Product Information

2006
3 Series

2006 3 Series

325i Sedan
325xi Sedan
330i Sedan
330xi Sedan

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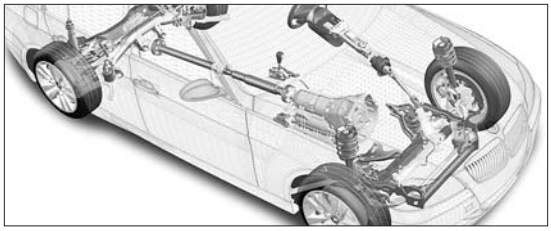

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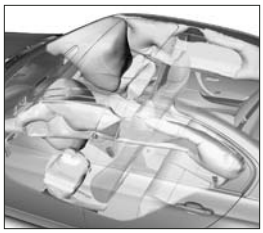

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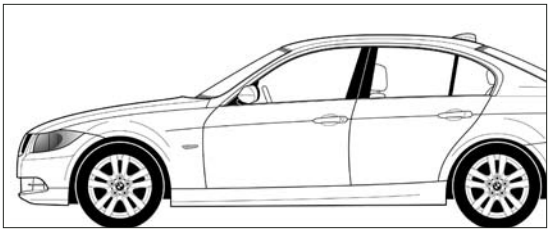


Informative drawings with key vehicle dimensions lead off the section containing the standard & optional features summary (pages 76-79), technical specifications (pages 80-82) and exterior/interior color combinations (page 83).

Note:
Some of the photos and drawings appearing in this Product Information Book are preliminary in nature. Many photos and drawings are of European models. Some information is also preliminary and subject to change.

The new 3 Series: concept & overview
Quicker. Smarter. More refined.

Shown here is a 330i (European version) with Sport Package.

New technology and style.
The BMW 3 Series, as just about everyone who cares about cars knows, is an icon. It's an icon for many reasons: its style, its quality, its unique combination of performance, practicality and European luxury in a compact package.

Yet above all, the 3 Series' undisputed status as an icon stems from **how it drives**. For decades, BMW has essentially owned the whole concept of agility; the 3 Series has always been remarkably agile and pleasurable to drive without compromising comfort and everyday practicality and usability, and no one else quite knew how to match this constellation of attributes.

The new 3 Series, appearing first as the E90 Sedans, builds on this core concept with –

- **An all-new design** that perfectly blends 3 Series character and tradition with progressive esthetics and enhanced functionality.
- **All-new engines** that retain the unique smoothness and sound of BMW's inline 6-cylinder format while offering more power, more torque, even more refined delivery of power, and new technology so exciting that it's a complete story in itself.
- **All-new suspension** that combines the refined road manners of larger, more costly BMWs with the agility of the more compact 3 Series…plus innovations in steering, brakes and stability systems as well.
- **Greater body rigidity**, more efficient aerodynamics and even more effective management of crash forces.
- **More space** for rear passengers and cargo.
- **Greater luxury and convenience**, including numerous features previously offered only in the 5, 6 and 7 Series.
- **New safety features**, including rear Head Protection for the first time in the 3 Series (front HPS has always been standard in E46 3 Series Sedans).

As the first models of the 5th-generation 3 Series, the E90 325i and 330i Sedans enter production in March 2005 as 2006 models. The 325xi and 330xi all-wheel-drive Sedans (which are also covered in this Product Information Book) and E91 Sports Wagons follow in September '05. Still later, E92 Coupes and E93 Convertibles will make their debut.

New through and through, yet firmly grounded in 3 Series tradition

From their low, wind-slicing front end through upswept side character line and beltline to a high trunklid that enhances aerodynamics and cargo space, the '06 3 Series Sedans are the logical progression from their E46 predecessors. Not only does the first glance tell you that this is a BMW; it also tells you that this is a 3 Series.

Incrementally larger and roomier, yet still truly compact

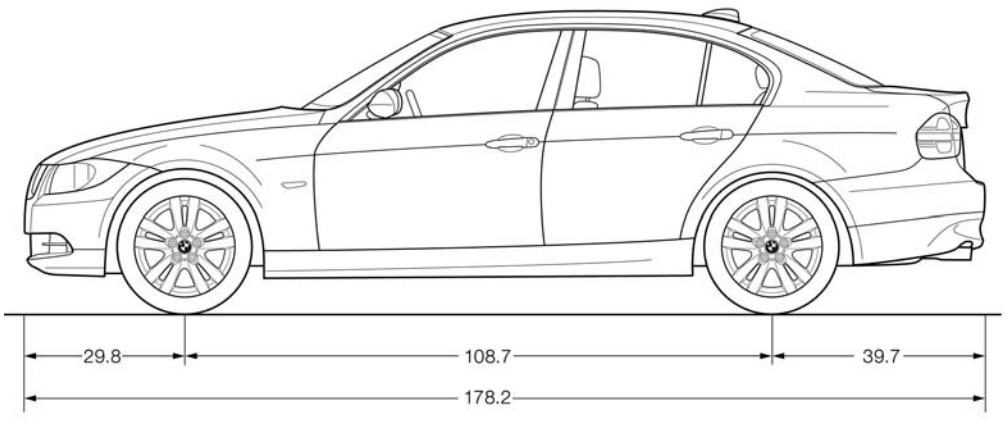
Compared to their predecessors, the new 3 Series Sedans grow in nearly every dimension. Wheelbase is up by 1.4 inches; length is 2.2 in. greater than before; width is up by fully 3 in.; and the new models are 0.8 in. taller. These gains in exterior dimensions pay off in greater passenger and cargo room: shoulder room (+1.0 in. front/0.9 in. rear); head room (+0.4 in. front); rear knee room (+0.8 in.); interior volume (+6.1%) and trunk space (+12.1%). But there's no hint that the 3 Series is abandoning its tradition of compact exterior dimensions (see nearby table), and despite extensive new content, weight is up less than 100 lb. on most versions (data for all-wheel-drive models are preliminary).

3 Series Sedan, 2006 vs. 2005: Key dimensions & weights

	2005 (E46)	2006 (E90)	Difference
Wheelbase, in.	107.3	108.7	+1.4
Track, front/rear, in. (standard wheels)	57.9/58.4	59.1/59.6	+1.2/1.2
Length, in.	176.0	178.2	+2.2
Width, in.	68.5	71.5	+3.0
Height, in. (without Sport Package)	55.1	55.9	+0.8
Weight, lb.:			
325i with automatic transmission	3307	3351	+43
330i with automatic transmission	3362	3450	+88
Weight distribution, front/rear, %:			
325i with automatic transmission	50.9/49.1	50.7/49.3	0.2
330i with automatic transmission	50.6/49.4	51.1/48.9	0.5
Shoulder room, front/rear, in.	54.4/54.2	55.4/55.1	+1.0/0.9
Head room with moonroof, front/rear, in.	37.0/37.4	37.4/37.1	+0.4/-0.3
Leg room, front/rear, in.	41.4/34.6	41.5/34.6	+0.1/–
Rear knee room, in. (see page 44)	30.9	31.7	+0.8
EPA passenger-compartment volume, cu ft.	90.8	93 [2]	+2.2
EPA cargo volume, cu ft.	10.7 [1]	12 [1, 2]	+1.3

1 – Can be expanded via available folding rear seats.
2 – Current EPA measurements are rounded off to nearest whole number.

Incremental increases in exterior dimensions translate into more usable space, primarily in shoulder room, rear knee room and cargo volume.



Technology and features: some new to the 3 Series, some altogether new

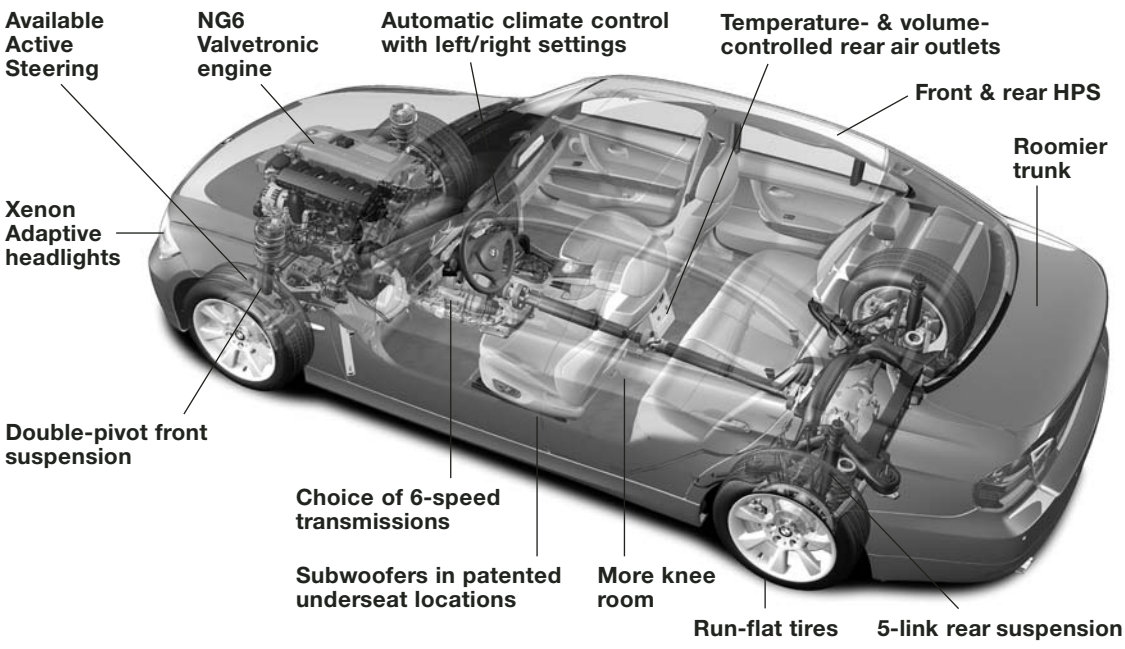
A new BMW platform always means exciting new technology and innovative, meaningful features. The new 3 Series offers abundant new technology and features in two categories:

Already in other Series, new to 3 Series.

Standard –
- Engine with Valvetronic variable valve lift
- All available transmissions are 6-speed
- Double-pivot front suspension, with more extensive aluminum components (aluminum in rear-wheel-drive models only)
- Run-flat tires throughout Series, no spare tire
- xDrive all-wheel drive [3]
- Exterior ground lighting
- Multi-function keyless remote with ID sender instead of conventional key
- Start/Stop button
- Galvanic interior trim
- Automatic climate control with –
  - separate left/right temperature settings
  - Max A/C function
  - mist sensor
  - Heat-at-Rest feature
- Temperature- and airflow-controlled air outlets for rear-seat passengers
- Climate-controlled console compartment
- Subwoofers included in standard audio system; located under front seats
- Power-window controls on driver's door
- Seat-occupation recognition with Passenger's Airbag Off indicator
- Front and rear Head Protection System
- Trunk lock switch in glove compartment

Optional –
- 6-speed automatic transmission
- Active Steering [4]
- 18-in. wheels and tires included in 330i Sport Package [5]
- Differentiated front/rear wheel-tire sizes available on 325i and all-wheel-drive models [5]
- Xenon Adaptive headlights (optional 325i/xi, standard 330i/xi)
- Park Distance Control with graphic display [6]
- Comfort Access
- Active Cruise Control
- Auto-dimming, power-fold exterior rearview mirrors [7]
- Digital compass in interior rearview mirror [7]
- Sport seats with adjustable backrest width
- iDrive [6]
- Voice Command System [6]
- Dakota leather upholstery
- Logic 7 audio system
- SIRIUS Satellite Radio as factory option [8]
- Heated front seats with –
  - expanded heating area
  - balance control [6]
- Power rear-window sunshade [9] and manual rear-window sunshades
- TeleService (included in BMW Assist).

The new 3 Series is packed with new technology and features, some of which are highlighted here.



Making first appearance in a BMW.
Standard –

- Engine with magnesium/aluminum composite construction, 3-stage variable intake system, electric water pump and volume-controlled oil pump
- 5-link rear suspension
- Dynamic Stability Control with expanded functions (DSC8+)
- Dynamic Cruise Control (can apply brakes lightly to control speed)
- Seat-mounted side-impact airbags
- Automatic safety-belt tensioners and force limiters front and outboard rear (already standard on front seats), both standard in all models
- New centralized safety-device control system
- Decoupling of foot pedals in severe frontal crash

The benchmark sports sedans set a new benchmark

If their predecessors were the benchmark in every aspect of sports-sedan attributes, the new 3 Series Sedans set the new benchmark. "Head and shoulders above the many Asian, American, and European models that are 'just like a BMW' stands the real thing," raved *Automobile Magazine* in February '04, naming the 3 Series to its annual All-Stars awards. "With either of its superb inline sixes – a 2.5-liter or a 3.0-liter – the 3 Series chassis is a tool that any sensitive driver will appreciate. The size is right, neither too small nor excessively large. Comfort, agility and fuel economy make a balanced package still unsurpassed."

Until now – for BMW has indeed surpassed the 3 Series *Automobile* was raving about. Again there are two inline 6-cylinder engines, each producing significantly more power than its predecessor. The chassis has undergone its most dramatic evolution since the E36 3 Series appeared in 1992; it sets new standards of agility that make it an even more precise tool for skilled drivers to appreciate. And the size remains "right."

Greater convenience and luxury, without sacrificing sportiness

The size does indeed remain right; yet there is more comfort, more convenience, more luxury inside the new 3. "Galvanic" treatments – sophisticated metallic coatings on elements like door handles, speedometer and tachometer rings, the iDrive controller when present – have provided elegant accents in the 5, 6 and 7 Series and now add discreet richness to the 3 Series interior as well. As in the final year of their predecessors, the new Sedans come standard with wood interior trim and offer alternate trims at no extra cost. And the many new options, listed nearby, give our customers the opportunity to enjoy high-end BMW luxury in BMW's most accessible Sedans.

A full range of safety features, standard

The new 3 Series body structure has been developed to fulfill the requirements of new, more stringent crash tests. Side-impact airbags, newly built into the front seats' backrests, are standard. Thanks in part to a new curtain-type Head Protection System that extends past front and rear outboard seating positions, rear-seat passengers enjoy a full measure of protection without having to specify rear side-impact airbags. For the first time in any BMW, the rear outboard safety belts are equipped with both automatic tensioners and force limiters as standard equipment. All safety systems are controlled by a new, centralized MRS5 overall control unit that incorporates the latest knowledge and technology for deploying occupant protection in the most effective way. LATCH anchoring for child safety seats on the rear seat is standard.

This Product Information Book is devoted to describing in detail the new 3 Series Sedans' many virtues.

3 – In 325xi/330xi models, to be introduced 9/05 (retail 10/05).
4 – Stand-alone option, not in Sport Package.
5 – Due to low-profile tires, please note: Wheels, tires and suspension parts are more susceptible to road hazard and consequential damages.
6 – In combination with Navigation System. iDrive & Navigation System are a single option; cannot be ordered separately.
7 – Premium Package.
8 – To be available in all '06 models.
9 – Previously available only as Priority 1 option.

3 Series tradition:
always BMW's core product, always an icon of driving pleasure.

Most famous of the 02 Series: a 2002, U.S. version, 1974.

The 3 Series tradition goes back almost 40 years. It began with a model that was not yet called the 3 Series; instead, the 3's first lineal ancestor is the so-called 02 Series, which made its debut as the 1600-2 in the year of BMW's 50th anniversary. In the intervening decades, the actual 3 Series came into being in 1975; three further generations succeeded it in 1982, 1990 and 1998 (production dates; model years and U.S. sales dates differed). With each generation, the 3 Series has grown modestly in dimensions while evolving significantly in its capabilities and sophistication; the new E90 3 Series is another significant step in this direction, yet is as true to its heritage as any new 3 Series ever was. Here's the story of that heritage.

The first "3 Series," though not so named: 1600-2, 1966

As a 2-door "spinoff" from the Series that had given new life to BMW in the early 1960s, the 1600-2 was a precisely targeted downward move in price and size for BMW. Using the same 1.6-liter overhead-cam engine as its 4-door counterpart, and sharing essentially the same chassis engineering (strut-type front/semi-trailing-arm rear suspension, disc front brakes), the 1600-2 had a shorter wheelbase and an entirely distinctive body shell.

"Despite its simpler equipment and fittings," opined the book *BMW: A History*, it was every centimeter a BMW, and the motoring press in Europe and America greeted it enthusiastically. "It was with this model," continued the history book, "that BMW's gradual but steady climb to its current status in the United States began."

Then came the 2002, 1968-76

Though a charming and capable little driving machine that received lavish praise from the enthusiast magazines, the 1600-2 would be eclipsed just two years later by the BMW that really, really put BMW on the map: the 2002.

Aside from the fact that it was the first BMW to achieve cult status in the U.S., it was a breakthrough car in a couple of other ways. The 2002 –

- was the first BMW whose specifications were decisively influenced by U.S. market priorities.
- broke with the European – and BMW – tradition of engines that were relatively small for the size of the vehicle.
- was the first BMW model to make significant inroads into the U.S. outside of the enthusiast market.
- gave BMW the ability to begin building some real U.S. sales volume.

The 2002 was also the first of its Series to make "02" part of its name – actually the same formula as the 1600-2 designation but now "run together." Subsequent versions of this Series, which had the internal code 114, followed suit: The 1600-2 was eventually renamed 1602 and there were 1802 and 1502 models, though of these only the 2002 was sold in the U.S.

The first 3 Series (E21) was introduced in Europe in 1975, but arrived in the U.S. as a '77 model. This is a 1981 U.S. 320i. In February '80, a *Road & Track* editor noted that "It feels good to get behind the wheel of a proper motor car, a product of intelligent design and not happenstance."

Most further 02 Series evolution focused on performance and/or meeting the new and increasingly stringent U.S. emission and safety regulations. A 2002 ti, with twin carburetors and more power, appeared in late '68 and a cabriolet (convertible) was added in '71. Neither of these models was ever officially imported into the U.S., but the 2002 ti's successor was.

Except for the audacious 2002 Turbo, which also wasn't marketed in the U.S., this was the most powerful of all 2002s. Today it's a coveted collector car: the 2002 tii, the second "i" standing for fuel injection. Delivering 130 horsepower, the 2002 tii engine powered the 2-door sedan to 60 mph in a then-impressive 9.8 seconds, according to *Road & Track's* May '72 issue. That was in the context of a comparison test with the Alfa Romeo 1750 Berlina and Mazda RX-2; the magazine concluded that "the BMW garnered eight 'firsts' in handling, ride, gearbox, outward vision, body structure, interior and exterior styling, and overall finish, and was rated best overall by a comfortable margin." Sound familiar?

In its various iterations, the 2002 remained an important model for BMW until 1975 in most markets, and the true core model for BMW in the U.S. through '76. It is an unforgettable car, and an all-important element of BMW history and tradition.

The first 3 Series, so named: E21, 1975-83

The 5 Series' debut in 1972 ushered in a new era of BMW Series and model designations, whereby the first digit now represented the Series and the next two the engine size. In mid-1975, the first 3 Series was introduced in Europe, bringing not only the new family look but also the new nomenclature to BMW's smaller line. The first models – 316, 318 and 320 – were naturally powered by 1.6- and 1.8-liter engines evolved from those of the 1602, 1802 and 2002.

For the U.S., however, the 2002 continued through '76. When the 3 Series arrived in the U.S., it was a '77 model with the stronger, bulkier bumpers required by U.S. regulations and with a new variation on the 2.0-liter engine.

Called 320i – the "i" again signifying fuel injection – this was an exclusive designation for the U.S. Spurred by the goal of meeting increasingly stringent U.S. emission regulations while also achieving better performance, BMW had developed a standard engine that developed 125 hp, just 5 short of the previous high-performance 2002 tii model; the 320i's Bosch K-Jetronic fuel injection was less complicated than the tii's Kugelfischer system, and better suited to the new emission limits.

In a March '77 road test comparing the 320i with seven competitors (including Alfa Romeo, Fiat and Lancia, now long departed from the U.S. market), *Road & Track* declared the new small BMW its overall winner and best in 13 of the 22 ratings criteria. Clearly, BMW was already building the reputation that it enjoys today.

Evolution continued. Also in '77, BMW introduced a pair of brand-new 6-cylinder engines in the 3 Series; so powered, the models were named 320 (2.0-liter with carburetor) and 323i (fuel-injected 2.3-liter). These models, however, didn't come to the U.S.; instead, BMW would develop a special version of the new "six," to appear later in the U.S. and elsewhere.

What did make it to the U.S. in the E21 3 Series was a refined version of the 320i, powered by a smaller (1.8-liter) engine with more advanced emission control. A 5-speed transmission replaced the previous 4-speed, and the net result was similar performance with improved fuel economy. As with the earlier version, a 3-speed automatic was also available, but in those days only a small proportion of customers took it. There were other evolutionary improvements as well. Concluding *Road & Track's* February 1980 test of the '80 320i, one editor noted that "It feels good to get behind the wheel of a proper motor car, a product of intelligent design and not happenstance."

The 2nd-generation 3 Series (E30) appeared in Europe in ’83, in the U.S. as an early ’84 model. It was the first 3 Series to include a 4-door Sedan. These are two ’86 325 models, 2-door and 4-door; both were powered by BMW’s high-efficiency “eta” 6-cylinder engine.

E30 3 Series, 1983-92: further evolution, plus the first M3

In a step that would become a regular BMW pattern, the next 3 Series would be an essentially new car, but thoroughly evolutionary in its design and engineering progression from the E21. European models at the 1983 launch included 316, 318i, 320i and 323i (the latter two with 6-cylinder engines); for the U.S. the new Series appeared as an early ’84 model and as a 318i only, powered by the same 1.8-liter 4-cylinder introduced in the ’80 U.S. 320i. “The new small BMW is better in almost every way,” commented *Road & Track*; “more efficient, quieter, better-riding, better-handling, a tad roomier and significantly more comfortable. On the other hand,” the magazine countered, “performance is off and the price is up.”

It was but a short wait before performance would be up – ‘way up – with the advent of the 325e, later in the ’84 model year. Here, finally, was the “small six” that had made its European debut in ’77, but in a much-modified, very timely new version.

BMW called the 6-cylinder 3 Series 325e. In a “bending” of model designation that had already occurred with the 1.8-liter 320i, the “25” referred not to a 2.5-liter engine, but rather a 2.7-liter unit “detuned” to a lower power level for the sake of torque, fuel efficiency and low emissions. This engine delivered 121 hp (up from the 4-cylinder’s 101) and 170 pounds-feet of torque (up dramatically from the four’s 100, and also well beyond the European 323i’s 151). The “e” stood for “eta,” the Greek letter engineers use to denote efficiency; and indeed, *Road & Track’s* June ’84 test of the 325e reported an overall fuel economy of 28 mpg and a lively 0-60-mph time of 8.9 sec. The engine had a relatively low redline of 5000 rpm, “an abundance of torque at almost any engine speed” according to *R&T*, and convincing everyday driveability.

That same model year, BMW introduced the first 4-door 3 Series body to the U.S. Offered in both 318i and 325e versions, it had excellent proportions and set the format that has thrived to this day: the 4-door model that’s still the core of this core Series. In the process of evolution, a sportier 325es was spun off the 325i 2-door.

Yet more E30 evolution was to come. Beginning with the ’86 model year, the “eta” engine powered a lower-priced pair of 6-cylinder models that had replaced the 318i 2- and 4-door in ’86. Then in mid-’87, with growing buyer preference for performance over ultimate fuel economy, the 325e 4-door and 325es 2-door models were replaced by 325i/is counterparts.

Now the model designations were re-aligned into BMW tradition: the new engine had 2.5 liters of displacement. It was also tuned more like a traditional BMW engine, with its peak of 168 hp occurring at 5800 rpm (325e: 121 hp @ 4250 rpm!). *R&T* recorded a 0-60-mph time of just 7.5 sec. for an ’88 325is with manual transmission. Of course there was some sacrifice in fuel economy, but the days of performance were returning and BMW was quite capable of combining both attributes at an outstanding level.

BMW's first regular-production Convertible in many years was added to the 3 Series in '87, and became a popular body style in the Series. This is a '91 325i Convertible, wearing the more compact bumpers that were introduced in 1990.

New variations on the E30

Though the E30 3 Series still had a few years to go, new variations were yet to come. One was the Convertible, which joined the Series in '87 and shared the new 2.5-liter engine. Another was the M3, which appeared in '88 as an all-out sports version of the 3 Series as the first BMW M3 Series exercise. Finally, the 318i designation returned with a new DOHC (double-overhead-cam) 4-cylinder engine.

Arriving in '91, the new 4-cylinder came in three versions: 318i 4-door, 318is 2-door with discreetly sporty cosmetics, and 318i Convertible. The Convertibles, as we know now, would become a mainstay of the Series.

So would the M3, although later it would become one of a separate line of BMW M models. The 1st-generation M3 was literally a racing car tamed for road use: a winged, spoilered 2-door sedan powered by a rip-snortin' BMW M 4-cylinder engine of 2.3 liters and 190 hp. It certainly wasn't for everyone; but even today it has a devoted, one might say near-fanatical following.

The first M3 was essentially a racing version of the E30 2-door, tamed for the road. It was powered by a BMW M 4-cylinder engine of 2.3 liters and 190 hp – a high-strung engine with appeal to true enthusiasts.

Dramatic change: E36 3 Series, 1992-1999

Mid-1991 saw the debut of an all-new 3 Series 4-door sedan as an early '92 325i model. In addition to its dramatically forward-looking body, the E36 offered a brand-new DOHC 2.5-liter 6-cylinder engine; new multi-link rear suspension; air conditioning with left/right temperature controls; and a host of new features both performance- and luxury-oriented.

The next model year, the E36 became a four-model Series: 4-cylinder 318i Sedan and 318is Coupe; 6-cylinder 325i Sedan and 325is Coupe. The E30 Convertible would continue for another year, but only as a 6-cylinder 325i and still powered by the single-overhead-cam engine. Then, for the '94 model, a handsome new 325i Convertible would bring the entire Series up to E36 modernity.

Model year '95 was eventful for the 3 Series. In addition to the six models offered in '94, a new 318ti joined the line. This 3-door model, available in standard form or with a Club Sport Package, was more compact than the other 3 Series models and priced for younger buyers. In '96 the 318ti offered three Packages, each with its own character; along with other 318 models it got a larger (1.9-liter) engine that was shared with the brand-new Z3 Roadster.

At the same time, a 318i version of the Convertible became available, and at midyear the E36 M3 made its debut. This was a giant

E36, the 3rd-generation 3 Series, arrived in the U.S. as this '92 325i and was offered through '99. In '95, year of its broadest model variety, there were eight 3 Series models and three versions of the new E36 M3.

In '95, a more compact model joined the 3 Series: the 318ti (above). Available in standard form or with a Club Sport Package, the 3-door Coupe came with a 1.8-liter (later 1.9-liter) 4-cylinder engine. The 318ti shared its rear suspension system with the Z3 Roadster, which would make its debut in '96.

Beginning in '98, all Coupes and Convertibles were powered by 6-cylinder engines: here the 323is Coupe, which replaced the 4-cylinder 318is Coupe in that model year and continued through '99.

step for the M3, which now made the transition from a machine for diehard enthusiasts to one with much wider appeal. It was the first 6-cylinder M3, and what a six this was: With 3.0 liters, it developed 240 hp and catapulted the excitingly styled coupe from 0 to 60 mph in just 6.1 sec. "To drive this car," reported *Car and Driver* in a December '94 comparison test, "is to fall in love with the engine." And yet a magnificent engine was only one of the M3's many sporting attributes; standard All Season Traction, a limited-slip differential, a BMW M sport suspension calibration, 17-in. wheels and more powerful brakes made it a true sports car. Yet it also provided all the practicality of the regular 3 Series coupes – plus some extra, M-style luxury. If fact, before '95 was over, a Luxury Package became available to impart what *Motor Trend* magazine (November '95) called "a splendidly stealthy quality." For buyers who intended to race their M3s, a Lightweight version was also offered on a limited basis.

In '96, the M3 engine was enlarged to 3.2 liters for greater torque. The 325 models were upgraded to 328s, with a 2.8-liter engine and other mechanical upgrades. All models got extensive detail updating as well.

For '97, another round of refinements was headed by a subtle design freshening, and an M3 Sedan joined the Coupe to bring M3 performance and 4-door practicality together for the first and (as it would turn out at least so far) the only time! One more thing distinguished the Sedan, which immediately became a best-seller: an available automatic transmission, the only one ever offered in an M Car. Naming the M3 and 328i models to its Ten Best Cars (and not for the first time), *Car and Driver's* January '97 issue declared that "The definitive sports sedans from the company whose very existence has been based on fast four-seaters for more than 30 years simply keep getting better and better."

For the last two years of the E36 platform, BMW replaced the 318is Coupe and 318i Convertible with new models that brought 6-cylinder performance and smoothness to a lower price bracket, the 323is Coupe and 323i Convertible. These joined the 318ti (the most affordable 3 Series model); the 328i/is Sedan, Coupe and Convertible; and the M3 Coupe and Sedan for the last all-E36 year. In '99, the E36 318ti, Coupes and Convertibles would continue with minor updates, while M3s were grouped alongside the new M roadster and coupe in the BMW M stable.

E46 3 Series, 1999-present: the E90's direct predecessor

A mid-'98 introduction revealed the '99 E46 3 Series as a pair of 4-door Sedans – just as the new '06 E90 is being introduced in mid-'05. Then as now, the previous Series continued in its Coupe and Convertible forms. This is BMW's established phase-in of additional body types after an initial introduction of a single type.

The 4th-generation 3 Series, platform E46, made its debut as a '99 Sedan in two models: 323i and 328i. Stylistically it was an evolutionary step from the E36.

E46 Coupes, Sports Wagons and Convertibles followed in 2000, the same model year when Dynamic Stability Control became standard. All four body styles continued into the '05 model year; the Coupes and Convertibles will continue into '06.

The initial two E46 models were the 323i and 328i Sedans, powered by 2.5- and 2.8-liter versions of a new-generation (M54) 6-cylinder engine family. Both models offered a new 5-speed automatic transmission and featured extensively refined suspension systems with new aluminum components; 4-wheel ventilated disc brakes for the first time in regular-production 3 Series models; Vehicle and Key Memory; tilt/telescopic steering wheel; the pioneering Head Protection System (HPS) for front occupants; and a host of other innovations.

Also following BMW's established pattern of alternating "revolution and evolution," the E46 was an evolutionary step from the E36 – a convincing one that has proven to be highly successful. E46 Coupes, Sports Wagons and Convertibles followed in model year 2000; Dynamic Stability Control became standard and numerous detail updates and upgrades further enhanced the new Series.

Model year '01 brought further developments in this perpetual pattern of refinement and improvement. With an uprated version of the 2.5-liter engine, 323 models became 325s; the 328s got a larger (3.0-liter) engine to become 330s. Three all-wheel-drive models were added: 325xi Sedan and Sports Wagon, 330xi Sedan. And a new M3, powered by a mighty 333-hp BMW M engine, made its E46 debut in this model year as a Coupe and a Convertible.

Subsequent model years brought further refinement of engineering and features; a design freshening first for the Sedans and Sports Wagons and then for the Coupes and Convertibles; availability of run-flat tires on some models; and expansion of standard equipment. In '03, certain 2.5-liter models sold in California, Massachusetts, New York and Vermont began to offer an engine that met SULEV (Super Ultra Low Emissions Vehicle) standards. And the sensational Performance Package became an option for the 330i Sedan.

Among other updates, '04 saw Adaptive Brake Lights becoming standard on all 3 Series models, and the Sequential Manual Gearbox (SMG) became optional on some rear-wheel-drive models. During the '04 model year, availability of the Performance Package – which had achieved an impressive 40% take rate on the Sedan – was extended to the 330Ci Coupe and Convertible.

For the '05 model year, the last for the Sedans and Wagons but not for the Coupes and Convertibles, the main thrust was a further upgrading of standard equipment. For example, wood interior trim became standard in all models, and the power moonroof was now standard on all closed-body models. Sirius Satellite Radio and the iPod adapter kit were added as new BMW Center-installed accessories.

The 3 Series for '06: E90 Sedans, E46 Coupes and Convertibles

As of March '05 production the truly all-new E90 Sedans, described in detail in this Product Information Book, make their debut as '06 models. The E91, which is the new 3 Series Sports Wagon, will follow in September '05, also as an '06. E46 Sedans and Wagons continued, in the updated form just described, into the '05 model year; E46 Coupes and Convertibles will continue for '06.

The "E9x" line – including the E90 and the body styles to come (E91 Sports Wagon, E92 Coupe, E93 Convertible) – is a more dramatic step after the evolutionary E46. Yet E9x by no means signifies a departure from the 3 Series tradition described and pictured here. Instead, it is a logical thrust of the 3 Series concept and heritage that is truly "more": more of everything that has made the 3 Series the universally accepted icon that it is. Long live the 3 Series!

2006 3 Series models
Key features

325i Sedan

BMW's new "entry" Sedan – but there's nothing entry-level about it.

