

AUDI RS 4: SUPER SEDAN IS SUPER USED-CAR BARGAIN



Grassroots Motorsports

THE HARDCORE SPORTS CAR MAGAZINE



TRACK TIRE SHOOTOUT:
What's the best rubber for your track day?

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BUILD YOUR OWN SPORTS CAR!

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WE BUILD FACTORY FIVE'S SUBARU-POWERED 818 ROADSTER. PROJECT STARTS ON PAGE 95

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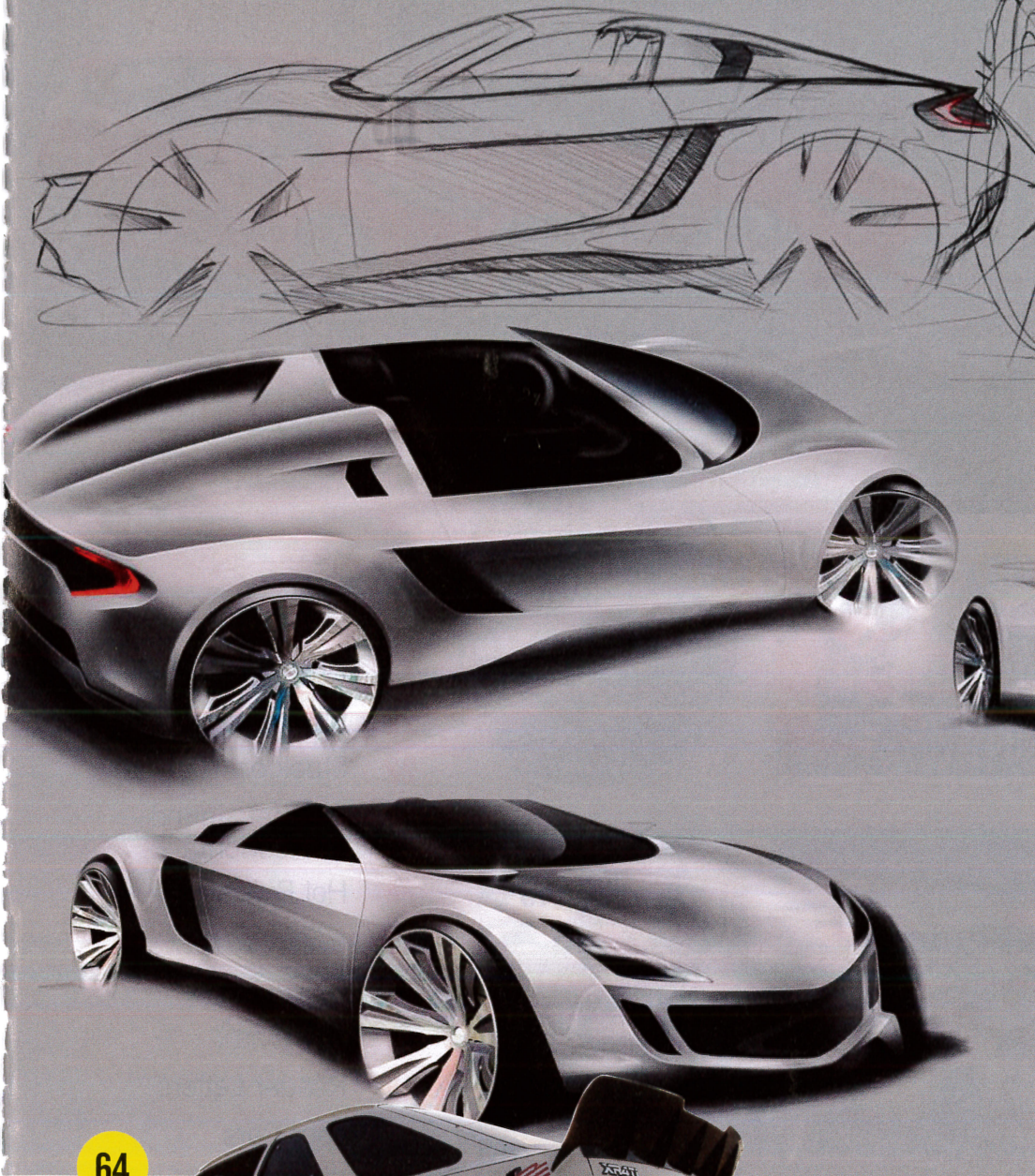
plus:

- Is drag robbing you of power?
- Toyota MR2 • Merkur XR4TI
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2013

EDITORS' CHOICE

20 Things That Rocked Our Year

story by david s. wallens • photos as credited



kevin adolf photo

Sunrise, sunset. Another year has passed and left us in its dust. Just woke up from a long sleep? Got distracted by “Angry Birds”? Fell off the grid? We’ll fill you in on what happened—at least in our motorsports scene.

