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Baldi's basics play for free

Keep up with the latest daily buzz with the BuzzFeed Daily newsletter! Ten cars were invited to this three-day test. Six showed up, and four survived. We ate lunch at a Taco Bell on the first day, got stuck in a raging desert sandstorm the second, and had to rent a U-Haul to drag one of the cars back to Los Angeles on day three. Our ambitious test was starcrossed from the get-go. But we worked through the frustration and found some enlightenment. The idea was simple enough: Gather up hot-rodded four-cylinder production cars to survey developments in the evolving art of making them quick. On the West Coast, where it seems every Honda has a ham-size exhaust tip, zero suspension travel, and a driver's seat in permanent recline, the current mania is obvious. It was even more evident at last November's SEMA aftermarket trade show in Las Vegas, where the aisles were clogged with tiny cars sporting everything from exotic turbo systems and carbon-fiber bodywork to absurdly oversized brakes and shockingly tasteless graphics. In the aftermarket at least, small cars rule the earth. Because they're so popular, we could have invited 10 tweaked Hondas to the test. But the depth of this craze extends beyond that single make to everything from Dodge Neons to Mercedes SLKs. So we recruited a diverse field, inviting companies both familiar and obscure with vehicles ranging from accessible to exotic. Then as our test approached, cars started dropping out. Greddy Performance couldn't have either its turbocharged Honda Civic or Acura Integra available for our test in early December. Jackson Racing pulled its supercharged Honda Civic or Acura Integra available for our test, DC Sports was working the bugs out of its Honda S2000 at the Willow Springs track outside Los Angeles when the S2000 was punted in the left-rear wheel by a Formula Ford. And the turbocharged Ford Focus coming from Borla picked the morning of our event to have its computer experience a nervous breakdown. Hey, so we'll have a six-car test! That's enough, right? The plan was to meet at Willow Springs on the first day and then play catch with the cars along roads in the foothills surrounding Tehachapi. The second day would be spent producing performance numbers on the 7.5-mile oval at the Honda Proving Center of California (HPCC) in the Mojave Desert. And the third day we'd return to Willow Springs for some timed laps of the Streets of Willow course. Simple. All we asked of the participants was that each car show up wearing enough equipment to plausibly pass a visual emissions inspection, run on 92-octane fuel, and have a reasonably quiet exhaust and 5/32nds of an inch of tread on each tire. What did turn up for our test was a handling-intensive Mazda Miata from Racing Beat, Neuspeed's first shot at modifying the Audi TT Quattro coupe, King Motorsports' near-race Acura Integra Type R, the Honda Civic Si on which Vortech is developing its supercharger system, HKS's turbocharged Subaru Impreza 2.5RS, and T.C. Kline's ProSpec-massaged Honda S2000. There were no limits on what could be done to any car since this was not to be a comparison test, but none of the cars was constructed from a bottomless bank account. These aren't exotic machines; they're within reach of average car nuts with a few extra bucks, a reasonable collection of tools, and weekends to burn. Each company brought a car that it felt represented its talents and products well. Theoretically, we'd wind up with a survey of the possibilities out there. Not a very broad survey, but a survey. Except for chalupa-induced gurglings, day one went well. The cars were impressive and the roads perfect except for chalupa-induced gurglings, day one went well. The cars were impressive and the roads perfect except for that occasional sloppy cattle drive across them, and the only damage suffered was a dinged wheel on the Quattro when some doofus freelancer drove it over a rock. Optimism spread that the mechanically fragile cars had been winnowed from the field and the rest of the test would go just as well. So it was off to HPCC the next morning. Straight-line performance measurements would take place on the Honda track, but the first test would be the toughest: top speed. Aftermarket tuners almost always test on a drag strip, but few have access to facilities where they can run flat-out. And running at wide-open throttle for an extended period often reveals unexpected stress points. Case in point: Insufficient fuel flow burned a piston in the Vortech Civic Si, and suddenly we were down to five cars. Then the winds came, big cross-Mojave sandblasters that had us huddled inside a building at the track waiting for them to subside. After a couple of hours stuck in that room, it was starting to feel like a setup for an Outer Limits episode. At any moment, someone would remove a baseball cap to reveal a third eye in the forehead, or a prehensile tail would bolt out the back of somebody's Dockers. Fortunately, the winds died before anyone started on a crying jag. Back at Willow Springs for the third day, the HKS Subaru resolutely refused to move under its own power. A proper diagnosis of the problem proved elusive. Hey, we're down to four cars! Perfect! To their credit, those four cars would survive repeated laps of the Streets and make it home at the end of the day under their own power. We decided to write about all six cars that showed up, even though little or no measured performance data are available for the Vortech Civic or the HKS Impreza. Kids getting their first driver's licenses now were born in the mid-'80s. They'll never own a new car with a carburetor, they grew up being ferried in Camrys and Accords, and they are unencumbered by loyalty to archaic notions of performance such as gut-busting V-8s. In an era of relaxed consumer credit, a time when kids get signing bonuses for part-time pizza chauffeuring, a new small car often isn't beyond their means. So, naturally, there's an obsession with improving small-engine performance. These are, after all, the cars they own. But extracting that performance always comes at a price beyond the cost of the parts. Maybe it's just a little more ride harshness or a louder exhaust note. Or it can be fragility in a car whose warranty has been voided. If you're going to get the most out of making a small car faster with