

2. Design

BMW cars are renowned for engineering excellence and class-leading driving dynamics, but innovative design has also proved to be a brand pillar that has defined the marque. BMW's iconic kidney grille first appeared on the 328 and has been retained on every production BMW since. Other design cues such as the long bonnet, set back glasshouse, round headlights, long wheelbase with short front and rear bodywork overhangs, and the Hofmeister kink (named after the then BMW chief designer Wilhelm Hofmeister and his styling detail on the 1962 BMW 3200 CS Bertone) are always present.

Exterior

The design of the new BMW 3 Series Saloon and Touring continues the premium appearance expected of a BMW but now with an added sporting stance to underscore the superior driving credentials.

From the front, both the new Saloon and Touring models receive the same remodelling. ES and SE specification cars now come with a revised front bumper and spoiler. The removal of a horizontal slat from the middle air intake creates a wider aperture while the bumper has been re-profiled. A new headlight arrangement features twin corona side light rings, while the optional xenon headlights come with LED indicators and side positioning lights. The front fog lights are also a new style for enhanced optical efficiency.

Detailed changes to the new 3 Series (top) compared to the outgoing model (bottom).



The most obvious differentiating factors from the head-on angle are the revised kidney grille and new bonnet. Each kidney grille is now wider and sits lower in the bodywork than before and is encapsulated with a chrome surround. The bonnet features two precision lines running back from the kidney grille to present a more dramatic appearance.

The difference between the new (top) and previous (bottom) BMW 3 Series is clear.



From a side profile, the Hofmeister kink is still very evident. A new crease line along the valance accentuates the rear-wheel-drive configuration. A new 16" to 18" alloy wheel programme featuring eight designs also adds to the dynamic impression. To complete the enhancements of the side profile the mirrors have also been slightly enlarged for greater visibility.

The swept-up look of the new car (bottom) accentuates the rear-wheel-drive configuration of the car compared to its predecessor (top). The light reflecting styling line also serves to connect elements in the front and rear valances to visually stretch the wheelbase and make the car appear longer.



At the rear, the subtle reworking of the class-leading BMW 3 Series adds a fresh appeal. Reshaped mono-colour rear light clusters incorporate LED light bars and indicators as standard. The brake lights come with a dynamic safety function which sees them flash repeatedly when the driver brakes sharply in the car. Additionally, should such an extreme manoeuvre occur, the hazard warning lights come on as the vehicle comes to a standstill. The boot lip sits fractionally higher while the rear valance now incorporates a double concave surface to add greater differentiation in light tone.

New rear light cluster (right) shows styling enhancement



To heighten the visual sporting stance of the BMW 3 Series the rear track of the car has been widened by up to 24mm, dependent on model variant. This has been achieved with the use of a new wheel carrier and other, minor axle modifications.

M Sport – sporting attributes makes the UK the world’s largest market

The styling enhancements referred to thus far apply to the familiar 3 Series ES and SE levels of specification. However, BMW sells more 3 Series M Sport models in the UK than anywhere else in the world. To July, UK car buyers have taken delivery of 14,284 M Sport 3 Series cars - nearly half of the 34,004 3 Series cars sold in total in the UK in 2008.

All BMW 3 Series M Sport cars feature a revised M Aerodynamic package with redesigned front valance and rear diffuser, M Sport suspension, shortened gearshift, Sport seats, M Sport multi-function steering wheel, Anthracite headlining, High-gloss Shadowline exterior trim, M designation door sill finishers and Blue Shadow cloth and Alcantara upholstery.

Interior

Inside, and the most striking change is for cars specified with one of the optional navigation systems. Such models now come with an all-new operating system and multimedia package.