Welcome to our annual Editors’ Choice awards. Here’s where we celebrate the 20 biggest achievements of the past year. No lame categories, no confining parameters: We just chose 20 things that rocked our little world.



The brains at Factory Five realized the need for a new, lightweight sportster. The power would come from Subaru’s WRX. The mid-engined chassis would be unique.

For the body, they came to *GRM*: Can your readers give it a shape? The **Factory Five 818**’s gestation period has finally ended, and the cars have started to leave the factory. Total price? Figure about \$15,000 by the time you’re done, including the donor. Sales have been strong, and the reviews are solid.

Traditionally, the classic car festivities held each August in Monterey cater to the top, top levels of the automotive scene. If it’s not a multimillion-dollar piece of rolling sculpture, well, then it’s just second-rate.

And then there’s the **Concours d’LeMons**, a car show for the rest of us. While show organizers claim they’re celebrating the oddball, mundane and truly awful of the automotive world, in reality it’s so much more than that. The event showcases cars that deserve recognition—even if it’s to say, “Don’t try this at home, kids.”

Hagerty gave the show a major jumpstart for 2013, and standouts from this year’s gathering included a pimp-tastic Mercury, a seaworthy Amphicar, a rusty but still running Porsche 356 and—count them—six copies of the Cosworth Vega. Would their owners consider these machines to be awful or mundane? Hardly. They’re just cool cars for the rest of us—and cool enough to attract some serious A-list spectators to this year’s show.



Want to know what makes a pro racer tick? Ask **Andy Lally**. This four-time Daytona winner often opens the phone lines to field questions via Twitter (@AndyLally). Best car he’s ever raced? Toughest on-track competition? Favorite metal band? Nothing is off limits.



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DATA SHEET

project: building and living with the first-ever Factory Five 818 kit car.

part 1: the origins of 818 (this issue).



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Factory Five's newest kit car, the Subaru-powered 818, looks good in artist renderings. What's it like to build and live with one? We're going to find out.

**SOME
ASSEMBLY
REQUIRED**

Part 1: The Origins of Factory Five's All-New, Subaru-Powered Kit Car

story by tom suddard • photos as credited

Ask any 16-year-old car enthusiast about Shelby Cobras, and he or she will tell you that they're everywhere. Every car show has an entire row of them. They show up at every drag race, autocross and track day. They can be seen on back roads whenever the sun is shining. That same 16-year-old would be utterly bewildered to learn that less than a thousand Cobras were made half a century ago. How could something so rare become so ubiquitous?

The Shelby Cobra was a marvel of crude engineering. Some had leaf springs and recirculating-ball steering, yet they seemingly went nearly 200 mph when most cars couldn't top 100. It was loud. It had big, sticky tires. It had giant exhaust pipes and a giant V8. It was terribly unsafe.

Oh, and it was completely useless at doing anything normal cars do. The trunk was too small, the top inadequate, and the windows nonexistent. The Cobra was one of the first supercars, and its ridiculousness was its greatest asset. Young car enthusiasts drooled over them and dreamed of owning their own.

Their parents didn't, though. Ford couldn't have made a more perfect dream car, but dream cars don't exactly sell well (most 16-year-olds can't really afford them). Cars like the

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less-expensive Chevrolet Corvette vastly outsold the Cobra, and Ford was forced to cancel the program after only a few years.

Decades later, the kids who grew up dreaming of their very own Cobras found themselves in an awkward position. They were middle-aged and wealthy enough to buy a classic car, but there just weren't enough Cobras to go around. How would they scratch their itch?

Factory Five Racing had an answer: Starting in 1995, they offered a DIY replica of the famed Cobra. They weren't the first to clone the Cobra, but their kit became quite popular—strong looks, strong performance, strong value. For a fraction of what a real Cobra cost,

NOT EVERY MILLENNIAL LUSTS AFTER A V8 OR A LIVE AXLE

baby boomers could assemble their own dream cars using Factory Five's kit and a wrecked Fox-body Ford Mustang GT as the donor vehicle.

And as a bonus, the resulting kit car was better built, faster and more comfortable than the original. The kits sold like hotcakes, and Factory Five carries much of the blame for the proliferation of Cobras over the past two decades.

