

Parts & Service

DINAN

California-Bred MINI Tuner



by Gary
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Nearly all tuners started out working in someone else's shop while they worked in their spare time on their own ideas to make cars faster and better. That's how Steve Dinan started out, but unlike most tuners, he has parlayed that drive and talent into a company bearing his name that is respected throughout the world for its BMW tuning products, and is now stamping that name on MINI Coopers as well.

Steve Dinan says that he was interested in hot rods since before he could drive, so when money was short after he graduated from high school, he went to work as a mechanic during the day while pursuing an engineering degree at night.

After working on several different automobile brands, he decided to focus on BMWs, out of an

appreciation for the quality of engineering in the design and manufacturing of the cars.

But Steve couldn't be satisfied with the compromises that were necessitated in any production automobile. So while continuing to work on BMWs for other bosses during the day, he began designing and developing his own parts to improve the car's ability to satisfy the true driving enthusiast. It wasn't long before his parts and upgrades were getting a positive reputation around the Mountain View, California, area between San Francisco and San Jose.

The obvious next step, as a person who never liked compromise; was to set up shop on his own, and Dinan Engineering was born in Mountain View. The rest, as they might say, is history. Nowadays, every BMW owner knows that the ultimate factory BMW is the M3 or M5, but the ultimate M3 or M5 is one that carries the Dinan name on the back, signifying that it has been upgraded with a combination of Dinan-designed, developed, and manufactured systems to improve performance and handling.

Except that the history hasn't been finished yet. The Dinan operations have expanded to the point where they needed one big roof under which they could consolidate their 75 staff members in R&D, manufacturing and sales operations. Steve feels strongly that an engineer who can work on a new product concept, then follow it through testing into manufacturing and installation is going to do a better job of his design than someone who is geographically isolated from the people who have to make and install the products, and the customers whose satisfaction was the ultimate goal.

So when we met Steve Dinan, Herb Shattuck, vice president for marketing and sales, and Swtt Leandres, director of marketing, it was in their impressive new building in Morgan Hill, just south of San Jose.



Above: Dinan headquarters, warehouse, and R&D shops in Morgan Hill, California. Right Steve Dinan is a hands-on technical manager, the secret behind Dinan's success.

The reason for our visit, of course, is that Dinan is now becoming a force in MINI tuning and upgrades, with the same reputation for quality and performance that it has brought to the BMW enthusiast.

Herb, Steve and Scott make no apology for the fact that they have been relatively slow to enter the market. "We're always just a little bit behind the curve," Steve said. "We don't bring a product into the market until we're sure that it is absolutely the best that we can make it, and that means that we're never the first. But we think we're always the best available."

One factor that distinguishes the company from other companies that have grown and died in Silicon Valley – and make no mistake, Dinan is as much a Silicon Valley company as any microchip or software-based venture firm in the industrial parks of this entrepreneurial breeding ground – is that it continues to be technology driven.

Steve's office is surrounded by the cubicles of the development engineers, and as he guided us through the neat and orderly building, it was clear that he is still very much in charge of technology development. Without pause, he was able to explain in details that Man could understand, but lost me almost immediately, everything that was going on, whether it was how the increasing bit rate of the new ECUs was complicating the task of reverse engineering, or why a particular welding technique was critical to the mufflers in the Dinan exhaust systems.

The Dinan managers were quick to correct us on some of our false assumptions. "We're not a catalog parts supplier, we sell performance systems," Scott explained at one point. "All of the components of our systems are designed to work with one another for maximum system performance." For example, though they do buy in Koni performance shocks for their suspension systems, they use their own shock dyno to revalve the Konis so that they're completely compatible with the heavy-duty springs and sway bars that give the Dinan cars their comfortable but competent handling behavior.

Scott also noted that Dinan is unusual in that they do most of their own manufacturing as well as all of their own development, whether the product is a muffler, a cold air induction system, a supercharger pulley or throttle body, or the software modifications that allow the components to work together to their maximum potential. The amazing thing to us is that welding, machining, testing, development, warehousing, and shipping coexist within the same large, spotless (and huge) room.

As we walked through the plant, Herb explained two of the factors that also underpin Dinan's development strategy. "First," he said, "We aim at the middle of the pyramid. We want the customer's car to be among the best at the track but totally comfortable for daily use. Second, we have to be good enough to satisfy BMW, because they are our marketing partners."