Performance & efficiency

- 3.0-liter DOHC 24-valve inline 6-cylinder engine with magnesium/aluminum composite construction, Valvetronic variable intake-valve lift, Double VANOS variable intake- and exhaust-valve timing, single-stage induction system, 215 hp
- Standard 6-speed manual transmission or optional 6-speed STEPTRONIC automatic transmission

Handling, ride & braking

- Aluminum double-pivot-type front suspension
- 5-link rear suspension
- Tubular anti-roll (stabilizer) bars front and rear
- Engine-speed-sensitive variable-assist rack-and-pinion power steering
- 4-wheel ventilated disc brakes, aluminum calipers on front brakes
- Dynamic Stability Control with expanded range of functions
- 16 x 7.0 alloy wheels, Double Spoke design #156
- 205/55R-16 H-rated run-flat all-season tires
- Flat Tire Warning

Exterior & aerodynamics

- All-new exterior design
- Halogen free-form low-beam headlights
- Automatic headlight control
- Halogen free-form foglights
- Rain-sensing windshield wipers
- Heated windshield-washer jets
- Dual power/heated exterior mirrors
- Ground lighting via illumination on exterior door handles
- Adaptive Brake Lights
- "325i" script on trunklid

Ergonomics, luxury & convenience

- Doorsill trims with "BMW" lettering in chrome
- Vehicle and Key Memory
- Multi-function keyless remote with electronic ID, selective unlocking, remote trunk release, window and moonroof opening
- Entry/exit lighting in front doors
- Storage bins in front doors
- Lockable glove compartment with recharge-able take-out flashlight and trunk lock switch
- BMW Ambiance Lighting front and rear
- Front footwell lighting
- Separately switched left/right reading lights front and rear
- Start/Stop button
- Tilt/telescopic leather-wrapped 3-spoke steering wheel with fingertip controls for audio system, phone and air recirculation
- Dynamic Cruise Control
- 6-way adjustable front seats (incl. height)
- Front center armrest
- Climate-controlled center console compartment
- Leatherette upholstery
- Burl Walnut wood interior trim
- Power windows with key-off operation, 1-touch opening and closing, anti-trapping feature, opening from remote
- Automatic climate control with left/right temperature controls, Max A/C function, humidity control, bi-direction solar sensor, automatic recirculation control, mist sensor, Heat at Rest, temperature- and volume-controlled rear air outlets and other features
- Activated-charcoal microfilter ventilation
- Power 2-way moonroof with key-off and 1-touch operation, sliding interior sunshade and wind deflector
- Anti-theft AM/FM/CD/MP3 audio system with Radio Data System, 10 speakers (including 2 subwoofers)
- Pre-wiring for Bluetooth phone interface
- Pre-wiring for trunk-mounted 6-disc CD changer
- Dual cupholders front and rear
- Fold-up rear center armrest
- Fully finished trunk

Safety & security

- MRS5 central system for control of safety functions and devices
- Dual-airbag Supplementary Restraint System with 2-stage Smart Airbags
- Front and rear safety belts with automatic tensioners and force limiters
- Interlocking door anchoring system for side impacts
- Front- and rear-seat Head Protection System
- Front seat-mounted side-impact airbags
- LATCH attachments in rear seat for child restraint seats
- Central locking system with double-lock anti-theft feature, selective unlocking
- Coded Driveaway Protection
- Pre-wiring for alarm system

Options

- Premium Package:
  - Dakota leather upholstery
  - 12-way power front seats (including 4-way power lumbar support)
  - Memory system for driver's seat and exterior mirrors
  - Auto-dimming exterior and interior rearview mirrors, power-fold exterior mirrors
  - Digital compass in interior rearview mirror
  - BMW Universal Transceiver
  - BMW Assist with Bluetooth cellphone interface
- Sport Package:
  - 149-mph top-speed limiter
  - Sport suspension calibration
  - 17 x 8.0 front/17 x 8.5 alloy wheels, Double Spoke design #161
  - 225/45R-17 front / 255/40R-17 rear V-rated performance tires [10]
  - Sport front seats with manually adjustable thigh support, power-adjustable backrest width
- Cold Weather Package:
  - High-intensity headlight cleaning system with retracting jets
  - Heated front seats with expanded heated area
  - Split folding rear seats and ski bag

Stand-alone options:

- 6-speed STEPTRONIC automatic transmission
- Active Steering
- Active Cruise Control
- Park Distance Control, rear only
- Xenon Adaptive headlights with auto-leveling and luminous rings as parking lights
- Metallic paint
- Dakota leather upholstery
- Comfort Access [11]
- 8-way power front seats with driver's-seat/exterior-mirror memory
- Heated front seats with expanded heated area
- 13-speaker Logic 7 sound system
- Sirius Satellite Radio
- Vehicle preparation for Sirius Satellite Radio
- Split folding rear seats and ski bag
- Power rear-window and manual rear side-window sunshades
- Aluminum Finish or Poplar Natural interior trim (no-cost options)
- BMW On-board Navigation System, iDrive control system and Voice Command
- BMW Assist with Bluetooth cellphone interface

325xi Sedan

xDrive brings new agility and traction to the all-wheel-drive 325 model.

In addition to or in place of the features listed for the 325i Sedan, the 325xi Sedan offers:

Performance & efficiency

- Performance and fuel efficiency are somewhat affected by additional weight and mechanism of AWD system

Handling, ride & braking

- xDrive all-wheel drive system, electronically controlled with variable front/rear torque split and traction control
- Front suspension and subframe in steel, vs. 325i's aluminum; aluminum thrust plate added for additional strength

Exterior & aerodynamics

- High-intensity headlight cleaning system with retracting jets, standard
- "325xi" script on trunklid

Options

Same as 325i Sedan, except –

- Sport Package
  - 130-mph top-speed limiter
  - Deletes sport suspension calibration (AWD models have their own calibration, same with or without Sport Package)
  - 17 x 8.0 alloy wheels, Star Spoke design #159
  - 225/45R-17 H-rated all-season tires [10]
- Cold Weather Package:
  - Deletes high-intensity headlight cleaning system with retracting jets, which is standard

Stand-alone options:

- Active Steering not offered
- 17 x 8.0 front/17 x 8.5 alloy wheels, Double Spoke design #161, and 225/45R-17 front / 255/40R-17 rear V-rated performance tires optional in combination with Sport Package; include 149-mph top-speed limiter

10 – Due to low-profile tires, please note: Wheels, tires and suspension parts are more susceptible to road hazard and consequential damages.

11 – Available as of 9/05 production.

330i Sedan

Premium model, with higher performance and more extensive standard equipment.

In addition to or in place of the features listed for the 325i Sedan, the 330i Sedan includes:

Performance & efficiency

- Engine has 3-stage variable intake system and specific software; power increases to 255 hp
- Sequential Manual Gearbox to be available (see **Options**)

Handling, ride & braking

- Larger brake dimensions front and rear
- 17 x 8.0 alloy wheels, Star Spoke design #159
- 225/45R-17 H-rated run-flat all-season tires [10]

Exterior & aerodynamics

- Xenon Adaptive headlights with auto-leveling and luminous rings as parking lights
- Front bumper/spoiler: horizontal slats (center and both sides) in body color (325i: black)
- Chrome vertical grille slats (325i: black)
- Side-window framing in black with chrome trim (325i: all-black)
- Right exterior mirror has auto tilt-down feature (325i: included with optional power seats)
- "330i" script on trunklid

Ergonomics, luxury & convenience

- 8-way power front seats with driver's-seat/exterior-mirror memory
- 13-speaker Logic 7 sound system

Options

(all options are listed)

- Premium Package:
  - Dakota leather upholstery
  - 4-way power front-seat lumbar support
  - Auto-dimming exterior and interior rearview mirrors, power-fold exterior mirrors
  - Digital compass in interior rearview mirror
  - BMW Universal Transceiver
  - BMW Assist with Bluetooth cellphone interface
- Sport Package:
  - 149-mph top-speed limiter
  - Sport suspension calibration
  - 18 x 8.0 front/18 x 8.5 alloy wheels, Ellipsoid design #162
  - 225/40R-18 front / 255/35R-18 rear W-rated performance tires [10]
  - Sport front seats with manually adjustable thigh support, power-adjustable backrest width
- Cold Weather Package:
  - High-intensity headlight cleaning system with retracting jets
  - Heated front seats with expanded heated area
  - Split folding rear seats and ski bag

Stand-alone options:

- 6-speed STEPTRONIC automatic transmission
- 6-speed Sequential Manual Gearbox (SMG) [12]
- Active Steering
- Active Cruise Control
- Park Distance Control, rear only
- Metallic paint
- Dakota leather upholstery
- Comfort Access [11]
- Heated front seats with expanded heated area
- Sirius Satellite Radio
- Vehicle preparation for Sirius Satellite Radio
- Split folding rear seats and ski bag
- Power rear-window and manual rear side-window sunshades
- Aluminum Finish or Poplar Natural interior trim (no-cost options)
- BMW On-board Navigation System, iDrive control system and Voice Command
- BMW Assist with Bluetooth cellphone interface

330xi Sedan

xDrive and the 255-hp 330i engine add up to BMW's sportiest, highest-performing AWD automobile.

In addition to or in place of the features listed for the 330i Sedan, the 330xi Sedan offers:

Performance & efficiency

- Performance and fuel efficiency are somewhat affected by additional weight and mechanism of AWD system

Handling, ride & braking

- xDrive all-wheel drive system, electronically controlled with variable front/rear torque split and traction control
- Front suspension and subframe in steel, vs. 330i's aluminum; aluminum thrust plate added for additional strength

Exterior & aerodynamics

- High-intensity headlight cleaning system with retracting jets, standard (preliminary)
- "330xi" script on trunklid

Options

Same as 330i Sedan, except –

- Sport Package
  - 130-mph top-speed limiter
  - Deletes sport suspension calibration (AWD models have their own calibration)
  - 17 x 8.0 alloy wheels, Star Spoke design #158
  - 225/45R-17 H-rated all-season tires [10]
- Cold Weather Package:
  - Deletes high-intensity headlight cleaning system with retracting jets, which is standard

Stand-alone options:

- Sequential Manual Gearbox (SMG) not offered
- Active Steering not offered
- 18x 8.0 front/18 x 8.5 alloy wheels, Ellipsoid design #162, and 225/40R-18 front / 255/35R-18 rear W-rated performance tires optional in combination with Sport Package; include 149-mph top-speed limiter

10 – Due to low-profile tires, please note: Wheels, tires and suspension parts are more susceptible to road hazard and consequential damages.

11 – Available as of 9/05 production.

12 – Available as of 9/05 production; requires Sport Package.

From the media
Early reports are full of praise for the new 3.

All models

"In driving dynamics, the 330i is still the king of its class. The extra power is noticeable, though not dramatic. No matter, because the new aluminum-intensive front suspension – with double-pivot lower arms – and 5-link rear continue the tradition of spot-on tuning, providing the balanced handling that rewards hard driving, yet still gives a comfortable ride."
Road & Track, April '05

"The 3 Series has long been considered the gold standard among entry-luxury models worldwide. It is the car against which all others are measured."
AIADA, March 1, '05

"BMW had laid out a wide handling course on a huge slab of polished concrete, with a friction coefficient about the same as packed powder. There we finally touched the 2006 330i's inner self: the perfect balance front to rear; that bit of lean that seems to press the outside rear tire onto the pavement; sweet, rock-steady torque delivery; the inherent goodness that allows rank amateurs to hold opposite-lock powerslides like Colin McRae.

"The 330i's [NG6] is stronger than any 3 Series engine before, short of the M3. There is more torque down low, but it retains its sprinter's lungs and pulls to the higher redline. It sounds great, with an emphasis on clean mechanical noise from the engine bay rather than the tone of the muffler."
AutoWeek, February 28, '05

"Now entering its fifth generation, the BMW 3 Series is once again pushing up the benchmark. Acknowledged for 30 years as the best car in its class, the 3 Series comes with a wide range of innovative, hands-on progress on the engine and suspension, and in terms of motoring comfort.

"In its design language, the 3 Series makes a powerful statement as a unique, self-confident, dynamic and elegant sports saloon. The new car comes right in the middle of BMW's modern design spectrum, matching the design language of the BMW Z4 or the BMW 1 Series, on the one hand, with the elegance of the 5 and 7 Series, on the other. Characteristic features are the short overhangs, the greenhouse moved far to the back, as well as the long engine compartment lid. Significantly larger both outside and inside, the interior is bright, spacious and generous, reflecting the lifestyle of its target group.

"The interior is both modern and harmonious all in one, the generous ambience creating a feeling of controlled dynamics and lightness. So the driver and his – or her – passengers clearly feel the two characters

combined so harmoniously by the BMW 3 Series: that of a comfortable midrange saloon and that of a sports driving machine."
Automotive Intelligence, February 11, '05

"The compact four-door, which goes on sale in North America in early May as a 2006 model, exhibits remarkable composure, agility and power – no surprise, considering the 30-year heritage of the 3 Series and its German parent's reputation for building some of the world's great sport sedans.

"The new 330i boasts an all-independent chassis design that is one of the best in the business....The result is precise control coupled with a firm, well-damped ride over all kinds of terrain. When we encountered small rises in the pavement at speeds of up to 125 miles an hour, the car hunkered down into a comfortable, tarmac-hugging crouch. Our test car was fitted with Pirelli Euforia 225/45-17 run-flat tires, which displayed great grip and transmitted little road noise.

"The oversize, vented disc brakes at all four corners were exceptional, with no evidence of fade or grab, even when hauling the car down from extreme speeds. The 330i's speed-sensitive, variable-assist power steering also feels just right – quick, precise, responsive and beautifully balanced."
The Detroit News, February 9, '05

"'A BMW,' says BMW's new design chief Adrian van Hooydonk, 'must not only be beautiful, but also make you say, Where's the key?' If this is the criterion, then Hooydonk's people have done good work. Even standing still, the new 3 looks so agile, so dynamic, so rarin' to go, that one can hardly escape its pull.

"All the essential attributes that have for 30 years made the 3 Series the definition of a BMW and the sports sedan *par excellence* are packed into this 5th-generation 3: high-caliber technology, powerful engines, superior handling and an undiluted driving experience – and all of this in an elegant shape of great presence and quality. This is what enthusiastic drivers have always appreciated about the 3, and upon first acquaintance it is clear that this appreciation will transfer to the new Series.

"The greater width, longer wheelbase and increased room for rear passengers are appreciated too...Better yet: The 3 remains a compact, intense driving machine – only shrewder, more precise, livelier than even its still praised predecessor."
auto motor und sport, Germany, January 19, '05

"BMW is the first to develop a liquid-cooled inline 6-cylinder out of aluminum and magnesium. It is an especially light six in the 3-liter class that could become an example for other carmakers to follow."
Automobil Revue, Switzerland, January 26, '05

"The predecessor is still very much up-to-date, so Phase 1 of the new Series concentrates on the Sedans.

"The flowing lines and skillful shaping of front and rear ends achieve a dynamic image. Contributing to this effect are the increased overall length and wheelbase. Combined with greater width and [in European versions] unchanged height, this growth results in significantly more interior space.

"Not just the exterior look promises 'Joy of Driving,' but also the new, elaborately designed suspension system. This is confirmed by early test drives on Spanish roads and on the challenging racetrack at Albacete.

"Faultless straight-line stability and precise power steering, as well as springing and damping that are firm, but not too much so, further validate BMW's goals of sporty, dynamic road manners. And the brakes work efficiently."
Automobil Revue, Switzerland, January 19, '05

"It is a synthesis that should please everyone, offend hardly anyone, and create the best prospects for longterm sales success."
Automobil Revue, Switzerland, October 27, '04

"The new 3 Series has a taut look, with a striking sculpture line at the level of the door handles and a hood that terminates in a pronounced V-shape."
auto motor und sport, Germany, June 23, '04

"The latest version of the 3 Series should be even more appealing than its predecessor."
Edmunds.com

Performance & efficiency features

It's clear enough that the BMW 3 Series is an icon. Yet not just the car itself is an icon; so, standing on its own merits and heritage, is the 3 Series engine. It's a "six," yes, but not just any six: Whereas nearly all other vehicle makers make their sixes in V-format, BMW nurtures a format that puts all the cylinders in a row: the inline six. And is honored for doing so, with words like "superb" (*Automobile Magazine*, February '04) and "sublime" (*Road & Track*, July '02).

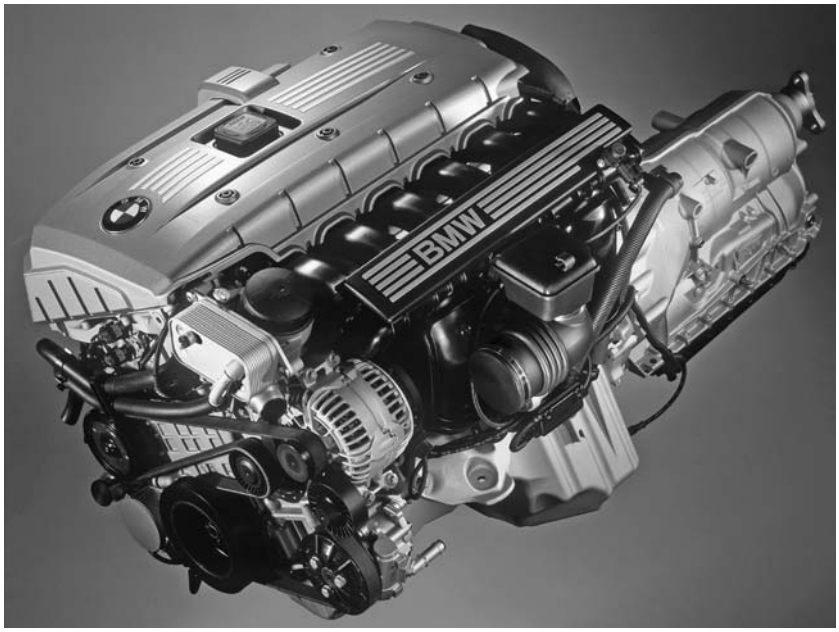
Not content to rest on such acclaim, BMW has endowed the two new 3 Series Sedans with all-new inline 6-cylinder engines, as advanced as they are powerful. And each is available with a choice of 6-speed transmissions.

All-new DOHC 24-valve 6-cylinder engines

Benefits

- BMW's unique approach to 6-cylinder power, now more advanced than ever
- Each model has more power and torque than its predecessor
- Magnesium/aluminum construction reduces weight, enhances weight distribution, demonstrates BMW's commitment to advanced technology
- Valvetronic variable valve lift enhances performance and fuel efficiency
- Electric water pump and volume-controlled oil pump also enhance efficiency
- Legendary smoothness of inline 6-cylinder engine is retained, enhanced
- Greater fuel efficiency is expected

Almost all vehicle manufacturers who make 6-cylinder engines have adopted the V-6 format, whose compactness is advantageous in small or midsize cars with front-wheel drive. By contrast, BMW's inline 6-cylinder engines are brilliant for their smoothness and sound, and BMW customers (not to mention professional auto critics!) have come to treasure them for these attributes. For this reason, BMW has elected to retain the inline format while developing it toward reduced weight, more compact dimensions – and even more brilliant performance, smoothness and sound. An increase in fuel efficiency and even tighter control of emissions were also set as goals.



All-new engine with a whole new look: the NG6 Valvetronic inline 6-cylinder. Magnesium camshaft cover and thermoplastic intake pipes of the 3-stage induction system (330i only) are visible in this photo.

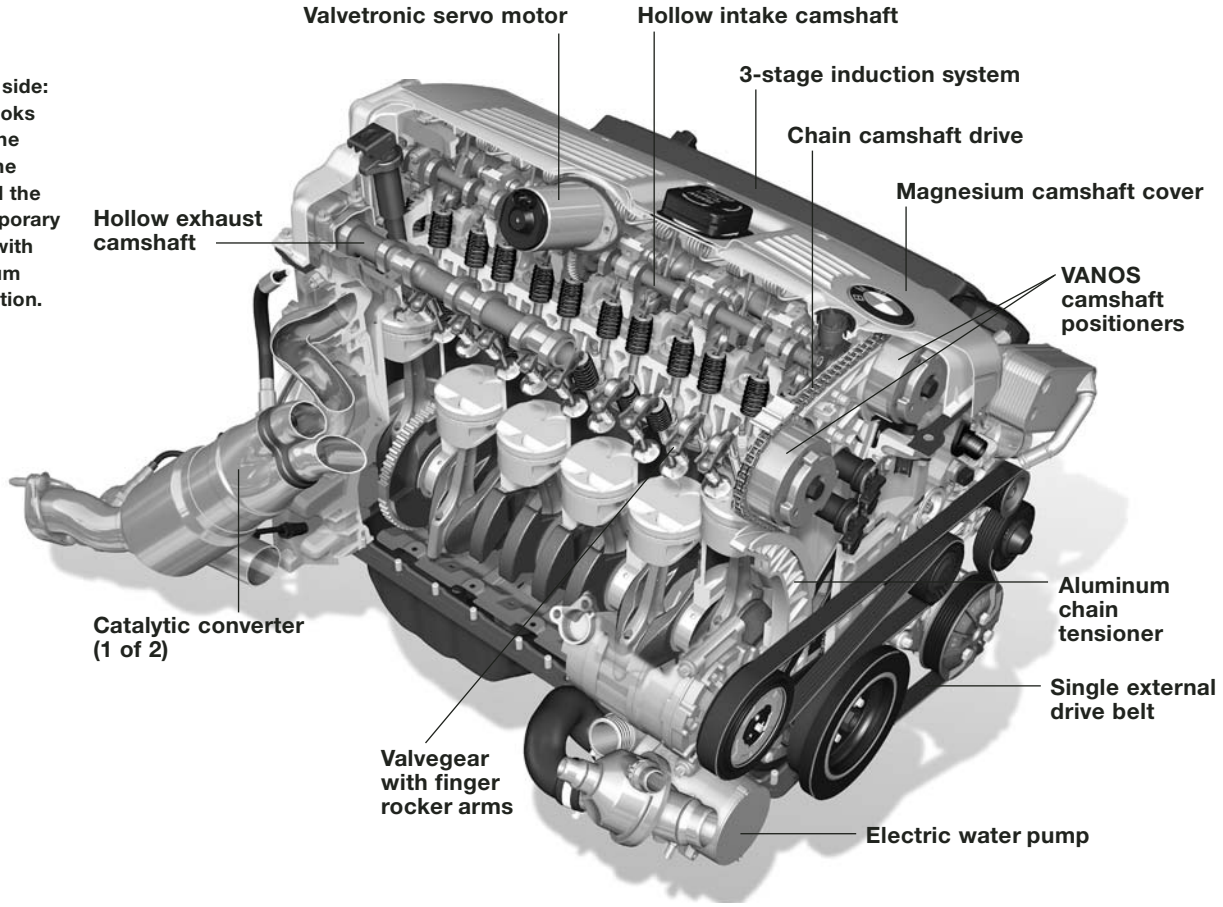
The result of this quest is a New Generation of 6-cylinder engines, appropriately called the NG6. Compared to its predecessor, the M54 engine family, the NG6 achieves notable progress on all fronts (NG6 3.0-liter vs. M54 3.0-liter):

- **Greater power**, 255 hp vs. 225 hp [13]. This amounts to a very impressive 85 hp/liter.
- **Greater torque**, 220 lb-ft. vs. 214 [13], and even stronger torque characteristics across the broad range of engine speeds.
- **Higher revving ability.** The new engine's "redline" is 7000 rpm, vs. 6500 for the predecessor.
- **Superior fuel efficiency.** Though official U.S. EPA mileage ratings are not yet available, European ratings indicate 12% greater mileage.
- **Reduced weight** – 22 lb. less. Had BMW engineers developed the previous engine to meet their goals, it would have added about 30 lb. – and thus would have weighed fully 52 lb. more than the new engine does.
- **More compact** – Because of the electric water pump, there is just one external drive belt, vs. the previous two; overall engine length is thus about an inch shorter.

Now, here are the details of how this dramatic progress was achieved – over an engine that was already outstanding in all these respects.

13 – 235 hp/222 lb-ft. with Performance Package, which currently has no counterpart in the NG6 engine family.

View from the other side: here too, the NG6 looks as new as it is. It's the first 6-cylinder engine with Valvetronic, and the world's first contemporary automobile engine with magnesium/aluminum composite construction.



Valvetronic variable valve lift. This exclusive, patented innovation, already enhancing the performance and fuel efficiency of BMW's V-8 and V-12 engines, appears in the NG6 in evolved form.

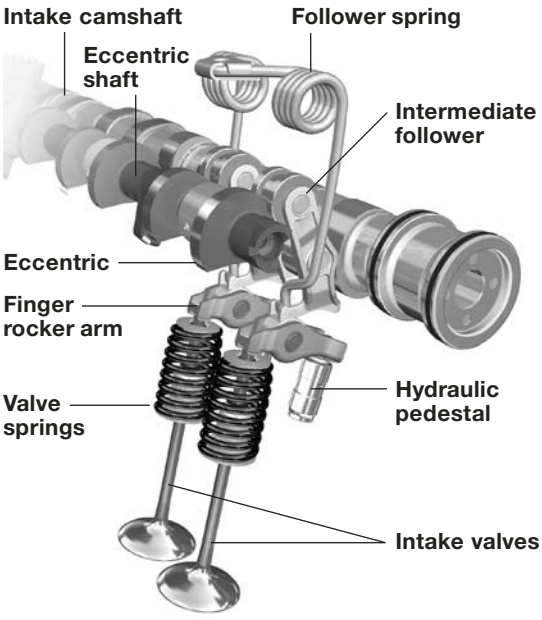
Variable valve lift is a step beyond variable valve timing – which this and all other current BMW gasoline engines have too. Valvetronic varies lift to a far greater degree than other variable-lift systems (Honda/Acura's V-Tech is one of them). Indeed, Valvetronic varies lift so extensively that it replaces the traditional engine throttle; engine breathing is controlled entirely by the valves, and the traditional throttle simply goes away [14].

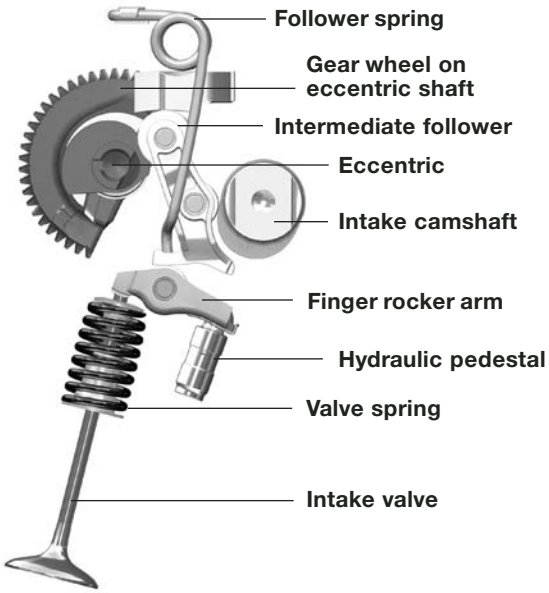
The Valvetronic mechanism sits atop the intake valves. Each of the engine's 24 valves is actuated as the camshaft lobe deflects a finger-type rocker arm. (This is new; the previous engine has bucket-type hydraulic valve lifters.) On the intake side, there is an additional element between the cam lobe and rocker arm, called an intermediate follower.

Upon contact by the camshaft lobe, this follower actuates the rocker arm and, in turn, the valve. The follower is positioned by an eccentric shaft that a servo motor rotates in response to the driver's accelerator-pedal movements; the eccentrics on this shaft determine each intermediate follower's pivot point and thus vary the valve lift.

Here are the highlights of Valvetronic:

- **Intake valves assume function of throttle.** Engine breathing – air intake – is controlled by varying valve lift. The driver's foot gives the commands; valve lift varies accordingly. At minimum lift, the engine is idling or decelerating; at maximum lift, it delivers full power.
- **Greater efficiency.** As a throttle closes, it imposes a restriction that incoming air must snake around. This causes so-called "pumping losses," which take a greater proportion of engine power at lower speeds. By eliminating the throttle [14], Valvetronic essentially does away with pumping losses.
- **More spontaneous engine response.** Again, because there is no conventional throttle.
- **More power.** High valve lift contributes to high power output. With conventional valvegear, there's a limit to how high valve lift can go without degrading low-speed operation. With Valvetronic, lift is tailored precisely to operating conditions, and is extra-high at the top end. The 330i/xi engine's power peak (255 hp) comes at 6600 rpm, vs. 5900 rpm before. Yet low- to medium-speed operation is not compromised (see below).
- **A "fatter" torque curve.** Not only does the new engine produce more torque; the torque peak occurs at a lower engine speed, 2750 rpm vs. the previous 3500 rpm. This materially improves the engine's low- to midrange response.





Two views of the Valvetronic mechanism: left, perspective; right, looking straight at it. The components' functions are:

- **Gear wheel – meshes with spiral shaft of servo motor to rotate eccentric shaft, varying position of intermediate follower according to accelerator pedal**
- **Intermediate follower – varies valve lift**
- **Rocker arm – actuates valve**
- **Hydraulic pedestal – maintains valve clearance at zero for minimum noise**
- **Intake valve – opens to admit air and fuel into cylinder**
- **Valve spring – closes valve**
- **Follower spring – retains and tensions follower**

- **More refined engine operation.** In light-load operation, operation is especially smooth because valve lift is low.
- **Low friction, precision components.** Every "rubbing point" in the Valvetronic mechanism is not a rubbing (friction) point at all. Instead, low-friction rollers transmit the motion: from cam lobe to intermediate follower, from follower to rocker arm, from eccentric shaft to follower. The follower itself is a precision component – now even more so in this new, high-rpm evolution of Valvetronic. As in the previous engine, zero valve clearance is maintained hydraulically to ensure quiet operation, though by a different mechanism.

How Valvetronic has evolved. As dramatic as these fundamental advantages of Valvetronic are, with this new engine they become even more dramatic. Though highly technical and detailed, the evolution of Valvetronic can be understood in these broad terms:

- **Maximum engine speed increased by 500 rpm.** This was enabled by making Valvetronic's reciprocating parts more rigid.
- **Maximum intake-valve lift increased** from 9.7 mm to 9.9 mm, which contributes to the increase in maximum power output.
- **Greater maximum intake-valve acceleration.** This means less time is spent opening and closing the valves; thus they are effectively open longer. In effect this is a "de-throttling" that further reduces pumping losses.
- **Phasing of the two intake valves.** Starting from minimal intake-valve lift (i.e. idling), an increase in engine load causes the lift and timing of intake valve 1 to increase faster than that of valve 2. At its maximum, this phasing has valve 1 lifting 1.8 mm more than valve 2; at about 6 mm, the two valves are again "in synch." This refinement achieves an asymmetric distribution of the fuel/air mixture that enhances fuel economy under low-load driving conditions.

Improved combustion chambers. Subtle refinements to the combustion-chamber shape conspire with the intake-valve phasing to create more stable combustion, with benefits to fuel efficiency and emission control.

Further evolved VANOS. Double VANOS [15] is a familiar feature of all current BMW engines. The range over which intake-valve timing can be varied has been increased by 10°, achieving yet another de-throttling effect.

3-stage induction system. BMW 6-cylinder engines have long had a 2-stage (or dual-resonance) system, with one intake-path length for lower rpm, the other for higher rpm. This system further optimizes the engine's power delivery by providing an additional "middle" stage. Electrically switched, the three stages are:

- Low-speed: idle-3250 rpm
- Medium-range: 3250-4500 rpm
- High-speed: 4500-7000 rpm.

This feature is present only on the 330i engine; the 325i engine (see page 24) has a single-stage intake manifold.

For perspective, the BMW V-8 engine (in 545i and 745i/Li) has a fully variable system that varies intake length steplessly from idle to maximum rpm – an ultimate solution, but too costly and bulky for the 3 Series.

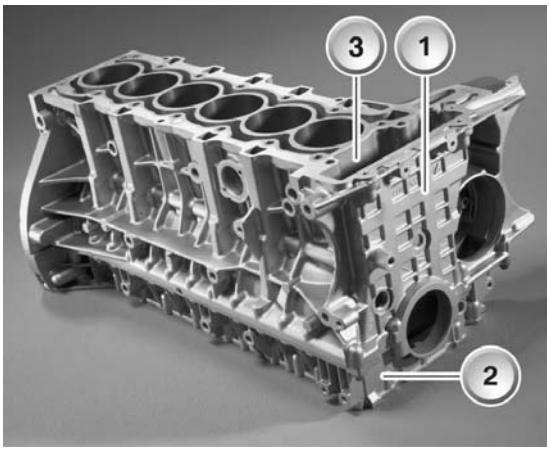
Higher fuel-injection pressure, increased from 3.5 to 5 bar (51.4 to 73.5 lb./sq in.), results in an improved injection spray, helping reduce raw hydrocarbon emissions in a cold engine.

All-new engine electronics. As the above development descriptions imply, the number of variables (inputs) feeding into the engine's electronic management system has increased significantly; a completely new system was developed. Among many innovative details, the basic ignition and valve-timing functions are duplicated. The first part was optimized for fuel consumption and emissions; the second part was determined according to pure driving parameters. Depending upon how perfectly the engine is running at any time, control interpolates between the two strategies. Under ideal conditions, the engine always runs with its lowest fuel consumption. In case of poor fuel quality or unfavorable environmental conditions, the control parameters prioritize driveability.

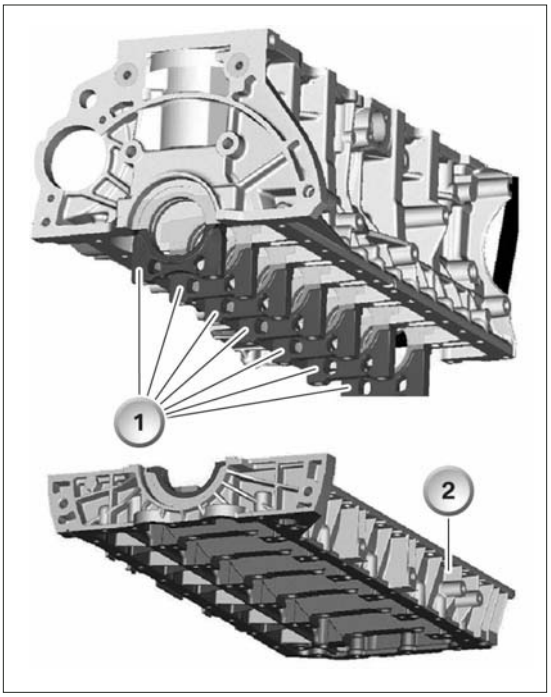
14 – Actually, there is an auxiliary throttle, for certain specific functions only: as a fail-safe measure for the unlikely event of Valvetronic malfunction; for diagnostic purposes; to control fuel-tank ventilation; and to improve cold starting. Under virtually all normal operating conditions, this throttle is open and imposes no restriction on incoming air.

15 – VANOS = **VA**riable **NO**ckenwellen **S**teuerung = variable camshaft control, or variable valve timing.

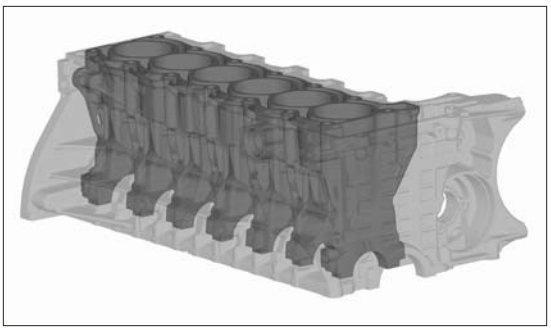
The NG6 engine block consists of three major castings:
1 – Upper crankcase, of magnesium alloy
2 – Bedplate, of magnesium alloy
3 – Insert, of aluminum-silicon alloy.



