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CAR AND DRIVER

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POWER

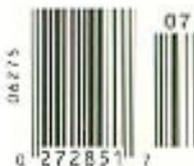
Trip

Porsche's new
911 Turbo S
versus Acura's NSX-T 3.2
and Dodge's Viper GTS



PLUS:
Does this Porsche equal
the legendary 959?

TESTED: Audi's diesel/electric Duo, 3 Dinan BMWs,
Jeep Cherokee Sport, Lincoln Navigator, Hyundai Sonata.
FEATURE: Racing on trial—what killed Ayrton Senna?



SPECIALTY FILE



Showroom Specials

BMW now sells fully guaranteed new and used
Dinan-modified M3s and 850s.

BY BARRY WINFIELD

What goes around comes around, they say. And what comes around at car dealerships these days are all those leased during the past few years. Largely for that reason, BMW of North is allowing the folks at Dinan Performance Engineering of Mountain View, California, to modify new and used 850s and M3s for sale right off the BMW showroom floor. BMW's marketing types evidently believe that the unique performance and handling attributes of Dinan cars—along with the stylish optional Dinan wheels—will help move the metal a little faster.

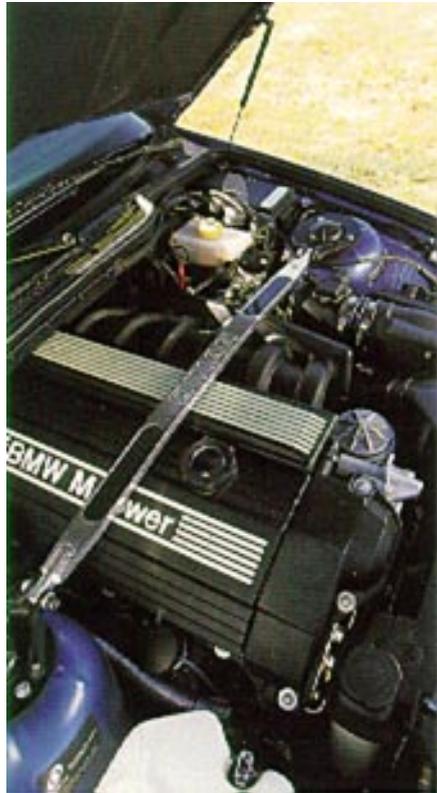
Dinan's modifications have certainly helped move the metal a little faster in the past, at least as far as acceleration and lap times are concerned. But the work Dinan does on BMWs in this program is covered by the terms of BMW's rigorous new-and-used-car warranties, so the

modifications are limited to induction and exhaust-flow improvements, electronic enhancements, and chassis tuning.

Steve Dinan says the most dramatic improvement comes in the handling department, and we'd hat to agree. Our 48,000-mile '93 850Ci with fresh Dinan improvements felt a lot like the BMW M division's 850Ci in the way it responded to the helm and clung to the road. The car wears four stiffer springs that lower the ride height a half-inch but do little to diminish ride quality. Dinan replaced BMW's electronically adaptive shocks with custom-built Bilsteins on this car with its relatively high mileage, although he says may leave the stock shocks on other cars he converts. The suspension also benefits from camber plates up front that add a half-degree more negative camber and from optional three-piece wheels that are 9 inches wide

and 17 inches in diameter and come wrapped in Bridgestone Potenza S-02 tires.

