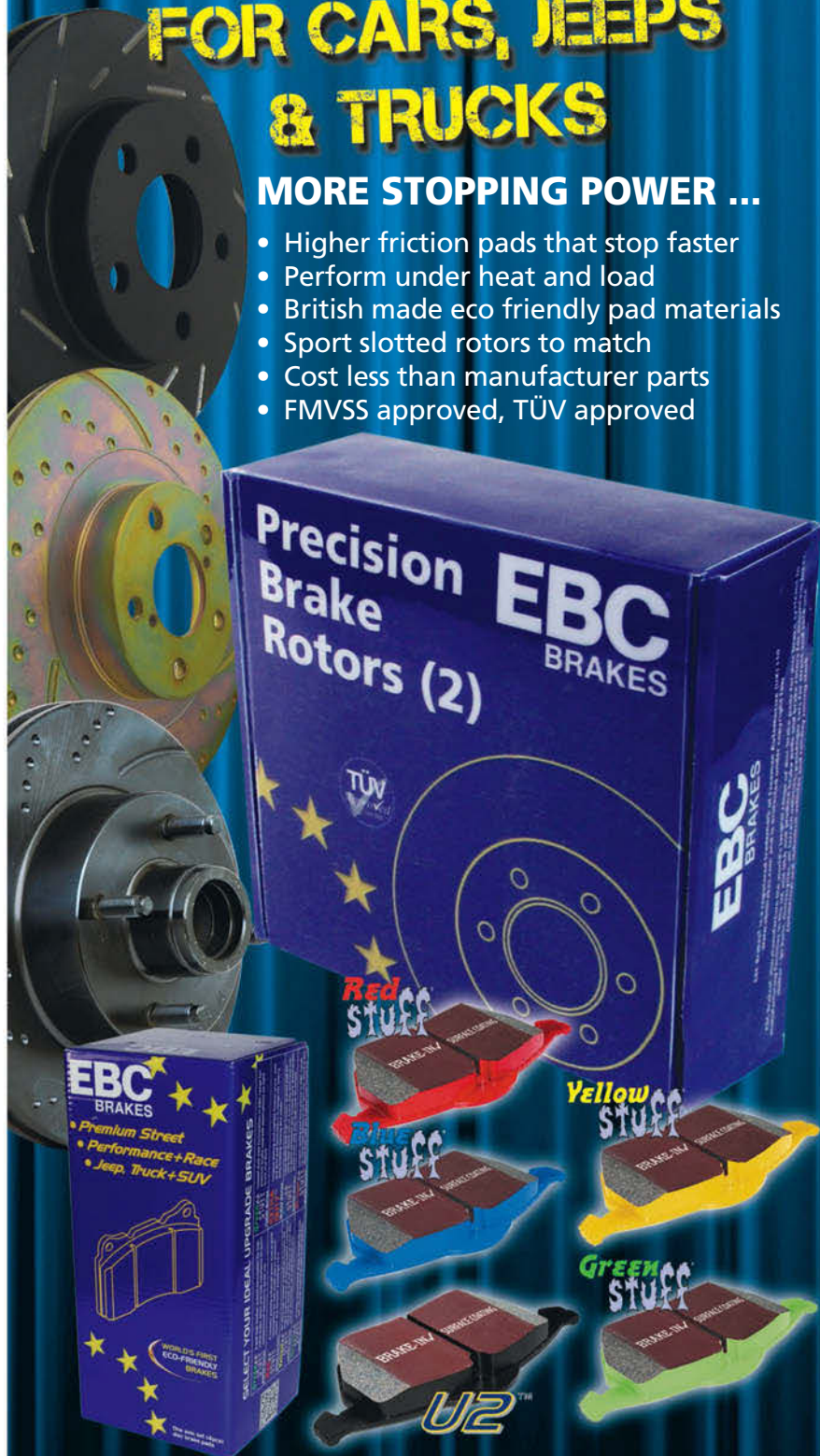


We loved this patina'd 2002—it was in stark contrast to the concours examples.