This "exploded" view of engine block shows the bedplate and upper crankcase separately:
1 – Steel inlays fit into bedplate to carry crankshaft main bearings
2 – The bedplate.



The insert (dark) is cast inseparably into the magnesium-alloy upper crankcase. It includes the cylinders, coolant passages and all threaded connections to the transmission, cylinder head and cylinder block.



Magnesium/aluminum composite construction

Benefits

- Reduces engine weight
- Enhances vehicle weight distribution

Although the direct customer benefits of this unique and pioneering construction are subtle in comparison with those of Valvetronic, this is nevertheless an important innovation – a world's first in modern times and exclusive to BMW.

Structurally, the new engine block consists of three major castings:
Bedplate (magnesium alloy [16]). This casting forms the lower portion of the block (crankcase), and is similar in concept to a construction element found in some racing engines – as well as the 500-hp V-10 engine that powers the new BMW M5. The bedplate combines with the upper crankcase to form the outer shell of the cylinder block; the result is an ultra-rigid engine structure.

Upper crankcase (magnesium alloy [16]). Joining the bedplate at the level of the crankshaft (main) bearings, this too is a weight-saving casting. It is mounted onto the bedplate from above.

Insert (aluminum alloy). Forms the cylinders and their coolant passages. Whereas the previous engine has an aluminum block with cast-iron sleeves as the cylinders' working surfaces, this insert is of silicon-impregnated aluminum (Alusil). Silicon particles are thus cast into the insert; a "soft honing" machine removes just enough of the aluminum to leave the crystals as the ultra-hard cylinder surfaces. In this sense, the NG6's block construction resembles that of current BMW V-8 and V-12 engines, though these blocks are all-Alusil.

How it goes together. First, the aluminum insert is cast by conventional methods. Then, during a newly developed die-casting method, the magnesium upper shell shrinks onto the insert while cooling; structural rigidity and stability are ensured by interlocking ribs where the two castings meet.

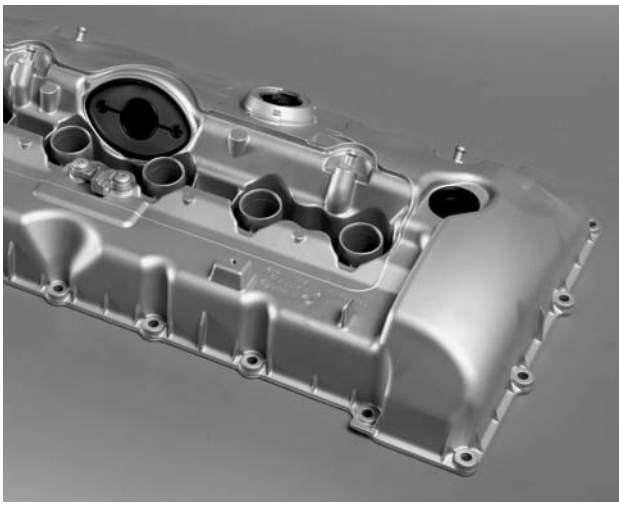
In the next step, the upper crankcase, consisting of magnesium shell and aluminum insert, is mounted onto the magnesium bedplate from above. The sintered-steel main bearings' lower halves are in place in the bedplate, the upper halves in the upper crankcase. After the bedplate and upper crankcase have been bolted together, a liquid sealing compound is injected into a groove on the contact surface between the two components. Special aluminum bolts are used to attach parts, such as the engine mounting brackets, to the magnesium/aluminum castings.

More conventionally, the cylinder head is of aluminum; however, the head of an inline 6-cylinder engine must be cast with great precision because its relatively great length implies considerable contraction during the cooling-down process after casting. The casting process used here is called "lost-foam"; because all BMW gasoline engines since the 1960s have had aluminum heads, BMW's experience in this regard is long and successful and BMW has used the lost-foam method for cylinder heads since 1997. This process, which employs a polystyrene "dummy" of the head to form the mold into which the aluminum is poured, results in an extremely precise casting of this critical engine component.

Other weight-saving materials. Though the magnesium/aluminum composite crankcase construction is the most sensational example, other materials and production innovations also help pare weight from the NG6 engine. The second most productive material innovation was the adoption of **hollow camshafts**, which save a remarkable 2.6 lb. each. Beginning as steel tubes, the camshafts are shaped in a hydroforming procedure, subjected from the inside to a water pressure of 4000 bar (58,000 lb./sq in.) against outer forms to achieve the cam profiles. All this takes place in a cold state – nothing melts – and as a final step the cams are polished to a finish quality of 1/1000 mm. Hydroforming is also used to achieve the hollow, but ultra-strong profiles of the 3 and 6 Series Convertibles' windshield frames.

The engine's **camshaft cover** is of weight-saving magnesium. For the first time, the **VANOS sprockets**, via which the camshaft chain drives the two variable-valve-timing mechanisms, are of aluminum. And the chain camshaft drive, a high-durability, low-maintenance feature of all current BMW engines, has an **aluminum chain tensioner** that also saves weight. Instead of being a separate casting, the camshaft drive's housing is integrally cast into the magnesium structure, eliminating a production step and sealing components. As one final weight-reducing element, the **exhaust headers' flanges** are formed from 2-mm-thick steel, significantly lighter than the 12-mm flanges used previously; for a secure seal of this steel to the aluminum head, graphite rings are employed.

By designing innovative hollow camshafts (conventional camshafts are solid), BMW's engine engineers saved more than 5 lb. of engine weight.



Another weight-saver is the magnesium camshaft cover.

16 – These magnesium castings are actually a magnesium-aluminum alloy, as pure magnesium would not have sufficient strength for these applications.

Electric water pump. A conventional engine water (coolant) pump is driven by a belt, and always runs at a speed directly proportional to engine rpm. This innovation is electrically driven and electronically controlled according to the engine's coolant and oil temperatures at any moment. Thus it runs only as much as needed, and in doing so consumes a maximum of 200 watts vs. up to 2 kilowatts (10 times as much) for a conventional pump. The electric pump has numerous tangible benefits:

- By requiring less power, contributes to the engine's increased power output.
- Faster engine warmup, because it doesn't circulate coolant when the engine is cold.
- Provides coolant circulation for the Heat-at-Rest feature now included in the climate control.
- By eliminating an external drive belt, makes the engine shorter.

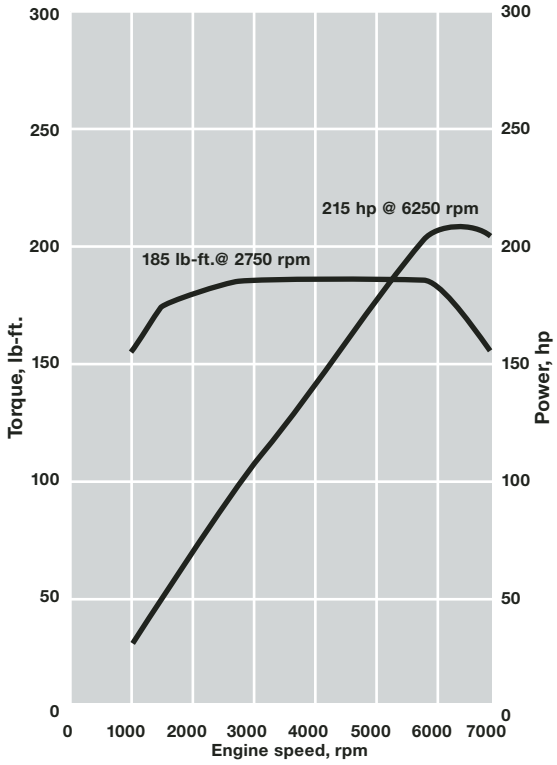
An electrically driven, electronically controlled water pump consumes less power than a conventional belt-driven pump, helps the engine warm up more quickly, facilitates the Heat-at-Rest feature and eliminates one external drive belt.

Variable-volume oil pump. Conventional oil pumps, too, deliver oil in direct proportion to engine speed. In order to supply the necessary pressure to the VANOS system (which employs oil pressure to adjust the camshafts and thus vary valve timing) at all speeds and temperatures without excess capacity at high engine speeds, BMW engineers developed a new type of oil pump. By varying the output of its pump element according to engine oil pressure, the engineers achieved a pump that always delivers sufficient pressure to lubricate the engine and operate the VANOS, yet never pumps more oil than is necessary. Thus it –

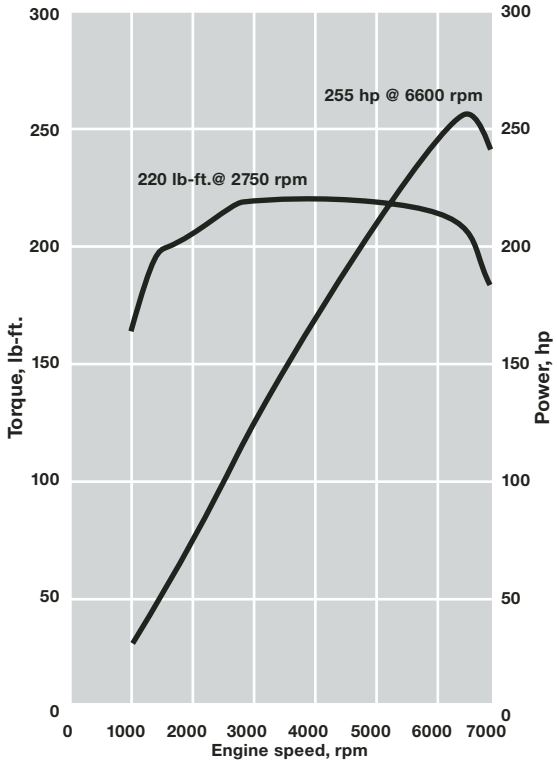
- Contributes to the engine's increased power output, by requiring less power from the engine.
- Doesn't require a bypass to divert excess flow, which can be up to 80% with a conventional pump. This also avoids possible excess oil temperatures and oil foaming.

Oil/coolant heat exchanger. Another feature that speeds engine warmup; during this phase of operation, it transfers heat from the coolant to the oil circuit. Under conditions of high engine power and high oil temperatures, it performs the reverse, transferring heat from the oil circuit to the coolant, from which the engine cooling system then removes excess heat.

Torque and power curves for the 325i engine.



Torque and power curves for the 330i engine, the most powerful ever offered in a regular-production 3 Series model.



325i/xi and 330i/xi: the two engine versions

Benefits

- New approach to the two performance levels contributes to emission control
- 325i/xi engine's torque delivery is stronger than if it had a 2.5-liter engine

Instead of the previous strategy of a 2.5-liter engine version in the 325i and a 3.0-liter in the 330i, both new models use a 3.0-liter NG6, equipped and calibrated to provide two levels of performance:

- **325i/xi** – 215 hp @ 6250 rpm, 185 lb-ft. torque @ 2750 rpm
- **330i/xi** – 255 hp @ 6600 rpm, 220 lb-ft. torque @ 2750 rpm.

Power and torque curves for the two engines are shown at left.

Significant differences between the 325i/xi and 330i/xi engines are as follows:

- Whereas the 330i/xi engine has the 3-stage induction system, the 325i/xi unit has a single-stage intake manifold.
- Engine software differs between the two versions.

Transmissions: all choices are 6-speeds

Benefits

- 6-speed transmissions across the board
- 325i, 325xi and 330xi offer manual or STEPTRONIC automatic
- 330i offers manual, Sequential Manual Gearbox [11] or STEPTRONIC automatic

All transmissions for the new 3 Series have six forward speeds, further optimizing performance and fuel efficiency.

6-speed manual transmission

(standard all models)

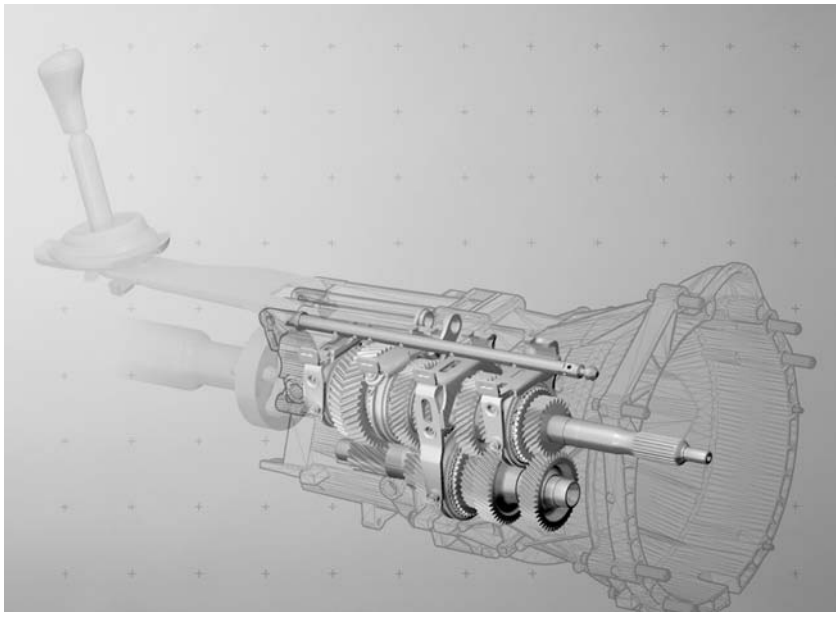
Benefits

- Even more precise shifting than previous transmissions
- Shorter movements from gear to gear further enhance BMW's already legendary driving pleasure
- 6 speeds improve both performance and cruising comfort

A new generation of 6-speed manual transmissions has been phased into the various BMW Series, beginning with the Z4 and then introduced in E46 330 models and the 5 Series. The new 330 models continue with this Type H unit; the 325s introduce a somewhat lighter-duty version, called the Type I. This new "gearbox" is about 10% lighter in weight than the Type H and has even higher mechanical efficiency, contributing to fuel efficiency. Its gear ratios differ slightly from those of the Type H, not for performance or economy reasons but because of internal design factors.

Compared to earlier BMW manual transmissions, both units offer tangible customer benefits:

- Even more effective synchronization of shifting
- Lighter and more pleasing feel as the shift lever is moved from gear to gear
- Firmer engagement of gear once selected
- Sportier shifting, via shorter shift "throws" from neutral to each gear
- Use of lifetime transmission oil, which never needs to be changed
- "Clean bearings" design for main bearings in transmission; protects bearings from contamination, ensures adequate lubrication at all times and therefore enhances durability.



A 6-speed manual transmission is standard on all E90 3 Series models.

6-speed STEPTRONIC automatic transmission

(optional all models)

Benefits

- Additional gear over previous 5-speed unit makes for an almost "seamless" flow of power from a standstill to the highest cruising speeds
- 6th speed is an even more relaxed cruising gear
- Reduces fuel consumption at cruising speeds
- Actually lighter than previous 5-speed automatic
- Smoother than ever

With the all-new 2006 models, the 3 Series joins the 5, 6 and 7 Series in offering a 6-speed automatic. This is the ZF 6 HP 19 model, also employed in 6-cylinder 5 Series models.

Compared to the 5-speed unit it replaces, it's fully 10% lighter, has a more efficient torque converter, actually operates with fewer internal clutches, and can reduce fuel consumption, particularly at cruising speeds when 6th gear is in frequent use.

As in all other current BMW automatics, the STEPTRONIC feature offers drivers a choice of Normal, Sport and Manual modes. Park, Reverse, Neutral and Drive ranges (P-R-N-D) are in the right gate of the shift lever. The Sport mode, in which shifts occur at higher engine speeds, is engaged by moving the lever leftward from D; the Manual mode is engaged when the driver manually chooses a gear by tipping the lever forward (for down-shifts) or rearward (for upshifts).

11 – Available as of 9/05 production.

The STEPTRONIC automatic transmission is also a 6-speed.

The 6-speed Sequential Manual Gearbox (SMG) is available on the 330i only.

6-speed Sequential Manual Gearbox (SMG)

(optional 330i Sedan; available as of 9/05 production, requires Sport Package)

Benefits

- Brings Formula 1 racing technology to the road
- Retains efficiency and performance of manual transmission, yet offers choice of automated or manual shifting
- Includes Dynamic Driving Control (Sport button)
- Can shift faster than even an expert driver
- No clutch pedal
- Manual shifting via shift lever or steering-wheel "paddles"

The 3 Series' SMG continues to be similar to that offered in the Z4, 5 and 6 Series rather than the BMW M version with Drivelogic.

Like all BMW SMG versions, this is an electrohydraulically shifted, electronically controlled rendition of a 6-speed manual transmission, including an automatic clutch; as such it is an utterly different type of transmission from a conventional automatic such as the STEPTRONIC. There is no clutch pedal; the driver selects the desired mode (N, R, D, S) with a console-mounted selector lever, and can execute manual shifts via that lever or two "paddles" on the steering wheel. The fundamental advantages of SMG are that it fully preserves the performance of a manual transmission, entails little or no penalty in fuel economy, and facilitates both automated and very sporty driving.

Features and characteristics of the SMG driver interface includes the following:

- A **Drive** mode (D) in which shifting is automated
- A **Sequential** mode (S) in which shifting is mostly driver-controlled
- A **Sport button** on the console, which selects the SMG Sport program
- An **instrument-panel display** of the gear currently engaged.

In D, shifts are automatic, and programmed according to how the driver is currently driving: More aggressive driving results in shift points at higher speeds. D is not to be interpreted as a substitute for the D of a fully automatic transmission, but rather a convenient operational mode for those times when the driver wants ease of driving and is not primarily concerned with extracting maximum performance.

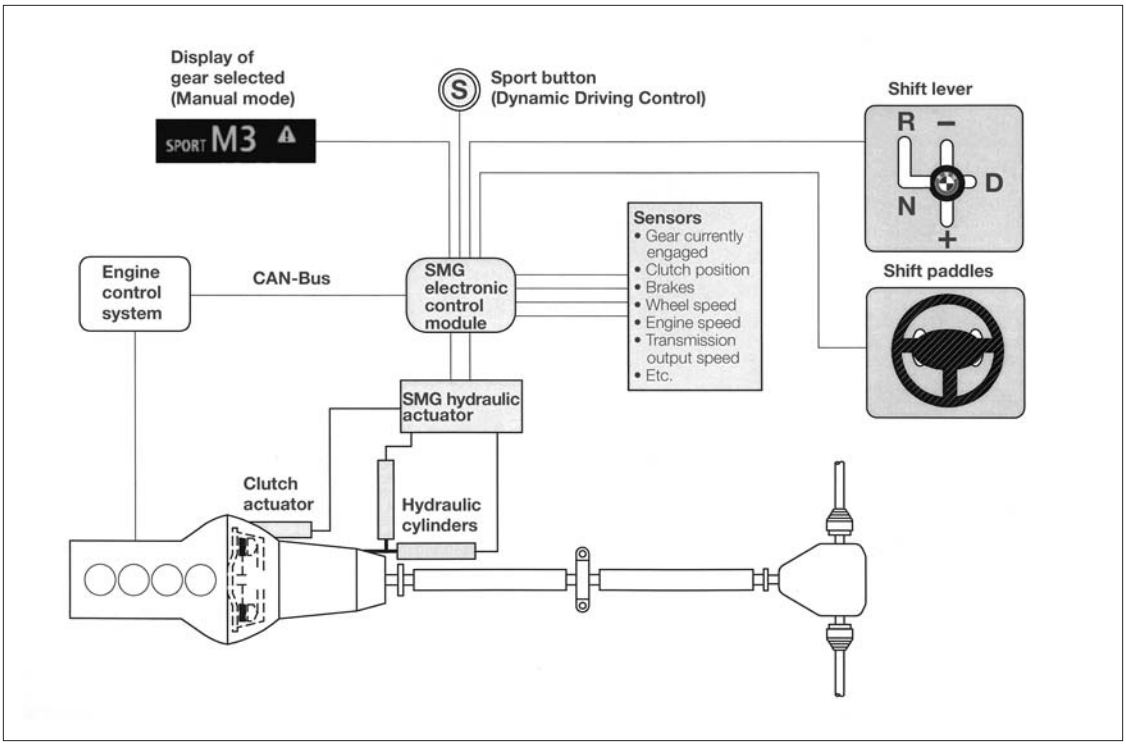
With S selected, the driver essentially controls all shifting by means of the shift lever or paddles –

- Tip lever or paddle(s) rearward = upshift
- Tip lever or paddle(s) forward = downshift

– with the following exceptions:

- If the driver takes the engine up to its rpm limit, SMG will automatically shift to the next higher gear.
- Upon deceleration, as the engine comes down to approximately 1100 rpm, SMG selects the next lower gear. When the vehicle comes to a stop, SMG selects 1st gear automatically; upon moving off, however, the driver again chooses each upshift.

SMG can be shifted via the shift lever or paddles on the steering wheel.



Engaging the Sport program via the button on the console influences shifting as follows:

- In S, shifts occur more quickly (sharply).
- In D, shifts occur not only more quickly, but at higher road speeds. This is parallel to the Sport mode of BMW automatic transmissions.

An Acceleration Assistant function (also referred to as Launch Control) is available for very sporty driving: With the Sport program activated, the driver presses and holds the DSC button (on the dash) for 3 sec. or more, then presses the accelerator to the floor. The engine is automatically revved to the optimum rpm for a wheel-spinning start and the vehicle is "launched." The Owner's Manual cautions: "Do not use the Acceleration Assistant too frequently, as this could cause premature wear of the components."

An instrument-cluster display tells the driver which of the six speeds is currently engaged. In D, it adds a "D" to the gear indication. If the Sport program is selected, SPORT is also displayed.

New differential design

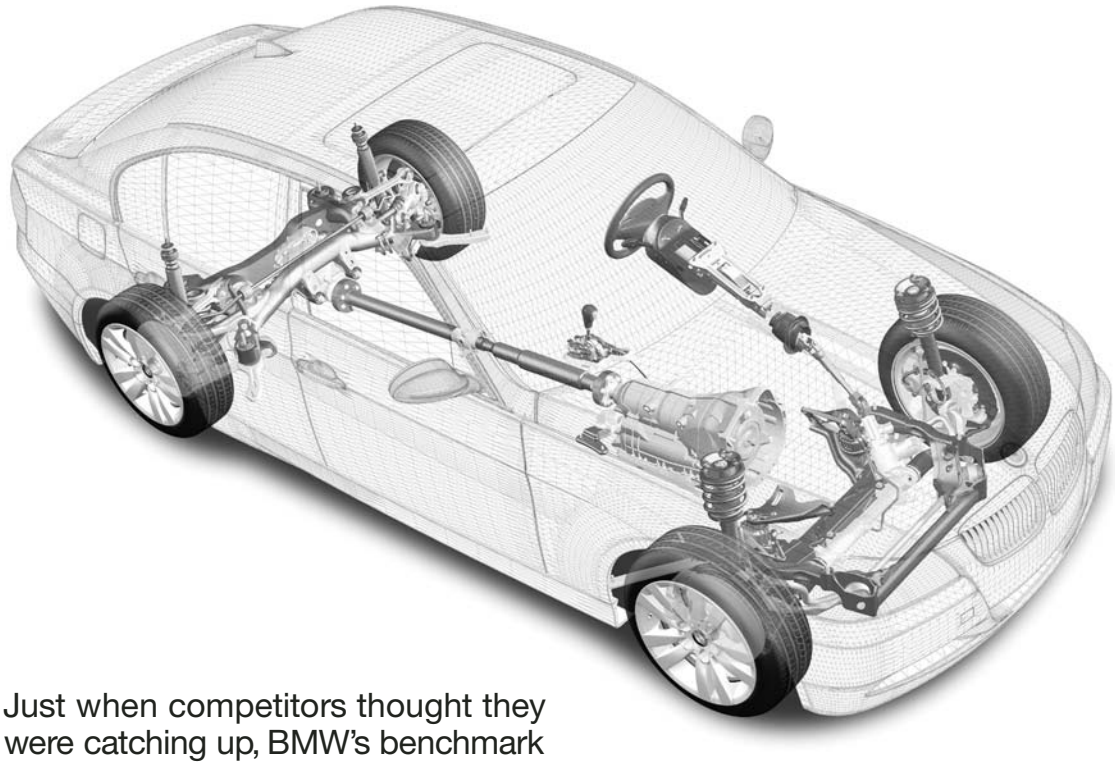
Benefit

- Increased efficiency, resulting in a slight increase in fuel economy

A new generation of differential has been developed for the 3 Series. Its main distinction is a new type of bearing, called "double angular-contact ball bearing." These bearings reduce oil temperatures within the differential, with benefits for both function and durability. Power losses due to oil flow are reduced and gear design has been adapted to the new bearings, with the overall result that efficiency is increased (meaning a small increase in fuel economy).

Similar engineering and advantages apply to the front differential of the "xi" all-wheel-drive models.

Handling, ride & braking features



Just when competitors thought they were catching up, BMW's benchmark sports sedan appears in an all-new form and again sets new standards. In concert with the new and more powerful 6-cylinder engines, an also all-new chassis brings the unique benefits of BMW's double-pivot strut-type front suspension to this Series for the first time. Completely new 5-link rear suspension further perfects the 3 Series' unique blend of agility and stability. Chassis/body rigidity has been further improved. 4-wheel disc brakes, still ventilated all around, have larger dimensions; new-generation Dynamic Stability Control adds an amazing array of functions that enhance brake performance. And delivering all these capabilities to the road are run-flat tires, standard with every equipment configuration.

Double-pivot front suspension: proven principle, new to 3 Series

Benefits

- Double-pivot design for great stability under all road conditions, space for large disc brakes
- Aluminum components for especially excellent handling and ride on irregular road surfaces

Though familiar from BMW's "premium" Series (5, 6 and 7), this system is new to the 3 Series. It is a more elaborate concept than that of previous 3 Series, featuring two lower arms that work in combination with the spring/shock-absorber strut. (The previous 3 Series system – itself acclaimed for excellence – employs a single, curved lower arm.) These two lower arms are the reason for its name "double-pivot."

By employing two lower arms instead of one, this system provides several fundamental advantages:

- **Small positive steering offset**, for best steering feel and control under all road conditions. Though the two arms don't actually intersect, if you visualize extending their axes to a point where they do intersect,

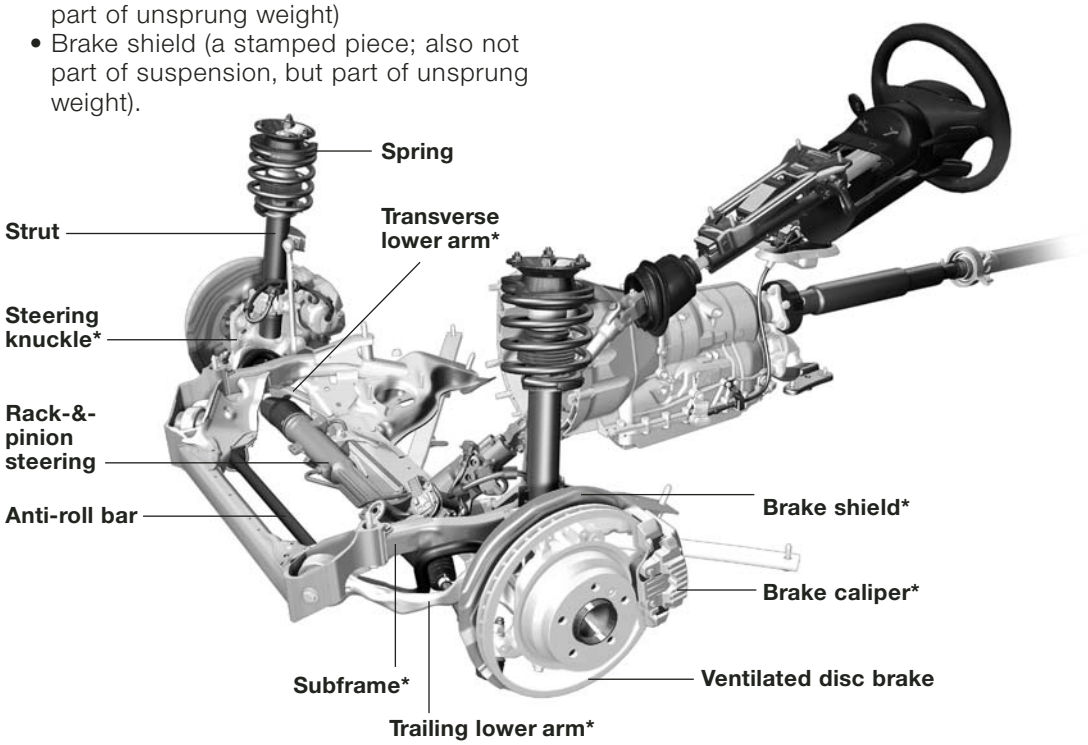
you find a "virtual pivot point" that is ideal for achieving this result. Steering offset is the "lever arm" through which road forces act on the suspension system.
- **Large steering caster**, for outstanding stability in straight-line driving and excellent steering return action coming out of curves.
- **Space for large brakes**, by virtue of the arrangement of the two lower arms.

Further advantages are found in the details:
- **The trailing lower arm** (thrust rod) has a rubber/hydraulic cushion, which provides the most effective "compliance" for reducing road shock and thus improving riding comfort.
- **The transverse lower arm** (lower control arm) is cushioned by a finely tuned rubber element that fosters direct and precise response to the steering wheel in curves and corners.
- **Extensive aluminum componentry** for low unsprung weight. This improves the suspension's response to bumps and other road irregularities; it can markedly improve riding comfort and, on any irregular road surface, handling as well. Aluminum components on each side include –
  - Both lower arms (forged aluminum)
  - Steering knuckle (also forged)
  - Brake caliper (not part of suspension, but part of unsprung weight)
  - Brake shield (a stamped piece; also not part of suspension, but part of unsprung weight).

In addition, the subframe that carries the front suspension is of aluminum, as is the steering rack; these are not unsprung components, but do contribute to overall weight reduction – and being up front, also to the "typical BMW" near-50/50 weight distribution. More elaborate than the previous steel one, the new subframe adds rigidity, enhances steering precision and is also an integral element in the vehicle's management of energy in a frontal crash.

The previous 3 Series' aluminum components were its single lower arm and brake shield; thus there is more extensive use of aluminum in the new system. All things considered, the new front suspension represents an enhancement of the 3 Series' already legendary road qualities.

Note: The 325xi and 330xi models have steel lower arms, and a steel subframe plus an aluminum thrust plate that reinforces the main structure in the area of the subframe's attachment. This arrangement provides additional strength for the xi models' driven front wheels. Thus it cannot be claimed that the xi models have aluminum suspension.



Though familiar from the 5, 6 and 7 Series, double-pivot front suspension comes to the 3 Series for the first time. The system is known for great stability under all road conditions and space for large brakes. On rear-wheel-drive models (shown), all components with asterisk (*) are of aluminum for reduced unsprung weight. Trailing and lateral lower arms appear on both sides, but not all are visible in this illustration.

New 5-link rear suspension

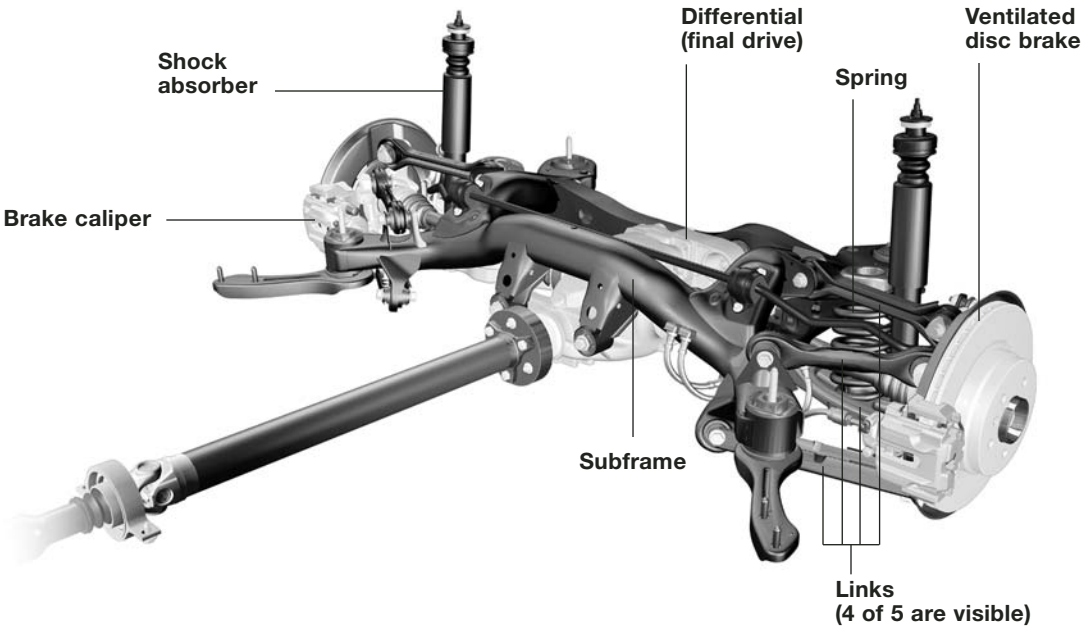
Benefits

- Precise control of rear-wheel angles for sporty, yet stable handling
- A new level of handling sophistication for the 3 Series
- Remarkably light and compact for its capabilities; contributes to excellent rear-seat and trunk space

This brand-new system makes its first U.S. appearance in the new 3 Series; it will also appear later in other Series. In its concept, it could be described as a double-A-arm system with an additional lateral track rod; the upper and lower A-arms actually consist of two links each, their vertical positions differing. (This is similar to the front suspension's dual lower arms.) Advantages are extensive:

- As at the front, there is a **virtual pivot point** for each pair of links, giving the engineers similar freedom in optimizing the system's geometry for best handling. Also as at the front, the axis connecting these virtual points is configured so that driving, braking and road forces all act effectively on short leverage. The result is very precise handling, especially insensitive to road disturbances.
- Under cornering forces, the system controls geometry in such a way as to achieve great agility while also ensuring predictable, stable handling. These are fundamentally contradictory qualities; the degree to which they are mutually achieved is a measure of a suspension's excellence.
- Contributing to this outstanding geometry is the wide and rigid basis on which the rear tires are "planted" on the road. The lateral links are extremely rigid too, as is the subframe.
- For the first time, all the suspension's links connect to the subframe; no longer does any link pivot directly from the body structure. This further reduces any effects of road irregularities on passenger comfort, and improves handling precision as well.
- Here too, the large and elaborate subframe contributes to energy management in a crash – including the more severe rear-end impact that the E90 has been designed to withstand. (See pages 55-56.)

