



**Volkswagen**

## **The New Phaeton**

International Driving Presentation in Sanya, China

Notes:

You will find this press information and images of the new Phaeton on the Internet at: [www.volkswagen-media-services.com](http://www.volkswagen-media-services.com).

User-ID: new-phaeton | Password: 06-2010

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### **The New Phaeton –**

One of the world's highest quality saloons got even better

**Flagship of the Volkswagen brand has fundamentally new front-end styling**

**Online services and dynamic main beam control make their way into Phaeton**

Wolfsburg/Sanya, June 2010. Volkswagen produces one of the world's highest quality and most exclusive automobiles at the German Transparent Factory (Dresden): the Phaeton. The quality, style and travelling comfort of this saloon (standard all-wheel drive, air suspension and 4-zone automatic climate control) set their own standards. The Phaeton is offered with two wheelbases as well as two rear seating versions (three seat bench or two individual seats). Now Volkswagen has further perfected the brand's flagship.

The entire front end was redesigned, including the standard bi-xenon headlights with LED cornering lights. Also tuned to match this look are the new LED rear lights. In parallel, an abundance of new technical features are making their way into the vehicle. They include a new brake system, the Dynamic Light Assist (camera-based, dynamic main beam control) system being introduced in a saloon for the first time, and a navigation system, which can integrate online data in the map display upon request. Moreover, thanks to an optional front camera the Phaeton "sees" traffic signs; speed limit signs are visualized in the instrument cluster (multifunction display) and the central touch-screen of the centre console. The system will be the first in the world to recognize and display no-passing zone markings. The latest generation of the Phaeton will launch on the market in just a few weeks (Europe in June; China in August).

**V6, V8 and W12 engines:** On the drive side, four engines are available (one turbodiesel, three petrol). The six, eight and twelve cylinder engines cover a power range extending from 176 kW/240 PS to 331 kW/450 PS. The six-cylinder petrol engine in the Phaeton is a V6 direct-injection engine (FSI with 206 kW/280 PS). At the power levels above the V6 FSI, a V8 and a W12 petrol engine are available (246 kW/335 PS and 331 kW/450 PS). In the diesel area, Volkswagen offers an extremely fuel efficient and refined V6 TDI (174 kW/240 PS) whose combined fuel consumption has been reduced from 9.0 to 8.5 l/100 km (equivalent to 224 g/km CO<sub>2</sub>).

**Design avant garde:** The Volkswagen Design-DNA developed by the Head of Design for the Group, Walter de Silva, defines the car's lines. In the area of the new front end, in particular, the design team added a measure of precision to the original, stylish and superlative image of this model. This gave the timelessly elegant Phaeton a broader and more powerful appearance: In keeping with the current Volkswagen Design-DNA, horizontal lines dominate the geometry. Different than on any other Volkswagen based on this new DNA so far, in the Phaeton the radiator grille is not styled in glossy black; rather a completely new chrome element is used. This radiator trim has a decisive impact on the styling of the new Phaeton.

Joining the left and right sides of the grille are the newly developed bi-xenon headlights with integrated LED indicator lights and LED cornering lights. The new bumper design complements the radiator grille and headlight styling. Here too, horizontal lines are the virtual

common thread linking their design. Even the front fog lights now shine in LED technology. The rear section of the car was also modified. In this area, the design team chose not to change the classic, clear and powerful basic styling of the Phaeton; instead it developed new smoked LED rear lights. Similar to the front end, the rear bumper was also modified. In its side profile, the car's new side trim strips and narrow-styled LED indicator lights in the outside mirrors stand out.

**Interior artistry:** The interior of the Phaeton is one of the most elegant, high quality and comfortable of the entire luxury class. The styling is linear and timeless; the materials and quality of workmanship define the benchmark worldwide. Unmatched in quality are its technological concepts such as a draft-free 4-zone climate control system and 18-way seats with award-winning ergonomics. As an alternative to the version with three rear seats (5-seater), the saloon may be ordered with two electrically adjustable individual seats as an option (4-seater). The Phaeton is also available in an extended chauffeur version that is 120 millimetres longer. The possibilities for customising the saloon are practically limitless with numerous options from Volkswagen Exclusive covering a broad range of leather, Alcantara trim, wood accents and such features as a refrigerator and multimedia systems. This also applies to the new styling of the multifunction steering wheel; it can be ordered in either leather or a wood-leather combination that is coordinated with the interior accents. Many customers in Europe – and those customers travelling to Europe – take advantage of the opportunity to configure

their new Phaeton with original leathers, woods and paints right at the Transparent Factory.