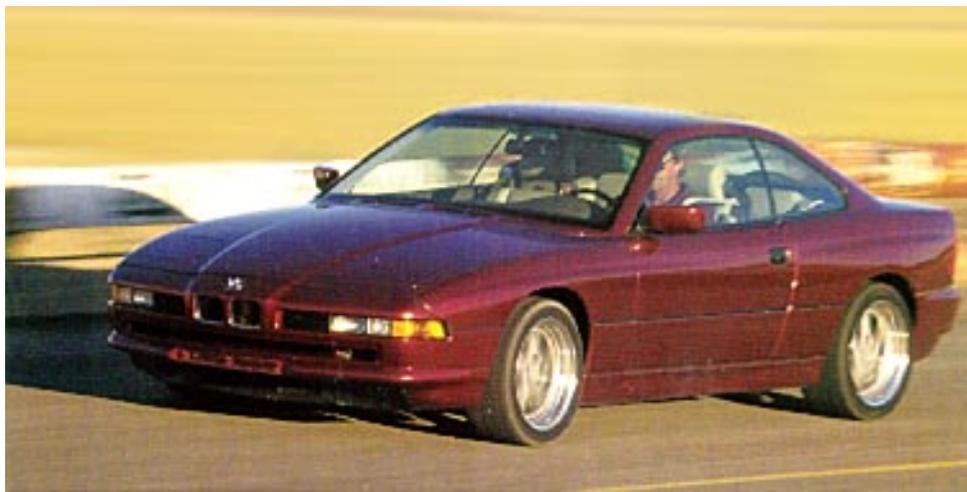
Dinan claims a lateral-acceleration performance of 0.87 g, a figure we did not achieve on a slippery skidpad that had recently been seal-coated. Still, the 0.83 g figure we recorded tops our most recent 850Ci (C/D, October 1996), which racked up just 0.81 on Chrysler's stickier pad. As for the improvement in character, the Dinan 850Ci is light-years ahead of the factory-stock 850Ci, offering brighter, more-communicative steering response and significantly more feedback through the seat of the pant. The throttle response, too, is immediate and vivid and free of the languid flavor we recall of the stock car. To achieve this, Dinan replaces the ships controlling the engine, transmission, and throttle-by-the-electronics and then fits a ported intake manifold along



Engine mods breathe 17 more horses into the Dinan M3's six (above); '93 850Ci (below) gets massive 58-horse boost to 354 hp.



Dinan adds stress braces to the M3's front and rear shock towers, over the engine (far left) and through the trunk (above).



with less-restrictive mufflers.

According to Steve Dinan, peak horsepower grows from 296 at 5200 rpm to 354 at 5500 rpm, and torque swells from 332 pound-feet at 4100 rpm to 387 at 4500. The shift points are reprogrammed to match the new power curve, and Dinan also Switchlogic, which is his version of BMW's Steptronic manual. It utilizes the existing lever for the power-telescoping steering lever for the power-upshifts (pull back) or downshifts (push forward.) A rocker switch on the column toggles the lever from steering-wheel control to transmission control. No matter how you sift it, the car now pulls emphatically to its redline, all the while uttering a deep, muscular exhaust note. In the process, it beats the stock model to 60 mph by half a second and turns the quarter-mile 0.6 second quicker.

The big V-12 has really been brought to life by this development work, yet the car's colossal touring potential has not been compromised. It still lofts you to three-figure velocities with little fuss and nowise other than its pleasing brass-wind blare, and it makes that 70-mph speed limit seem unbearably low. This performance improvement costs \$6800 installed. Switchlogic costs \$1295 more, and the wheel-and-tire package adds another \$4975. Total them up, and the price rises \$13,070.

Just as with the 850Ci, Dinan's modifications to the M3 are mostly external to the engine. A new intake-air-filter assembly and exhaust system improve the car's breathing and bump output—according to Dinan—from 240 to 257 hp at 6000 rpm, and the peak

torque increases from 236 pound-feet at 3800 rpm to 245 pound-feet at 4000 rpm. The improvement in performance is perhaps noticeable only at the test track, where the Dinan car takes 0.1 second off the standard 3.2-liter car in the sprint to 60 mph as well as in the quarter-mile. As with the 850, the car feels more lively than the stock vehicle, with an undiluted exhaust tone adding perceptibly to its appeal.

Dinan says his intent with the M3 was more toward improving handling. The suspension work includes springs that lower the car by a third of an inch, Koni adjustable shocks at all four corners, front and rear adjustable anti-roll bars, front and rear stress braces (con-

necting the shock towers), and camber plates in front to add a half-degree of negative camber. He claims a 0.89-g skidpad performance, but again, or tar-and-marbles skidpad allowed only 0.86 g. Our last stock M3 managed 0.89, so Dinan's figure may be conservative. All these modifications are supplied—with the engine work plus floor mats and identification plaques—in a basic package that runs \$5370 installed. Again you must pay more—another \$4880—to get handsome 17-inch Dinan wheels and Michelin Pilot SX tires.

Dinan Performance Engineering, 150 South Whisman, Mountain View, California 94041; 415-962-9401.

Boosting Out All Over

Dinan's supercharged package for the BMW M3 can also be sold BMW dealerships—but the supercharger installation voids your factory powertrain warranty. Owners of a supercharged M3 won't be worried about the warranty however. Speeding tickets, maybe. Their addiction to power, sure. But warranties? Not likely, although Dinan will supply a prorated warranty for a maximum of \$3000.

