

THE BRITISH ARE COMING — BACK JAGUAR LAND ROVER SPECIAL OPS



MCLAREN MOTORSPORT AN EXCLUSIVE LOO

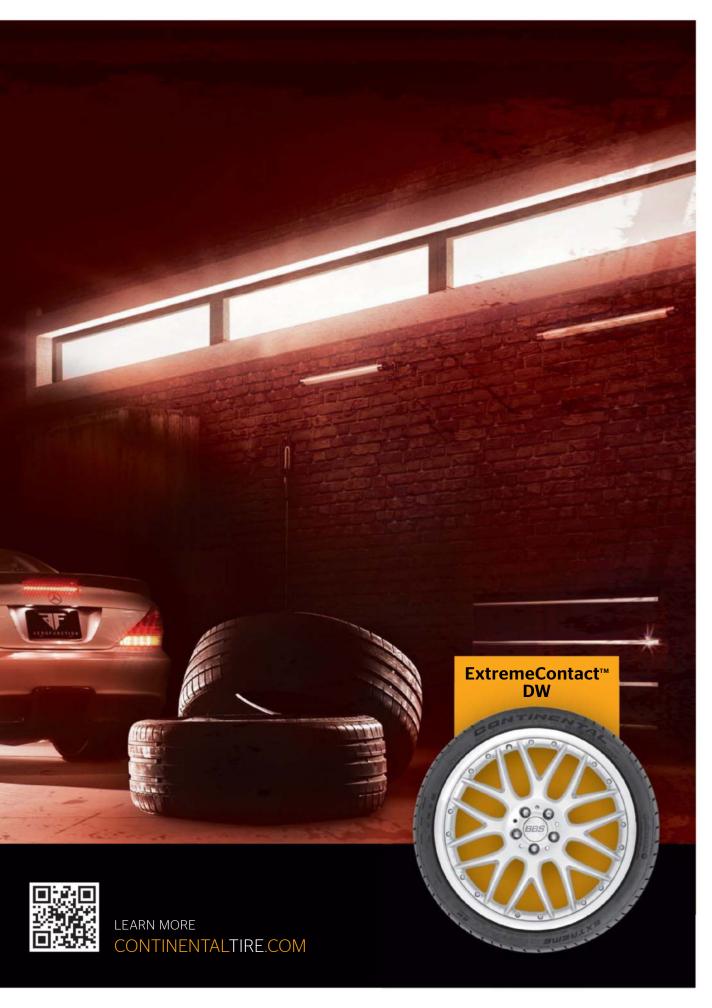
AN EXCLUSIVE LOOK INSIDE K-PAX RACING

EASY HORSEPOWER TURBO SOFTWARE BUYERS' GUIDE **P.84**

VOLKSWAGEN E-GOLF >850HP BRABUS IBUSINESS WATERFEST 20 >MINI COOPER S >MONTEREY CAR WEEK



Continental Tire. For what **you** do.











Cover Story

44 JAGUAR LAND ROVER SVR

We take a look at the future of high performance, luxury and heritage from the legendary Brits

Features

28 PORSCHE BOXSTER AND CAYMAN GTS

Comparing the newest top-spec midengined cars on track

40 PORSCHE 918

Chasing Hurley Haywood around Laguna Seca in Porsche's Hypercar

48 GIFT GUIDE

A collection of all the things you want this holiday season

60 K-PAX MCLAREN RACING

We get inside America's top McLaren

68 BRABUS 850 6.0 IBUSINESS

Building an 850hp land-based business jet out of a Mercedes S-Class

76 BMW 3-SERIES TUNER WAGONS

Two takes on SUV alternatives

Tech

84 ECU SOFTWARE BUYERS GUIDE

The latest in software flashes for turbocharged cars

Events

92 MONTEREY CAR WEEK 2014

The biggest and best event for enthusiasts in the United States

98 WATERFEST 20

VW and Audi enthusiasts gather in New Jersey—you won't believe what happens next

Departments

Jumping on a moving train

12 GEAR

The latest products for you and your car

16 DRIVE AND TESTED

VW e-Golf, Mini Cooper S and VW Golf R

58 BEHIND THE LINES

A designer's take at the Lamborghini Huracan

102 THROWBACK







EUROPEAN CAR (ISSN 1056-8476), DECEMBER 2014, VOL 45, NO 09

Published nine times a year in Jan/Feb, Mar/Apr, May, Jun, Jul, Aug/Sep, Oct, Nov, and Dec by Source Interlink Media, LLC., 261 Madison Ave., 6th Floor, New York, NY 10016-2303. Periodicals Postage Paid at New York, NY and at additional mailing offices. Copyright © 2014 by Source Interlink Magazines, LLC. All rights reserved. POSTMASTER: Send all UAA to CFS. (See DMM 707.4.12.5); NON-POSTAL AND MILLTRAY FACILITIES: send address corrections to european care, P.O. Box 420235, Palm Coast, FL 32142-0235. Printed in the U.S.A. Subscription rates for 1 year (9 issues) U.S., APD, FPO and U.S. Possessions \$23.94. Canadian orders add \$9.00 per year and international orders add \$18.00 per year (for surface mail postage). Payment in advance, U.S. funds only. No part of this book may be reproduced without written permission. This book is purchased with the understanding that the information presented herein is from varied sources for which there can be no warranty or responsibility by the publisher as to the accuracy or completeness



www.covercraft.com

european car

EDITORIAL
NETWORK CONTENT DIRECTOR Bob Hernandez **EDITOR** Michael Febbo MANAGING EDITOR Michelle McCarthy ONLINE EDITOR Sean Russell
SOCIAL MEDIA MANAGER Mike Sabounchi
PRODUCTION EDITOR Josh Ching

ART DIRECTOR Alina Avanesyan

CONTRIBUTORS

Greg Emmerson, Bryan Joslin, Ryan Jurnecka, lan Kuah, Colin Ryan, Ezekiel Wheeler, Peter Wu

THE SUPER STREET NETWORK ON THE WEB

www.europeancarweb.com www.superstreetonline.com

VP, MANUFACTURING & AD OPERATIONS Greg Parnell SENIOR DIRECTOR, AD OPERATIONS Pauline Atwood DIRECTOR, PUBLISHING TECHNOLOGIES Dale Bryson ARCHIVIST Thomas Voehringer

GENERAL MANAGER, SUPER STREET NETWORK Mark Han ASSOCIATE GENERAL MANAGER Willie Yee ADVERTISING OPERATIONS COORDINATOR Gail Petito

LOS ANGELES 831 S. DOUGLAS ST., EL SEGUNDO, CA 90245; 310/531-9900 IRVINE 1733 ALTON PARKWAY, IRVINE, CA 92606; 949/705-3100

NEW YORK 261 MADISON AVE., 6TH FLOOR, NEW YORK, NY 10016; 212/915-4000

NORTH

DETROIT 4327 DELEMERE COURT, ROYAL OAK, MI 48073

CHICAGO 312/396-0620

SOUTHEAST 813/675-3479

626/695-5950

SOURCE INTERLINK MEDIA. LLC

CHAIRMAN Peter Englehart
CHIEF EXECUTIVE OFFICER Scott P. Dickey PRESIDENT, AUTOMOTIVE Chris Argentieri EVP, CHIEF FINANCIAL OFFICER Bill Sutman EVP, AFTERMARKET AUTOMOTIVE David Algire EVP. CHIEF CREATIVE OFFICER Alan Albanian **EVP, SPORTS & ENTERTAINMENT** Norb Garrett EVP, CHIEF CONTENT OFFICER AnguS MacKenzie EVP, OPERATIONS Kevin Mulian SVP, ENTERPRISES Tyler Schulze EVP, SALES & MARKETING Eric Schwab SVP, DIGITAL OPERATIONS Dan Bednar VP, SALES OPERATIONS Matt Boice SVP, FINANCIAL PLANNING Mike Cummings SVP, AUTOMOTIVE DIGITAL Geoff DeFrance VP, EDITORIAL OPERATIONS Amy Diamond EVP, AFTERMARKET AUTOMOTIVE Doug Evans SVP, CONTENT STRATEGY, AUTOMOTIVE David Freiburger SVP, DIGITAL, SPORTS & ENTERTAINMENT Greg Morrow VP, DIGITAL MONETIZATION Elisabeth Murray SVP, MARKETING Ryan Payne

EVP, MIND OVER EYE Bill Wadsworth CONSUMER MARKETING, ENTHUSIAST MEDIA SUBSCRIPTION COMPANY, INC.

SVP, CIRCULATION Tom Slater VP, RETENTION & OPERATIONS FULFILLMENT Donald T. Robinson III

SUBSCRIBER SERVICES europeancar@emailcustomerservice.com Domestic: 800/926-9419 International: 386/447-6385 European Car Box 420235 Palm Coast, FL 32142-0235 Please include your name, address, and phone number. POSTMASTER Please send changes to: European Car P.O. Box 420235 Palm Coast, FL 32142-0235 CANADA POST Return undeliverable Canadian addresses to: IMEX Global Solutions, P.O. Box 25542, London, ON N6C 682

EMANUA PUST Return underwerable Landalan addresses to: MEX Global Solutions, P.U. BOX 25342, London, UN Note BBZ EDITORIAL CONTRIBUTIONS Welcomed, but editors recommend that contributors query first. Contribution must be ac-companied by return postage and we assume no responsibility for loss or damage thereto. Manuscripts must be typewritten on white paper, and all photographs must be accompanied by captions. Photo model releases required on all persons in photos. European Car reserves the right to use material at its discretion, and we reserve the right to edit material to meet our requirements. Upon publication, payment will be made at our current rate, and that said payment will cover author's and

our requirements. Upon publication, payment will be made at our current rate, and that said payment will cover author's and contributor's rights of the contribution. Contributor's act of mailing contribution shall constitute an express warranty that the material is original and no infringement on the rights of others.

MAL CONTRIBUTIONS TO European Car Magazine, 831 S. Douglas St., El Segundo, CA 90245. Occasionally, our subscriber list is made available to reputable firms offering goods and services that we believe would be of interest to our readers. If you prefer to be excluded, please send your current address label and a note requesting to be excluded from these promotions to Source Interlink Media, LLC, 831 S. Douglas St., El Segundo, CA 90245, Attn.: Privacy Coordinator.

ADVERTISING INFORMATION Please call European Car Advertising Department, (310) 531-9084. Related publications: Car Craft, Classic Trucks, Dirt Sports & Off-Road, Hot Rod, Hot Rod Deluxe, Lowrider, Muscle Mustangs & Fast Fords, Street Rod-der Super-Chays, Surfin Turkin, Vette, and other specialty magazines.

der, Super Chevy, Surfing, Truckin, Vette, and other specialty magazines.

REPRINTS Contact Wright's Media @ 877.652.5295 (281.419.5725 outside the U.S. and Canada) to purchase quality custom reprints or e-prints of articles appearing in this publication.

BACK ISSUES To order back issues, visit www.simbackissues.com. Any submissions or contributions from readers shall be subject to and governed by Source Interlink Media's User Content Submission Terms and Conditions, which are posted at http://privacy.sourceinterlinkmedia.com/submissions.html







The BRABUS refinement program for the new Mercedes-Benz C-class.

Aerodynamic enhancements • BRABUS PowerXtra Performance Kits • Light alloy wheels 17-20" Sport springs • Sports exhaust systems • Start-Stop function • Leather interiors Shift paddles • Entrance panels • Interior accessories and more ...













BRABUS USA +++ GTC - German Tuning Corporation 1711 • McGaw Ave, Irvine, CA 92614 Phone 949.229 1770 • info@brabus-usa.com • www.brabus-usa.com

BRABUS Germany +++ BRABUS GmbH • Brabus-Allee • 46240 Bottrop • Germany Phone: +49 2041 777-0 • info@brabus.com • www.brabus.com

BRABUS China +++ BRABUS Flagship Store Beijing • Goldenport Motor Park, China Phone: +86 10 84 34 00 00 • info@brabus-beijing.com • www.brabus-china.com

BRABUS Dubai +++ BRABUS Middle East LLC • Sheikh Zayed Road, Dubai, UAE Phone +971 4 339 28 20 • info@brabus.ae • www.brabus.ae

BRABUS London +++ Excalibur Park Lane Ltd. • Avenfield House, 118-127 Park Lane • London, UK Phone +44 207 629 7020 • contact@bobforstner.co.uk • www.bobforstner.co.uk



















parts and labor











JUMPING ONTO A MOVING TRAIN

I FEEL LIKE THIS WAS MY FIRST REAL MONTH AT THE MAGAZINE, and what a month it has been. Growing up would have been a lot easier if eighth-grade-me could see the Facebook feed of current-me. I survived another Monterey Car Week, witnessed firsthand what may be the symbolic turning point of the British car industry, drove some of the best affordable cars in the world, drove what might be the best car ever built and encountered a new Doctor. It was a big month.

I have been attending Monterey Car Week more on than off for the past 16 years—first as a civilian and later in the VIP hospitality trenches as a professional journalist. Early in my career, I was always a cog in a much larger journalistic machine, which meant I could make my own schedule. This generally meant full days at the track and fuller nights bouncing around the auctions. Occasionally,

"One of the high points of the week was the Jaguar Land Rover party that included a three-car reveal along with some life-changing ravioli."

I would throw in a concourse and try to attend at least one professional obligation.

This year, as the man representing this magazine's esteemed readers, I had responsibilities, obligations that came one after another and often one on top of another. The entire week has become another auto show for premium manufacturers with launches, press briefings and PR opportunities disguised as meals.

Should you feel sorry for me with all this work I had to endure? Not in the slightest. One of the high points of the week was the Jaguar Land Rover party that included a three-car reveal along with some life-changing ravioli. You can read

included a three-car reveal along with some life-changing ravioli. You can read more about it on page 44. The reveals, not the ravioli. Let me just say: I think people will look back on that night 10 years from now and realize the importance.

With no time to recover from Car Week, I jumped directly into a Porsche mid-engine program at Mazda Raceway Laguna Seca centered around the new Cayman and Boxster GTS. Spoiler alert: They're fantastic. And as they edge closer to 911 performance levels, the more their character differentiates them. For an added bonus, Porsche brought out the 918 Spyder. While I have written a brief review, what I should have focused on was the time machine Porsche

must possess that allowed the company to bring this car back from the future. The 918 is of the same automotive-moon-landing scale as the 959 back in 1986. Sure, the McLaren P1 and Ferrari La Ferrari are amazing in their own way, but the Porsche is every bit the hypercar while still being able to commute back and forth purely on electric power and in total comfort. The only downside in having experienced this car will be waiting for all that amazing tech to trickle down to cars we can all afford.

The other bonus of the Porsche trip was getting to spend time with Porsche Racing legend Hurley Haywood. My journalistic approach is supposed to numb my senses to the effects of star power. However, I've been watching Mr. Haywood race as long as I've been a race fan, so sitting across from him at dinner is and always will be an exercise in hero worship. Getting to chase him around a track is even better.

My final event before this issue went to press was a Volkswagen full line drive in Virginia. I've done a few of these full line clusters in the past and don't think it's possible to reasonably judge every car a manufacturer offers in a single day of driving. I focused mainly on the e-Golf, but also drove the refreshed 2015 Jetta, a rare V6 4Motion CC—and I can't be around a GTI and not drive it. The e-Golf is nothing short of amazing. While I still consider the Tesla Model S the best all-electric vehicle, the e-Golf is 90 percent the car at half the price.

Finally, how about Peter Capaldi? By the time this is published, we are a few more *Doctor Who* episodes in. But so far, I'm very impressed indeed.

Michael Febbo, Editor european.car@sorc.com



Introducing nonstop round trips from DC to NYC.



The all-new Volkswagen Golf TDI Clean Diesel. Push the city to its limits with the bigger, fuel-efficient Golf TDI® Clean Diesel, and get up to 594 highway miles on a single tank of fuel.* That's like going from DC to NYC and back without ever filling up. Not to mention other standard features like a touchscreen sound system and 52.7 cubic feet of cargo space** to pack in plenty of mementos along the way. Ready. Set. Golf. That's the Power of German Engineering.



@nicheroadwheels nicheroadwheels.com

see website for technical data, sizes, and finish options











Enyo

Intake

Form







Lucerne

Verona

Vicenza







MILLTEK PERFORMANCE EXHAUST SYSTEM

The Audi S7 Sportback makes a nifty 420 hp from its 4.0 TSFI twin-turbo V8 engine, which might be enough for a lot of people. But in case 500 hp is considered more desirable, then check out Milltek's new stainless steel exhaust system. The company's own S7 runs the every-bell-and-whistle version with HJS 200-cell sport cat, primary catalyst bypass pipe and the optional ValveSonic rear silencer tech (for a choice of quiet or blaring operation), plus a software upgrade to claim a figure of 80 horses over stock. Pipe diameter is 2.76 inches, and the quad tips come in Polished, Black Velvet or Titanium. **From \$2,599**.

g-werke.com



KW DDC PLUG & PLAY COILOVERS

KW claims the BMW 2 Series feels "more direct and agile" than stock when installing these adaptive coilovers and selecting Sport mode. They also allow ride height to be lowered between 1 and 2 inches. The setup is fully compatible with BMW's wiring and switching, so it's just a question of swapping over and plugging into the existing connectors. Time taken to go from one mode to another is 5 milliseconds. And it also works for the M235i. **\$3,999.99**.

kw-suspension.com



AUTOMOTIVE TOUCHUP UTOMOTIVETOUCH BASECOAT COLOR **READY TO SPRAY** BASECOAT COLOR

AUTOMOTIVE TOUCHUP READY-TO-SPRAY PAINTS

Automotive Touchup says its products are "custom-formulated from the most comprehensive library of OEM colors" and include urethane and acrylic lacquer primers, urethane base coats, acrylic urethane and acrylic lacquer clearcoats. They are shipped directly to customers to keep costs down. The company also offers spray guns, respirators, paint preparation and repair materials. From \$5.75 for a touch-up pen.

automotivetouchup.com



We've featured a few Track Edition exhausts from AWE Tuning. With good reason. They're handcrafted and TIG-welded in-house from T304 stainless steel with 2.5-inch piping. There's also a menu of options such as resonated or nonresonated downpipes, and chrome or diamond black tips. Here's the latest one, made for the B8/8.5 Audi S4 (2010-on). AWE claims a hike in engine output of 8 horses and 9 lb-ft measured at the crank. Earplugs not supplied. From \$1,379. awe-tuning.com



S-DISC

File under "why has no one thought of this before?" This clever and simple stainless steel disc goes on top of an adjustable aftermarket coilover and lets the user know by how much of a turn the shock absorber has been tweaked. It means being able to drive to the track in comfort, adjusting the suspension for super-stiff apex attacks, then driving back home again in the same comfort. It's held in place by a hex nut. Originally designed for Koni shocks, it will work with other 14mm (0.55-inch) fixtures, and now there's an adapter that will take it down to 12 mm (0.47 inch) to embrace a wider array of shock absorbers. **\$34.99** (plus \$4.99 shipping within the United States).

shockdisc.com



BAVARIAN AUTOSPORT BRAKE KITS

With a name like Bavarian Autosport, you probably think this company does a ton of stuff for BMW cars. And you'd be right. Take this replacement brake kit, for example, also available for Mini models (which come under the BMW umbrella, conveniently). The whole caboodle includes rotors, sensor wires, hold-down bolts and Pagid Red or Cool Carbon brake pads made with an antisqueal compound. And buying the kit saves money over getting the individual items separately. From \$115.95 to \$1,199.95. bavauto.com



INTEGRATED ENGINEERING MK5/MK6 FDS PERFORMANCE INTERCOOLER

In this instance, FDS stands for flow distribution system. Any kind of cooler should be able to distribute flow, but this one does so with a core that's 54 percent larger than the OEM equivalent. If that sounds like extra weight, fear not. IE says its attention to detail, such as high-quality cast end tanks, results in this intercooler being lighter than many imported examples. Comes with five-ply silicone hoses and a billet adapter, plus all the required hardware and clamps. Fits many Audi and VW cars with the EA888 engine (like the A3, TT, GTI, GLI) and a few with the EA113 engine. \$999.99.

performancebyie.com



AEM WATER/METHANOL INJECTION KIT

The fine folks at 034 Motorsport now bring us a water/methanol injection (WMI) kit for the 2.7T V6 engine that thrums away in the bays of the B5 Audi S4 and C5 Audi A6. It includes an AEM 200-psi pump, injector nozzles, hardware, controller with internal MAP sensor, plug-in wiring harness, connectors and full instructions. The company claims a more linear fluid delivery through a revised flow control setup. An AEM WMI Injection Monitor & Failsafe kit is sold separately. \$495.