Unlike many maverick tuner products firms, Dinan has always sought to work in partnership with BMW. Like John Cooper Works MINIs, a customer normally buys his Dinan modifications at his MINI dealer – over 40 MINI dealers now offer Dinan upgrade systems – and the Dinan products are covered for the same warranty period as the MINI, with any warranty issues worked out between MINI and Dinan, rather than requiring the customer's involvement.

It's only relatively recently that Dinan has applied all of this philosophy to the MINI market, and their offerings are still relatively limited. Nevertheless, as we experienced when we drove the Dinan S (Yup, that's what the badge said on the back hatch) demonstrator, we thought they offered everything the enthusiastic MINI driver would want in the way of performance enhancements. We're going to be going through the Dinan upgrade process on one of the MC² project cars over the next six months, and we'll be reporting back on our experience.

MC²

Top to bottom: All of the operations, from development to manufacturing to shipping all operate within the same large, spotless bay. One of the few isolated areas is the Dynapak dynamometer, which uses a wind-tunnel size fan for accurate results equivalent to airflow at 80 miles an hour on the highway and rollers that bolt onto the hubs. Paul Robertson, left, one of the development engineers, explains to Steve Dinan and Matt Richter how a prototype is made for installation testing before a part is manufactured. Ten test and installation bays are at one end of the building.





Dinan and JCW Comparing the Two Hot Dealer Packages



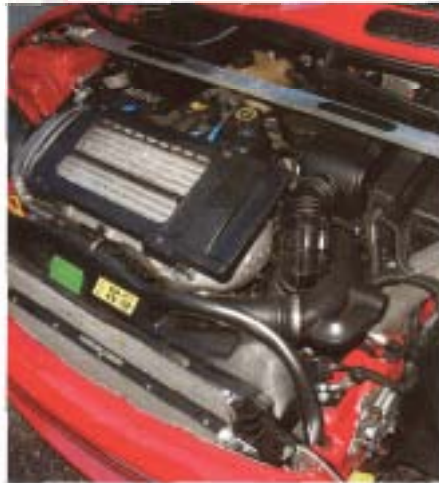
You say you're looking for better performance from your MINI, but don't want to go through the time and trouble (and potential risk) of picking your components yourself and then installing them, or finding an installation shop! So where do you go?

The answer may be your nearest MINI Motoring Advisor. There you can discuss two options: selection of a John Cooper Works performance package as a factory option or upgrade or, with the increasing number of dealers with relationships with Dinan, a Dinan-developed upgrade system.

Either way, the components will be installed by MINI or the service department, they'll be serviced at the dealer, and if anything goes wrong, the service department will take care of it under a standard warranty.

We've recently had the chance to do some extended driving in a 2006 JCW-equipped MCS, and in the Dinan demonstrator with all the bells and whistles available from the Morgan Hill firm.

Both Minis offered brake horsepower comfortably above the 200 mark. In broad strokes, both groups take the same route to their goals. Both improve the cold air box, both reduce the pulley size, and both replace the stock exhaust with a free-flow system and more efficient muffler. And, of course, as you've learned from the ECU 101 and 102 articles, both reprogram the maps in the stock ECU to provide the maximum amount of power from the modifications without sacrificing driveability.



If you opt for the full Dinan upgrade approach, the Cooper badge can be replaced by a Dinan badge. Our first experience with the car was on the Hollister/Pinnacles road, a rewarding piece of tarmac that combined long maximum-speed stretches with challenging twisties. Changes are visually subtle, but more than apparent from behind the wheel.

In fact, if there is one thing that is common between these two modification systems, it's the seamless way in which power is delivered from dead stop to speeds we won't admit to having attained. This exceptional performance, which can only be called addictive, results from two factors. First, the engineers were working with a defined system of top quality components. Second, they had the time and resources for the hundreds and hundreds of dyno pulls and on-road miles to reprogram the ECU so that the engines deliver the torque efficiently and smoothly throughout the entire rev range.

The Dinan S2 is rated at 205 bhp. This 37 horsepower increase over the factory's 168 rating is achieved without going into the engine. Improvements start with Dinan's own high-flow cowl induction intake that draws air from the grille and cowl into a sealed air box fitted with a high-performance filter. Other than the signature strut tower bar that can be ordered with the package, the distinctive intake is the most obvious of the modifications in the engine compartment.