New Blood

Things are still going well for Factory Five, and to this day the company sells a ton of replica Cobras. But its founder, Dave Smith, knows that Cobras won't be in demand forever.

The reason is old age, and unfortunately it's been chipping away at the company's customer base. The Cobra's audience will soon be too old to build their own cars, so in the past few years Factory Five has expanded its product line to include a hotrod, a Cobra Daytona Coupe, and a GTM Supercar, which could be compared to a Ford GT. Each car is targeted at a slightly different builder, and each car has sold well.

But these options all have one thing in common: big, American V8 power. These are great engines, but they don't have much in common with what powers most modern cars. Not every Millennial

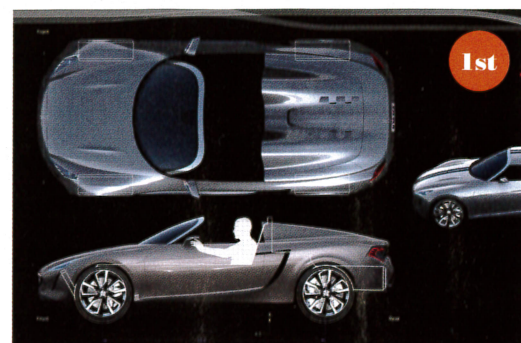
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lusts after a V8 or a live axle; Factory Five needed a new formula if it was going to capture the generation that grew up watching “Need for Speed” and dreaming of owning a Lamborghini.

Factory Five started work on not just a new car, but a new way of thinking. Their next offering needed to appeal to a fresh audience, one that hadn’t heard of Carroll Shelby. It needed to be inexpensive and easy to build, even if the owner lived overseas. And it had to be viciously fast.

The first step was picking a parts source. A single, inexpensive donor car would again save the builder time and money, but this donor wouldn’t have a blue oval or a gold bowtie on the grille. They chose the Subaru Impreza WRX due to its relatively low cost, healthy production run, high power output, and the plentiful aftermarket support.

Next, it was time to work on the chassis. The company decided

on a target weight—818 kilograms, which determined the 818’s name—and a drivetrain layout. They would ditch the Subaru’s heavy front-engine, all-wheel-drive layout in favor of a mid-engine, rear-wheel-drive design.

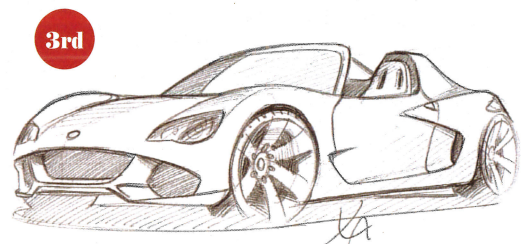
The wheelbase would match that of a Lotus Exige, and the 818 would have a CAD-designed tube frame with nearly perfect suspension geometry at every corner. Subaru parts would be used in clever ways to keep cost and complexity down.

Crowdsourcing Sketches

Finally, after years of design and development, the rolling chassis was finished. Rather than merely drawing up a roadster and slapping it on the chassis, Factory Five took a different route. The company partnered with *Grassroots Motorsports*, SolidWorks and HP Computers to launch the Project 818 design contest. The goal? Let the 818’s target market design its look.