034motorsport.com

AKRAPOVIC EVOLUTION LINE EXHAUST SYSTEM

It's about time someone showed the Porsche Panamera some love. This newest addition
to Akrapovic's Evolution Line of titanium exhaust systems has been developed for the 2014
Panamera Turbo and Turbo 5. No in-cabin drone, just an on-demand stentorian soundtrack
to complement the rest of this super sedan. Our Slovenian friends also claim a blip on the
output graph of 87 hp and 173 lb-ft along with a weight savings of 297 pounds. \$7,299.95.
akrapovic.com



FORGE MOTORSPORT HIGH-CAPACITY DUMP VALVE

When higher power levels are in play, the stock F20 BMW 135i dump valve is something of a wimp, unable to move the required amount of air. Forge Motorsport's "vent to atmosphere" twin-piston dump valve solves that problem while still being fully compatible with factory engine management. This direct-replacement kit comes with all the necessary ancillaries such as solenoid, brackets, clamps and vacuum pipe. \$335.

forgemotorsport.com



DEATSCHWERKS DW350IL FUEL PUMP

Engineered to be compatible with Bosch 044 surge tanks, the DW350iL delivers 350 liters of fuel per hour at 40 psi and can support 700 hp, which makes it DeatschWerks' highest-flowing fuel pump to date and the company's first externally mounted in-line unit. The anodized aluminum body features -8 AN ORB female fittings on the inlet and outlet to accommodate larger fuel lines. \$209.

deatschwerks.com

ARNOTT REAR AIR STRUTS

It wouldn't be right to describe Arnott's engineers as airheads, but they really do have a way with cushioned suspensions. For example, these new rear air struts for the E65 and E66 (2001 to 2008) BMW 7 Series. Like some of the company's other products, they use Continental ContiTech air spring bladders. This time they're accompanied by bespoke Arnott shock absorbers made from aircraft-quality aluminum. No Electronic Damping Control (EDC)? No problem. Arnott has a version for those cars as well. **\$690 each without EDC, or \$890** each with EDC.

rnott Inc

arnottinc.com

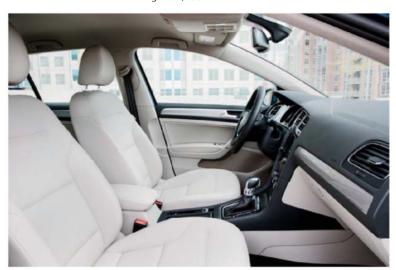


2015 Volkswagen e-Golf

WATTS GOING ON

Words Michael Febbo

I'VE SAID MANY TIMES THAT, for the money, the Volkswagen Golf is the best car in the world. The TDI has always been a fan favorite for efficiency, while the GTI and Golf R are as fun to drive as cars costing twice as much. The base Golf is not only as efficient as ever, thanks to the new 1.8-liter turbo, but the interior is world-class as well. For 2015, VW is heading into the zero-emissions market with the all-electric e-Golf. It looks set to be the benchmark in that segment, too.

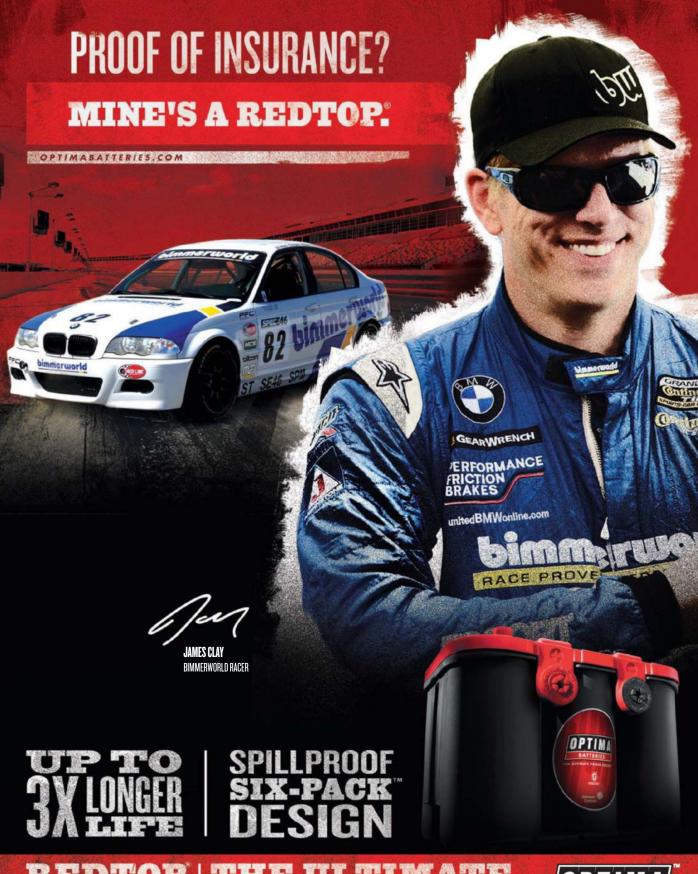


Stop with the eye rolling. It's really good, and electric cars have a real place in the market. Even for enthusiasts. As someone who has spent a fair amount of time talking to electric car owners while charging a long-term Tesla, I have a pretty good idea of what people expect from them. They are almost never the person's only car and seldom the owner's most expensive car. Even in the case of \$90,000 Teslas. They are, however, the owner's daily driver and sometimes favorite toy.

Driving the e-Golf, the real stand-out feature is the shortage of anything that stands out. Aside from some energy readouts in place of a tachometer and the general lack of noise, there is little about the experience to differentiate it from a gas- or diesel-powered version.

The single electric motor is only rated at 115 hp, but with 199 lb-ft of torque available from the start, it pulls better than a TDI. Unlike other compact electrics, it even pulls well at highway speeds. The Nissan Leaf, for instance, feels downright fast off the line, but the show's over by 35 mph. The e-Golf keeps pulling long after.

Acceleration is smooth and quiet, as is highway cruising. Other electrics suffer from road and wind noise that would normally have been masked by powertrain sounds. The MQB-based Golf is quiet to begin with, but it seems as though extra time has been spent with this battery-powered variant. The whole experience can be relaxing. And as anyone



REDTOP THE ULTIMATE ALWAYS-GOT-YOUR-BACK BATTERY





firstdrive

TECH SPEC

2015 VOLKSWAGEN

BASE PRICE \$36,265

VEHICLE LAYOUT

Front-engine, FWD, five-passenger, four-door hatchback

ELECTRIC MOTOR 115 hp/199 lb-ft

TRANSMISSION Single speed

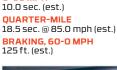
CURB WEIGHT 3391 lb.

WHEELBASE 103.6 in.

LENGTH X WIDTH X HEIGHT

168.1 x 70.8 x 57.1 in.

0-60 MPH







"Unlike other compact electrics, it even **pulls** well at highway speeds."





who has driven a good electric vehicle will tell you, this is the future of luxury.

Volkswagen says the e-Golf is roughly 360 pounds heavier than a comparable four-door 1.8T Golf, even carrying around 700 pounds in lithium-ion batterv pack. The 24.2 kWh battery is good for 70 to 90 miles of normal driving. Volkswagen is partnering with Charge Point, a nationwide charging station network, and says the e-Golf can be charged to 80 percent of capacity in just 30 minutes. Plugging into a standard 110-volt home socket will take 20 hours for the same charge, but we can't imagine buying or leasing one

of these without having access to a charger either at home or work, if not both. In the event of not being able to guite make it to that charging station, VW offers free roadside assistance.

Even with the extra 360 pounds, the new MOB still feels nimble and maintains the normal solid-yetcompliant ride. The steering is great, surprisingly so, with no on-center dead spot. Resistance builds immediately and consistently as the wheel is turned. Road feel is on the low side. Some of that can be attributed to the 205/55 all-season tires, and I'm sure some is just tuning for the audience. Regardless, the handling is better than anything else in the class. Putting the battery pack in the center tunnel and under the rear seats has lowered the car's center of gravity and made it more centralized front to rear, which is always good for dynamics. It would be interesting to see how a good set of performance tires affects things in terms of both handling and economy.

The placement of the batteries has also allowed for the same trunk space as a regular Golf. And the rear seats are typical MkVII cavernous, with plenty of knee room and headroom, even when sitting behind a tall driver. The front seats are flat and certainly not as supportive as those in the GTI, but appropriate for the application. Maybe we will see the GTE in North America at some point.

The e-Golf hits dealerships in November 2014. Only the SEL Premium model will be available at launch. It's loaded with LED headlights and driving lights, touchscreen navigation, keyless access, front and rear park distance control and a rearview camera. Pricing is \$36,265 with destination and includes the previously mentioned roadside assistance as well as a 100,000-mile warranty on the battery pack.

It only has half the range of a Tesla Model S, but keep in mind it's half the price. Again, this isn't going to be a household's only car, but it makes an ideal second or third. Like other cars carrying the Golf name, the e-Golf is a world-class vehicle.



The STARTECH Widebody Kit for Range Rover Sport MY 2014

Further our product lineup includes carbon aerodynamic enhancements, light alloy wheels, valve guided sports exhausts, power upgrades, high-class interior options and many more.



Carbon spoiler for front bumper



Carbon grille



Carbon side air intake covers



Carbon diffusor for rear bumper



GTC - German Tuning Corporation 1711 McGaw Ave, Irvine, CA 92614 Phone: 949.229-2177 • Fax: 949.863-1944 info@startech-us.com • www.startech-us.com

Infoline: 888 427 5689



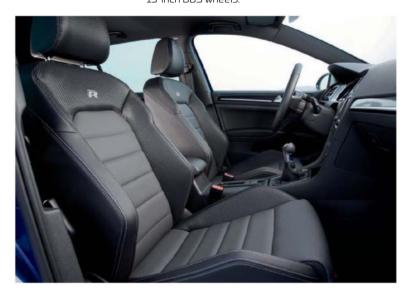


2015 VW Golf R Euro-spec

THE WOLFSBURG PIRATE

Words Michael Febbo

IN 1989, VOLKSWAGEN BUILT 71 EXAMPLES OF THE GOLF LIMITED. It was the most powerful Golf until the MkIV R32 a dozen years later. It was powered by a supercharged, 2.0-liter, 16-valve four-cylinder and put 207 hp to the ground through the same all-wheel-drive system used on the legendary Rallye Golf. It had all the high-end features of the day: power windows and sunroof, leather interior, even heated seats. On the outside, they were relative sleepers, all-gray four-doors with single, round headlights and 15-inch BBS wheels.



The new MkVII Golf R is similar in mission. It doesn't forego luxury for the sake of performance, although it is the fastest Golf ever. Although those in the know will recognize it as a performance car, it could never be considered flashy. The biggest difference between then and now is that the Golf R is actually sold in the United States.

We won't see it Stateside until early next year, but we got our hands on a European-spec version VW brought over for testing and marketing. While it isn't the innocuous dark gray of the Limited, it doesn't look over the top or too boy-racer even in Lapiz Blue. The front and rear bumpers, plus the 19-inch wheels, are the biggest tip-offs that this isn't a run-of-the-mill GTI.

VW suffered from some ill-timed decisions with previous cars wearing R badges. The MkV R32 was only offered with DSG when everyone still wanted manuals. The MkVI R was only offered in manual, when enthusiasts had since realized the value of computerized shifting. The MkVII Golf R will come with either transmission. Ours has a good old-fashioned three-pedal manual, which makes it an applesto-apples comparison with the last MkVI R we tested.

That earlier model in U.S. trim sported 256 hp and 243 lb-ft of torque. Not bad numbers, but the MkVII steps up with 290 hp and 280 lb-ft. Even though 290 sounds pretty impressive, I wouldn't be surprised if that number is on the conservative side. The MkVI R sprinted from standstill to 60 mph in 5.8 seconds—fairly impressive. The new R does the same nearly a tick faster, at 4.9 seconds. Keep in mind that

EST DRIVERS CAREX PERIENCE. COM

GGIII Remember 55 This Forever!

Fantasy comes true for five lucky Mobil 1[™] winners as they go behind the scenes at *Motor Trend's* Best Driver's Car competition!



POWERED BY

magine the perfect recipe for the ultimate car-guy's fantasy. Commence with a large helping of some of the coolest automobiles on the planet. Stir in hundreds of miles on some of the most entertaining driving roads in the U.S. Season with highly detailed test-track data. Then top it all off with screaming hot laps around Mazda Raceway Laguna Seca in Monterey, California. Voila! You've just cooked up Motor Trend's Best Driver's Car competition, easily the most intense and exciting week on the magazine's calen-

See all the behind the scenes action at

www.MotorTrend.com/2014BDC

dar. And at the end of it all, one amazing machine emerges victorious, the year's Best Driver's Car.

This summer's event marked *Motor Trend's* sixth annual BDC shoot-out. As in 2013, though, the 2014 competition added a unique twist. Thanks to a

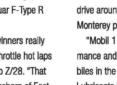
nationwide contest sponsored by Mobil 1™ synthetic motor oil, five lucky enthusiasts from around the country were flown in for a very special behind-the-scenes tour of BDC—a



rare opportunity to see the cars up close, meet and chat with *Motor Trend* editors like Ed Loh, Jonny Lieberman, and Carlos Lago, and take high-speed rides around Laguna Seca with pro racer Randy Pobst. Surveying the lineup of shiny vehicles in the Laguna pits—among them, a Porsche 911 Turbo S, a Nissan GT-R Nismo, the new Chevy Camaro Z/28, and the lithe Alfa Romeo 4C.

The fortuitous five wasted no time getting into the thick of the Best Driver's Car excitement. "Seeing that Z/28 pass by with the throttle wide open and the V-8 screaming was the highlight of my day!" exclaimed Sergey Bondarchuk of Brooklyn, New York. Greg Forman, of Lansing, Michigan, had his own highpoint: "For me, it's the raw sound of that Jaguar F-Type R Coupe. Wow!"

It was on day two, though, that the winners really took off—joining Randy Pobst for full-throttle hot laps in the sizzling, 505-horsepower Camaro Z/28. "That was just stupendous!" raved Steven Ginsberg of East Brunswick, New Jersey, after his circuit blast. Michael













Sim concurred: "Randy is superhuman! Going up the hill was like liftoff!"

Incredibly, the day's thrills weren't over. As a special surprise, Mobil 1 wowed the five winners with five gleaming supercars—from a Ferrari 458 Italia to a McLaren 12C—for an electrifying afternoon drive around the beautiful, challenging roads of the Monterey peninsula.

"Mobil 1 is behind the scenes providing performance and protection for some of the top automobiles in the world," says Sean Houts, ExxonMobil Lubricants Marketing Americas. Indeed, since the first BDC competition in 2009, no fewer than 23 of

> the competing cars—including the 2014 winner—have come factory filled with Mobil 1, the world's leading synthetic motor oil brand.

From meeting the *Motor*Trend crew to high-speed rides to piloting some of the world's greatest sports cars themselves, it's clear that this year's five Mobil 1 winners had the thrill of a lifetime. But Rob Balena of Austin, Texas, probably summed it up best: "You just couldn't ask for a better experience than this!"



>tested



2015 VW GOLF R

\$35,695 est.

VEHICLE LAYOUT
Front-engine, AWD, fivepass, four-door hatchback
ENGINE

2.0L/290hp/280-lb-ft turbo DOHC 16-valve I-4 TRANSMISSION six-speed manual

CURB WEIGHT (F/R DIST) 3287 lb. (59/41%)

WHEELBASE 103.6 in.

LENGTH X WIDTH X HEIGHT168.4 x 70.5 x 56.5 in.

0-60 MPH 4.9 sec.

QUARTER-MILE13.5 sec. @ 101.3 mph **BRAKING, 60-0 MPH**104 ft.

LATERAL ACCELERATION 0.97 g (avg.) FIGURE-8

25.0 sec. @ 0.77 g (avg.)

"On power is where the Golf R really shines."







DSG-equipped cars will probably be even quicker. In the quarter-mile sprint, the VI ran a 14.2-second time but couldn't quite break the century mark at 97.9 mph. The VII takes just 13.5 seconds and traps at 101.3 mph. Those of us who have been around for a while remember when anything under 15 seconds in a hot-hatch was flying.

Besides accelerating, the R has also learned a thing or two about stopping. The VI needed 128 feet to stop from 60 mph. The VII shows a huge improvement, needing just 104 feet to hit halt, thanks to 13.4-inch rotors up front and 12.2-inch rotors at the rear. The only problem with the brakes is the pedal itself. While actuation is good, placement could be improved. If I'm buying a manual, I want to be able to heel-toe my downshifts. There is a bit too much distance between the brake and gas pedal, making it pretty difficult to blip between gears. Maybe some inventive aftermarket company can come up with a slightly wider brake pedal cover; those buying the DSG will never notice or care.

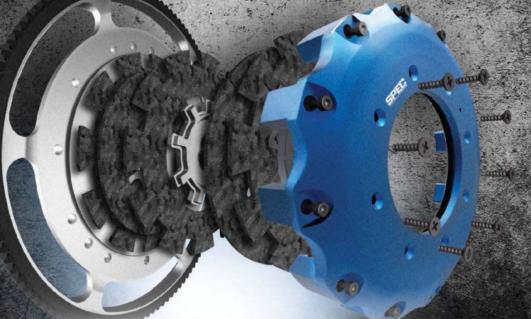
There isn't a single thing to complain about with the steering. The new Golf R is blessed with an extraresponsive, variable-rack system that's go-kart quick for turn-in. Steering assist, along with damping rates and exhaust sound, are all variable at the push of a button with VW's Driving Profile Control and Dynamic Chassis Control. Besides that (cue '80s teen-movie building applause), stability control can now be completely deactivated—the people rejoice. As the final icing on the proverbial performance cake, the Golf R receives brake-based torque-vectoring. In conjunction with the latest Haldex 5 system for all-wheel drive, light brake pressure pushes the power around to where it's needed most to either rotate or stabilize the car during cornering.

All these things add up to a Golf R that can play with the big boys around our figure-8 test. The MkVI Golf R needed 26.5 seconds to lap the twisted oval; the VII requires just 25 seconds. If you're wondering how quick that is in the grand scheme of things, it's 0.6 of a second faster than the F30 BMW 335i x Drive we tested not too long ago. The Golf R puts in these numbers exhibiting a bit of understeer in steady state cornering that's easily controlled with a bit of throttle lift.

On power is where the Golf R really shines, using all four wheels to get off the corners without drama. After driving the MkVII GTI with the Performance Pack's limited-slip differential, I wondered if there was even a need for all-wheel drive in a Golf. I'm no longer wondering. While the limited-slip diff is great (and the GTI has needed one for years), all-wheel drive is nextlevel. Especially if you plan on adding power to your Golf with aftermarket equipment. You will want some of that extra power going to the rear axle.

At the time of writing, Volkswagen didn't have official pricing on the MkVII Golf R. I guess it will be slightly north of \$35,000, and we will see where that heads if VW decides to make things like active cruise control and perhaps even parking assist available. Each member of the Golf family is as premium as ever and represents an amazing value in its category. The Golf R is no different. It won't be nearly as exclusive as the Limited, but at least you'll be able to park one in your driveway.

DISCOVER THE SIGNATURE







AUGMENTED REALITY TECHNOLOGY

DOWNLOAD OUR NEW APP TO SEE SPEC IN AUGMENTED REALITY

Interact with a 3D version of our Super Twin assembly to learn more about our materials and construction. You'll see that to harness more power, every little detail matters.



CLUTCHES B FLYWHEELS



TIRE RACK



















BRAKES

COOUSA

akebono Obrembo Centric

STOP () TECH

SUSPENSION

KONIT WW KYB &

MATERIAL PROPERTY BUSINESS





Ontinental 🔧



Studless Ice and Snow

Developed for the drivers of coupes, sedans and minivans, as well as pickups, crossovers and SUVs looking for traction on winter's clear, cold, slushy, snow-covered and icy roads, the ExtremeWinterContact is designed to deliver serious performance in bitter winter weather.

Asymmetric tread pattern blends dry road handling with foul-weather traction.

Low-void outboard shoulder blocks tied together by elevated lateral grooves increase dry road steering response and stability.

High-void central and inboard shoulder blocks separated by inclined longitudinal grooves provide swift removal of water, slush and snow.

High-density zigzag sipes offer multiple gripping edges to promote packed snow and ice traction.

Advanced high-tech winter tread compound remains flexible in freezing and near-freezing temperatures to enhance cold weather traction.



Install ExtremeWinterContact in sets of four only.

Due to the wintertime traction capabilities of the ExtremeWinterContact, Continental recommends using ExtremeWinterContact only in sets of four to provide the best handling characteristics and tire performance.

For up-to-date pricing and availability, call or visit tirerack.com/continental



ExtremeWinterContact tires meet the industry's severe snow service requirements and are branded with the mountain/snowflake symbol.