aftermarket components, the challenge is balancing youthful enthusiasm with adult expectations. So with that in mind, we donned our baggiest pants, reclined our seatbacks, and headed for the high desert. Here, in alphabetical order, are our findings. Only two shows on Speedvision are truly mesmerizing: the ancient Car and Track series with Bud Lindeman and coverage of the FIA World Rally Championship. You'll need a seance to hang with Lindeman, but HKS will help approximate Subaru's series-slaying WRX WRC car for you by bolting a turbocharger system to the 2.5RS engine is no small matter. There's the turbo itself and the xylophone-like air-to-air intercooler that stretches out over the 2.5-liter flat-four. Then there are the auxiliary waste gate, the two injectors that squirt extra fuel into the throttle body, and edd-on controllers for both systems. Throw in a new clutch, high-flow intake and exhaust systems, and enough plumbing to fluoridate Lake Superior, and the total powertrain tab is a hefty \$7626 including \$2000 for labor. But for two days it worked well in conjunction with the Subaru's all-wheel-drive system. Chassis tweaks are limited to \$3599 worth of 12.1-inch-diameter Brembo front disc brakes, HKS lowering springs, and P215/45ZR-17 Toyo Proxes T1 Plus tires on 7.5-by-17-inch Volk Racing wheels. The interior got Sparco racing seats, Schroth five-point harnesses, and a gauge package fit for Colin McRae. As for the driving experience, the blowoff valve sure isn't silent, but the engine takes to the turbo gracefully with progressive throttle response, little apparent lag, and a distinctive flat-motor exhaust note. With its all-wheel-driven manners, the car remained steadfast on the mountain roads with almost no squawking from the tires and gentle understeer when diving into corners. Some additional rear roll stiffness would balance the chassis a bit better, but this is an easy car in which to go really fast. On the Honda oval, the Impreza hauled itself to 135 mph -- a hefty 8 mph faster than stock, which suggests that there may be some truth to HKS's claim of 195 horsepower from the turbo motor. HKS says it has put this car in the hands of slam-footed journalists for more than a year with few problems, but on our third test day at Willow Springs, it idled but wouldn't move under its own power. HKS's explanation was that the mass-air sensor spontaneously committed hara-kiri during the cold night; a problem it says is unrelated to its modifications and not uncommon on virginal Subarus. Whatever, it ruined our day. A new Impreza is due next year, and rumor has it that North America will be exciting.- JPH VEHICLE TYPE: front-engine, 4-wheel-drive, 5-passenger, 2-door sedan PRICE, STOCK/MODIFIED: \$19,790/\$39,261 ENGINE TYPE: turbocharged and intercooled DOHC 16- valve flat-4, aluminum block and heads, Subaru engine-control system with portfuel injection MODIFICATIONS (all parts made by HKS unless otherwise noted): Engine and transmission: T-25 turbo, \$1275; air-to-air intercooler, \$975; auxiliary throttle-body injectors and controller, \$795; boost controller, \$599; cat-back exhaust system, \$599; lightweight flywheel, \$520; Exedy clutch, \$458; auxiliary waste gate, \$215; intake system, \$140; racing spark plugs, \$50; labor, \$2000 Suspension: 7.5 x 17-in Volk Racing TE37 aluminum wheels, \$2260; 215/45ZR-17 Toyo Proxes TI Plus tires, \$600; Tokico shocks, \$516; auxiliary waste gate, \$215; intake system, \$599; cat-back exhaust system, \$599; labor, \$500; Exedy clutch, \$458; auxiliary waste gate, \$215; intake system, \$590; auxiliary waste gate,
\$500; auxiliary waste gat coil springs, \$275; labor, \$600 Brakes: Brembo front-brake kit (includes stainless-steel brake lines, \$12.1-inch front calipers, \$300Displacement: 150; gauges, \$850; data logger, \$495; Schroth four-point harnesses, \$450; turbo timer, \$110; labor, \$300Displacement: 150 cu in, 2457ccPower (SAE net) stock: 165 bhp @ 5600 rpmPower (SAE net) modified: 195 bhp @ 6000 rpm TRANSMISSION: 5-speed manual DIMENSIONS:Wheelbase: 99.2 in Length: 172.2 inCurb weight: 2890 lb PERFORMANCE: STOCK / MODIFIED Zero to 60 mph: 8.2 sec / DNF Zero to 100 mph: 27.3 sec / DNF Street start, 5–60 mph: 8.9 sec / DNF Standing 1/4-mile: 16.3 sec @ 84 mph / DNF Top-gear passing time, 30–50 mph: 10.0 sec / DNF 50–70 mph: 11.1 sec / DNF Top speed (drag limited): 127 mph / 135 mph Braking, 70–0 mph: 191 ft / DNF Roadholding, 300-ft-dia skidpad: 0.81 g / DNF Emergency-lane-change maneuver, mph: DNFRoad-course lap, min:sec: DNF VEHICLE TYPE: frontengine, 4-wheel-drive, 5-passenger, 2-door sedan PRICE, STOCK/MODIFIED: \$19,790/\$39,261 ENGINE TYPE: turbocharged and intercooled DOHC 16- valve flat-4, aluminum block and heads, Subaru engine-control system with portfuel injection MODIFICATIONS (all parts made by HKS unless otherwise noted): Engine and transmission: T-25 turbo, \$1275; air-to-air interooler, \$975; auxiliary throttle-body injectors and controller, \$795; boost controller, \$599; cat-back exhaust system, \$140; racing spark plugs, \$50; labor, \$2000 Suspension: 7.5 x 17-in Volk Racing TE37 aluminum wheels, \$2260; 215/45ZR-17 Toyo Proxes TI Plus tires, \$600; Tokico shocks, \$516; coil springs, \$275; labor, \$600 Brakes: Brembo front-brake kit (includes stainless-steel brake lines, 12.1-inch front calipers, and Brembo four-piston calipers, \$495; Schroth four-point harnesses, \$450; turbo timer, \$110; labor, \$300Displacement: 150 cu in, 2457ccPower (SAE net) stock: 165 bhp @ 5600 rpmPower (SAE net) stock: 165 bhp @ 6000 rpm TRANSMISSION: 5-speed manual DIMENSIONS: Wheelbase: 99.2 in Length: 172.2 inCurb weight: 2890 lb PERFORMANCE: STOCK / MODIFIED Zero to 60 mph: 8.2 sec / DNF Zero to 100 mph: 8.2 sec / DNF Zer mph: 27.3 sec / DNF Street start, 5-60 mph: 8.9 sec / DNF Standing 1/4-mile: 16.3 sec @ 84 mph / DNF Top-gear passing time, 30-50 mph: 191 ft / DNF Roadholding, 300-ft-dia skidpad: 0.81 g / DNF Emergency-lane-change maneuver, mph: DNFRoad-course lap, min:sec: DNF Today, the name Mugen means as much to Honda tuners as Holley and Edelbrock once meant to street rodders. Mugen's been building go-fast Honda parts for years. Last year, Mugen was started by Hirotoshi Honda, son of the founder of the Honda Motor Company, which helps explain the close ties with Honda. The exclusive distributor of Mugen parts in North America is King Motorsports Unlimited, of