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Patrick Estudillo took the Best Modified trophy with this bold E46 M3 complete with DTM-style aero kit and HPF turbo conversion.



Status Gruppe continues to develop its CSL-style E46 M3 parts. The quality is first class, and we'll have a full feature soon.



M3 conversion on this E91 wagon by LTMotorwerks deserves closer inspection—expect a feature soon.



This Liberty Walk wagon combines AccuAir technology with HRE style to create a unique machine.



ND distribution repainted its previously white M5 in Yas Marina Blue. Under the hood are new hybrid turbos, but the software was awaiting development.

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Ron Perry's 1979 BMW 520i took the Best Classic award.



Marco Svizzero's 135i was built by Performance Technic with 1M widebody and M3 V8. Full feature on page 40 in this issue.



Akrapovic system is more an art than exhaust. The company unveiled several new BMW applications.

On the other side of the coin, EAS displayed a BMW M1 and there was a brace of interesting conversions for the classic 2002. BMW Motorsport also brought out some of its heritage race car collection for visitors to drool over.

Best in Show went to Joseph Liu's 2006 Mini Cooper S, while the Best Classic went to Ron Perry's 1979 520i, and the winner of Best Modified was Patrick Estudillo's 2006 M3. This was one of the first times we hadn't been involved in the judging, and we felt there were a few other worthy contenders. Top of that list would probably have been Marco Svizzero's BMW 135i with 1M widebody conversion and M3 V8 powerplant. We liked it so much, it's featured elsewhere in this issue.

For East Coast BMW fans who didn't make the trip, don't forget Bimmerfest East in Aberdeen, Maryland, which takes place every year in early August.

For more details on both Bimmerfest events, visit bimmerfest.com. **EE**

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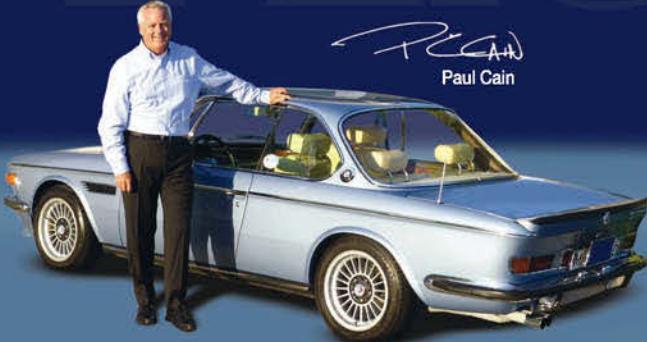
MOST REWARDING ACTIVITY: Head Concours Judge


FUN HOBBY: Installing modern drive trains into vintage BMW's

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WE ATTEND THE 8TH
ANNUAL SOWO IN
HELEN, GEORGIA

WORDS JAKEB MILLER
PHOTOS JORDAN DONNELLY, JAKEB MILLER

NEVER BEEN? Then you're missing out on one of the best VW/Audi events in the USA!

What a collection of people and cars. From rookies (such as myself), to those who have been to every event for the past eight years, this show is about making memories and making friends.

Held in Helen, Georgia, the Bavarian-themed city invites everybody to enjoy the beautiful scenic hills, although this year we also experienced some rather gloomy clouds. But even with the poor weather, people came to show and be seen.

When you get to the show area, it's as if you've been teleported to a small Bavarian town with a water park. It's slightly surreal but an incredible setting to view such a rich array of VW and Audi tuner cars.

The weather improved slightly as we arrived, and the pre-game show was already in full swing. Booths were being erected, cars cleaned, and friends making plans for the weekend of cars, parties, and more.



The New Audi A3 Sedan has only just arrived, but Unitronic has already worked out how to successfully modify it.



This has to be one of the most successful retro makeovers for the New Beetle—complete with fancy air tank display.