New iDrive controller



The new iDrive system has been changed for greater ease of use while at the same time adding more functionality. The BMW Professional Multimedia navigation system is built around a hard disc which is used to help power onboard systems such as navigation map data, voice processing data and the Integrated Owner's Manual. The appearance of the opening menu screen has been redesigned with the subsequent look and operation of the sub-menus all being accessed in a different manner. Before the menu consisted of five or nine distinct choices, depending on BMW model, and were opened by moving the controller in the required direction. The new system features a simple list format with the sub-menus building on each other, much the same way as your desktop computer works, and so is far more familiar to the untrained eye.

Eight gigabytes of the 3 Series' hard drive is set aside for music storage. Such capacity allows for more than 100 albums to be saved on the drive for the owner's convenience, with music from audio CDs downloaded on to the hard disc. Following an approximately 10-minute copying process, the audio CD may then be removed from the drive unit, with the data now retained on the hard disc in the car.

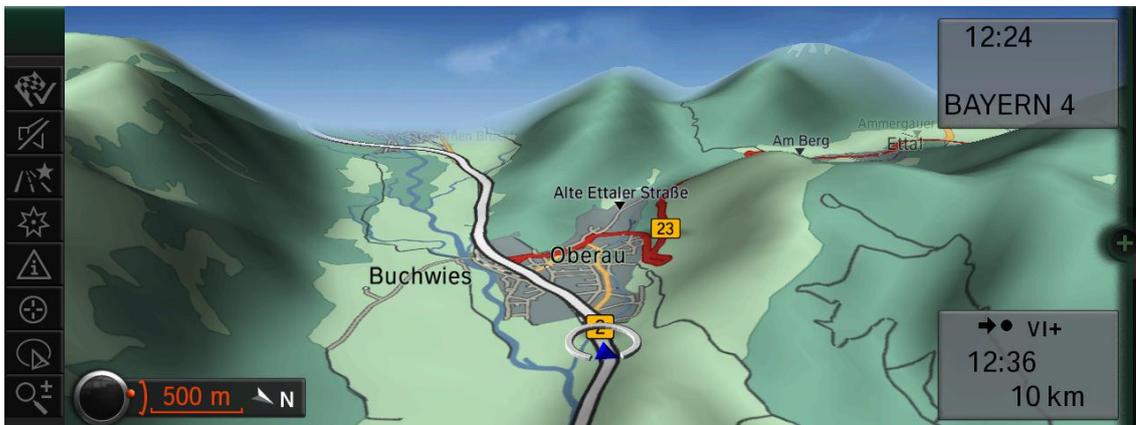
The hard disc of the BMW 3 Series also uses a function called a Gracenotes database. Gracenotes is a worldwide database of all published music and the inclusion of the database in the hard disc of the 3 Series enables the user to link the individual titles, the artists and album data to the music being stored. This information results in the most convenient way of searching for the desired track or album.

The BMW 3 Series is further enhanced with a new navigation system. The three-dimensional presentation of maps with an elevation profile providing a realistic bird's eye view is now a standard feature. This function includes three dimensional city maps that also highlight landmark buildings as key reference points.

It is now possible to access preview maps when entering your destination to provide easier orientation with destinations that might bear the same name. The same applies to preview maps of traffic reports. For those drivers contemplating a long road trip the travel planner function permits waypoints to be entered so the entire journey, including detours off the quickest route, can be calculated from the start. Because of the level of

detail and resolution of the navigation screen it can be changed at a click of the controller to a night setting to ease the driver's eyes.

The new multimedia navigation system appearance



ConnectedDrive

The BMW 3 Series can be specified with BMW ConnectedDrive. This facility features elements such as a dedicated call centre with a concierge service, automatic fault awareness and BMW Assist, the electronic safety net that automatically dials the emergency services in the event of an accident, free of charge for three years.

The ConnectedDrive system also offers users its own online portal which enables the driver to pre-enter their destination details from the comfort of their own desk and have it uploaded to the car. This destination can be selected manually or by using Google maps, with BMW remaining the only premium manufacturer to offer their drivers access to Google maps.

