

# AutoWeek SuperTuners

"It's Not Yours Until It's Yours!"



Who do you think  
you're callin'  
**LITTLE,**  
pipsqueak?



Above: Mini-Madness Mini Cooper-S



Whether it's the more than 5,000 cars that turned out for the NOPI Nationals at Atlanta, or the 300 that participated in the SCO Nights season kickoff in Phoenix, whether it's all the network television shows that have set an episode against the backdrop of the sport compact car culture, slammed and modified front-wheel-drive cars have become much more than just fast and the furious; they've become mainstream, and a major segment for SuperTuner treatment.

Just how major? Well, sport compacts may not be featured on the green at Pebble Beach for another 10 or 15 years, but they've become a two-point-five billion (and that's billion with a "b") dollar industry, according to figures compiled by SEMA, the Specialty Equipment Market Association that holds its annual meeting/car show/aftermarket parts and pieces spectacular in early November in Las Vegas. SEMA notes that in a national economy that's growing at an annual rate of only 1.5 to 2 percent a year, the sport compact segment is swelling at more than 25 percent a year.



These cars  
are  
**big**  
little  
cars

No wonder Detroit, Hiroshima and Wolfsburg, not to mention Spring Hill and Seoul, are taking notice. And someday the powers of Pebble Beach will too.

"There's a litany of what the young people [who do sport compact makeovers to their cars] want to go through," says SEMA vice president Jim Spoonhower. First, he says, "They want to lower the car. Then they want to do wheels and tires.

"They want to give it an exhaust, and with a certain sound. They'll also do a custom sound system [for inside the car as well].

"They install seats, shift knobs and pedals, Euro-style taillight lenses..."

And the litany continues. But what about the hot-rod engine modifications that actually make their cars more performance-oriented?



Above images, top to bottom:  
Chevy Cavalier, GM; Performance West  
Ford Focus; Nology Renault Clio V6.

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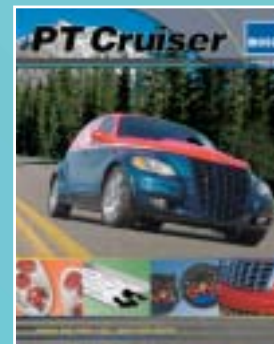
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## MINI Madness MINI Cooper S



MINI Madness ([www.mini-madness.com](http://www.mini-madness.com)) is based in Portland, Oregon, and uses the local CART track to test its products at triple-digit speeds. Its twist on the new MINI Cooper S includes an engine chip, cold air intake and dual stainless cat-back exhaust, all of which extracts an extra 35 horsepower from the four-cylinder engine.

But that's just the start. The Madness MINI also gets 13-inch Stoptech Big Brake rotors and four-piston calipers, stainless steel brake lines and Carbonech rear pads. A KW coil-over suspension drops the car 40 mm and a larger, adjustable rear swaybar offers two-point adjustability.

This MINI rides on Stillauto SR500 17x7-inch wheels with Dunlop SP FM901 ultra high-performance tires, gets PIAA rally lights, front and back rally stripes and a Schroth racing harness.

MINI Madness's George Mehallick suggests that MINI Cooper owners can bump their car's horsepower to the 130-135 hp range with similar engine tweaks, and says that making similar suspension changes to their cars takes a vehicle that already has established handling benchmarks "and makes it cut like a razor blade."

## CEC AC Schnitzer MINI



Claus Ettensberger Corp. of Gardena, California ([www.cecwheels.com](http://www.cecwheels.com)), is the American distributor of AC Schnitzer tuning products and has a "maximize your MINI" package that includes chrome-tipped, dual sport exhaust; sport springs; Type I wheels available in chrome, silver, red, yellow or black powder coating; a sliding canvas roof system and even an exterior graphics package. Interior tweaks include aluminum pedals, gearshift knob and hand brake, and special floor mats.

## Hyundai Tiburon



More than a dozen aftermarket companies are expected to display Hyundai Tiburon project vehicles at SEMA, but the first two examples were Hyundai internal product planning programs.

In stock mode, the 2003 Tiburon GT V6 delivers 170 horsepower and 181 pound-feet of torque through a six-speed manual transmission. Hyundai's modified version gets PPG's "Rouge Corsa" paint, ALT 18x7.5-inch painted wheels, 13.5-inch front Brembo brakes, cross-drilled rear rotors, APC "Intimidator" stainless steel exhaust, suspension that's lowered by 1.4 inches with Eibach springs, aluminum grilles and fascia openings, and custom hood graphics.

Inside are Sparco Milano seats, steering wheel and pedals and a roll bar.