Sullivan, Wisconsin. The pairing of a Midwestern race shop and a Japanese tuner has been an uncommonly successful one. King-built cars spent last summer shattering track records in the SCCA ITA class, and King's Motorola Cup cars are regular front-runners. For this test, King Motorsports owner Scott Zellner didn't even blink when asked which car he'd like to bring, and after piloting his Integra Type R, we can see why. His modifications turned the boy-racer Type R into a daringly quick street and track car. Starting with the engine, Zellner whipped up a brew of Mugen parts to increase available revs and breathing efficiency. First, he removed the engine is removed, Zellner checks for proper tolerances and reinstalls the engine with stiffer motor mounts. The stock limited-slip differential gets swapped for a Mugen piece that Zellner says does a better job of getting the power to the wheel with the most traction. For the exhaust, a freer-breathing Mugen header is joined to the stock catalytic converter and a Mugen muffler. The result: 220 hp, for \$9355. Zellner replaced the shocks, springs, anti-roll bars, wheels, and tires. He set up the car with greater rear roll stiffness than is found in the front, which, he says, "takes away a front-drive car's tendency to push wide through turns and actually lets it rotate a bit." Altogether, these changes tally \$19,213, but the transformed car is an absolute blast to drive. The motor rips urgently to the redline, and the stocker's frenzied, almost harmful-sounding engine note is replaced with one of the best engine notes this side of a Ferrari. The King/Mugen Integra also trounced the stocker to 60 mph, performing the feat in 5.8 seconds, nearly a full second quicker. Top speed rose 3 mph, even though the King/Mugen car had a larger, drag-inducing rear wing. On the track, the King/Mugen car certainly did not push; rather, the rear end would predictably step out on turn-in and allow the driver to get back on the gas sooner. Grip was up only 0.04 g, but it should be noted that Zellner chose full-tread street tires for our test, whereas some of the other cars were wearing DOT-legal racing rubber. Better tires would have dramatically lowered lap times and upped skidpad grip. The whole package had just enough raciness to make everyday driving thrilling -- and without a buckboard-stiff ride. If you have to own one car to haul groceries, blast out morning cobwebs, and go on weekend track forays, few do it better.-Larry Webster VEHICLE TYPE: front-engine, front-wheel-drive, 4passenger, 3-door coupe PRICE, STOCK/MODIFIED: \$24,805/\$44,018 ENGINE TYPE: DOHC 16-valve 4-in-line, aluminum block and head, Honda/Mugen N-1 engine and transmission: limited-slip differential, \$1320; engine computer, \$1300; cat-back exhaust system, \$975; header pipe, \$975; clutch, \$599; valve-spring set, \$460; engine mounts, \$399; lightweight flywheel, \$350; high-compression head gasket, \$129; low-temp thermostat, \$69; high-pressure radiator cap, \$29; labor, \$2750 Suspension: 7.0 x 16-in forged aluminum wheels, \$2200; adjustable shocks and springs, \$1450; 225/45ZR-16 Bridgestone S0-2 tires, \$800; 21mm front anti-roll bar, \$370; 26mm rear anti-roll bar, \$370; front shock-tower brace, \$285; labor, \$100 Appearance and interior modifications: S-1 seats and mounting hardware, \$2000; rear wing, \$680; FG-360 steering wheel, \$349; body stripe, \$85; labor, \$250Displacement: 110 cu in, 1797ccPower (SAE net) stock: 195 bhp @ 8000 rpmPower (SAE net) modified: 220 bhp @ 8000 rpm TRANSMISSION: 5-speed manual DIMENSIONS: Wheelbase: 101.2 in Length: 172.4 inCurb weight: 2500 lb PERFORMANCE: STOCK / MODIFIED: Zero to 60 mph: 6.6 sec / 5.8 sec Zero to 100 mph: 17.9 sec / 15.6 sec Street start, 5-60 mph: 7.1 sec / 6.5 sec Standing 1/4-mile: 15.2 sec @ 93 mph / 14.5 sec @ 97 mph Top-gear passing time, 30-50 mph: 164 ft / 159 ft Roadholding, 300-ft-dia skidpad: 0.88 g 0.92 g Emergency-lane-change maneuver: 67.3 mphRoad-course lap, min: sec: 1:20.0 VEHICLE TYPE: front-engine, front-wheel-drive, 4-passenger, 3-door coupe PRICE, STOCK/MODIFIED: \$24,805/\$44,018 ENGINE TYPE: DOHC 16-valve 4-in-line, aluminum block and head, Honda/Mugen N-1 engine-control system with port fuel injection MODIFICATIONS (all parts made by Mugen unless otherwise noted): Engine and transmission: limited-slip differential, \$1320; engine computer, \$1300; cat-back exhaust system, \$975; header pipe, \$975; clutch, \$599; valve-spring set, \$460; engine mounts, \$399; lightweight flywheel, \$350; high-compression head gasket, \$129; low-temp thermostat, \$69; high-compression head gasket, \$129; low-temp thermostat, \$12 high-pressure radiator cap, \$29; labor, \$2750 Suspension: 7.0 x 16-in forged aluminum wheels, \$2750 Suspension: 7.0 x 16-in forged aluminum wheels, \$270; adjustable shocks and springs, \$1450; 225/45ZR-16 Bridgestone S0-2 tires, \$800; 21mm front anti-roll bar, \$370; front shock-tower brace, \$285; rear shock-tower brace, \$285; labor, \$300 Brakes: Carbotech front and rear brake pads, \$175; stainless-steel brake lines, \$159; labor, \$100 Appearance and interior modifications: S-1 seats and mounting hardware, \$2000; rear wing, \$680; FG-360 steering wheel, \$349; body stripe, \$85; labor, \$250Displacement: 110 cu in, 1797ccPower (SAE net) stock: 195 bhp @ 8000 rpmPower (SAE net) modified: 220 bhp @ 8000 rpm TRANSMISSION: 5-speed manual DIMENSIONS: Wheelbase: 101.2 in Length: 172.4 inCurb weight: 2500 lb PERFORMANCE: STOCK / MODIFIED: Zero to 60 mph: 7.1 sec / 6.5 sec Standing 1/4-mile: 15.2 sec @ 93 mph / 14.5 sec @ 97 mph Top-gear passing time, 30-50 mph: 8.9 sec / 10.1 sec 50-70 mph: 8.8 sec / 9.9 sec Top speed (drag limited): 143 mph / 146 mph Braking, 70-0 mph: 164 ft / 159 ft Roadholding, 300-ft-dia skidpad: 0.88 g / 0.92 g Emergency-lane-change maneuver: 67.3 mphRoad-course lap, min: sec: 1:20.0 As you read this, Aaron Neumann is likely in the research garage at his father Bill's Neuspeed shop, trying to hack into the Audi TT Quattro's computer. Audi told him that its TT was just fine as he got it, and Audi wasn't going to give him any help in screwing with it. So he's still trying to figure out how to get the computer to allow greater boost levels and take further advantage of his company's P-Flo intake and stainless-steel exhaust systems that are hooked up to the turbocharged 20-valve engine. But even facing such frustration, Aaron has managed to conjure a more sharply focused version of an already much-loved car. The \$250 intake and \$700 exhaust systems add 10 hp -- enough to drop the 0-to-60 time from a stock 7.7 seconds to 7.4 -- and they give the 1.8-liter four a distinctive intake wail. But most of the effort went into the suspension. Neuspeed's 25mm front and 19mm rear anti-roll bars and sport lowering springs (which lower the car by 1.3 inches) are matched to Bilstein shocks and add significant roll stiffness to the otherwise rather softly sprung TT. Combine that with the grip of the 225/40ZR-18 Y88 BFGoodrich g-Force tires on Volk Racing wheels, and skidpad adhesion climbs from the stock car's 0.86 g to an impressive
