

THE ROAD TEST

BY JACK BARUTH

SOME ASSEMBLY REQUIRED

IN WHICH
SUBARU'S
ICONIC BOXER
ENGINE IS
THOROUGHLY
UNBOXED

Y

PHOTOGRAPHED BY DAVID ARKY

You've heard it before, but it bears repeating: There's never been a better time to be an American car enthusiast. The dark days when cars like the Nissan GT-R were forbidden fruit and the BMW M3 was a watered-down shadow of its continental self are long gone. In 2013, we sit at the table with the big boys, and we're not taking anyone's table scraps.



Except, of course, for the so-called track-day specials that have taken Europe by storm over the past decade. Featherweight two-seaters from companies like Radical and Caterham offer a prototype-car experience, complete with true downforce and suction-cup mechanical grip, in road-legal packages that often cost less than conventional sports cars. We love these beasts for the same reasons people dig the original Shelby Cobra: They look outrageous, they eat Corvettes for lunch, and they can be driven on the street, at least in theory.

There's pent-up demand for cars like that here, but exchange rates and import regulations have prevented most of them from crossing the Atlantic. The ones that have made it to our market have suffered from sky-high prices and a lack of dealer support.

Logically, then, the first company to offer a Radical SR3 or Caterham SP/300.R experience at a reasonable price shouldn't suffer for American business. Enter the Factory Five 818.



Massachusetts's Factory Five Racing has been around since 1995. At that time, the fake-snake—er, replica Cobra—market didn't appear to need another manufacturer of low-priced, build-it-yourself kits. But Factory Five wasn't just another manufacturer. Other companies forced the would-be Cobra owner to source a bizarre array of parts ranging from Smiths instruments to Jaguar rear axles, but Factory Five told him: Get a wrecked five-liter Ford Mustang. Strip the parts. Add them to our kit. Now you have yourself a Cobra. It was a simple, brilliant idea.

The replica-Shelby purists (and yes, there are such people) laughed openly. Compared to high-dollar aluminum-bodied kits, Factory Five's car, simply called Roadster, was crude. It could easily be distinguished as a replica, it used the "wrong" engine, and in terms of suspension, it was arguably a step backward from the original car. None of this mattered to the firm's customers, who quickly made the company one of the biggest names in the replica business.

Supported by that fanatically loyal base, Factory Five has created additional products, including a spec-racer variant of the Roadster, a replica of the Shelby Daytona Coupe, and a Corvette-powered supercar with a Porsche 911 transmission. None of these has eclipsed the original car as the firm's best seller. As a consequence, Factory Five now faces a pair of non-trivial barriers to growing the company. The first is that the 1987 Mustang GT originally recommended as a donor car can now be registered as a classic in most states. The second is that the brand, like Toyota, finds itself talking to customers who aren't getting any younger.

The 818 can be thought of as Factory Five's Scion—a build-it-yourself alternative to the overseas specials, aimed at Generations X and Y. This time, the donor isn't a Fox-body Mustang, but the cars that many people see as the modern equivalent: the 2002–2007 Subaru Impreza WRX and 2.5RS. (The 2006 WRX is preferred, due to a one-year-only combination of aluminum suspension parts and bigger brakes.) Subaru loyalists might prefer to start with a WRX STI, given its six-speed transmission and stronger engine, but that car's electronically controlled center differential cannot be easily adapted to mid-engine duty.

Mid-engine? Yes: In the 818, the WRX engine and transmission sit behind the driver. The transmission drives the rear wheels with what were formerly the front driveshafts, and a custom spacer/block plate replaces the rear propshaft. It's not a new idea, but it's simple and appropriate.

The 818 is intended to be completed for between \$15,000 (the basic 818 Street) and \$25,000 (the 818R, the bare-bones lapper we tested, with carbon aero bits and a fuel cell). It can also be registered for street use without difficulty in most states. The company estimates that a reasonably skilled individual can assemble the car in about 250 hours.