Similarly to the front, the entire system is carried on an elaborate subframe that is mounted to the main structure through precisely shaped rubber bushings. As always with BMWs, the final drive (differential) is also



All-new rear suspension provides new advantages in handling, as well as saving space. It contributes to agility and stability that are even better than the predecessor's legendary capabilities.

mounted to the subframe through rubber, creating acoustic decoupling that minimizes the transmission of driveline noises into the body. Widely spread mounts to the body, in an area where the body structure is particularly rigid (and reinforced by compression ribs in the floor stamping), further help optimize the combination of precision and riding comfort. And here too, the entire system has also been optimized for energy management in an accident impact.

The rear suspension system, subframe and brake calipers are all of steel. BMW's decision to employ aluminum extensively at the front, but not at all at the rear, arose from the goal of achieving BMW's typical ideal weight distribution of nearly 50% front/50% rear.

Steering: evolution standard, revolution optional

Benefits

- Standard steering continues widely praised virtues of 3 Series
- Active Steering is newly available

The 3 Series' engine-speed-sensitive variable-assist power rack-and-pinion steering system has generated universal praise; an auto magazine once described it as "nearly telepathic." This standard system continues essentially unchanged, although with a somewhat less direct overall ratio of 16.0:1. (Unlike the 5, 6 and 7 Series, the 3 Series' standard steering system has a constant, rather than variable, ratio.) Yet numbers don't always tell the entire story, for the new suspension and subframe have actually sharpened the new models' reaction to steering inputs.

The "revolution" here is the newly optional **Active Steering**, previously available only on the 5 and 6 Series. For details on Active Steering, offered as a stand-alone option and incorporating evolutionary refinements, see **options & accessories**.

Ventilated disc brakes: upgraded dimensions, new technology

Benefits

- True to BMW tradition, braking performance and technology have again advanced
- New-generation DSC introduces remarkable new functions

The brakes themselves are evolutionary, with ventilated cast-iron rotors and aluminum calipers on the front brakes as a contribution to balanced weight distribution. Braking power has been enhanced by larger diameters: **325i/xi** – rear discs upgraded from 294 mm/11.6 in. to 300 mm/11.8 in.; front discs remain at 300/11.8.

330i/xi – front discs upgraded from 325 mm/12.8 in. to 330/13.0; rear discs upgraded from 320 mm/12.6 in. to 336/13.2.

330i and 330xi models have a larger vacuum booster than their 325i/xi counterparts. A new refinement on all models is that the discs (rotors) get a Geomet coating that eliminates rusting on the portions of the rotors that are not swept by the brake pads. And in the context of Condition-Based Service, which is available in the 3 Series for the first time, there are separate front and rear wear sensors via which the mileage remaining on the front and rear pads can be displayed and appropriate service scheduled.

A remarkable array of new braking functions is provided by the new DSC generation, next page.

New-generation Dynamic Stability Control: remarkable new braking functions

Benefits

- Retains familiar DSC traction and stability functions
- Adds numerous, customer-relevant new functions

All BMW models are standard-equipped with Dynamic Stability Control, which provides a wide range of traction and stability functions, as well as (in all-wheel-drive models) Hill Descent Control. These functions are described in **Fast Facts 2005**, pages 26-28.

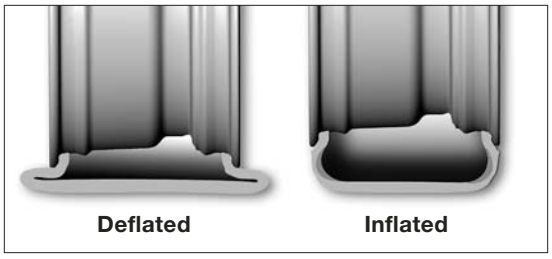
While retaining all these important functions, a new-generation DSC system appearing for the first time in the new 3 adds a wide array of new, customer-relevant functions that make driving even more reassuring and pleasant. They are:

- **Brake Fade Compensation.** "Brake fade" is the loss of effectiveness when brakes heat up under hard use. When this occurs, a given degree of deceleration requires more pressure on the brake pedal. As brake temperature rises, Fading Compensation automatically increases the hydraulic pressure in the brake system relative to pedal application, so the driver does not have to press harder on the pedal.
- **Brake Standby.** When the driver lifts off the accelerator pedal abruptly, DSC recognizes that sharp braking may be about to occur and applies just enough pressure in the brake system to snug up the pads against the rotors. Thus when the driver's foot reaches the brake pedal, the short "time lag" normally resulting from bringing the pad to the rotor is eliminated. Actual braking sets in more quickly; the reduced stopping or deceleration distance could reduce the likelihood of an accident.
- **Brake Drying.** Acting on input from the rain sensor (an element of the rain-sensing windshield wipers), the pads are periodically brought up to the rotors – just enough to eliminate any film of water between pads and rotors, but not enough to cause any brake application.
- **Comfort Stop.** Especially with automatic transmissions, unless the driver consciously eases off on the brake pedal, a jerk can occur as the vehicle comes to a stop. Comfort Stop automatically eases off, making for smoother stops.
- **Start-off Assistant.** Similar to the 7 Series' Automatic Hold function, this function keeps the vehicle from rolling backward when stopped facing uphill. The driver can then start up without doing a ballet with the clutch, brake and accelerator (manual transmission) or doesn't have to hold the accelerator or brakes while stopped on a hill (automatic transmission).
- **Modulated ABS function.** Thanks to new "analogized" control of the DSC brake valves, the anti-lockup function (ABS) is smoother than before. Instead of simply being fully applied and released, the application and release of these valves are now modulated.

All-new wheel designs; all-season or performance tires, all run-flats

Benefits

- Five distinctive wheel/tire combinations, tailored to each standard and Sport Package-equipped model for optimum road capabilities and visual identification
- 17-in. equipment standard on 330i/xi
- Differentiated front/rear sizes newly included in 325i Sport Package, available as stand-alone option on 325xi with Sport Package
- 18-in. equipment newly included in 330i Sport Package, available as stand-alone option on 330xi with Sport Package
- Run-flat tires throughout, eliminating need for spare tire and increasing usable trunk space



Run-flat tires are distinguished primarily by their special sidewalls, which allow a completely deflated tire to maintain its essential shape and guidance ability for a considerable distance.

Maintaining a BMW tradition, each model offers a choice of standard or Sport Package wheel-and-tire equipment. Fresh wheel designs complement the new body design; standard 330i wheels and tires are wider. Differentiated front/rear sizes are part of the 325i Sport Package for the first time; the all-wheel-drive models are newly available with differentiated front/rear sizes and performance tires, equivalent to the rear-wheel-drive models' Sport Package equipment. A table on the next page summarizes all available equipment combinations and reveals the extensive upgrading that they embody.

Every '06 3 Series Sedan comes with BMW's run-flat system, which consists of self-supporting tires and wheel rims shaped to help keep a flat tire securely in place. In their design and construction, the tires are distinguished primarily by their special sidewalls, which include specific inserts and highly heat-resistant rubber compounds. These features allow a deflated tire to maintain its essential shape and guidance characteristics for a considerable distance, so that when confronted with a flat tire the driver can continue on until reaching a convenient and safe place to have the tire replaced. All functions of Dynamic Stability Control remain fully active.

BMW does not recommend repairing a punctured tire. All BMW tires are high-performance tires; hence the safety and life of a repaired tire may be reduced. If an owner/driver prefers to have the tire repaired, he/she should consult a tire expert before making any repairs.

Suspension system designed for run-flat tires

Benefit

- Optimum riding comfort

The relatively stiff sidewalls and greater weight of run-flat tires call for specific suspension tuning. On vehicles where both regular and run-flat tires are offered, riding comfort may be somewhat compromised with the run-flats. Because the new 3 Series is engineered "from the ground up" for run-flat tires, its suspension is optimally calibrated for them. This means that riding comfort is optimum; in other words, the new 3's ride is not compromised by its run-flat tires.

Standard Flat Tire Warning

Benefits

- Alerts driver to loss of air pressure in any tire
- Because loss of tire pressure can adversely affect handling, enhances driving safety
- Because the change in handling is less pronounced when run-flat tires lose pressure, this may be the driver's only immediate indication of pressure loss

The Flat Tire Warning (FTW) is newly standard on the new 3 Series Sedans. Until now, it came with the run-flat option on the 330i, was (and remains) standard on 3 Series Coupes and Convertibles, and was unavailable on the 325i Sedan and Sports Wagon.

Whenever a tire's pressure drops by 30% or more, its rolling radius changes significantly; this means it will rotate at a different speed from the other tires on the vehicle. FTW measures wheel rotation via the DSC wheel-speed sensors, and recognizes any major deviation in wheel speed (and therefore tire pressure). Within a short time, the system triggers a pressure-loss signal via an indicator in the instrument cluster and an audible warning.

The new 3 Series models have no spare tire. Under the trunk floor is a deep compartment providing about 1.75 cu ft. of additional storage space.

Handling, ride & braking

Model/version	Equipment	Wheel size & design	Run-flat tires	Upgrade over '05
325i/xi Sedan	Standard	16 x 7.0 Double Spoke #156	205/55R-16 H-rated all-season	Wheels: new design Tires: run-flat
325i Sedan	Sport Package	17 x 8.0 front/17 x 8.5 rear Double Spoke #161	225/45R-17 front/ 255/40R-17 rear [17] V-rated performance	Wheels: new design Wheels & tires: differentiated front/rear, wider & lower-profile in rear, run-flat
325xi Sedan	Sport Package	17 x 8.0 Star Spoke #159	225/45R-17 [17] H-rated all-season	Wheels: new design, 1 in. wider Tires: 245/45 vs. 205/50, run-flat
325xi Sedan	Sport Package +option	Same as 325i Sport Package	Same as 325i Sport Package	New option
330i/xi Sedan	Standard	17 x 8.0 Star Spoke #159	225/45R-17 [17] H-rated all-season	Wheels: new design, 1 in. wider Tires: 225/45 vs. 205/50, run-flat
330i Sedan	Sport Package	18 x 8.0 front/18 x 8.5 rear Ellipsoid #162	225/40R-18 front/ 255/35R-18 rear [17] W-rated performance	Wheels: new design, 18-in. vs. 17, 0.5 in. wider in front Tires: 255/35 rear vs. 245/40, run-flat
330xi Sedan	Sport Package	17x 8.0 Star Spoke #158	225/45R-17 [17] H-rated all-season	Wheels: new design, 1 in. wider Tires: 225/45 vs. 205/50
330xi Sedan	Sport Package + option	Same as 330i Sport Package	Same as 330i Sport Package	New option

This 16 x 7.0 Double Spoke wheel (design #156) is standard on the 325i and 325xi, carrying 205/55R-16 H-rated all-season tires.

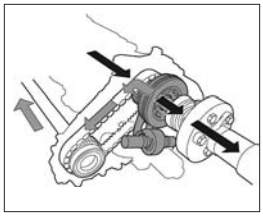
Sized 17 x 8.0 front/17 x 8.5 rear, this Double Spoke wheel (design #161) is included in the 325i Sport Package, and is also available as a stand-alone option on the 325xi in combination with its Sport Package. In either case, 225/45R-17 front / 255/40R-17 rear V-rated performance tires are fitted.

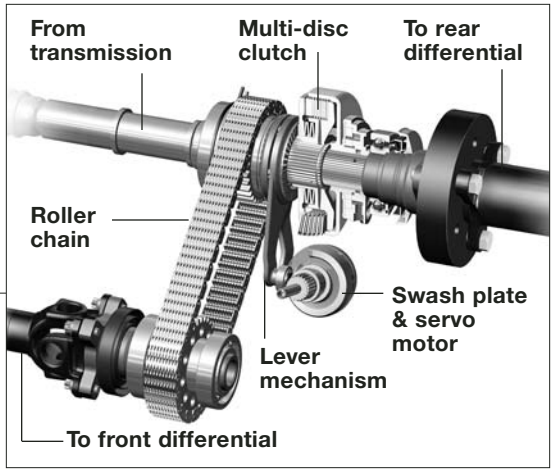
To combine a distinctive look and extra handling capability with all-season attributes, the 325xi Sport Package comes with this 17 x 8.0 Star Spoke wheel (design #159) and 225/45R-17 H-rated all-season tires. This combination is also standard on the 330i and 330xi.

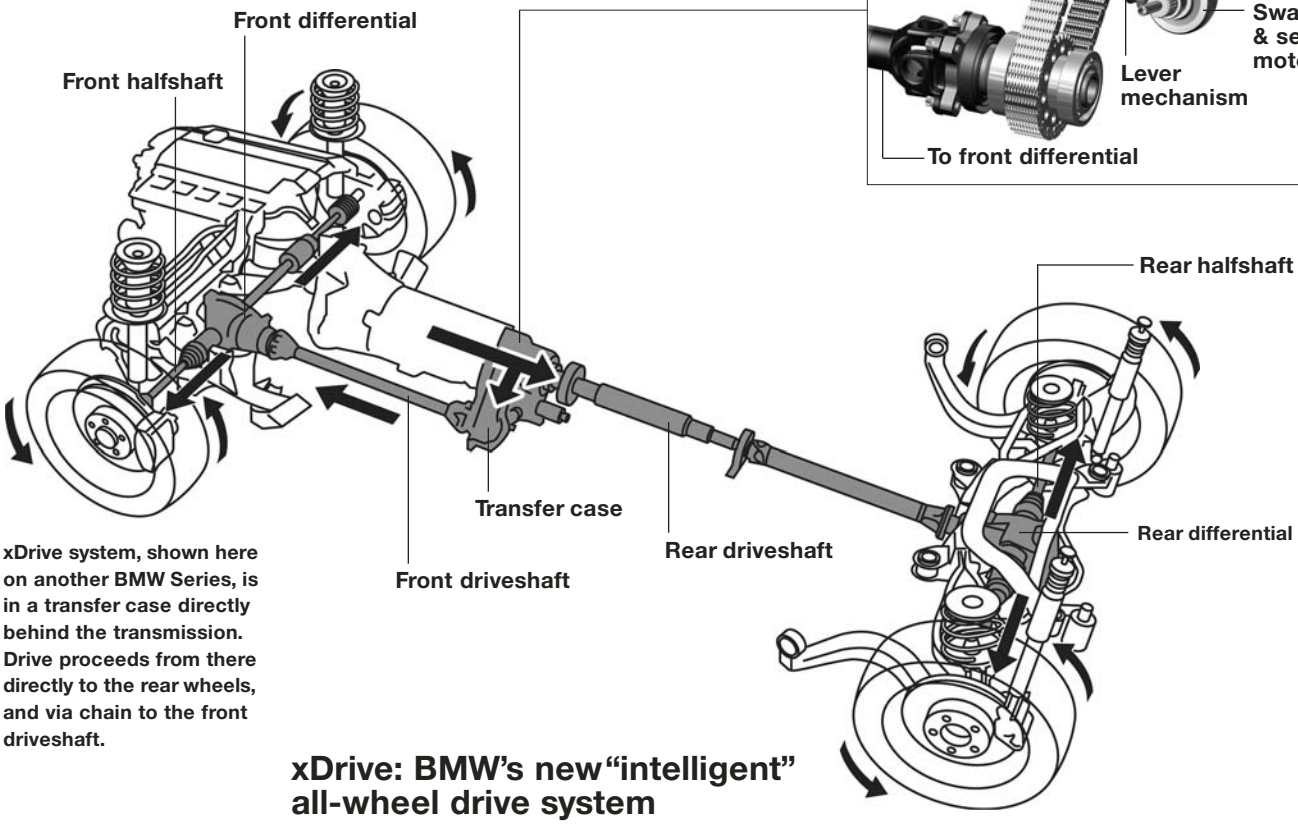
The ultimate performance combination for 3 Series Sedans is this Ellipsoid wheel (design #162), sized 18 x 8.0 front/18 x 8.5 rear and carrying 225/40R-18 front / 255/35R-18 rear W-rated performance tires. Parallel to the 325xi, this equipment is also available as a stand-alone option on the 330xi.

To give the 330xi with Sport Package distinctive appearance while retaining all-season characteristics, the Package specifies this Star Spoke wheel (design #158), sized like the standard wheels and wearing the same 225/45R-17 H-rated all-season tires.

Torque flow with xDrive: Black arrows represent direct flow from transmission to rear differential; gray arrows represent modulated flow via multi-disc clutch and roller chain to front differential.







xDrive system, shown here on another BMW Series, is in a transfer case directly behind the transmission. Drive proceeds from there directly to the rear wheels, and via chain to the front driveshaft.

xDrive: BMW's new "intelligent" all-wheel drive system

(325xi & 330xi models, available as of 9/05 production)

Benefits

- Excellent traction at all times, especially noticeable on slippery road surfaces
- Optimum handling agility
- Surefooted, neutral handling in curves

When the "xi" models go into production in September '05, they will incorporate BMW's new, advanced xDrive all-wheel drive and traction system. xDrive replaces the earlier AWD system used in E46 325xi and 330xi models, which employed a center differential with essentially fixed front/rear torque split.

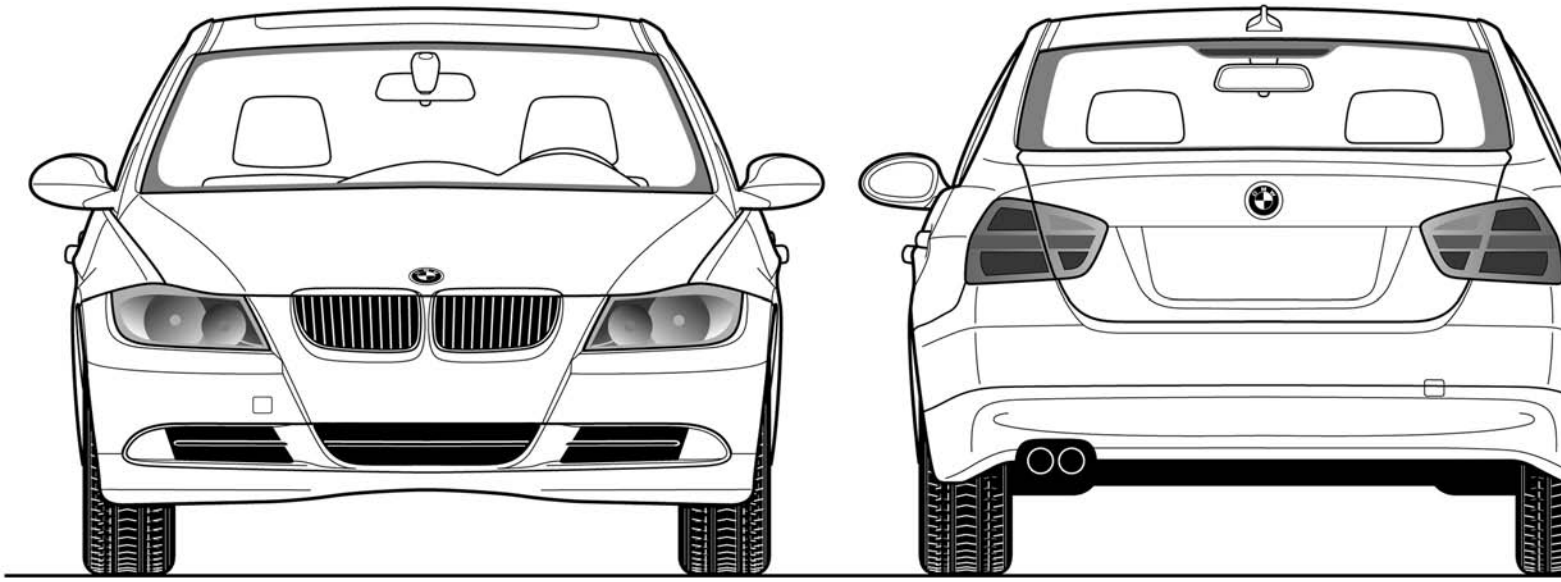
Instead of the center differential, xDrive operates as follows:

- Driving torque is always transmitted to the rear wheels, and most of the time to all four wheels.
- The portion of torque transmitted to the front wheels is controlled by a multi-disc clutch that can be fully open, fully engaged or at any level of partial engagement in between. The torque split between rear and front wheels is thus steplessly variable.
- Engagement pressure on the multi-disc clutch is directed by an electronic control system in response to actual road and driving conditions.

xDrive doesn't just optimize traction; it can also enhance both agility and stability on grippy as well as slippery road surfaces. Via the same type of logic that DSC employs to recognize and correct for excessive over- or understeer, xDrive adjusts the front/rear torque split to avoid these tendencies. If undesirable oversteer is sensed, the multi-disc clutch is completely closed, sending the maximum possible torque to the front wheels. If excess understeer is detected, xDrive opens the clutch completely, sending no driving torque to the front wheels. In the BMW tradition, the driver enjoys optimum vehicle dynamics under a wide range of driving and road conditions.

17 – Due to low-profile tires, please note: Wheels, tires and suspension parts are more susceptible to road hazard and consequential damages.

Exterior & aerodynamics features



In its basic "design language," the new 3 Series consistently reflects the new direction of BMW design first set by the 7 Series in 2002, and evolved with the new 5 Series in '04. At the same time, the new 3 is true to its heritage, radiating the dynamic presence that has increasingly characterized all 3 Series with each new generation. Up front, its "kidneys" grille thrusts strongly forward. In profile, it is strongly wedge-shaped, rising from a low and wind-cheating front end to an expressive, integrated decklid spoiler. A strong character line accents this profile and sweeps through the door handles; at the rear, large light clusters recall BMW's traditional L-form and incorporate Adaptive Brake Lights for enhanced active safety. It's a powerful, confident look in which BMW's tradition and future harmoniously come together.

The BMW design philosophy

The debut of a new 3 Series is a good occasion for reflecting on the BMW design philosophy.

The foundation of BMW's design culture is the relationship between human beings and BMW products. In an interplay of tradition and future, BMW design continually evolves, drawing its authenticity from the company's history, the brand's tradition, and BMW's careful, longterm nurturing of its brand values. BMW design points the way, and yet it must always be "durable," not based on fleeting fads. A measure of success in achieving these seemingly contradictory goals is that even as the vehicle becomes old, it still looks good.

BMWs do just that: they look good when new, and as they age they continue to look good. BMW design creates a long-lasting emotional connection with people. A BMW is a genuine "product personality," marked by its premium substance, innovative leadership and tasteful, eye-catching esthetics. In this harmonious overall design concept, typical BMW proportions, fascinating surfaces and highly perfected details are achieved inside and out; in the use of materials and colors; in the integration of ergonomics into all facets of design. All this comes together in a unique design process whose core values remain constant while their expression is again and again renewed.

BMW's "new generation"

On the firm foundation of BMW's longterm design philosophy, we have seen a new generation of BMWs progressively making its debut. With a wider esthetic range, anchored at one end by the 7 Series and at the other by the Z4, this new generation has created "space" for each Series to have its own distinctive character and for BMW to expand the family: the 6 Series and 1 Series have already appeared, and more new family members are yet to come.

3 Series design strategy

Benefits

- BMW's design strategy for today and tomorrow maintains BMW identity while giving each Series highly distinctive character and advanced styling
- Like all BMW design, the new 3 Series rests on twin pillars of tradition and future
- Typical 3 Series proportions and overall size; moderately larger than predecessor, still more compact than 5 Series
- A look of agility and alertness

With the E90 – and other versions to come (Sports Wagon, Coupe, Convertible) – an established family member newly expresses the BMW tradition of compact, dynamic, elegant sports sedans. BMW's established rhythm of modest steps (E30, pages 8-9) alternating with more dramatic steps (E36, pages 9-10) is once again confirmed: the E90 is a dramatic step forward.

With the E36 (1992), BMW moved to a coupe-like sedan silhouette, far less "boxy" than its E30 predecessor; this general feeling continued in the E46 (1999). The A-pillars were sloped strongly rearward; the roofline sloped gracefully toward the rear deck. The Hofmeister *Knick* in the rear door window added its swing to an unmistakable profile whose overall proportions – short front overhang, long hood, "greenhouse" set well back in the wheelbase – were the result of BMW's front-engine/rear-wheel-drive format. As always with BMW, design expresses substance.

While maintaining the basic profile and proportions of the E36 and E46, the E90 takes a relatively large step in terms of surfaces and details. Especially in terms of convex/concave exterior surfaces and their interplay of light and shadows, the new 3 Series comes closer to the Z4 than other BMWs.

Though all design activity at BMW is under the direction of Chris Bangle, each Series has its Chief Designer, responsible for the overall design. Leading the E90 design team was Joji Nagashima, who was born in Tokyo and has wide international design experience. Nagashima emigrated to the U.S. in 1979 and studied design at Wayne State University in Detroit, Michigan. His first design job was at General Motors' Opel in Germany, where he worked until 1986. After a three-year stint at Renault in France, Nagashima joined BMW in 1989. Along with BMW's other Munich-based designers and design administrators, he works at FIZ, the BMW Forschungs- und Innovations-Zentrum (Research and Innovation Center).

Exterior & aerodynamics

At the front. A face with strong character, radiating agility and alertness. Distinctively formed headlight units, with the traditional four beams behind clear covers, wrap around decisively and taper to a precise point, emphasizing in the front view the vehicle's width and in profile its short front overhang. With the Xenon Adaptive headlights (optional 325i, standard 330i), BMW's distinctive and popular luminous rings function as the parking lights and continue to illuminate when the headlights are on. Additionally, the four-headlight look – a key element of BMW tradition – is maintained.

Expressing another BMW tradition in new terms are the "kidney" grilles, optically framed by the hood's "power dome." There is an elegant continuity here, beginning low in the front spoiler and sweeping up past the grilles to the A-pillars. In this view, too, one notes the exterior mirrors, whose distinctive shape helps keep their glass areas clean when the weather's not so clean. Points of distinction between 330i/xi and 325i/xi models include:

- Grille vertical slats – 330 chrome, 325 black
- Horizontal slats in lower air intakes– 330 glossy painted, 325 flat black.

A face with strong character, radiating agility and alertness: 330i/xi front view.

In profile. There is much "swing" in the side view: the hood cut line, sloping upward and then continuing to become the beltline and on past the C-pillar; a strong character line corresponds to that of the previous 3 Series, but sets up a stronger convex/concave intersection. Taillights that wrap well around into the body sides create an esthetic "punctuation" while enhancing visibility of the vehicle from the side – an active-safety factor. As before, 325i/xi models have all-black side-window trim and roof-seam trim strips; on 330i/xi models the side-window trim is chrome and black, and the roof-seam trim are body-color.

At the rear. No less eye-catching than the other views, the rear aspect has its own interplay of interesting surfaces. A graceful arc connecting the taillight edges through the integral spoiler's lower edge is at the top; the top of the spoiler is the continuation of a line that begins in the C-pillar. Below the spoiler, the surface goes concave toward the license-plate recess. The trunk's outer edges sweep down into the bumper, making a conveniently low loading height also a visual treat. Functional/esthetic shapes are sculpted into the lower bumper area to help organize airflow at the back of the vehicle. The taillights' red sections – which include the Adaptive Brake Lights and segments that illuminate amber when the turn signals flash – recall a recent but popular BMW tradition, the L-shape first seen in the '87 7 Series. Model badging, not shown in the photo below, appears on the right side of the trunklid.

No less eye-catching than the other views, the rear aspect has its own interplay of interesting surfaces and forms. Visuals and functions merge: The trunk opening provides a visual treat and a low loading height, while the lighting clusters present attractive shapes and colors plus Adaptive Brake Lights.

A strong wedge profile: The hood cut line slopes upward to become the beltline; a strong character line runs through the door handles. Front and rear lighting units wrap around markedly into the sides; short overhangs maintain BMW tradition while visually expressing the front-engine/rear-wheel-drive concept.

Aerodynamics

Benefits

- Slightly reduced aerodynamic drag
- Carefully calibrated aerodynamic lift for stability at speed

Aerodynamically, this is the smoothest 3 Series yet: At 0.30, the U.S. models are a "point" better than the previous Sedans' 0.31. The overall shape is calibrated to maintain low aerodynamic lift at higher speeds; a visually interesting and also functional sharp edge at the taillights' corners helps ensure efficient airflow at the rear.

Improved corrosion-proofing and paint processes

Benefits

- Enhanced longterm corrosion resistance
- Even finer finish
- Improved paint durability

In preparation for production of the new 3 Series, BMW has further developed its rustproofing and paint processes. The enhancements include:

- **Body shell now virtually fully galvanized**, for further enhanced corrosion resistance. Standing behind this claim is BMW's Rust-Perforation Warranty, which now protects customers for 12 years/unlimited mileage.
- **Pre-paint preparation further improved.** Bodies for the new 3 are cleaned and prepared for priming in a new 12-zone process.
- **Rotation dipping** is used in both pre-paint preparation and primer application. This improves the cleaning process, and means that primers and corrosion-proofing coats reach even more fully into the body's nooks and crannies.

All this means that more than ever, the beauty of this new 3 Series will be satisfyingly long-lasting.

Ergonomics, luxury & convenience features

Moderate growth in the 3 Series' exterior dimensions leads to more space for occupants and cargo: The new Sedans provide greater shoulder room (+1.0 in. front/0.9 in. rear), more front head room (+0.4 in.) and 0.8 in. more rear knee room. EPA measurements indicate a 2.4% increase in overall interior space and an approximate 12% increase in trunk space. If these increases in passenger space don't quite correspond to the exterior growth, it is because the more elaborate structure and safety equipment take space. The trunk, on the other hand, benefits from elimination of the spare tire.

In addition to greater space, the 3 Series interior also offers reduced noise levels, improved climate control and a host of new features – standard and optional – that enhance luxury and convenience. And the design of this new interior is just as fresh as the new exterior. Once again, the newest BMW embodies a wealth of creative, thoughtful ideas to make driving and riding even more comfortable and satisfying.

Interior design: new elegance, enhanced functionality

Benefits

- Harmonious and tasteful colors and materials
- Greater expanse of trim material on instrument panel
- Wood trim is standard; two alternative trim materials offered at no extra cost

Driving pleasure has always been the central focus of the 3 Series; the new 3 takes this traditional emphasis to more sophisticated levels of elegance and functionality.

As always in BMWs, yet now in improved form, the driver enjoys his or her experience at the wheel largely because BMW has designed the interior to optimize that experience. All operational and informational elements essential to driving are grouped on and around the steering wheel. Even though many aspects of the control layout are updated, the most central informational element remains the traditional pair of round analog instruments, the speedometer and tachometer with their white numerals on black dials.

The views above and at left show many of the new features and details:

- **Sport seats (Sport Package)**
- **Leather upholstery**
- **Large expanses of standard wood trim**
- **"Double wave" dash and console controller with Navigation/iDrive option**
- **In-dash locations of cupholders.**

Like the exterior, the new 3's interior design presents a visually fascinating interplay of convex and concave surfaces. The instrument panel has a new, more horizontal format with a larger expanse of the trim material, which as in '05 is elegant wood. As before, standard leatherette upholstery comes in Black or Beige; there are four colors for the optional leather, two of them new. Detail trim elements are in the "galvanic" mode that has recently appeared in other BMW Series: Pearl-gloss metallic-coated material for the instrument rings, the new Start/Stop button, the controller for the available iDrive system, and numerous other accent applications.

Door design is new and elegant, especially at the front. A sharp eye will notice that the two front door panels differ in design: On the passenger side there's a sloped vertical door pull; on the driver's side, where the power-window controls are newly grouped on the armrest, the door pull is integrated into that armrest because a vertical pull would block access to the window controls. Both front doors include large open storage compartments.

The front cupholders have moved from between the seats to the dash, where they are above the glove compartment. In turn, the center console sweeps cleanly back to a standard center armrest, below which there is a new climate-controlled storage compartment as in the 5 Series.

The front passenger's door (above) includes a vertically oriented door pull. On the driver's door, the pull is integrated into the armrest, as a vertical pull would hinder access to the power-window controls.

Front cupholders, retracted when not in use, glide out when pressed.

In a choice exclusive to the 3 Series, the instrument panel is offered in two forms: standard, with a single hood above the main instrument cluster; and optional, with a double-wave theme similar to that in the 5 Series creating a second hood over the optional Navigation System and its iDrive control display. With this configuration there is also the iDrive controller between the front seats.

In addition to greater front shoulder and head room, there is more knee room for rear passengers. Standard features in the rear compartment include a fold-down center armrest, wood trim on the door armrests, and new temperature- and volume-controlled air outlets at the aft end of the center console.

More passenger space

Benefits

- More front shoulder room
- More front head room
- More rear knee room
- Greater overall interior volume

In terms of the dimensions usually quoted, the increases in exterior dimensions are reflected mainly in greater front shoulder room (by 1.0 in.) and somewhat more front head room (+0.4 in.). There is actually a small decrease in rear head room (-0.3 in.); head-room comparisons are preliminary and for vehicles with moonroof, which is standard on U.S. models. Comparing the "standard" leg-room dimensions, front and rear leg room have hardly changed.

One might wonder why the interior dimensions have changed so little, especially in terms of rear leg room; the answer lies in a dimension that is not part of the usually quoted set.

Essentially by definition, front leg room is virtually identical in all BMWs, because they are measured with the driver's seat in a defined position (within its adjustment range) that BMW considers ideal. Much more relevant to assessing rear leg room is a dimension called L50, which measures the distance from front to rear seating reference points. By this measurement, the new 3 Series Sedan at 31.7 in. has approximately 0.8 in. more rear knee room. As an additional plus for the driver, the adjustment range of the driver's seat has grown by a half-inch.

There is a major increase in cargo space; see **increased cargo space** on page 53.