Full Internet access – a segment world first

The new BMW 3 Series can, in some markets, come with full Internet access, a world first in its class. EDGE (Enhanced Data Rates for GSM Evolution) technology, which is three to four times faster than the GPRS mobile communication standard, makes this possible. A special BMW server is used to transmit the internet sites selected into the car. The server is able to present Flash animations and other so-called Applets with an extremely high data volume, ensuring particularly fast transmission and optimum presentation. The BMW 3 Series with full Internet connectivity launches in Germany first. The UK market will make a decision on when to introduce this option based on the rollout of EDGE technology and the cooperation with network providers.

3. Drivetrain

BMW's engines are unmatched in terms of the combination of efficiency and power output. The use of high-precision direct injection in petrol models and third-generation common-rail direct injection on diesel models and variable single turbocharging or twin sequential or in parallel turbocharging makes for class-leading drive trains, be they petrol or diesel. This market-leading and award-winning position is cemented with the addition of facets of BMW's acclaimed EfficientDynamics programme fitted as standard across the entire range.

Unlike competitors who offer a few 'eco' variants in their ranges, EfficientDynamics technologies are now available on every BMW sold. No other premium competitor can match BMW's current volume-weighted fleet average CO₂ figure of 157.6g/km. Independent analysis from Cleangreencars.co.uk has also showed that the BMW Group has done more than any other manufacturer over the last two years to reduce CO₂ and improve emissions. More details are available at www.cleangreencars.co.uk.

These improvements come as a result of start / stop technology on four cylinder, manual gearbox cars, low-rolling resistance tyres, active aerodynamics and a host of other fuel saving features.

The BMW 3 Series Saloon and Touring line up is powered by a range of award-winning engines with five petrol and five diesel derivatives offered from launch. The engine in the 330d derivative is completely new and it is joined by two engines built in the UK's Hams Hall plant in the guise of four-cylinder 318i and 320i models, and the 320d, historically the biggest selling 3 Series variant. The BMW 318d, the most economical and least polluting production 3 Series ever, completes the line up.

Moving up an ownership tier and the 325i and 325d offer the smooth refined nature inherent with a straight six-cylinder configuration. Crowning the non-M cars in the range is the current outright International Engine of the Year engine in the 335i. This impressive powerplant is offered alongside BMW's award-winning engines with the 330i and 335d – both category winners in the International Engine of the Year.

BMW 330d

The BMW 330d engine is a newly developed, all-aluminium unit that uses third generation common-rail diesel injection technology with piezo injectors, and a single turbo-charger with variable vane geometry for optimum performance.

The new six-cylinder, 2,993cc engine in the 330d produces 245hp at 4,000rpm, which is 14hp more than its predecessor. Torque has also increased by 20Nm to 520Nm and this peak figure is available from 1,750rpm through to 3,000rpm. The impressive

statistics mean the performance figures of the new 330d Saloon and Touring have improved compared to the previous model. It previously outran all competitors in the zero to 62mph sprint recording a time of 6.7 seconds, but the new 330d Saloon now records a time of 6.1 seconds (Touring 6.2 seconds) before going on to an electronically-limited top speed of 155mph. The economy of the new 330d Saloon has similarly improved rising from 46.3mpg to 49.6mpg while emissions have been cut by five per cent from 160g/km to 152g/km. The 330d Touring posts near identical figures recording a combined consumption figure of 47.9mpg compared to 45.6mpg previously with emissions dropping from 163g/km to 155g/km.

The two-thirds of new 330d drivers who favour an automatic transmission see an additional benefit with the introduction of the new BMW 3 Series. Refinements to the automatic transmission offered, combined with enhancements to the engine, mean their chosen vehicle will now qualify for a lower Vehicle Excise Duty band (D instead of E) with CO₂ emissions of 164g/km (Touring 165g/km) as opposed to 175g/km (Touring 176g/km). This is two bands lower than the competitor from Mercedes Benz.