0.94 -- with minimal comfort deterioration and greatly reduced initial understeer. "Tight, taut, and excellent; strong, responsive brakes," scribbled one tester in the logbook. "You can feel the bumps and pavement ripples, but it's not a harsh or uncomfortable feeling." In other words, it's easy to go quickly in this car, but it doesn't beat you up when it's time to behave. In all, the chassis mods total \$6810, which doesn't seem out of line for all the functional improvements (including the \$3160 wheels and \$1080 tires). More controversial is the \$3400 Cord Design five-piece body kit. The front-lip and rear-valance spoilers look sharp, but the rear wing reminds us of a urethane feeding trough sitting atop two aluminum doughnuts. That wing is adjustable and might well add some downforce to the TT compelling in the first place. Some day, Aaron will crack open the computer and more power will gush forth from the currently understressed engine. But although more power is always appreciated, that likely won't make the Neuspeed car any more balanced and easy to drive than it is now.- JPH VEHICLE TYPE: trubocharged and intercooled DOHC 20-valve 4-in-line, iron block and aluminum head, Bosch ME 7.5 engine-control system with port fuel injectionMODIFICATIONS (all parts made by Neuspeed unless otherwise noted): Engine and transmission: cat-back exhaust system, \$700; air-intake system, \$250; labor, \$100 Suspension: Volk Racing Volk III aluminum wheels, \$3160; Bilstein shock absorbers, \$1400; 225/40ZR-18 BFGoodrich g-Force tires, \$1080; coil springs, \$520; front and rear anti-roll bars, \$450; labor, \$400Displacement: 109 cu in, 1781ccPower (SAE net) stock: 180 bhp @ 5500 rpmPower (SAE net) modified: 190 bhp @ 5500 rpm TRANSMISSION: 5-speed manual DIMENSIONS: Wheelbase: 95.6 in Length: 159.1 inCurb weight: 3180 lb PERFORMANCE: STOCK / MODIFIED Zero to 60 mph: 8.7 sec / 8.0 sec Standing 1/4-mile: 15.8 sec @ 85 mph / 15.7 sec @ 86 mph Top-gear passing time, 30-50 mph: 11.6 sec / 11.0 sec 50-70 mph: 8.9 sec / 8.7 sec Top speed (governor limited): 129 mph / 129 mph Braking, 70-0 mph: 164 ft / 154 ft Roadholding, 300-ft-dia skidpad: 0.86 g / 0.94 g Emergency-lane-change maneuver: 66.3 mphRoad-course lap, min: sec: 1:22.4 VEHICLE TYPE: front-engine, 4-wheel-drive, 2+2-passenger, 3-door coupe PRICE, STOCK/MODIFIED: \$32,775/\$44,435 (est) ENGINE TYPE: turbocharged and intercooled DOHC 20-valve 4-in-line, iron block and aluminum head, Bosch ME 7.5 engine and transmission: cat-back exhaust system, \$700; air-intake system, \$250; labor, \$100 Suspension: Volk Racing Volk III aluminum wheels, \$3160; Bilstein shock absorbers, \$1400; 225/40ZR-18 BFGoodrich q-Force tires, \$1080; coil springs, \$520; front and rear anti-roll bars, \$450; labor, \$250 Appearance and interior modifications: Cord-design body kit, \$3400 (est); labor \$400Displacement: 109 cu in, 1781ccPower (SAE net) stock: 180 bhp @ 5500 rpmPower (SAE net) modified: 190 bhp @ 5500 rpm TRANSMISSION: 5-speed manual DIMENSIONS:Wheelbase: 95.6 in Length: 159.1 inCurb weight: 3180 lb PERFORMANCE: STOCK / MODIFIED Zero to 60 mph: 7.7 sec / 7.4 sec Zero to 100 mph: 23.4 sec / 23.4 sec Street start, 5-60 mph: 8.7 sec / 8.0 sec Standing 1/4-mile: 15.8 sec @ 85 mph / 15.7 sec @ 86 mph / 15.7 sec @ 86 mph / 129 mph Braking, 70-0 mph: 11.6 sec / 11.0 sec 50-70 mph: 129 mph Braking, 70-0 mph: 129 mph Braking, 70-0 mph: 15.8 sec @ 86 mph / 15.7 sec @ 86 mph / 15.7 sec @ 86 mph / 15.7 sec @ 86 mph / 15.8 sec / 11.0 sec 50-70 mph: 15.8 sec / 11.0 sec 50-70 mph: 15.8 sec / 15.8 by the response of T.C. Kline, owner and operator of ProParts, the company that designed and built the modifications for the \$2000, when we asked him which car he'd like to bring to our roundup. After all, Honda left little on the table for aftermarket tuners when they designed the \$2000. How much more power can you get from an engine that already has the highest horsepower per liter of any naturally aspirated powerplant built today? How can someone improve brakes that bring this car to a full stop from 70 mph in 157 feet and handling that grips the road with 0.90 g of lateral acceleration? But then again, if he wanted to supply us with an S2000 to flog for three days, who were we to protest? Kline got started autocrossing in 1979 and then moved into racing with considerable success. In 1986, he started T.C. Kline Racing branched into ProParts, a high-performance parts distributor and retailer. Today, ProParts also has an in-house group known as ProSpec that is dedicated to designing new parts for Honda automobiles. In short, ProSpec builds and specifies the parts ProParts sells for Honda cars. Get it? The good thing is that Kline had a hand in the new parts gracing the ProSpec S2000. As we suspected, Kline found little room for improvement under the hood. He fitted only a header pipe, a catback exhaust system, and a freer-breathing airbox. These mods add 20 hp (bringing the total to 260) and cost \$2680. Kline used the limited development time to enhance the suspension. We've always had high praise for the S2000's handling, wishing only, maybe, for a bit more willingness to rotate. Kline went at it anyway, banking on his years of experience to uncover a setup that was rewarding to drive on both the track and the street. For dampers, Kline modified a set of \$3980 Koni double-adjustable shocks. The high price buys exceptional control during small wheel movements, which results in dramatic improvements on the racetrack, says Kline. He also admits that for pure street driving, the shocks are probably overkill. The trickest part of the whole setup is the pair of blade-adjustable anti-roll bars. The pieces have the cool