Expanded Key Memory functions

Benefits

- Wider range of vehicle personalization for individual users
- These functions don't require settings by BMW Center

As a first step in a longer-term project at BMW to make our vehicles even more adaptable to customer preferences, the new 3 Series introduces an array of new Key Memory functions, by which settings chosen by a particular user (identified by his or her remote) during use of the vehicle are automatically stored and then recalled the next time that person uses the vehicle. These functions are:

- Audio tone settings and presets
- Language of displays and voice functions
- Climate-control temperature and air-distribution settings
- Seat/mirror memory setting
- Central-locking preferences
- Lighting preferences.

Start/Stop button, already present in 7 and Z4 Series, now appears in the 3 Series and will eventually become a part of all BMW models.

A new-type keyless remote control, similar to that of the 7 Series, inserts into a slot below the Start/Stop button.

Control strategy: an overview

Benefits

- Incorporates some features of 5 Series
- Introduces "keyless" remote control, similar to 7 Series
- Maintains driver-oriented layout
- Offers choice of "iDrive or not"

The 3 Series is the first BMW to offer buyers a choice of whether or not to have iDrive. With or without, the instrument cluster is similar to that of the 5 Series; the optional Navigation System comes with a second hood over a centrally placed iDrive control display. Elements of the control layout include:

- **Start/Stop button**, as in the 7 Series.
- **Keyless remote**, similar to that of the 7 Series. As in the 7, the remote is inserted into a slot below the Start/Stop button.
- **Manual tilt/telescopic steering wheel**, with the release lever newly located on the left side.
- **Console shift lever**, controlling the choice of manual, automatic or (330i only) SMG transmission.
- **Traditional pull-up handbrake.**
- **Seat controls** on the seats' outboard edges, except the manual fore-aft adjuster on vehicles without power seats (325i/xi standard), which is at the inboard front edge.
- **Power-window controls** for all windows on the driver's door.
- **Driver orientation** of the control center, although not to the degree of the predecessor Series. The new 3 has a "light" orientation of the center dash area toward the driver.

As in other BMW Series, power-window controls are now on the driver's door.

The instrument cluster

Benefits

- Blends traditional BMW instrument layout with fresh new design
- Includes display of cruise-control speed setting in speedometer dial
- Extensive indicator and warning lamps in upper and lower windows between dials

The analog speedometer and tachometer are in a style similar to that of the 5 Series; also as in the 5 Series, the fuel gauge is at the bottom of the speedometer and the analog fuel-economy readout is at the bottom of the tachometer. Via a rotating disc behind the speedometer face, a pointer at the dial's periphery indicates the cruise control's set speed.

Compared to the predecessor Series, new displays also include –

- Condition-Based Service indications (required service, miles to service, inspection dates)
- Active Cruise Control if present.

Instrument cluster blends traditional BMW instrument layout with fresh new design. As in the 5 and 7 Series, the cruise-control speed setting is indicated by a pointer at the dial's periphery, and is also displayed digitally in the cluster's lower center display. Many other indications and warnings appear in the upper center display, including (as shown here) that for the available Active Cruise Control.

Dynamic Cruise Control

Benefits

- If necessary, can apply brakes lightly to maintain set speed
- BMW's first appearance of this refinement

Not to be confused with Active Cruise Control, Dynamic is the new standard cruise control in the 3 Series. In its driver interface, it is similar to the 5 Series and Z4 system, in that its functions are controlled from a combination stalk on the left side of the steering column (as opposed to on the steering wheel's face in the previous 3 Series). As in the 5, 6 and 7 Series, the set speed is indicated on the speedometer face (and, briefly, digitally in the lower center display of the instrument cluster).

What is most significantly new here is that in addition to controlling the engine to maintain the set speed, the cruise-control system can also apply the brakes (lightly) if necessary. This gives it greater capability in controlling speed, for example, on a downhill grade. Also new is a 2-step choice of increasing or decreasing the set speed: a light tipping of the lever forward/backward increases/decreases speed by 1 km/h (0.6 mph); a harder push/pull increases/decreases speed by 10 km/h (6 mph).

Active Cruise Control is newly available for the 3 Series, and is described in **options & accessories**.

Dynamic Cruise Control, served by this steering-column stalk in place of the former buttons on the steering-wheel face, includes a new capability: applying the brakes lightly if necessary to maintain the set speed.

3-spoke steering wheel standard in all models

Benefits

- Fresh, sporty appearance with 3 spokes
- Available in two versions: standard and sport

All models will come standard with a 3-spoke steering wheel. (In previous Sedans, the standard wheel was 4-spoke, the sport wheel 3-spoke.) Both wheel styles have leather-wrapped rims; the arrangement of multi-function controls in the steering-wheel face is the same for both. New here are two switches with the symbols that are familiar in the 5, 6 and 7 Series, a rhombus and a star; in vehicles without the Navigation System/iDrive option, one selects air recirculation and the other the "next entertainment source" from the audio system. In vehicles with the Navigation System/iDrive option, they are programmable as in the 5 and 6 Series.

The 375-mm/14.8-in. standard wheel has a larger center face; the 369-mm/14.5-in. sport wheel has a smaller raised and padded center hub and a thicker rim.

iDrive comes to the 3 Series

Benefits

- Navigation option includes the same evolved, user-friendlier iDrive system as that in 5 Series with Navigation and 6 Series
- Buyers have choice of "iDrive or not iDrive"
- Two distinct instrument-panel configurations

The E90 3 Series is BMW's first to offer a choice of "iDrive or not." In vehicles without the Navigation/iDrive option, there is a single hood over the main instrument cluster, and all functions are operated by hard controls. With the Navigation/iDrive option, the dash has a "double wave" look similar to that in the 5 Series, the second hood frames the iDrive control display at dash center, and many functions (including those of the Navigation System) are operated via the display and a controller between the front seats. Both arrangements are visually attractive and ergonomically well thought-out. For details on the Navigation System and iDrive, see **options & accessories**.

In either case, the climate controls are fully served by hard keys and rotating knobs. See **automatic climate control** for details.

Automatic climate control moves to an even higher level of performance, sophistication and features in the new 3 Series. Separate left and right temperatures are set by the two rotary knobs; other new features and functions include Heat at Rest, 1-touch Max A/C operation, mist sensor, a climate-controlled center console compartment and temperature/volume-controlled outlets for rear passengers.

New automatic climate control with many enhancements

Benefits

- Adds left/right temperature control and numerous other features over previous system
- Retains dash-center outlets with temperature, volume and directional controls
- Even quieter and more powerful performance than the excellent previous system

Though the E46 3 Series has excellent automatic climate control, the E90's system moves to an even higher level of performance, sophistication and features. New features include the following, most already present in the 5, 6 and 7 Series but heretofore not in the 3:

- **Separate left and right temperature controls.** The E46 system has a single temperature control.
- **Temperature- and volume-controlled rear air outlets.** In the E46, air flows to the rear seating area through underseat ducts that are not separately controllable.
- **Climate-controlled center console compartment**, as in the 5 and 7 Series. The temperature here is oriented to that of the rear outlets; airflow to the compartment can be turned off.
- **Mist sensor.** Via the windshield wipers' rain sensor, misting of the windshield is sensed visually and system operation adjusted automatically to clear it up. A brand-new feature for BMW.
- **Heat at Rest.** Allows heating the interior for a limited time with the engine off. This is facilitated by the engine's electric water pump.
- **Maximum a/c setting** for rapid cool-down at a single touch of a button.
- **Dramatically increased blower power**, 9.0 kilograms of air per minute vs. 6.5 in E46. This means not only increased maximum cooling or heating power, but also quieter operation at the normal blower speeds that are now a smaller proportion of maximum.
- **Further optimized design of ducts and outlets**, also for reduced airflow noise.
- **Automatic reduction of blower speed** when vehicle comes to a stop, for yet another reduction in noise.
- **Indirect airflow** via outlets atop the dash. These outlets are for pleasant, draft-free climatization, not defrosting or demisting.
- **Recall of individual users' settings** via Key Memory:
  - Temperature
  - Manually selected air distribution (windshield, body-level, footwells)

Further features continue from the previous system:

- Active-charcoal microfilter ventilation
- Bi-directional solar sensor for front compartment (takes into account the intensity and direction of solar heat in determining cooling of interior)
- Automatic recirculation control, with specific sensing capability for diesel exhaust.

All in all, this is a significantly upgraded system and one of the best on the market. And its combination of soft-touch keys for mode and function selection and rotary knobs for the dual temperature controls is convenient and logical.

Audio systems

- Upgraded 325i/xi standard system; still 10 speakers, now includes 2 subwoofers
- Premium system is now the 13-speaker Logic 7, making first appearance in 3 Series; optional 325i/xi, standard 330i/xi

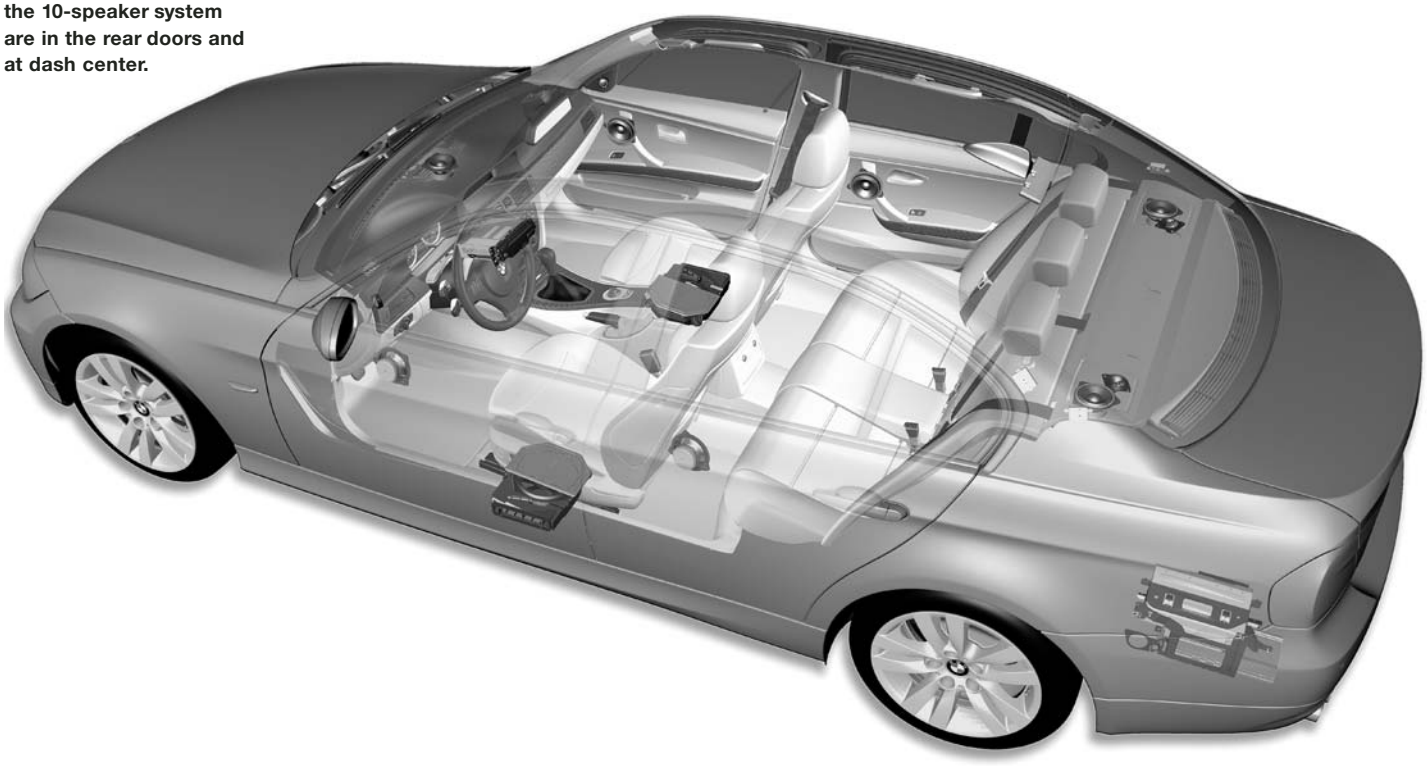
As before, two audio systems are offered. One is the 10-speaker system that's standard in the 325i/xi; the other is the amazing 13-speaker Logic 7 system, optional in the 325i/xi and standard in the 330i/xi. Both systems include two subwoofers in BMW's patented positions, in cavities at the bases of the B-pillars (generally referred to as "under the front seats").

Both systems continue with BMW's well developed, reception-enhancing diversity antenna system, with its multiple circuits in the rear window. A fin-type roof antenna serves the phone system and/or Navigation System, as well as the GPS aspect of the available BMW Assist telematics system and Navigation System. The housing for this antenna also accommodates an antenna for the available Sirius Satellite Radio, which becomes a regular option in the 3 Series for the first time; see **options & accessories** for details on the optional features.

325i/xi standard system. Features include:

- Programmable memory for 12 FM and 6 AM stations
- Autostore of 6 FM and 6 AM stations
- Search, seek and manual tuning
- Double tuner (only when Navigation System is present; displays all available radio stations)
- Audio volume and scroll-through-presets from steering-wheel controls
- Radio Data System (RDS), including Program Type (PTY)
- In-dash single-disc CD player
- Audio muting for phone use (with Bluetooth interface, included with available BMW Assist).
- Time and outside-temperature display
- MP3 capability (song title is displayed)
- Auxiliary audio input (in center console)
- 10 speakers:
  - 2 midrange, 100 mm, in front doors
  - 2 midrange, 100 mm, rear shelf
  - 2 subwoofers, 217 mm, under front seats
  - 2 tweeters, 25 mm, in front-door mirror triangles
  - 2 tweeters, 25 mm, in rear shelf.

Logic 7 audio system makes its 3 Series debut as an option for 325i/xi models and standard equipment in 330i/xi models. Underseat subwoofer location can be seen on the left side; additional speakers over the 10-speaker system are in the rear doors and at dash center.



330i/xi standard / 325i/xi optional system, Logic 7. This system considerably upgrades the existing practice of standard-equipping 330 models with the premium system and offering that system (as a stand-alone option, not part of a Package) in the 325 models. Compared to the 325i/xi standard system, the 3 Series version of Logic 7 offers –

- Increased audio power (as in 5 Series)
- Even higher-caliber speakers throughout, plus additional speakers (total 13, vs. standard 10)
- Digital Sound Processing (DSP), adjusted along with other Logic 7 parameters on the audio panel or (with Navigation/iDrive) the control display
- Surround Sound simulation.

The upgraded speakers are as follows; an asterisk (*) denotes additional speakers over the standard system –

- 1 aluminum-membrane midrange fill speaker, 100 mm, center of dash*
- 2 aluminum-membrane midrange, 100 mm, in front doors
- 2 aluminum-membrane midrange, 100 mm, rear shelf
- 2 aluminum-membrane midrange, 100 mm, in rear doors*
- 2 subwoofers, 217 mm, upgraded, under front seats
- 2 aluminum-membrane tweeters, 25 mm, in front-door mirror triangles
- 2 aluminum-membrane tweeters, 25 mm, in rear shelf.

With the new 3 Series, now four BMW Series offer this audiophile system, developed by Lexicon. Exclusive to Harman International brands, Logic 7's digital Surround Sound process provides uniquely realistic reproduction, generating a 360˚ sound field and accurately re-creating the acoustic intent of the original studio master.

In vehicles without the Navigation/iDrive option, all audio functions are served by hard controls. The Professional audio unit, with display and controls as shown here, is standard in all models.

In vehicles with the Navigation/iDrive option, as shown here, hard controls are reduced and many functions appear in the iDrive control display. The two disc slots are for the standard single-disc CD player (upper) and Navigation DVD (lower).

Upholstery and trim

Benefits

- Choice of leatherette or new Dakota leather
- Two new leather colors: a new Beige, and Terra
- Wood trim standard; alternate wood or aluminum optional at no extra cost
- Customers have more choices for tailoring interior to their preferences
- Detail trim in new, premium "galvanic" material

Once again, leatherette upholstery is standard, in Beige or Black. Dakota leather, already seen in other Series, becomes the 3 Series leather and is available in four colors, two of them new:

- A new and warm tone of Beige
- Black
- Gray
- Terra, a warm brown combined with contrasting black.

Just entering the new 3 is a gracious experience. At night, one appreciates the new ground lighting (on the underside of each exterior door handle), which comes on when the remote's Unlock button is actuated. Then upon entering, one is greeted by handsome doorsill trims with BMW in chrome lettering.

Following an equipment upgrade for the '05 model year, wood trim is standard in all models; it's Burl Walnut. Two other trims are available at no extra cost: Poplar Natural, which is somewhat lighter than the standard wood; and aluminum. Whatever the trim material, there is more of it: especially the full-width dash strip is generously dimensioned, and the material is repeated on a large area of the center console and as a handsome strip on each door.

Following a lead set by the 7, 5 and 6 Series in that order, BMW has adopted "galvanic" trim for numerous detail elements throughout the interior. Similar to the Ruthenium that appears in the 6 Series, this Pearl-gloss material has a plastic core, with a true metallic surface applied galvanically in several layers and a clearcoat on top to protect against corrosion. The Pearl-gloss material appears on the –

- Speedometer and tachometer rings
- Start/Stop button's ring
- Ashtray touch strip
- Interior door handles
- Center air outlets' adjusting tabs
- Open and Trunk buttons on remote.

Front seats: three choices in 325i/xi, two in 330i/xi

Benefits

- 6-way manual seats standard in 325i/xi
- 8-way power seats standard in 330i/xi, optional in 325i/xi
- Sport seats have new power adjustment of backrest width

The 6-way manual front seats, standard in the 325i/xi, are height-adjustable as before. Also as before, 8-way power front seats are available either as part of the Premium Package or as a stand-alone option. The power controls are on the seats' outboard edges; buttons for the driver's-seat/exterior-mirror memory are on the driver's seat.

New are sport seats with electropneumatic adjustment of backrest width, as first seen in the M3 Coupe. These can appear in combination with manual or power for the other adjustments, depending upon equipment combinations (see **options & accessories**).

8-way power seats are standard in 330i/xi models, optional in 325i/xi models. As before, the head restraints are manually adjustable.

Even the standard front seats have excellent lateral support, thanks to prominent side bolsters on the cushions and backrests.

Front center armrest and climate-controlled storage compartment

Benefits

- Front center armrest is standard
- Climate-controlled compartment

As in the latest E46 models, a front center armrest is standard. New here is the climate-controlled compartment under it; as in the 5 Series, temperature-controlled air is ducted into the compartment. The temperature depends upon the setting chosen by rear-seat passengers for their air outlets; air to the compartment can be shut off when the climatization is not desired.

Because the cupholders are no longer there, the console has a freer, more expansive look and feel. In vehicles equipped with the Navigation/iDrive option, the iDrive controller sits toward the rear of the console.

Convenient seatback nets are standard in all models.

Thoughtful features throughout

Benefits

- New and familiar features combine to create a more luxurious, convenient environment

From front to rear in the cabin, there are numerous thoughtful features that enhance luxury and convenience. New features are denoted by an asterisk (*):

- **Auto-dimming exterior* and interior mirrors, power-fold exterior mirrors* and digital compass* in interior mirror** – all part of the optional Premium Package.
- **Interior trunk release**, in familiar location ahead of left front door.
- **Standard power 2-way moonroof**, about 1.6 in. longer than previously and also slightly wider.
- **Front cupholders**, adjustable pull-out type, both above the glove compartment.
- **Lockable glove compartment** with rechargeable take-out flashlight, trunk lockout switch and holder for spare key.
- **Storage compartment/ashtray** at front of center console, with glide-up cover.
- **Voice controls*** switch behind iDrive controller, only with Navigation/iDrive option.
- **Bluetooth® interface**, included with BMW Assist option (whether stand-alone or in Premium Package).
- **Front and rear* overhead consoles:**
  - * Newly included in the front one are the BMW Assist buttons and Passenger Airbag Off indicator, whose logic has been refined to eliminate constant illumination when no front passenger is present. An interior light, separately switched left/right reading lights, BMW Ambiance Lighting, moonroof control and microphones for hands-free phone use are also here.
  - The rear one, positioned behind the moonroof, is new and includes another interior light, separate left/right reading lights, Ambiance Lighting and space for the Center-installed alarm system's motion detector.

After becoming standard in '05, 2-way power moonroof is again standard and has greater opening area in the new Sedans.

The two overhead consoles include Ambiance Lighting, left/right reading lights and many convenient controls – and add to the premium atmosphere in the new 3 Series Sedans.

- **Fold-up rear center armrest.** Though similar in concept to that of E46 3 Series Sports Wagons, the armrest doesn't include the rear center head restraint, which is mounted instead on the seat backrest.
- **Rear cupholders**, included as a pull-out unit in the rear center armrest.

Fold-up rear center armrest includes two cupholders.

Increased cargo space, new trunk features

Benefits

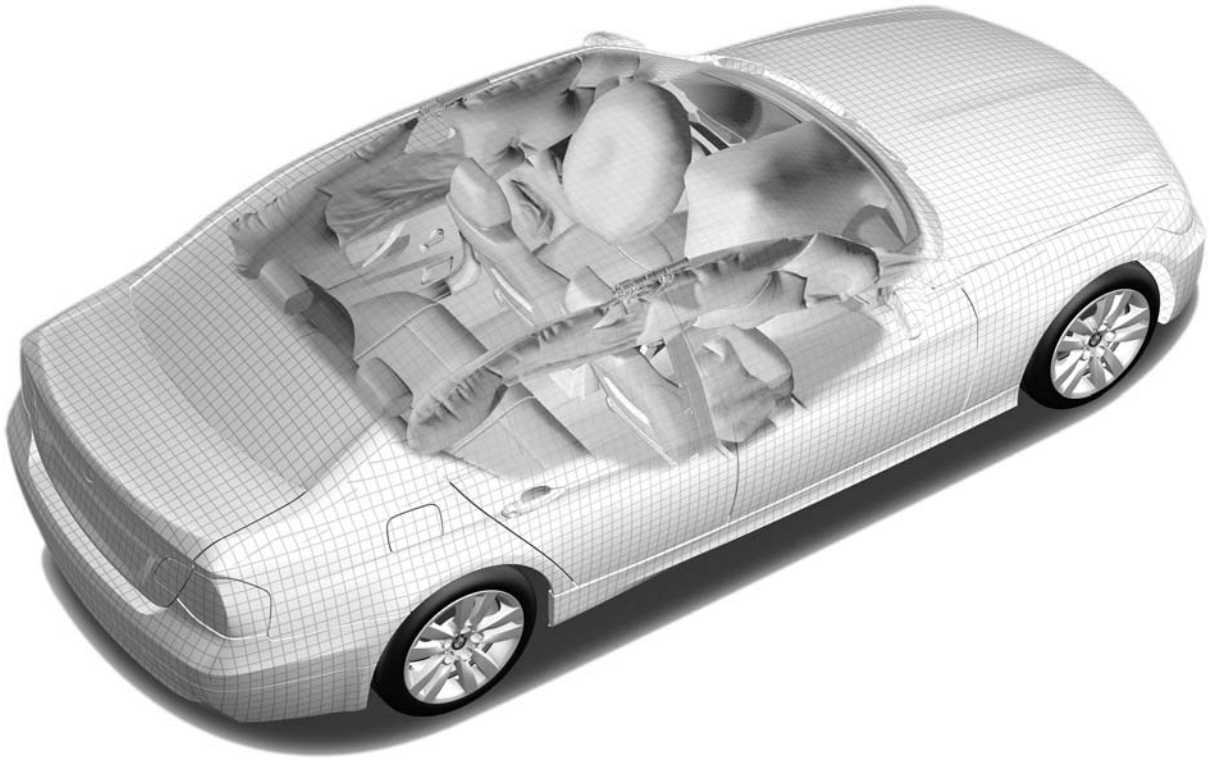
- Approximately 12% more cargo space
- Includes CD storage and provision for installation of CD changer
- Additional storage space under trunk floor

Elimination of the spare tire and jack, possible because run-flat tires are standard for the entire Series, results in approximately 12% more cargo space than before. Moreover, this official measurement does not include the deep well under the trunk floor, which encloses about 1.76 cubic feet and offers the possibility of storing smaller objects without worry of their moving around when the vehicle is in motion.

The trunk of all U.S. 3 Series sedans includes an open storage bin on the left side with ribs to accommodate CDs; the BMW Center-installed CD changer goes under this bin. As before, split folding rear seats (stand-alone option or Cold Weather Package) are available to increase effective cargo space and add storage versatility; a ski bag is included with this option.

According to official EPA measurement, trunk offers about 12% more cargo space than in predecessor Sedans – and not counted in this measurement are approximately 1.76 cubic feet of additional space under the trunk floor. The nets shown here are part of an accessory package that's not available in the U.S.

Safety & security features



In terms of direct customer concern and interest, it is the safety devices and systems – airbags, safety-belt tensioners and so forth – that are most readily communicated. Yet the ability of the vehicle's structure to absorb and manage the energy of a crash impact is just as important to the total picture of a motor vehicle's passive safety. Finally, active safety, the vehicle's ability to avoid an accident in the first place, is a key element of BMW's safety philosophy; active aspects of the 3 Series' excellent safety concept are covered in the **handling, ride & braking** section. This section concentrates on passive safety and the safety devices and systems.

A strongly evolved body structure

Benefits

- Engineered to meet new, more stringent safety standards, both European and U.S.
- "Raw" body shell achieves even greater passive safety with slightly reduced weight

The existing (E46) 3 Series' safety performance has been recognized by authoritative, independent observers:

- After conducting its own offset crash test of a 3 Series Sedan for its March 11, '99 issue, Germany's authoritative *auto motor und sport* magazine concluded, "Occupant protection by the new 3 Series is already at such a high level that only marginal improvements can be imagined."
- And in the U.S., the Insurance Institute for Highway Safety, after conducting its own crash test of the 3 Series Sedan, concluded simply, "A Best Pick."

In developing the 3 Series' all-new body/chassis structure, BMW's safety engineers set out not just to match, but to improve on, that excellent safety performance of its predecessor. Integrated into this overall goal were specific targets, including –

In developing the new 3 Series body structure, BMW safety engineers set out not just to match, but to improve on, the predecessor's excellent safety performance. Innovations include new high-strength steels and optimized "energy paths" for leading impact forces through the structure. As part of the interlocking door anchoring system, diagonal aluminum reinforcing bars in the doors continue a successful concept for resisting side impacts.

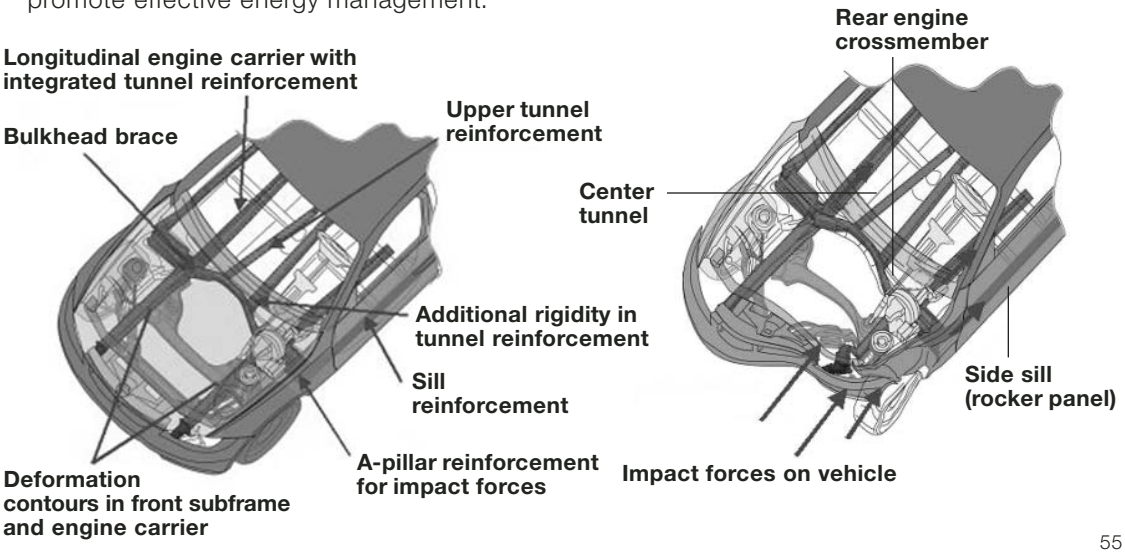
- Achieving 5 stars in the Euro-NCAP (New Car Assessment Program) offset frontal crash test
- Meeting the new U.S. FMVSS (Federal Motor Vehicle Safety Standard) 301, which specifies a brutal 50-mph rear-end offset crash. The impact is taken by 70% of the test vehicle's width; not only must stringent injury criteria be met, but the fuel system must remain free of leaks.
- Meeting the new IIHS (Insurance Institute for Highway Safety) "SUV side-impact" test, in which an impact from a tall vehicle at 50 km/h (31.1 mph) is simulated. In the case of a car like the 3 Series, the entire impact occurs above the side sill (rocker panel).

The various engineering approaches toward the new 3's even higher-performing structure included:

- Use of new high-strength steels in the large-section structural elements.
- Targeted application of further new types of steel, including multi-phase types, at various points throughout the structure to accomplish specific patterns of strength, deformability and force transfer (see next bullet) that promote effective energy management.
- Developing and improving energy paths by which the immense forces of frontal crash impacts are led through the structure and dissipated. Here, the engineers concentrated on optimizing the interaction between deformation of the front-end structure and the ability of the passenger space to remain intact. In severe frontal collisions – especially offset, when one side of the vehicle takes the brunt – they found ways to transfer the forces into the other side, so that the more heavily impacted side wouldn't have to absorb the entire forces. This helps protect the all-important foot space for front-seat occupants. The resulting extremely high energy-absorption capability is the basis for keeping the passenger space intact – and for optimum calibration of passive-safety systems such as safety belts and airbags.

In an offset crash, strong longitudinal members play major roles in managing impact forces. Part of the energy-management strategy is "energy paths" that transfer forces from the impact side to the other side, spreading the structure's "duties" and helping protect the all-important foot space for front-seat occupants.

Specific structural measures were incorporated into the structure to meet the new, nearly 40-mph Euro-NCAP offset frontal crash test.



- In side impacts as well, the structure is similarly designed to transfer impact energy to the side away from the impact. Here the IIHS's new "SUV test" has raised the bar for occupant safety in severe side collisions. Elements involved in managing this massive impact energy include the –
  - floor structure
  - doors, which retain BMW's effective interlocking door anchoring system
  - reinforced B-pillars
  - dash structure, which functions as much more than just a carrier for instruments, climate control, etc.
  - roof framing.

The interaction of all these elements adds up to holding the impact intrusion's depth and speed to prescribed biometric limits.

- In rear-end impacts, where the demanding new U.S. offset-crash regulation is relevant, the deformable area consists of –
  - two longitudinal structural members
  - the trunk floor and lid
  - the trunk side walls, as integral elements of the overall body-side structures
  - various additional reinforcements.

Here, the engineers worked to ensure that even in the radically severe offset rear-end crash specified by FMVSS 301, the passenger space would remain intact and the doors could be opened.

The structure is virtually fully galvanized, enhancing its corrosion resistance and therefore preserving its strength and energy-management capabilities over the years.

New front and rear Head Protection System

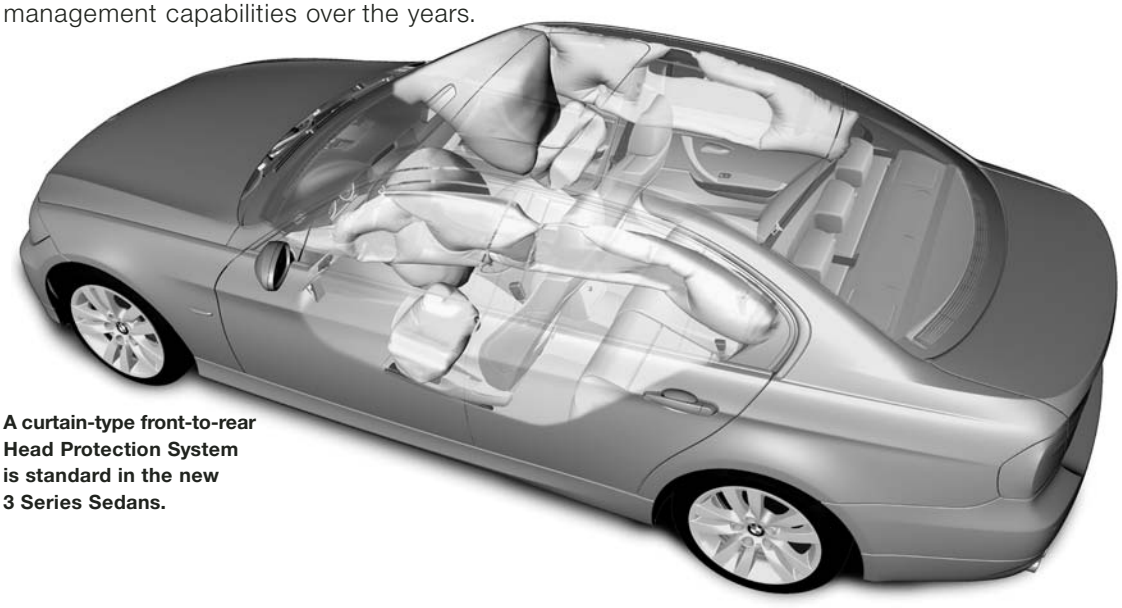
Benefits

- Offers excellent protection to occupants' heads in crash impacts, particularly side impacts
- Integrated front-to-rear system

This is the first front-to-rear Head Protection System to be offered in the 3 Series; now all BMW 4-door Sedans have front and rear Head Protection. Two types are currently offered:

- 5 and 7 Series – AHPS II type, with a front-to-rear inflatable tube anchored to the roof structure by a "sail."
- 3 Series –new curtain-type front-to-rear system.

The 3 Series is the first BMW automobile Series to employ the curtain-type system. Its safety advantages are the same as for the tubular/sail system, but it takes up less space in the headliner – a key advantage for the compact 3 Series Sedan. Like the tubular system, BMW's curtain-type HPS can remain inflated for several seconds after the initial impact and deployment (which takes just 20-22 milliseconds), an especially important function in case of rollover.



A curtain-type front-to-rear Head Protection System is standard in the new 3 Series Sedans.