The 330d engine is one of the most advanced on the market today and it has been designed to meet all forthcoming legislative criteria for emissions and fuel consumption targets. The 2,993cc engine is currently EU5 compliant and though the target for EU6 has yet to be finalised, indications are that the 330d will easily surpass the intended minimum criteria.

The table below underscores the competitive advantage these changes have ensured. Further comparisons of the 3 Series range with competitor products can be gleaned from logging on to www.bmw.co.uk and clicking through the EfficientDynamics link.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 – 62	Top Speed Mph	Combined Mpg	CO ₂ Emissions g/km	VED Band
BMW 330d Saloon*	245	520	6.2	155**	45.6	164	D
Mercedes C320 CDi Saloon	224	510	6.9	155**	38.7	193	F
BMW 330d Touring*	245	520	6.3	155**	44.8	165	D
Mercedes C320 CDi Estate	224	510	7.1	152	43.5	199	F

Data supplied by EMMOX Carcost Ltd

*Car with automatic transmission as Mercedes only offered with this gearbox.

** Electronically-limited.

BMW 335d

BMW's engineers have made minor software changes to deliver even greater levels of performance in the new 335d Saloon and Touring models. Power and torque output figures for the 2,993cc part aluminium and iron unit are still the same at 286hp and 580Nm, however the Saloon now reaches 62mph from standstill in 6.0 seconds as opposed to 6.2 seconds. The Touring also records a jump in performance to post a 6.1 zero to 62mph time.

The changes to the new 335d Saloon and Touring bear fruit in terms of economy and emissions. The new 335d records a combined consumption figure of 42.2mpg for the Saloon (Touring 41.5) while a CO₂ figure of 178g/km is equally impressive for a car with such high levels of performance.

The BMW 335d is a class-leading car, in part, because of the unique way its twin-turbocharger technology works compared to any competitor product. On the 335d the first, small turbocharger functions at low engine speeds to provide near instantaneous power and torque at less than 2,000rpm. The second, larger turbocharger spools into action as engine speed increases. At higher engine revolutions a flap in the exhaust system closes off the smaller turbocharger so that the larger one can operate alone. This process delivers a seamless wave of acceleration and power from low revs through to peak performance with none of the lag that has historically afflicted turbocharged engines.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 - 62	Top Speed Mph	Combined Mpg	CO ₂ Emissions g/km	VED Band
BMW 335d Saloon*	286	580	6.0	155**	42.2	177	E
Mercedes C320 CDi Saloon	224	510	6.9	155**	38.7	193	F
BMW 335d Touring*	286	580	6.1	155**	41.5	178	E
Mercedes C320 CDi Estate	224	510	7.1	155**	37.7	199	F

Data supplied by EMMOX Carcost Ltd

*Cars fitted with automatic transmission only.

** Electronically-limited.

BMW 325d

The performance of the BMW 325d Saloon and Touring showcases improvements in performance and efficiency. Combined fuel consumption on the 325d Saloon improves from 47.9mpg to 49.6mpg, while CO₂ emissions are cut from 155g/km to 153g/km. Meanwhile, the Touring makes similar strides in progress with a consumption figure of 47.9mpg instead of 47.1mpg. CO₂ emissions have been cut from 158g/km to 155g/km.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 - 62	Top Speed Mph	Combined Mpg	CO ₂ Emissions g/km	VED Band
BMW 325d Saloon*	197	400	7.6	145	45.6	164	D
Audi A4 TDI 190 Saloon	187	400	7.7	140	44.1	167	E
BMW 325d Touring	197	400	7.7	144	44.8	165	D
Audi A4 TDI 190 Avant	187	400	8.3	140	43.5	170	E

Data supplied by EMMOX Carcost Ltd

*Cars fitted with automatic transmission only.