In addition, supercharger boost is increased from 11 to 15 psi by substituting a smaller supercharger pulley. However, Dinan engineers have



The John Cooper Works Mini Cooper S has been a good option choice ever since MINI started installing the upgrades as factory options. The added power is achieved by replacing the cold air intake system, head, supercharger, and exhaust, and reprogramming the ECU. The factory option package also includes JCW brakes and limited slip differential.

found that this additional air flow and pressure has to be matched with fuel flow, so a larger-bore throttle body is fitted, as well as an upgraded fuel pressure regulator. With these changes, engine software is also modified by reprogramming the MINI's ECU.

To cope with the improved output, a free-flow exhaust, designed and manufactured by Dinan, which uses a single muffler and enlarged single exhaust pipe with dual three-inch tips, is also fitted to significantly reduce back pressure. Not coincidentally, the exhaust note has a great sound appropriate to this high-performing MINI.

The John Cooper Works engineers were able to find a comparable 36 extra horsepower by replacing the same components with upgraded versions. A JCW cold air box replaces the stock intake, with an improved filter and a flap that opens into the cowl area at higher rpm. An upgraded supercharger is fitted with a smaller-diameter pulley. In addition, a ported and flowed cylinder head is installed to improve air flow. Finally, the JCW sports a "twin sport" exhaust system to reduce back pressure, culminating in signature chrome exhaust tips.

If the John Cooper Works option is ordered on a new car, the upgrade also includes larger JCW front brakes and a limited slip differential, which is the way our press car was equipped. That option adds \$6300 to the base price of the car as ordered, but requires that the car also be equipped with the sport package, including dynamic stability control and larger wheels.

The power and brake upgrades are still available from dealers for installation on owners' cars. However, because parts have to be removed, the prices are a little higher, at \$4775 plus installation for the power upgrade, and \$1065 for the brake kit plus installation.

In comparison, ignoring the question of brakes, the comparable Dinan power upgrades will be a little cheaper than the JCW upgrades when installed on an owner's car, and a little more expensive than the JCW upgrades if those are ordered before the car is assembled.

The Dinan we tested had ratcheted the game up one more notch, with the installation of a high-performance cam and additional computer tweaks. It adds a measurable five more horsepower, which puts it into Works GP territory, but also adds \$549 for parts, plus cost of installation and software upgrade. That's a lot to pay for a small horsepower increase, but once you're across the 200 bhp threshold, each added pony is pricey.

We certainly wouldn't encourage anyone to add this much power to the MINI without upgrading the brakes, and Dinan offers Brembo brakes. However, they are pricey, reflecting their reputation as the best brakes available for high-performance cars. But there are less expensive upgrades available, or one could simply have a JCW brake kit installed at the dealer rather than going the Brembo route.



But power and brakes are only part of the story. It was the handling on the Dinan S2 that really distinguished it from the JCW. The Dinan car was equipped with their "Stage 3" suspension system,



including a performance spring set that also lowered the car about half an inch, a 19mm adjustable rear anti-sway bar, a strut tower brace, and front camber plates. Tying the whole package together, Dinan replaces the stock shocks with Koni adjustable shocks that are specifically adjusted to match the behavior of the other components of the system.

In our view, this really rounds out the whole upgrade in a way that isn't currently possible with John Cooper Works upgrades. On high-speed runs, the Dinan felt completely solid, with no hint of front end wander, and on curves the car turned in easily with no hint of understeer, and stayed planted through the turn without rolling or threatening to break loose.

By contrast, we always felt a little uncertain with the JCW. That's a lot of power to put to the wheels in a car this light, and we certainly would have felt better with some suspension tuning. The only alternative is to go to an aftermarket suspension tuner, and I'd frankly trust the Dinan engineers and testing procedures before I'd want to start mixing and matching springs, shocks, and sway bars, and then installing them on my own without the benefit of alignment specs or equipment.

So what does that all tell us? If I had a 2006 on order today, wanted more performance, and didn't feel like picking and choosing components and doing my own work, I'd kick myself if I hadn't ordered the John Cooper Works option. Then I'd spring for the Dinan suspension upgrades.

On the other hand, if I already owned a MINI and was getting a little frustrated with the limits of the stock performance, I'd definitely be looking seriously at the Dinan MINI Cooper S performance brochure. Which is what we will be doing with our own project car. We'll be working our way, system by system into the Dinan components, starting with the induction, exhaust, remapping, and sway bar. Stay tuned.