rodney olmos illustration



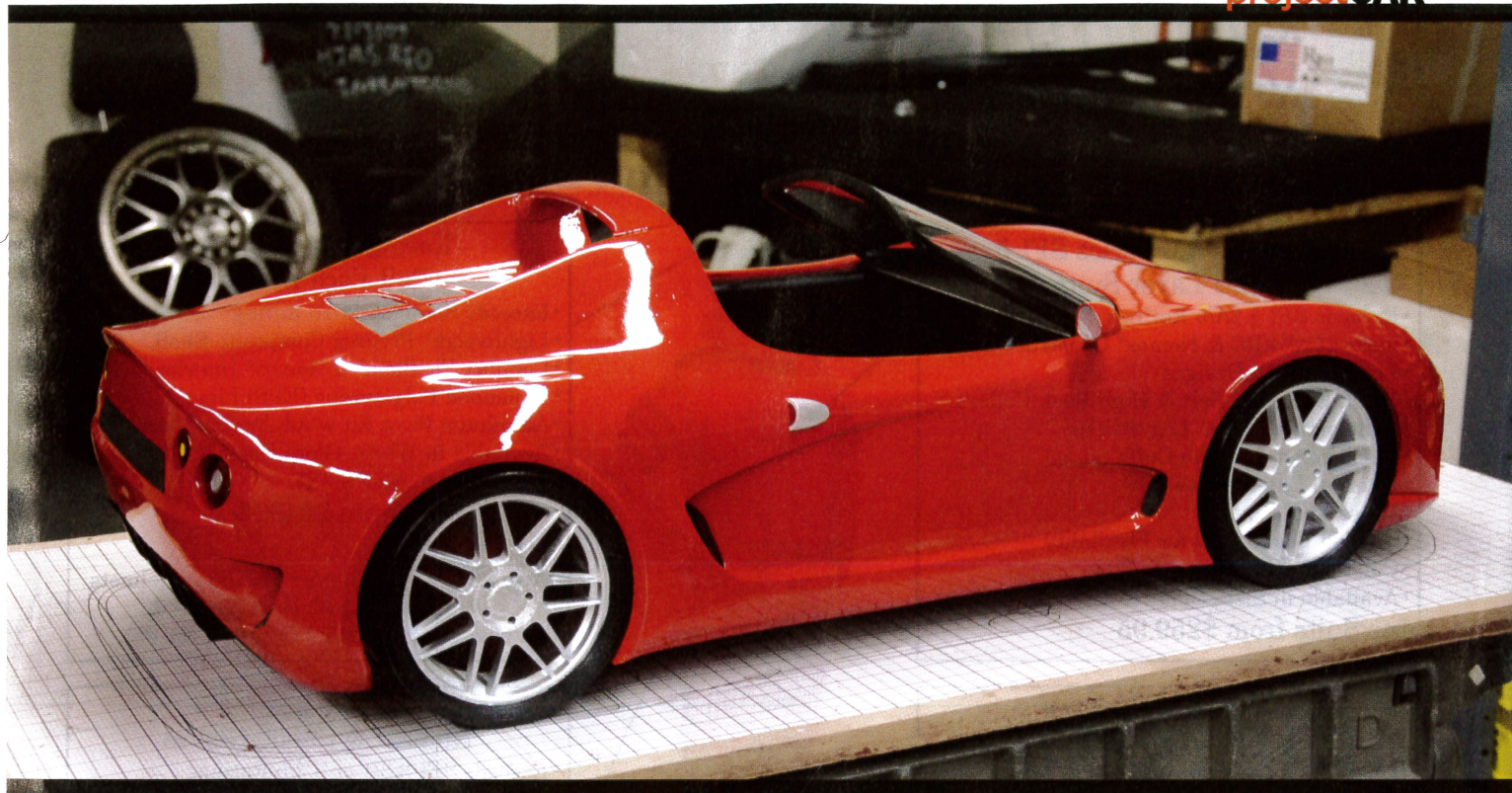
rodney olmos illustration



Factory Five 818

Factory Five’s engineers handled the 818’s underpinnings—a bespoke tube frame holding a mid-mounted Subaru WRX engine—but they asked *GRM* readers to help with the body. The top designs came from Nouphone Bansasi (first place), Rodney Olmos (second place) and Xabier Albizu Untur (third place).

THE GOAL? LET THE 818’S TARGET MARKET DESIGN ITS LOOK.



MORE THAN 700 ENTRIES WERE RECEIVED, BUT NOUPHONE BANSASI TOOK HOME FIRST PLACE AND \$5000.

Chassis dimensions, along with a few other guidelines, were released with simple instructions: Draw the car you'd like to buy (preferably in SolidWorks), and mail it in. A team of judges from *GRM* and Factory Five would then choose the winners, who would receive both recognition for penning the 818's final design and a pile of cash for their time.

After a few months, the contest was closed and winners were chosen. More than 700 entries were received, but Nophone Bansasi took home first place and \$5000. Rodney Olmos and Xabier Albizu earned second and third, respectively. Factory Five's designers then combined elements from the top three sketches to pen the final 818 body.

Our Goals

There's only one step left for the 818: testing the kit. We don't mean simply hurling it around a track or strapping it to a dyno. No, we want to work through the entire process of building, driving and owning a Factory Five 818.

GRM recently took possession of one of the first kits, and construction starts with the next installment. To make this task even tougher, we're only giving ourselves less than two weeks to do it. Wish us luck. Look for updates online at grassrootsmotorsports.com/818 and in these pages. You can find video segments on that page, too.



Factory Five turned our readers' ideas into reality. After doing the scale concept, a full-size plug—the grey car—was built. Then they did actual body design.

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