The first step to 818 ownership is the complete disassembly of whatever Impreza you've managed to buy, borrow, or crash. Next, you'll add the Subaru parts to the square-tube Factory Five space frame. A quick look at the car is enough to produce a smile; it's immediately obvious that this is WRX wine in an 818 bottle. The Subaru's stock instrument cluster is tucked neatly into a black fiberglass dashboard. The Impreza's lower control arms have been cleverly repurposed to mate with purpose-built upper A-arms in front and a multilink rear setup, turning a relatively prosaic four-wheel MacPherson-strut suspension into a sophisticated, Koni-damped affair.

According to Factory Five, four of every five pre-orders to date are for the 818S—the red car in this test's opening spread. That means a windshield and optional soft top, a

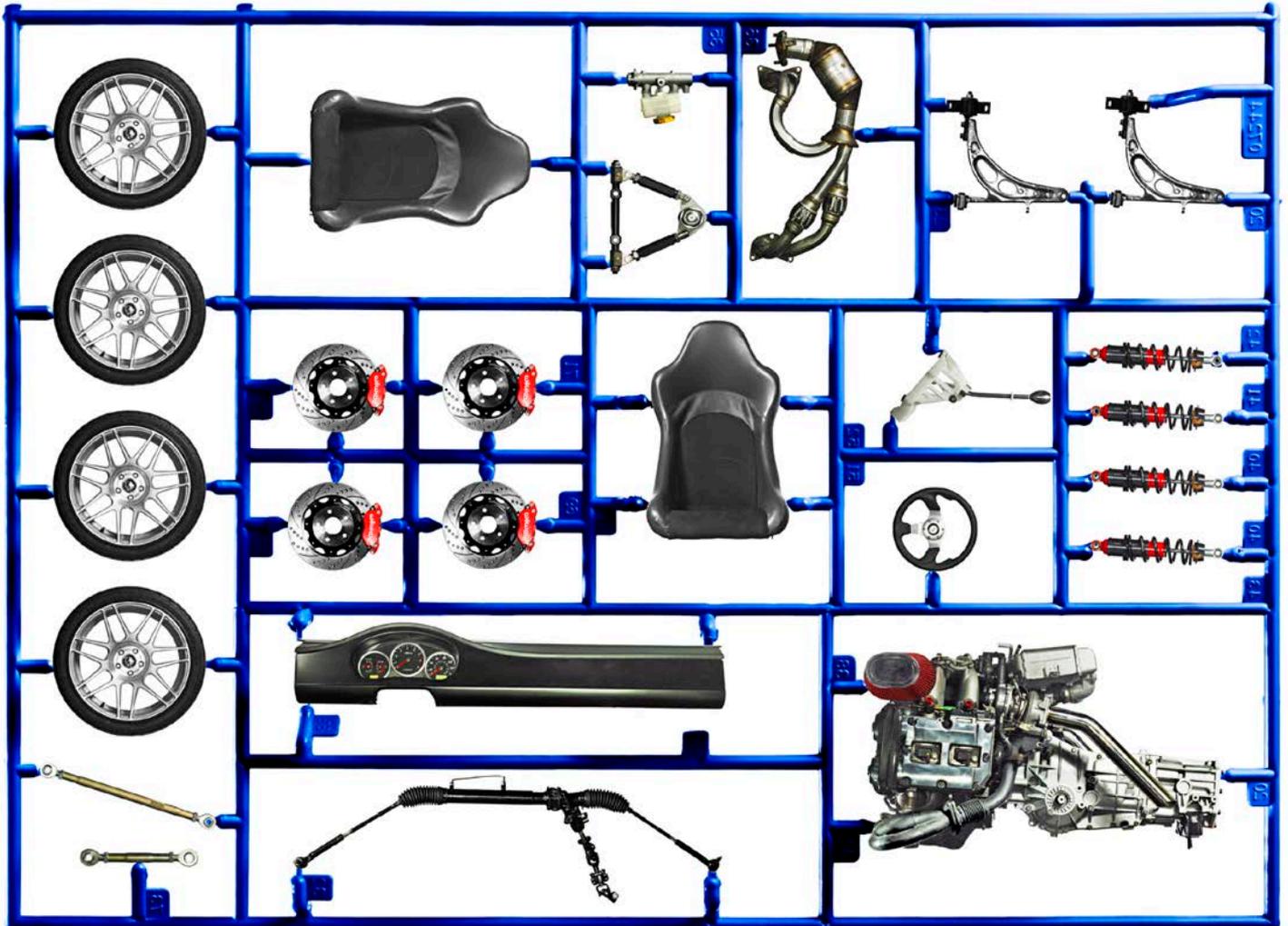
gel-coat fiberglass body, no roll cage, a carpeted interior, and a focus on streetability. The target weight of 818 kilograms (get it?) is about what you'd expect from a Euro-market Lotus Elise and considerably less than that car's chunkier, American-market cousin.