2014 Mini Cooper S

AGILE: HANDLE WITHOUT CARE

Words Michael Febbo

THE WORD "MINI" IS AN ADJECTIVE, a comparative word and not a unit of measure. My colleagues in auto journalism always squeal in delight at any opportunity to point out that the Mini Cooper has grown substantially since its launch in 1959. Jokes of the Maxi Cooper and Not-So-Mini have dribbled off reviewers' fingers onto keyboards since the relaunch of the brand under BMW ownership in 2001. The latest Mini Cooper S Hardtop is the largest yet, at nearly 152 inches long. That sounds pretty substantial compared to the original car's 120-inch length. Or maybe not, when you consider it's 30 inches shorter





buy. Even if you plan on replacing them, you can sell them later and probably make money on the deal. Sadly, the Cooper S doesn't come with a spare, which means run-flat tires, and all-seasons at that. Past experience has shown that there is almost always a big performance gain from switching to a good stuckflat summer tire.

than a current BMW 3-series. It's even 16 inches

shorter than a VW GTI. Among its contemporaries,

turbo four-cylinder has given way to the 2.0-liter unit

found under the hoods of several BMW models, just turned 90 degrees east/west in the Mini. The sixAlthough the Mini's engine has gained 25 percent more displacement over the older car, it only picks up 17 hp for a total of 189 ponies. The 207 lb-ft of torque, however, is a bump of 30 lb-ft over the 1.6 liter. It seems like Mini has gone rather conservative with the boost. Low-down torque is fat and easy underfoot. At higher revs, it feels as though the boost disappears and the power curve flattens out. We're anxious to see what a software change will do to the horsepower peak. The sound is the familiar Mini growl and will make you want to stay on the throttle more often than the EPA would like.

In a straight line, the new F56 shows a modest improvement over the previous car, with 0 to 60 mph coming up in 6.3 seconds, compared with 6.4 seconds. The quarter-mile shows off the F56's legs a little better, with a time of 14.7 seconds at 95.8 mph, as opposed to the R56's 15.0 at 91.4 mph. The new car can brag about braking as well, stopping from 60 mph in 11 feet, which is a full 6 feet shorter than the older car managed.

Minis have never been about stoplight performance, though. You buy a Mini because the straight and narrow is boring. In figure-8 testing, this Cooper S manages a respectable 0.86 g around the skidpad sections. Previous versions of the R56 Cooper S we tested were able to manage 0.83 g. But for comparison's sake, the latest GTI was able to manage an impressive 0.96 g, proving there really is something to be said for a good summer tire. The new Mini betters the older car again in total figure-8 time, putting in a 26.6-second lap, compared with the R56's 27.2. If you're wondering what it might do with some strategically chosen modifications, the 2013 John Cooper Works GP was able to fly through a lap in just 25.1 seconds, putting it into some rarefied company.

With quantitative lap data out of the way, let's get to what really matters. The new Mini still feels much like a traditional Mini. Turn-in is as quick as anything on the road; the longer wheelbase hasn't dulled reactions at all. The slightest twist of the steering wheel results in an immediate reaction from the front end.

And that front end does run the show. The rear axle follows quickly, but without any rapid yaw rotation. This is where the Mini really shows its magic. There may not be another car for sale right now that will snap into a corner like a Mini. If lane changing were an Olympic sport, the little bulldog would be on a cereal box. It will dart around like an athlete on tiptoe and shoot from direction to direction with a pinball's ferocity. However, unlike most cars that move with this urgency, once you commit to a corner the tires sink into the pavement and the Mini hunkers down. You can still dance the car around with a modulated throttle and a flick of the wheel, but stay in it and keep it smooth, and it feels like the wheelbase suddenly stretched a foot. This split personality means the Mini is just as enjoyable as a parking lot performer as it is for autocrossing, tearing up canyons or even track days.

With all that said about performance and how it still feels like a Mini, some things have changed significantly. We can argue whether that's for better or worse. The central speedometer is gone and the window switches have migrated to the door panels. The dashboard is a big step up in terms of quality and design. The rest of the interior, while immediately recognizable as a Mini, now feels more BMW-ish. You can read that as either classier or more expensive.

And complain about the bigger size all you want, but my 2-year-old, my wife and myself certainly didn't have a bad thing to say when we all fit comfortably on a weekend road trip with bags and associated child accessories

The Mini has always felt a bit more premium than its Japanese rivals—the gap is now greater. In terms of driving, the Mini still delivers everything you expect in terms of great turn-in, good power and driver confidence. As for the rest of the package, you now get a nicer environment for enjoying those traditional dynamics.









TECH SPEC 2014 MINI COOPER S HARDTOP

BASE PRICE \$24,395

PRICE AS TESTED \$27,595

VEHICLE LAYOUT
Front-engine, FWD, fourpass, two-door hatchback
ENGINE

2.0L/189 hp/207 lb-ft turbo DOHC 16-valve l-4

TRANSMISSION six-speed manual CURB WEIGHT (F/R DIST)

2734 lb. (63/37%)
WHEELBASE
98.2 in.

LENGTH X WIDTH X HEIGHT 151.9 x 68.0 x 55.7 in. 0-60 MPH 6 3 sec

QUARTER MILE 14.7 sec. @ 95.8 mph BRAKING, 60-0 MPH 111 ft. LATERAL

ACCELERATION

0.86 g (avg.) **FIGURE EIGHT** 26.6 sec. @ 0.66 g (avg.)

MIDLEMEN

COMPARING PORSCHE'S MID-ENGINED OFFERINGS ON TRACK

WORDS MICHAEL FEBBO





WITH EVERY NEW GENERA-**TION OF MID-ENGINE BOXSTER AND CAYMAN,**

they move closer to the performance of the 911. For 2015, both models will be offered in base, S and now GTS—the latter being the best of breed to date. The Cayman GTS in particular should have the Carrera looking over its shoulder.

The Boxster GTS takes the 315hp S up to 330 hp. In the Cayman, GTS means the 325hp S gets a bump up to 340. For those keeping score, that brings a Cayman to within 10 hp of the base 911 Carrera.

Both GTS versions include the Sport Chrono package and Sport Exhaust, which would normally set you back \$4,740 to option up an S model. These two features, along with a software change, account for the increased performance. Besides the go-faster additions, each gets new front and rear fasciae, bi-xenon lighting (including Porsche Dynamic Lighting System) and model-specific interior trim with either red or silver stitching, along with extra splashes of carbon fiber and Alcantara. Buying a GTS will save roughly \$9,000 over a comparably equipped S.

I attended the launch of the latest Boxster at Barber Motorsports Park back in May 2012. I reveled in the newer, bigger car's added stability, its refinement and how easy it was to drive. I also alluded to the fact that it might be slightly underpowered for the abilities of the chassis. Now I had the chance to drive all three variants of both models at the legendary Mazda Raceway Laguna Seca, whose asphalt still hadn't cooled from the annual Motorsports Reunion. The backdrop of this vintage motorsport event is ideal for driving Porsche's midengine family. From the beginning, the middle of the car is where the company has chosen to place the powerplant of the majority of its purpose-built racing cars. Everything from 550 Spyders to 908s to the current 919 hybrid racer all carry their power amidships.

The GTS cars Porsche brought over were European-spec, fitted with the beautifully supportive one-piece sport seats found in the last generation's Boxster Spyder. While I love these seats and would probably find a way to get them through the parts department for any new Porsche I was buying, they were apparently right behind the top in terms of customer concerns on the Spyder. If you want them in the States, I suggest you contact Porsche Cars North America and let them know.

I started my track session with the base Cayman. Which is good. The longer wheelbase (compared with the previous generation) makes it stable and easy to drive. In earlier Caymans (Caymen?), the thought of typical mid-engine snap-pirouettes was always in the back of my mind. The new car is completely predictable. And even with stability and traction control active, a few degrees of slip in the corners is possible. Steering feel, while not air-cooled Porsche hyperactive, is still about as good as it gets.

Jumping from base to S is big in terms of







performance, but the two are incredibly similar overall. It's hard to say the S is "better," but it's certainly faster and more capable in every aspect. All the things that define a car are the same: It rotates into turns dutifully, brakes straight and predictably and puts down power almost as well as a 911. It does feel a bit heavier, though. I don't feel like I want to move the car around as much; I want to be more precise and efficient in the S. Getting a little sideways bleeds off more speed, and getting a little offline during turn-in takes a bit more effort to get it back. But get it all correct and it will run away from the base car. Driving them back to back really makes the base car feel underpowered, or maybe it would be more appropriate to say the chassis feels under-utilized.

The GTS seems to split the difference. For this exercise, Porsche's GTS cars have manual transmissions. In Sport Plus mode, the car will blip the throttle to rev-match on downshifts. While this works seamlessly, the idea of the car heel-toeing for me negates the purpose of buying the manual. I freely admit that I'm always faster in PDK-equipped cars, but Porsche's manual transmissions are among the best in the business, and rowing my own does make me smile. On the track, give me the PDK. On the road? Three pedals, please.

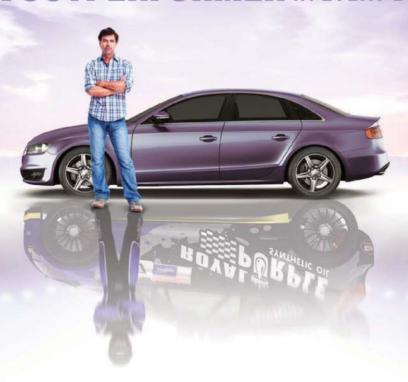
In the Cayman lineup, the GTS is hands down my favorite. It's easy to lose yourself in an IMSA GTP fantasy, driving what feels like a prototype racer. In high-speed turns, it settles down and grabs asphalt like a machine with higher downforce. Damping rates are firm, but suspension travel is plentiful, even with the 0.8-inch drop in ride height compared with the base cars. It never gets upset by track irregularities or running on the curbing. I can brake late and get on the power early; I'm never waiting on the car. After just a few corners, I think Porsche may shortly remove the term understeer from its vocabulary. High speed, low speed, under braking, hard on the throttle... the car just won't do it without being forced. Part of this is torque vectoring, but the majority is just good old-fashioned chassis tuning.

When switching to Boxsters, I decided not to drop down to the base version but opted to start with the mid-level S. The first noticeable thing about the Boxster is, ironically, the lack of headroom with the top up. I'm 6'2" and, with a helmet, my seating position is certainly compromised. Although there is an obvious fix, closed-top driving is the order of the day, so reclining the seat is the best course of action.

The Boxster S is great, full stop. Anyone who doesn't like this car doesn't like sports cars. It isn't quite as precise as the Cayman S—and you will have a tough time pretending you're nestled in a Le Mans—winning 962—but it will turn your favorite freeway ramps into switchbacks chiseled into the side of the Alps. It likes to be thrown around more than the Cayman S, which could be down to the slightly softer chassis, or maybe it just instills a greater sense of fun. I pulled into the pits after my Boxster S laps concerned that it would render a GTS version pointless.



FOR THE **OUTPERFORMER** IN EVERY DRIVER







The Performance Oil That Outperforms!®



Royal Purple® synthetic motor oils let your vehicle outperform.

- API-Certified premium, warranty-compliant oil for newer engines.
- HMX® revitalizes high mileage vehicles and extends engine life.
- HPS® keeps high performance engines clean and powerful.

Every formulation of Royal Purple® synthetic oil lets your vehicle

GO ONE FULL YEAR BETWEEN OIL CHANGES

To learn more about Royal Purple® performance products and to locate a retailer near you, go to royalpurpleconsumer.com

Brake pedal actuation is silky smooth and yardstick linear. Whether getting into or out of the brakes, it feels as though the ball of your foot is pressing the pad to the rotor with no middleman to try and throw in an interpretation. Turn-in may not be as precise or aggressive as the others, but it happens with more rotational yaw. The Cayman GTS bull's-eyes apexes with sniper-like precision, while the Boxster can be tossed at them, sliding by them in a beautifully controlled drift. If the Cayman GTS makes you Hurley Haywood racing a 962 at Le Mans, the Boxster transforms you into Hans Herrmann drifting a 550 Spyder around Italy in the Mille Miglia. This test car is optioned simply, and that's exactly how it should be bought.

The price gap between a base Boxster and a Cayman GTS is \$23,800. A decent chunk of change, but it doesn't even begin to tell the whole story. The base Boxster and the Cayman GTS are my two favorites, and while they may seem the same on paper, they sit on the palate as alike as chocolate ice cream and lemon sorbet.



POWERTRAIN/CHASSIS	2014 PORSCHE CAYMAN	2014 PORSCHE CAYMAN S	2015 PORSCHE CAYMAN GTS
DRIVETRAIN LAYOUT	Mid-engine, RWD	Mid-engine , RWD	Mid-engine, RWD
ENGINE TYPE	Flat-six, alum. block/heads	Flat-six, alum. block/heads	Flat-six, alum. block/heads
VALVETRAIN	DOHC, four valves/cyl.	DOHC, four valves/cyl.	DOHC, four valves/cyl.
DISPLACEMENT	2.7 liter	3.4 liter	3.4 liter
COMPRESSION RATIO	12.5:1	12.5:1	12.5:1
POWER (SAE NET)	275 hp @ 7400	325 hp @ 7400 rpm	340 hp @ 7400 rpm
TORQUE (SAE NET)	213 lb-ft @ 4500	272 lb-ft @ 4500 rpm	280 lb-ft @ 4750
REDLINE	7800 rpm	7800 rpm	7800 rpm
TRANSMISSION	six-speed manual/seven-speed twin-clutch auto	six-speed manual/seven-speed twin-clutch auto	six-speed manual/seven-speed twin-clutch auto
SUSPENSION, FRONT; REAR	Struts, coil springs, adj. shocks, antiroll bar; multi-link, coil springs, adj. shocks, antiroll bar	Struts, coil springs, adj. shocks, antiroll bar; multi-link, coil springs, adj. shocks, antiroll bar	Struts, coil springs, adj. shocks, antiroll bar; multi-link, coil springs, adj. shocks, antiroll bar
STEERING RATIO	12.4-16.5:1	12.4-16.5:1	12.4-16.5:1
TURNS LOCK-TO-LOCK	2.5	2.5	2.5
BRAKES, F; R	four-piston calipers, 12.4-in. vented, drilled rotos; four-piston calipers, 11.8-in. vented, drilled rotors	four-piston calipers, 13.8-in. vented, drilled rotors; four-piston calipers, 13.8- in. vented, drilled rotors	four-piston calipers, 13.8-in. vented, drilled rotors; four-piston calipers, 13.8- in. vented, drilled rotors
WHEELS, F; R	18 x 8 in.; 18 x 9 in. cast aluminum	19 x 8 in.; 19 x 9.5 in. cast aluminum	20 x 8 in.; 20 x 9.5 in. cast aluminum
TIRES, F; R	235/45-18; 265/45-18	235/40-19; 265/40-19	235/35-20; 265/35-20
DIMENSIONS			
WHEELBASE	97.4 in.	97.4 in.	97.4 in.
TRACK, F/R	60.1/60.6 in.	60.1/60.6 in.	60.1/60.6 in.
LENGTH X WIDTH X HEIGHT	172.4 x 70.9 x 51.0 in.	172.4 x 70.9 x 51.0 in.	173.4 x 70.9 x 50.6 in.
TURNING CIRCLE	36.0 ft.	36.0 ft.	36.0 ft.
CURB WEIGHT	3059 lb.	3152 lb.	3050 lb. mfr
WEIGHT DIST., F/R	45/55%	43/57%	57/0%
SEATING CAPACITY	2	2	2
CARGO VOLUME (F/R)	5.3/9.7 cu. ft.	5.3/9.7 cu. ft.	5.3/9.7 cu. ft.
ACCELERATION TO MHP / TE	ST DATA (IN COOPERATION WITH MOTOR	TREND)	
0-60	5.6	4.2	4.1 est.
QUARTER-MILE	13.9 sec. @ 102.7 mph	12.7 sec. @ 109.7 mph	12.5 sec. @ 114 mph est.
BRAKING, 60-0 MPH	101 ft.	106 ft.	106 ft. est.
LATERAL ACCELERATION	1.06 g (avg.)	1.04 g (avg.)	1.04 g (avg.) est.
MT FIGURE EIGHT	24.3 @ 0.80 g (avg.)	24.1 sec. @ 0.83 g (avg.)	23.9 sec. @ 0.84 g (avg.) est.
PRICING			
BASE PRICE	\$53,995	\$64,795	\$76,195





PREMIUM QUALITY SUSPENSION COMPONENTS 100% Made in Germany



(888) 827-8881 (360) 738-8881 hrsprings.com trakplus.com hrsprings.tv



I can tell you from past experience the Boxster is a phenomenal road car that carves canyons as happily as it commutes. It can handle track days and excel at driver education

The Cayman GTS feels like it would be just as content to commute, but it would turn canyon carving into a more serious proposition, an ideal companion for an owner progressing from occasional track outings to club racing. The other models fill the spectrum between these two with the Boxsters leaning more toward fun touring, the Caymans skewed slightly to furrowed-brow fast driving.

Show people a flash card with the word "Porsche" on it and 99 percent of them will visualize a 911. That's no bad thing, as the 911 embodies the soul of the company and probably always will, even if it doesn't always carry the performance flag. I love the 911; I'm a past owner. But for the first time, I would really consider buying the Cayman GTS over a base 911. I will also admit that a base Boxster was never really on my radar, but this current iteration is so good that I'm starting to calculate lease payments. Anything in this range is a winner—it just depends on which flavor you want. &

POWERTRAIN/CHASSIS	2014 PORSCHE BOXSTER	2014 PORSCHE BOXSTER S	2015 PORSCHE BOXSTER GTS
DRIVETRAIN LAYOUT	Mid-engine, RWD	Mid-engine , RWD	Mid-engine, RWD
ENGINE TYPE	Flat-six, alum. block/heads	Flat-six, alum. block/heads	Flat-six, alum. block/heads
VALVETRAIN	DOHC, four valves/cyl.	DOHC, four valves/cyl.	DOHC, four valves/cyl.
DISPLACEMENT	2.7 liter	3.4 liter	3.4 liter
COMPRESSION RATIO	12.5:1	12.5:1	12.5:1
POWER (SAE NET)	265 hp @ 6700	315 hp @ 6700	330 hp @ 6700 rpm
TORQUE (SAE NET)	207 lb-ft @ 4400	266 lb-ft @ 4500	273 lb-ft @ 4500
REDLINE	7800 rpm	7800 rpm	7800 rpm
TRANSMISSION	six-speed manual/seven-speed twin-clutch auto	six-speed manual/seven-speed twin-clutch auto	six-speed manual/seven-speed twin-clutch auto
SUSPENSION, FRONT; REAR	Struts, coil springs, adj. shocks, antiroll bar; multi-link, coil springs, adj. shocks, antiroll bar	Struts, coil springs, adj. shocks, antiroll bar; multi-link, coil springs, adj. shocks, antiroll bar	Struts, coil springs, adj. shocks, antiroll bar; multi-link, coil springs, adj. shocks, antiroll bar
STEERING RATIO	12.4-16.5:1	12.4-16.5:1	12.4-16.5:1
TURNS LOCK-TO-LOCK	2.5	2.5	2.5
BRAKES, F; R	four-piston calipers, 12.4-in. vented, drilled rotos; four-piston calipers, 11.8-in. vented, drilled rotors	four-piston calipers, 13.8-in. vented, drilled rotors; four-piston calipers, 13.8- in. vented, drilled rotors	four-piston calipers, 13.8-in. vented, drilled rotors; four-piston calipers, 13.8- in. vented, drilled rotors
WHEELS, F; R	18 x 8 in; 18 x 9 in. cast aluminum	19 x 8 in; 19 x 9.5 in. cast aluminum	20 x 8 in; 20 x 9.5 in. cast aluminum
TIRES, F; R	235/45-18; 265/45-18	235/40-19; 265/40-19	235/35-20; 265/35-20
DIMENSIONS			
WHEELBASE	97.4 in.	97.4 in.	97.4 in.
TRACK, F/R	60.1/60.6 in.	60.1/60.6 in.	60.1/60.6 in.
LENGTH X WIDTH X HEIGHT	172.2 x 70.9 x 50.5	172.2 x 70.9 x 50.0	172.2 x 70.9 x 50.0
TURNING CIRCLE	36.0 ft.	36.0 ft.	36.0 ft.
CURB WEIGHT	3040 lb.	3133 lb.	3050 lb. mfr
WEIGHT DIST., F/R	46/54%	45/55%	45/55% est.
SEATING CAPACITY	2	2	2
CARGO VOLUME (F/R)	5.3/4.6 cu. ft.	5.3/4.6 cu. ft.	5.3/4.6 cu. ft.
ACCELERATION TO MHP / TE	ST DATA (IN COOPERATION WITH MOTOR	(TREND)	
0-60	5.6	4.2	4.1 est
QUARTER-MILE	14.0 sec. @ 101.7 mph	12.7 sec. @ 109.7 mph	12.5 sec. @ 114 mph est.
BRAKING, 60-0 MPH	101 ft.	102 ft.	106 ft. est.
LATERAL ACCELERATION	1.02 g (avg.)	1.02 g (avg.)	1.04 g (avg.) est.
MT FIGURE EIGHT	24.9 @ 0.77 g (avg.)	24.6 @ 0.81 g (avg.)	23.9 sec. @ 0.84 g (avg.) est.
PRICING			
BASE PRICE	\$51,395	\$63,195	\$74,495

Everything for your BMW or MINI.



- Parts, accessories & knowledge
- Free shipping over \$150 (most orders)
- Free DIY video guides
- Free color catalogs





800.535.2002 | BavAuto.com





A Breakthrough in Winter Tire Technology

Many think ice presents the most formidable winter driving challenge when, in fact, the film of water that collects atop the ice is the real culprit. When temperatures hover between –21°F and 32°F, that film of water is truly all it takes to hydroplane. Fortunately, Yokohama has engineered winter tires with the most advanced traction technologies, giving you the confidence you need to get around safely in harsh winter conditions.