** Electronically-limited.

BMW 320d

The BMW 320d is the biggest selling variant of 3 Series – a position it has enjoyed since 2003 when it surpassed the 318i – currently accounting for 42 per cent of 3 Series Saloon sales and 46 per cent of Touring volume. The mainstay of the private and business user alike, the 320d is the current What Car? magazine Compact Executive Car of the Year, having held that position for the past three years running, and been a previous outright Car of the Year winner. It has also won the Compact Executive title in Fleet News for the past four years and a similar title in Auto Express for the past three years in a row. Business Car, Autocar and others have also all commended the 3 Series or, in particular the 320d, as the best in class. To retain this position engineers updated the engine for September 2007 production.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 - 62	Top Speed Mph	Combined Mpg	CO ₂ Emissions g/km	VED Band
BMW 320d Saloon	177	350	7.9	143	58.9	128	C
Audi A4 TDI 170 Saloon	168	350	8.3	143	53.3	140	C
BMW 320d Touring	177	350	8.1	142	57.6	130	C
Audi A4 TDI 170 Avant	168	350	8.6	140	50.4	149	C

Data supplied by EMMOX Carcost Ltd

BMW 318d

Another big selling car for BMW, the BMW 318d Saloon and Touring is expected to be even more popular thanks to a six-speed automatic gearbox being available for the first time. It offers drivers a more relaxed driving experience for a negligible impact on economy and emissions. A BMW 318d Saloon with automatic gearbox records a combined consumption figure of 52.3mpg (Touring 50.4mpg) and CO₂ emissions of 144g/km (Touring 146g/km).

Powered by the same 1,995cc engine as the 320d, but in a lower state of tune, the 318d offers even greater gains in economy and emissions. The BMW 318d Saloon is capable of zero to 62mph in 9.3 seconds (Touring 9.6 seconds) before going on to a 130mph top speed.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 - 62	Top Speed Mph	Combined Mpg	CO2 Emissions g/km	VED Band
BMW 318d Saloon	143	300	9.3	130	60.1	123	C
Mercedes C200 CDI Saloon	136	270	10.4	133	47.9	156	D
BMW 318d Touring	143	300	9.6	130	58.9	125	C
Mercedes C200 CDI Estate	136	270	10.8	129	47.1	157	D

Data supplied by EMMOX Carcost Ltd

BMW 335i

The twin-turbocharged petrol engine that powers the BMW 335i is the International Engine of the Year for 2008: the second year in a row it has won the outright honours in the most important global powertrain awards.

Compared to the twin-turbocharged diesel engine in the 335d models, the forced-induction technology on the 335i operates in a different way. It is more efficient for the engine to operate with two same-sized turbochargers with each one helping to supply three cylinders due to the characteristics of petrol power. This sees the 335i produce a diesel-engine style flat torque curve courtesy of its variable vane turbo technology. The engine's output is 306hp at 5,800rpm while peak torque is attained at just 1,300rpm through to 5,000rpm.

This 2,979cc unit is capable of propelling the BMW 335i Saloon from zero to 62mph in 5.6 seconds (Touring 5.7 seconds) and on to an electronically-limited top speed of 155mph. It achieves this impressive performance through a combination of twin-turbocharger technology and a high-precision direct injection system.

The advanced turbocharging system on the BMW 335i Saloon enables it to deliver class-leading performance figures. The 2,979cc-powered car is still capable of achieving 31.0mpg and a CO2 figure of just 218g/km.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 - 62	Top Speed Mph	Combined Mpg	CO ₂ Emissions g/km	VED Band
BMW 335i Saloon*	306	400	5.8	155**	31.0	221	F
Mercedes C350 Saloon	272	350	6.4	155**	29.1	232	G
BMW 335i Touring*	306	400	5.9	155**	30.4	223	F
Mercedes C350 Estate	272	350	6.5	155**	28.5	235	G

Data supplied by EMMOX Carcost Ltd

*Car with automatic transmission as Mercedes only offered with this gearbox.