As for that fifth order? That's for the more adventurous 818R, which does without the windshield and adds a tasty package of track-oriented bits, including a roll bar, FIA GT-esque rear spoiler, and a carbon splitter. It's possible to set the aforementioned splitter very close to the ground, since the 818 has two complete sets of suspension-mounting points for track and street use. (A third set of points is also present, to accommodate buyers who wish to use a WRX wagon, with its slightly different suspension, instead of the sedan.)

It's an unseasonably unpleasant day in April, with light snow and temperatures hovering around 32 degrees, as I meet our test 818R at Michigan's GingerMan Raceway. This one is clearly configured toward the hard-core, with Hoosier R6 DOT race tires and a 2.5-liter engine boosted to about 270 hp and 300 lb-ft. There's no passenger seat; that space is used for the fuel cell. Nor is there any power assistance for the steering or brakes.

The startup procedure is pure race car: Twist the large red paddle to engage the ignition. There's a row of four rocker switches beneath it. One of them engages the fuel pump, and I can hear it whirring even through my earplugs. Next, find the flip-up safety cover for the ignition switch. It's the same cover used to prevent accidental submarine missile launches in a dozen different movies, but in this case, it's only protecting the three-position off/run/start switch. Flick that switch, and every head for a hundred yards snaps to attention as the boxer sputters, then roars to life.

PREVIOUS: BITS OF THE BUILD-IT-YOURSELF FACTORY FIVE 818 STREET. ABOVE, OPPOSITE: THE TRACK-AIMED 818R: 270 HP AND 2000 POUNDS. DON'T GET GLUE ON YOUR FINGERS.



IT RIPS THE TIRES LOOSE IN PIT LANE ON A WHISPER OF THROTTLE. FORGET THE WRX. FORGET EVERY STREET CAR YOU'VE EVER DRIVEN. THIS IS SOMETHING ELSE.

It's difficult to reconcile the distant, docile, big-bore four under the hood of a stock WRX with the throbbing boxer behind my right shoulder. There's little to no flywheel effect. It revs with minimal hesitation and rips the tires loose in pit lane on a whisper of throttle. Forget the WRX. Forget every street car you've ever driven. This is something else. It's wide, it's low, and it vibrates the aluminum Kirkey driver's seat with nervous energy. When you flex your wrists, the car darts in response. There's a continual cacophony of gears, pumps, valves, and a thousand other mechanical noises. The mirrors are tiny and the wing behind you blocks most of the view.

After a full lap spent warming the tires, I crack it open. Most track-day specials are powered by transplanted liter-bike engines, which usually offer narrow powerbands. Not the 818. With a keening cry from the turbo and a corresponding intensification in all the

various creaks and squeaks ringing through my helmet, the 818 explodes down GingerMan's front straight. This isn't the fast you get with a 911 Turbo or a Corvette, that sense of mighty power overcoming considerable weight. It's the whoa of a linearly accelerated roller coaster. Second and third disappear in a rush as the rear end oscillates. I find myself short-shifting just to keep the car straight. It's a genuine thrill, and even if you never took your 818 to a track, the joy of warping between stoplights would keep you occupied for months.

It takes a few corners for my brain to catch up to how the car handles. You think a Mazda Miata is light? The 818 weighs 400 pounds less than the lightest first-generation Miata, and it rolls on tires 50 percent wider. Turn-in is neck-straining at high speed. On the first lap, it feels like the limits are too high to reach, but once you reach them, the 818's a true sweetheart, pushing the front predictably before uncorking its tail in a lazy slide. If you're used to driving a WRX fast, you'll be amazed at the speed with which all this stuff happens.

