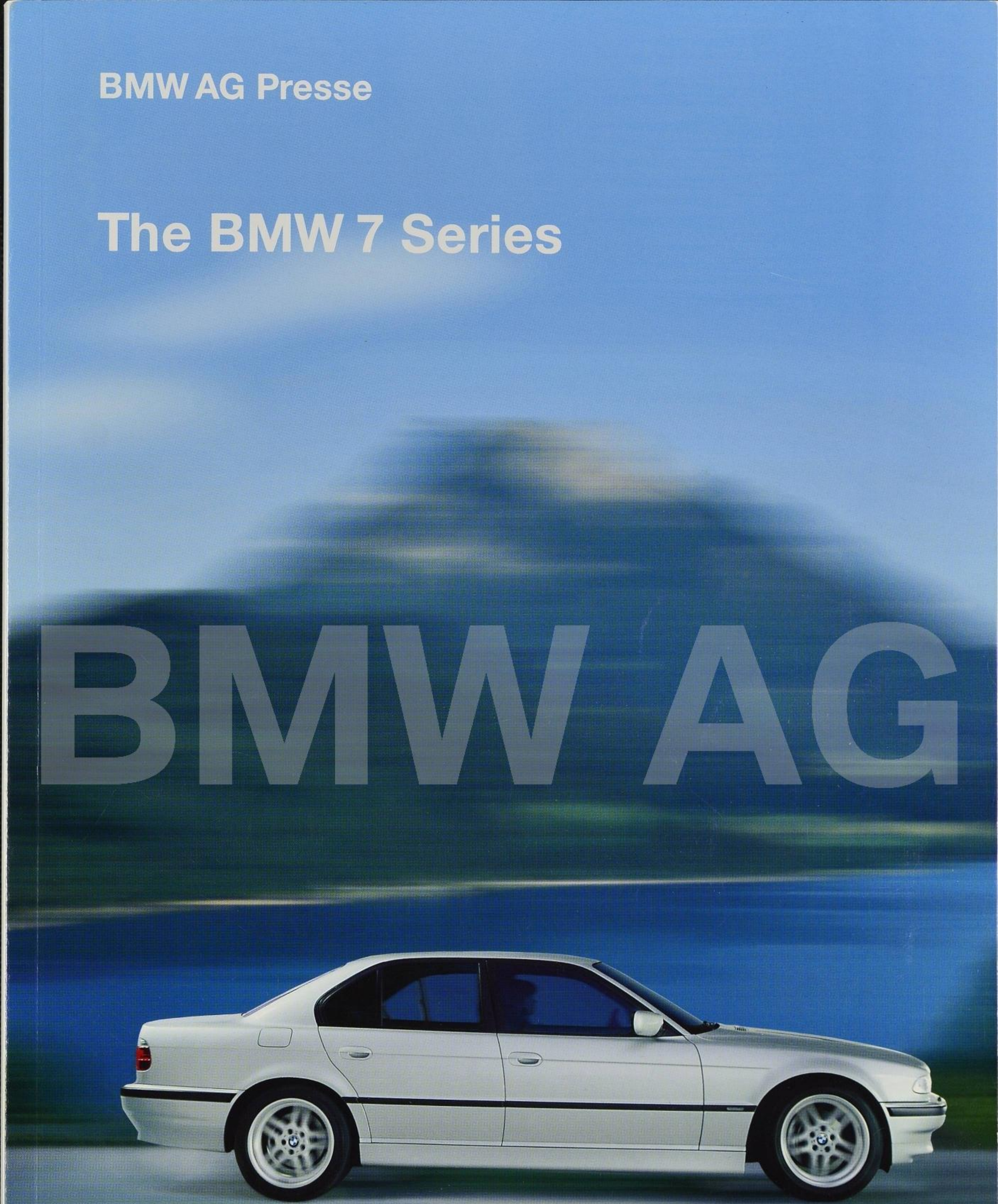
BMW AG Presse

The BMW 7 Series



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Contents

The BMW 7 Series Page 1

New: BMW 750iL and 740 iL Protection Page 9

BMW 7 Series Equipment Page 11

The BMW 7 Series and Its Forefathers Page 26

The BMW 7 Series as a Pacemaker in Technology Page 41

The BMW 7 Series – Specifications and Graphs Annex

The BMW 7 Series

With total sales of almost 230,000 units, the BMW 7 Series is currently the most successful luxury performance saloon in the world. And with annual deliveries averaging 45,000 units, this top model from Munich has indeed been the world leader in its class for a number of years.

This clear vote expressed by customers in the most demanding segment goes to a concept which retains all its appeal even after five years in the market: A concept based on consistent progress in technology resting on a sound foundation, the perfect symbiosis of modern technical responsibility and eternal sheer driving pleasure.

The range of 7 Series models culminating in currently the only saloon in the world boasting a 12-cylinder power unit is made up no less than six "basic" models:

728i/iL 2.8-litre straight-six, four valves per cylinder, double-VANOS, 142 kW/193 bhp, fuel consumption 10.0 litres (28.2 mpg Imp) premium, 228 km/h (141 mph)

735i/iL 3.5-litre V8, four valves per cylinder, VANOS, 175 kW/238 bhp, fuel consumption 12.1 litres (23.3 mpg Imp) premium, 243 km/h (151 mph)

740i/iL 4.4-litre V8, four valves per cylinder, VANOS, 210 kW/286 bhp, fuel consumption 12.5 litres (22.6 mpg Imp) premium, 250 km/h (155 mph)

750i/iL 5.4-litre V12, two valves per cylinder, 240 kW/326 bhp, fuel consumption 13.6 litres (20.8 mpg Imp) premium, 250 km/h (155 mph)

730d 3.0-litre straight-six, DI diesel, VNT turbocharger, intercooler, 135 kW/184 bhp, fuel consumption 8.7 litres (32.5 mpg Imp) diesel, 220 km/h (136 mph)

740d 3.9-litre V8, DI diesel, VNT turbocharger, intercooler, 180 kW/245 bhp, fuel consumption 9.8 litres (28.8 mpg Imp) diesel, 242 km/h (150 mph)

The spearhead in technology: world debuts in the BMW 7 Series

Even more than its predecessors, the current 7 Series seeks not just to keep up with developments in automotive technology, but rather to lead the way in every respect. Which explains why many new and further improved systems and components made their first appearance in the market in the BMW 7 Series: the DSC 2 driving stability system, ITS head airbags, on-board monitor control, the navigation system, multi-function steering wheel, theft-inhibiting glass, the active seat, TPC Tyre Pressure Control, "waterfall" illumination of the dashboard area, and now the world's first direct-injection 8-cylinder, to mention just a few examples.

Ultra-clean: petrol-engined 7 Series outperforms both the D4 and LEV standards

With the exception of the two diesel models certified according to the EU 2 standard due to the large amount of sulphur still remaining in diesel fuel, all other models in the 7 Series comply in full with the German D4, the European EU 3, and the US LEV regulations. Apart from the basic design of the engine ensuring optimum combustion from

the start, this efficient emission management is mainly attributable to the optimised cylinder charge process on both the six- and 8-cylinder models. Variable VANOS camshaft control on the intake side makes the combustion process even more efficient than ever before. And the straight-six power unit in the 728i/iL also comes with VANOS on the outlet camshaft. Positive side-effects of this sophisticated system are the further improved torque curve with an even higher peak and the reduction in fuel consumption.

The high standard of emission management provided in this way from the start ensures the ideal basis for equally efficient and effective emission treatment further down the line, with a combination of advance catalysts near the engine and the main catalyst beneath the floorpan. And to start the cleaning effect at the earliest possible point, a secondary air pump feeds oxygen into the exhaust system immediately after the engine has been fired cold.

The 750i/iL: 12 cylinders and E-cat all in one

The BMW 750i/iL is the first car ever to be equipped with an electrically heated catalytic converter, the catalyst system on the 12-cylinder power unit thus consisting of an absorber catalyst for hydrocarbons (HC), an electrically heated and a conventional main catalyst. The absorber holds back hydrocarbons in the first few seconds after the engine has been started cold, until the electrically heated catalytic converter has been able to warm up the monolithic body further downstream. Accordingly, the largest engine in the BMW range displacing no less than 5.4 litres

comes with a standard of sophisticated emission management technology which also outperforms the LEV, EU 3 and D4 limits.

The "intelligent" transmission for all the driver's wishes

The new 740d and the 730d, just like their 735i, 740i and 750i counterparts, come exclusively with Steptronic automatic transmission combining fully automatic, adaptive management of the five-speed automatic featuring both a comfort and a sports program with an individual manual gearshift. Two particular features worth mentioning in this case are the Shiftlock/Interlock safety system preventing gears from being activated by mistake and Fast-off Recognition preventing the transmission from shifting up when the driver suddenly takes his foot off the accelerator. Accordingly, the gear currently in mesh is retained, using the brake power of the engine whenever the driver quickly moves his foot to the brake pedal. A further advantage is that the transmission does not shift up inadvertently when accelerating out of a bend, since the system is able to recognise the lateral acceleration forces acting on the car. And on slippery roads the wheel spin detector automatically chooses a winter driving program.

The fully controlled converter lock-up clutch gives the car the same direct and spontaneous behaviour and performance over a wide range as a manual gearbox vehicle, while retaining the perfect vibration-free refinement and smooth acceleration of an automatic transmission model. A further point is that the lock-up clutch enhances the efficiency of the transmission and reduces fuel consumption accordingly. And last but not least, the automatic transmission, just like the manual gearbox,

comes with a lifetime fluid filling not requiring replacement throughout the entire running life of the vehicle.

The foundation of the BMW 7 Series: a stiff body and optimised suspension

The BMW 7 Series continues to set the benchmark also in ride and suspension quality. The main ingredients which make this possible are the unique integral rear axle with its sophisticated elastokinematics, the double-joint spring strut front axle, the large 16-inch wheels, long wheelbase and wide track, plus, not least, the exemplary body stiffness of 25,000 N/degree virtually eliminating any undesired steering effects and further enhancing the positive effect of the rear axle. And then there is also another significant factor built into the BMW car concept, the precise front-to-rear balance of weight.

Still setting the standard in active safety

On the road this concept ensures truly outstanding smoothness and roll comfort, optimum driving characteristics regardless of vehicle load and road speed, excellent handling, precise steering at all times, and the avoidance of any load change response in bends all the way to the extreme limit. Neutral, non-partisan tests prove that these features remain unparalleled to this very day, the BMW 7 Series still holding its own in active safety against even its newest competitors in the market.

Excellent driving characteristics in winter ensured in particular by the rear axle consistently maintaining its track and wheel camber are

supplemented by outstanding smoothness free of vibrations and immunity to any kind of excitation caused, for example, by wheel imbalance. And as an option perfecting the chassis and suspension the BMW 7 Series is also available with adaptive EDC Electronic Damper Control for the particularly demanding and ambitious driver.

The most advanced driving stability systems all featured as standard

This comprehensive concept of motoring refinement and active safety is rounded off by an extremely efficient brake system with a wide range of driving stability units all fitted as standard: **ASC+T Automatic Stability Control + Traction** comes as standard on both the 728i and 730d, all other models including the 740d feature **DSC Dynamic Stability Control** plus **DBC Dynamic Brake Control.** Clearly, a combination of this kind gives the driver of the 740d an active safety system unparalleled in its tracking stability and fast response. DBC expedites and boosts brake pressure when applying the brakes all-out, keeps stopping distances to a minimum even when the driver fails to press the brake pedal hard enough, and allows quick, sensitive "dosage" of brake power thanks to its hydraulic function.

Passive safety at its best: 10 airbags now featured as standard

The safety concept offered by the BMW 7 Series could simply not be more comprehensive, efficient and beneficial. Not only frontal airbags for the driver and front passenger - the latter complete with a seat occupation detector - come as standard, but also sidebags in all four

doors. And as a world-first achievement from BMW, the **ITS headbag** supplements the protective function of the door-integrated thorax airbags in collisions from the side.

In spring 1999 BMW enhanced the wide range of both active and passive safety features within the 7 Series through the addition of the **rear-seat headbag** (C-bag). Integrated, as the name indicates, in the C-pillar, the C-bag covers virtually the entire rear pillar area and the rear door quarterlight in a collision from the side. Passengers riding in BMW's large saloon are therefore protected as standard by no less than **10 airbags** actuated individually in a "smart" ignition process as a function of accident severity, thus ensuring maximum safety at all times.

Comprehensive range of safety and comfort features all fitted as standard

It almost goes without saying that the BMW 7 Series also comes with all other major safety and comfort features: on-board computer with fully programmable auxiliary ventilation, four headrests, heated rear-view mirrors and screenwiper rest area, wooden trimming,central locking with radio remote control also of the electric window lifts, sliding roof and luggage compartment, automatic air conditioning with automatic air recirculation, activated carbon filter and microfilter, multi-function steering wheel, radio with diversity aerial and six loudspeakers, electric window lifts front and rear with fingertip control and trap release.

The range of features also comprises the high-end rear compartment for the particularly demanding customer and, as a fitment exclusive to BMW worldwide, theft-inhibiting security glass.

The top-of-the-range 750i has even more to offer, with an interior boasting amenities such as all-leather upholstery, heated comfort seats at the front with a seat memory function and additional forward adjustment of the upper third of the backrest by a maximum of 35°. All this is then rounded off by a lumbar support electrically adjustable for both height and depth. Then there is the 95-litre (21-Imp gal) fuel tank, Servotronic steering assistance, an anti-theft warning system complete with microwave surveillance of the interior and a tilt angle alarm, as well as an emergency siren operating on its own self-sufficient power supply. Taking all this yet a step further, the 750iL comes inter alia with double glazing and electrical adjustment of the rear-seat backrests again featured as standard.

New: 750iL and 740iL Protection

Introducing the new 740iL and 750iL Protection, BMW is now extending the Protection Line introduced in early 1998 with the launch of the 540i Protection. These new models are scheduled to enter the market in the second quarter of 1999.

Catering for the growing need for security of BMW customers in many markets, the BMW Protection Line differs from conventional vehicles with light armour in particular through the use of innovative, extra-light aramide-fibre mats combining superior strength and stability with minimum weight. As a result, the increase in weight due to the use of this special armour is down by about 50 per cent versus a conventional, steel-armoured car, thus amounting to only about 145 kg or 320 lb. This, in turn, gives BMW's Protection cars virtually the same driving characteristics and performance as their "standard" counterparts - which means a unique edge in terms of extra security and safety on the road.

All BMW Protection Line cars come as standard with BMW's DSC Driving Stability Control, EDC Electronic Damper Control, self-levelling and Servotronic steering. The 7 Series models are fitted additionally with innovative safety tyres combining failsafe running characteristics with a tyre pressure warning system (TPWS). In the event of a puncture with a complete loss of air, these safety tyres featuring self-supporting side flanks will take you a maximum distance of up to 500 km at a speed of up to 80 km/h, depending, of course, on the load the car is carrying. The 540i Protection will presumably also be available with this special feature as of autumn 1999.

The BMW Protection cars safeguard their occupants by combining special body armour and protective glazing able to withstand both handheld firearms as well as heavy objects thrown at or hit against the car, while they look almost exactly the same as their "standard" counterparts. A fact which, by itself, offers a significant increase in safety.

Looking into the future: BMW's three-stage occupant protection concept

The BMW Protection Line is part of a three-stage security programme for perfect protection of the car's occupants. The "basic" model comes with theft-inhibiting glass all round available on both the 5 and the 7 Series and able to resist even severe attacks with a heavy sledgehammer. Stage two is BMW Protection Line with light armour and security glass on the 540i, 740iL and 750iL, able to withstand even heavy firearms. Stage three, finally, is the BMW 750i Security for highly endangered politicians and executives. Offering the highest standard of protection all round, the 750i Security ensures ample safety even under extreme attack.

BMW 7 Series Equipment

Active seat

Introducing the patented active seat, BMW is making a new, highly significant contribution worldwide to active motoring safety: With the seat bottom moving periodically under hydraulic pressure, the driver is able to avoid any back tension or pain and will therefore remain fresh and alert even on long distances. Based on the well-known BMW comfort seat, the active seat further enhances the long-distance comfort of BMW's luxury performance saloons already lauded as the benchmark.

Following an idea originally proposed by an orthopaedic surgeon, the active seat incorporates two hydraulic chambers beneath the seat bottom slightly moving the driver's pelvis and hips up and down at the sides. To provide this effect the two chambers are filled with a fluid pumped periodically from one side to the other, in the process raising and, alternately, lowering the driver's hips a few millimetres each time.

Illumination of door handles and the area outside the car

The instant you unlock the doors by remote control, the door handle illumination will come on on all four doors, a mini-spotlight in the handle recess illuminating not only the handle itself, but also the ground in front of the door, showing you clearly whether there are any puddles or obstacles in your way. And in the same process a dimmed light

illuminates the door openers inside the car as soon as the engine has been switched off.

On-board monitor

Introducing the on-board monitor concept in 1994, BMW once again paved the way into the future. Its optional on-board monitor comprises both the on-board computer and TV/videotex function, comes with a 5.5-inch LCD colour display, and serves as the monitor/control console for various functions such as the on-board computer, navigation system, radio, CD, cassette player, Digital Sound Processor, TV/videotex, telephone, auxiliary ventilation/heating, etc. The monitor is controlled by a very simple menu function incorporating a menu button and a rotary/push knob.

Car Memory and Key Memory

Since 1998 the Car Memory and Key Memory personalisation functions have opened up a new dimension in creating the tailor-made automobile custom-built for the specific needs of its owner. Car Memory, for example, allows the owner to adjust a wide range of fundamental functions to his own personal needs and requirements. Key Memory, in turn, memorises other personal settings on each remote control key, allowing each driver to recall, say, his own individual seat position and air conditioning mode right from the start when opening the central locking.

DSC with DBC

Particularly on slippery roads, DSC Dynamic Stability Control enhances driving safety to a new standard in abrupt manoeuvres or in fast bends. To handle such critical situations without a risk, the system is able to apply the brakes individually on each of the four wheels, thus keeping the car securely on track.

DBC Dynamic Brake Control now supplementing DSC Dynamic Stability Control gives the driver of a BMW an unparalleled active safety system for supreme tracking stability and with an ultra-fast response. DBC expedites and boosts the build-up of brake pressure when applying the brakes all-out, ensuring the shortest possible stopping distance even when the driver fails to press down the brake pedal sufficiently. To provide this function DBC concentrates largely on the rate at which brake pressure is built up and the level of pedal pressure. Unlike other systems in the market, it works with a hydraulic brake pressure booster, not with a vacuum system. Such hydraulic management used jointly with DSC enables the driver to apply the brakes much better and "dose" the brake system far more quickly in an emergency.

DSP Digital Sound Processor

To satisfy even the most demanding aficionado of top-quality music, BMW has developed a top-HiFi-system with subwoofer terminals and an integrated DSP Digital Sound Processing System complete with a graphic equaliser. This elaborate high-output system incorporates first-

rate loudspeakers and an additional subwoofer box with four loudspeakers beneath the parcel shelf, plus an amplifier featuring no less than 14 channels and 400 W output.

The entire system is controlled via the MID multi-information display or the on-board monitor. This allows the user to choose various amplifier functions, for example one of the three surround sound modes featured as standard or one of three individually adjustable sound modes retrievable at any time.

Twin-pane insulating glass

The BMW 7 Series comes complete with twin-pane insulating glass side windows enhancing motoring comfort in several respects: The first point is that the three-millimetre-thick air gap prevents hot or cold temperatures from getting into or escaping from the passenger compartment. Like thermal windows in a building, the outer panes on these insulating glass windows take on the ambient temperature, but the inner panes reliably maintain the desired temperature within the passenger compartment. This reduces the tendency of the windows to mist over and the glass itself feels more pleasant and "homely" - for example when you put your lower arm on the window sill. The general level of comfort is also enhanced since the windows no longer emit that "cold" feeling so typical of single-pane windows in winter weather. And last but certainly not least, twin-pane insulating glass efficiently seals off exterior noise, reducing the general noise level to a minimum.

Theft-inhibiting glass

Theft-inhibiting glass introduced for the first time ever in the BMW 7 Series and enhancing the excellent standard of security offered by the 7 Series to an even higher level ensures unprecedented protection from thieves attempting to enter the car. Available as an option, this specially developed laminated glass is made up of two layers of glass with a third layer of polycarbonate in between, embedded in a special TPU film. Polycarbonate is an extra-tough material originating from aircraft construction, where it has been used successfully for years to reinforce the windows in jet aircraft. Thanks to this film the transparent sandwich structure is able to take up energy so efficiently that an intruder is unable to access the car even when using a sledgehammer or axe. And an additional splinter protection film inside the glass protects the interior from glass particles possibly entering the passenger compartment.

Measuring 9 mm across, this special theft-inhibiting glass is exactly as thick as normal insulating glass and can therefore hardly be distinguished visually from the usual glazing. A further advantage is the heat-insulating effect provided by the green-tinted outer pane.

On cars fitted with this special feature all side windows come in theft-inhibiting glass, while the windscreen and rear window are made of laminated glass with several layers of film inside ensuring an equally high standard of strength and resistance.

Electrochromatic rear-view mirrors inside and outside

As soon as the exterior mirrors put an end to the dazzling effect of all the vehicles behind you, for example on the motorway at night, you will really appreciate the rear-view mirrors with their automatic anti-dazzle function available exclusively from BMW both inside and outside. These EC mirrors, as they are called, are made up of a clear and a reflecting glass panel with an ultra-thin film of fluid in between. Precisely this provides the special effect, the fluid changing its light permeability as soon as it is exposed to a certain voltage and the mirror growing darker.

The entire process is masterminded by two light-sensitive sensors in the interior mirror comparing ambient and mirror brightness and thus "recognising" any dazzling effect coming from the headlights of vehicles behind your BMW. Depending on individual requirements, the system then reduces the degree of reflection infinitely by a factor between 60 and 10 per cent. A further feature of the EC mirrors is the automatic reversing function tilting down the offside mirror whenever the car is in reverse to give the driver a clear view of the curb when backing up.

EDC Electronic Damper Control

Map-controlled, adaptive damper force adjustment by EDC solves the conflict of interest between motoring comfort, on the one hand, and driving safety, on the other, in choosing the right kind of suspension and chassis management. For EDC III offers the driver the choice of either an adaptive automatic program or a sports program for a faster and more dynamic style of motoring.

In the automatic mode the damper setting is varied adaptively and infinitely from "comfortable" to "sporting", depending on driving conditions. The setting chosen in the process always follows the basic rule to offer as much comfort as possible with maximum safety whenever necessary. And the system adjusts the damper setting extremely quickly whenever required, moving from one extreme to the other within the entire range in a maximum of 30 milliseconds.

The sports program, in turn, selects and retains the firmest damper position for the particularly dynamic, ambitious driver.