New seat-mounted front side-impact airbags

Benefits

- Continue BMW's front side-impact protection, standard in all current models
- Seat mounting allows greater freedom of interior design

The 3 Series is BMW's first to employ seat-mounted side-impact airbags, as opposed to the door-mounted type of the predecessor and other current BMW Series.

In their function of protecting occupants' pelvis and thorax regions in side impacts, the seat-mounted airbags are equal to the door-mounted type, but offer greater freedom for the interior designers to achieve their esthetic and functional goals:

- Because the airbag is always positioned exactly the same relative to the occupant regardless of seat adjustment, it can be smaller.
- Door-panel design can be further optimized with respect to esthetics and placement of functional elements, such as armrests, door handles and power-window controls.

Rear side-impact airbags no longer offered

Benefits

- Built-in safety in side impacts so great that airbags are not needed
- Customers are not faced with the "side-airbag-or-not" decision

Up to now, BMW has offered rear side-impact airbags as an option at nominal cost in most models, giving customers the choice of having them or not. In presenting this option, BMW Client Advisors were schooled to discuss the issue of rear-seat side-impact airbags with the customer, pointing out the benefits to adults and potential risks to children and infants riding in the back.

With the new 3 Series, the advances in side-impact safety (described earlier) are such that it is no longer necessary to offer rear-seat sidebags. Customers can be assured that children riding in the rear are appropriately separated from side impacts, without having to make a decision that can be difficult.

Further optimized 2-stage front-impact airbags

Benefit

- Improved esthetics

In recent years, BMW front-impact airbags have been intensely developed to optimize their 2-stage, accident-severity-dependent deployment characteristics, inflated shape, and interaction with surrounding surfaces and components.

In this last regard, a subtle but appreciated evolution took place with introduction of the 6 Series, in that the passenger's-side airbag involved no visible "break line" in the dash surface; at the same time, the (invisible) airbag opening was configured to optimize the airbag's unfolding sequence and protective capability. The 3 Series' dash also includes this feature.

Automatic safety-belt tensioners and force limiters front and rear

Benefit

- Long standard on BMW front safety belts, these features now enhance the outboard rear belts' effectiveness as well

Automatic tensioners tighten the belts in a collision impact, further optimizing the restraint of occupants by the belts. Their mechanism (actuated pyrotechnically) is integrated into the belt latch; upon impact the mechanism moves the latch downward to tighten the shoulder and lap belt portions directly.

Once the belts are tensioned, **force limiters** place an upper limit on the amount of force they can exert on the occupant's body.

Both these devices significantly enhance the effectiveness of safety belts; both are standard on both front belts and the rear outboard belts in the new 3 Series Sedans.

Differentiated deployment of restraint systems (dual-threshold deployment): new occupant detection sensor

Benefit

- Highly accurate measurement of occupant's weight and position in seat calibrates deployment of safety systems

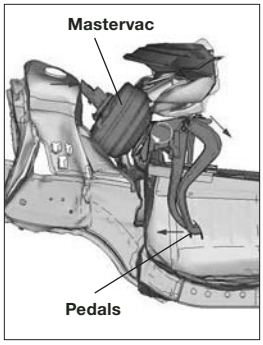
BMW has long employed a highly sophisticated electronic control strategy for managing the deployment of airbags and safety-belt tensioners. This approach to optimizing the effectiveness of safety systems continues in the new 3, but becomes even more precise thanks to a new sensing mat in the front passenger's seat. Called OC3, the new mat is highly sophisticated and far more costly than its predecessor; it measures the weight and position of each front occupant, and also recognizes when a child safety seat is mounted.

Management of deployment is as follows:

- There are two thresholds of frontal impact severity.
- At the lower threshold, if the seat occupant is belted, only the belt tensioner is deployed. If the occupant is not belted, the front-impact airbag deploys.
- At the higher threshold, the front-impact airbag and belt tensioner are deployed. If the occupant is not belted, only the airbag is deployed.
- If the front passenger seat is not occupied, neither the belt tensioner, front-impact airbag nor side-impact airbag for that seat will be deployed.

In a severe side impact from the right, the side-impact airbag on that side will be deployed only if there is a front passenger. The Passenger Airbag Off indicator, in the front roof console, illuminates only if there is a child seat attached to the passenger's seat. LATCH attachments (**L**ower **A**nchors and **T**ethers for **Ch**ildren) are provided on the rear seat for child safety seats.

In cases where the car can be repaired after an accident, this differentiated deployment strategy can save repair costs (and therefore be favorably reflected in insurance rates). **The deployment strategy for unbelted occupants must not be seen as a rationale for not fastening one's safety belt. Maximum protection of occupants can be achieved only if the occupants are wearing their safety belts.**



In a severe frontal crash, the Mastervac (brake master cylinder) rotates, and with it the brake and clutch pedal. This causes the pedals to move forward, canceling much of the force transfer to the driver's feet and legs.

New features for protecting the driver's feet and knees

Benefits

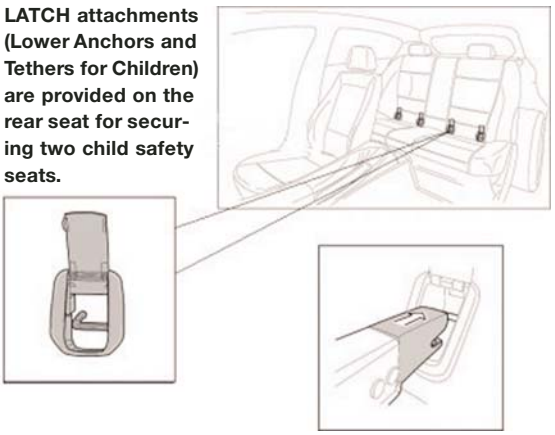
- Footrest deforms in severe frontal impact
- Pedals rotate forward in severe frontal impact
- Less likelihood of knees contacting steering-column adjusting lever

Two measures have been taken to reduce the likelihood of injuries to the driver's feet and legs in a severe frontal crash:

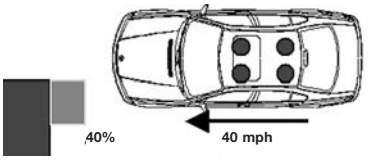
- The footrest is designed to crush under the force of the driver's left foot, so that the full impact force is not transmitted to his or her foot and leg.
- The Mastervac (brake vacuum booster) is mounted so that as the front end deforms, it rotates, and with it the brake and clutch pedals. This has the effect that the pedals move forward, also canceling much of the force transfer to the driver's feet and legs if they are on the pedals.

In another subtle update, the release lever for adjusting the tilt/telescopic steering wheel has been repositioned to the steering column's left side. Although this was never a hazard in its former bottom-of-column position, it does reduce any likelihood of the driver's knees contacting the lever in the course of a severe accident impact.

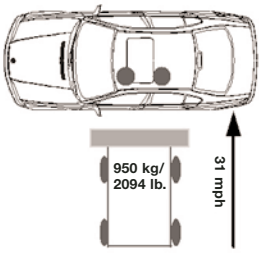
LATCH attachments (Lower Anchors and Tethers for Children) are provided on the rear seat for securing two child safety seats.



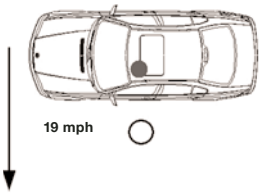
Crash tests



In a test to confirm compliance with the ultra-demanding Euro-NCAP offset frontal crash standard, the vehicle is driven into an offset barrier at 64 km/h (almost 40 mph). The black dots on the drawing indicate four passengers in the vehicle.



Confirming compliance with the new IIHS "SUV side-impact" standard, this test simulates a hefty impact from a tall vehicle at 50 km/h (31.1 mph).



In another type of side-impact test, a vertical pole is rammed against the vehicle side at 30 km/h (about 19 mph); this exercise simulates a vehicle sliding sideways into a tree or "telephone pole."

New, centralized safety control system

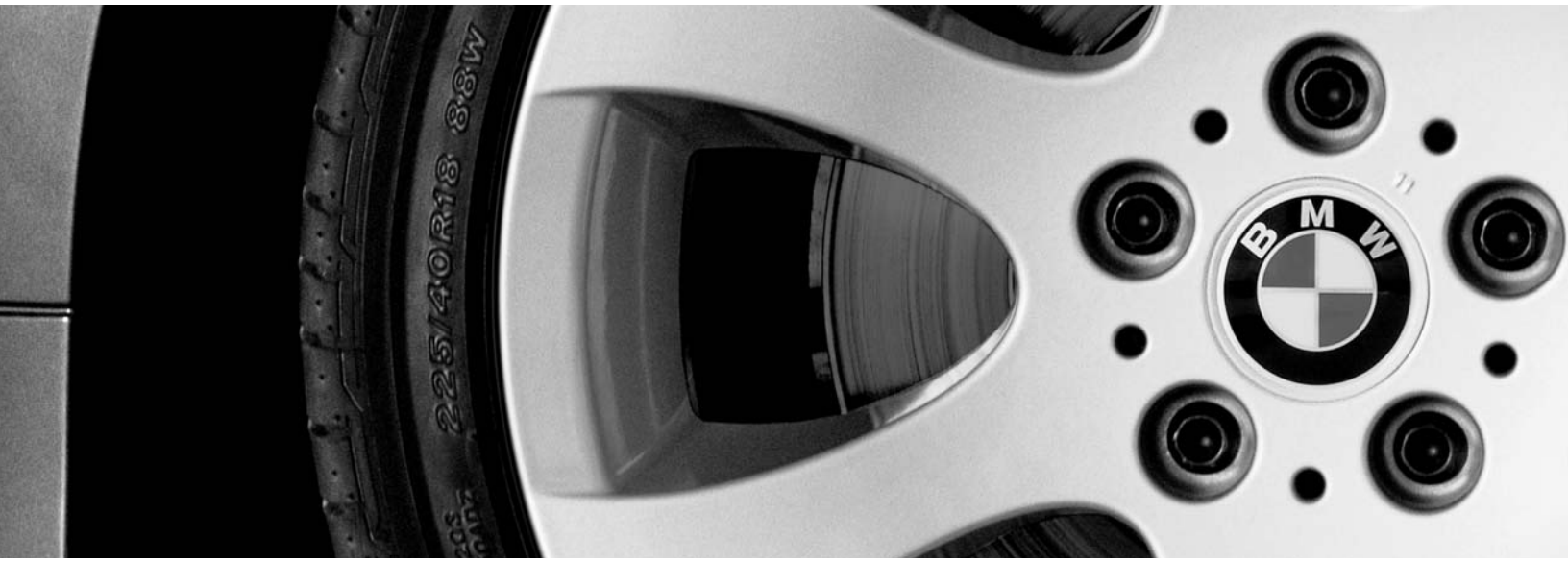
Benefit

- Further developed in terms of precision, deployment speed and reliability
- Can be updated as new software is developed

Called MRS5, an all-new control system oversees the functions of all safety devices. As contrasted to the 5, 6 and 7 Series ISIS control systems, which are decentralized with satellite sensors that directly trigger side-impact airbags, MRS5 is a completely centralized system that receives and processes all signals (including up-front, B-pillars, front doors and other remotely positioned sensors) and controls all deployments of safety systems accordingly.

The MRS5 control module, including some of its sensors, is in a protected position in the center console. In addition to sensors themselves, it also includes logic that verifies the plausibility of inputs from the various sensors. The purpose of this is to ensure that signals are valid and avoid unnecessary deployments.

Options & accessories



The program of factory options and BMW Center-installed accessories for the new 3 Series Sedans is notable not only for its extent and variety, but also for the fact that many features formerly available only on or in the "higher" 5, 6 and 7 Series now become available in this more compact, more accessible Series. Among these are a 6-speed automatic transmission, Active Steering, Active Cruise Control, Comfort Access, sunshades for the rear [18] and rear-door windows, Xenon Adaptive [19] headlights, iDrive, Voice Command, the Logic 7 audio system and factory-installed Sirius Satellite Radio. This section describes all the factory-installed options, both Packages and stand-alone; and a selection of key accessories.

Dakota leather upholstery is one feature of the Premium Package for all models; others include auto-dimming exterior and interior rearview mirrors, a digital compass in the interior mirror, 4-way power front-seat lumbar support, BMW Assist, and a BMW Universal Transceiver with its controls also in the mirror. Additional features of the 325i/xi Package (because they are not standard in these models) are power front seats and the useful auto tilt-down function for the right exterior mirror.

Factory-installed options

Premium Package

(all models, code ZPP)

Benefits

- Combines luxury and convenience features into a value-priced Package
- Includes features not previously available in 3 Series

Continuing BMW's popular offering of a Premium Package for most 3 and 5 Series models, this Package adds familiar and new features to the new 3 Series Sedans. New features or details are denoted by an asterisk:

All models:

- **Dakota leather upholstery**, as described on page 50.
- **Auto-dimming exterior* and interior mirrors**, the first appearance of auto-dimming exterior mirrors in the 3 Series.
- **Power-fold exterior mirrors***, also making their first appearance in this Series. A valued convenience for parking in tight spaces and for navigating some car washes.
- **Digital compass*** in the interior rearview mirror.
- **BMW Universal Transceiver***, the 3-function device that can operate garage doors and other external electrical devices or systems. Its controls are newly positioned in the front overhead console. Formerly available in 3 Series Sedans only as a Center-installed accessory.
- **4-way power lumbar support** on both front seats.
- **BMW Assist**, BMW's customer-services & in-vehicle telematics system. For details, see CenterNet or BMW Fast Facts 2005, pages 333-334.

Auto-dimming exterior mirrors appear for the first time on the 3 Series; they are combined with the familiar auto-dimming interior mirror in the Premium Package.

Power-fold exterior mirrors are another convenient feature making its 3 Series debut in the Premium Package. The "fold" button is to the left of the right/left select control.

325i/xi only (standard in 330i/xi):

- **Power front seats**, 8-way power. Include driver's-seat and exterior-mirror memory, newly with two memory settings for each driver.
- **Auto tilt-down feature** for the right-hand exterior mirror; mirror tilts down for a view of the curb or other possible obstruction when the transmission is shifted into reverse.

4-way power lumbar support is included in the Premium Package for all models. 4-way means that both firmness and height of the lumbar support are variable.

18 – This feature has been available as a Priority 1 option.

19 – Xenon Adaptive headlights were already available on E46 3 Series Coupes and Convertibles; Xenon lights without the Adaptive feature were available on E46 Sedans and Sports Wagons.

Adjustable backrest width, seen first in the M3 Coupe, is included on the new 3 Series' sport seats, which are included in every model's Sport Package.

Sport Package

(325i & 330i, code ZSP)

Benefits

- Includes wheels and performance tires in differentiated front/rear sizes
- Sport seats have new adjustable backrest width

For the first time on a 325i Sedan, the Sport Package includes wheels and tires in differentiated front/rear sizes; for the previous 330i Sedan, this was already the case but with 17-in. equipment. The contents of this Package are very attractive for sports-oriented drivers; new features or details are denoted by an asterisk:

- **Sport suspension**, consisting of firmer springs, shock absorbers and anti-roll (stabilizer) bars, plus polyurethane auxiliary springs at the front. The ride height is lowered by 15 mm/0.6 in.
- **Sport wheels and tires**, as follows for the two models:
  - **325i** – 17 x 8.0 front/17 x 8.5 rear Double Spoke wheels (design #161) with 225/45R-17 front / 255/40R-17 rear V-rated run-flat performance tires*[17].
  - **330i** – 18 x 8.0 front/18 x 8.5 rear Ellipsoid wheels (design #162) with 225/40R-18 front / 255/35R-18 rear W-rated run-flat performance tires*[17].
- **Sport steering wheel**, with its smaller, round center hub, wider spokes (especially the bottom one), slightly smaller diameter and thicker rim.
- **Sport seats.** Adopting a feature first offered in the M3 Coupe, the new 3 Series sport seats have power-adjustable backrest width, accomplished electropneumatically. Their other adjustments appear in two forms:
  - **325i without Premium Package or power-seats option 459** – 8-way manual adjustment for fore-aft, cushion height and angle, and backrest angle.
  - **325i with Premium Package or power-seats option 459** – 8-way power adjustment for fore-aft, cushion height and angle, and backrest angle.
- **149-mph top-speed limiter***, instead of the standard 130-mph limiter.

For the first time on the 325i, wheels and tires with differentiated front/rear sizes are included in the Sport Package. They are in this Double Spoke design (#161), sized 17 x 8.0 front/17 x 8.5 rear and carrying 225/45R-17 front / 255/40R-17 rear V-rated run-flat performance tires. These wheels are also available as a stand-alone option for the 325xi in combination with its Sport Package.

18-in. wheels and tires are a new feature of the 330i Sport Package. Sized 18 x 8.0 front/18 x 8.5 rear, they are in this elegantly sporty Ellipsoid design (#162) and wear 225/40R-18 front / 255/35R-18 rear W-rated run-flat performance tires. Parallel to the 325xi, they are also available as a stand-alone option for the 330xi in combination with its Sport Package.

Although all steering wheels are 3-spoke designs, the sport wheel has a smaller, round center hub, wider spokes, smaller diameter and thicker rim.

Sport Package

(325xi & 330xi, code ZSP)

Benefits

- Includes 17-in. wheels in same front/rear sizes, all-season tires
- Front/rear differentiated wheels and tires available as stand-alone option
- Otherwise same features as 325i/330i Package except sport suspension

This Package is tailored for the AWD models' specific considerations:

- **No sport suspension**, as in the previous "xi" models; the AWD chassis has its own specific suspension calibration.
- **130-mph top-speed limiter**, as on vehicles without the Sport Package.
- **Specific wheels and tires:**
  - **325xi** – 17 x 8.0 Star Spoke wheels (design #159) with 225/45R-17 H-rated all-season tires [17]. This equipment, also standard on the 330i and 330xi, puts more accent on all-weather traction and handling; customers who want the dry-road handling emphasis may order the same wheels and tires as are included in the 325i Sport Package, as a stand-alone option.
  - **330xi** – 17 x 8.0 Star Spoke wheels (design #158) with 225/45R-17 H-rated all-season tires [17]. As with the 325xi Package, this combination emphasizes all-weather traction and handling. Parallel to the 325xi, the stand-alone option brings wheel/tire equipment into line with the rear-wheel-drive model's Sport Package.

  As in the 325i/330i Package, a **sport steering wheel** and **sport seats** are included.

17 – Due to low-profile tires, please note: Wheels, tires and suspension parts are more susceptible to road hazard and consequential damages.

To emphasize all-season abilities, yet also add to dry-road handling and sporty appearance, the 325xi Sport Package comes with 17 x 8.0 wheels and 225/45R-17 H-rated all-season tires. The wheel design is Star Spoke #159.

The 330xi Sport Package wheels and tires are sized like those of the 325xi Package, again to emphasize all-season capability. The wheel design is Star Spoke #158.

Heated front seats (included in all Cold Weather Packages, also available as a stand-alone option) have new features: expanded heating area and (in combination with the Navigation/iDrive option) variable heating balance.

Cold Weather Package

(all models, code ZCW)

Benefit

- Combines weather- and versatility-oriented features into a value-priced Package

For all models, this Package includes:

- **Heated front seats** with expanded heating area and (in combination with the Navigation/iDrive option) variable heating balance. Also available as a stand-alone option; see page 71 for more details.
- **Split folding rear seats**, 60% left/40% right.
- **Ski bag**, usable with the center armrest folded down.

Included with the Cold Weather Package for all models are split folding seats and a ski bag.

The 325i/330i Package adds:

- **Headlight cleaning system.** High-intensity jets, normally retracted, pop out to spray the lights with washer fluid. These are standard on the 325xi and 330xi.

High-intensity headlight washers, standard on the 325xi/330xi Sedans, are included in the Cold Weather Package of the 325i/330i models.

The ski bag in use.

6-speed STEPTRONIC automatic transmission

(all models, code 205)

Benefits

- BMW's 5-speed automatics were already outstanding; this transmission is even more so
- Thanks to 6 speeds, power flow is almost seamless
- First 6-speed automatic in 3 Series

Described on page 27, this advanced, performance-enhancing and velvety-smooth automatic is offered as a stand-alone option on all models.

BMW's refined, responsive 6-speed STEPTRONIC automatic transmission is available on all models.

6-speed Sequential Manual Gearbox (SMG)

(330i only, code 206; available as of 9/05 production, requires Sport Package)

Benefits

- Retains efficiency of manual transmission, yet offers choice of automated or manual shifting
- Can shift faster than even an expert driver
- No clutch pedal
- Manual shifting via shift lever or steering-wheel "paddles"
- Includes Sport mode

Described on pages 28-29, SMG is a highly specialized kind of transmission, favored by sporting drivers who are also technologically motivated.

6-speed Sequential Manual Gearbox (SMG), available only on 330i, can be shifted via lever on console or "paddles" on steering wheel.

Active Cruise Control

(optional all models, code 541)

Benefits

- Automatically adjusts vehicle speed to that of slower-moving vehicles ahead
- Driver can choose following distance according to personal preferences
- System can also adjust vehicle speed in curves

Making its premier appearance in the 3 Series, this is the 2nd-generation version, incorporating significant evolution over the 1st generation:

- Four radar sensors in the sensor unit at the front of the vehicle, vs. two in early versions; these widen the unit's field of vision from +/- 4° to +/- 8°.
- Thanks to this widened sensory field, ACC now better senses traffic ahead, "sees" better into curves, and better detects traffic in adjacent lanes.
- The radar sensors' lenses are heated, so that the system works dependably even in bad weather conditions.

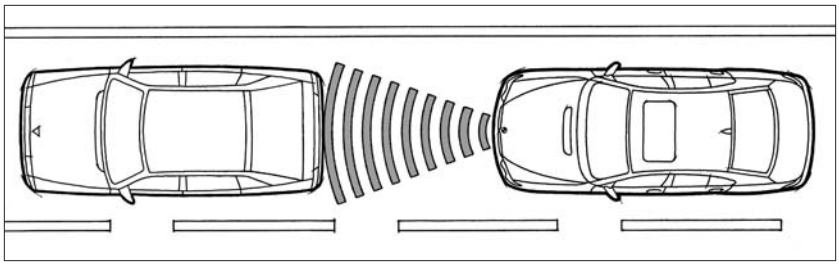
In its most basic description, ACC – beyond the speed-maintaining, acceleration and deceleration functions of the standard cruise control – can adjust the BMW driver's speed according to traffic conditions. Employing a radar sensor unit at the front of the vehicle, ACC senses the speed of vehicles traveling ahead, and adjusts the BMW driver's speed to maintain a safe following distance. Operation is as follows:

When the road is clear, operation is essentially as with standard cruise control, though with certain specific nuances:

- The current speed is captured by tipping the cruise-control stalk forward or rearward. Thereafter, each time the stalk is tipped forward or rearward, the set speed is increased or decreased by 5 mph.
- The driver can also adjust the set speed (upward only) in increments of 1 mph by pressing inward on the slider button at the left end of the stalk. When cruise control has been canceled (by braking, for example), this button is used to resume.
- The set speed is indicated by a marker at the periphery of the speedometer scale and a brief digital display.

When traffic is encountered ahead, ACC's special capabilities come into play:

- The driver can choose from four following distances by adjusting the rotary dial on the control stalk. Via four bars below the "vehicle ahead" icon, the chosen following distance is displayed briefly after selection (more bars = greater distance).
- When the radar sensors detect a vehicle ahead, the "vehicle ahead" icon illuminates. ACC adjusts the BMW driver's speed to maintain the selected following distance – in the 2nd-generation ACC, with enhanced accuracy and effectiveness.
- In adjusting vehicle speed, ACC may apply the brakes. It may also apply the brakes when the driver changes the set speed abruptly. If the brake application causes DSC or ABS to activate, a specific warning indicator illuminates.



The 3 Series becomes BMW's fourth Series to offer Active Cruise Control.

- When a vehicle pulls into the BMW driver's lane, ACC now recognizes that vehicle more quickly than before; this means that it can react sooner and more gently, necessitating driver action less frequently. Still, there are limits; if the vehicle cuts too suddenly into the lane, ACC may not be able to adjust speed quickly enough, in which case the vehicle icon is surrounded by a blinking triangular warning signal indicating that evasive action is needed. ACC does not react to stationary vehicles or other objects ahead.
- When traffic ahead clears, ACC automatically resumes the previously set cruising speed.

ACC can also reduce vehicle speed when a curve is entered at too high a speed. Unlike the 1st generation, the new ACC does indeed "look ahead" into curves and can adjust vehicle speed accordingly. In addition, interaction between ACC and GPS Navigation (when present) gives the ACC "knowledge" of the particular road the vehicle is on. This significantly enhances ACC's ability to assist the driver in a wide variety of driving situations. For example, on Interstates or freeways with long straightaways and broad curves, cruise-control acceleration will be more energetic than on a winding 2-lane country road or in built-up areas.

An amazing facet of ACC in connection with the Navigation/iDrive option is that even though the system relies upon the Navigation database

Active Cruise Control display in instrument cluster: upper graphic is for following distance, lower indication is for set speed.

to determine its operational characteristics, it is not too rigidly linked to the database. It was essential to develop this "smart" capability because no matter how good the database is, it can become outdated and may not be 100% correct even in the best case. Therefore the ACC continuously compares actual road conditions with those predicted by the database; the more discrepancies it detects, the less aggressive its intervention. Whatever automatic intervention occurs under such conditions, the driver can override it by stepping on the accelerator or brake pedal.

ACC is a technologically advanced driving enhancement – meaningful, welcome and stress-reducing, particularly in fast-moving yet congested traffic. The buyer of a BMW so equipped should be given a careful and thorough explanation of ACC's functions and benefits, and should be advised to study the system's operation. **The capabilities of ACC in no way relieve the driver of the responsibility to devote full attention to driving, to traffic and to all aspects of the driving environment!**

Active Steering

(optional 325i & 330i, code 217)

Benefits

- Varies steering ratio widely to achieve amazing agility at lower speeds while retaining stability at higher speeds
- Includes Servotronic vehicle-speed-sensitive power assist
- Enhances stability in certain critical driving situations

Already known from the 5 and 6 Series, Active Steering now comes to the 3 Series as a stand-alone option. Exclusive to BMW in the U.S., Active Steering offers heretofore unheard-of benefits.

Widely variable ratio. Electronically varies the steering ratio (that is, the number of degrees the steering wheel must be turned to achieve a 1˚ steering angle at the front wheels) on the basis of vehicle speed and other driving conditions. This variation is considerably greater than that achievable by purely mechanical means (such as the 5, 6 and 7 Series' standard variable-ratio steering gear); steering-wheel movements for parking maneuvers, U-turns and sharp corners are greatly reduced. This results not only in greater convenience, comfort and feeling of vehicle agility, but controls located on the steering wheel – multi-function buttons on the wheel's face and the Sequential Manual Gearbox's shift paddles – can be operated more easily and naturally while the driver is steering.

Optimized driving dynamics. Measures many factors of operating conditions, and varies the steering ratio to enhance dynamics, i.e. the vehicle's response to the steering wheel.

Vehicle stabilization. In situations that would normally diminish stability, Active Steering can intervene to preserve stability.

Authentic steering feel. Because Active Steering retains a direct mechanical connection between the steering wheel and the steered wheels, and steering assist is applied in a proven BMW way (Servotronic, vehicle-speed-sensitive), authentic steering feel is retained.

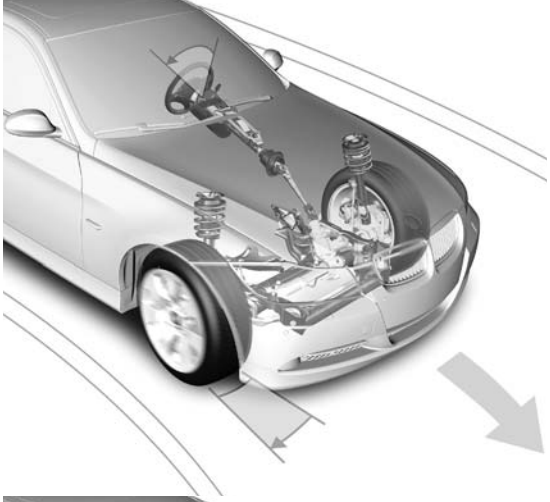
Reliability. The direct mechanical connection and a fail-safe provision ensures that even if there is a system failure the driver can still steer the vehicle.

Here's how Active Steering works.

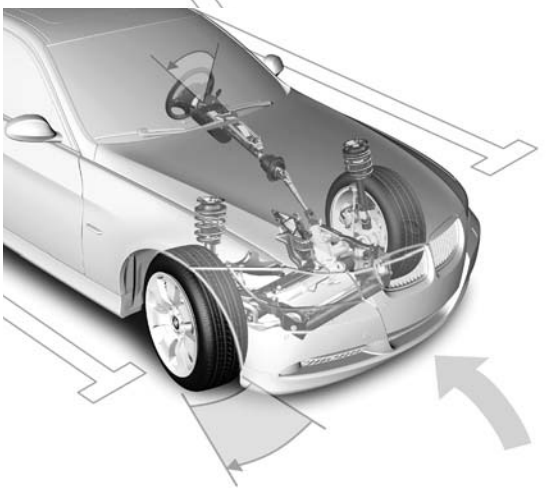
The steering column takes motion down to the hydraulically assisted rack-and-pinion steering gear between the front wheels. Active Steering interposes a planetary gearbox, feeding in near the bottom of the steering column to increase rotation there relative to the driver's turning of the steering wheel. The planetary gearbox is electrically driven; the degree to which it adds to the driver's input is determined by several electronically measured factors:

- Vehicle speed. We want less power assist as speed increases: more at low speeds to help us park and maneuver, less at high speeds for a firm feeling of the road and how the vehicle is relating to it. (Servotronic power assist provides this.) The electronic vehicle-speed input also feeds into Active Steering, which causes the little gearbox to add to the driver's steering-wheel motions (and therefore reduce the effective steering ratio). This addition gradually decreases until a speed of approximately 75 mph is reached, at which point the ratio becomes "conventional."
- Stability. Active Steering can add stability, even beyond the effect already provided by Dynamic Stability Control. Via its inputs of vehicle speed and steering angle, the system can compare actual vehicle motion with that desired by the driver. Even at small deviations from the desired motion, Active Steering can (unnoticed by the driver) adjust the steering to enhance stability.
- Split-traction situations. A new function for '06: If the driver applies the brakes while driving on a surface with uneven traction – for example, if one side of the roadway is slick and the other offers good traction – the brakes' uneven effect on the two surfaces can produce a tendency for the vehicle to pull to one side (yaw). Under such conditions, Active Steering recognizes the incipient instability and steers against it. The driver does not have to correct, and is most likely not even aware that the system is doing it.

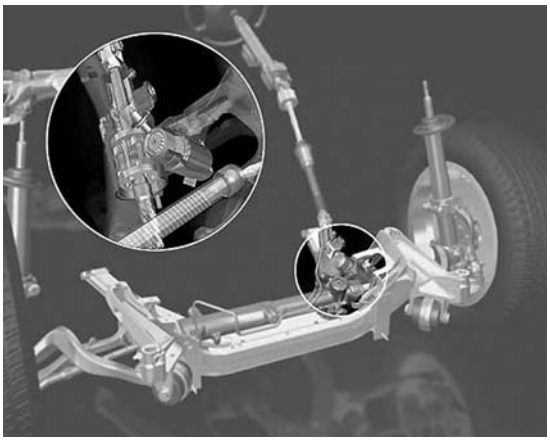
At higher speeds, Active Steering translates motions at the steering wheel into less steering of the front wheels, enhancing stability.

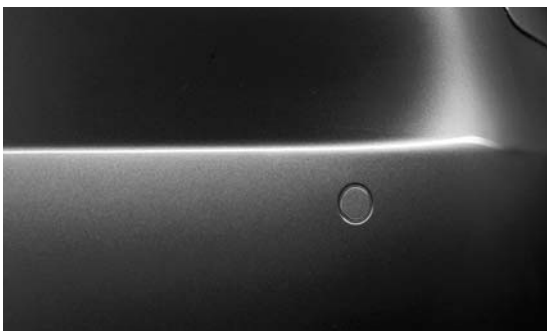


At low to medium speeds, Active Steering reduces the amount of turning at the steering wheel to negotiate any given curve or corner. This dramatically enhances agility.



Electrically driven planetary gearbox (shown on the 5 Series in circles at left) adds to driver's turning input to the steering wheel to vary the steering ratio according to driving conditions.





To assist driver in backing up, Park Distance Control (rear only) is optional on all models.

Sport wheels and tires

(325xi code 2BG, 330xi code 2AB; require Sport Package)

Benefits

- Combine all-wheel drive with enhanced dry-road handling
- Give "xi" models with Sport Package same appearance as their RWD counterparts

As mentioned in connection with the Sport Packages, for customers who desire all-wheel drive but prefer the enhanced dry-road handling of performance tires and differentiated front/rear wheel/tire sizes, this option provides Sport Package-equipped AWD models with the same wheel/tire equipment as their RWD counterparts:

- **325xi** – 17 x 8.0 front/17 x 8.5 rear Double Spoke wheels (design #161) with 225/45R-17 front / 255/40R-17 rear V-rated run-flat performance tires.
- **330xi** – 18 x 8.0 front/18 x 8.5 rear Ellipsoid wheels (design #162) with 225/40R-18 front / 255/35R-18 rear W-rated performance tires.

Park Distance Control

(all models, code 507)

Benefits

- Alerts driver when rear of vehicle is approaching an unseen obstacle
- Facilitates parking in tight spaces
- Can help driver conserve parking space

PDC employs four ultrasonic sensors in the rear bumper to detect when the vehicle is approaching obstacles that may not be visible to the driver. A warning tone emanates from the rear of the interior, increasing in frequency as the vehicle approaches the obstacle until the tone becomes constant.

A significant enhancement relative to previous 3 Series models (and the continuing E46 Coupes and Convertibles) is that when combined with the Navigation/iDrive option, PDC includes a plan-view vehicle diagram in the iDrive monitor, which graphically depicts the obstacle's location relative to the rear of the vehicle.

Xenon Adaptive headlights include the luminous rings that have been so popular on the 5, 6 and 7 Series. They serve as parking lights, but also remain lighted when the headlights are on.

Newly included on 3 Series Sedans, the Adaptive feature is part of the Xenon option and enhances the driver's night vision around corners and curves.