W.drive

PERFORMANCE VEHICLES

iceGUARD
iG52c

PASSENGER CARS

ice GUARD
iG51v

SUVs AND TRUCKS



Built to perform, the W.drive adapts to road surfaces and temperatures, offering drivers confidence, no matter the weather. Winter weather can change in a heartbeat. iceGUARD iG52c offers solid handling no matter what the season has in store.

Whether it's ice, slush or snow, the iceGUARD iG5 Iv is equipped with advanced technology to provide performance you can count on.

yokohamatire.com

©2014 Yokohama Tire Corporation

discounttiredirect.com 800.483.7555

M-F 8 a.m. - 9 p.m. EST **SAT** 9 a.m. - 6 p.m. EST





discounttiredirect.com

YOUR JOURNEY STARTS HERE

FREE SAME-DAY SHIPPING! Some restrictions apply.









STAY SAFE THIS WINTER. Call us about WINTER TIRES!



discounttiredirect.com

800.483.7555

M-F 8 a.m. - 9 p.m. EST SAT 9 a.m. - 6 p.m. EST



HYPER HYBRID

HOT LAPPING THE PORSCHE 918 SPYDER

WORDS MICHAEL FEBBO

THANKS TO THIS JOB, I do at least one thing a month that would make my 12-year-old self's head explode. Sitting in the pits at Mazda Raceway Laguna Seca, in the driver's seat of Porsche's latest hypercar—the 918 Spyder, getting ready to chase racing legend Hurley Haywood around the track would surely cause prepubescent cranial combustion. This isn't my first time in the 918, but realistically, it may be my last. And I can't imagine it getting any better even if it isn't.



Getting in is nearly as easy as any other Porsche sports car. I have been sliding in and out of Boxsters and Caymans all day before this and, thanks to Porsche not believing in any sort of winged, scissor or otherwise compromised-for-the-sake-of-style doors, I can plop in just like the others. In common with Porsche's GTS cars, the seats are sport-bucket style and confirm my "less is more" philosophy when it comes to driving thrones.

The environment is familiar, but more futuristic. Exposed carbon fiber is everywhere, which seems appropriate in a car wrought from the black wonder-weave. The center touchscreen is more smartphone-like. The steering wheel has a rotary controller for

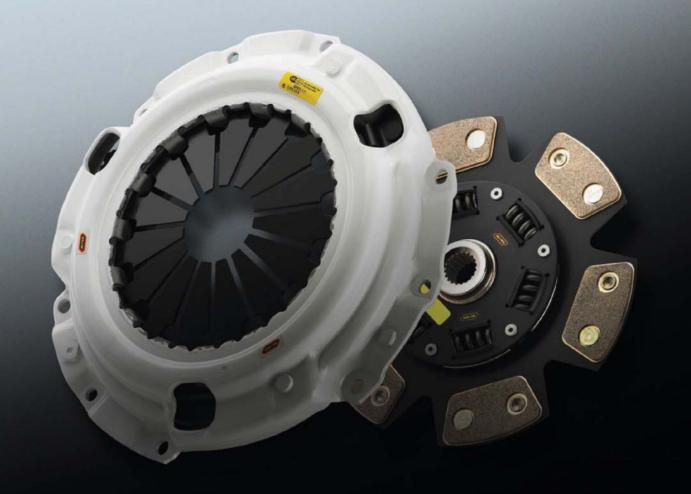
driving mode selection and the cabin is starker overall than a Cayman. It's comfortable, but slightly more Chris Pine's Enterprise than Patrick Stewart's.

Turn the key and a few things whir, a couple of beepers beep and lights light—no engine noise. I'm in full electric mode and roll out of the pits as quiet as a mouse on newly greased rollerblades. The front motor produces 129 hp while the rear motor nestled between the V8 and the transaxle produces an additional 156. The nature of electric motors means they produce their full 430 lb-ft of torque from zero revs. Porsche claims standstill to 60 mph in 6.2 seconds when burning nothing but electrons. Firing up the 608hp, 4.6-liter, flat-crank

V8 not only produces a shriek of exhaust noise, but also shaves that 0-60-mph time down to a test-verified 2.4 seconds.

I'm using the normal racing pit-out, so I drive all the way down the pit lane next to the front straight and down the hill on a road that suddenly feels just a few inches wider than the car. Before the tight left-hander, I switch to Race Mode. The engine catches, and crackles of combustion erupt to rattle my helmet. I gingerly roll into the throttle as I pull out. One does not simply jump on a combined 887 hp. My foot keeps falling, since there is no sign of tire spin. Even though I've driven the car before, the acceleration is breathtaking and I'm forced to merely mouth an expletive.





CLUTCH MASTERS CLUTCH KITS

PRODUCTS | ONLY THE BEST | SERVICE

INTERESTED IN MAKING YOUR BUSINESS THE BEST IT CAN BE?

TURN 14 DISTRIBUTION OFFERS THE BEST CUSTOMER SUPPORT, INVENTORY, B2B ONLINE EXPERIENCE, RETURN POLICY AND FLAT RATE SHIPPING! CAN YOU REALLY AFFORD TO NOT HAVE AN ACCOUNT WITH THE BEST IN THE BUSINESS? TURN 14 DISTRIBUTION, WHEN ONLY THE BEST WILL DO!



TURN14.COM | 877-7TURN14









"I've driven a few 1000-plus-horsepower cars, but none of them have felt as fast as the 918."

Getting on the brakes reminds me that stopping in the 918 is just as impressive as going. The initial bite just feels a bit wooden, the only telltale of the car's hybrid-ness. There's virtually no dive under braking, only lots of stopping power. Turn 3 is relatively easy: a low-speed, 90-degree, flat right-hander. The speed differential between a Cayman GTS and the 918 must be enormous, but I'm nowhere near the limit and feel as though I'm limping to the apex.

Back in the gas, and the acceleration is life-changing—no swearing, but a giggle. The shift is only noticeable because of the "blat" sound that shoots from the tailpipes. I brush the brakes for Turn 4. Once again, it's completely flat, but this one is deceptive and easy to run wide at the exit. I wonder if it's possible to corner at this speed on street-legal rubber as I burn through Turn 4 faster than I ever have on any tires. I can't tell if I'm more excited to be driving a 918 or having a front-row seat to Hurley Haywood drifting his 911 Turbo S right to the edge of the track.

Running up to Turn 5, I remember the stern warnings about Mazda Raceway's noise limit. Outside this bend, just up the hill, is one of the great wonders of the modern world: a sound-measuring shack. The noise limit could easily be broken by several cars that are completely legal on any road in the United States. So why have it? Because people built houses around a racetrack—long after the track itself had been

established for decades and then were shocked that it was loud. Anyway, I coast through the corner and upshift all the way into seventh to not upset the fragile feelings of the rich but apparently aurally sensitive locals.

I've driven a few 1000-plus-horsepower cars, but none of them have felt as fast as the 918 pulling up this hill. In the middle of the rise is Turn 6, a small kink to the left. It looks easy enough but there's a nasty bump right at the apex that easily upsets most cars. For such a low-slung machine, the 918 seems to have trophy truck—like suspension travel, probably because it isn't using most of it up with body movement.

The rest of the climb happens in a flash and before I know it, I'm standing on the stoppers for the Corkscrew. It's worth mentioning that the 918 decelerated from 60 mph in 94 feet during testing. Luckily, the car has a little more in reserve as Haywood's rear bumper has suddenly become huge. It then jukes left and disappears below me as he, then I, dive into the one of the most celebrated and challenging corners this side of Eau Rouge. Some cars feel light and just about fly; the 918 seems to generate its own gravity and suckers itself to the pavement. The bottom of the Corkscrew banks to the right. Combined with the 918's acceleration and natural cornering abilities, this is a whole new experience in g-forces and I'm pushed into the left rear corner of the seat.

Turn 9 is fast in any car. It's near-warp in the

TECH SPEC

2015 PORSCHE 918 SPYDER

BASE PRICE \$847,975

PRICE AS TESTED \$956,675

VEHICLE LAYOUT

Mid-engine, AWD, two-passenger, two-door convertible

ENGINE

4.6L/608 hp/398 lb-ft DOHC 32-valve V8 plus 129 hp/154 lb-ft front and 156 hp/276 lb-ft rear electric motor, 887 hp (comb.)

TRANSMISSION

seven-speed, twin-clutch auto

CURB WEIGHT (F/R DIST) 3791 lb. (43/57 percent)

WHEELBASE

107.5 in.

LENGTH X WIDTH X HEIGHT 182.9 x 76.4 x 45.95 in.

0-60 MPH

2.4 sec.

QUARTER-MILE 10.0 sec. @ 145.2 mph

BRAKING, 60-0 MPH

LATERAL ACCELERATION 1.12 g (avg.)

FIGURE EIGHT

22.2 sec. @ 1.06 g (avg.)

918. I can feel the rear-wheel steering doing its thing here as the car's attitude adjusts slightly without steering or throttle input. It's perceptible, but not distracting.

While pinned to the seatback, letting the car run out to the right before pulling it back to the left for Turn 10, I wonder if this speed is too easy. The 918 is much faster than even Haywood's Turbo S, yet I don't feel like I'm working that hard. Bearing down on the apex, I prove my own theory as I provoke a bit of understeer with an abrupt lift of the brake pedal and some aggressive steering input. Unwind, patience on the gas and I just kiss the curbing on exit.

Of all the times I've driven here, I don't think I've ever gotten Turn 11 perfect. Today is no different. I apex later than I should and end up sacrificing a bit of speed. Luckily, the 918 has that in spades, and I'm at triple digits before the self-loathing can even let out a sigh.

The straight at Laguna Seca has a kink to the left and a quick rise and fall. This is where drivers of really fast cars see God more often than the Pope does (unless His Holiness is a regular track rat at Laguna Seca). In the 918, it's a non-issue. Get the line right and it's nothing but smooth sailing all the way down to the braking markers for Turn 2.

And so concludes the most interesting lap in the 918. While most people won't ever get to drive a 918 Spyder, they will see the technology trickle down over the next few years. A hybrid 911 is certainly going to happen, and we already have a plug-in Panamera. It might even be the best version of that big sedan. The idea of a small, high-revving, naturally aspirated engine complemented by the down-low torque of an electric motor should appeal to all enthusiasts. If this is the future of sports cars, sign me up.



Composite Spring Cap

Hardened Chromed Piston Rod

Composite Spring Sea

High - Strength Springs

Zinc Plated Strut Housings

excellent all around performance, providing a balance between performance and comfort for everyday use

high-quality components for long durability use of twin-tube technology, independent reactions from damping inputs minimized chassis vibrations and increase driving dynamics

coilovers come with all necessary components, vehicle-specific certificate and insallation inscructions









Land Rover isn't so much looking back as forward with its maiden SVR offering. The Range Rover Sport SVR takes the current most rapid of Rovers to the finest edge of performance technology. The 550hp SVR has a claimed 0-to-60-mph time of 4.5 seconds. But more impressive is a Nürburgring Nordschleife lap of 8 minutes, 14 seconds. Even with all the on-road performance, the RRS SVR is still as capable off-road as the standard Sport model. Land Rover USA's Brand Vice President Kim McCullough said, "We always have to be mindful of our core values and expand from there. Technology has made it possible to build a car with this kind of performance without sacrificing off the road. No matter what, that's a Land Rover badge on there."

Again, McCullough gave credit to Tata for the ability to do this. "Under previous ownership, this would have been seen as a distraction. But with M and AMG building vehicles in this category, customers expect a vehicle like this from Land Rover." If a run of 250 cars is still too mass-market and a luxury SUV with

"Technology has made it possible to build a car with this kind of performance without sacrificing off the road."

sports car performance too predictable, then the Continuation Lightweight E-Type might be more your speed. SVR is building the final 6 of the intended 18 cars from the original 1963 run of these incredibly rare racers.

It could be argued that these continuation cars might actually be better than the originals. While they will be faithful reproductions, they are built to the original drawings and not patterned after a particular car. In the early '60s, quality control and manufacturing tolerances weren't what they are today. If you were to compare dimensions and individual components of two of the original E-Type Lightweights, you might think they were different models. Variances in critical dimensions like wheelbase and track, even overall length and height, could nearly be measured in inches. With the new cars, these variances will

be measured in thousandths of an inch.

Fans of Jaguar and Land Rover will contend that cars like the XKRS-GT and Autobiography Range Rovers were the precursors to all this. Maybe they were. The formation of SVR, however, shows a long-term commitment to vehicles that perhaps don't make perfect logical sense but fulfill an emotional need that had been missing from the lineups. Embracing the heritage of these legendary marques, while exploring the future by melding it with the latest innovations, is a winning formula.

Apparently Projects 8, 9 and 10 are already under way for SVR, and we will see another one within 12 to 18 months. It could be anything from another continuation car to another fast Jag. No matter which way it goes, the rest of the industry will be watching. The British are coming back and coming back fast.





creating a legacy, one wheel at a time.

www.modularewheels.com

T/877.636.8500

E/ sales@modularewheels.com



HOLIDAY MAKE EVERY CAR FAN ON YOUR LIST HAPPY GIFT GUIDE















A TUDOR GRANTOUR CHRONO FLY-BACK

Tudor watches are owned by Rolex. While the big R is perhaps aimed at more mature horologists, Tudor is skewed toward younger buyers and therefore less pricey. The Grantour Fly-Back is the company's tie-in with the FIA's World Endurance Championship series. As its name suggests, it sports a fly-back feature (which stops, resets and restarts chronograph functions with a single button) inside its 1.65-inch stainless steel case, which is ideal for timing laps and then checking your watch to see how many hours of this interminable race is left. It's water-resistant up to 500 feet, so it can easily cope with a victorious spray of champagne. **\$4,725**

tudorwatch.com



A AUTODROMO STRADALE

Let's face it, most of us are suckers for Italian words that sound like they might be involved with driving. It also helps when they're applied to watches as charmingly retro as the Autodromo Stradale. "Stradale" actually means "road-going" in Italian. The stainless steel case is 1.57 inches in diameter. Flip the watch over to see a 24-jewel mechanical movement. Water-resistant to 164 feet. Comes with a black dial and burgundy leather strap, cream dial with a brown strap or a gray dial with a blue strap.

autodromo.com



ARMIN STROM RACING COLLECTION

There are several separate limited-edition designs in the Swiss-made Armin Strom Racing Collection, including the Carbon Edition with its 1.7-inch titanium case, the Gravity (1.7-inch stainless steel/titanium case), the One Week Marussia Virgin F1 Limited Edition (1.7-inch black-coated stainless steel case) and the Marussia Virgin F1 Limited Edition (1.75-inch coated titanium case). And some of the parts come from the engine of a Formula One car. Starting at \$8,600

arminstrom.com





> BALL FOR BMW COLLECTION

Inspired by BMW's design philosophy, the Ball for BMW Collection has four styles: Classic, GMT, Power Reserve and Chronograph. They all have tiny gas tubes illuminating the numbers and hands, so it's easy to read at night and also looks downright cool. They come in a 1.7-inch case made of stainless steel or diamond-like carbon (except the Classic, which is steel case only). From \$3,699 to \$4,999 ballwatch.com







▲ GIULIANO MAZZUOLI MANOMETRO

Big and thick might possibly be the name of a country music duo, but it also describes the Italian-designed, Swiss-made Manometro from Giuliano Mazzuoli. The case is 1.78 inches in diameter and 0.58 inches in height. It comes in a carbon fiber, natural titanium, gunmetal titanium or polished rose gold/titanium finish.

From \$3,900 giulianomazzuoli.it



A BRM WATCHES AND CUFF LINKS

BRM (Bernard Richards Manufacture) watches have a nice link to motorsport—and not just because the name sounds like the kind of brrrm noise we made when playing with toy cars all those years (days) ago. This French company's designs appeal to the gearhead in us all. Some of them are called V8, others have the iconic pale-blue-and-orange Gulf livery and one even has carbon-fiber parts. From \$4,250 for the V6-44SA. The company also does a dashing line in cuff links, one with a brake disc design, the other bearing the Gulf emblem.

From \$250 for the Gulfs

brm-manufacture.com



A GRAHAM SILVERSTONE COLLECTION

Graham's Silverstone collection contains a dizzying array of timepieces, ranging from clean and slightly retro-looking (Vintage 30) to busy and buzzing with functions like a fly-back feature (Stowe GMT). The Silverstone RS versions sport things like a tire-tread strap and skeleton movements. Stainless steel case diameters go from 1.65 to 1.9 inches and they're all water-resistant to at least 160 feet. From \$4,595 for the Time Zone model graham1695.com



A ALFA ROMEO APPAREL AND ACCESSORIES

There's a ton of stuff bearing the famous badge or the tasteful script logo that just says "Alfa Romeo" at prices to suit any Alfisti: baseball caps, T-shirts, polo shirts, jackets, posters, tablet covers, tumblers, sunglasses and portable speakers. From

\$10 (for a key fob or cap) shopalfaromeousa.com

> BMW SHOP

It would have been amusingly appropriate for the BMW M-logo T-shirt (\$35) to only be available in M, but it actually comes in S, M, L, XL and XXL. As well as the usual plethora of accessories like the ones offered by Audi, BMW also sells logo-tastic athletic gear like running shoes and an M-branded carbon-fiber racing bicycle (\$2,279). There's an i-brand solar charger for smartphones (\$49), while kid's stuff includes bikes from \$355 and some pedal cars. From \$7 (for an M lapel pin)

shopbmwusa.com

►MINI

Among the usual merch of key rings, bags, watches, mugs, scale models and iPhone cases, Mini also offers wellington boots (\$56), a charm bracelet (\$35) and a folding bicycle (\$615). The boules set (\$35) is a bit un-British, but the "Be Mini" baby socks (\$11) are especially cute. From \$2.50 (for

a mini Union Jack pen)

shopminiusa.com



AUDI COLLECTION

Why the famed four rings of Audi should be on a foam American football is a mystery, but stranger things have probably happened in the world of merchandising. Some of the less strange things include briefcases, computer bags, golf umbrellas, scale models, aluminum bike racks, pens, dog coats (really), posters, mouse pads, watches, teddy bears, jigsaw puzzles and a special luggage set for the R8 priced at \$7,400. From \$12 (for the foam ball) audicollectionusa.com





FOLLOW US:

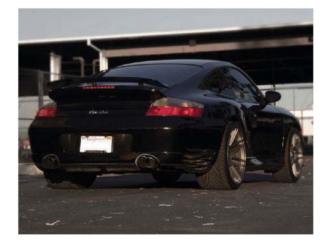












Our purpose is to share our **expertise**, **experience**, & **enthusiasm** in an effort to make the world a better place for automotive enthusiasts.



Special Offers for European Car Readers Here www.modbargains.com/ec.htm

Get our **Expert** Advice Learn from our **Experience** Feel our **Enthusiasm**

714.582.3331 ■ www.ModBargains.com 1721 E. Lambert Rd Unit C La Habra, CA 90631

- Variety of Products
- Best Pricing Available
- **■** Easy Online Shopping
- Mod Experts Available
- Professional Installations
- Large Stocking Inventory



MERCEDES-BENZ ACCESSORIES

Nothing says "I love you" like giving your better half a necklace (\$210) with a threepointed star dangling from it—except for buying them an actual car with a threepointed star on the nose. Assuming you've already done that, here's the chance to get the T-shirt (\$20). And the cheese board (\$85), iPhone case (\$18.50), capri pants (\$75), SLK zircon red nail polish (\$11.50), Nürburgring tea cup (\$58 and strangely desirable), plus the Bobby-Benz SLS AMG push-along car (\$127) and M-B-themed books like the Carl Benz biography (\$24).

From \$8 (for a 3-inch die-cast SLS AMG coupe)

accessories.mbusa.com



A VOLKSWAGEN

The GTI owner who always cuts himself seems like a pretty niche market, but everyone should get something for the holidays, hence Volkswagen's online store offers a tin of blue adhesive bandages bearing the VW badge (\$19.95). Meanwhile, a TDI T-shirt (from \$19.95) is a fine way of appearing manly and emissions-friendly at the same time. There are also mini-bus and Mk.I Rabbit T-shirts (\$19.95) with a high hip factor, plus GTI swim shorts (\$50), snow brush (\$12.95) and women's GTI briefs (\$21.95 and non-returnable). An eclectic mix, to be sure, but that means a better chance of getting something both suitable and original. From \$1 (GSR key tag) vw10drivergear.vw.com



A PORSCHE DESIGN

There's a difference between Porsche products and Porsche Design products. The latter has stores in expensive parts of town. Walk into one and it feels like they'll charge you for breathing their classy air. All those words used in relation to Porsche car styling—like elegance, simplicity and strength—can be applied to the various pens, sunglasses, luggage, clothing, lighting, watches and wallets. There's even a book (\$139) that goes into the history and philosophies of Porsche Design. Or try the Essence eau de toilette for men (\$72).