machined-from-solid-metal look of race-car parts. Finally, Kline ordered up a set of sticky 0.8inch-wider and 2.0-inch-taller Pirelli P Zero C tires, which are just barely DOT-legal. At the track, the engine mods compensate for the increased drag and the difficult launch characteristics of those fat, sticky tires. Kline's \$2000 accelerated to 60 mph in 5.7 seconds -- 0.1 second ahead of the stocker -- and cleared the quarter-mile 1 mph faster. His \$2320 Brembo brake job didn't pay off, as stops from 70 mph took 12 extra feet. The problem was traced to the ABS pumps, which were not able to flow enough fluid to supply the new four-piston calipers. The ProSpec S2000 smoked through the lane-change test, however, posting a 72.6-mph run. In addition, there was loads of grip available -- 1.04 g -- and Kline's car was much easier to rotate through turns. The ride penalty -- at least on California roads -- was minimal. We didn't think it needed improving, but Kline showed us that even the ultimate sports car can be made better.- Larry Webster VEHICLE TYPE: front-engine, rear-wheel-drive, 2-passenger, 2-door roadster PRICE, STOCK/MODIFIED: \$32,415/\$50,339 ENGINE TYPE: DOHC 16-valve 4-in-line, aluminum block and head, Honda PGM-FI engine-control system with port fuel injection MODIFICATIONS (all parts made by ProSpec unless otherwise noted): Engine and transmission: Comptech Sport cat-back exhaust system, \$1450; Comptech Sport header pipe, \$850; Comptech Sport high-flow air filter, \$100; labor, \$280 Suspension: Koni double-adjustable shock absorbers, \$3980; 8.0 x 18-in front, 9.0 x 18-in front, 9.0 x 18-in front, 245/35ZR-18 rear Pirelli P Zero C tires, \$1200; shock mounts, \$400; H&R coil springs, \$260; Comptech Sport front shock-tower brace, \$245; Comptech Sport lower frame brace, \$199; labor, \$800 Brakes: Brembo front brake kit (includes four-piston calipers, 13.0-inch rotors, and stainless-steel brake lines), \$2100; labor, \$220 Appearance and interior modifications: Recaro seats and mounting hardware, \$1550; Comptech Sport aluminum plug-wire cover, \$170; labor, \$200Displacement: 122 cu in, 1997ccPower (SAE net) stock: 240 bhp @ 8300 rpmPower (SAE net) modified: 260 bhp @ 8300 rpm TRANSMISSION: 6-speed manual DIMENSIONS:Wheelbase: 94.5 in Length: 162.2 inCurb weight: 2778 lb PERFORMANCE: STOCK / MODIFIED Zero to 60 mph: 5.8 sec / 5.7 sec Zero to 100 mph: 14.9 sec / 14.6 sec Zero to 130 mph: 31.0 sec / 31.3 sec Street start, 5-60 mph: 6.8 sec / 6.7 sec Standing 1/4-mile: 14.4 sec @ 98 mph / 14.4 sec @ 99 mph Top-gear passing time, 30-50 mph: 9.1 sec / 9.8 sec Top speed (drag limited): 147 mph / 148 mph Braking, 70-0 mph: 157 ft / 169 ft Roadholding, 300-ft-dia skidpad: 0.90 g / 1.04 g Emergency-lane-change maneuver: 72.6 mphRoad-course lap, min: sec: 1:18.5 VEHICLE TYPE: front-engine, rear-wheel-drive, 2-passenger, 2-door roadster PRICE, STOCK/MODIFIED: \$32,415/\$50,339 ENGINE TYPE: DOHC 16-valve 4-in-line, aluminum block and head, Honda PGM-FI engine-control system with port fuel injection MODIFICATIONS (all parts made by ProSpec unless otherwise noted): Engine and transmission: Comptech Sport cat-back exhaust system, \$1450; Comptech Sport header pipe, \$850; Comptech Sport high-flow air filter, \$100; labor, \$280 Suspension: Koni double-adjustable front and rear anti-roll bars, \$1500; comptech Sport high-flow air filter, \$100; labor, \$2420; blade-adjustable front and rear anti-roll bars, \$1500; and the suspension is a filter, \$100; labor, \$280 Suspension: Koni double-adjustable front and rear anti-roll bars, \$1500; and the suspension is a filter, \$100; labor, \$280 Suspension: Koni double-adjustable front and rear anti-roll bars, \$1500; and the suspension is a filter, \$100; labor, \$280 Suspension is a filter, \$100; labor, \$280 Suspension is a filter, \$100; labor, \$280 Suspension is a filter, \$100; labor, \$ 225/40ZR-18 front, 245/35ZR-18 rear Pirelli P Zero C tires, \$1200; shock mounts, \$400; H&R coil springs, \$260; Comptech Sport front shock-tower brace, \$199; labor, \$800 Brakes: Brembo front brake kit (includes four-piston calipers, 13.0-inch rotors, and stainless-steel brake lines), \$2100; labor, \$220 Appearance and interior modifications:
Recaro seats and mounting hardware, \$1550; Comptech Sport aluminum plug-wire cover, \$170; labor, \$200Displacement: 122 cu in, 1997ccPower (SAE net) modified: 260 bhp @ 8300 rpm TRANSMISSION: 6-speed manual DIMENSIONS:Wheelbase: 94.5 in Length: 162.2 inCurb weight: 2778 lb PERFORMANCE: STOCK / MODIFIED Zero to 60 mph: 5.8 sec / 5.7 sec Zero to 100 mph: 14.9 sec / 10.2 sec 50-70 mph: 9.8 sec / 10.2 sec 50-70 mph speed (drag limited): 147 mph / 148 mph Braking, 70-0 mph: 157 ft / 169 ft Roadholding, 300-ft-dia skidpad: 0.90 g / 1.04 g Emergency-lane-change maneuver: 72.6 mphRoad-course lap, min: sec: 1:18.5 Forget the Miatas clogging America's sorority-house parking lots. Racing Beat's Miata makeover is for the hard-core enthusiast. This is a Miata shorn of friendly compromises and distilled down to the essence of mechanical attraction. It's powerful, its reflexes are immediate, and it grabs corners kleptomaniacally. Starting with a base Miata, Racing Beat first reverted to manual steering and then transplanted the six-speed transmission and Torsen limited-slip differential from the 10th Anniversary Edition Miata. The result is a lightweight Miata (weighing 126 pounds less than our last anniversary Miata) with the six-speed's close ratios and the Torsen's superior traction -- a combination Mazda doesn't offer. It should. Racing Beat optimized the engine with its own K & N-filtered intake and Tri-Y ceramic-coated header feeding back into an exhaust system quieted by the company's Power Pulse muffler. Furthering the advantage are a lightweight aluminum flywheel and a new clutch assembly. The company measured a 14-hp increase in power at the rear wheels, but the character of that newfound power is improved markedly with more torque available at every rpm. Figure 158 hp at the crank. Spinning through shorter gearing, the Racing Beat car manages a 6.7-second trip from 0 to 60 mph (1.1 seconds faster than stock). This 1.8-liter four feels like the 2.0-liter in the old Nissan Sentra SE-R, and that's high praise around here. The engine may be lightly modified, but the chassis is transmogrified. Koni makes the shocks, but everything else --the front and rear subframe