High-end rear compartment

Excellent as it already is, the long-distance comfort on the rear seats of the BMW 7 Series can be enhanced to an even higher standard for the particularly demanding customer by the high-end rear compartment offering a wide range of truly outstanding features:

- Comfort seats with picnic tables, an extractable desktop on the front passenger's side and illuminated vanity mirrors on the back of the headrests
- Centre armrest at the rear with integrated remote control of the front passenger's seat (complete with memory function), radio, on-board computer and electric rear window sunblind
- Burr walnut trimming providing a particularly sophisticated touch of class
- Reading lights at the rear with indirect illumination

- Sunblinds on the rear side windows
- Rear seats with electrical adjustment

This electrical adjustment allows the rear-seat occupants to lower the backrests of their seats individually by 8°, the upper third of the backrest automatically tilting to the front in the process. The lumbar supports, in turn, are electrically adjustable for both height and depth. And as soon as the passengers fasten their seat belts, the electrically adjustable headrests move up from their original position for individual adjustment by each passenger to his or her specific demands.

If the customer orders his car with a BMW GSM telephone, the high-end rear compartment also includes a second telephone handset in the centre armrest.

Heated steering wheel

The multi-function steering wheel is optionally available with electric heating, a heater coil in the steering wheel rim warming up the wheel to 30°C at the touch of a button. A temperature sensor supervises this heating function displayed by a green light-emitting diode in the steering wheel button console. This steering wheel heating comes in a package together with the heatable seats.

ITS head airbag

BMW was the first manufacturer worldwide to introduce the tubular ITS headbag providing additional head protection for both the driver and front passenger in a collision from the side. Under pressure, this tubular system expands four times in diameter, contracting in length in the process. This serves to build up a strong axial force tightening the tube and giving it enormous stability.

Like a tyre, the airbag itself is made of highly resistant fabric with an absolutely gas-proof tube inside. As long as it is folded up, the tube remains beneath the A-pillar cover and the roof lining, while the gas generator is housed underneath the instrument panel. This special arrangement and the configuration of the ITS headbag guarantees an equally high standard of protection both for the small 1.60-metre woman and the tall 2.00-metre man.

Offering this combination of the door-integrated sidebag and the ITS headbag, BMW gives the occupant the highest standard of safety and protection currently available in a collision from the side.

Automatic air conditioning with air recirculation control

Over and above the cooling system as such, the automatic air conditioning featured as standard in the BMW 7 Series comprises a whole range of additional amenities:

- Residual engine heat supply pumping hot coolant through the heating system even after the engine has been switched off

- The combined microfilter/activated carbon filter
- Automatic air recirculation complete with a filter for the interior air supply

In the interest of enhanced fuel efficiency, the air conditioning compressor is not switched on quite generally under all driving conditions. Rather, BMW's proven AAR Automatic Air Recirculation uses a sensor in the engine compartment to measure the quality of the ambient air, switching over to air recirculation as of a certain level of pollution. The system detects all significant gaseous pollutants in the air such as carbon monoxide, nitric oxides, ethanol, partly burnt hydrocarbons, and diesel soot.

Air conditioning and monitor at the rear

Two further features enable the really demanding customer to enhance the high-end rear compartment to an even higher standard of perfection: the rear monitor and air conditioning. Operating as a sub-system of the on-board monitor in the instrument panel, the second monitor at the rear allows an equally wide range of functions also while driving. Clearly, the monitor comes with both a TV and video connection offering the rear-seat passengers the same comfort, convenience and functions as their television at home. Separate air conditioning at the rear, in turn, allows the passengers sitting in the back of the BMW 7 Series to choose their own very personal temperature zone, warm or cold air flowing out as required through two large openings between the front seats. The temperature and air throughput generated by the blower, in turn, can be selected directly via a display. And infinitely

variable seat heating for the two first-class seats at the rear helps to make motoring even more enjoyable also in the cold season.

Climate comfort windscreen

The infra red-reflecting windscreen helps to consistently reduce the heating effect of bright sunshine, an improvement you will notice above all when parking the car in the sun for a long time in summer, the interior panels and surfaces remaining pleasantly cool. After being exposed to the bright sunshine for 90 minutes, the instrument panel, for example, remains approximately 10° C cooler on the surface thanks to the insulating effect of the infra red-reflecting windscreen. And while driving the reduction in heat ensured in this way not only enhances motoring comfort, but also the driver's fitness and freedom of fatigue.

Comfort seat

The electric comfort seat excels in particular by the additional adjustment of the upper third of the backrest moving to the front by up to 35°. The big advantage this offers the driver is the considerably better shoulder support, while the front passenger, in turn, benefits from a very comfortable, relaxed seating or reclining position in conjunction with the softly padded comfort headrest. All this is then rounded off by the lumbar support adjustable electrically for height and depth, and by the memory function on the driver's seat starting seat motion slowly and providing two adjustment rates for rapid positioning of the seat and slow fine adjustment.

Contour seat

The contour seat comes with all the features of the comfort seat, but differs through its sporting seat and backrest supports at the side plus additional adjustment of seat depth.

The M Sports Package now also available on the 7 Series

Responding to requests from many customers, BMW has now developed an attractive M Sports Package for the 7 Series, comprising an M sports suspension with 235/50 R 18 tyres at the front and 255/45 R 18 tyres at the rear on 8J and, respectively, 9J light alloy wheels in M parallel-spoke styling, satin chrome, bumpers and side-sills in body colour, white direction indicator lights, sports seats for the driver and front passenger, Alcantara/nappa leather upholstery in anthracite/black, roof lining in anthracite, an M-leather sports steering wheel with multifunction buttons, and interior trim strips with special wood appliqués.

Navigation system

BMW became the first European manufacturer to offer a navigation system straight from the factory in 1994 on the 7 Series. Using voice messages and various optical signs on the on-board monitor, the navigator guides the driver to a destination selected in advance in a dialogue mode, with the driver specifying the city, street, etc. The driver also has the option to choose destinations directly on maps shown on the screen and can retrieve general survey maps in various scales. All of

these maps are stored on a compact disc containing a wide range of additional information available at request, such as restaurants, hotels and service stations. To ensure the highest possible precision in route guidance, the current position of the car is determined by multi-point navigation, map-matching and satellite navigation (GPS). Then, selecting additional parameters such as side roads or motorways, the driver can control the route planning process according to his own wishes and requirements. Being directly connected to the TMC road traffic signals broadcast by suitably equipped radio stations, the BMW navigation system has also been in a position since March 1998 to warn the driver of traffic jams and suggest other routes and diversions.

PDC Park Distance Control

PDC Park Distance Control, another first-time achievement introduced by BMW as the leader in this technology, enables the driver to "see" with his ears: Covering a range of approximately 1 ½ metres, the system starts to generate the first signal at a distance of about 120 centimetres from an obstacle. Then, the closer the car comes to an obstacle while backing up, the signal frequency increases accordingly, the control unit applying the echo principle to cyclically measure the distance between the four sensors in the rear bumper and the obstacle. Once the signal "beep" turns into a continuous whistle, the driver knows that the car is less than 20 cm from an obstacle.

TPC Tyre Pressure Control

TPC Tyre Pressure Control permanently monitors the air pressure inside all four wheels and the spare tyre naturally making allowance in the process for any change in pressure due to temperature alone. Giving the driver a clear warning in this way of possible tyre deficiencies, the system guarantees a further increase in active safety, greater economy and motoring comfort.

All the driver has to do in order to activate Tyre Pressure Control is press the TPC button on the instrument panel after setting air pressure in all four wheels to the right level. Then the system will monitor the pressure required both at a standstill and while driving, independently of road speed and outside temperature. The driver receives a warning as soon as the pressure in one or several tyres drops below a certain tolerance level.

Like the systems used to check tyre pressure in Formula 1, TPC is a telemetric control unit. A transmitter complete with a pressure and temperature sensor is fitted in each wheel - also in the spare tyre -, a lithium battery ensuring a service life of no less than five years. Since the transmitter does not require any modification or redesign of the wheel rim itself, it can also be fitted in other wheels offered by BMW.

The transmitter in each wheel sends its signals to the receiver aerial in the wheel arch from where the signals are passed on to the central control unit. Should one of the wheels not be fitted with a transmitter or if the transmitter is subject to transmission problems, the driver is informed accordingly.

Voice-controlled telephone and navigation system

Voice recognition opens up a new dimension of comfortable and safe vehicle control. Precisely this is why the telephone and navigation system in the BMW 7 Series are now optionally available as the first units with a voice control function enabling the driver, in a dialogue mode without even taking his hands off the steering wheel, to enter telephone numbers or request numbers from the memory simply by calling out the name of the person he wishes to contact. Similarly, he can also activate specific navigation system functions in the same kind of dialogue mode, and there is even a voice recorder function as a further option.

Available initially only in German, this system is to be introduced with other language versions in the near future.

Windscreen wipers complete with rain sensor

AIC Automatic Interval Control with a rain sensor controlling the windscreen wipers in conjunction with the headlight cleaning system ensures a particularly high standard of precision. Carefully sensing the amount of water on the windscreen, the system adjusts the wiper interval infinitely between continuous operation and a complete standstill. To do this the rain sensor measures the reflection of infra red light from a light-emitting diode, determining the light permeability of the windscreen in the process: a dry windscreen will reflect all the infra red light, a wet windscreen reflects only some of the light. This ensures exactly the right wiper frequency under all conditions, tailored exactly to the amount and level of precipitation.

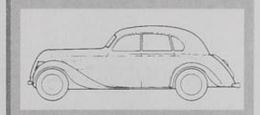
The BMW 7 Series and Its Forefathers:

Pioneers in Automotive Progress for 60 Years

BMW's luxury performance saloons are - proudly - celebrating their 60th birthday, the Company's first top-of-the-range saloon, the BMW 335, entering the market in 1939. Proceeding from this rather exclusive starting point in terms of production volume, BMW's luxury performance segment then developed consistently in terms of both the model hierarchy and technological features. And the fact that BMW is now acknowledged worldwide as a synonym for progress in technology is attributable to the Company's creative unrest and the courage to introduce progressive solutions time and again, solutions borne out consistently by the top saloons from Munich.

The pace set by BMW in the '30s was simply breathtaking: Just one year after BMW's first entirely self-designed and self-built car, the 3/20 PS, the first six-cylinder, the BMW 303, followed in 1933. The overwhelming success of the BMW 326 in 1936 then made BMW a volume manufacturer of a truly modern car at its time, while the BMW 328 launched on the same occasion quickly became a legend in motor racing.

BMW 335



3.5-ltr 90 bhp straight-six • Length 4815 mm • Weight 1300 kg • 145 km/h • 16 ltr/100 km • Built 1939-1941

All this provided both the foundation and the inititative for making the big move into the luxury performance range, the prototype of the BMW 335 making its debut in London in 1938. Based on the 326, this prestigious

saloon came with a longer chassis and an all-new engine, its dimensions alone making it the forefather of the current 7 Series also in a direct comparison: With its wheelbase of 2984 mm or 117.5", the 335 even exceeded the current 7 Series on this important count. And while the car was a handwidth shorter and narrower than today's 7 Series, it was almost 20 cm or 8" higher.

Beneath its long and sleek bonnet, the BMW 335 boasted a powerful 3.5-litre straight-six developing maximum output of 90 bhp at just 3500 rpm. Improved brakes and wider tyres served in turn to reliably slow down the 335 far heavier than its smaller brother, the BMW 326. Featuring a low-bed box frame, a rear axle running on torsion bar springs, oil pressure brakes and a straight-six power unit, this four-door offered a very modern concept at its time. The interior of this largest pre-war BMW pampered the passengers with supreme luxury, class and style, the driver benefitting in particular from an all-synchromesh transmission still very exclusive at the time.

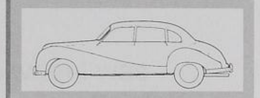
1939: The BMW 335 - a genuine *autobahn* express

Originally the BMW 335 was also to be sold in Britain under the badge of Frazer-Nash, BMW's local importer. But this plan had to be cancelled and the Company ran into delays in the production and final introduction of the car. The BMW 335 therefore became the last new BMW to enter the market before the War in 1939. Selling at 7,850.- reichsmarks, this 145 km/h (90 mph) saloon was quickly acknowledged as an express tourer on Germany's new *autobahnen*. But with World War II breaking out shortly after the introduction of the BMW 335, the total production

volume up to 1942/43 amounted to a mere 415 units, some of them featuring special coach-built bodies.

1951: The "baroque angel" full of highlights in technology

BMW 501-502



2.0-ltr straight-six - 3.2-ltr V8, 65-160 bhp • Length 4730 mm • Weight >1340 kg • 135-175 km/h • 12.5-16 ltr/100 km• Built 1952-1963

Despite its low production figures, the BMW 335 definitely marked the Company's successful entry into the luxury performance segment. With the clear intention to continue this model policy after the war, BMW promptly created the **501** making its debut at the 1951 Frankfurt Motor Show. The "baroque angel", as it was soon called in recognition of its sweeping lines, the BMW 501 was full of highlights in technology: The two half-shafts at the front each ran in two triangular track control arms supported in needle bearings - a low-friction bearing technology giving the progressive suspension a very smooth and sensitive response. The suspension, in turn, consisted of an extra-long longitudinal torsion rod on each side as another trendsetting technology. The arrangement of the dampers was equally unusual, extending diagonally from the outside of the lower triangular arm all the way to the inside of the upper track control arm. This avoided even the slightest contact with the body itself and, as a result, prevented the transmission of noise.

Car testers unanimously agreed at the time that the rear axle of the BMW 501 was "the highest stage of development in the history of live axle technology". Like on the front axle, torsion rods resting right at the outside via spring arms provided the desired suspension effect and

ensured smooth longitudinal guidance all in one. The dampers, in turn, were fitted in an inclined position between the spring arms and the frame. In the middle of the axle the differential housing rested on a triangular support arm cocooned itself on a rubber bearing in the frame. The result was not only very good guidance and spring action, but also supreme smoothness all the way down the drivetrain.

Even the transmission shifted from a lever on the steering wheel was fitted differently than on other cars: Instead of being flanged directly on to the engine, the gearbox with its four full-synchromesh gears was positioned beneath the front seats from where is was connected to the engine by a short propeller shaft. The two big advantages provided by this configuration were, first, the larger footwells not obstructed by the usual large transmission housing and, second, the possibility to rest the engine on unusually soft springs, since the engine bearings did not have to take up the maximum torque running through the transmission. Precisely this is why the 65-bhp 2.0-litre six-cylinder, a modified version of the power unit already seen in the BMW 326, offered exemplary smoothness and refinement in the BMW 501.

1954: the world's first-ever lightweight V8 to enter standard production

When the BMW 502 displacing 2.6 litres and developing maximum output of 100 bhp made its debut at the 1954 Geneva Motor Show, experts everywhere welcomed the first light-alloy engine in the world to enter standard production, as well as the first German 8-cylinder since

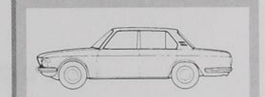
the War: "BMW's new lightweight V8 must be the best synthesis of automotive art so far both this side and the other side of the ocean", was the joyous comment made by Motor Revue. And indeed, just one of the features clearly bearing testimony to the modern imagination of BMW's engineers was the special fastening of the rocker arm shafts, with the inner retention bolts in the bearing blocks being made of dural steel just like the push rods and extending all the way through the cylinder head to the housing. This kept the bolts at an equal distance to the crankcase even in the transition from cold to hot running conditions, since the different metals used heated up at a different rate. The result was excellent compensation of valve play between the cold and the hot running mode, advertisers highlighting this special technology at the time as "automatic compensation of valve play".

In 1955 the 2.6-litre power unit was joined by various 3.2-litre versions developing 120, 140 and 160 bhp, respectively.

Production of the "baroque angel" amounted to almost 22,000 units until the car reached the end of its life in 1963. And it was to last five years until the Company closed this gap again.

1968: the BMW 2800 breaks the 200 km/h (125 mph) "sound barrier"

BMW 2500 - 3.3Li



2.5 - 3.3-ltr straight-six, 150 - 200 bhp • Length 4700 mm • Weight >1360 kg • 190-205 km/h • 11-20 litres/100 km • Built 1968-1977

Following the overwhelming success of the *New Range,* BMW was equally successful in 1968 in renewing the great tradition of the '30s through the introduction of new six-cylinder power units: This was the debut of the BMW 2500 and 2800 taking the Company back into the large saloon market. Fitted into the car at an angle of 30°, these outstanding engines combined a crankshaft running in 7 bearings with 12 counterweights for unparalleled smoothness and refinement. Added to all this, there was an overhead camshaft and, as an innovation in technology featured on both engines with the same basic design and configuration, triple-hemispherical combustion chambers incorporating the pistons themselves and ensuring even more intensive combustion of the fuel/air mixture borne out, inter alia, by the engine's outstanding power and performance: Maximum output of the 2.5-litre was 150, maximum output of the 2.8-litre 170 bhp - enough to boost the BMW 2800 into the highly exclusive group of 200 km/h (125 mph) grand touring cars. Capable of an almost equally impressive 190 km/h or 118 mph, the BMW 2500 also remained far ahead of its competitors at the time. Indeed, these six-cylinders were destined to set the benchmark in modern engine technology for decades to come, at the same time bringing home countless victories over the years.

Reflecting their superior engine power, BMW's new luxury performance models came with an equally sophisticated chassis featuring

independent suspension and four disc brakes. The BMW 2800 was even fitted as standard with self-levelling on the rear axle and a limited-slip differential.

As a clear tribute to their market segment, both models were also available with automatic transmission. And they were also very competitive in terms of prices, a price tag of approximately DM 15,500 on the BMW 2500 not being particularly expensive considering the standard of quality offered.

Boasting dual round headlights typical of the marque, the body of the new BMW 2500 and 2800 was both spacious and very business-like in its design. The interior, in turn, offered a unique blend of style and function, sporting performance and superior comfort. The instruments combined to form one unit came behind an anti-dazzle glass cover, highlighting the two extra-large dials for road speed and engine speed.

Engine capacity soon increased to 3.0 and 3.3 litres, output was boosted to 180 and, respectively, 190 bhp. Fuel injection made its entry into the BMW world in 1971, proudly displayed by the small last letter in the BMW 3.0 Si now developing maximum output of 200 bhp. An adjustable steering column, seats adjustable for height, headrests and inertia-reel seat belts all became standard in 1973. An additional model introduced in 1974 was the long-wheelbase 3.3-litre Li developing maximum output of 190 bhp and also boasting slightly modified rear light clusters in addition to its greater length.

Production of this model generation amounted to almost 200,000 units before the 7 Series took over in 1977.

1977: the first 7 Series as a sporting alternative in luxury performance motoring

The first BMW 7 Series took up BMW's new design philosophy intoduced by the 6 Series coupé, intelligently combining very representative exterior styling with a large number of innovations in technology. Just one example of such a world-first achievement was the introduction of the electronic speedometer in the 7 Series. At the same time the new car continued the active driving philosophy of its predecessors, making the 7 Series the sporting alternative in the luxury performance segment inter alia thanks to its superior engine power and torque. Initially customers had the choice of three six-cylinder models ranging from 2.8 litres and 170 bhp through 3.0 litres and 184 bhp all the way to the 3.2-litre top-of-the-range model developing maximum output of 197 bhp. While fuel injection was originally restricted to this top model, the 733i, this modern concept of fuel supply became standard technology in all 7 Series after just two years: Replacing the 733i, **the BMW 732i launched in 1979 was the first production car in the world with Digital Motor Electronics.**

BMW 728-745i

2.8-3.2 ltr straight-six, 170-252 bhp • Length 4860 mm • Weight >1470 kg • 196-227 km/h • 13.9-18 ltr/100 km • Built 1977-1986

The flagship in the first BMW 7 Series was however the 745i launched in 1980 and featuring a 252-bhp turbocharged six-cylinder. In this case the second and third digit in the model designation, which previously bore testimony to the capacity of the engine, now symbolised the fact that this turbocharged power unit was equal to a 4.5-litre normal-aspiration engine. And indeed, this 3.2-litre turbocharged six-cylinder

was able to offer a standard of performance quite unparalleled in saloon motoring.

1978: the BMW 7 Series pioneers the introduction of ABS

In 1978 the BMW 7 Series became one of the first cars in the world to feature ABS anti-lock brakes. In 1980 the on-board computer made its appearance in the 7 Series, and in **1982 the BMW 7 Series became the first German car equipped with electronic engine management and knock control. In 1983, in turn, the 7 Series was the first car worldwide to introduce automatic transmission management** corresponding with the electronic engine control system. In all, almost 280,000 units of the first BMW 7 Series left the production line until the end of the car's lifecycle in 1986.

1986: the second 7 Series becomes the technological benchmark in its class

The second BMW 7 Series turned heads in admiration right from the start when launched in 1986: Offering a beautiful combination of unpretentious class, sporting elegance, supreme performance, outstanding driving characteristics and an unprecedented range of technologies and equipment, the new BMW 7 Series thrilled testers and the public alike the world over. It was a new climax in that blend of typical BMW virtues - technology, output and performance. The engine, transmission, rear axle and suspension were all enhanced to a new

standard never seen before. Electronic control systems masterminded both the engine and the car's safety units, the **ASC Automatic Stability Control system featuring an electronic gas pedal and engine drag management** entering the market for the first time in the 735i.

BMW 728i-750i

3.0-ltr straight-six - 5.0-ltr 12-cylinder, 188-300 bhp • Length 4910 mm • Weight >1570 kg • 220-250 km/h • 9.4-10.5 ltr/100 km • Built 1986-1994

1987: Germany's first V12 since the War

While the very first BMW 7 Series came exclusively with six-cylinder power units, the second generation of the 7 Series saw the first German 12-cylinder saloon ever since the late '30s: the BMW 750i launched in 1987. Featuring a 5.0-litre 300 bhp light-alloy power unit developing maximum torque of 450 Nm or 332 lb-ft, this wonderful car had separate fuel injection, ignition and catalyst systems for both rows of cylinders. And despite its supreme power and performance, this 12-cylinder still made do with regular grade petrol.

In 1992 BMW successfully closed the gap between the six-cylinders and the top-of-the-range 12-cylinder: Two new 8-cylinders displaying 3.0 (730i) and 4.0 (740i) litres and with maximum output, respectively, of 218 and 286 bhp, rounded off the BMW range in the luxury performance segment. Both of these V8 power units excelled from the start through their outstanding smoothness, superior fuel efficiency, excellent performance and low weight. In autumn of the same year BMW then launched **ATM Automatic Transmission Management** in the 750i/iL, an "intelligent" system for the first time adjusting the gear chosen to the driver's individual style of motoring, and considering both road

conditions as well as the specific driving situation in each case. Another innovation was the introduction of a long-wheelbase version extended in length by 114 mm or 4.5" for even more room at the rear. Throughout its 8-year period of production, the second-generation BMW 7 Series was sold to approximately 310,000 customers the world over.