**Infotainment systems:** The thoroughly intuitive operation of the Phaeton was transferred unreservedly to the current generation radio/navigation system (RCD 810 as standard unit and RNS 810 as an option). The systems, whose features include 8-inch touchscreen control, form one functional unit with the climate control and multimedia controls. In the new Phaeton, Volkswagen is offering – for the first time – an Internet-based Google function as a supplement to the map display of the RNS 810 radio-navigation system with 30 Gigabyte hard drive. The relevant data are loaded into the system via mobile telephone using a specially set up Proxy Server. Visualisation on the touchscreen display is the same as that of the Google maps “Satellite” view or the Google “Hybrid” map on the iPhone, which are familiar from the conventional Internet, and it includes Points of Interest that can be called up. In the Phaeton, the satellite images are of course supplemented by the selected route recommended by the navigation system.

Ideally, the system loads the data over a UMTS connection. The telephone itself is fully integrated in the system via remote SIM Access Profile (rSAP). If a user wants to use a mobile phone with Hands-Free Profile (HFP) as an alternative (e.g. the iPhone), this is also possible in the new Phaeton (in this case, Google is not activated). The infotainment system can do even more. Thanks to an optional camera, it can now recognise traffic signs and show the relevant information on the touchscreen and/or the display of the multifunction display (located

between the speedometer and tachometer). By the way, this is the first vehicle in the world to indicate no-passing zones to the driver.

Electronic assistance systems: Assistance systems on the Phaeton include the new Dynamic Light Assist (dynamic main beam control), ACC (adaptive cruise control), Front Assist (surroundings monitoring system) and Side Assist (lane-changing assistant) systems. A tyre pressure monitoring system contributes to an even higher standard of safety. A completely new development is the optional Dynamic Light Assist: In conjunction with a camera integrated behind the front windscreen, the main beam modules of the bi-xenon headlights remain continually active; they are only masked in areas in which the system has analysed potential glare to other traffic participants. As a result, the driver has considerably more light to work with, and the system offers a clear gain in safety and driving convenience.

### **Phaeton Debuts with Entirely New Front End Styling**

**Designers re-styled the grille, headlights, bumper, wings and bonnet**

**Phaeton will be offered with optional 120 millimetre longer wheelbase**

Wolfsburg / Sanya, June 2010. An entirely new front end was developed for the new Phaeton. In keeping with the current Volkswagen Design-DNA, horizontal lines dominate its styling. Different than on any other Volkswagen based on this new DNA so far, the radiator grille on the Phaeton is not a glossy black; instead a completely new chrome element is used here. The styling of the new Phaeton is essentially defined by this radiator trim together with a new headlight design, and it underscores the car's uncompromising and independent character. Clear, elegant, stretched out and powerful are properties defining the side profile of the Phaeton with its roof placed far forward. The unique layout of the third window and coupe-like C-pillar that sweeps to the rear are characteristics of a very aristocratic design.

**Phaeton was designed for 300 km/h top speed**

The four-door body of the Phaeton, whose steel parts are fully galvanised, fulfils the highest standards when it comes to rigidity, vibration behaviour, passive safety and long life qualities. Like the running gear and powertrain, all body components are designed for a top speed of up to 300 km/h as well. Two of the many positive aspects of this basic construction layout: maximum solidity and maximum acoustic comfort. Besides using high-strength steels, Volkswagen also uses lightweight materials in the car body. The doors as well as the

front and rear bonnets are made of aluminium, while the front wings bridge the gap to Racing: They consist of a highly durable plastic.

### **New front end design with high-tech features**

Back to the styling. As mentioned, the team led by the Volkswagen Group's Head of Design, Walter de Silva, and the Head of Design for the Volkswagen Brand, Klaus Bischoff, designed a completely new front end for the Phaeton. Specifically, the new grille is more upright and more distinctive with its tighter geometry, and it shines in the interplay of its materials – between polished and brushed chrome. The horizontal connection of the grille and headlights follows the “Volkswagen Design Criteria” defined by Walter de Silva, and it impressively emphasises the vehicle's width. As a model-specific characteristic in its class, the Phaeton also displays three-dimensional sculpting of the grille and front bonnet. And indeed with precise edges that communicate a strong expression of high quality from the grille to the body sculpture. At the centre of the grille, there is once again the classic VW logo, which – despite the integration of ACC radar sensors (adaptive cruise control) – is now styled with a new surface look.