This particular car is set up low, and it likes to follow grooves and low spots in the pavement. The 818 uses the WRX's relatively slow steering rack, but even so, I quickly learn that it's best to keep a light grip on the wheel. The phrase "ride quality" doesn't apply here any more than it does in a go-kart. Nor

is there a lot of rubber between the wheels and your hands. If you really want to drive this to and from the track, pick a route without potholes, lest you arrive without your kidneys.

The 2006 WRX brakes on this car prove to be more than adequate. Small wonder, as they were designed to stop a car nearly twice as heavy. It's possible to lock the fronts at any speed if you want to, but trust me, you don't, not in a car that carries more than half its weight on the rear wheels. And of course, there's no ABS. If you've always wanted to learn the lost art of threshold braking, the 818 is a good place to start.

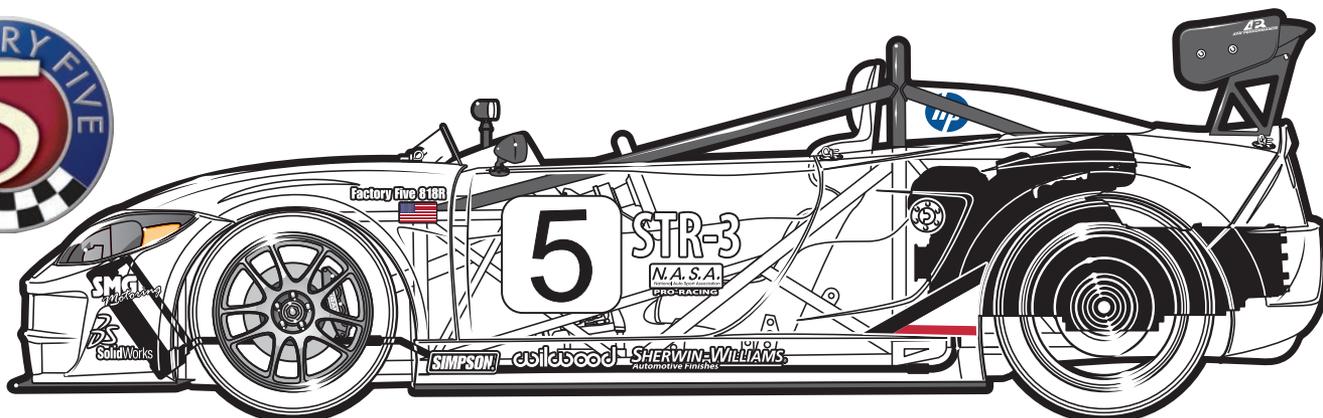
My 15-lap session passes quickly, and not just because the 818 is by far the fastest car in our relatively low-key lapping session. I'm enjoying myself quite a bit. With the low weight, strong engine, and complete lack of computer or even vacuum assist, this is not a car for inexperienced drivers, but the rewards for driving it competently are considerable. It has a broad range of virtues. To begin with, it's a joy at any speed, like a Miata or Lotus Elan. But unlike those cars, the Factory Five has enough raw pace to prevent your track day from being an endless session of point-bys. The dash of prototype-car excitement you get is just icing on the cake.

There are other ways to go just as fast for the same money; a used C5 Corvette Z06 with Hoosier tires comes to mind. Nor is the ownership experience of early adopters likely to be trouble-free. Still, the 818 offers a combination of virtues previously unavailable at the price. For the average WRX-driving track rat, schooled in infinite understeer and benign traction, this thing will be a revelation. For everyone else, it'll just be a hell of a lot of fun. ■

LEFT: THE AUTHOR AT MICHIGAN'S GINGERMAN RACEWAY. THE 818R HAS NO SECOND SEAT, JUST STEEL TUBING. FASHION-FORWARD GOLD VISOR SOLD SEPARATELY.