braces, the oversize anti-roll bars, the lower-control-arm reinforcement flanges, and the coil springs (which lower the car an inch) -- is built by Racing Beat. The trick, though, may be the modestly sized but sticky, nearly grooveless P205/50ZR-15 Kumho V-700 tires on 6.5-by-15-inch Racing Hart CP-F wheels. A popular West Coast autocross tire, it's an open question how they'd perform in sloppy weather or hold up as ordinary commuters, but on a dry track, they're magic. How about 1.03 g on the skidpad? Or a 1:20.6 lap of the Streets of Willow -- nearly as quick as the King/Mugen Integra, despite giving up 62 hp to that racer? We'd skip the tonneau cover, the rear wing, the "style bar," and the leather seat covers to rein in expenses, and we'd add Racing Beat's \$11,066 functional modifications over an extended time. On the road, this Miata is stiffer than stock, but the ride is hardly brutal, the steering is heavy, and the rumpy note of the exhaust is intoxicating. What's best is how neutral it remains in the corners -- that and the exceptional grip (we'd like to try it on less radical tires). If Colin Chapman had run Mazda, this is what the Miata would be.- JPH VEHICLE TYPE: front-engine, rear-wheel-drive, 2-passenger, 2-door roadster PRICE, STOCK/MODIFIED: \$21,695/\$34,235 ENGINE TYPE: DOHC 16-valve 4-in-line, aluminum block and head, Mazda engine-control system with port fuel injection MODIFICATIONS (all parts made by Racing Beat unless otherwise noted): Engine and transmission: Mazda six-speed manual transmission, limited-slip rear differential, and 3.91:1 ring-and-pinion gear, \$5629; aluminum flywheel, \$452; street/strip clutch, \$371; header pipe, \$350; Power Pulse muffler, \$225; air-intake system, \$175; ignition wires, \$85; labor, \$400 Suspension: 6.5 x 15-in Racing Hart CP-F wheels, \$1280; Koni single-adjustable shocks, \$440; 205/50ZR-15 Kumho V-700 tires, \$436; coil springs, \$170; front anti-roll-bar mounts, \$65; anti-roll-bar end links, \$60; lower-control-arm reinforcement flanges, \$12; labor, \$150; front anti-roll-bar mounts, \$65; anti-roll-bar end links, \$60; lower-control-arm reinforcement flanges, \$12; labor, \$150; front anti-roll-bar mounts, \$65; anti-roll-bar end links, \$60; lower-control-arm reinforcement flanges, \$12; labor, \$150; front anti-roll-bar mounts, \$65; anti-roll-bar end links, \$60; lower-control-arm reinforcement flanges, \$12; labor, \$150; front anti-roll-bar mounts, \$65; anti-roll-bar end links, \$60; lower-control-arm reinforcement flanges, \$12; labor, \$150; front anti-roll-bar end links, \$65; anti-roll-bar end links, \$60; lower-control-arm reinforcement flanges, \$12; labor, \$150; front anti-roll-bar end links, \$ Brakes: stainless-steel brake lines, \$136; Hawk Brake front-brake pads, \$130; labor, \$75 Appearance and interior modifications: Katzkin seat covers, \$450; style bar, \$299; tonneau cover, \$250; rear wing, \$225; labor, \$75 Appearance and interior modifications: Katzkin seat covers, \$450; style bar, \$299; tonneau cover, \$250; rear wing, \$225; labor, \$250Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450; rear wing, \$250Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450; rear wing, \$250Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450; rear wing, \$250Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450; rear wing, \$250Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450; rear wing, \$250Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450; rear wing, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: Katzkin seat covers, \$450Displacement: 140 cu in, 1839ccPower (SAE net) modifications: 140 cu in, 1830ccPower (SAE net) modifications: 140 cu in, 1830ccPower (SAE net) modifications: 140 cu in, 1830ccPower (SAE net) modifica TRANSMISSION: 6-speed manual DIMENSIONS: Wheelbase: 89.2 in Length: 155.3 inCurb weight: 2249 lb PERFORMANCE: STOCK / MODIFIED: Zero to 60 mph: 7.8 sec / 7.5 sec Standing 1/4-mile: 16.0 sec @ 85 mph / 15.2 sec @ 90 mph Top-gear passing time, 30-50 mph: 9.2 sec / 10.6 sec 50-70 mph: 10.0 sec / 11.2 sec Top speed (drag limited): 124 mph / 129 mph Braking, 70-0 mph: 183 ft / 156 ft Roadholding, 300-ft-dia skidpad: 0.86 g / 1.03 g Emergency-lane-change maneuver: 70.5 mphRoad-course lap, min: sec: 1:20.6 VEHICLE TYPE: front-engine, rear-wheel-drive, 2-passenger, 2-door roadster PRICE, STOCK/MODIFIED: \$21,695/\$34,235 ENGINE TYPE: DOHC 16-valve 4-in-line, aluminum block and head, Mazda engine-control system with port fuel injection MODIFICATIONS (all parts made by Racing Beat unless otherwise noted): Engine and transmission: Mazda six-speed manual transmission, limited-slip rear differential, and 3.91:1 ring-and-pinion gear, \$5629; aluminum flywheel, \$452; street/strip clutch, \$371; header pipe, \$350; Power Pulse muffler, \$225; air-intake system, \$170; front anti-roll bar, \$160; front subframe brace, \$98; rear subframe brace, \$98; rear subframe brace, \$88; rear anti-roll bar, \$79; front anti-roll-bar mounts, \$65; anti-roll-bar mounts, \$65 tonneau cover, \$250; rear wing, \$225; labor, \$250Displacement: 140 cu in, 1839ccPower (SAE net) stock: 140 bhp @ 6500 rpmPower (SAE net) modified: 158 bhp @ 6200 rpm TRANSMISSION: 6-speed manual DIMENSIONS: Wheelbase: 89.2 in Length: 155.3 inCurb weight: 2249 lb PERFORMANCE: STOCK / MODIFIED: Zero to 60 mph: 7.8 sec / 6.7 sec Zero to 100 mph: 23.4 sec / 20.7 sec Street start, 5-60 mph: 9.2 sec / 7.5 sec Standing 1/4-mile: 16.0 sec @ 85 mph / 15.2 sec @ 90 mph Top-gear passing time, 30-50 mph: 129 mph Braking, 70-0 mph: 183 ft / 156 ft Roadholding, 300-ft-dia skidpad: 0.86 g / 1.03 g Emergency-lane-change maneuver: 70.5 mphRoad-course lap, min: sec: 1:20.6 Heading with the wind down the straight of HPCC's 7.5-mile oval, the Vortech-supercharged Civic Si was still pulling in fifth toward its 8000-rpm redline, the speedo needle was pegged past its 140-mph markings, and the side windows were bowing out slightly. Then the thing broke. One of the pistons vaporized, Vortech afterward informed us, after prolonged high-rpm running caused the engine to begin running lean. It's a shame, because a Civic Si riding on P205/40ZR-17 Yokohama A520s at redline in fifth gear is going 144 mph. Vortech is a late entrant to the tiny-car aftermarket, having previously concentrated on supercharger systems for V-8-powered domestics such as the Mustang and the Camaro. The central element in Vortech's arsenal is a series of centrifugal blowers (they work like the compressor half of a turbocharger driven by a belt). In the Civic's case, Vortech fits a new, smaller V-5 unit driven off a long shaft running across the front of the engine. It looks goofy at first, but that's how it fits. Turning at about 6.9 times engine