From \$47.50 (V-neck T-shirt)





The trouble with Porsche-branded accessories is that they're just as cool and desirable as the cars. The sunglasses (from \$199) have smart designs, and there's even a 911 watch that's affordable at \$449. For those with the taste and the pockets for high-end gear, might we suggest a 911 Turbo wheel rim clock at \$2,299 or the carbon-framed RS bicycle with hydraulic disc brakes for \$7,999? Steely salt and pepper mills (\$225) are new additions, joining 911 brake disc bookends (\$240 each), car covers with Porsche badges (from \$320) and loads of other things we'd like to receive from our Stuttgart Santa. From \$9 (Porsche

car care shampoo)

shop1porsche.com





THE PERFECT GAUGE



vent integrated digital interface

...but don't take our word for it.

"For Audi or VW owners with turbocharged engines the (P3Cars Vent Integrated Digital interface) digital multifunction gauge is a dream come true!"

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 angalog 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! 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.

Our gauge is a simple "plug and play" device with a revolutionary interface all designed and built here in the USA. Simply plug one of our VIDI units into your cars diagnostic port and you are ready to go. It is that simple. Boost, all available temps like coolant and EGT, a 0-60 timer, shift light, timing, and even battery voltage are all right at your finger tips. We even included a code read and reset function for engine fault codes. What's more is our VIDI is expandable, having 3 additional 0-5v linear inputs for those of you who take your cars even more seriously. Monitor anything from AFR to pressure or even flow rate. Your car wants to talk to you. Are you ready to listen?







A BILL PATTERSON

Not only is the profoundly talented Bill Patterson the official artist at Mazda Raceway Laguna Seca, but he's also available for private commissions and has prints for sale. Customers include Andretti Racing. His art manages to convey motorsport's kinetic energy. Limited-edition prints start at \$100

billpattersonart.com



A OMP RACING

This framed race suit is a faithful replica of the one worn by the great Ayrton Senna when he scored his third Formula One drivers' championship at Suzuka in 1991, an occasion with no controversial contact. It's a limited edition of 41 examples, to commemorate Senna's 41 wins in the sport, and each suit has been handcrafted and numbered. Don't expect these to sell out really quickly, though. They're a little on the pricey side. But a portion of the proceeds goes to the Ayrton Senna Institute, an organization that works to improve the lives of Brazilian children. Approximately \$6,500 (5,000 euros)

ompracing.it



Yes, more radio-controlled cars and die-cast scale models, but what makes Kyosho so endearing to Euro aficionados is that among its new products is a VW Bug desert racer (\$299.99) and a mean-looking Audi R8 (\$285.99). Kind of car-related and still fun is the Lamborghini C-1 CAT GP21 gasoline-powered racing boat (\$450). From \$89 (for a resplendent 1:43 Ferrari

250 GTO model in red) kyoshoamerica.com



A TAMIYA

Just the thing your child needs to become an evil genius or technological savior of the human race. Tamiya provides build-your-own kits that include a solar-powered car (\$48), two- or four-legged walking robots (\$11.99 and \$25.99) and remote-controlled battling insects (\$95). Or choose from a variety of electric motors (\$18), transmissions (\$19.50), wind-power generators (\$73), cable car (\$20.50), radio-controlled cars, plus scale models of planes, boats, automobiles and space shuttles. So many brilliant toys to keep you—sorry, your child—occupied for hours on end. From \$3.90 (mini motor set)

tamiyausa.com





A HPI RACING

It's never too early to build, modify and fix cars. Or go racing with them. Radiocontrolled car kits from HPI Racing could be how the bug bites. The company does many versions, like drift cars and Baja racers, even nitro-powered cars. But our partisan eye was caught by this Falken Tire-liveried Porsche 911 GT3 RSR (\$468.99) with functioning rear wing, plus Falken rubber on BBS wheels. The adjustable suspension includes oil-filled shocks. Reminder: This is a toy we're talking about. Comes as a kit or fully assembled. From \$136.67 (Porsche 911 GT1)

hpiracing.com



ANKI

While some might see this as the writing on the pit wall for slot racing, Anki's Drive is undeniably interesting and possibly the future of toy car racing. The cars have a kind of artificial intelligence and can be upgraded with weapons and shields. They're controlled by an app (free) that runs on more recent versions of iPhone, iPad and iPod touch. And the track has no slots. Spooky. From \$199.99 (starter kit with two cars, track, chargers and cables) anki.com





MINISTEAM

For the older child (14 and up), there is always the joy of steam. Seriously, anyone with a mechanical leaning will like these steam-powered engines and vehicles from Ministeam. Take this Mamod Brooklands Tourer, for example (\$315.95). Once it's been put together, it's actually a working model that can operate under its own, erm, steam. Anything that gets young people away from the Xbox and interacting with the real world must be a good thing. Ministeam also stocks standalone steam engines, fire trucks and even miniaturized V8 engines running on 89-octane gas. At \$8,257.75, these are actually more expensive than a lot of big-boy V8 motors, but at least they have the virtue of being able to fit on a workbench. From \$96.01 (Wilesco D5 steam engine kit)

ministeam.com



SCALEXTRIC

Say the word "Scalextric" to any British man of a certain age and watch his gaze grow wistful as he remembers hours of fun racing slot cars on the brand of choice across the Atlantic with his mates, Mickey and Dave. The company has since made its way to the United States and now might be one of the few ways of obtaining a Lotus Evora (\$44.99), albeit in 1:32 scale. The types of cars available range from Formula One (modern and classic), rally cars (including a sweet Escort MkI at \$54.99) and GT and street cars to endurance racers like the Peugeot 908 HDI FAP (\$52.99) and Porsche RS Spyder (\$49.99). There's even a Caterham 7 (\$44.99). From \$99.99 (Start Grid 24 set with track, two 1:32

cars, hand controllers, etc.)

hornbyamerica.com



A CARRERA SLOTS

Slot cars. Love 'em. Carrera has everything the budding Bernie Ecclestone needs. F1 cars, GT racers, DTM machines, plus track sections, bridges, control towers and even grid girls (plastic: do not attempt to engage in conversation). A particularly fetching Porsche 904 Carrera GTS (\$31.99) is new for 2014. From \$59.99 (Power Grip Set with 1:43 Ferrari 458 Italia and Dodge Viper SRT, two speed controllers, track, transformer, guard rail and analog lap counter) carrerasiots.com



A DWIGHT KNOWLTON

Since you should probably own at least one copy of The Little Red Racing Car, the children's book that redefined the kid's car genre, we thought you might be interested in the clothing line. If for some unfathomable reason you haven't bought the book, get it and a shirt to go with it. What better way to show the world you and your little ones are true car lovers and you're literate? Available in men's, ladies' and children's sizes. Shirts start at \$14.

carpegear.com





RACELAND COM

Raceland coilover kits are sold directly to you the consumer at dealer pricing. Our coilover kits come with a 30 day satisfaction guarantee and carry a two year warranty. In other words we guarantee our coilover kits will improve both the look and handling of your vehicle and if you don't agree, send them back for a refund.

Raceland wheel spacers are available to help you get that perfect wheel fitment.

Contact Us

801-365-1440 info@raceland.com

Available Makes

Acura Mazda
Audi MINI
BMW Mitsubishi
Dodge Nissan
Ford Scion
Honda Subaru
Hyundai Toyota

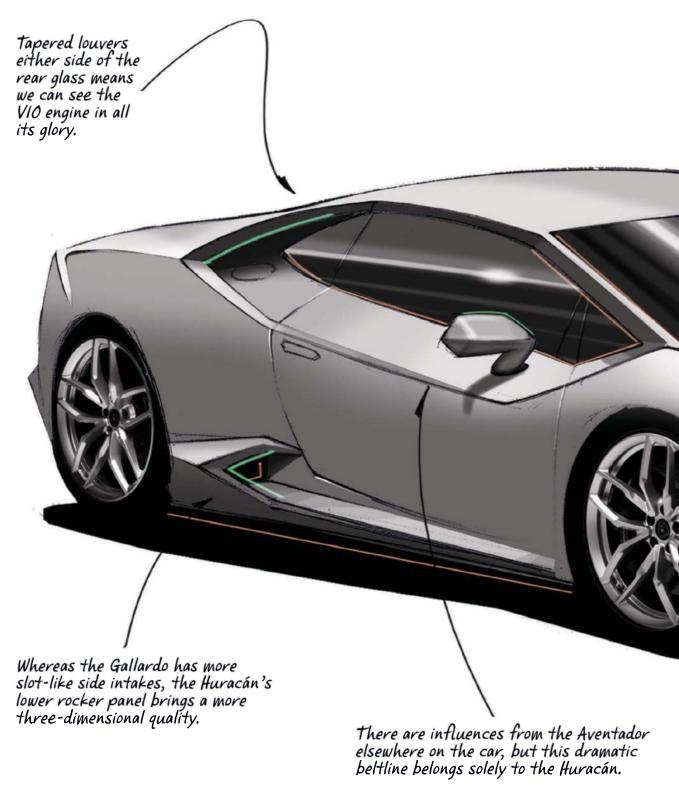
Volkswagen

Infiniti

behind the lines

2015 Lamborghini Huracán LP 610-4

A MIGHTY WIND



Words and Illustration Fzekiel Wheeler

THANK GOODNESS FOR LAMBORGHINI. While other manufacturers display a lack of nerve and imagination, the Raging Bull keeps coming out with machines that couldn't be mistaken for any other supercar, that make no apologies for their flashiness, with designs that are confident and comfortable with the avantgarde. Cars like the Huracán.

This successor to the wildly successful Gallardo is the latest chapter of a story told in metal. The man responsible for its design is Filippo Perini, director of Lamborghini Centro Stile since 2006. While holding this post, he has also created the Reventón and Aventador. In one of his previous jobs, he came up with the Alfa Romeo 8C Competizione. So we're looking at someone whose name could soon be mentioned with the same reverence as people like Bertone, Pininfarina and Gandini.

Remove the hood from the rest of the car and these creases will make it seem like a flying wing.

Just as the Huracán carries the Gallardo's torch, Perini took the baton from Luc Donckerwolke, the man behind the Murciélago. And he has run with it. Right now, he's the Usain Bolt of car design.

Take a head-on view for a greater appreciation of the creases in the hood and the symmetry of the shallow angles. Above the huge hexagonal air intakes are similar-shaped headlights containing LED strips in Y formations. Even the door mirrors get in on the six-sided action.

Studying the Huracán's profile, it's clear that the line traced from the road-kissing front lip only arcs up to the hood, windshield and roof as minimally as possible. Maybe just a little less than necessary, as if the basic ergonomic needs of humans are of little concern. Geometry goes three-dimensional for the cooling ducts and hooded C-pillars.

At the tail, things get cleaner and more elongated. Notice how either side of the rear valance reflects the taillamps and how the quad exhaust tips follow the rising line of the valance's lower edges. Those lamps also have Y-shaped LED strips.



Here's a look adapted from the Aventador; these big, hexagonal intakes add to an overall air of aggression. Let Arnie keep his Hummers, this looks more like a car the Predator would drive.



WHAT IT'S REALLY LIKE TO GO RACING

WORDS RYAN JURNECKA **PHOTOS** JIM HAUGHEY

THE MORNING'S MARINE LAYER FROM SAN FRANCISCO BAY IS BEGINNING

TO BURN OFF when K-PAX Racing hit the paddock at Sonoma Raceway. Their garage consists of two trailers with a tarp hanging between them, from which fluorescent tubes shine down on a pair of McLaren MP4-12C GT3 machines painted in dark blue with bright yellow accents. On the side of the trailers are the team's accolades: 2007 World Challenge GT Champion, 2008 Word Challenge GT Champion, 2010 World Challenge GT Champion, 2010 Manufacturers' Champions.

K-PAX are here for the next meeting of the Pirelli World Challenge series, their penultimate race weekend for this season. A crew of 14 buzzes with activity, mechanics working on the cars, technicians consulting with two McLaren GT representatives from England. The driver's engineers are sitting in one of the trailers—"the geek room"—preparing for the first practice session.

Celebrating its 25th season, the Pirelli World Challenge is one of the United States' premiere sports car racing championships. The 2014 calendar is 12 weekends running one to two 50-minute races per class, nine involving GT/GT-A/GTS, completing 16 races. TC, TCA, TCB series run in seven race weekends for a total of 14 races.

in every class. A manufacturer's championship is also awarded in GT, GTS and TC. Points are won for race finish positions, to drivers who have led the most laps, led at least one lap, fastest lap, and pole position. Total points can exceed 1,000 by season's end.

K-PAX participate in the GT class, a field so competitive that Bob Raub (team co-founder and crew chief) reckons the drivers have to put in qualifying laps every lap. The recent inclusion of FIA GT3 cars has created a flood of exotic European marques. Accompanying the two McLarens are Bentley Continentals, Audi R8 LMS Ultras, Ferrari 458s, Lamborghini Gallardo FL2s, Porsche GT3Rs and an Aston Martin.

Joining a domestic Dodge Viper SRT-GT3 are two dying-breed, non-GT3 Cadillac CTS-V Rs. They're still competitive, though, leading the championship into the final weekend. Veteran North American sports car drivers like Johnny O'Connell, Butch Leitzinger, Andy Pilgrim and (up until this year) Randy Pobst can also be found in GT.











At 10:40, 35 minutes before the start of practice, the #9 car fires up, filling the garage with ethanol exhaust. Ten minutes later, veteran sports car driver Alex Figge, in his white Alpinestars uniform, approaches and watches the mechanics as they fit the hood back into place. Sporting a thick beard more suited to a winter climate than the anticipated 80 degrees, Figge is restless as he paces alongside his car. He has every right to be.

This championship-winning team is currently enduring its first winless season. After five years of successful racing with factory supported Volvo S60s (accounting for most of its 29 race wins), the company's decision to back out of the sport last year left the team searching for a new manufacturer.

"After the introduction of FIA GT3 cars, we started looking at what was available," says Jim Haughey, co-founder and team owner. With many options, the team sourced information on every car, compiled spreadsheets and watched YouTube videos of performances domestically and overseas. "In the end, [the team] voted and it was unanimous when McLaren won. It was the name, the look, the heritage. Nobody else was running the car in the United States.'

The return of McLaren via K-PAX is the marque's first appearance in North American racing in more than 40 years, since the legendary factory-based Can-Am racers of the 1970s. In its various 2013 European championships, the car won 23 races, claimed 27 pole positions and scored three championship titles.

K-PAX are currently sitting sixth in the manufacturers' championship, an unfamiliar position. Coming into this race weekend, the drivers are eighth and eleventh in the standings. The season began on the back foot. Cars were not delivered until January and February, giving the team limited testing time regarding some of the major differences between North American and European racing before the March kickoff.

One major difference is the standing-start performance. Rolling starts are employed overseas, so launch control had to be developed. Unfortunately, it has become common to lose multiple positions at the start. "If you don't launch, you're dead screwed," Raub says. Street circuits are also proving to be a challenge, especially given the car's pitch-sensitive character and difficult rear-wheel traction accelerating out of low-speed corners.

Evolution of Performance.







AC Schnitzer parts are TÜV approved



AC Schnitzer suspensions



AC Schnitzer performance upgrades



AC Schnitzer alloy wheels



AC Schnitzer exhaust systems

At AC Schnitzer we have cultivated advanced automotive technology to perfection. An outstanding example are the exclusive components for the BMW 4 series Coupé. **Efficient Performance by AC Schnitzer.**

AC Schnitzer USA | German Tuning Corporation 1711 McGaw Avenue | Irvine, CA 92614 Phone: 949.863.0015 | andreas@acschnitzer-us.com www.acschnitzer-us.com











While Figge settles his nerves, Robert Thorne, the driver who's eighth in the championship, steps out of the trailer. Thorne appears more relaxed and chats with his race engineer. He's 24, eight years Figge's junior. But he's a rising star, having won the 2012 U.S. Touring Car Championship. He has a boyish face, but behind his narrow frameless glasses is a look of determination.

The crew finishes final preparations and leaves the garage, hauling the bare pit-stop essentials to a makeshift lane at Turn Four. Once the session begins, both drivers are back in the pits after only a couple of laps. The team is trying new Penske shocks and the initial results are not encouraging. According to the drivers, the cars are feeling "pushy" through almost every turn. Powering out of the corners is creating oversteer. And the car bottoms out in several places, including the steep climb at Turn One. After many tweaks throughout this session and the next, not much improves.

Thursday's times are not recorded officially, but the team knows it's not where it wants to be. The overall mood is one of concern. There are lots of hands on hips and crossed arms. "The car seems to be a little out of its element," Haughey says.

A representative from Penske Racing Shocks, a musclebound guy who seems more like a club bouncer than a race tech expert, pays close attention to the drivers' conversations with their engineers regarding their performance. When asked about his silence in the car, Thorne says, "I get quiet when I'm disappointed." There are just two more practice sessions before Saturday's qualifying and race, and the team appears lost.

There's a lot of downtime between sessions, which is when Holly Raub, Bob's wife, is usually at her busiest. As a sort of mother to the team, she wears a perpetual smile and makes sure the guys have plenty of food and drink, topping up Famous Amos cookies, Snickers bars, potato chips and two large drinks coolers. Lunch and dinner are often provided, sometimes even cooked by Mrs. Raub herself, and allows for more positive interactions to take place. There's more laughter during meals, more smiles, and it appears everyone sits with one another at a different moment during the weekend. It's a true family connection, as they all travel together from their Denver base to races across the continent. Once the meal is over, the smiles fade and business is resumed.





Saturday morning: qualifying for the first race. Figge's left leg is rocking back and forth nervously as he sits in the cockpit. His Penske shocks have been changed back to the originals. He tells his mechanic crouched nearby, "I just wish I had some sense of what to expect." Thorne seems focused, after spending most of the pre-grid in conversation with Butch Leitzinger and deciding to keep his Penske shocks.

Qualifying goes better. Thorne appears to have the third slot until Guy Smith (Bentley) and Anthony Lazarro (Ferrari) go faster on the last lap, displacing him to fifth with a car he describes as "pushy, but planted." Figge makes the best of a noticeably twitchy car by placing eighth.

Before the race, the mechanics are hard at work in the garage. There are no *parc fermé* regulations, so teams are still allowed to finetune. With IndyCars making their first appearance on the track, there is more fan presence than in prior days. And there are more people walking into the garage to snap pictures of the exotic-looking McLarens and ask questions of the engineers and mechanics. The drivers stay in their trailers.

At 2 p.m., the teams head for the "real" pits, the front straight pit lane currently occupied by the IndyCars. K-PAX will be stationed right in front of Juan Pablo Montoya's Penske pits to the left of the main grandstand.

In 81-degree heat, the cars line up on the starting grid. The lights come on, the drivers initiate launch control, engines roar. Then they're away.

Both McLarens get off the grid remarkably well, one of their best starts of the season. Thorne is held up, though, behind the slow-starting Bentley of Guy Smith, dropping him to sixth. Figge is able to move up to seventh.

Thorne reclaims fifth position through a remarkable overtaking move on O'Connell's



"In the end, [the team] voted and it was unanimous when McLaren won. It was the name, the look, the heritage."

Cadillac. The car is loose, but Thorne continues to push the car hard, ruining the rear tires. Moments later, Thorne goes off, damaging the front and rear of the car. He's 10th at the checkered flag. The one positive is that he sets the third fastest time. Tomorrow's starting grid is ranked by this race's lap times.

Figge struggles continuously with the setup and even pulls into the pit when he thinks the issue is a flat tire. But there's no obvious damage and he has to settle for 19th.

The team seem stoically accustomed to such disappointment when they return to the garage. They've been in this position before, when starting development with Volvo. They went through multiple transmissions every race weekend. Then hard work and determination turned things around and they won championships.

Raub sits alone at one of the dining tables, utters an audible "Goddammit" and shakes his head. But he soon becomes upbeat: "We're

starting third tomorrow and we now have the pace. That's the important thing."

Figge has another trying time on Sunday, finishing 18th. Thorne has learned from his mistake the day before and drives a superb race, maintaining his third-place starting position, despite restarts and late challenges from Mike Hedlund's Ferrari and Leitzinger's Bentley, allowing the team and driver to record their second podium of the year.

"It was a good race for us, a good race for Robert," Haughey says. "In no way was the car a first-place or second-place car, but it was a third-place car. Even though it was a third-place finish, it felt like a first because of the smart driving. I'm happy to see him run that smart race and develop some maturity. It's good to see him learn and advance."

With greater driver maturity and newfound pace, K-PAX may yet be regaining its winning formula as one season ends and a new one awaits.