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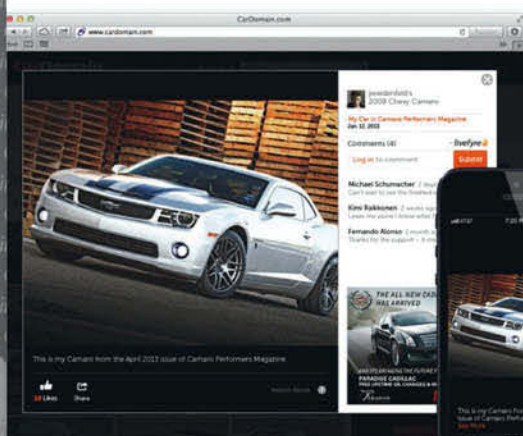
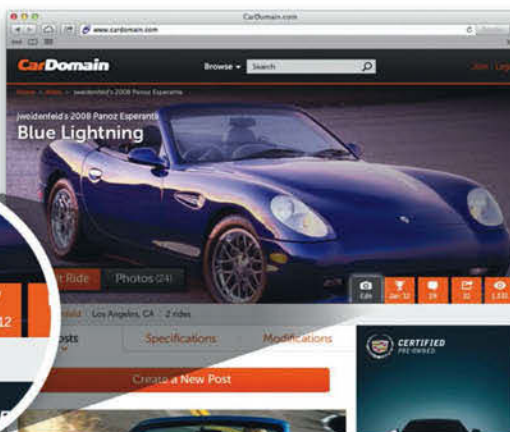


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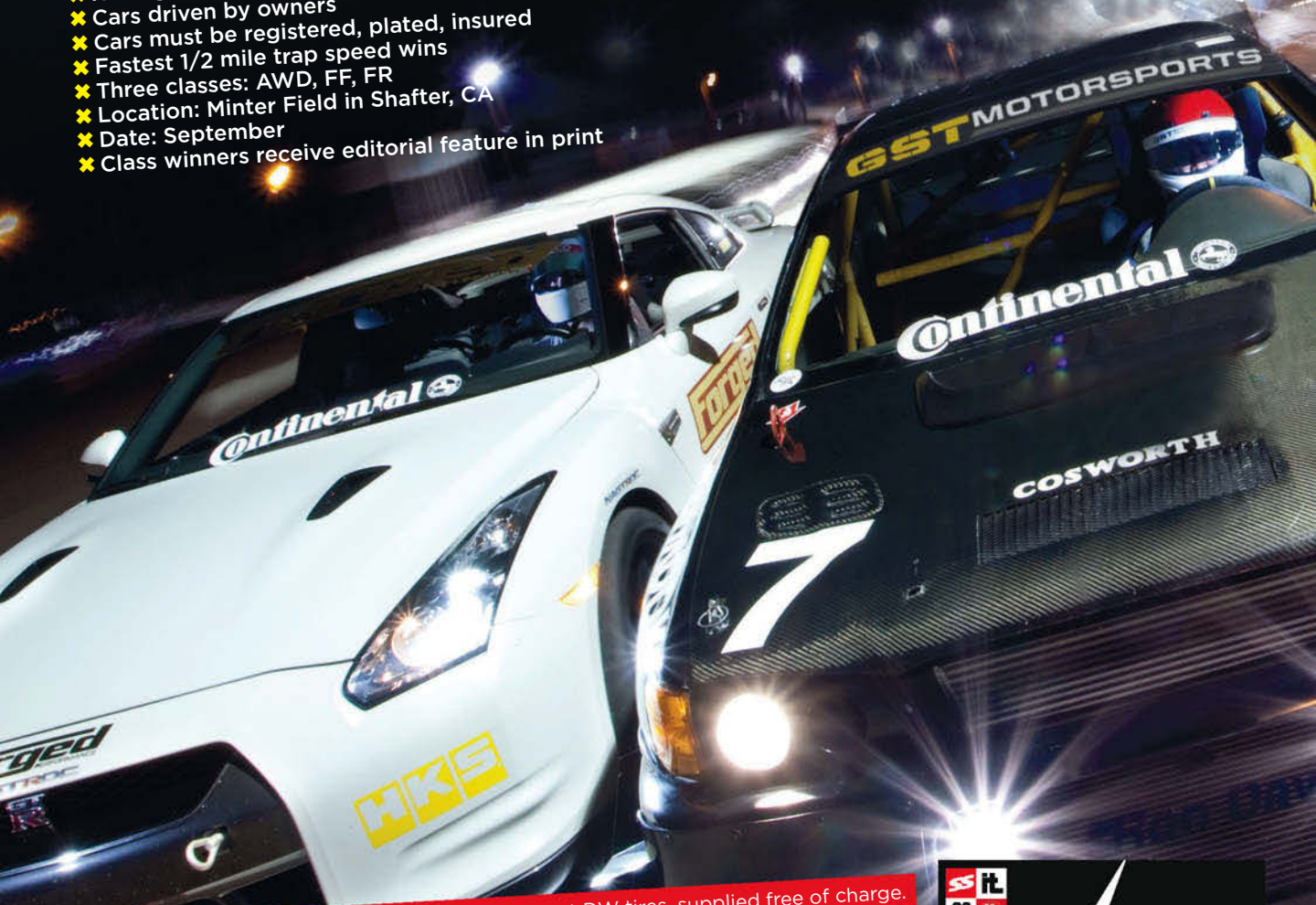
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Is your car a straight line beast? Now's your chance to prove it.