Xenon Adaptive headlights with auto-leveling

(optional 325i/xi, standard 330i/xi; code 522)

Benefits

- Xenon forward illumination on low and high beams
- Auto-leveling helps optimize forward illumination and avoid glare to oncoming drivers
- Adaptive feature helps driver "see around curves"

This option provides stronger, daylight-like Xenon illumination. In BMW's 4-lamp system, the outboard lamps serve as both low and high beams; the inboard ones function as headlight flashers and Daytime Running Lamps.

The Adaptive feature, a new part of the option for 3 Series Sedans, literally "aims" at making night driving safer. With the headlight switch in its Automatic position, the outboard lights steer with the front wheels, guided by an electronic control system and swiveled by small servo motors. (Except that the feature is inactive when the vehicle is backing up.) The system responds not merely to the steering angle, but also to vehicle speed and the "yaw rate," or the rate at which the vehicle's direction is changing. The tangible customer benefit is enhanced night vision around corners and curves.

The system includes static auto-leveling of the headlights; the headlights' aim is adjusted for loads carried in the vehicle, optimizing forward illumination and helping avoid glare to oncoming drivers. Luminous rings around the headlights, already a popular feature of the 5, 6 and 7 Series, is included with the Xenon lights.

Metallic paint

(optional all models, color codes)

Benefits

- Many customers prefer the sparkling quality of metallic paints
- Includes several new colors

The beauty of BMW metallic paints needs no introduction; with the enhanced painting process being introduced with the new 3, its beauty promises to be even longer-lasting. The new metallic colors are:

- Arctic – a cool gray with a hint of green
- Barrique – a dark red
- Deep Green – lives up to its name
- Monaco Blue – a very dark blue.

Sonora (a gold) and Sparkling Graphite (also lives up to its name) became available on 3 Series Coupes and Convertibles as of the '05 model year, but are new to the Sedans.

Comfort Access

(optional all models, code 322; available as of 9/05 production)

Benefit

- Additional convenience in entering, starting and leaving the vehicle

First seen in the '05 7 Series, this is another new option for the 3 Series. Eliminates the need to activate a remote to unlock or lock the vehicle, or to insert it into the dash slot before starting the engine:

- **Keyless access** – User enters vehicle merely by pulling a door handle, or opens the trunk by pressing the trunk release. Presence of the remote (say, as in the user's pocket or purse) has already confirmed that the user is authorized.

Three interior trim materials are available, all at no extra cost. This is the standard Burl Walnut...

...and this is the available Aluminum trim.

- **Keyless starting** – User authorization is confirmed by the presence of the remote inside the vehicle; the driver starts the engine by merely pressing the Start/Stop button.
- **Keyless engine switch-off and vehicle locking** – Driver turns off the engine via the Start/Stop switch, and presses a door handle to lock the vehicle after exiting. In case the remote has been left in the trunk inadvertently, the trunk opens automatically.

Dakota leather upholstery

(optional all models, code LC)

Benefit

- Buyer can opt for leather without the Premium Package

The softer, more luxurious Dakota grade (the leather in E46 3 Series models is Montana) is available as this stand-alone option or as part of the Premium Package. Available in Black, a new Beige, Gray and new Terra, a rich natural brown.

Poplar Natural wood or Aluminum interior trim

(optional all models at no extra cost, code 4AC or 4AD)

Benefits

- Customer choice of interior materials at no extra cost
- Continues an upgrade in interior trim introduced in '05

While the pearl-gloss galvanic trim material (see page 50) for accents and functional elements is the same in all models, customers have a choice in the major trim across the dash, on the center console and on all four doors. Wood trim, standard in all 3 Series models as of model year '05, is now the 4AB Burl Walnut; the options are the slightly lighter Poplar Natural (4AC) or Aluminum (4AD) with a brushed effect.

Power front seats and memory system

(optional 325i/xi, standard 330i/xi; code 459)

Benefits

- 8-way power seats
- Memory for driver's seat and exterior mirrors, captures 2 positions per driver

For customers who do not want to order the Premium Package, this equipment is available as a stand-alone option. Instead of the predecessor Series' memory for a total of three positions, the new memory provides two positions for each user, as identified by the remote he or she is using. The memory system includes auto tilt-down of the right-hand exterior mirror when the transmission is shifted into reverse.

This option does not include the power-adjustable lumbar support that comes with the Premium Packages; with that feature, the number of power adjustments rises to 12.

Heated front seats

(optional all models, code 494)

Benefit

- Cold-weather comfort
- 3-stage, thermostatically controlled heating, more powerful than before
- Expanded heated area; now encompasses side bolsters
- In combination with Navigation/iDrive option, heat balance is variable

Available as this stand-alone option or as part of the Cold Weather Package, the heated seats are considerably upgraded from their E46 counterparts:

- Greater heated area, now extending to the side bolsters.
- Increased heating power – about 10% higher than in E46
- Variable heating balance; relative heating between cushion and backrest is variable via the iDrive monitor.

Split folding rear seats and ski bag

(optional all models, code 465)

Benefits

- Enhance versatility of passenger- and cargo-carrying capability
- Allow skis to be carried "indoors"

The seats are split 60% left/40% right. The pass-through for the ski bag is in the center, as part of the 60% side; as with the standard rear seat, there are three head restraints. Unlike the E46 Sports Wagon arrangement, the center head restraint stays with the seat-back instead of folding down with the center armrest. Releases for folding the seats are in the trunk.

Like that of the 5 Series, the body shell is now the same whether or not the vehicle is equipped with this option at the factory; the seat backrest itself consists of a "hybrid" wall, a rigid welded steel frame and plastic shell, that is fastened to the body at four points. This shell itself forms the bulkhead and is made in two versions, one with a fixed backrest and the other with this folding arrangement. The plastic shell reduces noise transmission from trunk to interior.

BMW On-board Navigation System

(optional all models, code 609)

Benefits

- Option includes iDrive and Voice Command system
- iDrive version corresponds to that of Navigation-equipped 5 Series and all 6 Series, with large, high-resolution iDrive screen and Force Feedback controller
- Expanded and improved functions

The E90 3 Series is the first set of BMW models to be available with or without iDrive. With this option, the instrument panel gains a "second wave" that houses the iDrive monitor, and a controller sits on the clean, uncluttered console behind the shift lever. The entire system is BMW's CCC (Car Communication Computer) with –

- 8.8-in. Control Display, high-resolution 640 x 240 pixels
- Controller with Force Feedback (incorporates tactile feedback into controller movements)
- GPS Navigation with DVD database
- Voice Command system.

The four main-menu choices are:
Communication – phone functions, BMW Assist and TeleService.

Entertainment – radio, Sirius Satellite Radio when present, and CD functions. If the optional Logic 7 audio system is present, this menu also leads to its Surround Sound effect and Digital Sound Processing.

Climate – Functions beyond those provided via the dash hard controls include heating balance for the available heated front seats, and (for when the car is parked) automatic ventilation.

Navigation – GPS Navigation, on-board Information, trip computer, speed limit and stopwatch.

Additionally, the i-menu (reached by pressing the controller while in the main menu) offers choices for vehicle display and control settings as well as vehicle service. Here, under the Condition-Based Service menu option, one can observe the remaining miles to selected service and maintenance procedures, as well as legally mandated inspections. (Examples: front and rear brake pads, brake fluid, spark-plugs, engine coolant.) Under TeleService, key vehicle data are transmitted automatically to the BMW Center when the Condition-Based Service sensors detect an upcoming service need, or manually when the driver activates the Service Request button under BMW Assist in the control display. The BMW Center then contacts the customer to set a service appointment.

Wide range of functions. If the vehicle is equipped with a CD changer or Bluetooth phone interface, some of their functions are also controlled from the iDrive monitor. Most functions served by the monitor are controlled by simple, intuitive turn-and-push motions of a single knob, fundamentally similar to the point-and-click operation of a computer mouse. The user can control the following systems and features:

- Satellite-based GPS (Global Positioning System) Navigation

With the Navigation System option, the instrument panel gains a "second wave"...

...that houses the iDrive monitor.

The iDrive controller is on the console behind the shift lever. Voice Command (right-hand button) is included in the option.

- Emergency and Roadside Assistance calls (BMW Assist telematics)[20], with latitude, longitude, cell-phone number and VIN automatically transmitted to BMW Roadside Assistance
- TeleService
- Phone memory and dialing functions
- The audio system –
  – Radio
  – In-dash CD player (not MP3-capable)
  – CD changer (if present)
  – Special Logic 7 functions if that option is present
- 8-function On-board Computer[21]
- A supplemental security code.

The new 3 Series' Navigation System incorporates all the refinements seen in the 5, 6 and 7 Series:

- DVD database; a single DVD covers the entire United States
- Fast processor
- Highly accurate dynamic calculation of Estimated Time of Arrival
- 100-entry address book
- 20-entry "last destination" capacity increased to 20 entries
- Monitor brightness control (in Settings menu)
- Various map scales available
- Optimized mixing of audio volume and navigation voice guidance.

Voice Command. Another feature from the 5, 6 and 7 Series that's making its first appearance in the 3 Series, Voice Command is included with the Navigation/iDrive option.

The system incorporates a text-to-speech engine, which makes it possible to translate various text messages, such as radio-station names and (in the future) received e-mails, into voice form. Also recently added is interaction of graphics and speech: For example, the user might select a radio station via Voice Command; the monitor would then display this choice. In vehicles with a BMW Cellular Phone System or Bluetooth interface, once the phone menu is selected, one can dial the number of a programmed phone contact merely by speaking his or her name. It is also possible to obtain GPS guidance to a city or town by speaking its name.

In summary, Voice Command can put its advanced user interface to work controlling the –

- Phone system
- Address book
- GPS Navigation
- Short Message System (SMS)
- Audio system
- Climate control.

The system can recognize 3000 words.

20 – All current models with BMW Assist, including this new 3 Series, offer these functions via button(s) in the overhead console.

21 – This is an upgrade over the 4-function On-board Computer of 3 Series models.

New regular options for 3 Series Sedans: power rear-window and manual rear side-window sunshades.

Sirius Satellite Radio

(optional all models, code 655)

Benefits

- Integrated into vehicle audio system
- Offers 100 channels of programming
- Includes scan and presets

Together with Sirius, BMW is offering our customers the latest in radio technology. With the E90, the 3 Series joins the range of BMW models that can be factory-equipped with the system; it is also available with factory preparation for installation by BMW Centers.

The Sirius system beams programming to satellites orbiting the earth; Sirius-equipped vehicles receive the programming. Except for locations where reception is physically blocked, users can enjoy the same programs anywhere in the U.S. Sirius provides 60 original channels of commercial-free music of virtually every genre, and 40 sports, news and entertainment channels. Sirius currently carries National Basketball Association and National Football League games as part of its sports coverage.

Hardware for the vehicle consists of -

- an activated Sirius Satellite Receiver
- a Satellite Antenna
- a Sirius-compatible audio system

– and includes a 1-year subscription, to which Sirius currently adds a complimentary 2-month extension (a limited offer).

Once the equipment is installed and activated, the customer simply selects the satellite radio mode (example: AM/FM/CD/Satellite). As with FM and AM, users will be able to scan and set their favorite presets. The audio display can show the channel name, channel number and (in the case of music channels) artists and music title.

For the latest information on Sirius availability, see CenterNet.

Logic 7 sound system

(optional 325i/xi, standard 330i/xi; code 677)

Benefits

- Audiophile sound quality
- 13 speakers
- An acclaimed premium feature also found in 5, 6 and 7 Series

This remarkable system is described on page 49.

Power rear-window and manual rear side-window shades

(optional all models, code 417)

Benefits

- Reduce glare and external heat load for rear-seat passengers
- Add privacy
- Driver can operate power rear-window shade

Newly available for 3 Series Sedans; the power rear sunshade was previously available as a Priority 1 option. The rear-window shade is powered, and controlled from a console switch. The side-window shades are manual and easily raised or lowered by rear-seat passengers; each of these consists of two portions, for the main window (opening vertically) and the fixed quarter pane (opening radially).

BMW Assist

(optional all models, code 639)

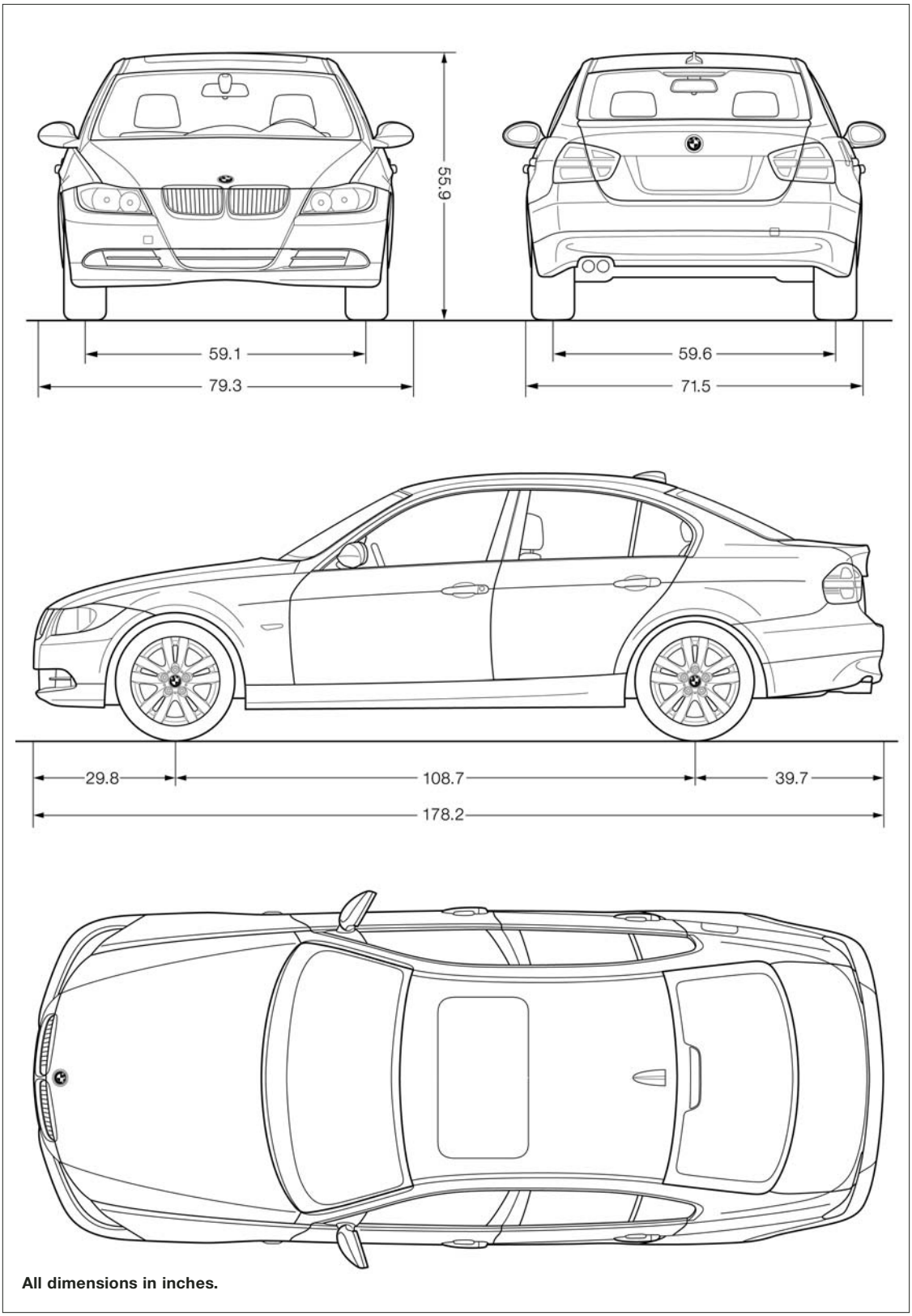
In addition to being part of the Premium Package for all models, BMW Assist is also available as a stand-alone option. BMW Assist is BMW's comprehensive system of customer services and in-car telematics; for detailed information, see CenterNet or BMW Fast Facts 2005, pages 333-334. A Bluetooth cellphone interface is included; the option price includes a 1-year subscription to BMW Assist services.

BMW Center-installed accessories

The following items are planned for availability at launch:

- **Carbon-fiber front chin spoiler**
- **Complete wheel and tire sets**, 18- and 19-in.
- **Rear spoiler**
- **Dark-lens ("smoked") taillights**
- **Park Distance Control**, rear only (aftermarket version, not same as factory option)
- **Strut reinforcing braces**, running from the front suspension's strut towers to the cowl area
- **Sport muffler** for more "sound of performance"
- **Alarm system**
- **Nose mask**
- **Car covers**, outdoor and indoor types
- **Windshield sunshade**
- **Sun/wind deflector** for moonroof
- **CD changer**
- **Floormats**, carpet and rubber
- **Aluminum pedals.**

New 3 Series Sedans:
Features & specifications



All dimensions in inches.

Standard & optional features
2006 3 Series Sedans

Bold indicates new feature relative to 2005 3 Series model.

Performance & efficiency	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
DOHC 24-valve inline 6-cylinder engine:				
3.0-liter	**S**	**S**	–	–
3.0-liter high-output	–	–	**S**	**S**
Engine features:				
Magnesium/aluminum composite construction	**S**	**S**	**S**	**S**
Valvetronic system	**S**	**S**	**S**	**S**
Double VANOS [1] steplessly variable valve timing	S	S	S	S
Single-stage induction system	S	S	–	–
3-stage induction system	NA	NA	**S**	**S**
Electronically controlled engine cooling	S	S	S	S
Electric water pump	**S**	**S**	**S**	**S**
Volume-controlled oil pump	**S**	**S**	**S**	**S**
Direct ignition system with knock control	S	S	S	S
6-speed manual transmission	**S**	**S**	S	S
6-speed Sequential Manual Gearbox (SMG) with Automated, Manual & Sport programs	NA	NA	OPT [2, 3]	NA
6-speed STEPTRONIC automatic transmission with Normal, Sport & Manual shift modes	OPT	OPT	OPT	OPT

Handling, ride & braking	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Double-pivot-type front suspension	**S**	**S**	**S**	**S**
Aluminum front suspension components	**S**	NA	**S**	NA
5-link rear suspension	**S**	**S**	**S**	**S**
Front & rear anti-roll (stabilizer) bars	S	S	S	S
Aluminum front/steel rear subframes	S	Both steel [4]	S	Both steel [4]
Twin-tube gas-pressure shock absorbers	S	S	S	S
Sport suspension calibration	ZSP	NA	ZSP	NA
Engine-speed-sensitive variable-assist power steering	S	S	S	S
Active Steering with Servotronic vehicle-speed-sensitive power steering	**OPT**	NA	**OPT**	NA
4-wheel ventilated disc brakes	S	S	S	S
Dynamic Stability Control (DSC), including electronic brake proportioning, antilock braking (ABS), cornering/braking stability enhancement & Dynamic Brake Control, **Brake Fade Compensation, Brake Standby, Brake Drying, Comfort Stop & Start-off Assistant**	S	S	S	S
plus – Dynamic Traction Control	S	NA	S	NA
Hill Descent Control	NA	**S**	NA	**S**
xDrive fulltime all-wheel drive system, electronically controlled with variable front/rear torque split & traction control	NA	**S**	NA	**S**
Alloy wheels:				
16 x 7.0 **Double Spoke (design #156)**	**S**	**S**	–	–
17 x **8.0** Star Spoke **(design #159)**	NA	**ZSP**	**S**	**S**
17 x **8.0 Star Spoke (design #158)**	NA	NA	NA	**ZSP**
17 x 8.0 front/17 x **8.5 rear Double Spoke (design #161)**	**ZSP**	**OPT** [3]	–	–
18 x 8.0 front/18 x 8.5 rear **Ellipsoid (design #162)**	NA	NA	**ZSP**	**OPT** [3]
Run-flat tires:				
205/55R-16 H-rated all-season	S	S	–	–
225/45R-17 H-rated all-season [5]	NA	**ZSP**	**S**	**S**
225/45R-17 front / **255/40R**-17 rear **V-rated** performance [5]	**ZSP**	**OPT** [3]	–	–
225/40R-18 front / 255/35R-18 rear W-rated performance [5]	NA	NA	**ZSP**	**OPT** [3]
Flat Tire Warning	**S**	**S**	**S**	**S**

Exterior & aerodynamics	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Front & rear body-color bumpers	S	S	S	S
Xenon **Adaptive** headlights with luminous rings & auto-leveling	OPT	OPT	**S**	**S**
Automatic headlight control	S	S	S	S
High-intensity headlight cleaning system	ZCW	**S**	ZCW	**S**
Daytime Running Lamps	S[6]	S[6]	S[6]	S[6]
Halogen free-form foglights	S	S	S	S
Rain-sensing windshield wipers	S	S	S	S
Heated windshield-washer jets	S	S	S	S
Power-fold exterior mirrors	**ZPP**	**ZPP**	**ZPP**	**ZPP**
Ground lighting in door handles	**S**	**S**	**S**	**S**
Comfort Access	**OPT**[2]	**OPT**[2]	**OPT**[2]	**OPT**[2]
Adaptive Brake Lights	S	S	S	S
Metallic paint	OPT	OPT	OPT	OPT
Chrome/black side-window trim	NA	NA	S	S
Chrome grille vertical slats	NA	NA	S	S
Body-color horizontal slats in lower front air intakes	NA	NA	**S**	**S**

Ergonomics, luxury & convenience	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Aluminum/rubber doorsill trim plates with BMW lettering	**S**	**S**	S	S
Vehicle & Key Memory	S	S	S	S
Multi-function keyless remote with selective locking & remote trunk release	S	S	S	S
Dual power/heated exterior mirrors	S	S	S	S
Automatic-dimming interior **& exterior** mirrors	ZPP	ZPP	ZPP	ZPP
Digital compass in interior mirror	**ZPP**	**ZPP**	**ZPP**	**ZPP**
BMW Universal Transceiver (garage-door opener)	**ZPP**	**ZPP**	ZPP	ZPP
Courtesy lights with fade-in/fade-out feature, actuation from remote, automatic switch-on when engine is turned off, separately controlled left/right front & rear reading lights, front footwell lighting & illuminated visor vanity mirrors	S	S	S	S
BMW Ambiance Lighting, front **& rear**	S	S	S	S
Lockable glove compartment with **trunk lock switch**, rechargeable take-out flashlight & **holder for spare-key adapter**	S	S	S	S
Tilt/telescopic 3-spoke leather-wrapped steering wheel with fingertip audio & phone[7] controls: Standard wheel, 375 mm/14.8 in.	S	S	S	S
Sport wheel, 369 mm/14.5 in.	ZSP	ZSP	ZSP	ZSP
Dynamic Cruise Control	S	S	S	S
Active Cruise Control	**OPT**	**OPT**	**OPT**	**OPT**
6-way adjustable front seats	S	S	–	–
10-way manual front sport seats with **power-adjustable backrest width**	ZSP	ZSP	–	–
8-way power front seats	OPT/ZPP	OPT/ZPP	S	S
4-way power front-seat lumbar support	ZPP	ZPP	ZPP	ZPP
10-way power front sport seats, including **power-adjustable backrest width**	OPT/ZPP + ZSP[8]	OPT/ZPP + ZSP[8]	ZSP	ZSP
Memory system for driver's seat & exterior mirrors **(2 settings per user)**	OPT/ZPP[9]	OPT/ZPP	S	S
Auto tilt-down of right-hand exterior mirror for reversing	OPT/ZPP[9]	OPT/ZPP	S	S
3-stage, thermostatically controlled heated front seats[10]	OPT/ZCW	OPT/ZCW	OPT/ZCW	OPT/ZCW

1 – VANOS = VAriable NOckenwellen Steuerung = variable camshaft control, or variable valve timing.

2 – Available as of 9/05 production.

3 – Require(s) Sport Package.

4 – Steel front subframe with aluminum thrust plate.

5 – Due to low-profile tires, please note: Wheels, tires and suspension parts are more susceptible to road hazard and consequential damages.

6 – Selectable via Vehicle Memory System.

7 – Phone controls active when approved cellphone is used in combination with Bluetooth interface.

8 – Power sport seats in 325i/xi when Premium & Sport Packages are combined, or when stand-alone power-seats option & Sport Package are combined. If Premium Package, 4-way power lumbar support is also included.

9 – Included with all power seats.

10 – Include variable heating balance with graphic display if vehicle is equipped with Navigation System/iDrive option.

S – Standard

OPT – Optional

NC – No extra cost

C – BMW Center-installed

– – Not applicable

NA – Not available

ZCW – Cold Weather Package

ZPP – Premium Package

ZSP – Sport Package

Features summary

Ergonomics, luxury & convenience	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Front center armrest	S	S	S	S
Climate-controlled center console compartment	**S**	**S**	**S**	**S**
Electronic analog speedometer & tachometer	S	S	S	S
LCD main & trip odometers	S	S	S	S
Condition-Based Service system	S	S	S	S
GPS Navigation & **iDrive system: five menus & controller with Force Feedback (includes On-board Computer, voice controls, TeleService, many other features & functions)**	**OPT**	**OPT**	**OPT**	**OPT**
Leatherette upholstery	S	S	S	S
Dakota leather upholstery	OPT/ZPP	OPT/ZPP	OPT/ZPP	OPT/ZPP
Burl Walnut wood interior trim	S	S	S	S
Poplar Natural wood interior trim	NC	NC	NC	NC
Aluminum interior trim	NC	NC	NC	NC
Pearl-gloss galvanic trim (speedometer & tachometer, Start/Stop button, interior door handles, etc.)	S	S	S	S
Power windows with key-off operation; 1-touch opening & closing of all windows, anti-trapping feature, opening from remote	S	S	S	S
Automatic climate control with **separate left/right temperature settings, Max A/C function**, automatic recirculation control, **mist control**, bi-directional solar sensor, **Heat at Rest, temperature- & volume-controlled rear air outlets**, activated-charcoal microfilter ventilation & other features	S	S	S	S
2-way power moonroof with 1-touch opening & closing, anti-trapping feature, opening from remote, sliding interior sunshade	S	S	S	S
BMW Professional anti-theft AM/FM/CD/**MP3** audio system with 10 speakers including 2 subwoofers, Radio Data System (RDS), FM diversity antenna system, auxiliary audio input & other features	S	S	–	–
Logic 7 audio system with 13 speakers, Digital Sound Processing & Surround Sound simulation; includes subwoofers, upgraded componentry throughout & all features of 10-speaker system	**OPT**	**OPT**	**S**	**S**
Sirius Satellite Radio	**OPT**/C	**OPT**/C	**OPT**/C	**OPT**/C
Preparation for Sirius Satellite Radio	**OPT**	**OPT**	**OPT**	**OPT**
Pre-wiring for 6-disc CD changer	S	S	S	S
6-disc CD changer	C	C	C	C
Dual cupholders front & rear	S	S	S	S
Dual front sun visors with illuminated mirrors	S	S	S	S
Option storage compartments in front doors	S	S	S	S
Fold-up rear center armrest	S	S	S	S
Seatback storage compartments	S	S	S	S
Split folding rear seats & ski bag	OPT/ZCW	OPT/ZCW	OPT/ZCW	OPT/ZCW
Power rear & manual rear side-window sunshades	**OPT**	**OPT**	**OPT**	**OPT**
Rear-window defroster	S	S	S	S
Interior trunk release, electrically operated	S	S	S	S

Safety & security	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Dual front-impact airbag Supplementary Restraint System (SRS) with dual-threshold deployment, 2-stage Smart Airbags	S	S	S	S
3-point safety belts at all seating positions	S	S	S	S
Front **& rear outboard** safety belts with automatic tensioners & force limiters	S	S	S	S
Automatic-locking retractors (ALR) on all passenger safety belts (for installation of child restraint seats)	S	S	S	S
LATCH attachments in rear seat (for installation of child restraint seats)	S	S	S	S
Head restraints at all seating positions	S	S	S	S
Interlocking door anchoring system for side impacts	S	S	S	S
Front **& rear-seat** Head Protection System	S	S	S	S
Front-seat side-impact airbags, **seat-mounted**	S	S	S	S
MRS5 System for deployment of safety systems	S	S	S	S
Post-impact safety measures: Unlocking of central locking system	S	S	S	S
Switch-on of hazard flashers	S	S	S	S
Switch-on of interior lighting	S	S	S	S
Disconnect of alternator, fuel pump & starter from battery (via Battery Safety Terminal)	S	S	S	S
BMW Assist, including automatic collision notification, Assist & SOS buttons, Bluetooth interface; enhanced Roadside Assistance, Concierge & Customer Relations services	OPT/ZPP	OPT/ZPP	OPT/ZPP	OPT/ZPP
Central locking system with double-lock anti-theft feature, selective unlocking	S	S	S	S
Coded Driveaway Protection	S	S	S	S
Alarm system with operation from remote, interior motion detector	C	C	C	C

S – Standard
OPT – Optional
NC – No extra cost
C – BMW Center-installed
– – Not applicable
NA – Not available
ZCW – Cold Weather Package
ZPP – Premium Package
ZSP – Sport Package

Technical specifications
2006 3 Series Sedans

Virtually all specifications are new relative to 2005 3 Series Sedans.

General	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Curb weight, lb.:				
Manual transmission	3285	3560 [1]	3417	3627 [1]
Sequential Manual Gearbox (SMG)	–	–	3450 [1]	–
Automatic transmission	3351	3605 [1]	3450	3671 [1]
Weight distribution, front/rear, %:				
Manual transmission	50.3/49.7	52.6/47.4 [1]	50.6/49.4	52.6/47.4 [1]
Automatic transmission	50.7/49.3	52.9/47.1 [1]	51.1/48.9	52.9/47.1 [1]
Wheelbase, in.	108.7 [2]			
Track, front/rear, in. (with standard wheels)	59.1/59.6 [2]			
Length, in.	178.2 [2]			
Width, in.	71.5 [2]			
Height, in.	55.9	56.1	55.9	56.1

Body	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Type	4-door sedan [2]			
Aerodynamic drag coefficient	0.30 [2]			
EPA size classification	Compact [1, 2]			

Accommodations	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Seating capacity, persons	5 [2]			
Shoulder room, front/rear, in.	55.4/55.1 [2]			
Head room, front/rear	37.4/37.1 [2]			
Leg room, front/rear	41.5/34.6 [2]			
EPA passenger-compartment volume, cu ft.	93 [2]			
EPA cargo volume, cu ft.	12 [2, 3]			

Engine & electrical	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Engine type	DOHC inline 24-valve 6-cylinder, magnesium/aluminum composite construction, Valvetronic variable valve lift & Double VANOS steplessly variable intake- & exhaust-valve timing [2]			
Bore x stroke, mm/in.	85.0 x 88.0/3.35 x 3.46 [2]			
Displacement, cc/cu in.	2996/183 [2]			
Compression ratio	10.7 [2]			
Power @ rpm, hp	215 @ 6250 [4]		255 @ 6600 [5]	
Torque @ rpm, lb-ft.	185 @ 2750 [4]		220 @ 2750 [5]	
Engine-management system	MSV70 with knock control (2 sensors); Valvetronic, variable valve timing, engine cooling & other functions included in control strategy [2]			
Induction system	Single-stage [4]		3-stage [5]	
Fuel requirement	Premium unleaded [2]			
Fuel capacity, U.S. gal.	15.9 [2]			
Battery capacity, amp-hr.	70 [2]			
Alternator output rating, amp./W	185/2590 [2]			

Drivetrain	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Drive system	Front engine/ rear-wheel drive	Front engine/ all-wheel drive	Front engine/ rear-wheel drive	Front engine/ all-wheel drive
Manual transmission	Getrag I, 6-speed	Gertag H, 6-speed [6]		
Ratios: 1st	4.32:1	4.35:1 [6]		
2nd	2.46:1	2.50:1 [6]		
3rd	1.66:1	1.66:1 [6]		
4th	1.23:1	1.23:1 [6]		
5th	1.00:1	1.00:1 [6]		
6th	0.85:1	0.85:1 [6]		
Final drive ratio	3.23:1	3.38:1	3.15:1	3.23:1
Sequential Manual Gearbox (SMG)	330i Sedan only: Electrohydraulic/electronic controls applied to 6-speed manual transmission; transmission ratios & final drive ratio as for Getrag H transmission; includes Sport mode affecting shift characteristics			
Automatic transmission	ZF 6 HP 19, 6-speed [2]			
Ratios: 1st	4.17:1 [2]			
2nd	2.34:1 [2]			
3rd	1.52:1 [2]			
4th	1.14:1 [2]			
5th	0.87:1 [2]			
6th	0.69:1 [2]			
Final drive ratio	3.73:1	3.91:1	3.64:1	3.64:1

Chassis	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Body/frame construction	Unitized steel [2]			
Front suspension	Struts, double-pivot lower arms, coil springs, twin-tube gas-pressure shock absorbers, tubular anti-roll bar, subframe [2] (325i/330i: aluminum lower arms, steering knuckles & subframe) (325i/330i ZSP: sport suspension calibration)			
Rear suspension	5-link system, coil springs, twin-tube gas-pressure shock absorbers, tubular anti-roll bar, subframe [2] (325i/330i ZSP: sport suspension calibration)			
Rack-&-pinion steering: Standard system	Engine-speed-sensitive power assist			
Overall ratio	16.0 [2]			
Turns lock-to-lock	3.0 [2]			
Optional Active Steering	Vehicle-speed-sensitive ratio & power assist			
Overall ratio	Electrically/electronically variable over wide range of 10.8:1 – 18.0:1			
Turns lock-to-lock	**1.8-3.0**			
Turning circle, ft.	36.1	ND	36.1	ND
4-wheel ventilated disc brakes, vacuum-assisted: Front, diameter x thickness, mm/in.	300 x 24/11.8 x 0.94 [4]		330 x 24/13.0 x 0.94 [5]	
Caliper material	Aluminum [2]			
Rear, diameter x thickness, mm/in.	300 x 20/11.8 x 0.79 [4]		336 x 22/13.2 x 0.87 [5]	
Caliper material	Cast iron [2]			

1 – Preliminary data.

2 – Specification applies to all models.

3 – Does not include compartment under trunk floor, which encloses about 1.76 cu ft.; can be expanded via available folding rear seats.