R & T | Performance Report [Factory Five 818R]



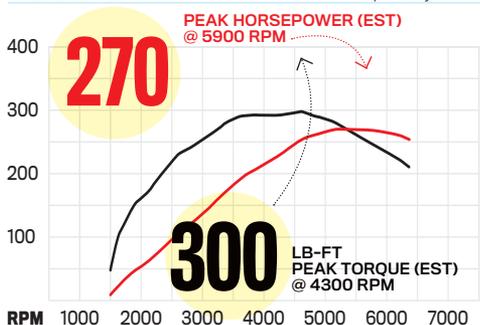
SPECIFICATIONS

PRICE

BASE (KIT, SANS SUBARU WRX DRIVELINE)	\$10,990
AS TESTED	\$25,377

ENGINE

LAYOUT	mid, longitudinal
CONFIGURATION	H-4
INDUCTION	turbocharged
MATERIAL	aluminum block and heads
VALVETRAIN	DOHC, 16 valves
DISPLACEMENT	2457 cc
BORE x STROKE	99.5 x 79.0 mm
COMPRESSION RATIO	8.4:1
REDLINE	6250 rpm
FUEL DELIVERY	port injection



TRANSMISSION

DRIVEN WHEELS	rear
TRANSMISSION TYPE	5-speed manual

FINAL-DRIVE RATIO	3.70:1, limited-slip differential	
GEAR	RATIO	MAX SPEED (RPM)
1	3.45:1	37 mph (6250)
2	1.95:1	67 mph (6250)
3	1.37:1	95 mph (6250)
4	0.97:1	134 mph (6250)
5	0.74:1	145 mph (5400)*

STEERING

ASSIST	none
RATIO	16.5:1
TURNS, LOCK-TO-LOCK	2.6
TURNING CIRCLE	41.1 ft

SUSPENSION

FRONT	upper and lower A-arms, anti-roll bar
REAR	multilink, anti-roll bar

BRAKES AND TIRES

BRAKES, FRONT	11.5-in vented rotors, 4-piston fixed calipers
BRAKES, REAR	11.3-in vented rotors, 2-piston fixed calipers
TIRES	Hoosier R6
SIZE, FRONT	225/40ZR-17
SIZE, REAR	255/35ZR-18

BODY AND CHASSIS

CONSTRUCTION, CHASSIS	steel space frame
CONSTRUCTION, BODY	fiberglass
LENGTH	155.0 in
WIDTH	69.5 in
HEIGHT	52.5 in
WHEELBASE	96.0 in
TRACK, FRONT/REAR	59.5/59.0 in
DOORS/SEATS	0/1
EPA CLASS	n/a
CARGO CAPACITY	0 ft ³
DRAG COEFFICIENT x FRONTAL AREA	n/a

WEIGHT

CURB WEIGHT	2012 lb
DISTRIBUTION FRONT/REAR	43.7/56.3%
WEIGHT-TO-POWER RATIO	7.5 lb/hp

FUEL

EPA CITY/HWY	n/a
CAPACITY	18.0 gallons
RANGE	n/a
RECOMMENDED FUEL GRADE	premium gasoline

TEST RESULTS

ACCELERATION

1 FOOT (rollout)	0.2 sec
60 FEET	2.0 sec

ROLLING START, 5-60 MPH	4.6 sec
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1/4-MILE
12.5
SECONDS @ 112 MPH

0-10 MPH	0.4
0-20	1.0
0-30	1.5
0-40	2.4
0-50	3.0

0-60
3.8
SECONDS

0-70	5.2
0-80	6.3
0-90	8.1
0-100	9.9
0-110	12.0
0-120	15.0
0-130	n/a
0-140	n/a
0-150	n/a

TOP SPEED
(drag limited, R&T est) 145 mph

BRAKING

60-0 MPH	114 ft
80-0 MPH	202 ft
FADE	minimal

HANDLING

ROAD HOLDING
(300-ft skidpad)
1.12 g

BALANCE mild understeer

INTERIOR NOISE

IDLE	n/a
70-MPH CRUISING	n/a
0-70 MPH, PEAK	n/a

TEST NOTES

- Handling resembles a formula car's in that limit behavior is largely up to you. Easing off the gas midcorner transfers weight forward and reduces understeer. Conversely, big throttle prods usually pitch the car sideways, which is fun, but slow. The 818 won't hide your mistakes, nor should it.
- Shifter is a bit stiff; at times, we couldn't tell if we'd successfully engaged second gear.
- Feels durable, like it's been conditioned to take abuse.

TEST CONDITIONS: TEMPERATURE: 53°F | RELATIVE HUMIDITY: 43% | ELEVATION: 930 ft | WIND: Calm | LOCATION: Chelsea, Michigan