** Electronically-limited.

BMW 330i

The BMW 330i is powered by a 2,996cc six-cylinder engine that develops 272hp at 6,700rpm. The smooth and refined powerplant mixes a high-revving, sports oriented power delivery with everyday in-gear flexibility thanks to its peak torque of 320Nm. The performance of the BMW 330i betters that offered by rivals as demonstrated below. Its closest competitor, the Mercedes C280, produces greater CO₂, returns worse fuel economy, yet comes with a substantially lower power output and performance figures.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 - 62	Top Speed Mph	Combined Mpg	CO ₂ Emissions g/km	VED Band
BMW 330i Saloon*	272	320	6.3	155**	39.2	173	E
Mercedes C280 Saloon	231	300	7.2	152	30.7	219	F
BMW 330i Touring*	272	320	6.4	155**	38.2	178	E
Mercedes C280 Estate	231	300	7.5	149	30.1	224	F

Data supplied by EMMOX Carcost Ltd

*Car with automatic transmission as Mercedes only offered with this gearbox.

** Electronically-limited.

BMW 325i

As it is based on the class-leading 330i it is, perhaps unsurprising, that the 325i dominates its competitor set too. The 218hp six-cylinder car has a Vehicle Excise Duty band lower than its Mercedes counterpart. At the same time, its fuel consumption of 39.8mpg and zero to 62mph time are unsurpassed.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 - 62	Top Speed Mph	Combined Mpg	CO2 Emissions g/km	VED Band
BMW 325i Saloon	218	270	6.7	155*	39.8	170	E
Mercedes C230 Saloon	204	245	8.4	149	31.0	216	F
BMW 325i Touring	218	270	6.9	154	39.2	173	E
Mercedes C230 Estate	204	245	8.6	144	30.4	221	F

Data supplied by EMMOX Carcost Ltd

* Electronically-limited.

BMW 320i

The BMW 320i and the BMW 318i are cars with a strong UK connection. The BMW Plant Hams Hall facility in the Midlands produces all of the four-cylinder petrol engines for the BMW Group worldwide and in August 2008, the plant built its 1,500,000th engine. Even the engines that powered Andy Priaulx to World Touring Car Championship glory originally started life at Hams Hall prior to the necessary racing modifications.

Featuring every aspect of BMW EfficientDynamics technologies, the BMW 320i is the benchmark car compared to its main rival and sits two VED bands below the Audi competitor, as the table below outlines.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 - 62	Top Speed Mph	Combined Mpg	CO2 Emissions g/km	VED Band
BMW 320i Saloon	170	210	8.2	142	46.3	146	C
Audi A4 FSI T 160 Saloon	158	250	8.6	140	39.8	169	E
BMW 320i Touring	170	210	8.4	140	45.6	148	C
Audi A4 FSI T 160 Avant	158	250	8.9	140	39.2	170	E

Data supplied by EMMOX Carcost Ltd

BMW 318i

Yet again it is the BMW powerplant that surpasses its main rival in overall terms courtesy of EfficientDynamics technologies. The 1,995cc four-cylinder engine car comes with every facet of EfficientDynamics and this sees the BMW 318i record a higher power output, a greater zero to 62mph time, better combined fuel consumption and lower emissions. All of this equates to a car that is more dynamic to drive yet is cheaper to own, again being two VED bands below the Audi competitor.

Model	Power Hp	Torque Nm	Zero – 62mph Seconds 0 - 62	Top Speed Mph	Combined Mpg	CO ₂ Emissions g/km	VED Band
BMW 318i Saloon	143	190	9.1	130	47.9	142	C
Audi A4 FSI T 120 Saloon	118	230	10.5	130	39.8	169	E

Data supplied by EMMOX Carcost Ltd

EfficientDynamics

Since it was first introduced in 2007 BMW's award-winning EfficientDynamics technologies have had a huge impact on car buyers and the environment. In 2007 alone 450,000 EfficientDynamics-equipped cars were sold in Europe and in 2008 this figure is expected to rise to approximately 700,000 vehicles. As a graphic illustration of its impact, compared to the 2006 BMW range, which did not feature EfficientDynamics, those 700,000 cars will consume 150 million litres less fuel in 2008 and emit 373,000 million tonnes less CO₂.