2015





18X8 | 20X8.5 | 20X10



409MB 18X8 | 20X8.5 | 20X10



NEW MYTHIC415MB 20X8.5 22X9



AN409B 18X8 | 20X8.5 | 20X10





407MB 18X8 | 20X8.5 | 22X9

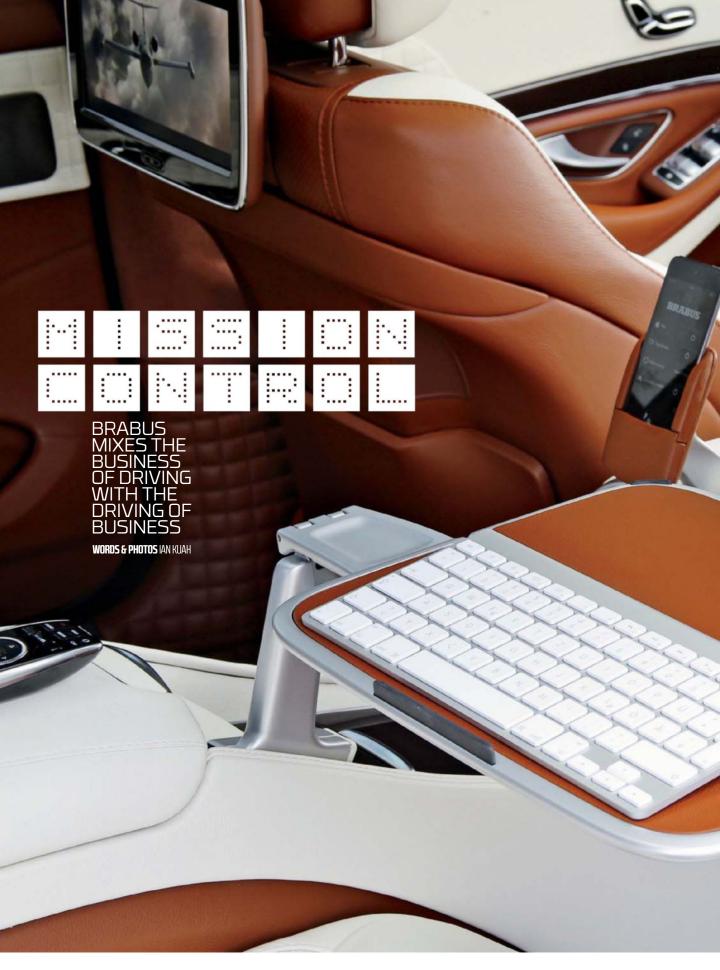


MARANELLO 410BM 18X8 | 18X9.5 | 20X8.5 | 20X10 | 22X9 | 22X10.5











THE BRABUS 850 6.0 BITURBO **IBUSINESS AND I FIRST MET BACK**

IN MARCH 2014 at the Geneva Motor Show. The latest in a long line of extremely well-appointed Brabus S-Class models, this über-sedan offers supreme speed, comfort and connectivity for the tycoon on the move. However, with the Brabus stand offering plenty of captivating machinery and dozens of new car unveilings going on elsewhere at the show, this was not the time or place to get to grips with the world's fastest business tool on wheels.

A few weeks later, I visit Brabus HQ in Bottrop, Germany, on a pilgrimage to familiarize myself with the 850 6.0 Biturbo iBusiness, minus the distractions. And because of the car's doubled-edged mission statement to excel in both kinds of hustle, I'll be conducting this test from the back seat as well as behind the wheel.

Straight from the factory, the current W222 S-Class is an imperious conveyance. Its visual presence is an important aspect for owners, especially in places like China and the Middle East where social status—or at least its perception—is everything. With distinctive AMG styling and larger alloy wheels, the S63 AMG carries even more cachet. However, when the car reaches Bottrop, the Affalterbach tailoring is morphed into something altogether different. Like swapping Boss for Armani. Neither is better than the other; it's merely a matter of taste.

Brabus styling changes are built on the AMG aero kit, adding carbon-fiber components to the front bumper, with more aggressive airscoops around the big side intakes. Carbon fiber is also used for those inserts just behind the front wheels.

The chromed radiator grille is shot-blasted and repainted in matte titanium gray to tone down the imposing (and rather bling) nose of the standard car. This de-chroming process is applied to all the brightwork. The window frames and rear trim strip above the license plate also receive the titanium treatment.

New side skirts of OE-quality polyurethane reaction injection molding (PU-RIM) replace the AMG originals, containing LED lights for night illumination that can help prevent exiting occupants from stepping into a puddle or pothole or worse.

At the rear, a new carbon-fiber insert incorporates a diffuser flanked by cutouts for two distinctive exhaust outlet shrouds that have been CNC-machined from billet aluminum. A PU-RIM trunk lid spoiler adds the finishing touch.

Brabus offers a choice of 21-inch or 22-inch lightweight forged alloy wheels for the S-Class. At the Geneva Show, one of these options is fitted to each side. So the driver side features the 9.0 and 10.5 by 21-inch Brabus Monoblock R in liquid titanium smoked finish, with 255/35 ZR21 and 295/30 ZR21 Continental Sport Contact 5P tires, going from front to rear. Meanwhile, the other side wears 9.0 and 10.0 by 22-inch Monoblock G rims with 255/30 ZR22 and 295/25 ZR22 Pirelli PZero Nero rubber.

Behind the spokes of either wheel design is the Brabus big front brake kit. Clamped by huge six-piston calipers, the 15-inch (380mm) vented discs are made by Brembo from a new carbon-ceramic material that is claimed to significantly improve thermal transfer for optimum braking performance under tough conditions. The rear setup is stock S63 AMG.

A lowering module for the Airmatic suspension drops ride height by 0.6 of an inch without any negative impact on comfort. In combination with the aero kit and the bigger wheels and tires, the car looks even more purposeful.

Converting the 5.5-liter AMG M157 biturbo V8 to achieve 850 hp is a work of engineering art. While it is possible to extract 800 hp from this engine with no change in displacement, the level of power and torque targeted by Brabus required more capacity as well as strengthened internals.





2014 Brabus 850 6.0 Ibusiness

5912 cc Brabus modified AMG V8, 32v, DOHC, 850 hp @ 5400 rpm, 848 ft lb @ 2500-4500

Mercedes-Benz/AMG 7-speed Speedshift MCT gearbox, RWD w/limited-slip-differential

Brabus/Brembo 15x1.3 carbon-ceramic vented discs, six-piston calipers (f); 14.2x1.02 internally vented and perforated steel discs, single-piston calipers (r), ABS

Airmatic suspension w/Brabus lowering

WHEELS & TIRES
Brabus Monoblock R 21x9 (f), 21x10.5 (r);
255/35 ZR21 (f), 295/30 ZR21 (r) Continental
Sport Contact 5F. Or Brabus Monoblock
G 22x9 (f) and 22x10 (r); 255/30 ZR22 (f),
295/25 ZR22 (r) Pirelli PZero Nero

Brabus aero kit w/carbon fiber front splitter, air scoops; PU-RIM side skirts w/LED downlighters; carbon fiber rear diffuser; PU-RIM trunk lid spoiler; matte titanium refinish for all chromed parts

Full re-trim in two-tone leather and Alcantara, carbon fiber trim inlays, iBusiness package w/two video screens in front seat headrests, drop-down 15.6-in. monitor, DVD and TV capability, Apple Mac Mini, onboard WLAN router for mobile hotspot, iPad Mini or iPod Touch control via Brabus app

CONTACT brabus.com





Out of the box, the M157 motor deploys a bore and stroke of 3.86 x 3.56 inches. The Brabus conversion uses a custom-made billet. steel crankshaft, machined billet connecting rods and forged Mahle Motorsport pistons to take the swept capacity to 5912 cc with a bore and stroke of 3.9 x 3.78 inches. The company's deputy development chief, Jörn Gander, explains that the new pistons have to be shorter to stay close to the stock compression ratio of 10:1, although the shorter connecting rods raise the thrust angle.

"We increase boost pressure to between 1.1 bar (16 psi) and 1.2 bar (17.4 psi) depending on engine speed, and this peaks at 1.3 bar (18.8 psi) on overboost," Gander says. "The greater combustion pressures and temperatures require a special head gasket material. This comprises three bonded metal layers to create a gasket that reliably meets those physical demands."

In the old days, Brabus would have swapped the camshafts for ones with higher lift and longer duration, optimizing power and torque.

However, while the bottom end of the motor has seen radical modifications, the top end is stock except for gas-flowed cylinder heads. The reason is simple. All fine-tuning these days is done with variable valve timing controlled by ECU mapping, so what used to require new hardware has now become an exercise in

On the subject of ECU remapping: fueling, ignition, valve timing and boost pressure are all recalibrated for the larger-capacity motor, deeper-breathing intake, larger turbochargers and the lower back pressure of the bespoke

to run closer to detonation for more power. This is quite safe. The factory knock sensors are precision-tuned to retard the ignition well before the danger point, protecting the motor in case of poor fuel quality, especially in high

To achieve maximum-intake airflow, Brabus employs a setup similar to its first E V12 800. "We designed a carbon-fiber ram air collector system that sits between the grille and hood and feeds air to a custom high-flow filter box for each cylinder bank with 45 percent more surface area than stock," Gander says. "When the hood is closed, these boxes are sealed and so [they] maximize air pressure."

Carbon-fiber pipes feeding air to the turbochargers are also larger in diameter and, like the intake pipes, are covered in a gold heat-reflecting material. "We did a lot of testing to optimize the intake and charge-air pipe diameters," Gander says. "With the higher airflow and bigger turbos, we had significant loss under-pressure using the standard pipework, so we had to go larger to reduce power loss. It is always a balancing act. If you go too big, power starts to fall off again."





The stock housing of each turbocharger unit is internally machined to take a larger compressor wheel, then mounted on a custom exhaust manifold with larger-diameter pipes made as close to equal length as possible within the confined space of the engine bay.

Unlike some tuners whose conversions are only designed to meet current EU emissions laws, Brabus always aims to fulfill the same emissions standards as the factory product. The 850 engine is therefore homologated to EU6 standards. To do this requires the latest sport catalytic converter technology, and Brabus worked with an OE supplier to obtain a 400-cell metal unit with double the reactive surface area, yet with no more backpressure than the 200-cell units used before. At 3 inches in diameter, the downpipes are bigger than stock and each cylinder bank sends its gases to the rear through a pipe 0.04 of an inch larger, with middle and rear silencer boxes along the way.

All this results in a huge jump in output from the stock 585 hp at 5800 rpm and 663 lb-ft of torque between 2250 and 3750 rpm, to 850 hp at 5400 rpm with 847 lb-ft of torque from 2500 to 4500 rpm. The dyno actually saw 1069

lb-ft of torque, but this has been dialed back electronically to protect the drivetrain.

Even so, the seven-ratio Speedshift MCT transmission is beefed up to ensure long-term reliability, and Brabus added a limited-slip differential with 40 percent locking. This partnership dispenses torque-to-tarmac efficiently enough to ensure a sprint from standstill to 62

mph in just 3.5 seconds. Top speed is limited electronically to 217 mph, which is an all-time record for this class of car.

From the well-upholstered driver seat, there's an immediate feeling of immense power and torque. The standard S63 AMG is a snarling beast in a smart suit. With its exhaust valves open, the 850 iBusiness does nothing to disguise an even more aggressive nature. Activating those valves (at the touch of a button) will dampen things down a bit, but there's no hiding the ferocity under the hood that seems to be biding its time until the driver opens the throttle again.

Step on the gas and the car lunges for the horizon with a fervor that made me thank Mercedes-Benz for its excellent self-leveling Airmatic suspension. The last time I experienced anything similar, there was a big Brabus twin-turbo V12 involved. Now this smaller and lighter twin-turbo V8 can convincingly outpunch its big brother. That's progress.

If the exterior looks imposing, a lavishly appointed, handcrafted cabin exudes an expert wielding of color and texture that complements countless luxurious details. The finest soft hides in tobacco and snow-white leather, with matching tobacco headlining in Alcantara, make for a strong contrast with the metallic black paintwork. The almost-black carbon-fiber inlays have a hint of dark brown, harmonizing nicely with the leather.

To sit in the rear compartment is to experience one of the two seats that can be either mission control for business deals or an entertainment center on the move. All major functions here are controlled by the iPad mini or iPod touch. The holder for the former is in the drop-down central armrest; a cradle in the center console accommodates the latter.

There are three video screens in the back. The two behind the front seats are factory units. Brabus supplements these with a 15.6-inch monitor that descends from a specially made compartment in the headlining. This is part of the iBusiness package, whose core is a Mac mini stored in a motorized drawer built into the under-shelf area of the trunk. Audio from the Mac mini and Apple TV is routed to the excellent Burmester sound system.

A Brabus remote app activates the ceiling-mounted monitor, switches the Mac mini on and off, controls the video source (Apple TV or DVD) and the opening and closing of the drawer in the trunk. An onboard WLAN router sets up a hotspot, and all Internet-connected devices are run off this.

Not long ago, in-vehicle office facilities tended to be clunky, with a distinct lack of integration between software and hardware. But now, thanks to 3G and 4G cell phone technology, along with the superior connectivity of Apple's ecosystem, we can reach out and touch the world more easily while on the move.

The Brabus 850 6.0 Biturbo iBusiness is not the only vehicle in the world to be equipped so comprehensively with business and entertainment tools, but you can bet it will be the fastest of its kind for quite some time to come.







76 EUROPEANCARWEB.COM • 12/2014



THERE'S A LONG AND NOBLE TRADI-TION OF SPORT WAGONS IN EUROPE

that for some reason has never fully translated to this side of the Atlantic. The concept of moving more than two people plus cargo efficiently, comfortably and with agility seems like a no-brainer, but the glut of SUVs and minivans on the freeways suggests most Americans don't share this view.

Fortunately, there's a hard-core group of Europhiles who understand the advantages and enjoy the cool factor of owning something out of the ordinary. Audi and Mercedes currently offer some of the most desirable sport wagons on the planet, even if not all of them are available here (that means you, Audi RS4). And while BMW hasn't had any such product to stir the emotions for a few years, it does at least acknowledge the existence of a small, loyal band of wagon aficionados and services them with a stylish 3 Series wagon.

Two such BMW wagon fans are the owners of the cars seen here. Both have owned a series of performance cars in the past, but circumstances led them down similar wagon trails.

The 2014 F31 BMW 328i xDrive belongs to Stan Chen, events and motorsport manager at Toyo Tire USA. Long-standing *European Car* enthusiasts might remember him as the founder of tuning shop DTM Autohaus, a company he established in 2000 that spawned a series of cover and feature cars for our sister publication *Eurotuner* magazine.

Chen sold that business in 2004 before joining Toyo, during which time he drove a modified 5 Series. He had hankered after a station wagon for many years, but his wife, Chelsea, was the main obstacle to this plan. The imminent birth of their first child, Valentina, tipped the balance in his favor.

Since they live in one of the trendier parts of Southern California, the Mercedes E-Class wagon was ruled out because it wouldn't fit their garage. So the choice narrowed down to the Audi allroad and the BMW, with the 328i xDrive getting the nod because Mrs. Chen didn't like the Audi's plastic cladding.

Decision made, the next step was finding a car, since few dealers carried stock. However, that can be an advantage if it's been sitting on the lot for a few weeks. Snagging a good deal, Chen immediately set about sourcing parts and planning his SEMA 2014 build. The car will be displayed on the Toyo Treadpath, if you'd like to see it in person.

F31

A veteran of the tuning industry, Chen mapped out a strategy. It involved a host of big names to ensure a quality build, beginning with the M Performance online catalog at bmwusa.com. BMW's entry into the aftermarket business has provided a selection of high-quality parts that can be ordered from any BMW dealer and even added to the vehicle's finance plan.

In this instance, BMW was one of the few resources, but these parts were only intended for cars with the M Sport trim package. Fortunately, the company offers an M Sport





2014 BMW 328I XDRIVE

Long Beach, CA Toyo Tires Events & Motorsport Manager

2.0-liter I-4, 16v, turbo w/ECU Tuning Group piggyback ECU, MXP cat-back exhaust system

DRIVETRAIN

Stock eight-speed automatic transmission, AWD

BMW M Performance four-piston calipers, R1 Concepts 14.5 rotors (f); BMW M Performance two-piston calipers, 13.4 slotted and dimpled

KW Variant 1 coilovers

WHEELS & TIRES
20x8.5 HRE 501 Vintage Series wheels, 225/35
R20 Toyo Proxes 4 Plus tires (f); 20x9.5 HRE
501 Vintage Series wheels, 255/30 R20 Toyo
Proxes 4 Plus tires (r)

BMW M Sport bumpers (f & r) w/M Sport retrofit kit, M Performance front splitter, diffuser, side blades, roof spoiler, Thule Sonic roof box, AeroBlade Edge rack system, Hyper Optik ceramic window tint

Recaro Sportster CS leather seats, full European coding by Alpine Coding

The Shop (theshopautomotive.com), Alpine Coding (alpinecoding.com), STM Advanced Window Film Solutions (stmsolutionsinc. com), Thule (thule.com), BMW M Performance (bmwusa.com), R1 Concepts (r1concepts. com), KW Suspensions (kw-suspension.com), Toyo Tire (toyotires.com), HRE Performance Wheels (hrewheels.com), ECU Tuning Group (ecutuninggroup.com), Mevius (mackin-ind. com), Recaro (recaro-automotive.com)



retrofit kit, allowing owners of lesser models to update their bumpers to the higher specification. With the new bumpers in place, Chen could fit the M Performance three-piece front splitter and rear diffuser. He also added the side blades and tailgate spoiler.

Everything was color-matched to the white exterior—with the exception of the splitter and diffuser, which were painted in the same charcoal gray as the HRE wheels. The side skirts also received a splash of gray before Porsche Irish Green was applied to strategic areas such as the wheel rims and leading edges of the spoilers.

A similar green stripe was applied along the sides, which older enthusiasts might recognize as a tribute to the AC Schnitzer ACS3 CSL

II. The Coupé Lightweight Silhouette II was based on the E36 M3 and caused a stir when it was unveiled in the mid-'90s. Finished in a similar green, it had yellow highlights, which Chen has echoed with his Ferrari-yellow M Performance brake calipers—another official accessory that uses multi-piston Brembo brakes as part of the package.

The Thule roof box continues the white and green color scheme. This addition hasn't won universal approval from his better half, but Chen rationalizes it by being able to keep his car care products separate from the baby formula. It's also in the fine European tradition of packing everything you have into a small vehicle and traveling long distances, so this combination of wagon and roof box is

a common sight across the Old World.

HRE's Vintage Series mesh wheels bring more retro nostalgia. These 20-inch custompainted rims support all-season Toyo Proxes 4 Plus tires that allow the family the chance to explore winter slopes. Ordinarily, this would be a fine choice for the 328i xDrive, but Chen has extracted more horsepower with a piggyback control module from the ECU Tuning Group. It's claimed to provide a healthy power increase, although we're not able to verify any numbers. However, it does suggest that a set of Toyo's high-performance summer tires might be needed soon.

Chen ensured the wagon would sound more purposeful with a cat-back MXP exhaust (previously known as Mevius) with four black

James Camarador's M3 conversion on his E91 328i sports Laguna Seca Blue paint and air ride for extra attention.



options activated on the car, so it now has emergency brake lights, an M Performance logo on the dash at start-up, the ability to turn off the daytime running lights and tire pressures displayed by the TPMS. With the parts assembled and the car built in a hectic two days at The Shop in Culver City, California, this F31 cuts through traffic with panache. It's a modern car with retro accents and proves that it's possible to stand out from the crowd without having to make sacrifices in style or performance.

James Camarador from La Cañada, California, had a similar desire to create an interpretation of the ultimate 3 Series wagon. His starting point was the previous-generation E91, taking obvious inspiration from the M3.

Again, Camarador is a mainstay of the West Coast tuning community, previously known for a 2000 Honda Civic (EK) and later an E46

took his time finding the right shop. Anyone who pays attention to the SoCal BMW tuning scene won't be surprised to learn Camarador eventually arrived at the door of our good friend at LTMotorwerks. Long Tran and his crew had recently completed an M3 conversion on another E91. So with all the research and development carried out on the first car, "the second would be a breeze," Tran assured him.

Creating a convincing M3 conversion is far from plain sailing, however. The first task is sourcing the many parts. This included the entire M3 front end: bumper, radiator support, hood, headlights, air ducts, fenders and bellypan. Everything fits fairly easily, but it has to be aligned properly, which takes most of the time.

The hardest aspect of the swap was the rear end. Although the E91 wagon is similar to the E90 sedan, there are differences, particularly around the lights and tailgate. As a result,

2007 BMW 3281

James Camarador

Floss Design wheel refinishing

3.0-liter I-6, 24v, w/BurgerTuning Juice Box

DRIVETRAIN

Stock six-speed automatic transmission, RWD

BRAKES

BMW M Performance 13.3 drilled and grooved discs, four-piston calipers (f); Brembo 11.8 drilled and grooved rotors, two-piston calipers (r), Brembo lines, ABS

SUSPENSION

AirREX airbags, five-gallon air tank, control unit; Viair compresso

WHEELS & TIRES

18x10.5 BBS E88 wheels w/wheel stud conversion, 255/35 R18 Toyo Proxes 4 Plus tires (f); 18x12.5 BBS E88 wheels w/wheel stud conversion, 295/30 R18 Toyo Proxes 4 Plus tires (r)

EXTERIOR

M3 hood, front bumper, radiator support, air wishious, in to uniper, radiator, support, side skirts, rear quarter-panels, rear bumper and fender liners, Vollkommen Design GT4-style dry carbon-fiber front lip, M Performance gloss black kidney grilles, LCI window trim and taillight conversion, MTEC LED angel-eye headlights

M Sport steering wheel, piano black dash and door trim, AirREX ride height screen

THANKS

LTMotorwerks (Itmotorwerks.com), Vollkommen Design (vollkommendesign com), AirREX (airrexus.com), BurgerTuning (burgertuning.com)



CORBEAU



SPORTLINE EVOLUTION

- · 20 SEAT STYLES STARTING AT \$199
- · CUSTOM SEAT BRACKETS
- · HARNESS BELTS
- · SEAT HEATERS

801-255-3737 FREE CATALOG WWW.CORBEAU.COM





BBS E88 18-inch wheels are an awesome choice, built-in custom sizes and finished in custom colors by James at his Floss Design business.

since it wasn't offered as an option in the United States.