speed and blowing through the company's aftercooler air-to-water intercooler, the supercharger pressurizes the stock intake manifold with about eight pounds of boost. To support that, Vortech adds its own Maxflow bypass valve and Power Rail fuel rail. After throwing on a Thermal Research & Development cat-back exhaust system, Vortech claims that drive-wheel horsepower grew from 131 hp stock (Honda claims 160 at the crank) to a full 195. Vortech expects that the supercharger system will run about \$4000, which would bring the total engine job to slightly less than \$5300. To countermand that power, Vortech installed Baer Racing's 13-inch-diameter PBR front-brake kit (\$1095 installed). The suspeed 19mm rear anti-roll bar. Enkei NT03 7.0-by-17-inch wheels provide the finishing touch. The supercharger doesn't alter the Si powerplant's nature as much as it radically exaggerates it. Low-end torque is still minimal, but at 6200 rpm when the VTEC cam kicks over, the car feels as though a rhino on meth has just head-butted it from the rear. This amped-up, unforgiving power band, combined with limited suspension travel, made this the most challenging car to drive quickly on mountain roads. But it felt spectacularly quick. Vortech is still developing this supercharger installation. Now that it knows that sustained hypervelocities are a problem, it has an opportunity to fix that. Once that's been addressed, if our guesstimates are accurate, this may prove to be a dominant setup in import drag racing.- JPH VEHICLE TYPE: front-engine, front-wheel-drive, 5-passenger, 2-door sedan ESTIMATED PRICE, STOCK/MODIFIED: \$17,960/ \$27,700 (est)Engine type: supercharged and intercooled DOHC 16-valve 4-in-line, aluminum block and head, Honda PGM-FI engine-control system with port fuel injection MODIFICATIONS (all parts made by Vortech unless otherwise noted):Engine and transmission: supercharger and intercooler system, \$4000 (est); cat-back exhaust system, \$500; auxiliary waste gate, \$206; fuel-pressure regulator and fuel rail, \$188; labor, \$400 Suspension: 7.0 x 17-in Enkei NT01 wheels, \$1200; Koni/Neuspeed single-adjustable shocks, \$792; 205/40ZR-17 Yokohama A520 tires, \$520; Neuspeed rear anti-roll bar, \$400; Neuspeed coil springs, \$240; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, DIMENSIONS: Wheelbase: 103.2 in Length: 175.1 inCurb weight: 2630 lb PERFORMANCE: STOCK / MODIFIED Zero to 60 mph: 7.6 sec / DNF Standing 1/4-mile: 16.1 sec @ 87 mph / DNF Top-gear passing time, 30-50 mph: 10.3 sec / DNF 50-70 mph: 11.1 sec / DNF Top speed (drag limited): 127 mph / DNF Braking, 70-0 mph: 199 ft / DNF Roadholding, 300-ft-dia skidpad: 0.83 g / DNF Emergency-lane-change maneuver, mph: DNFRoad-course lap, min: sec: DNF VEHICLE TYPE: front-engine, front-wheel-drive, 5-passenger, 2-door sedan ESTIMATED PRICE, STOCK/MODIFIED: \$17,960/ \$27,700 (est)Engine type: supercharged and intercooled DOHC 16-valve 4-in-line, aluminum block and head, Honda PGM-FI engine-control system with port fuel injection MODIFICATIONS (all parts made by Vortech unless otherwise noted): Engine and transmission: supercharger and intercooler system, \$4000 (est); cat-back exhaust system, \$500; auxiliary waste gate, \$206; fuel-pressure regulator and fuel rail, \$188; labor, \$400 Suspension: 7.0 x 17-in Enkei NT01 wheels, \$1200; Koni/Neuspeed rear anti-roll bar, \$400; Neuspeed coil springs, \$240; labor, \$200 Brakes: Baer Racing front-brake kit (includes two-piston calipers and 13-inch rotors), \$895; labor, \$200Displacement: 97 cu in, 1595ccPower (SAE net) stock: 160 bhp @ 7600 rpmPower (SAE net) modified: 225 bhp @ 7800 rpm TRANSMISSION: 5-speed manual DIMENSIONS: Wheelbase: 103.2 in Length: 175.1 inCurb weight: 2630 lb PERFORMANCE: STOCK / MODIFIED Zero to 100 mph: 7.6 sec / DNF Zero to 100 mph: 23.0 sec / DNF Street start, 5-60 mph: 7.9 sec / DNF Standing 1/4-mile: 16.1 sec @ 87 mph / DNF Top-gear passing time, 30-50 mph: 10.3 sec / DNF Roadholding, 300-ft-dia skidpad: 0.83 g / DNF Emergency-lane-change maneuver, mph: DNFRoad-course lap, min: sec: DNF HKS U.S.A., Inc. 2801 East 208th Street Carson, California 90810 310-763-9600www.hksusa.com King Motorsports.com Neuspeed 3300 Corte Malpaso Camarillo, California 93012 805-388-7171www.neuspeed.com ProParts, Inc. 21417 Ingomar Street Canoga Park, California 91304 818-888-8904www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.racingbeat.com Vortech Engineering, Inc. 1650 Pacific Avenue Channel Islands, California 92807 714-779-8677www.racingbeat.com Vortech Engineering, Inc. 1650 Pacific Avenue Channel Islands, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.racingbeat.com Vortech Engineering, Inc. 1650 Pacific Avenue Channel Islands, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Anaheim, California 92807 714-779-8677www.propartsusa.net Racing Beat, Inc. 4789 Wesley Drive Beat, Inc. 4789 Wesley D possibly go wrong — go International Raceway, in the high desert near Edwards Air Force Base, to put the car through C/Ds standard performance tests. We wanted to measure the results of our tweaks. Then again, maybe not. When the Si rolled to a stop, Winfield had just completed his first circuit—one lap—of the Willow Springs skidpad, the initial, as in first, element in his test regimen. It refused to make another. Refused, in fact to run at all. "It seemed to be okay when I picked it up at Honda headquarters," Winfield reported. "But on the way out here it started detonating. I tilled it up with premium, but just lost power and quit." And so, as Winfield began wondering how he was going to get home, some seven months of effort and frustration came to an ignominious end. It had begun with a challenge from our friends at American Honda. Inspired by the California small-displacement hot-rod phenomenon—and the hordes of "slammed" Civics and Acura Integras it has spawned—Honda suggested a magazine shootout between C/D, Sport Compact Car, Super Street, and Popular Mechanics. The idea: Each magazine would have the loan of a new Civic Si to be modified as its temporary owners