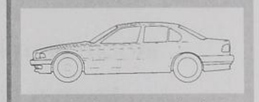
1994: the third BMW 7 Series sets a new standard in motoring comfort and agility

In 1994 the third and current generation of the BMW 7 Series again redefined the concept of luxury performance motoring in relatively compact, manageable dimensions. Combining supreme elegance with new technologies, this new model, with its exterior dimensions remaining almost unchanged, offers not only an even higher standard of both active and passive safety, but also a new standard of supremacy particularly in motoring comfort enhanced to perfection in the long-wheelbase versions of the 730i, 740i and 750i, the "L" models.

After 7 years of outstanding success in the market, BMW's legendary 12-cylinder was thoroughly revised for the new 7 Series, now displacing 5.4 litres and developing maximum output of 240 kW/326 bhp. At the same time fuel consumption was reduced by 11 per cent in the DIN combined cycle and by no less than 19 per cent in the urban cycle.

In addition to ABS, the new BMW 7 Series featured two even more sophisticated driving safety systems ensuring an even higher standard of active safety right from the start: Automatic Stability Control (ASC) as an option on the 8-cylinder models and Dynamic Stability Control (DSC II) as a standard feature exclusively on the 12-cylinder models, in each case incorporating a built-in traction system. For the first time DSC II combined the ABS/ASC/DSC "brain" and the ABS/ASC hydraulic system as one unit for minimum weight and dimensions.

BMW 725tds-750i



2.5-ltr straight-six - 5.4-ltr 12-cylinder, 143 - 326 PS • Length 4984 mm • Weight >1710 kg • 206-250 km/h • 7.5-13.6 ltr/100 km • Built since 1994

The range of equipment offered on the new BMW 7 Series was also quite unique from the start. The highlight, understandably, was the first European navigation system featuring a colour on-board monitor serving at the same time as the control console for additional functions. Added to this there was the electric comfort seat finished in Montana leather throughout and excelling in particular through the additional adjustment of the upper third of the backrest by a maximum of 35° to the front (standard on the 750i). While offering the driver significantly improved shoulder support, this seat design, in conjunction with the softly padded comfort headrest, gives the front passenger an extremely comfortable and relaxed seating and reclined position.

Since autumn 1995 a new six-cylinder power unit has rounded off the range of engines in the current BMW 7 Series - the light-alloy straight-six featured in the 728i. Then, only one year later, the 8-cylinder power units in the 7 Series also entered their next level of development, the 735i and 740i replacing the 730i and 740i with a lot more torque and larger engine displacement, but at the same time with a considerable improvement in fuel economy through the use of the most advanced technology. It was also at this point that BMW became the first manufacturer in the world to introduce a variable engine cooling system, map-controlled cooling, on the new V8 power units. And in conjunction with five-speed automatic transmission, all 7 Series have been fitted ever since with Steptronic transmission management for individual, manual selection of gears over and above the usual automatic control.

1996: the BMW 7 Series introduces the diesel age

It was also at about this time that a particularly economical new model entered the market, presenting those typical BMW virtues in a most individual style: 19 years after the first 7 Series and 13 years after BMW's first turbodiesel, the luxury performance class from Munich appeared on the market for the first time with a diesel engine, the turbocharged six-cylinder in the 725tds developing maximum output of 105 kW/143 bhp and providing a top speed of 206 km/h or 125 mph on average fuel consumption of just 7.5 litres diesel/100 km (37.7 mpg Imp). No other engine in the 725tds segment was able to develop so much power from such compact engine capacity, no other engine was able to provide the same motoring comfort on so little fuel, with such clean emissions and such a low noise level. And since DDE Digital Diesel Electronics in the 725tds was able to communicate with ASC+T via the CAN-bus, BMW also became the only manufacturer in the world to offer a diesel passenger car boasting Automatic Stability and Traction Control.

BMW's latest spectacular innovations in the market also feature diesel technology: Just half a year after the debut of the first direct-injection BMW diesel in the 320d, the 730d entered the market in 1998. Offering the most advanced technologies such as common-rail direct fuel injection, a turbocharger with variable geometry, and four valves per cylinder, the new 3.0-litre straight-six featured in the 730d comes right at the top of its class not only through engine output of 135 kW/184 bhp and maximum torque of 410 Nm/302 lb-ft. For fuel consumption of just

8.7 litres/100 km (32.5 mpg Imp) and a top speed of 220 km/h (136 mph) are also an absolutely unique combination of qualities.

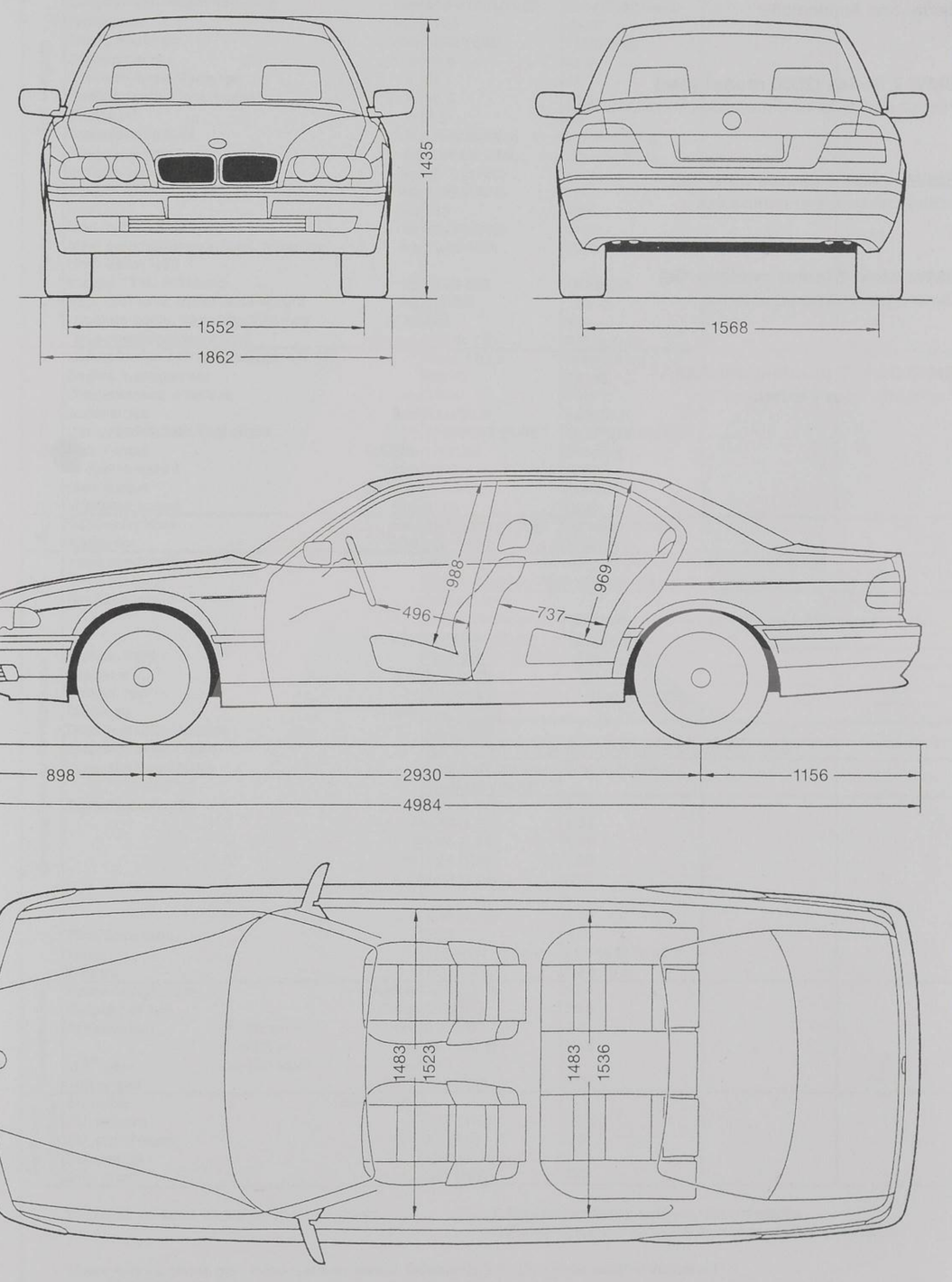
Now the new 740d with maximum output of 180 kW/245 bhp, standard fuel consumption in the composite test of 9.8 litres/100 km (28.8 mpg Imp) and a top speed of 242 km/h (150 mph) marks the new highlight in this story of successful diesel technology. Introducing the first diesel V8 saloon in the world with common-rail fuel injection, BMW is indeed able to offer yet another absolutely unique top-of-the-range product in the market - in this case the diesel market. Just like the 750i/iL is and remains the only 12-cylinder in its class in the outstanding segment of petrol-engined luxury performance saloons. Which actually explains why more than 230,000 purchasers have already opted for the current BMW 7 Series - more than for any other luxury performance saloon the world over.

The BMW 7 Series as a Pacemaker in Technology

1977	Electronic speedometer
1978	Automatic air conditioning
1978	Electronic cruise control
1980	Courtesy lights with automatic dimming function
1980	On-board computer
1985	Seat belt restrainer
1986	Speed-related intermittent wipe
1986	Automatic belt adjustment at the front
1986	Dual ellipsoid headlights
1987	Aerial in diversity technology
1987	ASC Automatic Stability Control with electronic gas pedal
1989	Interior rear-view mirror with automatic anti-dazzle function
1989	AAR Automatic Air Recirculation
1990	Fine-dust interior filter
1991	Park Distance Control
1993	Xenon headlights
1994	Comfort seats
1994	Adaptive Transmission Management
1994	DSC II Driving Stability Control
1994	Navigation system
1995	First battery-less immobiliser with interchanging code
1997	ITS head airbag
1998	"Waterfall" illumination in front of centre console
1998	Active seats
1998	Intelligent remote control also of external functions
1998	Car telephone and navigation system with voice control
1998	TPC Tyre Pressure Control
1998	Theft-inhibiting glass
1998	Water-cooled alternator
1999	Electronically controlled VNT turbocharger

BMW 7er-Reihe (Mj. '00)
Innen- und Außenmaße

A 99/05



BMW 7er-Reihe (Mj. '00)
Innen- und Außenmaße

BMW 7 Series (2000 model year)
Interior and exterior dimensions (in millimetres)

BMW - série 7 (année auto '00)
Cotes intérieures et extérieures

BMW Serie 7 (anno modello '00)
Dimensioni interne ed esterne

BMW Serie 7 (modelo año '00)
Cotas interiores y exteriores

	Specifications: BMW car range			Saloon 728i	Saloon 728iL		
Body, dimensions and weights	No. of doors/seats			4/5	4/5		
	Length/width/height (unladen)		mm	4984/1862/1435	5124/1862/1425		
	Wheelbase		mm	2930	3070		
	Track, front/rear		mm	1552/1568	1552/1568		
	Turning circle		m	11.6	12.2		
	Fuel tank capacity/range		ltr	85	85		
	Cooling system incl. heater		ltr	10.5	10.5		
	Engine oil		ltr	6.5	6.5		
	Transmission fluid		ltr	Lifetime filling	Lifetime filling		
	Final drive fluid		ltr	Lifetime filling	Lifetime filling		
	Weight, unladen (DIN)		kg	1710 (1730)	1765		
	Weight, unladen (EU) °		kg	1785 (1805)	1840		
	Max. load		kg	535	535		
	Max. permissible weight		kg	2245 (2265)	2300		
	Max. permissible axle load, front/rear		kg	1070/1250	1090/1265		
	Max. trailer load [1]						
	braked 12%, unbraked		kg	1900/750	1900/750		
	Max. roof load, trailer nose weight		kg	100/90	100/75		
	Luggage comp. capacity, VDA test		ltr	500	500		
	Drag coefficient/front area		Cd x A	0.30 x 2.21	0.30 x 2.21		
Engine	Layout/No. of cylinders/valves			Inline / 6 / 4	Inline / 6 / 4		
	Engine management			MS 42	MS 42		
	Displacement, effective		cc	2793	2793		
	Bore/stroke		mm	84.0/84.0	84.0/84.0		
	Compression ratio/fuel grade		:1	10.2/ROM 91-98 [2]	10.2/ROM 91-98 [2]		
	Max. output		kW/bhp	142/193	142/193		
	at engine speed		rpm	5500	5500		
	Max. torque		Nm/lb-ft	280/206	280/206		
	at engine speed		rpm	3500	3500		
El.	Battery/location		Ah/-	90/luggage comp.	90/luggage comp.		
	Alternator		A/W	120/1680	120/1680		
Chassis/power transmission	Front suspension			Double-pivot struts with castor angle offset; positive steering scrub radius; compensation of transverse forces; anti-dive			
	Rear suspension			Integral axle; multi-dimensional suspension with anti-squat and anti-divecompensation; Long-wheelbase version: level control system			
	Brakes, front			Four-piston floating caliper disk brakes			
	Diameter		mm	316, vented			
	Brakes, rear			Single-piston floating caliper disk brakes			
	Diameter		mm	324			
	Driving stability system			ABS, ASC + T			
	Steering, overall ratio			Ball and nut, torque-dependent power-assisted, 16.9:1			
	Type of transmission			5-sp man gearbox (5-sp auto trans)	5-sp auto trans		
	Transmission ratio	I	:1	4.21 (3.67)	3,67		
		II	:1	2.49 (2.00)	2.00		
		III	:1	1.66 (1.41)	1.41		
		IV	:1	1.24 (1.00)	1.00		
		V	:1	1.00 (0.74)	0.74		
		VI	:1	-	-		
		R	:1	3.85 (4.10)	4.10		
	Final drive ratio			3.23	3.23		
	Tyres			215/65 R 16 98 V	215/65 R 16 98 V		
	Wheels			7 J x 16 st	7 J x 16 st		
Performance	Power-weight ratio		kg/kW	12.0 (12.2)	12.4		
	Output per litre		kW/ltr	50.8	50.8		
	Acceleration	0-100 km/h	sec	8.6 (9.6)	9.6		
		0-1000 m	sec	29.7 (30.5)	30.5		
	in 4th gear	80-120 km/h	sec	8.8 (-)	-		
	Top speed		km/h	228 (226)	226		
Fuel consumption	EU cycle		(ltr/100 km)				
	EU, in town			13.7 (16.5)	16.5		
	EU, out of town			7.9 (8.0)	8.0		
	EU, overall			10.0 (11.1)	11.1		
	CO_2 g/cm			241 (267)	267		

° Weight, unladen, including 75 kg for driver

1) May be increased under certain conditions
2) Performance and economy figures are based on ROM 95

These specifications are for the German market. Deviations from the model variants described here are possible in various countries.

	Specifications: BMW car range		Saloon			
			735i	**735iL**	**740i**	**740iL**
Body, dimensions and weights	No. of doors/seats		4/5	4/5	4/5	4/5
	Length/width/height (unladen)	mm	4984/1862/1435	5124/1862/1425	4984/1862/1435	5124/1862/1425
	Wheelbase	mm	2930	3070	2930	3070
	Track, front/rear	mm	1552/1568	1552/1568	1552/1568	1552/1568
	Turning circle	m	11.6	12.2	11.6	12.2
	Fuel tank capacity/range	ltr	85	95	85	95
	Cooling system incl. heater	ltr	12.0	12.0	12.0	12.0
	Engine oil	ltr	7.5	7.5	7.5	7.5
	Transmission fluid	ltr	Lifetime filling	Lifetime filling	Lifetime filling	Lifetime filling
	Final drive fluid	ltr	Lifetime filling	Lifetime filling	Lifetime filling	Lifetime filling
	Weight, unladen (DIN)	kg	1810	1845	1850	1890
	Weight, unladen (EU) °	kg	1885	1920	1925	1965
	Max. load	kg	535	535	535	535
	Max. permissible weight	kg	2345	2380	2385	2425
	Max. permissible axle load, front/rear	kg	1135/1270	1160/1280	1145/1295	1165/1315
	Max. trailer load [1]					
	braked 12%, unbraked	kg	2000/750	2000/750	2100/750	2100/750
	Max. roof load, trailer nose weight	kg	100/90	100/90	100/90	100/90
	Luggage comp. capacity, VDA test	ltr	500	500	500	500
	Drag coefficient/front area	Cd x A	0.30 x 2.21	0.30 x 2.21	0.30 x 2.21	0.30 x 2.21
Engine	Layout/No. of cylinders/valves		V 90 / 8 / 4	V 90 / 8 / 4	V 90 / 8 / 4	V 90 / 8 / 4
	Engine management		M 7.2	M 7.2	M 7.2	M 7.2
	Displacement, effective	cc	3498	3498	4398	4398
	Bore/stroke	mm	84.0/78.9	84.0/78.9	92.0/82.7	92.0/82.7
	Compression ratio/fuel grade	:1	10.0/ROM 91-98[2]	10.0/ROM 91-98[2]	10.0/ROM 91-98[2]	10.0/ROM 91-98[2]
	Max. output	kW/bhp	175/238	175/238	210/286	210/286
	at engine speed	rpm	5800	5800	5400	5400
	Max. torque	Nm/lb-ft	345/255	345/255	440/325	440/325
	at engine speed	rpm	3800	3800	3600	3600
El.	Battery/location	Ah/-	90/luggage comp.	90/luggage comp.	90/luggage comp.	90/luggage comp.
	Alternator	A/W	150/2100	150/2100	150/2100	150/2100
Chassis/power transmission	Front suspension		Double-pivot struts with castor angle offset; positive steering scrub radius; compensation of transverse forces; anti-dive			
	Rear suspension		Integlal axle; multi-dimensional suspension with anti-squat and anti-dive compensation; Long-wheelbase version: level control system			
	Brakes, front		Four-piston floating caliper disc brakes		Single-piston floating caliper disc brakes	
	Diameter	mm	316, vented		324, vented	
	Brakes, rear		Single-piston floating-caliper disc brakes			
	Diameter	mm	324			
	Driving stability system		ABS, ASC+T, DBC, DSC			
	Steering, overall ratio		Ball and nut, torque-dependent power assisted, 16.9:1			
	Type of transmission		5-sp auto trans			
	Transmission ratio I	:1	3.57	3.57	3.57	3.57
	II	:1	2.20	2.20	2.20	2.20
	III	:1	1.51	1.51	1.51	1.51
	IV	:1	1.00	1.00	1.00	1.00
	V	:1	0.80	0.80	0.80	0.80
	VI	:1	-	-	-	-
	R	:1	4.10	4.10	4.10	4.10
	Final drive ratio		3.15	3.15	2.93	2.93
	Tyres		235/60 R16 100W	235/60 R16 100W	235/60 R16 100W	235/60 R16 100W
	Wheels		7.5 J x 16 la	7.5 J x 16 la	7.5 J x 16 la	7.5 J x 16 la
Performance	Power-weight ratio	kg/kW	10.3	10.5	8.8	9.0
	Output per litre	kW/ltr	50.0	50.0	47.7	47.7
	Acceleration 0-100 km/h	sec	8.2	8.2	7.0	7.0
	0-1000 m	sec	28.9	28.9	27.1	27.1
	in 4th gear 80-120 km/h	sec	-	-	-	-
	Top speed	km/h	243	243	250	250
Fuel consumption	EU cycle	(ltr/100 km)				
	EU, in town		17.2	17.2	18.1	18.6
	EU, out of town		9.1	9.1	9.2	9.4
	EU, overall		12.1	12.1	12.5	12.8
	CO_2 g/cm		291	291	301	306

° Weight, unladen, including 75 kg for driver

1) May be increased under certain conditions
2) Performance figures are based on ROM 98, economy figures on ROM 95.

These specifications are for the German market. Deviations from the model variants described here are possible in various countries.

	Specifications: BMW car range		Saloon			
			750i	750iL		
Body, dimensions and weights	No. of doors/seats		4/5	4/5		
	Length/width/height (unladen)	mm	4984/1862/1425	5124/1862/1425		
	Wheelbase	mm	2930	3070		
	Track, front/rear	mm	1552/1568	1552/1568		
	Turning circle	m	11.6	12.2		
	Fuel tank capacity/range	ltr	95	95		
	Cooling system incl. heater	ltr	13.0	13.0		
	Engine oil	ltr	8.0	8.0		
	Transmission fluid	ltr	Lifetime filling	Lifetime filling		
	Final drive fluid	ltr	Lifetime filling	Lifetime filling		
	Weight, unladen (DIN)	kg	1980	2035		
	Weight, unladen (EU) °	kg	2055	2110		
	Max. load	kg	535	535		
	Max. permissible weight	kg	2515	2570		
	Max. permissible axle load, front/rear	kg	1200/1355	1210/1390		
	Max. trailer load [1]					
	braked 12%, unbraked	kg	2100/750	2100/750		
	Max. roof load, trailer nose weight	kg	100/90	100/90		
	Luggage comp. capacity, VDA test	ltr	500	500		
	Drag coefficient/front area	Cd x A	0.32 x 2.21	0.32 x 2.21		
Engine	Layout/No. of cylinders/valves		V 60 / 12 / 2	V 60 / 12 / 2		
	Engine management		M 5.2.1	M 5.2.1		
	Displacement, effective	cc	5379	5379		
	Bore/stroke	mm	85.0/79.0	85.0/79.0		
	Compression ratio/fuel grade	:1	10.0/ROM 91-98 [2]	10.0/ROM 91-98 [2]		
	Max. output	kW/bhp	240/326	240/326		
	at engine speed	rpm	5000	5000		
	Max. torque	Nm/lb-ft	490/361	490/361		
	at engine speed	rpm	3900	3900		
El.	Battery/location	Ah/-	90/luggage comp.	90/luggage comp.		
	Alternator	A/W	150/2100	150/2100		
Chassis/power transmission	Front suspension		Double-pivot struts with castor angle offset; positive steering scrub radius; compensation of transverse forces; anti-dive			
	Rear suspension		Integral axle; multi-dimensional suspension with anti-squat and anti-dive; level control system; adaptive suspension automatic electronic damper force adjustment (EDC III)			
	Brakes, front		Double-piston floating-caliper disk brakes			
	Diameter	mm	334, vented			
	Brakes, rear		Single-piston floating-caliper disk brakes			
	Diameter	mm	328, vented			
	Driving stability system		ABS, ASC+T, DBC, DSC			
	Steering, overall ratio		Ball and nut, torque-dependent power-assisted, Servotronic, 16.9:1			
	Type of transmission		5-sp auto trans			
	Transmission ratio I	:1	3.55	3.55		
	II	:1	2.24	2.24		
	III	:1	1.54	1.54		
	IV	:1	1.00	1.00		
	V	:1	0.79	0.79		
	VI	:1	-	-		
	R	:1	3.68	3.68		
	Final drive ratio		2.81	2.81		
	Tyres		235/60 R16 100W	235/60 R16 100W		
	Wheels		7.5 J x 16 la	7.5 J x 16 la		
Performance	Power-weight ratio	kg/kW	8.3	8.5		
	Output per litre	kW/ltr	44.6	44.6		
	Acceleration 0-100 km/h	sec	6.8	9.6		
	0-1000 m	sec	26.7	26.7		
	in 4th gear 80-120 km/h	sec	-	-		
	Top speed	km/h	250	250		
Fuel consumption	EU cycle	(ltr/100 km)				
	EU, in town		19.6	19.7		
	EU, out of town		10.1	10.4		
	EU, overall		13.6	13.8		
	CO_2 g/cm		327	332		

° Weight, unladen, including 75 kg for driver

1) May be increased under certain conditions
2) Performance figures are based on ROM 98, economy figures on ROM 95

These specifications are for the German market. Deviations from the model variants described here are possible in various countries.