4 – Specification applies to 325i & 325xi.

5 – Specification applies to 330i & 330xi.

6 – Specification applies to 325xi, 330i & 330xi.

ND – No data available

ZSP – Sport Package

Technical specifications

Chassis (cont.)		325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Cast-alloy wheels:	standard	16 x 7.0 [4]		17 x 8.0 [5]	
	optional	17 x 8.0 front/ 17 x 8.5 rear [4]	17 x 8.0	18 x 8.0 front/ 18 x 8.5 rear [5]	17 x 8.0
Run-flat tires:	standard	205/55R-16 H-rated all-season [4]		225/45R-17 H-rated all-season [5, 7]	
	optional	225/45R-17 H-rated all-season [7] (325xi ZSP) 225/45R-17 front / 255/40R-17 rear W-rated performance [7] (325i ZSP, 325xi ZSP + option) 225/40R-18 front / 255/35R-18 rear W-rated performance [7] (330i ZSP, 330xi ZSP + option)			
Stability-enhancement system		Dynamic Stability Control, including Dynamic Traction Control, cornering/braking stability enhancement, antilock braking (ABS), electronic brake proportioning, Dynamic Brake Control, Fading Compensation, Brake Standby, Brake Drying, Comfort Stop & Start-off Assistant) (325xi/330xi: delete Dynamic Traction Control, add Hill Descent Control)			

Performance data	325i Sedan	325xi Sedan	330i Sedan	330xi Sedan
Acceleration, 0-60 mph, sec. [8]				
Manual transmission or SMG	6.7	ND	6.1	ND
Automatic transmission	7.2	ND	6.3	ND
Top speed, mph [9]				
Standard	130 [1]			
Sport Package	149	130	149	130
Sport Package + optional tires	–	149 [1]	–	149 [1]
EPA estimated MPG, city/highway [1]:				
Manual transmission	20/30	20/28	20/30	20/28
Automatic transmission	21/29	20/27	20/28	20/27

1 – Preliminary data.

4 – Specification applies to 325i & 325xi.

5 – Specification applies to 330i & 330xi.

7 – Due to low-profile tires, please note: Wheels, tires and suspension parts are more susceptible to road hazard and consequential damages.

8 – BMW AG test results. Actual acceleration results may vary depending on specification of vehicle; road and environmental conditions; testing procedures and driving style. These results should be used for comparison only, and verification should not be attempted on public roads. BMW urges you to obey all posted speed limits and to please wear your safety belt at all times.

9 – Electronically limited.

ND – No data available

ZSP – Sport Package

Exterior/interior color combinations
2006 3 Series Sedans

	Exterior colors											
	Standard colors			Metallic colors								
	Alpine White 300	Electric Red 438	Jet Black 668	Mystic Blue A07*	Sparkling Graphite A22	Sonora A23	Arctic	Monaco Blue A35	Barrique A41*	Deep Green A43*	Titanium Silver 354	Black Sapphire 475
Leatherette												
Beige KAB4	•	•	•	•	•	•	•	•	•	•	•	•
Black KASW	•	•	•	•	•	•	•	•	•	•	•	•
Dakota leather												
Beige LCB4	•	•	•	•	•	•	•	•	•	•	•	•
Black LCSW	•	•	•	•	•	•	•	•	•	•	•	•
Gray LCAD	•	•	•	•	•	•	•	•	•	•	•	•
Terra LCB8	•	•	•	•	•	•	•	•	•	•	•	•

* Delayed availability.

Market outlook

Has it really been that long? The first 3 Series appeared 30 years ago, and if we go back to this Series' lineal starting point, it's almost 40 years – as recounted on pages 6-11. True to BMW tradition, each new generation continued to build on the foundation laid by that first "02 Series" model, the 1600-2, in the BMW manner: gradually, consistently, with a long-range strategy of building a brand, nuturing a heritage, offering credible products that always stood for something. First and foremost, that "something" was The Joy of Driving.

And so it was that the 3 Series, which took over from the 02 in '77 and now moves into its 5th generation, became an icon for the way it always combined The Joy of Driving with rational, everyday practicality. This newest 3 Series, presenting the consistent 3 Series character in an entirely new form, is an outstanding product in every way. Yet in today's ever more competitive market, "outstanding product" isn't enough. We at BMW must market this wonderful new automobile intelligently and effectively; position it credibly and appropriately in its field; price it for both sales success and corporate profitability; and make sure that our potential customers get the message.

This section presents an overview of the new 3 Series' market heritage, positioning, competitive field and targeted customer demographics, plus information on its launch program.

Positioning the new 3 Series

The positioning statement is –

The sports sedan – setting the benchmark even higher by offering unparalleled dynamics, premium substance and efficiency. It awakens the youthful spirit of great driving.

Let's analyze this statement, and see how the product itself supports its key words:
Dynamics. In the lay language of most of our customers, "dynamics" essentially equates to "power and handling." And as this Product Information Book extensively documents, the new 3 Series offers power and handling in abundance.

Premium substance. As it evolves, the 3 Series becomes ever more clearly a Premium product, embodying sophisticated technology, thoughtful and enjoyable features, new standard equipment and options that raise its level of luxury and convenience to greater heights, more elegant esthetics and a higher level of safety for its occupants.

Efficiency. New engine technology, 6-speed transmissions across the board, and BMW's efforts to avoid significant weight increases despite greater power and all the new substance lead to an expectation of higher efficiency. European fuel-economy data provide early documentation of this achievement; when EPA mileage ratings become available, we expect them to lend U.S.-specific support to this claim.

3 Series market heritage adds up to enduring credibility

Car and Driver neatly summed up the 3 Series' heritage when it declared in its January '97 issue that "The definitive sports sedans from the company whose very existence has been based on fast four-seaters for more than 30 years simply keep getting better and better." And at its core, that's what a new-generation 3 Series is a all about: a consistent concept, but better than ever. This combination of a consistent concept and perpetual improvement add up to credibility for our customers; even if they wouldn't formulate it the way marketing professionals do, they understand what the 3 Series stands for.

The 3 Series' field: more competitive than ever

According to J.D. Power and Associates, the 3 Series Sedans compete in the Entry Luxury segment; BMW defines their segment more precisely as Luxury/Performance Compact Sedans. Their competitors include the Acura TL, Audi A4, Cadillac CTS, Infiniti G35, Jaguar X-Type, Lexus ES 330 and IS 300, Mercedes-Benz C-Class, Saab 9-3, Volkswagen Passat, and Volvo S60. Of these, the Sedans' key competitors can be considered to be the –

- Acura TL – 77,895 units sold in '04 in the U.S., vs. 3 Series' 68,643*
- Audi A4 – 30,880 units*
- Infiniti G35 – 42,800 units (not including G35x)*
- Lexus ES 330 – 75,916 units
- Mercedes-Benz C-Class – 59,259 units*
- Volvo S60 – 25,564 units.

Less direct, though in some cases strong, competition is posed by the –

- Cadillac CTS (including former Catera) – 57,211 units
- Jaguar X-Type – 21,461 units
- Saab 9-3 –21,133 units*

* Sedans only.

Though not the volume leader in its class of sedans, the entire 3 Series with its Coupes, Sport Wagons and Convertibles achieved a volume of 106,539 units, ahead of all the full lines whose sedans are listed here. (Audi A4, Infiniti G35, Mercedes C-Class and Saab 9-3 all offer more than one body style.)

Among the various body styles in this segment, sedans achieve the highest volume – no surprise as their blend of sport, luxury and practicality appeals to the highest proportion of buyers. Their sales were essentially flat in 2002 and '03, at around 500,000 units for each of the two calendar years, though the group is expected to grow to around 600,000 by '07. BMW's goal with the 3 Series Sedans is to secure and expand its position in the U.S. Luxury/Performance Compact Sedan segment; when the other new 3 Series body types are introduced, their goal-setting will be parallel for Sports Wagons, Coupes and Convertibles. The 3 Series' 2004 volume (almost unchanged from calendar '03) proves that the existing Series had the "stuff" to do it; expect the new 3 Series to perform even better in its segments.

At its debut, the new 3 of course appears in Sedan form only, and it will be competing mostly with '05 models of its key competitors. Here are some advantages of the new 3 Series models over their key competitors – and they are more convincing than ever. All quoted prices include destination charge:

Acura TL

Essentially all-new for '04, the TL got minimal changes for '05. Beginning at $33,470 with 5-speed automatic transmission, the TL works its way up via versions (Acura does not offer options as such), like a 6-speed manual model with or without GPS Navigation or performance tires, to $35,670. All have the same 3.2-liter, 270-hp V-6 engine, ride on a 107.9-in. wheelbase and are 189.3 in. long (3 Series: 108.7 in./178.2 in.). Dealers offer an "A-Spec" package to upgrade TL performance and handling, at about $5,000 installed.

Good car though it is, the Achilles' heel of the TL is that its powertrain puts that 270 hp through front-wheel drive. Sure enough, *Edmunds.com* noted that "when you really lay into it coming out of a corner the V-6's brawny output makes itself known in the form of torque steer, as the limited-slip differential tries its best to manage the 270 horses let loose through the front wheels." *AutoWeek* (March 8, '04) noted that "the TL isn't quite as smooth and refined as the mighty 3 [Series]" – and of course now BMW is fielding the new, dramatically evolved 3 Series to strengthen that comparison.

Leaving out the A-Spec retrofits, TL pricing falls between the 325i and 330i Sedans. In addition to the rear-wheel drive, here are the **key advantages of the 325i over the TL** [1]:

- Inline 6-cylinder engine, vs. V-6. Though Acura's V-6 is smooth and powerful, it still lacks that special sound of the BMW six – which is now better than ever.
- More advanced engine technology: magnesium-aluminum composite construction, Valvetronic vs. VTEC, electric water pump.
- Available 6-speed automatic transmission, vs. Acura's 5-speed
- All-wheel drive to be available in 325xi and 330xi Sedans as of 9/05 production; Acura offers no AWD on the TL.
- Superior weight distribution: BMW's near-50/50 vs. approximately 60/40
- Aluminum front suspension, vs. steel
- Much tighter turning circle, 36.1 ft. vs. 39.7
- Larger rear brakes, 11.8 in. vs. 11.1
- Advanced braking functions (see page 34)
- Standard run-flat tires (TL: not available)
- Rain-sensing windshield wipers
- Adaptive Brake Lights
- All four windows are 1-touch open/close (TL: front windows only)
- Climate-controlled center console compartment
- Standard wood interior trim, no-extra-cost alternate wood and aluminum trim (TL: "wood-patterned" or aluminum trim)
- Automatic tensioners on rear outboard safety belts, force limiters on front and outboard rear safety belts (TL: tensioners on front belts only, no force limiters)
- Condition-Based Service (standard), Tele-Service (included in BMW Assist). Acura provides only a Maintenance Interval Reminder.
- Full maintenance for 4 years/50,000 miles, vs. no included maintenance
- 12-year corrosion warranty, vs. 5
- Available 325i options not offered on TL:
  - Premium Package, including auto-dimming exterior mirrors, digital compass and power front seats with 8-way adjustment + 4-way lumbar. Standard TL seats have 8-way driver's/4-way passenger's power seats, lumbar (2-way only) on driver's.

- Sport Package, including sport suspension (available for TL only via A-Spec program, see previous page); front/rear differentiated wheel/tire sizes, sport steering wheel and sport seats with variable backrest width
- Split folding rear seats (Cold Weather Package or stand-alone option); trunk pass-through is standard in TL, but folding seats aren't offered.
- Headlight cleaning system (Cold Weather Package).
- Active Cruise Control
- Active Steering
- Park Distance Control as factory option (TL: dealer-installed only)
- Comfort Access [2]
- Navigation/iDrive option (TL: Navigation only)
- Power rear and manual rear side-window sunshades

For 330i vs. TL, add or substitute [1]:

- 3-stage induction system
- Larger front brakes; 13.0 in. vs. TL's 11.8 in. with automatic transmission, 12.2 with manual
- Greater advantage in rear brakes: 13.2 in. vs. 11.1.
- Auto-leveling of headlights (Xenon lights standard on 330i and TL)
- 8-way power passenger's seat (TL: 4-way)
- Standard Logic 7 audio system with patented BMW subwoofer location under front seats
- Available 330i options not offered on TL:
  - Sequential Manual Gearbox [2]
  - Sport Package includes 18-in. wheels and tires with differentiated front/rear sizes (TL: no factory 18-in. equipment available; even A-Spec equipment lacks differentiated front/rear sizes)

TL strengths – BMW representatives should know about standard 3.2-liter/270-hp engine, W-rated 17-in. tires, leather upholstery, heated front seats and Bluetooth phone interface; standard audio system with Surround Sound, DVD audio and DTS changer, and XM Satellite Radio; auto tilt-down of both exterior mirrors; and greater interior and cargo volumes. Acura's Navigation System adds $2,000 to TL prices; automatic- and manual-transmission versions are priced identically.

Audi A4

Just as this Product Information Book went to press, Audi introduced what it calls an "all-new" A4. Actually it's not all-new, but rather a significant facelift with new, larger engines and some equipment changes. Prices are up: The A4 2.0 T sedan base-prices at $28,070 and the A4 3.2 quattro sedan starts at $36,120. Both model designations are new: 2.0 T signifies a larger (2.0-liter) turbocharged 4-cylinder engine of 200hp, up from 1.8/170; and 3.2 means a larger (3.2-liter) V-6 engine with 255 hp, up from 3.0/220. As further distinguishing characteristics, both engines now have direct fuel injection and 4 valves per cylinder (previously port injection/5 valves). Despite the update, A4s continue to be labeled '05 models. The 2.0 T comes in several variations, with front- and all-wheel drive; 6-speed manual or automatic transmission, and CVT automatic (continuously variable transmission). The 3.2 comes only as a quattro (all-wheel drive) with 6-speed automatic transmission. An S4 model, with 340-hp V-8 engine, will be added in summer '05 as an M3 competitor.

As the A4 3.2 and 330xi are the most closely matched A4 vs. 3 Series models, these are the models we compare here.

Key 330xi advantages over Audi A4 3.2 quattro [1]:

- Inline 6-cylinder engine, vs. V-6. Though Audi's V-6 is pleasant, it lacks that special sound of the BMW six – now better than ever. (See *AutoWeek* quote, page 16.)
- More advanced engine technology: magnesium-aluminum composite construction, Valvetronic, 3-stage induction system, electric water pump.
- Dynamic Cruise Control with braking capability

1 – Comparison based on competitor's '05 model.
2 – Available as of 9/05 production.

- Superior weight distribution: 52.9% front/47.1% rear, vs. approximately 60/40
- Standard 6-speed manual transmission (A4 3.2 comes only with automatic)
- More advanced xDrive AWD system, vs. Audi's older-concept quattro system
- Advanced braking functions (see page 34)
- 18-in. wheels/tires in differentiated front/rear sizes optional on 330xi, not available on A4s
- Run-flat tires standard; not available on A4s
- Standard Xenon Adaptive headlights, vs. optional (Audi's Lighting Package)
- Standard headlight cleaning system, vs. optional (Cold Weather Package)
- Standard automatic headlight control, vs. optional (Lighting Package)
- Standard rain-sensing windshield wipers, vs. optional (Lighting Package)
- Adaptive Brake Lights
- Ground lighting
- Greater passenger-compartment volume, 93 cu ft. vs. 90.1
- Standard moonroof, vs. optional (Premium Package)
- Logic 7 audio system standard; 2 subwoofers vs. Audi's 1
- Even Audi's optional Bose sound system not likely to match quality of Logic 7
- Wood interior trim standard, vs. optional
- Climate-controlled center console compartment
- Driver's-seat and exterior-mirror memory standard, vs. optional (Premium Package)
- Force limiters on front and outboard rear safety belts (A4 has tensioners front and rear, but force limiters only on front belts)
- Full maintenance for 4 years/50,000 miles, vs. scheduled maintenance only

A4 3.2 quattro strengths – lower base price, 235/45 standard tires; standard leather upholstery, power front-seat lumbar support, split folding rear seats, Satellite Radio preparation and alarm system; choice of optional Sirius or XM Satellite Radio; larger trunk.

Infiniti G35 and G35x

More than any other current model, these Nissan products represent the efforts of other vehicle makers – particularly those lacking a heritage comparable to BMW's – to compete directly with BMW. The G35 comes in three forms, all powered by Nissan's ubiquitous 3.5-liter V-6 engine[3]: the $31,040 6MT, with 298-hp engine version and 6-speed manual transmission; $31,290 "regular" with 280 hp and 5-speed automatic; and $33,090 AWD with 280 hp and an AWD system similar in concept to BMW's xDrive.

Key 330i advantages over the G35[1]:

- Inline 6-cylinder engine, vs. V-6. Nissan has given the G35 an interesting exhaust note, but BMW has further improved its inline six's unique and velvety sound.
- More advanced engine technology: magnesium-aluminum composite construction, Valvetronic, 3-stage induction system, electric water pump. Where Nissan goes the traditional way to get power (more "cubes"), BMW has taken a decidedly high-tech route.
- Available 6-speed automatic transmission, vs. Infiniti's 5-speed
- Available Sequential Manual Gearbox[2]
- Dynamic Cruise Control with braking capability

- Superior weight distribution: approximately 51/49 vs. 54/46
- Larger brakes: 13.0-in. front/13.2-in. rear vs. 12.6 front and rear
- Advanced braking functions (see page 34)
- Standard run-flat tires (G35: not available)
- Xenon Adaptive headlights (G35: Xenon, not Adaptive)
- Automatic headlight control standard (G35: Premium Package)
- Rain-sensing windshield wipers
- Adaptive Brake Lights
- Ground lighting
- Standard moonroof (G35: Premium Package)
- Tilt/telescopic steering wheel, vs. G35's standard tilt-only (power tilt/telescopic in G35 Premium Package)
- Standard 8-way power front seats (G35: 8-way driver's/4-way passenger's)
- Standard temperature- and volume-controlled rear air outlets (G35: Premium Package)
- Standard 13-speaker Logic 7 audio system (G35: 6-speaker Bose system in Premium Package)
- Standard wood interior trim, no-extra-cost alternate wood and aluminum trim (G35: aluminum standard; wood optional, but not in combination with sport suspension)
- Front and outboard rear safety belts have automatic tensioners and force limiters (G35: front only)

For 330xi vs. G35x AWD, add or substitute [1]:

- SMG not available on 330xi
- BMW's brake advantage even greater: 13.0-in. front/13.2-in. rear vs. G35x's smaller 11.7/11.3
- Full maintenance for 4 years/50,000 miles, vs. no included maintenance
- 12-year corrosion warranty, vs. 7

Available 330i/xi options not offered on G35/G35x [1]:

- Premium Package includes auto-dimming interior and exterior mirrors (G35/x: interior only), digital compass (not available in G35/x), power lumbar support (NA G35/x)
- Sport Package – sport seats with adjustable-width backrests
- Sport Package (330i) or option (330xi) – 18-in. wheels/tires with differentiated front/rear sizes (G35: 18-in. same size front/rear in Sport-tuned Suspension Package, not available on G35x)
- Any transmission available with BMW's Sport Package; G35 with manual transmission is tied to Sport-tuned Suspension Package, impairing choice.
- Sequential Manual Gearbox [2]
- Active Cruise Control
- Active Steering
- Park Distance Control
- Navigation/iDrive option (G35: included Vehicle Information System provides vehicle monitoring, maintenance reminders and trip computer but not TeleService)
- Split folding rear seats and ski bag
- Power rear and manual rear side-window sunshades

G35 strengths – standard leather upholstery, CD changer, heated front seats, active front head restraints and trunk pass-through; choice of optional Sirius or XM Satellite Radio; greater interior and cargo volumes, instrument cluster that adjusts with steering wheel; adjustable rear-seat backrests in Premium Package; 4/60,000 basic warranty, 6/70,000 powertrain warranty.

1 – Comparison based on competitor's '05 model.

2 – Available as of 9/05 production.

3 – In various versions, this engine powers a wide range of vehicles from the Nissan Altima to the Infiniti FX35 SUV.

MT– Manual transmission

AT – automatic transmission

SMG – Sequential Manual Gearbox

Lexus ES 330

Of Lexus' two models in the Entry Luxury segment, the IS 300 – closer to 3 Series in product character – is in its build-out phase (a mere 9972 IS 300 sedans and wagons were sold in the U.S. during '04) and the successor hasn't been introduced. This leaves the ES 330, a competent car but far less sporty than the 3 Series, as the Lexus competitor. Offered only as a sedan, it achieves a sales volume comparable to that of the 3 Series Sedans. For '05 the ES 330 got exterior and interior design retouches and new optional 17-in. wheels and tires. At $32,600 with automatic (the only transmission offered), the ES is base-priced closer to the 325i, but (as explained below) moves into 330i price territory when optioned with some important items of 330i standard equipment. No all-wheel-drive version is offered or planned.

Key 330i advantages over Lexus ES 330[1]:

- Inline 6-cylinder engine. The Lexus V-6 is smooth and quiet, but lacks BMW's entertaining aural character.
- More advanced engine technology: magnesium-aluminum composite construction, Valvetronic, 3-stage induction system, electric water pump.
- Choice of 6-speed manual, SMG[2] or automatic transmission, vs. Lexus' 5-speed automatic only.
- Available 6-speed automatic transmission, vs. Lexus' 5-speed
- More power, 255 hp vs. 225
- Better performance: 0-60 mph in 6.1 sec. (MT or SMG) or 6.3 sec. (AT), vs. ES 330's 7.2 sec.
- Rear-wheel drive, vs. FWD (AWD not offered)
- Aluminum front suspension system, vs. steel
- More sophisticated suspension system all-around: double-pivot front/5-link rear vs. Lexus' front/rear struts
- A dramatic range of superior brake features:
  - Larger discs – 13.0 in. front/13.2 in. rear vs. ES 300's 11.7/10.6
  - Ventilated all around, vs. front only
  - Advanced braking functions (see page 34)
- Standard Dynamic Stability Control (including advanced functions); Lexus's Vehicle Stability Control is optional
- Standard 17 x 8.0 wheels and 225/45 tires, vs. 16 x 6.5 and 215/55
- Standard run-flat tires (ES 330: not available)
- Standard Xenon Adaptive headlights and rain-sensing wipers. Lexus offers Xenon (not Adaptive) lights and rain-sensing wipers as a combined option.
- Adaptive Brake Lights
- Tilt/telescopic steering wheel, vs. tilt-only
- Standard 13-speaker Logic 7 audio system, with 2 subwoofers in BMW's patented underseat locations. For a comparable system, Lexus offers the Mark Levinson premium audio system only in combination with the Navigation System – and it has just 7 speakers (with 1 subwoofer), vs. BMW's 13 speakers (with 2 subwoofers).
- Condition-Based Service (standard), Tele-Service (included in Navigation/iDrive option). Lexus maintenance intervals aren't automatically adapted to vehicle use.
- Full maintenance for 4 years/50,000 miles, vs. no included maintenance
- 12-year corrosion warranty, vs. 6
- Available 330i options not offered on ES 330:
  - Sport Package, including sport suspension, 18-in. wheels/tires in differentiated front/rear sizes, sport steering wheel and sport seats. The sportiest equipment Lexus offers is 17 x 7.0 wheels with 215/55 tires all around.
  - Premium Package, including 4-way power front-seat lumbar support. 2-way lumbar (firmness only) is standard on the ES driver's seat, unavailable on the front passenger's seat.
  - Sequential Manual Gearbox[2]
  - Active Cruise Control
  - Active Steering
  - Park Distance Control
  - Comfort Access[2]
  - Sirius Satellite Radio
  - Alternate wood or aluminum interior trim
  - Split folding rear seats and ski bag
  - Rear side-window sunshades (Lexus offers only a rear-window shade)

ES 330 strengths –standard auto-dimming interior and exterior mirrors, universal transceiver, standard leather upholstery and 10-way power driver's seat; available Adaptive Variable suspension, power-adjustable pedals, in-dash CD changer and heated/ventilated front seats; greater EPA interior and cargo volumes, 6/70,000 powertrain warranty.

Mercedes-Benz C-Class

In the C-Class, which runs all the way from a 4-cylinder hatchback to the wagons and the 5.5-liter V-8 C55 AMG, the models squared off against the new 3 Series Sedans are the C 230 Sport Sedan ($29,970), C 240 Sedan (RWD $33,370, AWD $34,570) and C 320 Sedan (RWD $38,670, AWD $39,870). The series got a facelift for '05, with design updates inside and out, a new standard audio system, available GPS Navigation, improved manual shift linkage and (on models described as Sport Sedans) sport suspension and drilled front brake discs. For '06, a new, larger-engined C 350 (shown above) replaces the C 320. This model comes in Luxury and Sport trim levels, the former available with rear- or all-wheel drive and the latter as rear-drive only but with a choice of 6-speed manual or 7-speed automatic transmission. As this is written, prices for the C 350 models have not been set; the lowest base price is expected to be about $38,000.

Key 325i advantages over Mercedes-Benz C 230 Kompressor Sport Sedan [1]:

- 3.0-liter 6-cylinder engine vs. supercharged 1.8-liter 4-cylinder. Here BMW offers dramatically greater smoothness and finer sound, plus…
- More power: 215 hp, vs. 189
- Better performance: 0-60 mph in 6.7 sec. (MT) or 7.2 sec. (AT), vs. C 230 Sedan's 7.6/7.8
- More advanced engine technology: magnesium-aluminum composite construction, Valvetronic, electric water pump. Mercedes chose a very small engine and a supercharger to get power out of it; the supercharger emits a high-pitched whine that can be annoying at times.
- Expect more precise shifting from BMW's manual transmission: Of Mercedes' improved 6-speed, Germany's *Auto Zeitung* reports that "Since the overhaul, the shift lever has proven easier to operate, but some kinks remain."
- Available 6-speed automatic transmission, vs. 5-speed
- Dynamic Cruise Control with braking capability
- Aluminum front suspension, vs. Mercedes' steel
- Advanced braking functions (see page 34)
- Standard run-flat tires (C-Class: not available)
- Standard rain-sensing wipers, vs. Sun Roof Package
- Adaptive Brake Lights
- Greater EPA passenger-compartment volume: 93 cu ft. vs. 85.5
- Standard moonroof, vs. optional
- Climate-controlled center console compartment
- Standard 10-speaker audio system with 2 subwoofers, vs. Mercedes' 6 speakers, no subwoofer
- Standard wood interior trim, no-extra-cost alternate wood or aluminum trim (C 230 K has standard aluminum, offers no wood trim)
- Full maintenance for 4 years/50,000 miles, vs. Mercedes' complementary 1,000- and 3,000-mile service and one tire rotation only
- 12-year/unlimited-mileage corrosion warranty, vs. 4-year/50,000-mile
- Available 325i options not offered on C 230 K Sedan:
  - Premium Package, including auto-dimming interior and exterior mirrors; Mercedes offers only left-hand exterior auto-dim.
  - Sport Package, including sport seats with variable backrest width; rear tires wider than C 230 K's
  - Xenon Adaptive headlights, vs. Xenon non-Adaptive
  - Active Cruise Control
  - Active Steering
  - Park Distance Control
  - Comfort Access [2]
  - 13-speaker Logic 7 audio system
  - Rear side-window sunshades (Mercedes offers only a rear-window shade)

1 – Comparison based on competitor's '05 model.
2 – Available as of 9/05 production.
MT– Manual transmission
AT – automatic transmission
SMG – Sequential Manual Gearbox

For 325i vs. C 240 Luxury Sedan, add or substitute [1]:

- 3.0-liter inline 6-cylinder engine vs. 2.6-liter V-6, with many advantages besides BMW engines' legendary smoothness and sound…
- More power: 215 hp, vs. 168
- More torque: 185 lb-ft. vs. 177
- Better performance: 0-60 in 6.7 sec. (MT), 7.2 sec. (AT) vs. C 240's 8.7 (AT only)
- More advanced engine technology: magnesium-aluminum composite construction, Valvetronic, 24 valves vs. 18, electric water pump
- Choice of 6-speed manual or automatic transmission, vs. 5-speed automatic only
- No-extra-cost alternate wood or aluminum interior trim; wood standard in C 240, no alternate trims offered
- 325i offers Sport Package, including sport suspension, 17-in. wheels/tires in differentiated front/rear sizes, sport steering wheel, and sport seats with adjustable backrest width. This Mercedes isn't available with sport equipment.

For 330i vs. C 350 Luxury Sedan, add or substitute:

- Though the C 350's engine is all-new and has more up-to-date engineering than the old 3.2 (silicon-aluminum cylinder liners, 4 valves/cylinder), it's still a 90˚ V-6 and thus requires a balance shaft to smooth it out. It's powerful and torquey, but we'll bet it doesn't sound as great as BMW's new inline 6. (See *AutoWeek* quote, page 16.)
- More advanced engine technology also includes 3-stage induction system vs. 2-stage
- Choice of 6-speed manual, SMG [2] or automatic transmission, vs. automatic only
- Standard Xenon Adaptive headlights, vs. optional Xenon non-Adaptive
- Both models have standard Logic 7 audio systems; BMW's has 13 speakers/2 subwoofers, Mercedes' has 12 speakers/1 subwoofer.

For 330i with Sport Package vs. C 350 Sport Sedan, add or substitute:

- 330i Sport Package includes 18-in. wheels/tires with differentiated front/rear sizes, vs. C 320 Sport Sedan's 17-in. equipment; and sport seats with adjustable backrest width
- Standard wood interior trim, no-extra-cost alternate wood or aluminum trim; aluminum standard in C 350 Sport Sedan, no alternate trims offered

For 325xi/330xi vs. C-Class AWD models [1]:

- BMW's xDrive is more advanced than Mercedes' 4Matic, which has a basic fixed front/rear torque split of 40%/60% and optimizes traction only via brake intervention. xDrive has an electronically variable torque split, and works to optimize not only traction but also handling via brake and engine intervention (see page 37). Finally, as in other Mercedes series, the AWD versions come only with a 5-speed automatic transmission – even the C 350, whose rear-drive versions offer a 6-speed manual or 7-speed automatic.

C-Class strengths – all Sedans have greater interior and cargo volumes. **C 230 K and C 350 Sport Sedans** – standard sport suspension, drilled front brake discs, 17-in. wheels and tires with differentiated front/rear sizes, AMG-design lower bodywork, rubber/aluminum pedals and other special interior trim items. **All C 240 and C 350 Sedans** – standard 10-way power front seats and power tilt/telescopic steering wheel. **C 350 Sedans** – new V-6 engine produces 268 hp/258 lb-ft. torque; 7-speed automatic transmission on rear-drive models.

Who are our target customers?

It will surprise no one that the new 3 Series will be marketed as the quintessential BMW for the customer who –

- loves to drive
- is technologically savvy
- is self-confident
- has an independent streak
- leads an active lifestyle
- has practical needs that are adequately addressed by a compact sedan.

In this last regard, the new 3's increased rear-seat and trunk space will extend its appeal to buyers with greater needs for practicality, giving it enhanced conquest potential for current Mercedes and Lexus owners. Nearby tables list some specifics on the current "average" 3 Series Sedan owner and the typical owners of all Luxury Compact sedans.

Notable distinctions of BMW Sedan owners from those of the category in general are apparent in the tables:

- Slightly higher proportion of male owners
- A higher proportion of Administrative and Clerical owners, vs. Teachers and Educators
- More children in the family
- Differing automotive affinities and sales sources, tending more toward higher-end brands.

Regarding age: Between 1999 and 2004 the median age of 3 Series Sedan buyers has increased from 39 to 44. Indeed, 28% of our buyers are in their 30s, and 33% are between 45 and 59. The rest are at opposite ends of the age scale, with only 7% are between 25 and 29 – half the proportion we had in this age group in '98. This is a challenge for us.

Our communications program will be directed toward re-engaging owners and attracting new customers to the brand.

Key dates include:

Pre-launch

- Launch on bmwusa.com – October '04–May '05
- *BMW Magazine* teaser – November '04
- Direct mail to 3 Series off-lease customers – December '04–May '05
- International press launch – late January '05
- Start of production, 325i and 330i Sedans – March 1
- Start of production, 325xi and 330xi Sedans, 325xi Sports Wagon – September 1
- Major auto shows: Geneva, Switzerland (March 3-7), New York (March 23–April 4)
- Pricing announcement – March 23

Retail launch

- Product Information Book – mid-April
- Brochures and POS materials to BMW Centers – April 15
- Training – April 15–May 28
- U.S. press launch – May 1-7
- TV/print/online ads – May-August
- Demos arrive at BMW Centers – May
- Retail launch, 325i & 330i Sedans – May 6

For further details on the Marketing Plan, contact your market team or Ken Bracht, 3 Series Product Manager, at 201/307-4167.

Today's typical 3 Series Sedan owner

• Gender	50% female/50% male
• Age	Younger than the competition (30s to 50s), but getting older: Loyalists = oldest; conquest (L/P) – in-between; conquest (non-L/P) = youngest, Gen-X
• Occupation	Executive/Managerial 24% Professional Specialty 16% Sales/Health Care/ Administrative/Clerical 22%
• Median house-hold income	$102,000
• Children	1 in 3 households has kids at home
• Interests	Driving for fun, working out, running/jogging/walking, golf, listening to radio, personal computing
• Psychology	Strong self-perception and confidence, independent
• Brand affinities	BMW, Mercedes-Benz, Audi, Lexus, Acura
• Sales source	Audi, Mercedes-Benz, Infiniti, Acura

Typical Luxury/Performance Compact Sedan owner

• Gender	48% female/52% male
• Median age	49
• Occupation	Executive/Managerial 23% Professional specialty 17% Sales/Health Care/Teacher/ Educator 22%
• Median house-hold income	$102,758
• Children	Overwhelming majority have no children (73%)
• Interests	Fine dining/dining out, traveling, reading, friends
• Psychology	Strong self-perception and confidence, independent, enjoys engaging in "fun activities"
• Brand affinities	Toyota, Lexus, Ford, Honda, Chevrolet
• Sales source	Lexus, Toyota, Honda

1 – Comparison based on competitor's '05 model.
2 – Available as of 9/05 production.
MT– Manual transmission
AT – automatic transmission
SMG – Sequential Manual Gearbox

Principal General Manager	Sales New Cars	Sales Used Cars	Business Manager (F&I)	Service	Parts and Accessories	Administration

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