The carbon lip must fear for its life because, thanks to the AirREX air suspension, Camarador can bring it into contact with terra firma at the touch of a button on the digital display. With AirREX bags at each corner, a five-gallon air tank and a Viair compressor, Camarador is able to set it low for show. However, he's also able to raise the car and drive it home. Not that he does. He likes to have it slammed at all times, with his cruising setting lower than most people would dare.

The eagle-eyed will have noticed that not

only does the E91 wagon wear a set of highly desirable staggered BBS E88 wheels, but they're a different color on either side. This

You see, Camarador runs a business called Floss Design. He refinishes wheels or creates custom finishes to customers' specifications. When he asked us what color we'd like to see the wheels, we couldn't decide between silver or gold. So he gave us both options. At least it supports our dilemma, because even now we

Behind the wheels is a set of M Performance big brakes with the calipers painted yellow. There's also a BurgerTuning Juice Box piggyback ECU to provide the straight-six with a little more pep. Why doesn't the car have a more potent powerplant? "The M3 bodywork represents the first stage of a comprehensive conversion, but it's also expensive," Camarador said. "So while major engine work is planned, the car remains at stage one for the time being. We hope to either fit the new ESS supercharger for the original 3.0-liter engine or transplant the M3 V8."

As it stands, Camarador loves cruising in his stanced 328i. He occasionally uses its cargo hold for business purposes, but mostly he enjoys people's reactions when they first spot the Laguna Seca M3—a rare occurrence in its own right. What gives him the most satisfaction, though, is the subsequent double take when they realize it's a wagon.



ESS-UNING

BMW performance tuning and supercharger systems



ESS E-FLASH

"OBD programing and diagnostic interface" Horsepower for your BMW is now a DIY affair.

Applications include:

1 series 3 series

5 series 6 series

7 series Z series

X series M series



ESS VT2-625 Supercharger Kit shown

www.esstuning.com | Phone: 480 525 9160





THE LATEST IN AFFORDABLE HORSEPOWER

WORDS PETER WU

TO MEET TOUGHER CONSUMPTION AND EMISSIONS REGULATIONS, manu-

facturers are moving toward turbocharged engines. Compared with turbo engines of the past, when words like "lag" and "heat" and "thirst" were part of the lexicon, they've come a long way. The new wave, often 2.0-liter units, features smaller turbos that spool up quickly for low-end torque, instead of coming on later as older turbo engines used to.

For enthusiasts, perhaps the best thing about turbocharged engines is how easy it is to make significant gains with a re-map of the ECU, which shows that OEMs leave a lot on the table. We asked a few tuners about their latest offerings for some recent engines: VAG's third-generation EA888, BMW's N20/26 and S55 (the latter propels the new M3 and M4), plus Porsche's 3.8-liter twin-turbo in the 991 Turbo and Turbo S.

-SUPER COUPON!

NO **PURCHASE** REQUIRED

THE NO PURCHASE REQUIRED THE

ANY SINGLE ITEM

How Does Harbor Freight

Sell GREAT QUALITY Tools at the LOWEST Prices?

We have invested millions of dollars in our own state-of-the-art quality test labs and millions more in our factories, so our tools will go toe-to-toe with the top professional brands. And we can sell them for a fraction of the price because we cut out the middle man and pass the savings on to you. It's just that simple! Come visit one of our 500 Stores Nationwide.



6" MAGNETIC PARTS HOLDER ITEM 61428/97825 Item 97825 shown П

PITTSBURGH **6 PIECE SCREWDRIVER** 47770/61313 Item 47770 showr **\$1**99 VALUE

CAN AND OBD II

LOT NO. 60693/99722/62119

DELUXE SCAN TOOL

П

12 TON SHOP PRESS @ MACHINERY Pair of Included LOT NO. 33497/60604 60604 **REG. PRICE \$199.99**

3 GALLON 100 PSI OILLESS **HOT DOG STYLE AIR COMPRESSOR** LOT NO. 97080/69269 **CENTRAL PNEUMATIC**



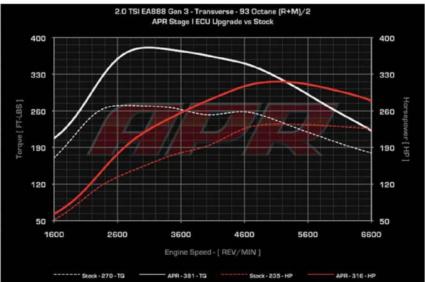




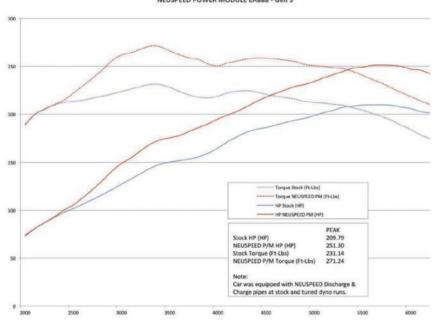


- 100% Satisfaction Guaranteed
- Over 25 Million Satisfied Customers
- No Hassle Return Policy
- Lifetime Warranty On All Hand Tools
- 500 Stores Nationwide
- HarborFreight.com 800-423-2567





2014 VW JETTA GLI MK6 NEUSPEED POWER MODULE EA888 - Gen 3



VW EA888

We could arguably credit VAG for starting the trend toward small-displacement, small-turbo engines with the 1.8T from the mid-'90s. The company's latest 2.0-liter turbo is an update of the EA888 found in the MkVII GTI and newest Audi A3. In the GTI, it's rated at 235 hp and 270 lb-ft of torque; the A3 is rated at 220 hp/258 lb-ft. The 1.8-liter version develops at 170 and 184 lb-ft in VWs and 170 hp/200 lb-ft in the A3, but APR's baseline for that engine is 189 hp and 204 lb-ft at the crank.

In APR's 2.0 version, the company claims an impressive 316 hp, 81 hp above stock—plus a massive 381 lb-ft of torque, 111 lb-ft more than stock. For the 1.8, APR's Stage One tune measures 245 hp, which is 36 hp above stock, and 290 lb-ft, a gain of 86 lb-ft.



Neuspeed's Power Module (which the company says can be installed and removed without detection) is a plug-and-play system that intercepts at the MAP and boost sensors. Electronics are housed in a billet aluminum case, and there's also a two-position switch to select 91- or 100-octane gas. The company sent us a dyno graph showing gains of 40 hp and 40 lb-ft made on a Generation 2.5 EA888 in the 2014 Jetta GLI. Both the baseline figures and Power Module figures were made while the engine was fitted with Neuspeed's discharge and charge pipes.



WeatherTech[®]

Automotive Accessories

FloorLiner[™]



Laser measured to perfectly fit your vehicle
Provides "absolute interior protection™"

Has channels to carry fluids and debris to a
lower reservoir





Available in Black, Tan and Grey for over 900 applications

Cargo Liner

Complete trunk and cargo area protection
Digitally designed for each application
Remains flexible under temperature extremes



In-Channel Side Window Deflectors



Increases ventilation Light and Dark Tint Available
Reduces wind noise and allows interior heat to

escape











BumpStep™

CargoTech™

TechCare[™]

ClearCover®

Car Covers

Pet Barrier

Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

Order Now: 800-441-6287



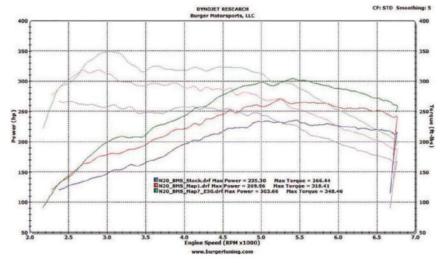
American Customers
WeatherTech.com



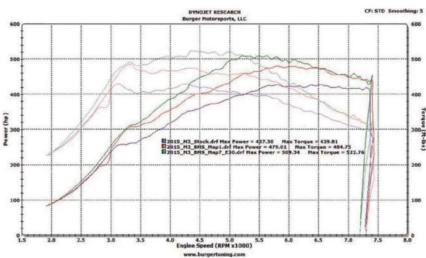
Canadian Customers WeatherTech.ca



European Customers WeatherTechEurope.com







BMW N20/26

First seen in the United States in the Z4 and then later in the F10 528i, X3 and F30 328i, BMW's N20 is a 2.0-liter four that deploys a twin-scroll turbo for a quick spool-up. It's rated at 241 hp and 258 lb-ft of torque, but the N20/26 has been consistently showing around 240 wheel horsepower in independent dyno tests. The N20 became the N26 after BMW switched the rubber fuel lines to metal ones and added a valve to the fuel tank venting system so it could qualify as a SULEV (Super Ultra Low Emissions Vehicle).

Burger Motorsports of Southern California offers several levels of tune for the N20/26, but these tunes are not currently CARB-exempt and therefore not legal for road use in the Golden State. A Stage One piggyback module attaches to the factory DME and pushes power from the 235 hp baseline to 270 and from 266 lb-ft of torque to 318 lb-ft at the wheels.

Burger's JB4 Juicebox is also a piggyback module but features CANbus functionality, allowing for multiple maps (that can be changed in-dash), plus built-in diagnostics, code reading/deleting, downpipe support, ethanol support and free software updates.

According to Burger Motorsports, a JB4 Juicebox running the most aggressive map on a completely stock engine and exhaust system produces 304 hp and 348 lb-ft at the wheels, drinking a 70/30 mix of 91-octane and E85 fuel. We reviewed Evolution Racewerks' 328i using the JB4 with ER's intake, downpipe, intercooler, charge pipe and exhaust system in the June 2014 issue. It measured 312 hp and 355 lb-ft on 91 octane.

ESS Tuning's Roman Zepeda said the company is close to finalizing tunes. He estimates an increase of 40 to 70 hp.

BMW 555

Burger Motorsports' tunes for the S55, found in the M3/M4, are currently beta-spec and, like its N20 tunes, are not CARB-exempt. According to Terry Burger, owner of Burger Motorsports, it's "based on the Juicebox 4 system and includes Stage One, Two and Three maps, along with programming based on user needs. The higher the stage, the more harness connections are used. Stage One is a 15-minute install job. The full Stage Three is about an hour-long process. It's fully reversible and can be enabled/disabled on the fly using steering wheel controls. For more advanced users, it offers a laptop/iPhone/ Android interface allowing a full suite of datalogging, map-changing and custom-tuning options. The tuning supports all fuel types.'

Early tests of the Stage One tune have shown a jump of 52 hp (477 hp) and 55 lb-ft (485 lb-ft) from the stock engine's 427 hp and 430 lb-ft. Like the N20, BMW understates the S55's output; 427 to the wheels works out to roughly 491 at the crank when corrected for drivetrain loss. Burger's most aggressive tune, using 70 percent 91 octane and 30 percent E85 cranked out an impressive 509 hp and 523 lb-ft.

ESS Tuning said early tests on an S55 tune have shown an extra 50 to 80 hp.





STR 607 Wheel Collection





SILVER MACHINED FACE MATTE GUN METAL WHITE BLACK FACE

TITANIUM

MIRROR FINISH

CANDY APPLE RED

STRWheels

STR Wheels

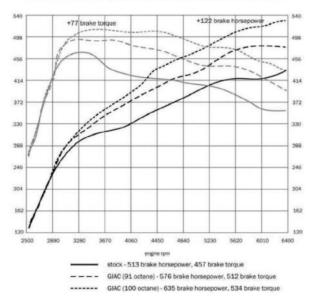
fSTR Racing Wheels

www.str-racing.com
TOLL FREE 888-589-5045

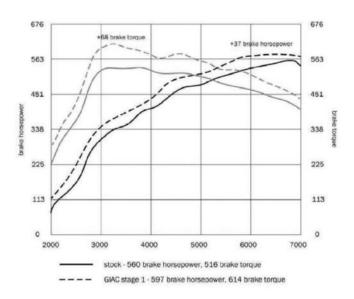
Los Angeles New York Las Vegas Atlanta Puerto Rico Northwest Region Rent A Wheel



Porsche 991 Turbo GIAC Software Estimated Crankshaft Power Output



Porsche 991 Turbo S GIAC Stage 1 Software Estimated Crankshaft Power Output



PORSCHE 991 TURBO SIX

We've found two companies that have managed to squeeze out more power from the 3.8-liter twin-turbo in the 991 Turbo and Turbo S.

GIAC claims to be first in offering an OBD-II port flash for the 991 Turbo S. The company's dyno graph shows increases of 37 hp and 68 lb-ft on 93 octane (measured at the crank). A flash for the Turbo also shows significant gains.

With a baseline of 513 hp and 457 lb-ft, this program hikes power to 576 hp and 512 lb-ft on 91 octane with a GMG exhaust system. Fill up with 100 octane and the engine can make 635 hp and 534 lb-ft.

Evolution Motorsports (EVOMS) has just finalized a 650hp/650-lb-ft package for the Turbo and Turbo S. Todd Zuccone, owner of Evolution Motorsports, explained that instead of just flashing the ECU with a new map, this

includes upgraded components in other areas to extract maximum power safely—such as a more efficient intercooler, freer-flowing exhaust system and a pair of exhaust manifolds that features EVOMS-patented flow divider technology to help scavenging and increase exhaust velocity. Through the ECU, boost is increased to 19.1 psi (from 17.4 psi in the Turbo S) in regular mode and 21.3 psi (19.6 psi/Turbo S) in overboost mode.



A USER'S GUIDE TO MONTEREY CAR WEEK

WORDS & PHOTOS F7FKIFL WHFFLFR



ON ARRIVAL

It's always a good idea to become familiar with the new surroundings. The best place to start at Pebble Beach is Carmel-by-the-Sea. It's packed with locals who enjoy a decent bite to eat, and there's plenty to look at. The main drag, Ocean Avenue, is constantly abuzz with cars, people and events. Like our run-in with Dario Franchitti who helped kick off the Balvenie Rare Craft Roadshow, an artfully curated display of handcrafted items from across the nation. Items like a coffee table fashioned from parts once used in Franchitti's race car.



Dario Franchitti talking about his role in the Rare Craft





Beauty is more than skin deep.



Lamborghini debuted the Huracán Super Trofeo, soon to be known as Huracán GT3.



The McLaren 650S Sprint wows the crowd.



Balvenie Rare Craft Roadshow explored America in this verv Morgan.





 $\label{thm:continuous} \textbf{Typical street sighting near RM Auctions at the Portola Hotel}.$

For a killer view and damn good cocktails, stop by The Lodge, where it's possible to see the Concept Lawn begin to fill up. Just up the hill from there is where several luxury manufacturers set up shop. This year, McLaren had a newly tuned 650S Sprint ready for would-be owners to place a down payment.

A little further north is the famed Gooding & Company auction tent. Admission is \$40, but that allows you to pop in all weekend to see the hammer falling on gem after gem. Considering every car collection set to cross the block will only be parked door to door on this one occasion, that means the best Pop-Up Automotive Museum in the world. The company also gives out free kettle corn during auction hours. Watching rare cars reach eight figures is better drama than any movie.

SEE SOMETHING NEW

Concours d'Elegance used to be a simple two-to-three-day race weekend 60 years ago. Today, it has morphed into a five-day (seven, if you plan on showing anything) extravaganza sprinkled across the Monterey Peninsula. For manufacturers, it's a time to showcase their latest creations to a premium audience.



The BMW Villa was packed with unveils.



i8 Pebble Beach Concours d'Elegance contrasts with the 30th Anniversary M5.

The BMW villa, around the corner from The Lodge, hosted the 2014 North American unveiling of its Future Vision Luxury Concept, possibly the next generation of 7 Series or an all-new i9 hybrid platform to take the fight to Tesla. The first production i8 was also around. Dubbed the Pebble Beach Concours d'Elegance Edition, this specially trimmed futuristic supercar sold at Gooding & Co. for an eyewatering \$825,000. A little more attainable was the 30th Anniversary M5, going for \$138,275.

ENJOY A SHOW

Scheduling has to be the most complex and chaotic experience during Monterey Car Week. Events happen one on top of the other. To hit up the Rolex Monterey Motorsports Reunion (referred to as The Historics) and guarantee a full day of ear-shattering race cars, you'll have to budget your time wisely. It starts on



Snow patrol at the Legends of the Autobahn event.



Worth collecting now, a U.S.-spec Mercedes-Benz 190E 2.3L Cosworth with Hoosier slicks.





Karim Habib, BMW design chief, dissecting the Future Vision Luxury Concept.

Wednesday and ends on Sunday evening. That leaves only so many hours to enjoy events like the Quail, McCall's Jet Center, Concorso Italiano, Tour d'Elegance, Concours on the Avenue, Legends of the Autobahn, California Mille and various official and unofficial villa parties.

The Quail is the most exclusive. Or at least that's how it's marketed. At roughly \$500 a ticket (luckily, wine and food is included), there are plenty of one-off restorations, concepts and global debuts. Some owners build cars to make a splash here and bring something else to Sunday's main event.

Concorso Italiano is located at a new venue (Black Horse Golf Course) and on a new day (Saturday, was Friday) and pays homage to the best of Italian automobiles, including wedge-shaped Bertone vehicles, Zagato double-bubbles and Prancing Horses



The rare BMW M1 basks in the sunlight at Legends.



Nanni Galli drove this factory Alfa Romeo GTA Widebody during the Rolex Motorsports Reunion.



Anthony Rimicci taking his 1965 Alfa Romeo GTA to the starting grid.



This Aston Martin V12 Zagato was just one highlight of Concorso Italiano.





The legend, Nanni Galli.



Yes, this early Countach really does need a wash.







The 2014 Alfa Romeo 4C is a hoot to toss about 17-Mile Drive.

organized chronologically from the 1950s. To celebrate Maserati's centennial was every type of significant and rare Trident model.

Never underestimate the power of an old race car. While the world is being swept up in hyper hybrid performance machines, there are still metal coffins breathing through old-fashioned carburetors, drinking gasoline and smelling of race fuel and burnt rubber. Makes you wish your childhood took place in the era of motoring nirvana. Famous Dino owner Anthony Rimicci piloted several well-appointed and competitive Alfa Romeo GTAs, including one that Nanni Galli, former F1/Le Mans/Ferrari/Alfa pilot and teammate of Jacky Ickx, took for some hot laps.

MEET SOME PEOPLE

When flitting from one event to another, it's easy to bump into celebrities. And not Kimye or Bieber. People more interesting to petrol-blooded folk, like Sir Stirling Moss or Gordon Murray.

I had a chat with Fiat Group design director Lorenzo Ramaciotti. We touched on details not too many people are privy to, or may not know until now. Like what is Fiat USA going to be? Will it go down the Mini path or forge new territory? Luckily, Ramaciotti indicated the latter. The company will continue to identify all future models under various iterations bearing the familiar 500 nameplate, but they will all be designs that are "playful and almost like a pet," Ramaciotti said. "Something you're happy to see when it greets you in your driveway. Keep an eye on the Paris Auto Show, where we will unveil the production version of the 500X, an all-wheel-drive, 187hp car with a nine-speed transmission.'

Now, the elephant in the room: Alfa Romeo. Its return is welcomed, but many are skeptical about a permanent place in the United States. "Right now, we have a separate team dedicated to developing eight new models with new engines and platforms to bear the Alfa Romeo badge by 2018. We are very serious about Alfa Romeo in America and all over the world. The 4C is an adaptation of what we learned from the 8C. There will not be an 8C replacement, because that is a special car on its own. Instead, the 4C offers the best technology for what drivers are looking for in a sports car. Future models will build on this momentum and become the DNA on which Alfa Romeo is designed."

BASK IN THE GLORY

Sunday means "Best in Show" pomp. For the best view, arrive early; this attracts thousands of people. And bring lawn chairs or a good blanket, a well-stocked picnic basket, hat and sunscreen. Gloomy doesn't mean not sunny, it just means filtered sun. Once settled, prepare to watch the best cars in history roar past. Alternatively, you could always do what the veterans do and wait until it's over and see the entire field of cars fire up and file out.

Every car invited to the Concours d'Elegance is subject to rigorous judging. Part of that

READY FOR LAUNCH

WWW. SUPERSTREETNETWORK.COM

european car

SUPER

ÎMPOSIL

HONDATUNING

TUNERS, CLASSICS, AND THE NEWEST IN EUROPEAN CARS





The largest confluence of Pontoon Ferrari Testa Rossas on display, to everyone's delight. This was an unexpected marque feature.



