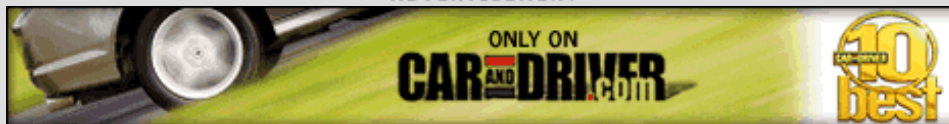


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BMW 5-series

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New baby, new bath water.

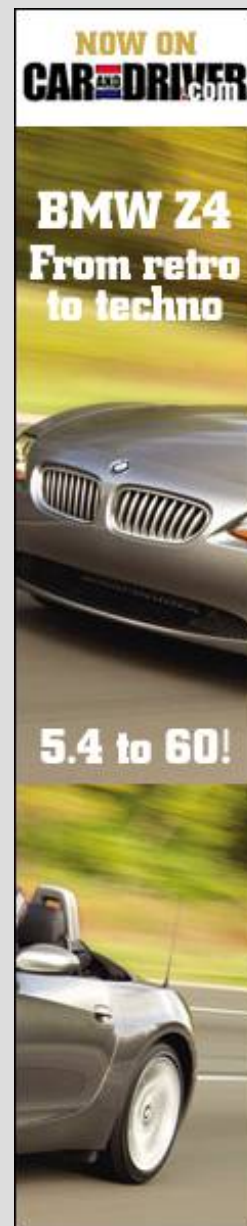
 BY FRANK MARKUS
 August 2003

Few new-model unveilings have prompted as much fretting among the enthusiast faithful as has BMW's '04 5-series debut. Maybe that's because most of us don't see much room for improvement in a car whose ride, handling, and performance earned 10Best honors for six years running and first- or second-place finishes in nine of our comparison tests, and attracted paying customers in numbers that increased every year from its 1996 launch through 2002.

So it's little wonder that as rumors surfaced about the new 5-series' iDrive dash, ominous-sounding "active front steering" system, and inflated dimensions (1.3 inches taller, 1.8 inches wider, and 2.6 inches longer on a wheelbase stretch of 2.3 inches), Bimmerphiles became agitated. Some who went on to agonize over design czar Chris Bangle's "flame front" styling wound up in a force-five tizzy.

Well, after two days of intense thrashing over twisting goat paths on the Italian island of Sardinia, we're prepared to lay many of those fears to rest. For starters, Bangle has throttled his "flame" to a sweet spot between bold and beautiful. Crisp lines flow gracefully from front to back, framing surfaces that transition imperceptibly from concave to convex with no jarring interruptions, and a significantly widened track maintains the 5-series' trademark stance.

Inside, the dimensional upgrade buys rear-seat roominess: leg-crossing space increases 1.8 inches, and arm-waving width is up 1.3 inches. The iDrive system has been simplified so that the main menu now controls only four categories (navigation, entertainment, communications, and climate control). Options within each category are listed on horizontal buttons that are chosen by moving the knob fore and aft. Twirling and depressing the knob



then selects an item within the submenu. There are fewer functions, and they're more accessible. Some, such as stability control, have even moved back to the more standard dash buttons. There's an optional multicolor head-up display, and a new Bluetooth wireless communications network can link the car's hands-free phone interface with the customer's own cell phone. The air conditioning even monitors humidity levels to prevent drying out occupants' mucous membranes.



the front end by about 75 pounds. Bolt-on front-end crash-repair modules keep a lid on insurance premiums. Nearly all the suspension components are aluminum, as is half the driveshaft. Final curb weight is actually a bit less than the previous 5's, and its distribution is an ideal 50/50 front to rear.

Now for that new Active Front Steering system that no one seemed to be clamoring for in the first place. It will only be available as part of a Sport package that also includes Active Roll Stabilization (hydraulic anti-roll bars that counteract body roll up to 0.30 g), stiffer springs and shock absorbers, and Bridgestone run-flat tires. AFS aims to provide both go-kart-quick steering (1.7 turns lock-to-lock) at low speeds and a highly stable, languid (five turns) helm at autobahn velocities. (See sidebar at right for a nitty-gritty explanation.)

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prevent the bulging dimensions from rendering the 5-series obese, BMW forms all bodywork of aluminum from the fire wall forward. Stamped, cast, and extruded parts are arc- or laser-welded together, then bonded and riveted to the remainder of the steel unibody to prevent galvanic corrosion. This construction lightened

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Our first exposure to AFS was on a low-speed autocross course. Even in tight 300-degree turns and a closely spaced slalom, our hands never had to leave the 9 and 3 o'clock positions, whereas the base car often had us grappling hand over hand. On the highway at 100 mph the car felt rock solid and immune to sneeze-induced lane changes. One senses the invisible hand of electronic assistance, but in most maneuvers that occur at relatively constant speeds it

behaves predictably and appropriately while transmitting the quivers, twitches, and effort changes that describe road-surface conditions. AFS only feels weird during maneuvers that involve big changes in speed, such as deep decreasing-radius turns that require a lot of braking, which result in an unnatural gain in steering angle. We'll need more seat time to rule conclusively on AFS, but we're optimistic.

We drove the 225-hp 530i, which hits the bricks this October, followed a month later by the 184-hp 525i six and 325-hp 545i V-8 sedans (a wagon is expected a year later, with the hellacious V-10-powered M5 following that). All are available with a choice of three six-speed transmissions: stick, sequential manual, and conventional ZF automatic.

Best news of all: BMW expects prices to creep up only slightly. There. We know you'll all sleep a bit better tonight.

How that Trick Steering Works

The heart of BMW's Active Front Steering system is a planetary gearset in the steering column. The steering wheel turns a sun gear that meshes with three double-ended planet gears that also engage another sun gear to drive the steering rack. The planet gears ride in a carrier that is spun by an electric motor. At low speeds the motor drives the carrier in the same direction as the steering wheel, which quickens the steering ratio to 10:1. Turning the carrier in the opposite direction slows the ratio to 18:1 at high speeds. The system is integrated with Dynamic Stability Control, so it can induce mild countersteering when appropriate to arrest a spin. If the system fails, the steering defaults to a constant 14:1 ratio. —FM

Vehicle type: front-engine, rear-wheel-drive, 5-passenger, 4-door sedan

Estimated base price: \$40,000-\$57,000

Engines: DOHC 24-valve 2.5-liter 6-in-line, 184 hp, 175 lb-ft; DOHC 24-valve 3.0-liter 6-in-line, 225 hp, 214 lb-ft; DOHC 32-valve 4.4-liter V-8, 325 hp, 330 lb-ft
Transmissions 6-speed manual, 6-speed manual with automatic shifting and clutch, 6-speed automatic with lockup torque converter

Wheelbase: 113.7 in



Length: 190.6 in
Width: 72.7 in
Height: 57.8 in
Curb weight: 3400-3750 lb

Manufacturer's performance ratings: (525i/530i/545i)

Zero to 60 mph: 8.1-8.7/6.8-7.0/5.8-6.0 sec
Top speed (governor limited): 128/150/155 mph

Projected fuel economy (530i):
European urban cycle: 17 mpg
extra-urban cycle: 31-34 mpg
combined cycle: 24-25 mpg

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