	Specifications: BMW car range			Saloon			
				740iL PL	750iL PL		
Body, dimensions and weights	No. of doors/seats			4/4	4/4		
	Length/width/height (unladen)		mm	5124/1862/1425	5124/1862/1425		
	Wheelbase		mm	3070	3070		
	Track, front/rear		mm	1546/1562	1546/1562		
	Turning circle		m	12.2	12.2		
	Fuel tank capacity/range		ltr	95	95		
	Cooling system incl. heater		ltr	12.0	13.0		
	Engine oil		ltr	7.5	8.0		
	Transmission fluid		ltr	Lifetime filling	Lifetime filling		
	Final drive fluid		ltr	Lifetime filling	Lifetime filling		
	Weight, unladen (DIN)		kg	2060	2185		
	Weight, unladen (EU) °		kg	2135	2260		
	Max. load		kg	460	460		
	Max. permissible weight		kg	2520	2645		
	Max. permissible axle load, front/rear		kg	1210/1350	1255/1410		
	Max. trailer load [1]						
	braked 12%, unbraked		kg	1550/750	1550/750		
	Max. roof load, trailer nose weight		kg	60/90	60/90		
	Luggage comp. capacity, VDA test		ltr	500	500		
	Drag coefficient/front area		Cd x A	0.30 x 2.21	0.32 x 2.21		
Engine	Layout/No. of cylinders/valves			V 90 / 8 / 4	V 60 / 12 / 2		
	Engine management			M 7.2	M 5.2.1		
	Displacement, effective		cc	4398	5379		
	Bore/stroke		mm	92.0/82.7	85.0/79.0		
	Compression ratio/fuel grade		:1	10.0/ROM 91-98 [2]	10.0/ROM 91-98 [2]		
	Max. output		kW/bhp	210/286	240/326		
	at engine speed		rpm	5400	5000		
	Max. torque		Nm/lb-ft	440/325	490/361		
	at engine speed		rpm	3600	3900		
El.	Battery/location		Ah/-	90/luggage comp.	90/luggage comp.		
	Alternator		A/W	150/2100	150/2100		
Chassis/power transmission	Front suspension			Double-pivot struts with castor angle offset; positive steering scrub radius; compensation of transverse forces; anti-dive			
	Rear suspension			Integlal axle; multi-dimensional suspension with anti-squat and anti-dive compensation; Long-wheelbase version: level control system			
	Brakes, front			Four-piston floating caliper disc brakes	Single-piston float. caliper disc brakes		
	Diameter		mm	334, vented	348, vented		
	Brakes, rear			Single-piston floating-caliper disc brakes			
	Diameter		mm	328, vented	328, vented		
	Driving stability system			ABS, ASC+T, DBC, DSC			
	Steering, overall ratio			Ball and nut, torque-dependent power assisted, 16.9:1			
	Type of transmission			5-sp auto trans			
	Transmission ratio	I	:1	3.57	3.55		
		II	:1	2.20	2.24		
		III	:1	1.51	1.54		
		IV	:1	1.00	1.00		
		V	:1	0.80	0.79		
		VI	:1	-	-		
		R	:1	4.10	3.68		
	Final drive ratio			2.93	3.15		
	Tyres			235/55 R17 99W	235/55 R17 99W		
	Wheels			8 J x 17 la	8 J x 17 la		
Performance	Power-weight ratio		kg/kW	9.8	9.1		
	Output per litre		kW/ltr	47.7	44.6		
	Acceleration	0-100 km/h	sec	7.5	7.0		
		0-1000 m	sec	28.0	27.1		
	in 4th gear	80-120 km/h	sec	-	-		
	Top speed		km/h	240	240		
Fuel consumption	EU cycle		(ltr/100 km)				
	EU, in town			19.4	22.1		
	EU, out of town			9.8	11.3		
	EU, overall			13.3	15.2		
	CO_2 g/cm			321	366		

° Weight, unladen, including 75 kg for driver

1) May be increased under certain conditions
2) Performance figures are based on ROM 98, economy figures on ROM 95.

These specifications are for the German market. Deviations from the model variants described here are possible in various countries.

	Specifications: BMW Car Range			Saloon 730d	Saloon 740d		
Body, Dimensions and Weights	No. of doors/seats			4/5	4/5		
	Length/width/height (unladen)		mm	4984/1862/1435	4984/1862/1435		
	Wheelbase		mm	2930	2930		
	Track front/rear		mm	1552/1568	1552/1568		
	Turning circle		m	11.6	11.6		
	Fuel tank capacity/range		ltr	85	85		
	Cooling system incl. heating		ltr	9.2	16.00		
	Engine oil		ltr	7.70	9.5		
	Transmission fluid		ltr	Lifetime filling	Lifetime filling		
	Final drive fluid		ltr	Lifetime filling	Lifetime filling		
	Weight, unladen (DIN)		kg	1830	1960		
	Weight, unladen (EU) °		kg	1905	2035		
	Max. load		kg	535	535		
	Max. permissible weight		kg	2365	2495		
	Max. permissible axle load front/rear		kg	1150/1275	1255/1300		
	Max. trailer load [1]						
	braked 12%, unbraked		kg	2100/750	2100/750		
	Max. roof load, trailer nose weight		kg	100/90	100/90		
	Luggage comp. capacity, VDA test		ltr	500	500		
	Drag coefficient/front area		Cd x A	0.30 x 2.21	0.31 x 2.21		
Engine	Layout/No. of cylinders/valves			Inline / 6 / 4	V 90 / 8 / 4		
	Engine management			DDE 4.0 (CR)	DDE 4.1 (CR)		
	Displacement, effective		cc	2926	3901		
	Bore/stroke		mm	84.0/88.8	84.0/88.0		
	Compression ratio/fuel grade		:1	18.0/diesel	18.0/diesel		
	Max. output		kW/bhp	135/184	180/245		
	at engine speed		rpm	4000	4000		
	Max. torque		Nm/lb-ft	410/302	560/413		
	at engine speed		rpm	2000-3000	1750-2500		
El.	Battery/location		Ah/-	110/luggage comp.	110/luggage comp.		
	Alternator		A/W	150/2100	150/2100		
Chassis/power transmission	Front suspension			Double-pivot struts with castor angle offset; positive steering scrub radius; compensation of transverse forces; anti-dive			
	Rear suspension			Integral axle; multi-dimensional suspension with anti-squat and anti-dive			
	Brakes, front			Four-piston floating-caliper disc brakes			
	Diameter		mm	316, vented	334, vented		
	Brakes, rear			Single-piston floating-caliper disc brakes			
	Diameter		mm	324	328, vented		
	Driving stability system			ABS, ASC + T	ABS, ASC+T, DBC, DSC		
	Steering, overall ratio			Ball and nut, torque-dependent power assisted, 16.9:1			
	Type of transmission			5-sp man gearbox (5-sp auto trans)	5-sp auto trans		
	Transmission ratio	I	:1	3.57	3.55		
		II	:1	2.20	2.24		
		III	:1	1.51	1.54		
		IV	:1	1.00	1.00		
		V	:1	0.80	0.79		
		VI	:1	-	-		
		R	:1	4.10	3.68		
	Final drive ratio			3.08	2.65		
	Tyres			215/65 R 16 98 V	235/60 R 16 100 W		
	Wheels			7.5 J x 16 la	7.5 J x 16 st		
Performance	Power-weight ratio		kg/kW	13.6	10.9		
	Output per litre		kW/ltr	46.1	46.1		
	Acceleration	0-100 km/h	sec	9.2	8.4		
		0-1000 m	sec	30.1	29.1		
	in 4th gear	80-120 km/h	sec	-	-		
	Top speed		km/h	220	242		
Fuel consumption	EU cycle		(ltr/100 km)				
	EU, in town			12.1	14.7		
	EU, out of town			6.8	7.0		
	EU, overall			8.7	9.8		
	CO_2 g/cm			232	260		

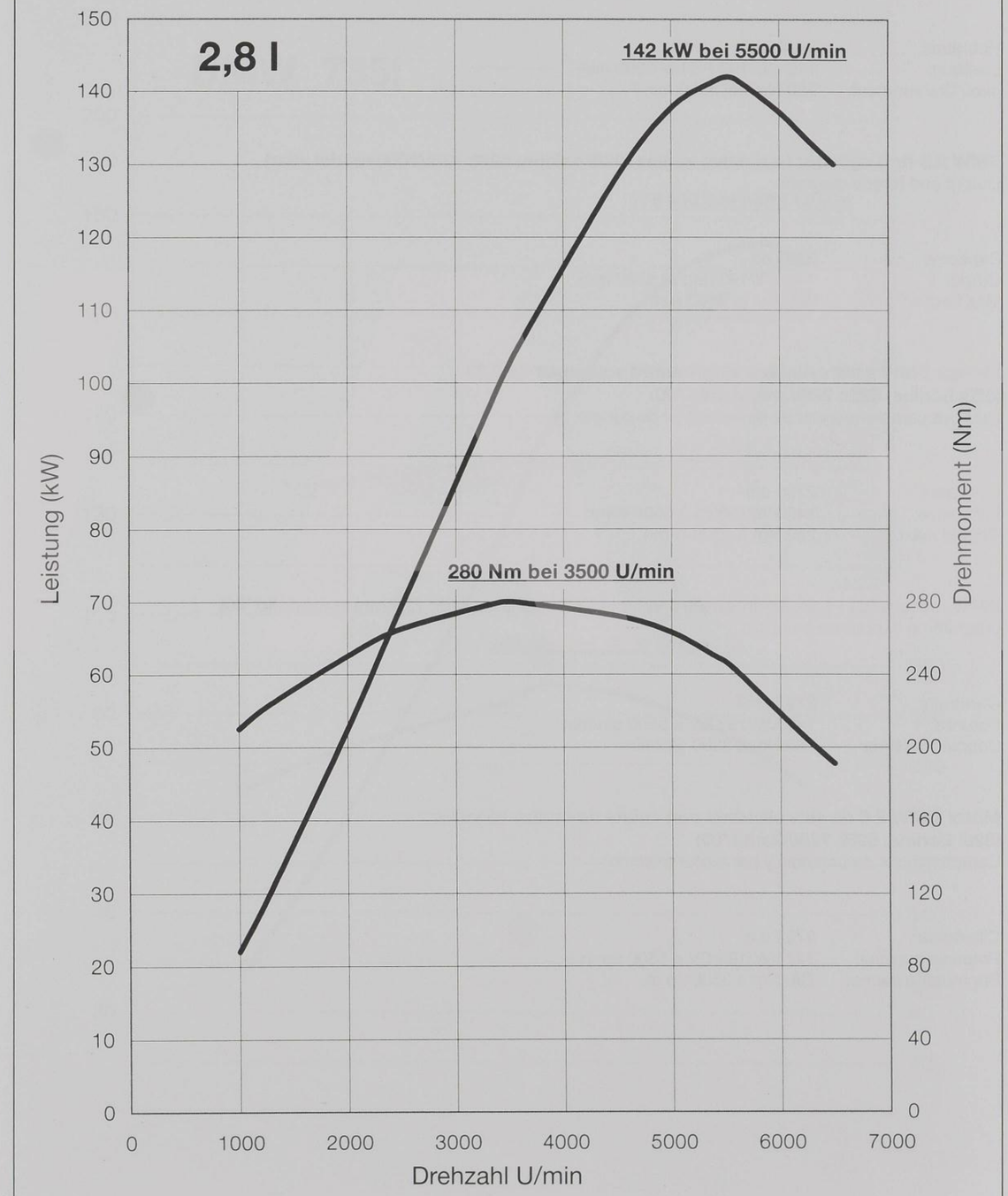
° Weight, unladen, including 75kg for driver

1) May be increased under certain conditions

These specifations are for the German market. Deviations from the model variants described here are possible in various countries.

BMW 2,8 l Sechszylinder-Vierventilmotor (328i Lim; 528i; 728i/Mj. '00)
Leistungs- und Drehmomentdiagramm

A 99/153



BMW 2,8 l Sechszylinder-Vierventilmotor (328i Lim; 528i; 728i/Mj. '00)
Leistungs- und Drehmomentdiagramm

Hubraum:	2793 cm^3
Leistung:	142 kW/193 PS bei 5500 min^{-1}
max. Drehmoment:	280 Nm bei 3500 min^{-1}

BMW 2.8-ltr 6-cylinder four-valve engine (328i saloon; 528i; 728i/2000 model year)
Output and torque diagram

Capacity:	2793 cc
Output:	142 kW/193 bhp at 5500 rpm
Max torque:	280 Nm at 3500 rpm

Moteur BMW à six cylindres vingt-quatre soupapes de 2,8 l (328i berline; 528i; 728i/année auto '00)
Courbes caractéristiques de puissance et de couple

Cylindrée:	2793 cm^3
Puissance:	142 kW/193 ch à 5500 tr/mn
Couple maxi.:	280 Nm à 3500 tr/mn

BMW motore 2,8 l sei cilindri quattro valvole (328i Berlina; 528i; 728i/anno modello '00)
Diagramma di potenza e coppia

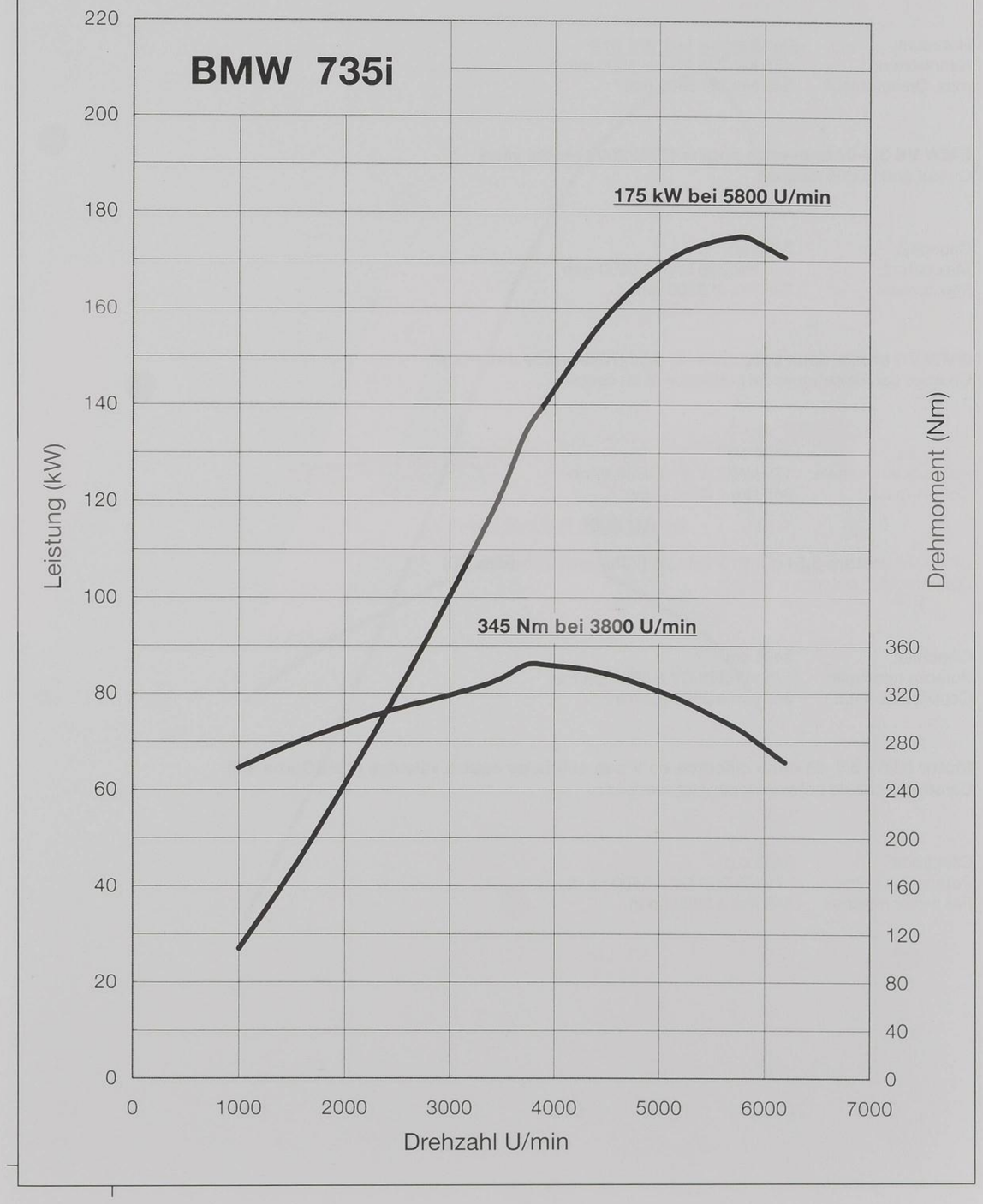
Cilindrata:	2793 cm^3
Potenza:	142 kW/193 CV a 5500 giri/min.
Coppia massima:	280 Nm a 3500 giri/min.

Motor BMW 2.8 de seis cilindros con culata de cuatro válvulas (328i Berlina; 528i; 728i/Gama '00)
Características de potencia y par motor máximo

Cilindrada:	2793 c.c.
Potencia maxima:	142 kW/193 CV a 5500 r.p.m.
Par motor máximo:	280 Nm a 3500 r.p.m.

BMW V8 3,5 l Vierventilmotor (735i/Mj. '00)
Leistungs- und Drehmomentdiagramm

A 99/157



BMW V8 3,5 l Vierventilmotor (735i/Mj. '00)
Leistungs- und Drehmomentdiagramm

Hubraum: 3498 cm^3
Nennleistung: 175 kW/238 PS bei 5800 min^{-1}
max. Drehmoment: 345 Nm bei 3800 min^{-1}

BMW V8 3.5-ltr four-valve engine (735i/2000 model year)
Output and torque diagram

Capacity: 3498 cc
Max output: 175 kW/238 bhp at 5800 rpm
Max torque: 345 Nm at 3800 rpm

BMW V8 trente-deux soupapes de 3,5 l (735i/année auto '00)
Courbes caractéristiques de puissance et de couple

Cylindrée: 3498 cm^3
Puissance nominale: 175 kW/238 ch à 5800 tr/mn
Couple maxi.: 345 Nm à 3800 tr/mn

BMW V8 motore 3,5 l quattro valvole (735i/anno modello '00)
Diagramma di potenza e coppia

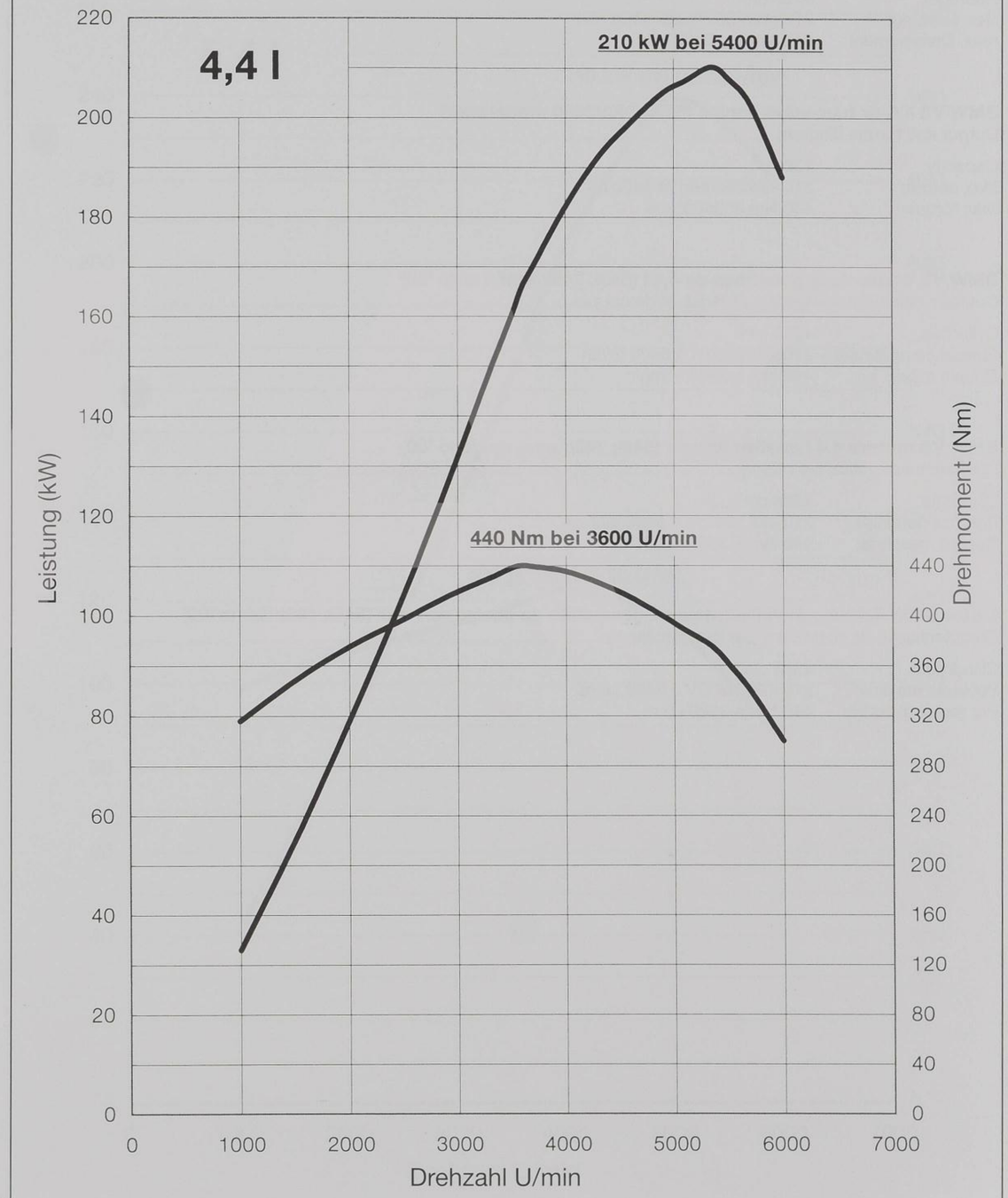
Cilindrata: 3498 cm^3
Potenza nominale: 175 kW/238 CV a 5800 giri/min.
Coppia massima: 345 Nm a 3800 giri/min.

Motor BMW 3.5 de ocho cilindros en V con culata de cuatro válvulas (735i/Gama '00)
Características de potencia y par motor máximo

Cilindrada: 3498 c.c.
Potencia máxima: 175 kW/238 CV a 5800 r.p.m.
Par motor máximo: 345 Nm a 3800 r.p.m.