At the end of 2007, BMW had 67 models recording less than 165g/km CO₂ emissions and by the end of 2008 this will increase to 110 models. In 2008 63 per cent of all BMWs sold have CO₂ emissions below 165g/km. Currently there are 73 models that fall below the 140g/km threshold.

To ensure as many new BMW 3 Series Saloon and Touring models post the lowest possible CO₂ figures all variants of both body styles get facets of BMW EfficientDynamics. Four-cylinder models come as standard with every element. Brake Energy Regeneration is standard across the range in conjunction with active aerodynamics and low viscosity fluids in the steering and transmission systems. Third generation common-rail systems for the diesel-engined vehicles and high-precision direct injection on the petrol models serve to optimise the combustion process.

Auto Start-Stop technology is available as standard on all four-cylinder manual transmission cars. The feature automatically switches off the engine when the vehicle is stationary and the driver takes his foot off the clutch. As soon as the clutch is depressed, the engine restarts ensuring that Auto Start-Stop is completely unobtrusive in normal driving.

On-demand management of ancillary units likewise serves to further optimise efficiency. The power required to drive the fuel and steering assistance pumps has been significantly reduced by matching the uptake to current driving conditions, saving substantial energy in the process. In addition, the clutched air-conditioning compressor automatically disconnects the compressor as soon as the air conditioning is switched off to save energy.

Transmission

Power in all BMW 3 Series Saloon and Touring models is transmitted to the road via a standard six-speed manual transmission with a six-speed automatic offered as an option (except 335d where it is standard). From September 2008, customers ordering 335i Coupé or Convertible models will now be able to specify an optional Double Clutch Transmission – similar in operation and performance to the M DCT first showcased on the M3 Convertible in April. Offering two settings of gear change (via a Sport button) as opposed to the 11 DRIVELOGIC settings on the M3, the new Double Clutch Transmission offers faster gear changes than is possible with the standard manual gearbox. It also has the added benefit of reduced fuel consumption and lower emissions.

4. Chassis & safety

BMW is renowned for producing the 'Ultimate Driving Machine' and the BMW 3 Series has set the benchmark since its 1975 debut. A front engine, rear-wheel-drive configuration combined with 50:50 weight distribution, and the use of advanced lightweight materials on the body and the suspension add up to an award-winning combination.

The suspension of the new 3 Series is an example of lightweight engineering that enhances the driving characteristics of the car while also achieving the hallowed 50:50 weight distribution. The entire front axle subframe is made of aluminium while the tie bars, track control arms and pivot bearings are also made of the same material. The rear suspension also features a five-arm arrangement for optimum handling.

M Sport suspension is available as an option. This lowers the standard car's ride height by 15mm and stiffens the dampers and spring rates to deliver a more sporting drive and handling on challenging roads. This is standard on the popular M Sport models but those customers choosing ES or SE cars also have this sporting option available.

The latest BMW 3 Series is available with two tiers of Dynamic Stability Control chassis systems to provide the best handling and one of the most advanced electronic safety blankets available to motorists. Buyers of all 3 Series cars take ownership of a vehicle with a DSC system incorporating Dynamic Traction Control and Corner Brake Control along with ABS. The DSC system constantly monitors speed, steering inputs, lateral acceleration and yaw rate and, should it determine that control is being lost, DSC retards engine power or applies the brakes to re-balance the car.

Customers selecting six-cylinder models will be able to make use of an enhanced version of DSC. Called DSC+ this hones the already accomplished DSC system by adding five features: Brake Standby, Rain Brake Support, Hill-start Assist, Brake Fading Compensation and Soft Stop.