Best in Show, the 1954 Ferrari 375 MM Scaglietti Coupe.



Sir Stirling Moss putting in his two pennies.



Gordon Murray roaming the fairway.





Valentino Balboni, legendary Lambo test driver, enjoying the main event as an official judge.



Post Patrol: the rollout of the event is just as good as Dawn Patrol without the 04:00 call time.



Best in Class, this '54 bubbletop streamlined Jaguar XK120 was a crowd favorite.



This \$4,500 Porsche RSR die-cast model was just as big as our long lens. Size does matter.

process is turning the motor over, revving a few times and remaining at idle for a while. This is, of course, after Thursday morning's Tour d'Elegance, a 60-mile jaunt around the peninsula. Extra points are scored if the car finishes. Third, Second and First Place are announced in that order.

This year, something historic happened. Two cars pulled up for the final. And then a third, a 1954 Ferrari 375 MM Scaglietti Coupe, which seemed the odd one out. For most of the event's 60-plus years, judges have invariably favored pre-Second World War coach-built sculptures. Not since the late '50s has a postwar car taken home Best in Show.

Now add this Ferrari to the list. Created for Hollywood director Roberto Rossellini who gifted it to his wife, Ingrid Bergman, the car started off as one of five 375 MM examples but was badly damaged in an accident. Rossellini sent the car to Carrozzeria Scaglietti, where it received its current body, which later would be recognized as the first passenger car designed by Pininfarina. The car's current owner found it in 1955, hidden in an underground Paris garage.

What does this mean for the next 60 years of the Concours? It means the organizers are looking to the future of car collecting and might not wax so lyrical about "the way it was." We can certainly expect to see more post-war cars compete for top honors.



www.bilsteinUS.com







ON VEARING FEST

GOT VW? GOT RADIATOR? GET HERE.

WORDS & PHOTOS BRYAN JOSLIN



THE YOUNGEST OF TODAY'S VW

ENTHUSIASTS probably don't give a second thought as to why the largest Volkswagen and Audi show in America is called Waterfest. But 20 years ago, when the very first Waterfest was held in a community college parking lot in New York, the "water" portion of the show's title was a major differentiator.

Most organized VW shows at that time catered almost exclusively to air-cooled cars—the original Beetles, Microbuses and Karmann Ghias that put German cars in the driveways of a whole generation of Americans, even though water-cooled models had long since replaced them in the showrooms. By the mid-'90s, the water-cooled enthusiast scene was well established, with Sciroccos, Jettas, GTIs and Corrados showing up en masse at events, often relegated to a single class by a different generation of show organizers who couldn't tell them apart. The time had come for a change, and Waterfest was the first large-scale event to turn the tables on convention.

Arranged as a promotional event by Rapid Parts, one of the many aftermarket companies catering to performance-seeking VW owners at the time, the original Waterfest in 1995 drew 150 show cars and 50 autocross competitors, as well as 1,200 or so spectators to its single-day event. In many ways, it wasn't much different than any other local car show, except for its primary audience. And perhaps its timing,

Accounts of this new "Waterfest" traveled swiftly through Internet user groups on nascent websites like AOL and Yahoo. No doubt this radical new medium was crucial to spreading word of this initial event, as these interconnected communities happened to be largely populated by the same youthful, techsavyy enthusiasts who were also flocking to the newer, more powerful generation of G60-and VR6-powered VWs.

Fueled by Internet buzz combined with national recognition in print magazines like European Car, Waterfest grew exponentially with each passing year, blossoming quickly into a full-blown national show. After three successful events at its original location-Rockland Community College in Suffern, New York—it outgrew its space. A string of new hosts struggled to contain the burgeoning crowds, including Purchase College in Westchester, New York (1998), Montclair State University in Montclair, New Jersey (1999 and 2000), and Island Dragway in Great Meadows, New Jersey (2001). By the time the new millennium arrived, Volkswagen had introduced an all-new engine family that would change the face of the VW scene forever—the 1.8T. Released initially in the Audi A4, it instantly became the tuner's choice, with what seemed like virtually limitless potential for aftermarket performance enhancement. The turbo era represented a quantum leap in the aftermarket world, and by 2002 Waterfest would be forced to find a much larger venue to deal with the crowds it was now drawing. Raceway Park in Englishtown, New Jersey, has been the host





















ever since, handling at its peak more than 20,000 participants and spectators over what is now a two-day weekend festival.

In keeping with other import shows of the time, sound-off competitions were added to the roster of events in 1999, allowing audio enthusiasts a chance to be heard. That same year saw the official addition of Audis, further growing Waterfest into the de facto national event for the broader VAG family. Since then, turnout has been predictably massive, though recent years have seen a slight decline in both participants and spectators from the highs of the mid-2000s. Waterfest has always been as much about "go" as it is "show," with activities like autocross and drag races, the latter of which have become even more impressive with the proliferation of all-wheel drive and monstrously torquey turbocharged engines.

Feeding the crowd's insatiable desire for engine noise, exhaust fumes and tire smoke, the burnout contest is another perennial fan favorite. Those with a project still in the garage have often found the swap meet the perfect place to score the most desirable upgrades.

Dealers turn up with rare wheels, rescued sport seats and donor engines among other necessary bits for what may become next year's show car. The variety is occasionally mindboggling and usually worth a look if for no other reasons than a walk down memory lane or up inspiration alley.

Aftermarket businesses were naturally quick to recognize the chance to be smack in front of their most voracious prospects. Vendor aisles have always attracted enthusiasts shopping for good deals or the ideal accessory. Today's sellers are more sophisticated than ever, several arriving with truckloads of stock, some even handling installations on site. Software tuners like Unitronic and GIAC regularly set up makeshift tuning stations, reflashing ECUs while customers wait. The master of this operation may well be longtime headline sponsor APR Performance, which had six drive-through lanes dedicated to software upgrades plus another four exhaust installation stations at the 2014 show.

Volkswagen of America, likewise, couldn't ignore the fact that its most visible and vocal

loyalists were turning up year after year and, in a somewhat surprising move, actually embraced the scene. The company even started sponsoring the show in 1999, eventually rolling out a mobile showroom of all the latest performance models, accessories and lifestyle gear. VW used Waterfest 12 (2006) to promote the fifth-generation GTI, complete with Helga (Zonja Wöstendiek, if you must know), the memorable model from the series of clever TV commercials with the ironic meta-theme of "Unpimp My Ride." For many enthusiasts, the gathering is as much about connecting with kindred spirits as it about the cars themselves. The social scene surrounding Waterfest has always been boisterous and occasionally downright disorderly. Thankfully, a lot of the most egregious activity took place in the days before camera phones were everywhere. Nevertheless, there's plenty of evidence of past "youthful indiscretions" that often included hotel furnishings in swimming pools, shopping carts used inappropriately in makeshift pushcart races and impromptu burnout contests in local parking lots.

































To encourage a more neighborly atmosphere, while still channeling all the energy an enthusiast event of this scale undoubtedly stirs up, the organizers came up with Afterfest, an official party on the Saturday night. Last year (2013) saw the inaugural Afterfest, with more than 3,000 people in attendance, saving the locals at least a few headaches.

Waterfest is no longer the only major event for VW enthusiasts, with H2O International, Southern Wörthersee (SoWo) and WusteFest among others drawing big national audiences. Nevertheless, it remains a high point on the calendar for many enthusiasts, particularly in the Northeast. It has also become a bellwether of upcoming styling and performance trends, with many of the country's top show cars making their debuts here.

Two decades of Waterfest have proven that the American VW and Audi scene is not only alive and well, but that it's always changing. In its earliest days, the cars were largely tuned for street performance, with 150 hp marking a fast car, and 17-inch wheels being seen as borderline obscene. The Fast & Furious era saw the rise of questionable body kits, even more questionable lighting, aftermarket turbos and wild color schemes. Today's show cars regularly rock 300 or (substantially) more horses, feature shaved engine bays and ride on bagged suspensions with poked-and-stretched wheels and tires.

No one can predict what Waterfest 21 will look like, but we're sure it will continue to fuel the passion and inspire the next generation of VW and Audi enthusiasts. Even if they're not sure why it's called Waterfest.











1991-1997 BMW 8 Series

A GEM FROM THE DECADE THAT BROUGHT US THE WEB AND THE HUBBLE TELESCOPE

Words Colin Ryan

IT STILL WORKS, DOESN'T IT? People talk about a car's power, but there's more to it than just what the engine churns out. Some cars have a power over our imagination, to send us scouring through classifieds, scheming over what assets to sell so the dream can come true. The BMW 8 Series is like that.

There's something timelessly gorgeous about the 8 Series, or E31 to all those factory code completists. That elegant simplicity makes it look like it might have been styled by Giugiaro, who did design the M1 supercar, the nose of which is echoed in the 8 Series by that tiny, squared-off double-kidney grille and pop-up headlights. The actual designer was Klaus Kapitz, who later wrote a book on Alfa Romeos, so it's safe to assume he's a Giugiaro fan.

It's not exactly a gentleman's express, though, like a Jaguar or an Aston Martin. There's an undertone of ruthlessness in its precise lines. But how sweet are those "throwing star" (Style 21M) alloy wheels? And what looks like a B-pillar is actually part of the rear passenger window's frame. With all the windows down, the aperture is completely unhindered.

Produced from 1990 to 1999, although only imported to the United States between 1991 and 1997, this was BMW's flagship coupe and came initially as an 850i, propelled by a 5.0-liter V12 making

295 hp and 332 lb-ft of torque. The auto option was a four-speeder and the car also came with a six-speed manual—a first for that engine/transmission pairing.

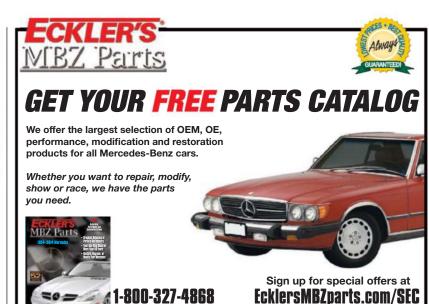
However, that was too rich for the blood of many people, even in those heady Clinton-era days. So the company added the 840Ci in 1994 ('93 in Europe), delighting lucky drivers with 282 hp and 295 lb-ft of torque from a 4.0-liter V8. American-spec V8 versions all have a five-speed auto.

Both models were eventually updated with new engines. The 840Ci received BMW's excellent 4.4-liter V8 around 1996; same horsepower but now with 310 lb-ft of twist. The 850 enjoyed a 5.4-liter V12—with 326 hp and 360 lb-ft of torque—from 1995, becoming the 850Ci at the same time.

There's also the '94 to '95 850CSi, which develops 380 hp and 410 lb-ft from its 5.6-liter V12 and was fettled by the M division. It has a sportier suspension tune (no electronic dampers), limited-slip diff and beefed-up brakes. Alpina even got in on the act with its V12-powered B12. But these models are so few and far between that the guy who owns one probably has a unicorn out back as well. The 8 had some innovations, such as drive-by-wire throttles and a multi-link independent rear suspension that became incorporated into the 3, 5 and 7 Series.

"It's not exactly a gentleman's express, though, like a Jaguar or an Aston Martin."









myowncover

upload - design - onden



Looking for a personalized gift for almost any occasion?

My Own Cover magazine covers are perfect for birthday gifts, holiday gifts, corporate recognitions, or celebrating a milestone.

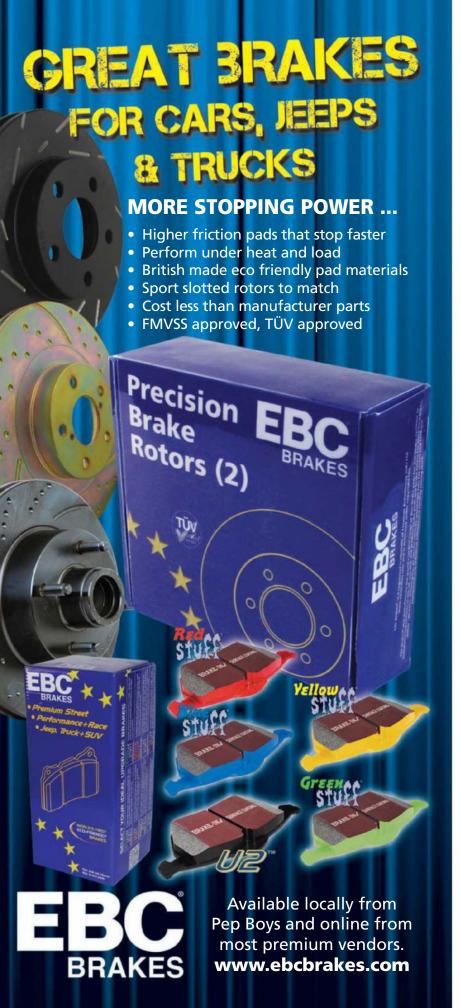
Each magazine cover is as unique as the person on the cover.

- Upload your own photos
- · Design great personalized covers
- · Order prints to share or give as gifts

Create your own magazine cover and be a star. **www.myowncover.com**







STATEMENT OF OWNERSHIP

As required by Title 39, Section 3685 United States Code below is the

- 1. Publication Title: European Car
- 2 Publication Number: 1056-8476
- 3. Filing Date: 10/01/14
- 4. Issue Frequency: Oct., Nov., Dec., Jan./Feb., Mar./Apr., May, June, July, Aug./Sept.
- 5. Number of Issues Published Annually: 9
- 6. Annual Subscription Price: \$23.94
- Complete Mailing Address of Known Office of Publication: 261 Madison Avenue, 6th Floor, New York, NY 10016-2303. Contact Person: Brian Laboe/212-915-4182
- 8. Complete Mailing Address of Headquarters or General Business Office of Publisher: Source Interlink Media LLC, 831 S. Douglas St., El Segundo, CA 90245
- Publisher, Mark Han/831 S. Douglas St., El Segundo, CA 90245;
 Editor, Mike Febbo/831 S. Douglas St., El Segundo, CA 90245;
 Managing Editor, Michelle McCarthy/831 S. Douglas St., El Segundo, CA 90245;
- Wanaging Editor, Michelle McCartny/831 S. Douglas St., El Segundo, CA 90245
 Owner: Source Interlink Media Inc., 831 S. Douglas St., El Segundo, CA 90245
- Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1
 Percent or More of Total Amount of Bonds, Mortgages or Other Securities: None
- Tax Status: (For completion by nonprofit organizations authorized to mail at nonprofit rate)
 - (Check one) The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes
- ☐ Has Changed During the Preceding 12 Months
- 13. Publication Title: European Car
- 14. Issue Date for Circulation Data Below: August/September 2014

14. ISSUE DALE FOR CIRCUIALION DALA BEIOV	v: August/September Zu	14
15. Extent and Nature of Circulation:	Average No. Copies Each Issue During Preceding 12 Months	No. of Copies of Single Issue Publi: Nearest to Filing D
a. Total number of copies	36,579	28,755
b. Paid Circulation (by mail and outside the mail) 1. Mailed Outside-County Paid		
Subscriptions Stated on PS Form 3541	20,776	17,474
2. Mailed In-County Paid Subscriptions Stated on		
PS Form 3541	0	0
 Paid Distribution Outside the Mails Including Sales Through Dealers and and Carriers, Street Vendors, Counter Sales and Other Paid Distribution Outside USPS 	2,828	2,822
4. Paid Distribution by Other Classes of Mail Through the USPS	0	0
c. Total Paid Distribution	23,604	20,296
d. Free or Nominal Rate Distribution (By Mail and Outside the Mail) 1. Free or Nominal Rate Outside County Copies included on PS Form 3541	2,598	2,718
2. Free or Nominal Rate In-County Copies included on PS Form 3541	0	0
3. Free or Nominal Rate Copies Mailed at Other Classes Through The USPS	0	0
4. Free or Nominal Rate Distribution Outside the Mail	14	0
e. Total Free or Nominal Rate Distribution	2,612	2,718
f. Total Distribution	26,216	23,014
g. Copies not Distributed	10,363	5,741
h. Total	36,579	28,755
i. Percent Paid	90.0%	88.2%
16. Extent and Nature of Circulation:		
	Average No. Copies	No. of Copies of

	Each Issue During Preceding 12 Months	Single Issue Published Nearest to Filing Date		
a. Paid Electronic Copies	4,473	4,365		
b. Total Paid Print Copies (Line 15C) + Paid Electronic Copies (Line 16A)	28,077	24,661		
c. Total Print Distribution (Line15F)+Paid Electronic Copies (Line 16A)	30,689	27,379		
d. Percent Paid (Both Print & Electronic Copies) (16b divided by 16c X 100)	91.5%	90.1%		
M I Cortify that EONs of all my distributed Conice				

- ☑ I Certify that 50% of all my distributed Copies (Electronic & Print) are paid above a nominal Price
- 17. Publication of Statement of Ownership will be printed in the:
 December 2014 issue of this publication.
- Signature and Title of Editor, Publisher, Business Manager, or Owner Thomas Slater, SVP Consumer Marketing 10-1-2014

I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including infines and imprisonment) and/or civil sanctions (including civil penalties).

>throwback

TECH SPEC

1991-1997 BMW 8 SERIES

LAYOUT

Longitudinal front engine, rear-wheel drive

ENGINES

5.0-liter, SOHC, 24-valve, V12; 5.4-liter, SOHC, 24-valve V12; 5.6-liter, SOHC, 24-valve, V12; 4.0-liter, dohc, 32-valve V8; 4.4-liter, dohc, 32-valve V8

TRANSMISSION

Six-speed manual/fourspeed automatic (V12), five-speed automatic (V8)

SUSPENSION

Struts, coil springs, anti-roll bar (f); multi-link, coil springs, anti-roll bar (r)

PERFORMANCE

PEAK POWER

295 hp @ 5200 rpm (850i), 326 hp @ 5000 rpm (850Ci), 380 hp @ 5300 rpm (850CSi), 282 hp @ 5800 rpm (4.0), 282 hp @ 5700 rpm (4.4)

PEAK TORQUE

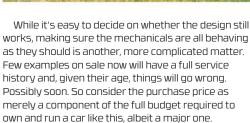
332 lb-ft @ 4100 rpm (850i), 360 lb-ft @ 3900 rpm (850Ci), 410 lb-ft @ 4000 rpm (850CSi), 295 lb-ft @ 4500 rpm (4.0), 310 lb-ft @ 3900 rpm (4.4)

0-60 MPH

7.2 sec. (850i), 5.7 sec. (850CSi), 7.3 sec. (840Ci)

TOP SPEED

155 mph (all versions limited electronically)



Potential buys may be in a different part of the country—in which case, factor in gas, food and motels. Or shipping costs if you're happy to buy it unseen except for an inspection by a trusted technician. It's probably still worth a plane trip just for the peace of mind.

The 4.0-liter V8 engines ran into problems with their Nikasil cylinder liners, a substance that did not react well with high-sulfur gasoline. By now, the damage has been done and rectified (a re-bore and Alusil liners should do it). The 4.4 didn't have this issue. But watch for seals and pay attention to the cooling systems of both engines, as these tend to be temperamental.

A pressure control valve (PCV) in the inlet manifold may also fail, bringing smoke at start-up and under acceleration. It's not an expensive part, but it is located at the rear of the engine. The timing chain tensioner should be replaced at 100,000 miles to preserve the plastic timing chain guides.

The SOHC V12 is actually a model of reliability. It

was also used in the E38 750i, so it's a well-known quantity, including being known for the quantity of gas it consumes. A full V12 service at the 100,000-mile mark could easily run to \$1,000 just for parts and fluids. But to drive a V12 is to experience a different and glorious way of getting around.

In general, the main bugs are electrical. Each bank of cylinders has its own ECU, and the ABS/DSC control module gets iffy. Top-quality transmission fluid must be used—regularly.

The information display in the center console is bound to lose a pixel or three, which is expensive to fix (when possible) and annoying when the current state of the brake pads would be useful to know.

Maintenance won't be cheap: approximately \$1,500 for a clutch, plate and bearing; \$1,000 for an air conditioning compressor; \$1,000 for new brakes. And the brakes are asked to do a lot of work to bring something this quick and heavy (3,951 pounds for the 850i) to a stop.

A hypothetical '96 840Ci with 90,000 miles in good condition is valued by KBB at \$11,077. Real-world prices will fluctuate, so approach with a clear head and some healthy cynicism. A look at the classifieds on a nationwide website brought up a clean '94 850CSi with 66,500 miles and dealer service history priced close to \$53,000. A '94 840Ci with 140,000 miles was offered for \$7,500. And there were something like 85 other examples in between.



"A full V12
service at the
100,000-mile
mark could easily
run to \$1,000
just for parts and
fluids"





ROUEN - Silver with Brushed Face and Chrome Stainless Lip

Multi-Piece

The new Rouen wheel style is available in 18, 19, 20 and 22 inch multi-piece staggered fitments and comes in multiple finish options. Our multi-piece wheel styles feature lightweight forged barrel construction.