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Competitors will be selected by the editorial teams from European Car, Import Tuner, Super Street and Honda Tuning. They will narrow the field of submissions down to only the best quality, highest powered street cars to represent each brand and chassis platform.

- ✦ Rolling half-mile racing, side-by-side
- ✦ Cars driven by owners
- ✦ Cars must be registered, plated, insured
- ✦ Fastest 1/2 mile trap speed wins
- ✦ Three classes: AWD, FF, FR
- ✦ Location: Minter Field in Shafter, CA
- ✦ Date: September
- ✦ Class winners receive editorial feature in print



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Different generation but Unitronic showed the Jetta is a killer tuning subject.



This bagged trailer from New Zealand was scraping through the streets of Helen and getting a lot of cheers. It's seen here with Rob Amason's bagged 5 Series by the Watercooled Society tent.



Topspeed Motorsports brought its R8 twin-turbo widebody out to play—full feature coming soon.



They say "Low & Slow" is the way to go, but Jackson Beall took it to an extreme with his color-changed Audi S4.



Now, where did I leave my car?



The Audi allroad lends itself well to air-ride applications.



Every night at the Helendorf hotel was a crazy time, but even the police were having some fun.

The very narrow Edelweiss Strasse is where everybody cruises. It's a chance to show the crowds your car while the rest of us relax and take photos. Some cars started flexing their power or showing their air-ride, and a few cars even had nice red 'n' blue lights that made a pretty display. And this was only at 3 p.m. the day before the show... It started getting wild as the sun nestled behind the hills and more people were rolling in. The streets that were pristine before 5 p.m. looked more like Tanner Foust had been filming Top Gear 'Merica by 9 p.m.

From what we heard, the cops were out in force compared to previous years and, to be honest, they were needed as the craziness went on all night. Helen is a small town and only has a few places to party. When this thing gets going, there ain't nothing stopping it! It was enormous fun, and everybody seemed to be having a great time.

As for the cars, they arrived from all points of the compass, including a crew that drove up from Mexico City. The quality was superb, and we loved the variety of old and new, static and air, turbo and NA. It was a Teutonic festival in the heart of Georgia.

For more details on the event, visit southernwuthersee.com. 



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