## Neuspeed Volkswagen Golf



This Neuspeed ([www.neuspeed.com](http://www.neuspeed.com)) project car is "Koni-powered," notes the adjustable shock maker that worked with the Neumanns on this supercharged Golf.

Koni supplied the adjustable coil-over suspension kit that allows the car's ride height to be optimized through its threaded bodies.

Neuspeed completed the package with its supercharger kit, which includes a one-piece cast manifold, Eaton P45 full ball-bearing rotor group and Neuspeed custom P-Chip ECU. Neuspeed also supplied its T304 two-inch stainless steel cat-back exhaust and short-shift kit, 11.3-inch front brakes, 25-mm front and 28-mm rear antiroll bars as well as

polished billet aluminum oil cap, power steering cap, coolant cap, strut bearing caps and billet aluminum pedal set.

The front sport grille is from Kamei. The front spoiler, rear valence, side skirts and rear spoiler are from Projektzo.

Completing the package are 18x7.5-inch RH Evolution C5000 wheels and BFGoodrich g-Force TA tires from DAZZ Motorsport.

## Nology Renault Clio V6



Okay, so the Renault Clio V6 isn't even sold in the United States, but that didn't stop Nology engineering of San Marcos, California, from using one for its latest project vehicle.

The Renault Clio V6 is the road-going homologation special that enables

Renault to race this car in Europe. Tom Walkinshaw Racing builds the Clio V6 in Sweden. The "stock" 3.0-liter V6 is tuned to 250 horsepower but is mounted where the rear seat normally sits.

That's only 100 short of the Nology version, which gets a two-stage Nitrous Express package, Nology PowerCore coil amplifiers and Silverstone spark plugs as well as PowerBand engine management controller.

A B&M short shifter operates the six-speed manual transmission.

Nology's project vehicle rides on the same 17-inch OZ wheels that are used in Clio Cup racing - 7 inches wide in front and 8.5 in the rear, and wraps them with Yokohama AVS ES100 tires, 215/45s in front and 245/40s in back.

Eibach springs were installed in the race-bred suspension, but Nology found the 13-inch front discs to be so strong that it made no changes to the Clio's braking system. It did install MOMO racing seats, steering wheel and pedals, and four-point



RK



RX



RZ

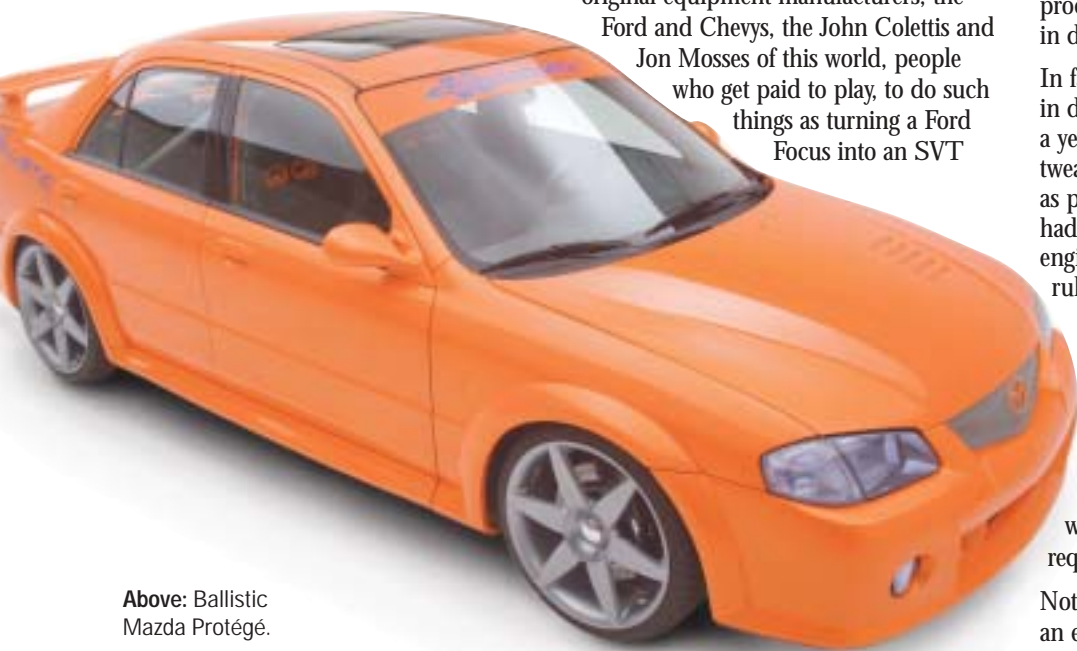


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"Within the segment there are two basic groups," says Spoonhower. "One wants the look and feel. Then you have the hard-core, the tuners who will swap engines, do turbocharging and nitrous.