BMW V8 4,4 l Vierventilmotor (540i; 740i/Mj. '00)
Leistungs- und Drehmomentdiagramm

A 99/159



BMW V8 4,4 l Vierventilmotor (540i; 740i/Mj. '00)
Leistungs- und Drehmomentdiagramm

Hubraum: 4398 cm^3
Nennleistung: 210 kW/286 PS bei 5400 min^{-1}
max. Drehmoment: 440 Nm bei 3600 min^{-1}

BMW V8 4.4-ltr four-valve engine (540i; 740i/2000 model year)
Output and torque diagram

Capacity: 4398 cc
Max output: 210 kW/286 bhp at 5400 rpm
Max torque: 440 Nm at 3600 rpm

BMW V8 trente-deux soupapes de 4,4 l (540i; 740i/année auto '00)
Courbes caractéristiques de puissance et de couple

Cylindrée: 4398 cm^3
Puissance nominale: 210 kW/286 ch à 5400 tr/mn
Couple maxi.: 440 Nm à 3600 tr/mn

BMW V8 motore 4,4 l quattro valvole (540i; 740i/anno modello '00)
Diagramma di potenza e coppia

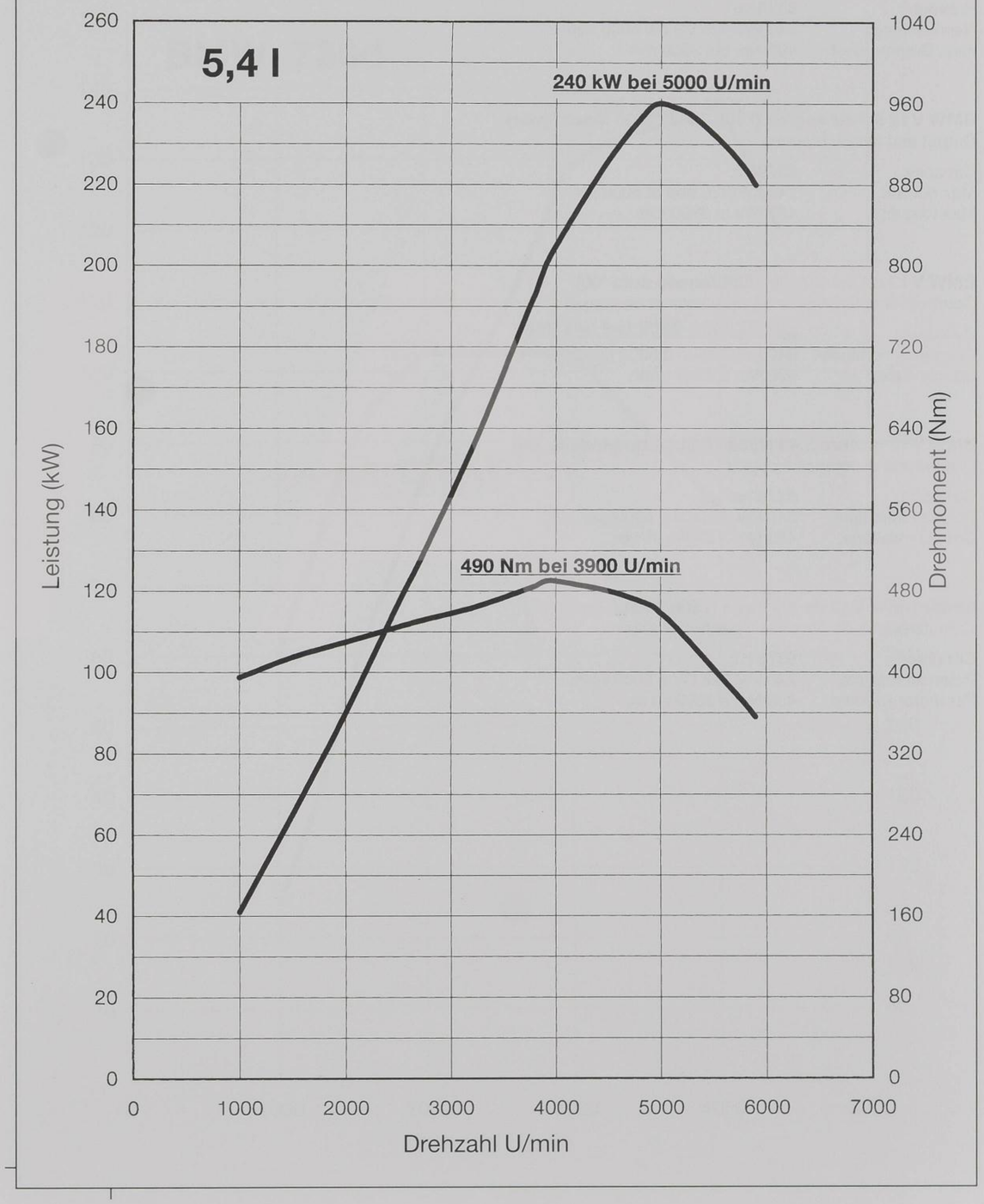
Cilindrata: 4398 cm^3
Potenza nominale: 210 kW/286 CV a 5400 giri/min.
Coppia massima: 440 Nm a 3600 giri/min.

Motor BMW 4.4 de ocho cilindros en V con culata de cuatro válvulas (540i; 740i/Gama '00)
Características de potencia y par motor máximo

Cilindrada: 4398 c.c.
Potencia máxima: 210 kW/286 CV a 5400 r.p.m.
Par motor máximo: 440 Nm a 3600 r.p.m.

BMW V12 5,4 l Motor (750i; 750iL/Mj. '00)
Leistungs- und Drehmomentvergleich

A 99/165



BMW V12 5,4 l Motor (750i; 750iL/Mj. '00)
Leistungs- und Drehmomentdiagramm

Hubraum:	5379cm³
Nennleistung:	240 kW/326 PS bei 5000 min⁻¹
max. Drehmoment:	490 Nm bei 3900 min⁻¹

BMW V12 5.4-ltr engine (750i; 750iL/2000 model year)
Output and torque diagram

Capacity:	5379 cc
Max output:	240 kW/326 bhp at 5000 rpm
Max torque:	490 Nm at 3900 rpm

BMW V12 de 5,4 l (750i; 750iL/année auto '00)
Courbes caractéristiques de puissance et de couple

Cylindrée:	5379 cm³
Puissance nominale:	240 kW/326 ch à 5000 tr/mn
Couple maxi.:	490 Nm à 3900 tr/mn

BMW V12 motore 5,4 l (750i; 750iL/anno modello '00)
Diagramma di potenza e coppia

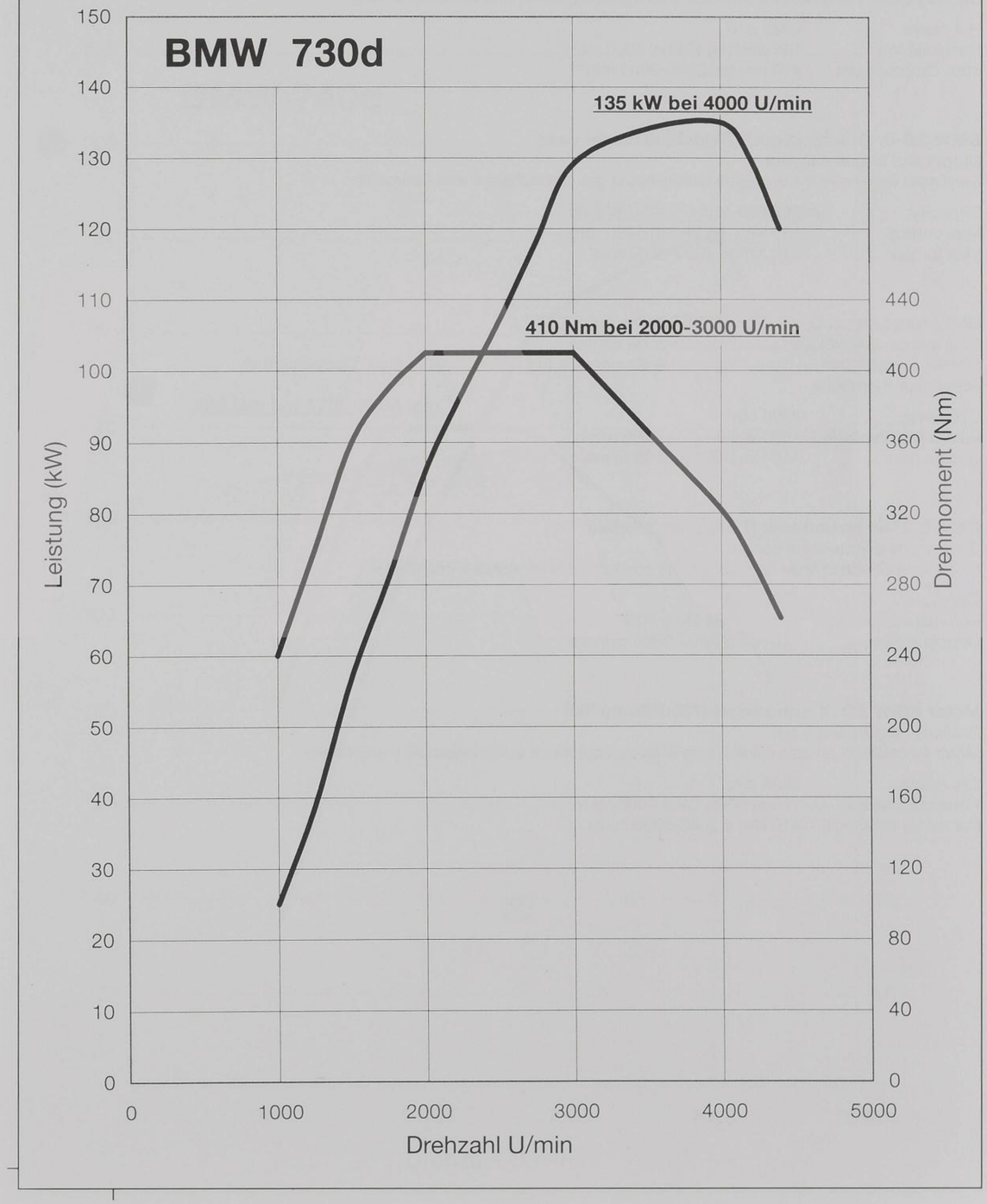
Cilindrata:	5379 cm³
Potenza nominale:	240 kW/326 CV a 5000 giri/min.
Coppia massima:	490 Nm a 3900 giri/min.

Motor BMW V12 de 5,4 litros (750i; 750iL/Gama '00)
Características de potencia y par motor máximo

Cilindrada:	5379 c.c.
Potencia máxima:	240 kW/326 CV a 5000 r.p.m.
Par motor máximo:	490 Nm a 3900 r.p.m.

BMW 3,0 l DI-Turbodiesel mit Ladeluftkühlung (730d/Mj. '00)
Leistungs- und Drehmomentdiagramm

A 99/148



BMW 3,0 l DI-Turbodiesel (730d/Mj. '00)
Leistungs- und Drehmomentdiagramm
Sechszylinder-Vierventil-Reihenmotor mit Abgasturbolader und Ladeluftkühlung

Hubraum:	2926 cm^3
Nennleistung:	135 kW/184 PS bei 4000 min^{-1}
max. Drehmoment:	410 Nm bei 2000-3000 min^{-1}

BMW 3.0-ltr DI turbodiesel (730d/2000 model year)
Output and torque diagram
6-cylinder four-valve inline engine with exhaust gas turbocharger and intercooler

Capacity:	2926 cc
Max output:	135 kW/184 bhp at 4000 rpm
Max torque:	410 Nm at 2000-3000 rpm

BMW turbodiesel DI de 3,0 l (730d/année auto '00)
Courbes caractéristiques de puissance et de couple
Moteur six cylindres en ligne vingt-quatre soupapes à turbocompresseur sur échappement et échangeur thermique

Cylindrée:	2926 cm^3
Puissance nominale:	135 kW/184 ch à 4000 tr/mn
Couple maxi.:	410 Nm à 2000-3000 tr/mn

BMW 3,0 l DI turbodiesel (730d/anno modello '00)
Diagramma di potenza e coppia
Motore sei cilindri in linea quattro valvole con turbocompressore e intercooler

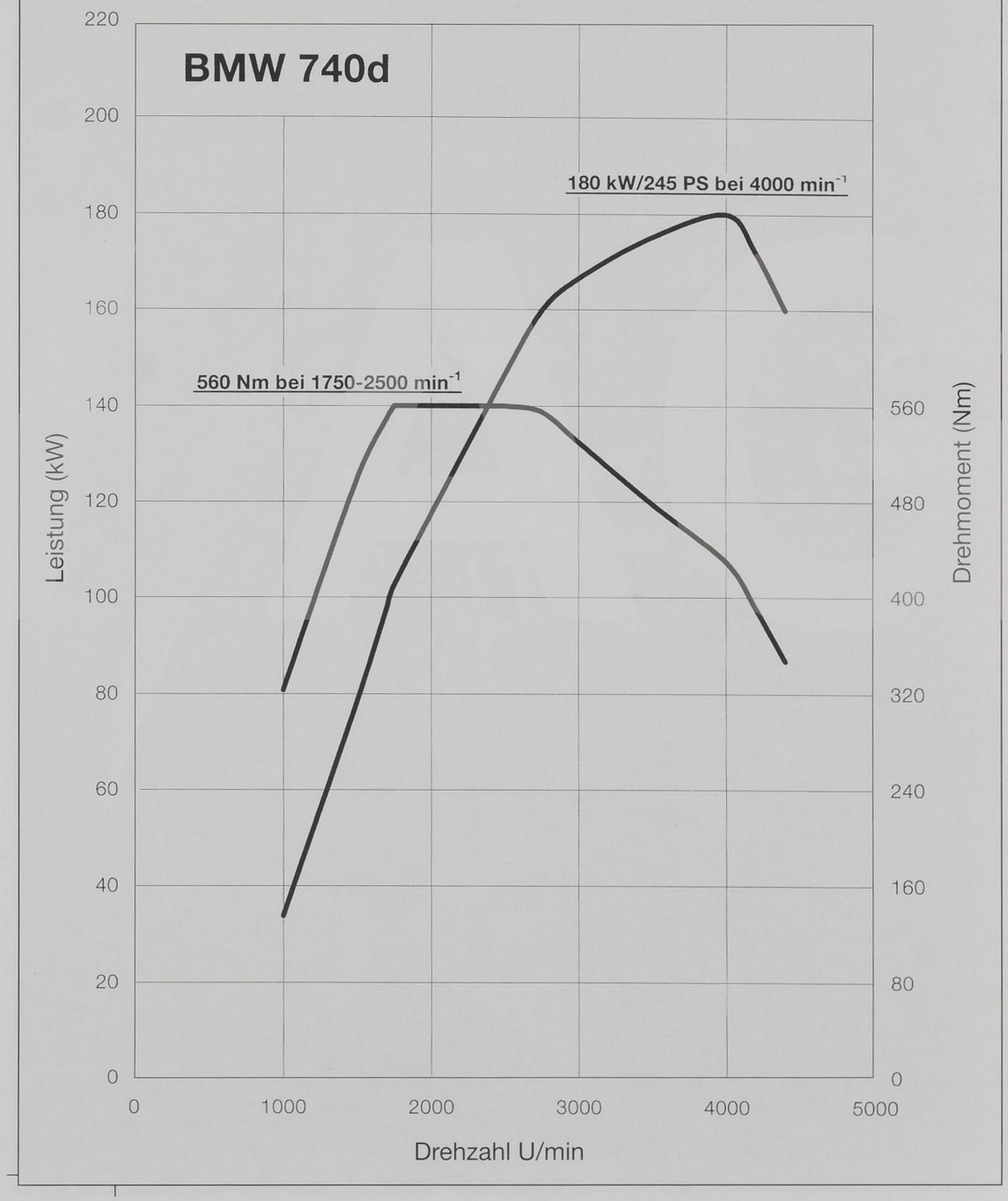
Cilindrata:	2926 cm^3
Potenza nominale:	135 kW/184 CV a 4000 giri/min.
Coppia massima:	410 Nm a 2000-3000 giri/min.

Motor BMW 3.0 DI turbodiesel (730d/Gama '00)
Gráficos de potencia y par
Motor turbodiesel de seis cilindros en linéa con culata de cuatro válvulas y intercooler

Cilindrada:	2926 c.c.
Potencia máxima:	135 kW/184 CV a 4000 r.p.m.
Par motor máximo:	410 Nm a 2000-3000 r.p.m.

BMW 3,9 l V8 DI-Turbodiesel mit Ladeluftkühlung (740d/Mj. '00)
Leistungs- und Drehmomentdiagramm

A 99/176



BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Leistungs- und Drehmomentdiagramm
V8 Vierventilmotor mit Biturboaufladung und Ladeluftkühlung

Hubraum:	3901 cm^3
Nennleistung:	180 kW/245 PS bei 4000 min^{-1}
max. Drehmoment:	560 Nm bei 1750-2500 min^{-1}

BMW 3.9-ltr DI turbodiesel (740d/2000 model year)
Output and torque diagram
V8 four valve engine with dual turbocharger and intercooler

Capacity:	3901 cc
Max output:	180 kW/245 bhp at 4000 rpm
Max torque:	560 Nm/413 lb-ft at 1750-2500 rpm

BMW turbodiesel DI de 3,9 l (740d/année auto '00)
Courbes caractéristiques de puissance et de couple
Moteur V8 trente-deux soupapes avec suralimentation par biturbo et échangeur thermique

Cylindrée:	3901 cm^3
Puissance nominale:	180 kW/245 ch à 4000 tr/mn
Couple maxi.:	560 Nm à 1750-2500 tr/mn

BMW 3,9 l DI turbodiesel (740d/anno modello '00)
Diagramma di potenza e coppia
Motore V8 quattro valvole bi-turbo e intercooler

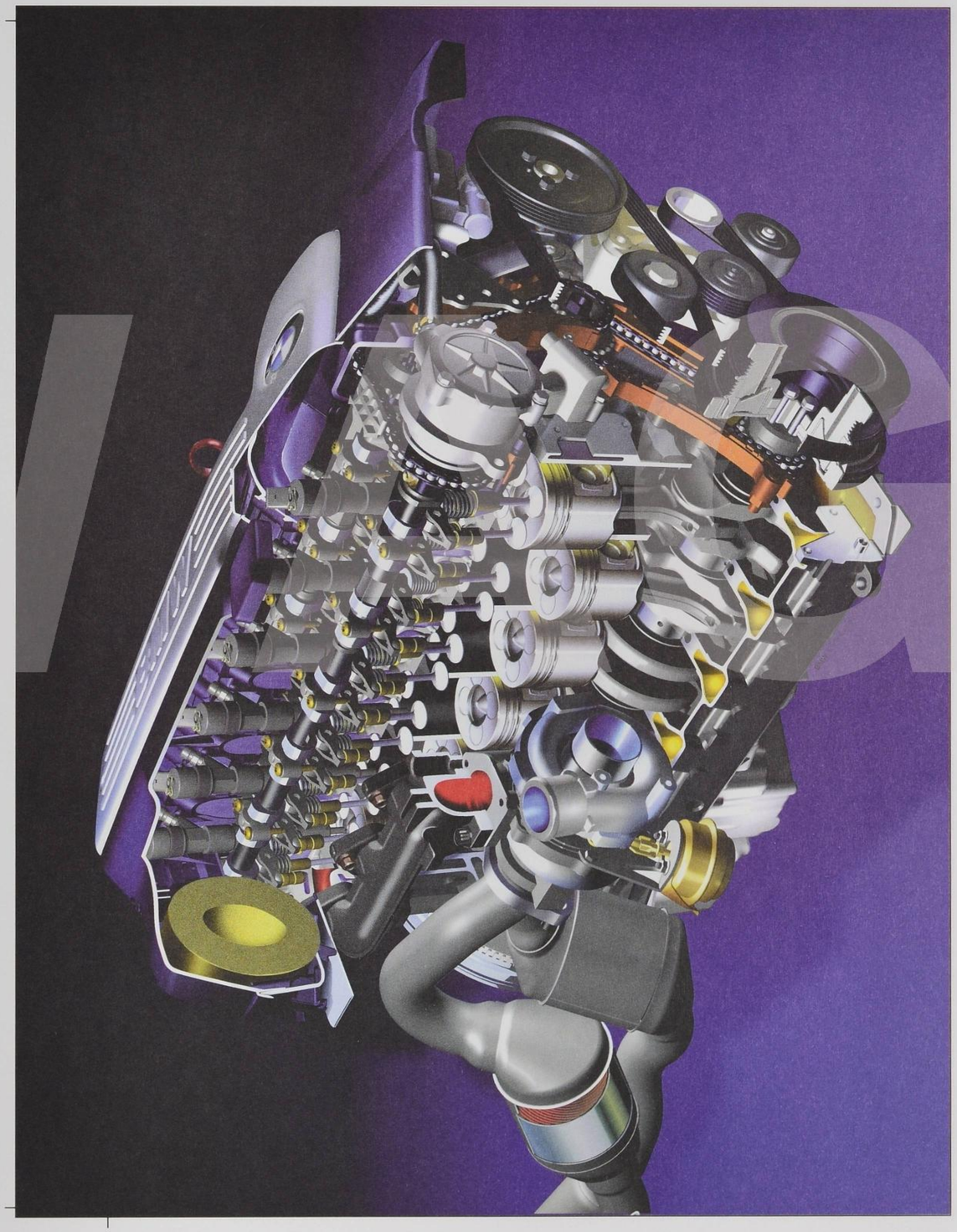
Cilindrata:	3901 cm^3
Potenza nominale:	180 kW/245 CV a 4000 giri/min.
Coppia massima:	560 Nm a 1750-2500 giri/min.

Motor BMW 3.9 DI turbodiesel (740d/Gama '00)
Gráficos de potencia y par
Motor V8 cilindros de cuatro válvulas con sobrealimentación biturbo e intercooler

Cilindrada:	3901 c.c.
Potencia máxima:	180 kW/245 CV a 4000 r.p.m.
Par motor máximo:	560 Nm a 1750-2500 r.p.m.