- Brake Standby shortens stopping distances by priming the brakes if the car detects that the driver has lifted off the accelerator sharply in preparation for an emergency stop.
- Rain Brake Support improves braking performance in the wet. The activation of the windscreen wipers or a signal from the screen-mounted Rain Sensor enables a periodic gentle (and imperceptible to the driver) application of the brakes to scrub off any build up of

residue. When full stopping power is needed the maximum force is available.

- Hill-start Assistant allows a manual transmission car to pull away smoothly on a gradient without rolling backwards. This is achieved by maintaining brake pressure for the short time taken to apply the accelerator after releasing the foot or handbrake. The system judges the gradient of slope and the subsequent degree of brake pressure needed for a smooth start.
- Brake Fade Compensation applies a greater braking force to achieve the same stopping power when sensors detect that the brakes are hot and might be prone to fade. This occurs without any extra effort from the driver.
- Soft Stop allows every driver to provide a smoother journey for all the car's occupants. By releasing a small proportion of the braking pressure at the end of the braking cycle the perfect soft stop is performed every time.

The driver of a BMW 3 Series Saloon and Touring is able to select the Dynamic Traction Control (DTC) function of DSC or DSC+. DTC allows for a greater degree of wheel slip to enable a driver to pull away on loose surfaces such as snow or gravel without the DSC/DSC+ intervening. DTC allows for more spirited driving in the dry without interruption and can be selected via a button on the centre console.

Steering

The BMW 3 Series Saloon and Touring comes as standard with a performance-oriented steering rack for precise, short steering inputs. Drivers wishing to build on this can opt for BMW's unique Active Steering system. This varies the steering ratio depending on road speed. It does this by way of an electronically operated planetary gear that intersects the steering shaft. The planetary gear, in conjunction with an electric motor, is able to add more lock than provided by the driver at slow speeds to make parking and slow speed manoeuvres effortless. When driving at higher speeds the opposite occurs with Active Steering actually retarding the input from the driver ensuring a smoother, more composed, drive.

Safe braking

BMW's own research found that motorists did not always properly understand the previous warning function of the brake lights coming on in two stages with the second more intense light indicating that the driver is applying the brakes in an emergency situation. By contrast, simultaneous, rhythmic flashing of the brake lights is well-known internationally as an alarm signal and was found to be better understood and acted upon by driver following behind. Because of this research BMW has adopted this type of brake light function for the new 3 Series Saloon and Touring.

BMW is proud of its history of producing cars that offer the very best in safety standards. The same strong rigid chassis, long wheelbase, wide track and 50:50 weight distribution that helps make for great road holding also plays a part in the safety levels of the car. At low speeds, deformable impact boxes at the front and rear minimise the chances of minor parking bumps transforming into long-lasting bodywork damage. Combine this with robust support structures and, at knocks up to 9mph, the chassis remains undamaged. For higher speed impacts deformable crash structures help channel away impact energy to ensure the passenger compartment remains intact.

The BMW 3 Series Saloon and Touring comes with three ISOFIX child seat attachments as standard. When using a child seat in the front seat, the owner is required to deactivate the front passenger airbag for safety reasons using a simple key switch in the near-side front door shut. Dual stage front airbags, two side airbags and an ITS head airbag system for side collision and roll-over protection, are fitted as standard to all 3 Series vehicles.

Run-flat tyres have been developed specifically for the 3 Series and are fitted as standard across the model line-up – the suspension of the car has been designed to suit the sidewall structure of this type of tyre. The benefits of Run-flat technology have proved themselves time and again with owners who have been unfortunate enough to get a puncture. Unlike cars with conventional tyres that experience a slow puncture or even a blow-out situation, the DSC system and Run-flat tyre combination still function for optimum safety. Conservative advice says a driver can continue for 150 miles at 50mph with a punctured Run-flat tyre. However, during original testing expert drivers continued driving on a deflated Run-flat tyre for more than 600 miles before the tyre eventually failed.

The BMW 3 Series is a five star EuroNCAP adult occupant protection car.