The average consumer in this area doesn't go to that extent. The enthusiast goes totally out."



Above: Ballistic Mazda Protégé.

Hey, that's what we enthusiasts do, isn't it? We go totally out!

But it's important to know when you've ventured too far. The difference between adding nitrous and adding a bit too much can be an expensive engine rebuild.

One way to avoid making mistakes is to follow the example of the OEMs, the original equipment manufacturers, the Ford and Chevys, the John Colettis and Jon Mosses of this world, people who get paid to play, to do such things as turning a Ford Focus into an SVT

Focus or a Saturn SC2 coupe into a 300-horsepower SCX concept.

Tom Chapman is engineering chassis system supervisor for Ford's Special Vehicle Team and helped refocus Ford's entry level car into something very special among sport compacts. Believe it or not, Chapman says a high-performance version of the Focus was not part of the product plan when the Focus was in development.

In fact, he says, the Focus was in dealer showrooms for more than a year before the SVT folks started tweaking and tuning. Even then, he notes, as part of the OEM family, the SVT team had to consider not only internal Ford engineering requirements, but federal rules as well.

Private tuners, Chapman notes, "don't have to speak to the federal government, and if they blow a crankshaft out of an engine two times in the summer, they don't care. We can't blow engines up. Everything we do has to pass the same engineering requirements as every other Ford product."

Not that the SVT folks may not explode an engine from time to time in the

development process. "That's part of the development process," Chapman adds. "You don't know where the limit is until you cross it occasionally.

"You can put a blower on a Zetec and make a ton of horsepower, but then you start twisting halfshafts. It takes a lot of development time to know how to do this stuff technically correct and to address the tradeoffs properly. Guys who just buy parts and install them, unless they have lots of background, probably don't know how far to go before they've crossed the line.

"We don't do a lot of work with aftermarket parts here. We have our own engineering requirements we have to meet [SVT products go through extra drag racing-style acceleration trials as well as extensive road course track development laps]. The whole system has to be engineered and integrated as a vehicle system."

Of course, Chapman adds, "If you didn't have any constraints, we could get 450 horsepower out of the Zetec [the 2.0-liter, four-cylinder engine in the Focus].

But even with constraints, the SVT team boosts the little motor's output from a stock rating of 130 hp and 135 pound-feet of torque to 170 horsepower and 145 pound-feet, and with much more of that torque available sooner but also over a wider rev range. At the same time, however, the SVT Focus still meets low emission vehicle standards.

"It took us about 18 to 20 months to turn the Focus into an SVT Focus, and it was a global effort," Chapman adds. "There was a lot of interaction with our counterparts in the UK [where the Focus serves as the vehicle for Ford's World Rally Championship efforts].

"A conglomeration of optimized aftermarket parts does not necessarily result in an optimized vehicle system. By the time we develop our systems and components, integrate it into the vehicles and run them through our standard durability tests, there's a lot of time involved."

But with the demise of the SVT Contour, Ford needed the tuned Focus. Fortunately, says Chapman, the Focus was developed from the start with "a pretty robust architecture and good kinematics, so we had a good base. When we make an SVT product out of a mainstream vehicle, we have brake requirements, braking

performance requirements, engine/power-train performance, handling, things that we do to make the vehicle more appealing to the enthusiasts. We up the ante on these attributes. But we still want to provide a decent ride. I've been in chassis

Hey, that's what we enthusiasts do, isn't it? We go totally out!

design for a long time. You don't have to beat people's brains out to give them good driving dynamics."

Indeed. One of the biggest surprises about the SVT Focus is how comfortable its ride remains for normal driving. But load up the suspension as you approach a turn and then take the car through the corner, and the SVT Focus responds like, well, like you'd expect a properly tuned sport compact to respond.

"Most of us are enthusiasts ourselves," Chapman notes. "Everybody in SVT has something in the garage at home. If it pleases us, it should please other enthusiasts. One of my rules of thumb is: Would I buy what I'm doing?"

Although Chapman is a professional at this, he says he's very impressed with what many young enthusiasts are doing on their own with their own cars. "The import tuner thing is wacko crazy these days," Chapman says. "What these kids are doing is awesome."

In fact, he adds, it reminds him a lot of what he and his buddies used to do when they were younger and had GTOs and Boss 302s and GTXs. It seems that only the (brand) names (and the number of cylinders and the location of the drive wheels) have been changed.

To turn the Focus into an SVT Focus, the Special Vehicles Team worked with Cosworth Technology (known for building Grand Prix and Indy-winning

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