BMW 3,0 l DI-Turbodiesel mit Ladeluftkühlung (Mj. '00)
Motorschnittbild

A 99/161



BMW 3,0 l DI-Turbodiesel (Mj. '00)
Motorschnittbild

Sechszylinder-Vierventil-Reihenmotor mit Abgasturbolader und Ladeluftkühlung

Hubraum:	2926cm³
Nennleistung:	135 kW/184 PS bei 4000 min⁻¹
max. Drehmoment:	390 Nm bei 1750-3200 min⁻¹ (530d)/410 Nm bei 2000-3000 min⁻¹ (730d)

BMW 3.0-ltr DI turbodiesel (2000 model year)
Engine cutaway drawing

6-cylinder four valve inline engine with exhaust gas turbocharger and intercooler

Capacity:	2926 cc
Max output:	135 kW/184 bhp at 4000 rpm
Max torque:	390 Nm at 1750-3200 rpm (530d)/410 Nm at 2000-3000 rpm (730d)

BMW turbodiesel DI de 3,0 l (année auto '00)
Vue en crevé du moteur

Moteur six cylindres en ligne vingt-quatre soupapes à turbocompresseur sur échappement et échangeur thermique

Cylindrée:	2926 cm³
Puissance nominale:	135 kW/184 ch à 4000 tr/mn
Couple maxi.:	390 Nm à 1750-3200 tr/mn (530d)/410 Nm à 2000-3000 tr/mn (730d)

BMW 3,0 l DI turbodiesel (anno modello '00)
Trasparenza del motore

Motore sei cilindri in linea quattro valvole con turbocompressore e intercooler

Cilindrata:	2926 cm³
Potenza nominale:	135 kW/184 CV a 4000 giri/min.
Coppia massima:	390 Nm a 1750-3200 giri/min. (530d)/410 Nm a 2000-3000 giri/min. (730d)

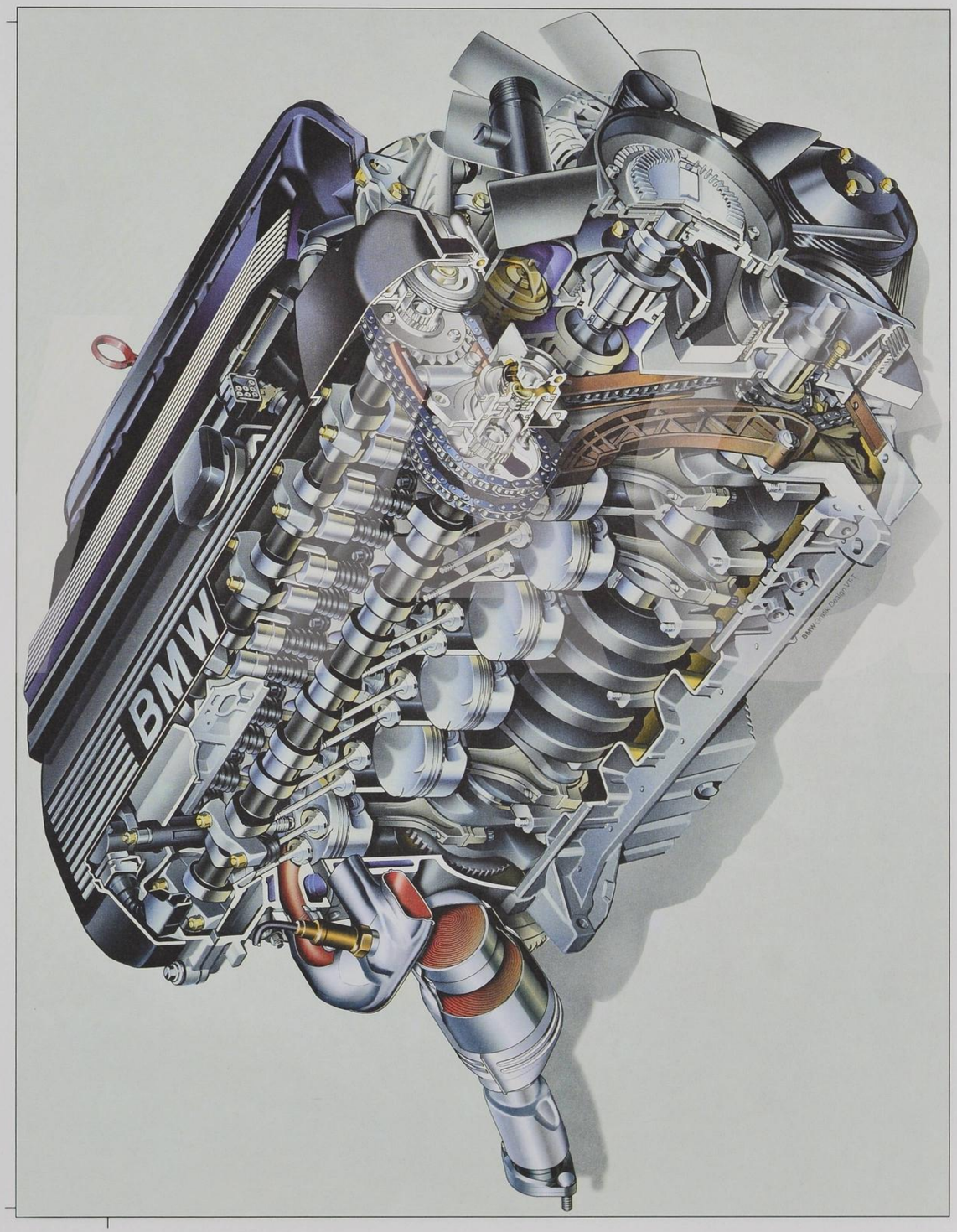
Motor BMW 3.0 DI turbodiesel (Gama '00)
Transparencia del motor

Motor turbodiesel de seis cilindros en línea con intercooler

Cilindrada:	2926 c.c.
Potencia máxima:	135 kW/184 CV a 4000 r.p.m.
Par motor máximo:	390 Nm a 1750-3200 r.p.m. (530d)/410 Nm a 2000-3000 r.p.m. (730d)

BMW 2,8 l Sechszylinder-Vierventilmotor mit Doppel-VANOS (Mj. '00)
Motorschnittbild

A 99/162



BMW 2,8 l Sechszylinder-Vierventilmotor mit Doppel-VANOS (Mj. '00)
Motorschnittbild

Hubraum:	2793 cm^3
Nennleistung:	142 kW/193 PS bei 5500 min^{-1}
max. Drehmoment:	280 Nm bei 3500 min^{-1}

BMW 2.8-ltr 6-cylinder four-valve engine with double-VANOS (2000 model year)
Engine cutaway drawing

Capacity:	2793 cc
Max output:	142 kW/193 bhp at 5500 rpm
Max torque:	280 Nm at 3500 rpm

Moteur BMW à six cylindres vingt-quatre soupapes de 2,8 l équipé du VANOS double (année auto '00)
Vue en crevé du moteur

Cylindrée:	2793 cm^3
Puissance nominale:	142 kW/193 ch à 5500 tr/mn
Couple maxi.:	280 Nm à 3500 tr/mn

BMW motore 2,8 l sei cilindri quattro valvole con doppio VANOS (anno modello '00)
Trasparenza del motore

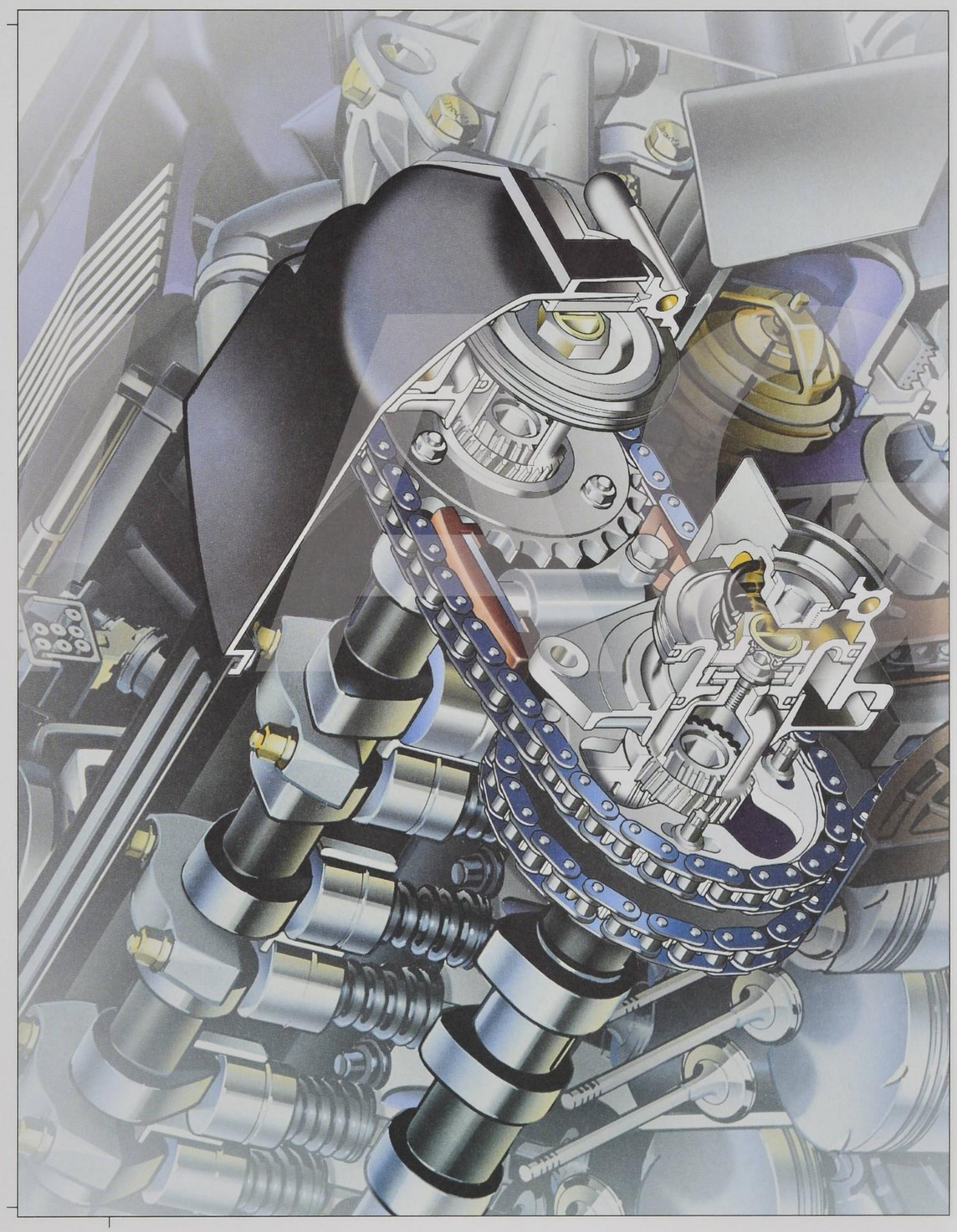
Cilindrata:	2793 cm^3
Potenza nominale:	142 kW/193 CV a 5500 giri/min.
Coppia massima:	280 Nm a 3500 giri/min.

Motor BMW 2.8 de seis cilindros con culata de cuatro válvulas y doble distribución variable (Gama '00)
Transparencia del motor

Cilindrada:	2793 c.c.
Potencia máxima:	142 kW/193 CV a 5500 r.p.m.
Par motor máximo:	280 Nm a 3500 r.p.m.

BMW 2,8 l Sechszylinder-Vierventilmotor mit Doppel-VANOS (Mj. '00)
Schnittbild Doppel-VANOS

A 99/163



BMW 2,8 l Sechszylinder-Vierventilmotor mit Doppel-VANOS (Mj. '00)
Doppel-VANOS

BMW 2.8-ltr 6-cylinder four-valve engine with double VANOS (2000 model year)
Double Vanos (Doppel-VANOS)

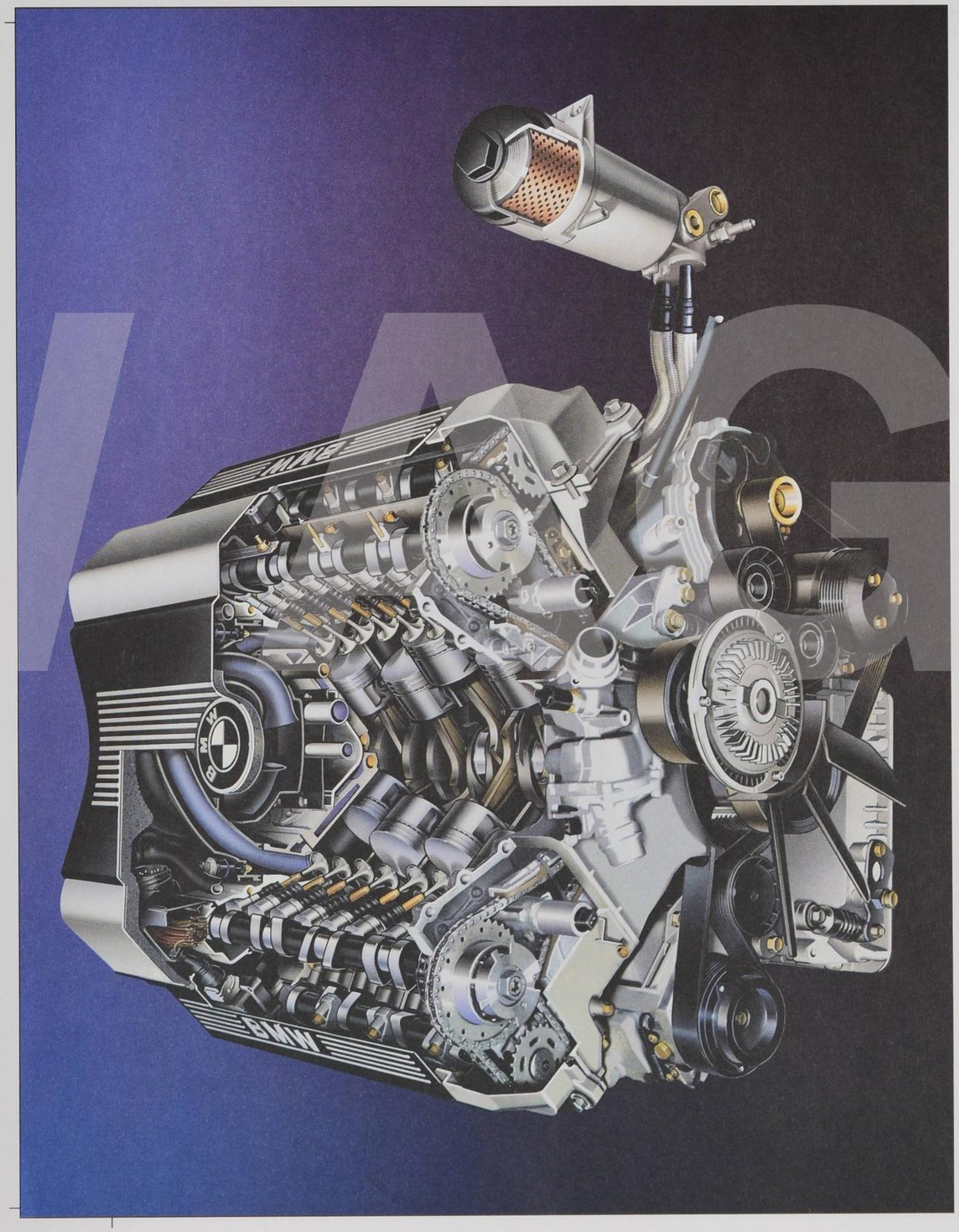
Moteur BMW à six cylindres vingt-quatre soupapes de 2,8 l équipé du VANOS double (année auto '00)
VANOS double

BMW motore 2,8 l sei cilindri quattro valvole con doppio VANOS (anno modello '00)
Doppio VANOS

Motor BMW 2.8 l de seis cilindros con culata de cuatro válvulas y doble distribución variable (Gama '00)
Doble sistema de distribución variable (Doppel-VANOS)

BMW V8 3,5 l/4,4 l Vierventilmotor mit VANOS (Mj. '00)
Motorschnittbild

A 99/164



BMW V8 3,5 l Vierventilmotor mit VANOS (Mj. '00)
Motorschnitt

Hubraum:	3498 cm^3
Nennleistung:	180 kW/245 PS bei 5800 min^{-1} (535i)
	175 kW/238 PS bei 5800 min^{-1} (735i)
max. Drehmoment:	345 Nm bei 3800 min^{-1}

BMW V8 4,4 l Vierventilmotor mit VANOS (Mj. '00)
Motorschnitt

Hubraum:	4398 cm^3
Nennleistung:	210 kW/286 PS bei 5400 min^{-1}
max. Drehmoment:	440 Nm bei 3600 min^{-1}

BMW V8 3.5-ltr four-valve engine with VANOS (2000 model year)
Engine cutaway drawing

Capacity:	3498 cc
Max output:	180 kW/245 bhp at 5800 rpm (535i)
	175 kW/238 bhp at 5800 rpm (735i)
Max torque:	345 Nm at 3800 rpm

BMW V8 4.4-ltr four-valve engine with VANOS (2000 model year)
Engine cutaway drawing

Capacity:	4398 cc
Max output:	210 kW/286 bhp at 5400 rpm
Max torque:	440 Nm at 3600 rpm

BMW V8 trente-deux soupapes de 3,5 l équipé du VANOS (année auto '00)
Vue en crevé du moteur

Cylindrée:	3498 cm^3
Puissance nominale:	180 kW/245 ch à 5800 tr/mn (535i)
	175 kW/238 ch à 5800 tr/mn (735i)
Couple maxi.:	345 Nm à 3800 tr/mn

BMW V8 trente-deux soupapes de 4,4 l équipé du VANOS (année auto '00)
Vue en crevé du moteur

Cylindrée:	4398 cm^3
Puissance nominale:	210 kW/286 ch à 5400 tr/mn
Couple maxi.:	440 Nm à 3600 tr/mn

BMW V8 motore 3,5 l quattro valvole con VANOS (anno modello '00)
Trasparenza del motore

Cilindrata:	3498 cm^3
Potenza nominale:	180 kW/245 CV a 5800 giri/min. (535i)
	175 kW/238 CV a 5800 giri/min. (735i)
Coppia massima:	345 Nm a 3800 giri/min.

BMW V8 motore 4,4 l quattro valvole con VANOS (anno modello '00)
Trasparenza del motore

Cilindrata:	4398 cm^3
Potenza nominale:	210 kW/286 CV a 5400 giri/min.
Coppia massima:	440 Nm a 3600 giri/min.

Motor BMW 3.5 de ocho cilindros en V con culata de cuatro válvulas y distribución variable (Gama '00)
Transparencia del motor

Cilindrada:	3498 c.c.
Potencia máxima:	180 kW/245 CV a 5800 r.p.m. (535i)
	175 kW/238 CV a 5800 r.p.m. (735i)
Par motor máximo:	345 Nm a 3800 r.p.m.

Motor BMW 4.4 de ocho cilindros en V con culata de cuatro válvulas y distribución variable (Gama '00)
Transparencia del motor

Cilindrada:	4398 c.c.
Potencia máxima:	210 kW/286 CV a 5400 r.p.m.
Par motor máximo:	440 Nm a 3600 r.p.m.

BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Motorschnittbild

A 99/174

BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Motorschnittbild

V8 Vierventilmotor mit Biturboaufladung und Ladeluftkühlung

Hubraum:	3901 cm^3
Nennleistung:	180 kW/245 PS bei 4000 min^{-1}
max. Drehmoment:	560 Nm bei 1750-2500 min^{-1}

BMW 3.9-ltr DI turbodiesel (740d/2000 model year)
Engine cutaway drawing

V8 four valve engine with dual turbocharger and intercooler

Capacity:	3901 cc
Max output:	180 kW/245 bhp at 4000 rpm
Max torque:	560 Nm/413 lb-ft at 1750-2500 rpm

BMW turbodiesel DI de 3,9 l (740d/année auto '00)
Vue en crevé du moteur

Moteur V8 trente-deux soupapes avec suralimentation par biturbo et échangeur thermique

Cylindrée:	3901 cm^3
Puissance nominale:	180 kW/245 ch à 4000 tr/mn
Couple maxi.:	560 Nm à 1750-2500 tr/mn

BMW 3,9 l DI turbodiesel (740d/anno modello '00)
Trasparenza del motore

Motore V8 quattro valvole bi-turbo e intercooler

Cilindrata:	3901 cm^3
Potenza nominale:	180 kW/245 CV a 4000 giri/min.
Coppia massima:	560 Nm a 1750-2500 giri/min.

Motor BMW 3.9 DI turbodiesel (740d/Gama '00)
Transparencia del motor

Motor V8 cilindros de cuatro válvulas con sobrealimentación biturbo e intercooler

Cilindrada:	3901 c.c.
Potencia máxima:	180 kW/245 CV a 4000 r.p.m.
Par motor máximo:	560 Nm a 1750-2500 r.p.m.

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BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Motorschnittbild

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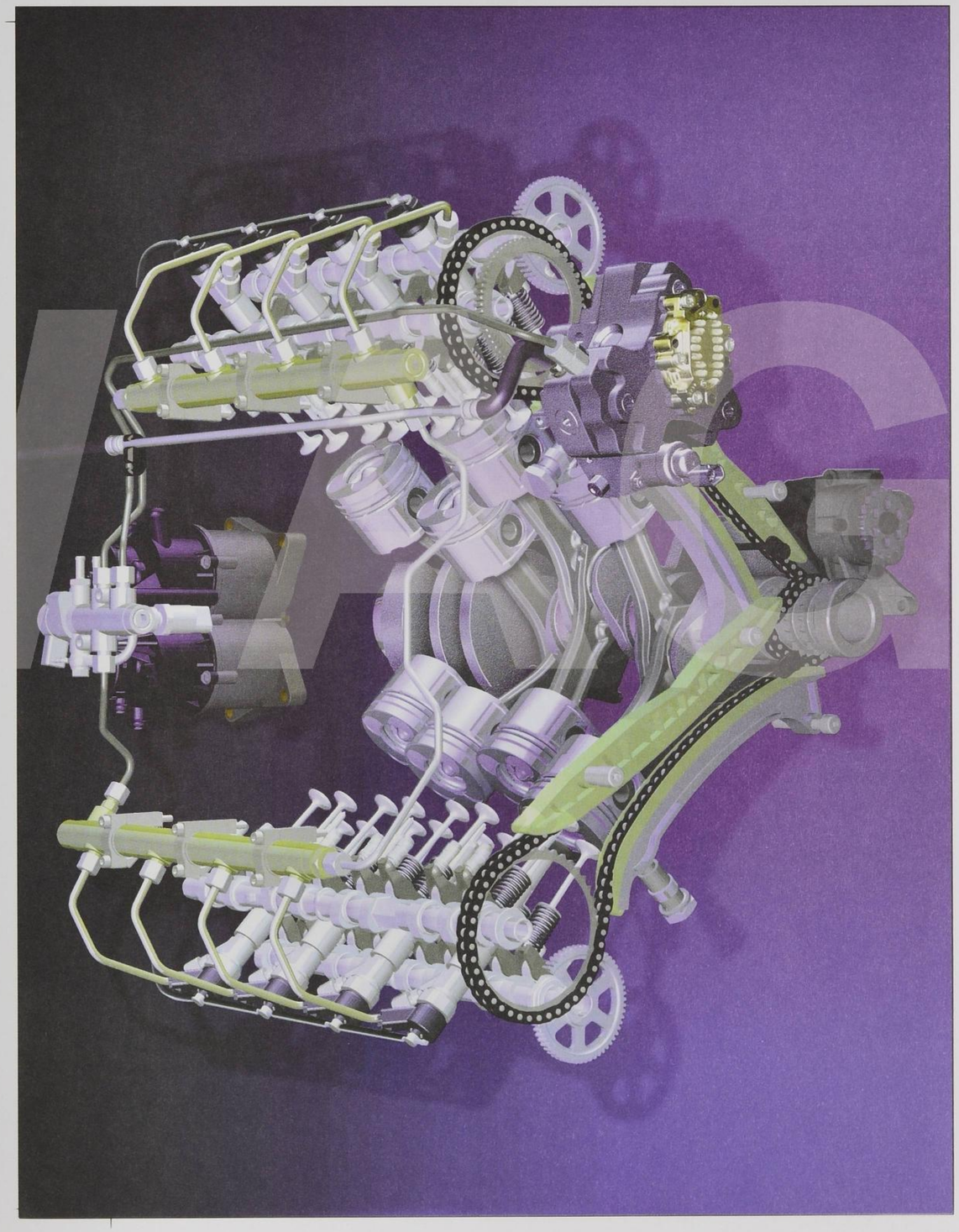

BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Motorschnittbild

V8 Vierventilmotor mit Biturboaufladung und Ladeluftkühlung

Hubraum:	3901 cm^3
Nennleistung:	180 kW/245 PS bei 4000 min^{-1}
max. Drehmoment:	560 Nm bei 1750-2500 min^{-1}

BMW 3.9-ltr DI turbodiesel (740d/2000 model year)
Engine cutaway drawing

V8 four valve engine with dual turbocharger and intercooler

Capacity:	3901 cc
Max output:	180 kW/245 bhp at 4000 rpm
Max torque:	560 Nm/413 lb-ft at 1750-2500 rpm

BMW turbodiesel DI de 3,9 l (740d/année auto '00)
Vue en crevé du moteur

Moteur V8 trente-deux soupapes avec suralimentation par biturbo et échangeur thermique

Cylindrée:	3901 cm^3
Puissance nominale:	180 kW/245 ch à 4000 tr/mn
Couple maxi.:	560 Nm à 1750-2500 tr/mn

BMW 3,9 l DI turbodiesel (740d/anno modello '00)
Trasparenza del motore

Motore V8 quattro valvole bi-turbo e intercooler

Cilindrata:	3901 cm^3
Potenza nominale:	180 kW/245 CV a 4000 giri/min.
Coppia massima:	560 Nm a 1750-2500 giri/min.