saw fit. The only caveat was that the finished car would have to conform to California Air Resources Board regs and would have to pass a CARB emissions sniff test. Then the combatants would be subjected to two performance showdowns at an Import Drag Racing Association (IDRA) meet, where the menu would include timed laps on the track's infield road course, as well as acceleration and braking evaluations. Each magazine was allotted a mythical \$10,000 parts budget mythical because Honda wasn't about to part with 40 large to subsidize the exercise, and neither were any of the participants. Most if not all of the major after-market components were contributed—our own shop-ping list is detailed herewith—and the fictional costs were tallied on a basis of retail prices. Significantly, labor costs weren't added into the total. Even Honda's Si Challenge administrative crew, although singularly benighted in some other areas of attempting to orchestrate this event, realized there was no way to accurately assess what the four teams were spending (or not spending) to get things done. The cost of the gorgeous flame job on the Pop Mechanics car, for example, could have been entered as
\$0. The scoring was broken into three categories: cosmetic appeal, to be voted by fans at the IDRA event and by employees at Honda's Torrance, California, head-quarters; general performance, including acceleration and braking; and handling on the Vegas road circuit. It was this last area—handling—where we elected to stack the bulk of our chips, for a couple of reasons. First, although we're no more immune to power lust than the next guys, we think precise handling is the element that creates a sense of partnership between man and machine—the car as an extension of the driver's will. Second. of the three scoring categories, we figured it was the one we understood best, particularly after years of collective staff racing experience in street-stock front-drive cars. As a strategy, it made plenty of sense to us in the abstract. But it failed to reckon with a major random variable named Paul Tracy, selected (over our objections) by Honda as the designated hotshoe because (a) his Team Kool Green CART race car uses Honda power and (b) he happens to reside in Las Vegas. Although we're some 2000 miles away from Southern California, where the import-hot-rod phenom is really cooking, we felt comfortable with this project because we wore able to partner up with King Motorsports, an outfit from Sullivan, Wisconsin, that's made its own contributions to hastening Hondas. In addition to building Sports Car Club of America World Challenge winners for Real Time Racing, and a host of killer club-racing Civics and CRXs, King is also the North American distributor for Mugen products. Mugen is to Honda what supertuner AMG was to Mercedes-Benz before going in-house, and Mugen's high-quality goodies range from cosmetic addons to suspension bits to engine hard parts. For all our emphasis on handling, power was the project's first priority and ate the biggest single chunk—\$2800—of our budget. This sum will buy you an Oscar Jackson supercharger kit, complete with a CARB part number, although it won't buy you King's attendant engine work—blueprinting, balancing, and port matching. A Mugen exhaust header, a Mugen stainless cat-back exhaust, an AEM cold—air intake, and R.C. Engineering injectors rounded out the bolt-ons, and with 9 psi of boost, King manager Scott Zellner measured 198 front-wheel horse-power on the shop's chassis dyno. Since mechanical power losses typically run between 15 and 20 percent, Zellner estimated about 225 hp at the Si's crank, in contrast to the stock rating of 160 hp. Delivering power to the ground through a Mugen limited-slip differential and sticky Hoosier road- racing radial tires on 7.0-by-1 6-inch Enkei aluminum wheels, this setup produced quarter-mile inns in the 14-second range. Our own Larry Webster turned a best of 14.8 at 94.1 mph at the IDRA shootout held at Palmdale, California (elevation 2000 feet), and Zellner claimed a 14.1-second run at 98.0 mph at Wisconsin's Union Grove strip. Handling enhancements included reduced ride height; an H&R coil-over shock kit with stiff spring rates (500 pounds front, 900 rear); a 22mm Mugen rear anti-roll bar (vs. 13mm stock); a collection of Mugen hard-rubber bushings; and modifications to the front knuckles that yielded 2.5 degrees of negative camber. What all these mods would have yielded on a road course, aside from an exceptionally stiff ride, we may never know. With no real warm-up, Tracy drew the C/D car first and almost immediately lost the supercharger drive belt. We were allowed another ran once repairs ware effected, but an off-course excursion spoiled that one. We also learned that excessive use of the rev limiter in a super-charged car such as this can produce a lean condition that in turn leads to overheating and vaporized spark plug electrodes. All in all, we chalked it up as a learning experience. And even though we didn't win, our result was better than the fate of the Sport Compactentry, which suffered severe overheating during the Vegas runs and was later stolen and stripped just outside the Specialty Equipment Manufacturers Association show that followed. Here's how we spent our notional \$10,000 developmental budget for the Hood Civic Si Challenge. We're grateful to these suppliers, and to King Motorsports, for their support. Part: Retail Cost Oscar Jackson supercharger kit: \$2800 Enkei NTO3 7.0-x-1 6-in aluminum alloy wheels (4): \$1076 Mugen limited-slip differential: \$1200 King Motorsports/H&R custom coil-over shock kit: \$899 Mugen stainless-steel 4-into-i exhaust header: \$799 Hoosier DOT road-racing radials (4): \$600 Mugen cat-back stainless-steel exhaust: \$599 Honda rear wing: \$499 Mugen chin spoiler: \$350 R.C. Engineering fuel injectors (4): \$129 F-1 graphics by Competition Graphics: \$75Total: \$9989 This content is created and maintained by a third party, and imported onto this page to help users provide their email addresses. You may be able to find more information about this page to help users provide their email addresses. You may be able to find more information about this page to help users provide their email addresses. You may be able to find more information about this page to help users provide their email addresses. 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