The package costs \$17,600 and includes a belt-driven Powerdyne Automotive Products centrifugal blower, a low-restriction exhaust sys-

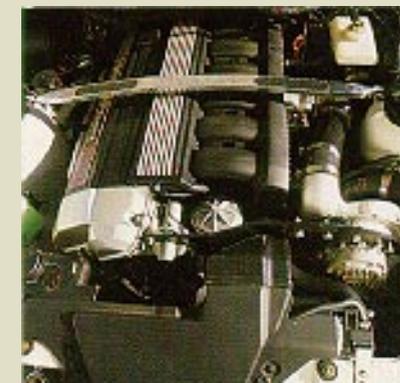


tem, a high-flow throttle body, a suspension system that lowers and firms up the ride, front stress braces, floor mats, a trunk plaque, those cool wheels and tires, and a console gauge panel containing a boost gauge, a voltmeter, and an oil-temperature gauge.

What you get is a car that feels, from a normal start, like a sturdy M3. You accelerate briskly up to about 4500 rpm, and there the blower's efforts become wickedly obvious. From that point to the electronic rev limiter (7000 rpm in first and second, 6800 rpm in the other gears), the blown M3 pulls like a demon. If you can achieve the fine balance between wheelspin and forward motion in a full-bore start, the car will launch with dizzy-

ing ferocity, lunging to 60 mph in 4.8 seconds and on through the quarter-mile in just 13.6 seconds at 103 mph.

Keep on going, and in a little more than half a minute the car is hitting on the rev limiter in fifth gear, trying to beat its way past 155 mph. At that speed, we noticed a little tendency to weave, brought on by the increased negative camber in the front suspension. But that's a small price to pay for the linear steering response and prodigious grip the car enjoys in the mountains, where it begs for slightly quicker steering. The downside? Some blower whine at low revs, some tire smack over two-wheel bumps, and the loss of your BMW new- or used-car warranty. The upside? Just about everything else. —BW



Vital Statistics	price, base/as tested	engine	manufacturer's rating, power/torque	transmission/gear ratios:1/maximum test speed, mph/axle ratio:1	curb weight, pounds	tires	acceleration, seconds										braking, 70-0 mph, feet	roadholding 300-foot skidpad, g
							0-30 mph	0-60 mph	0-100 mph	0-130 mph	1/4-mile	street smart, 5-60 mph	top gear, 30-50 mph	top gear, 50-70 mph	top speed, mph			
1993 DINAN 850Ci	\$50,500/ \$63,570	SOHC 24-valve V-12, 328 cu in (5379cc), aluminum block and heads, Bosch/Dinan engine-control system with port fuel injection	354 bhp @ 5500 rpm/ 387 lb-ft @ 4500 rpm	4-speed auto, lockup converter/ 2.48, 1.48, 1.00, 0.73/ 48, 80, 118, 155/ 3.64	4200	Bridgestone Potenza S-02, 255/40ZR-17	2.6	6.7	16.4	38.1	15.0 @ 95 mph	7.5	3.7	7.5	155 (governed)	165	0.83	
1997 DINAN M3	\$40,266/ \$54,036	DOHC 24-valve 6-in-line, 192 cu in (3152cc), aluminum block and head, Siemens MS41.1 engine-control system with port fuel injection	257 bhp @ 6000 rpm/ 245 lb-ft @ 4000 rpm	5-speed manual 4.20, 2.49, 1.66, 1.24, 1.00/ 36, 60, 86, 115, 138/ 3.23	3280	Michelin Pilot SX, 245/40ZR-17	1.9	5.6	14.6	30.0	14.2 @ 98 mph	6.3	7.5	6.3	138 (governed)	167	0.86	
1995 DINAN SUPER-CHARGED M3	\$34,000/ \$52,182	DOHC 24-valve 6-in-line, 192 cu in (3152cc), iron block and aluminum head, Siemens MS41.1 engine-control system with port fuel injection	341 bhp @ 6750 rpm/ 297 lb-ft @ 5000 rpm	5-speed manual 4.20, 2.49, 1.66, 1.24, 1.00/ 38, 64, 93, 125, 152/ 3.15	3280	Toyo Proxes F1S, 255/40ZR-17	1.8	4.8	12.8	23.8	13.6 @ 103 mph	5.8	9.6	5.8	152 (redline limited)	163	0.90	

The base prices of the used cars are the approximate retail values of the stock cars prior to Dinan modifications