Motor BMW 3.9 DI turbodiesel (740d/Gama '00)
Transparencia del motor

Motor V8 cilindros de cuatro válvulas con sobrealimentación biturbo e intercooler

Cilindrada:	3901 c.c.
Potencia máxima:	180 kW/245 CV a 4000 r.p.m.
Par motor máximo:	560 Nm a 1750-2500 r.p.m.

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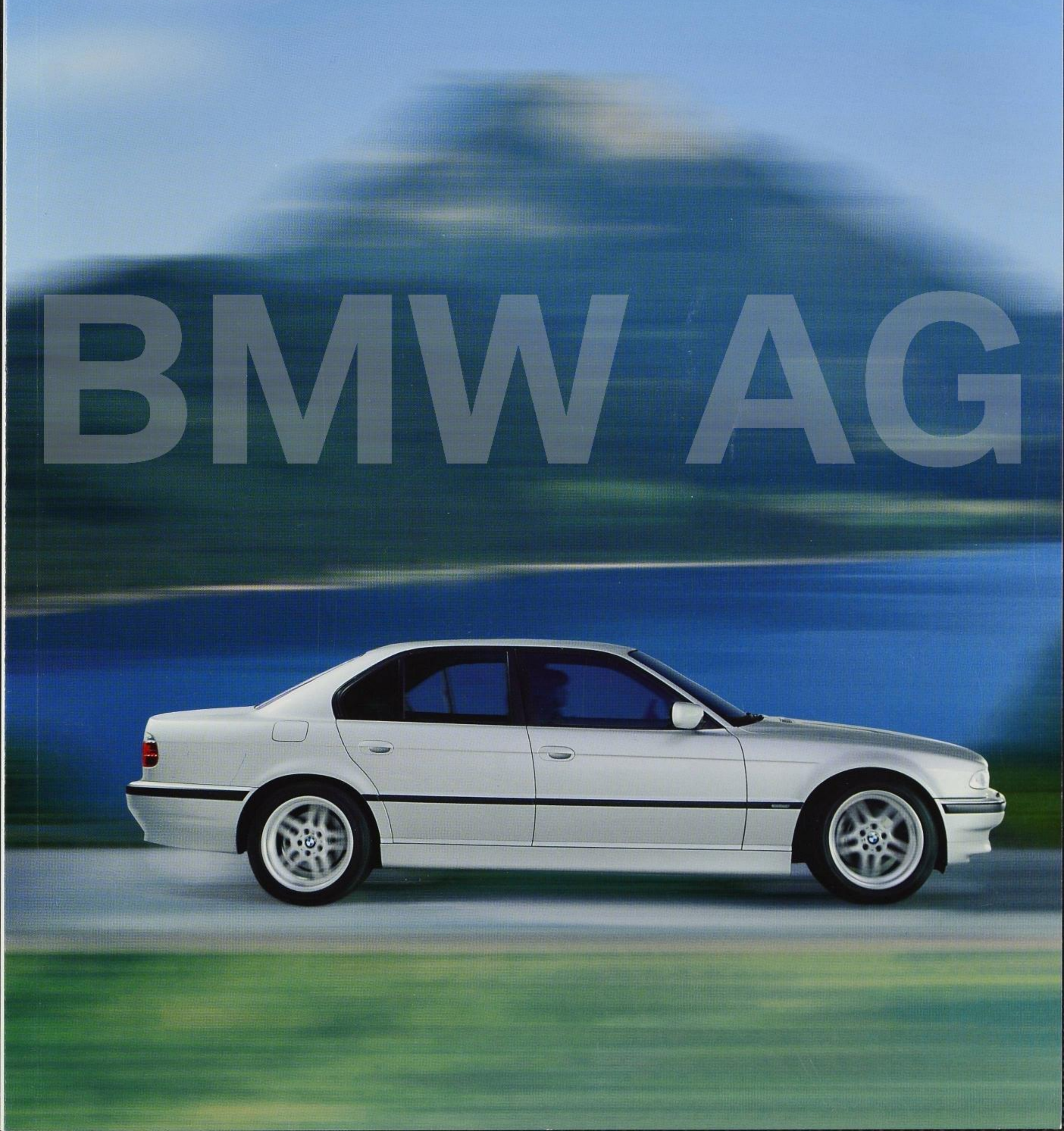
The New BMW V8 Diesel



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BMW AG Presse

Der neue BMW V8 Diesel
The New BMW V8 Diesel
La nouveau V8 diesel de BMW
Il nuovo BMW V8 diesel
El nuevo BMW V8 diesel

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Contents

740d Short Story: BMW Putting on Steam Page 1

The BMW 740d: The World´s First V8 DI Diesel in the Luxury Performance Segment Page 5

Already a Tradition Today: The BMW Diesel Page 18

740d - Specifications and Graphs Annex

BMW Putting on Steam:

The First V8 in the New Diesel Generation

Only the small letter "d" reveals what lurks within this outstanding new car: the **740d**, the world's first luxury performance passenger car with a direct-injection V8 diesel engine. Ultra-powerful and extremely fuel-efficient in one, this **biturbo V8 featuring common-rail direct fuel injection and a capacity of 3.9 litres** is also the **world's first-ever 8-cylinder in the latest generation of diesel engines to enter the market.** In its technical features, it is based on the highly successful three-litre BMW DI straight-six launched in autumn 1998.

Developing maximum output of **180 kW/245 bhp at 4000 rpm** and maximum torque of **560 Nm/413 lb-ft all the way between 1750 and 2500 rpm,** this V8 offers truly impressive performance throughout, setting the benchmark in this new market segment.

Further outstanding features:

- Crankcase made of high-strength GGV grey-cast iron
- Biturbo technology featuring innovative adjustment of the VNT turbochargers by electric motors
- Two intercoolers
- Four-valve combustion chambers with the injection nozzle located in the middle
- Fully controlled, cooled exhaust gas recirculation

- Twin-chamber exhaust system with one advance and one main catalyst on each chamber.

The new BMW 740d is the first diesel in the world to enter the high-performance luxury segment. In terms of motoring comfort, performance and fuel economy, this combination of a V8 power unit and diesel technology establishes a new benchmark in the world of motoring. In its actual performance on the road, this 7 Series with BMW's largest diesel engine ranks equal to its counterparts with an 8-cylinder petrol engine. The supreme muscle developed by the power unit is transmitted to the rear wheels exclusively by an adaptive five-speed automatic transmission with Steptronic management. Over and above the perfect gearshift in the automatic mode, Steptronic offers the sports-oriented customer the additional pleasure of a sequential manual gearshift.

Looking at the car's trendsetting safety equipment with 10 airbags including BMW's new head/side airbags at the rear, as well as the luxurious range of standard features and the comprehensive line-up of optional extras, we see again that the BMW 740d ranks equal to the 740i. It is also, incidentally, BMW's first diesel to be fitted with DSC Driving Stability and Traction Control.

Uncompromising design, future-oriented technologies

The V8 diesel 7 Series is the flagship within BMW's new generation of diesel cars. In terms of both performance and motoring comfort, the drive system incorporating the most innovative technologies is designed without the slightest compromise for the most demanding BMW

customers in this segment, once again impressively proving BMW's competence also in the area of self-ignition technology.

In its noise control and superior smoothness free of vibrations, the new V8 diesel again offers the same level of quality as BMW's 8-cylinder petrol engines widely lauded precisely for their supreme refinement. And the performance data of the 740d are most appropriate for a luxury saloon of this calibre: **Acceleration to 100 km/h comes in 8.4 seconds,** engine flexibility is truly outstanding for relaxed motoring, and the **top speed is 242 km/h or 150 mph.**

The only area where the 740d is truly modest is fuel consumption: **Consumingjust 9.8 litres of diesel fuel on 100 km (28.8 mpg Imp)**, this luxury liner featuring the most advanced common rail technology is one of the most fuel-efficient cars according to the Euro 100 standard, capable of covering a range of roughly 800 km or 500 miles on just one tank.

The 320d, 530d, 730d and 740d: BMW's new generation of diesel models

Introducing the new 320d saloon, BMW launched a new generation of cars with direct-injection diesel engines only a year ago. And indeed, the synthesis of power and torque offered by this two-litre engine remains unparalleled in its segment. This potential came out most clearly on 14 June 1998 when the 320d became the first diesel-powered touring car in history to win a 24-hour marathon well ahead of its petrol-engined competitors.

Launched towards the end of last year, the BMW 530d and 730d rank right at the top of the performance and comfort league in the six-cylinder diesel range. And now the **world's first V8 in the new diesel engine generation** is following as the top-of-the-range power unit in the BMW 740d. Clearly, this rounds off BMW's line-up of new diesels with a potential living up to the Company's supreme standard in every respect.

The 740d: The World's First V8 DI Diesel in the Luxury Performance Segment

The world's first standard-production 8-cylinder diesel engine with common rail direct fuel injection and **electronically controlled biturbo technology** introduced by BMW opens up a new dimension of powerful, comfortable and, at the same time, fuel-efficient motoring. Indeed, just one look at the car's performance data clearly reveals the strengths of this new top-of-the-range diesel in the 7 Series:

740d 180 kW/245 bhp at 4000 rpm, 560 Nm/413 lb-ft at 1750-2500 rpm, fuel consumption 9.8 litres/100 km (28.8 mpg Imp), 0-100 km/h in 8.4 sec, top speed 242 km/h (150 mph)

The new BMW 740d makes a powerful entry into the segment of high-powered luxury performance cars so far strictly off limits to the diesel. In terms of comfort, performance and fuel economy, this combination of V8 superiority and diesel technology sets a new benchmark in modern motoring. This result of BMW's uncompromising technology tailored to the specific demands of BMW customers, truly a high-end power unit in every sense of the word, impressively proves the quality of BMW engines also in the self-ignition segment.

The BMW 7 Series featuring the Company's new 3.9-litre V8 diesel comes right at the top of the line-up of direct-injection diesel power units successfully introduced by BMW in rapid succession. Following the 2.0-litre four-cylinder direct-injection diesel engine in the 320d with a level of power and performance unparalleled in its class, the new 3.0-litre straight-six direct-injection diesel complete with common rail technology celebrated its public launch only a few months ago in the

530d and 730d. As a result, the BMW 7 Series - already the unparalleled segment leader and, indeed, the benchmark in the luxury class - now comes with the most advanced and powerful diesel engines in the market.

As strong as a bull, as modest as a mouse: the grand tourer par excellence

The power unit of the BMW 740d is characterised in particular by two truly extreme features: Despite the immense torque of **560 Nm or 413 lb-ft between 1750 and 2500 rpm** - more than any other standard-production BMW ever built - the 3.9-litre 8-cylinder consumes just **9.8 litres of diesel fuel (28.8 Imp gals) in the EU cycle.** Clearly, this makes BMW's new 8-cylinder diesel an ideal vehicle for towing all kinds of trailers, for example a large horse-box or a boat trailer, not to mention the fact that this is virtually the ideal grand tourer saloon. Indeed, it is this fundamental forte of the BMW 7 Series in general that lifts the 740d to an all-new standard: Even at high cruising speeds, this supreme diesel will take virtually every gradient on a European *autobahn* without any decrease in engine speed worth mentioning, and certainly without changing gears. And even if the car is carrying its maximum load of 535 kg or 1180 lb, this performance is virtually guaranteed.

The very long final drive ratio of 2.65:1, in turn, ensures road speeds far above 130 km/h at low engine speeds. Thanks to the unparalleled economy of the direct-injection diesel under part load, finally, the new 740d is able to offer a level of fuel economy never seen before in a car of this calibre.

Smooth, silent, refined: the 90°-V GGV engine block

The starting point for the car's powerful acceleration even from low road and engine speeds is of course the engine displacement of 3.9 litres with a bore:stroke ratio of 84:88 mm (3.31:3.46"). Almost identical in its basic dimensions to BMW's 8-cylinder petrol engine, this 90°-V-engine with its crankshaft also angled at 90° offers the perfect starting point for supreme vibration and noise control. And through its design it ensures a complete balance of mass forces and momentum, providing a level of smoothness and refinement appropriate for a car of this calibre and avoiding the high level of fuel consumption and weight virtually inevitable with an engine featuring balance shafts.

The material used for the crankcase for the first time ever on a production car engine is high-strength grey-cast iron with vermicular graphite (GGV). Compared with conventional grey-cast iron (GG), the greater strength offered by GGV ensures a reduction in weight by approximately 20 per cent, engine design remaining the same and noise control becoming even better in the process. Cast aluminium, in turn, remains critical even with the current state of the art due to the extremely high crankshaft bearing pressure of up to 170 bar - not to mention acoustic problems caused by this technology.

A first-time achievement in engine construction: the crankcase with cracked bearing blocks

Given the enormous forces acting on the crankshaft of the 8-cylinder power unit at a torque level of this kind, the crankshaft bearings must be particularly stable. The usual method to ensure such stability is by

bolting on the bearing cover at four points, one vertical and one bolt inclinded at an angle of 45° on each side serving as an anchor to hold the cover in position despite significant transverse forces. On the V8 diesel, however, BMW has introduced a new, patented solution, using cracked crankshaft bearing blocks for the first time ever, together with cracked connecting rods already the state-of-the-art on modern BMW engines.

In this cracking process the covers are forced off the bearing blocks cast as one unit by hydraulic pressure. The individual fracture profile created in this way ensures not only a perfect fit free of even the slightest tolerance and confusion when put together again and thus not requiring any correction in the assembly process, but also maximum resistance to lateral forces thanks to the two sides of the profile meshing into one another. This dispenses with the inclined bolts, the BMW V8 requiring only two vertical bolts on each bearing block - which, in turn, reduces the complexity and weight of the engine.

BMW was also the world's first manufacturer to use this cracking technology on the connecting rod bearings facing towards the crankshaft on the V8 petrol engines, gaining excellent experience and results in the process.

Future-proof in every respect: 8-cylinder common-rail fuel injection

Like the direct-injection six-cylinder diesel, the 8-cylinder also uses common-rail technology to supply fuel to the cylinders. The V-design of the engine nevertheless presents particular demands in this case, two separate rails connected to the V8 cylinder heads allowing the use of

short injection pipes leading to the injectors on the two rows of cylinders and thus ensuring a high level of power and performance. The two rails are always kept under optimum pressure in accordance with running conditions by a newly developed high-pressure pump and an integrated pre-delivery pump. Injection pressure at the outlet itself is therefore up to 1350 bar. Indeed, this new pump already offers the potential for the next generation of common-rail technology with an increase in injection pressure of up to 1600 bar and even more efficient volume control with adaptive management on the intake side for minimum losses.

The entire system is controlled by the latest generation of Digital Diesel Electronics, DDE 4.1. It communicates with the other electronically controlled systems such as the automatic transmission and the Integrated Chassis Management (ICM) via an extremely fast CAN data bus.

High pressure is an essential prerequisite for the rapid and combustion-specific atomisation of fuel in the combustion chamber and, accordingly, for optimum fuel/air mixture formation and smooth combustion. This, in turn, ensures high torque and output on minimum emissions. The common-rail principle is more suitable for engines with more than four cylinders than the conventional distributor pump concept providing even higher injection pressure on the 320d, since common-rail technology in the latter case would require long injection pipes.

It almost goes without saying that BMW uses pilot fuel injection for a soft combustion process also on the 8-cylinder. The minute amount of fuel pre-injected in the process is 1.5 mm^3, about half the volume of a pinhead, the main amount of diesel fuel is then injected after a carefully

defined time-lag, burning much more softly and smoothly in the process. The harmonious combustion behaviour achieved in this way is borne out by the much quieter and smoother power cycle of BMW's direct-injection diesel engines.

Fast and spontaneous: the world's first diesel with electric turbocharger adjustment

Launching the new power unit of the 740d, BMW is once again setting the pace in biturbo technology with intercooling, introducing the first-ever VNT turbochargers with electrical adjustment of the turbine blades. The rate of adjustment provided by the electrical actuator is 10 times as fast as it would be with underpressure adjustment, the accuracy of the entire adjustment and control process being enhanced accordingly.

This allows both turbochargers to adjust much more precisely and quickly than conventional, underpressure-controlled systems to the turbocharger pressure required, ensuring a much better and smoother response at all times. Synchronisation of the two turbochargers now provided for the first time by air mass management and electronic control serves furthermore to ensure perfect running smoothness under all conditions.

Compared with a conventional turbocharger using bypass management, the VNT (Variable Nozzle Turbine) system offers the big advantage of directing the entire flow of exhaust gas through the cylinder at all times, without any unnecessarily high exhaust gas counterpressure being able to build up in the process. The advantages are more torque when setting off (a feature previously only made possible through the use of

an extra-small turbocharger) and more power thanks to the reduction of exhaust gas counterpressure at high engine speeds (a feature previously only possible with an extra-large turbocharger).

The driver will immediately feel these benefits of VNT technology, the engine offering extra torque both at low and high speeds. The rapid charge cycle ensured by the combination of turbocharger and four-valve technology significantly enhances the response of the engine, BMW's new V8 diesel spontaneously providing all the torque required for powerful acceleration.

Four-valve combustion chambers for superior power and a long running life

BMW's engine development specialists have given particular attention to the design and configuration of the four-valve combustion chambers crucial to the superior performance and emission management provided by the new diesel engine. Two decisive factors in this context are the central position of the injection jet along the cylinder axis and the combustion recess within the pistons themselves. Like on all of BMW's direct-injection diesel engines, the combustion chambers on the new V8 direct-injection diesel are rotation-symmetric in design allowing optimum cooling of pistons via a circular oil duct and, as a result, high output throughout a long and reliable service life.

The air motion (turbulence frequency) required for optimum combustion is ensured by the use of twin-duct technology combining a tangential and a swirl duct extending through the cylinder head to the two injection valves on each combustion camber. The outlet ducts are also twin units

helping to maintain not only an optimum flow of air, but also compact engine dimensions.

Uncompromising: double air and emission chambers

A virtually perfect charge cycle is ensured by the most sophisticated technology available, the entire engine system ranging from the intake manifold through the air filter, air mass meter, turbocharger, intercooler, advance and main catalyst, and from there all the way to the tail-end muffler including the cooled and carefully controlled recirculation of exhaust gases featuring double-chamber technology throughout. In conjunction with the four-valve combustion chambers, this is the guarantee for optimum power, torque and fuel economy, plus very precise control and managment of both the VNT turbochargers and exhaust emissions.

Clean emission management now reaching the very limit

In addition to the fully controlled emission recirculation system (ERS), a pre-catalyst close to the engine itself and a main catalyst further downstream ensure efficient emission management on each row of cylinders. In both cases the exhaust gas flows through two chambers all the way to the two mufflers at the rear end of the car, efficient ERS-cooling keeping the temperature of the recirculated emissions at an adequately low level. This, in turn, allows the engine to run on higher rates of recirculation helping to further reduce the formation of nitric oxides (NO_x).

The result of this high standard of technology is emission management quite outstanding for a diesel engine of this size: The 740d easily outperforms the EU2 standards and comes very close to the standards required in the strict EU3 test. To exceed even these limits the engine would require an even more sophisticated, further-reaching exhaust management system not yet possible today with the diesel fuel in the market having a sulphur content of up to 500 ppm.

Ancillary heating system for extra comfort and minimum wear

Benefitting from its high standard of efficiency, the direct-injection diesel is able to reduce the dissipation of excess heat to a minimum. Naturally a fundamental advantage in principle, this also means that there is less heat for warming up the passenger compartment. To achieve the usual BMW standard of motoring comfort, therefore, the BMW 740d comes as standard with an ancillary heating system integrated in the heater circuit and automatically switching on whenever required (which again means that the actual uptake of energy is reduced to a minimum). This additional heating system helps to warm up not only the interior, but also the engine itself even more quickly to the desired temperature level, thus shortening the high-wear cold-running period and minimising the emission of harmful pollutants.

Quieter, more powerful and absolutely exclusive to BMW the world over: the water-cooled alternator

BMW is the first car maker in the world to introduce the water-cooled alternator on both V8 and V12 power units. The biggest advantage offered by this sophisticated technology is highly efficient noise control

and sound deadening, the insulating water layer and the omission of the fan reducing engine noise in the high-frequency range by up to 3 dB, which means, quite literally, that noise emissions are reduced to just half the usual level. But even this is not everything, since the enhancement of heat dissipation makes the alternator even more efficient, reducing fuel consumption and boosting output and performance all in one. And last but not least, the feed of alternator waste heat into the engine shortens the warm-up period and improves emission management accordingly.

Steptronic fitted as standard

The supreme power of the engine is delivered to the rear wheels in all cases by an adaptive five-speed automatic transmission with Steptronic. Apart from the virtually perfect gear change in the automatic mode, Steptronic also offers the sports-minded customer the additional benefit of a sequential manual gearshift.

Yet a further advantage is provided by the fully controlled converter lock-up clutch combining the direct and spontaneous flow of power throughout the entire engine speed so typical of a manual gearbox with the perfect smoothness and almost effortless acceleration only an automatic transmission is able to offer. A further point is that the lock-up clutch enhances the efficiency of the transmission throughout a wide range of running conditions, helping to reduce fuel consumption accordingly in the process.

Reducing costs to a minimum: pay less, get more (driving pleasure)

Quite apart from its truly outstanding fuel economy, the 740d also excels through minimum cost of ownership and service. Changing the engine oil, for example, is required on average only once every 22,000 km or 13,600 miles. And the exact time for changing the engine oil is determined and displayed clearly by the "intelligent" Service Interval Indicator invented by BMW. An adaptive, self-learning system, the SII adjusts to the car's individual running conditions from one service to the next, determining the best and most cost-efficient time for service individually from one interval to another, depending on the data obtained in the process.

Another positive contribution to the owner's budget is made by the lifetime fluid charge both in the automatic transmission and the final drive, the omission of the usual oil change again reducing the cost of maintenance quite substantially. A further advantage is the use of self-diagnosis systems for the automatic transmission ensuring quick detection and inexpensive repair of possible defects. This integrates the transmission into an all-round monitoring system comprising virtually all electronically controlled functions and, wherever necessary, detecting and memorising any defects which might occur. Clearly, such a far-reaching system of self-diagnosis, the application of sophisticated diagnostic concepts, and the easy-to-service arrangement of parts and components helps to keep the cost of service and repair to a minimum.

Featuring DSC and 10 airbags for optimum results: active and passive safety

The BMW 740d is the world's first diesel to feature **DSC Driving Stability Control.** Among other things, DSC applies the brakes selectively whenever the car threatens to swerve in a violent manoeuvre or in bends the driver is taking at an excessive speed, particularly on slippery roads, thus helping to improve traction and driving stability. And the combination of DSC with **DBC Dynamic Brake Control** gives the driver of the BMW 740d an unprecedented active safety system in terms of both tracking control and fast response: DBC accelerates and boosts the build-up of brake pressure whenever applying the brakes all-out, at the same time keeping stopping distances to a minimum even when the driver fails to press down the brake pedal properly. A further advantage is that DBC, given its hydraulic function, allows very quick and sensitive dosage of the brakes under all circumstances.

Starting in spring 1999, BMW is supplementing the 7 Series' active components in trendsetting passive safety by the addition of **head airbags at the rear.** Integrated in the C-pillars, these head airbags cover both the pillars themselves and the rear quarterlights almost completely in a collision from the side. This means that the occupants riding in a large BMW saloon are protected as standard by a total of no less than **10 airbags** actuated individually and "intelligently" according to the type of accident and its severity: In a head-on collision both frontal airbags will inflate immediately, in a side-on collision one thorax airbag each in both the front and rear doors as well as a head airbag in the A- and C-pillars will be inflated in the interest of maximum safety.

Four-, six- and 8-cylinders: three direct-injection power units within 15 months

The introduction of the new 3 Series saloon in spring 1998 marked the starting point for an all-new generation of direct-injection BMW diesels: The first engine launched in the 320d was the 2.0-litre four-cylinder featuring a high-pressure distributor-type injection pump, a VNT turbocharger, intercooler and four-valve technology. Providing maximum output of 100 kW/136 bhp, this engine immediately became the leader in its class not only in terms of power and performance, but also in fuel economy, emission management, and motoring comfort.

Just half a year after the 320d, the 530d and 730d also made their debut in the market, immediately following in the footsteps of their "smaller" brother. Featuring a three-litre power unit supplied with fuel by common-rail technology, these two models once again offered the pinnacle in their class with maximum torque of 390 Nm/287 lb-ft (530d) and 410 Nm/302 lb-ft (730d), plus maximum output in both cases of 135 kW/184 bhp. The combination of advanced fuel injection with classic straight-six configuration also helps to provide ideal conditions for ideal motoring comfort in genuine diesel style. And in terms of performance, these new diesels also comply with BMW's usual supreme standard, the 730d accelerating to 100 km/h in 9.2 seconds, achieving a top speed of 220 km/h or 136 mph, and returning fuel consumption of just 8.7 litres diesel/100 km or 32.5 mpg according to the EU standard.

The outstanding popularity of BMW diesels with customers the world over is also expressed by a clear figure: From 1983 - spring 1999, worldwide sales of 3, 5 and 7 Series diesels amounted to approximately 750,000 units. And the trend is pointing up - fast.

Already a Tradition Today: The BMW Diesel

Introducing the 740d, BMW is continuing a tradition of setting the standard not only with the most powerful, but also with the most refined and smoothest diesel engines. All this goes back to the year 1983 and the introduction of the first BMW diesel, the 524td, featuring a turbocharged power unit developing 85 kW/115 bhp and soon gaining a great name for itself as the "Sports Diesel" thanks to its fortes so typical of the brand.

Both then and today, BMW's choice of diesel technology was based on a clear commitment: A BMW diesel must offer all the outstanding features of the marque in its particular class - features which have also characterised the success of BMW's petrol engines over the years and decades.

In 1987 BMW became the first car maker in the world to introduce DDE Digital Diesel Electronics in the 324td - fully electronic, digital diesel engine management developed by BMW in cooperation with Bosch and setting the pace ever since in diesel technology. DDE also paved the way for the integration of electronically controlled automatic transmission and driving stability control systems within the diesel, the electronic "brain" controlling all parameters crucial to exhaust emissions and fuel economy, noise emissions and motoring refinement far more quickly and precisely than even the most sophisticated mechanical system. Taking numerous factors into consideration, DDE was therefore able for the first time to ensure optimum fuel injection at exactly the right point as a function of engine map management. And indeed, the supreme control and management accuracy of DDE throughout the entire service life of the engine was and still is an essential prerequisite

for maintaining emission control standards constantly becoming stricter the world over.

Then BMW set the benchmark once again at the 1989 Frankfurt Motor Show, introducing the oxidation catalyst for the diesel engine. This was followed in 1991 by an all-new 2.5-litre turbodiesel making its debut as the world's most powerful diesel in its class thanks to intercooler technology and maximum output of no less than 105 kW/143 bhp. Only four years later, BMW again became the first manufacturer worldwide to offer Automatic Stability and Traction Control in a diesel in early 1995.

	Specifications: BMW Car Range			Saloon			
				730d	740d		
Body, Dimensions and Weights	No. of doors/seats			4/5	4/5		
	Length/width/height (unladen)		mm	4984/1862/1435	4984/1862/1435		
	Wheelbase		mm	2930	2930		
	Track front/rear		mm	1552/1568	1552/1568		
	Turning circle		m	11.6	11.6		
	Fuel tank capacity/range		ltr	85	85		
	Cooling system incl. heating		ltr	9.2	16.00		
	Engine oil		ltr	7.70	9.5		
	Transmission fluid		ltr	Lifetime filling	Lifetime filling		
	Final drive fluid		ltr	Lifetime filling	Lifetime filling		
	Weight, unladen (DIN)		kg	1830	1960		
	Weight, unladen (EU) °		kg	1905	2035		
	Max. load		kg	535	535		
	Max. permissible weight		kg	2365	2495		
	Max. permissible axle load front/rear		kg	1150/1275	1255/1300		
	Max. trailer load [1]						
	braked 12%, unbraked		kg	2100/750	2100/750		
	Max. roof load, trailer nose weight		kg	100/90	100/90		
	Luggage comp. capacity, VDA test		ltr	500	500		
	Drag coefficient/front area		Cd x A	0.30 x 2.21	0.31 x 2.21		
Engine	Layout/No. of cylinders/valves			Inline / 6 / 4	V 90 / 8 / 4		
	Engine management			DDE 4.0 (CR)	DDE 4.1 (CR)		
	Displacement, effective		cc	2926	3901		
	Bore/stroke		mm	84.0/88.8	84.0/88.0		
	Compression ratio/fuel grade		:1	18.0/diesel	18.0/diesel		
	Max. output		kW/bhp	135/184	180/245		
	at engine speed		rpm	4000	4000		
	Max. torque		Nm/lb-ft	410/302	560/413		
	at engine speed		rpm	2000-3000	1750-2500		
El.	Battery/location		Ah/-	110/luggage comp.	110/luggage comp.		
	Alternator		A/W	150/2100	150/2100		
Chassis/power transmission	Front suspension			Double-pivot struts with castor angle offset; positive steering scrub radius; compensation of transverse forces; anti-dive			
	Rear suspension			Integral axle; multi-dimensional suspension with anti-squat and anti-dive			
	Brakes, front			Four-piston floating-caliper disc brakes			
	Diameter		mm	316, vented	334, vented		
	Brakes, rear			Single-piston floating-caliper disc brakes			
	Diameter		mm	324	328, vented		
	Driving stability system			ABS, ASC + T	ABS, ASC+T, DBC, DSC		
	Steering, overall ratio			Ball and nut, torque-dependent power assisted, 16.9:1			
	Type of transmission			5-sp man gearbox (5-sp auto trans)	5-sp auto trans		
	Transmission ratio	I	:1	3.57	3.55		
		II	:1	2.20	2.24		
		III	:1	1.51	1.54		
		IV	:1	1.00	1.00		
		V	:1	0.80	0.79		
		VI	:1	-	-		
		R	:1	4.10	3.68		
	Final drive ratio			3.08	2.65		
	Tyres			215/65 R 16 98 V	235/60 R 16 100 W		
	Wheels			7.5 J x 16 la	7.5 J x 16 st		
Performance	Power-weight ratio		kg/kW	13.6	10.9		
	Output per litre		kW/ltr	46.1	46.1		
	Acceleration	0-100 km/h	sec	9.2	8.4		
		0-1000 m	sec	30.1	29.1		
	in 4th gear	80-120 km/h	sec	-	-		
	Top speed		km/h	220	242		
Fuel consumption	EU cycle		(ltr/100 km)				
	EU, in town			12.1	14.7		
	EU, out of town			6.8	7.0		
	EU, overall			8.7	9.8		
	CO_2 g/cm			232	260		

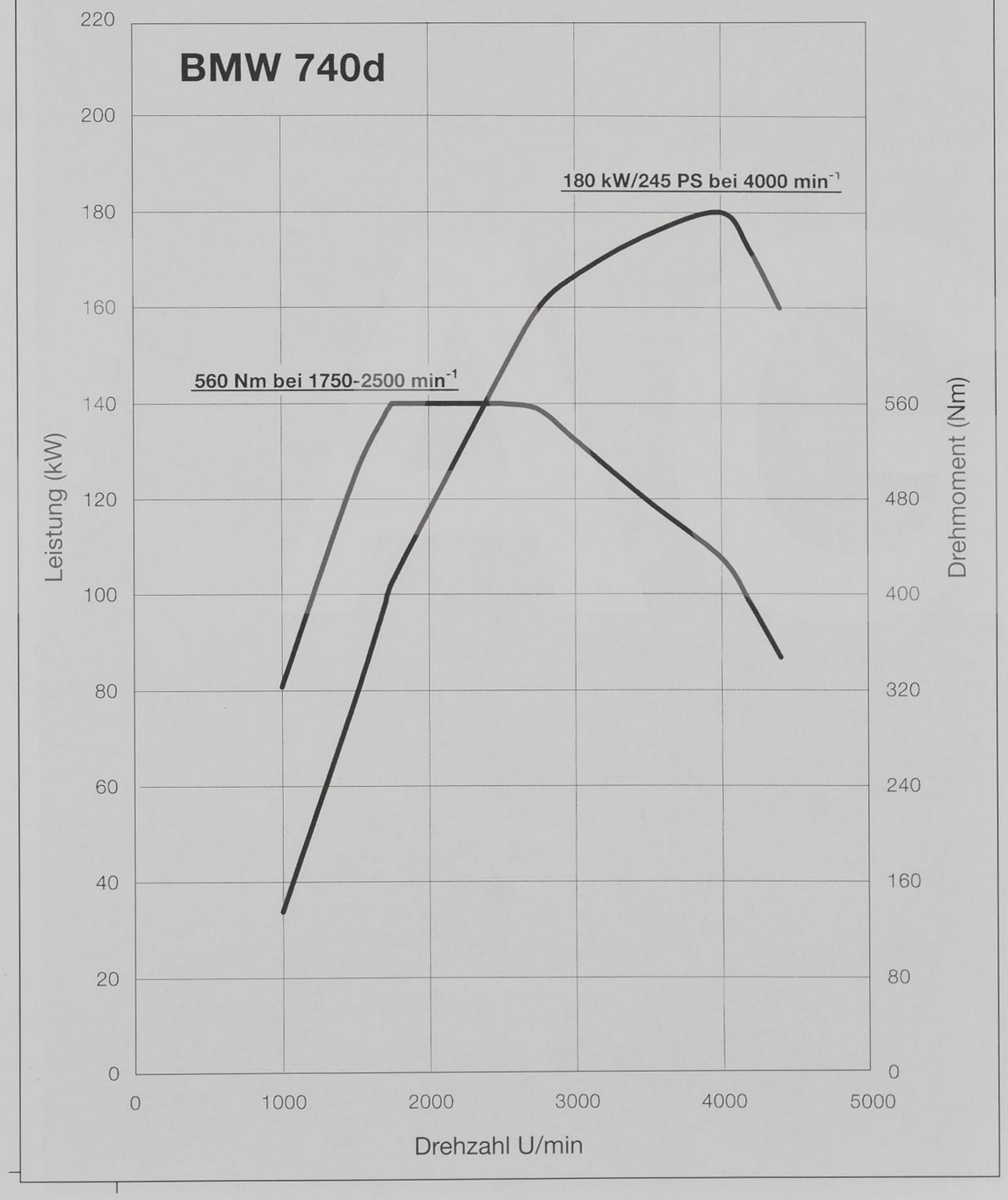
° Weight, unladen, including 75kg for driver

1) May be increased under certain conditions

These specifations are for the German market. Deviations from the model variants described here are possible in various countries.

BMW 3,9 l V8 DI-Turbodiesel mit Ladeluftkühlung (740d/Mj. '00)
Leistungs- und Drehmomentdiagramm

A 99/176



BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Leistungs- und Drehmomentdiagramm
V8 Vierventilmotor mit Biturboaufladung und Ladeluftkühlung

Hubraum:	3901 cm^3
Nennleistung:	180 kW/245 PS bei 4000 min^{-1}
max. Drehmoment:	560 Nm bei 1750-2500 min^{-1}

BMW 3.9-ltr DI turbodiesel (740d/2000 model year)
Output and torque diagram
V8 four valve engine with dual turbocharger and intercooler

Capacity:	3901 cc
Max output:	180 kW/245 bhp at 4000 rpm
Max torque:	560 Nm/413 lb-ft at 1750-2500 rpm

BMW turbodiesel DI de 3,9 l (740d/année auto '00)
Courbes caractéristiques de puissance et de couple
Moteur V8 trente-deux soupapes avec suralimentation par biturbo et échangeur thermique

Cylindrée:	3901 cm^3
Puissance nominale:	180 kW/245 ch à 4000 tr/mn
Couple maxi.:	560 Nm à 1750-2500 tr/mn

BMW 3,9 l DI turbodiesel (740d/anno modello '00)
Diagramma di potenza e coppia
Motore V8 quattro valvole bi-turbo e intercooler

Cilindrata:	3901 cm^3
Potenza nominale:	180 kW/245 CV a 4000 giri/min.
Coppia massima:	560 Nm a 1750-2500 giri/min.

Motor BMW 3.9 DI turbodiesel (740d/Gama '00)
Gráficos de potencia y par
Motor V8 cilindros de cuatro válvulas con sobrealimentación biturbo e intercooler

Cilindrada:	3901 c.c.
Potencia máxima:	180 kW/245 CV a 4000 r.p.m.
Par motor máximo:	560 Nm a 1750-2500 r.p.m.

BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Motorschnittbild

A 99/174

BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Motorschnittbild

V8 Vierventilmotor mit Biturboaufladung und Ladeluftkühlung

Hubraum:	3901 cm^3
Nennleistung:	180 kW/245 PS bei 4000 min^{-1}
max. Drehmoment:	560 Nm bei 1750-2500 min^{-1}

BMW 3.9-ltr DI turbodiesel (740d/2000 model year)
Engine cutaway drawing

V8 four valve engine with dual turbocharger and intercooler

Capacity:	3901 cc
Max output:	180 kW/245 bhp at 4000 rpm
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BMW turbodiesel DI de 3,9 l (740d/année auto '00)
Vue en crevé du moteur

Moteur V8 trente-deux soupapes avec suralimentation par biturbo et échangeur thermique

Cylindrée:	3901 cm^3
Puissance nominale:	180 kW/245 ch à 4000 tr/mn
Couple maxi.:	560 Nm à 1750-2500 tr/mn

BMW 3,9 l DI turbodiesel (740d/anno modello '00)
Trasparenza del motore

Motore V8 quattro valvole bi-turbo e intercooler

Cilindrata:	3901 cm^3
Potenza nominale:	180 kW/245 CV a 4000 giri/min.
Coppia massima:	560 Nm a 1750-2500 giri/min.

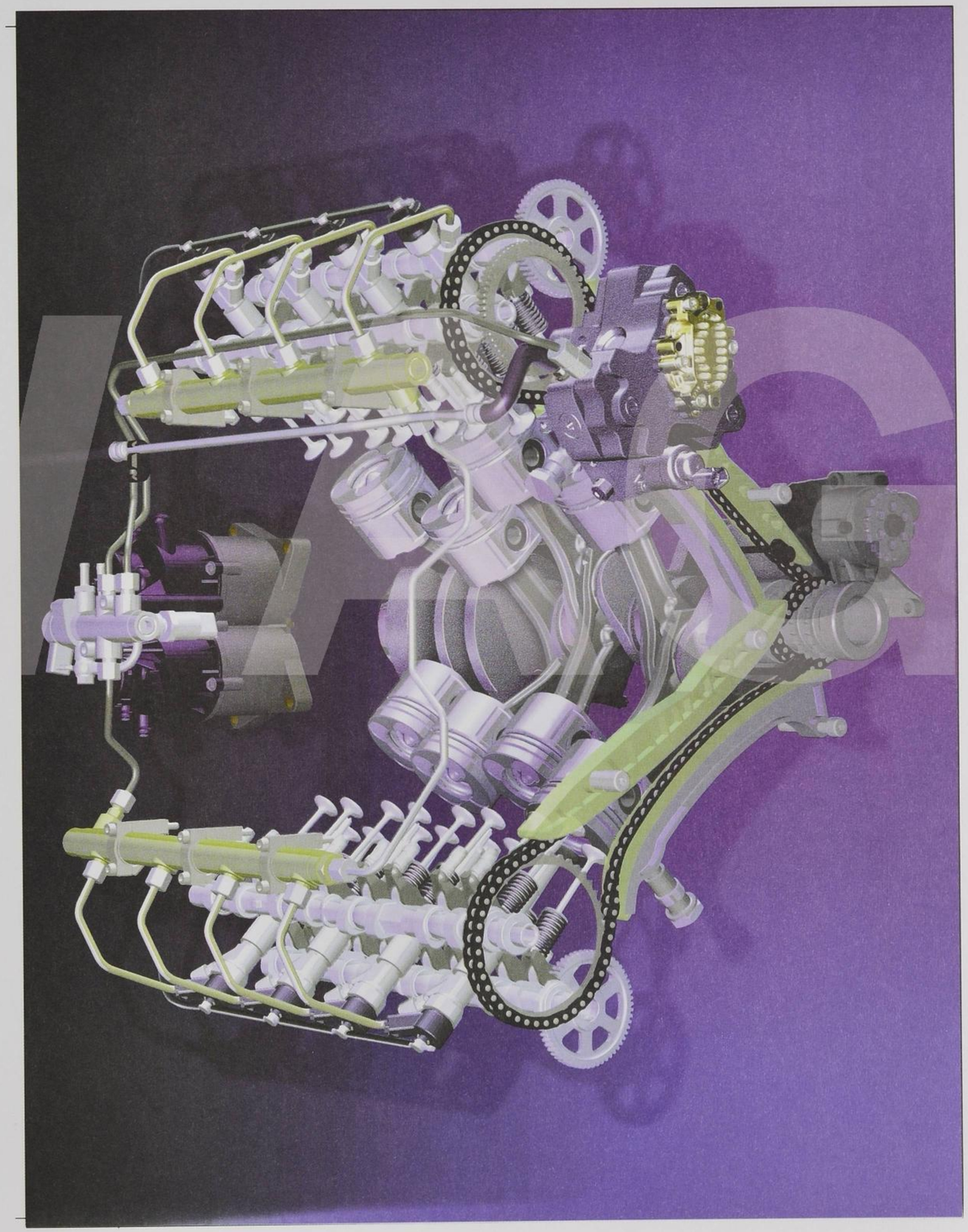
Motor BMW 3.9 DI turbodiesel (740d/Gama '00)
Transparencia del motor

Motor V8 cilindros de cuatro válvulas con sobrealimentación biturbo e intercooler

Cilindrada:	3901 c.c.
Potencia máxima:	180 kW/245 CV a 4000 r.p.m.
Par motor máximo:	560 Nm a 1750-2500 r.p.m.

BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Motorschnittbild

A 99/175



BMW 3,9 l DI-Turbodiesel (740d/Mj. '00)
Motorschnittbild

V8 Vierventilmotor mit Biturboaufladung und Ladeluftkühlung

Hubraum:	3901 cm^3
Nennleistung:	180 kW/245 PS bei 4000 min^{-1}
max. Drehmoment:	560 Nm bei 1750-2500 min^{-1}

BMW 3.9-ltr DI turbodiesel (740d/2000 model year)
Engine cutaway drawing

V8 four valve engine with dual turbocharger and intercooler

Capacity:	3901 cc
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BMW turbodiesel DI de 3,9 l (740d/année auto '00)
Vue en crevé du moteur

Moteur V8 trente-deux soupapes avec suralimentation par biturbo et échangeur thermique

Cylindrée:	3901 cm^3
Puissance nominale:	180 kW/245 ch à 4000 tr/mn
Couple maxi.:	560 Nm à 1750-2500 tr/mn

BMW 3,9 l DI turbodiesel (740d/anno modello '00)
Trasparenza del motore

Motore V8 quattro valvole bi-turbo e intercooler

Cilindrata:	3901 cm^3
Potenza nominale:	180 kW/245 CV a 4000 giri/min.
Coppia massima:	560 Nm a 1750-2500 giri/min.

Motor BMW 3.9 DI turbodiesel (740d/Gama '00)
Transparencia del motor

Motor V8 cilindros de cuatro válvulas con sobrealimentación biturbo e intercooler

Cilindrada:	3901 c.c.
Potencia máxima:	180 kW/245 CV a 4000 r.p.m.
Par motor máximo:	560 Nm a 1750-2500 r.p.m.

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