Joining the left and right sides of the grille are the new standard bi-xenon headlights with integrated cornering lights. This is a completely new generation of headlights – not only in their visual appearance, but also from a technological perspective. First: The narrow strip of turn indicator lights and cornering lights was designed with extremely visible, stylish and distinctive LEDs. Second: After the new Touareg, the Phaeton

will also be available with optional Dynamic Light Assist. The complex technology “recognises” other vehicles in traffic thanks to a camera integrated in the area of the rearview mirror, and it controls illumination of the roadway (*see separate section on Dynamic Light Assist*).

The new bumper was designed to complement the radiator grille and headlights. Here too, horizontal lines form the virtual common thread running through the design. Even the front fog lights were conceptualised as narrow, horizontally oriented strips in LED technology. Last but not least, the lower section of the bumper is now also painted in body colour. Compared to the previous model, this makes the new generation of the Phaeton even sportier and gives it a greater street presence.

#### **Modified rear and side profiles show timeless elegance**

The similarly modified rear section highlights this impression. In this area, the design team decided not to change the long-standing classic, clear and powerful basic styling, and chose instead to develop new LED rear lights. Besides dot-shaped lights, a band of LEDs in the form of an “M” was also designed. The results: an unmistakable and high-end day and night-time look. Integrated horizontally as narrow bands of LEDs at the bottom of the rear lights is the reversing light. Also new: the VW logo now also designed in a 3D contour on the rear bonnet.

The rear bumper was also redesigned, similar to the front end. The rear bumper has a new three-piece chrome strip, which provides a visual

parallel to the LED strips of the reversing light. At the rear, the bumper trim nearest the road is now also painted in body colour. Also distinctive in side profile are the modified side trim strips, the narrow-styled LED indicator lights in the outside mirrors and the new, optional 18-inch “Experience” type alloy wheels (standard on the V6 and V8: 17-inch “Impression” alloy wheels, and on the W12 the 18-inch “Innovation” alloy wheels). A total of ten alloy wheel styles are being offered on the new Phaeton; they range up to a dimension of 9J x 19.

#### **Optional 120 millimetre longer wheelbase**

The Volkswagen flagship is offered with two different wheelbases. In the standard configuration (wheelbase: 2,881 millimetres), the overall length is 5,059 millimetres. The version with a longer wheelbase (increased 120 to 3,001 millimetres) has an overall length measuring 5,179 millimetres. Both body versions are 1,903 millimetres wide and 1,450 millimetres tall.

## **New Phaeton Offers Travel and Operating Conveniences of the Extra Class**

**Interior of the Phaeton is considered stylistically and ergonomically pioneering**

**Online services and dynamic main beam control make their way into the Phaeton**

Wolfsburg/Sanya, June 2010. The interior of the highly safe Phaeton is considered one of the most elegant, high quality and comfortable of the entire luxury class. Unmatched in quality are the absolutely draft-free 4-zone climate control system and the 18-way seats that have won awards for their ergonomics. In addition, all control functions of the Phaeton's interior are intuitive. As an alternative to the version with three rear seat positions (5-seater), the saloon may be ordered with two electrically adjustable individual seats as an option (4-seater). The Phaeton is also available in an extended version that is twelve centimetres longer. The possibilities for individualising the saloon are practically limitless with the multitude of options ranging from a wide variety of leather, Alcantara trim, wood accents to such features as a refrigerator or multimedia systems as well as the one-of-a-kind customising services of Volkswagen R GmbH. This also applies to the new multifunction steering wheel design; it may be ordered in either leather or a wood-leather combination that is coordinated with the interior accents.

Yet, the Phaeton is not only comfortable; it is also extremely safe. Complementing such safety features as all-wheel drive and ESP and the car's high-strength body (37,000 Nm/Grad of static torsional rigidity) are the restraint systems installed as standard equipment in the interior, which provide effective all-round protection. Components of

this safety network include active head restraints (front), front and side airbags (front) as well as head airbags for the front and rear passengers (outer seats). Additional standard features are the ISOFIX mounting points (outer seating positions in rear) for safe mounting of suitable child seats; these mounts are now supplemented by a what is known as a Top Tether (additional support of the child seats in the area behind the head restraints).

#### **One of the best interiors in the world**

The materials used, the technical solutions, elegant styling and ample interior space all generate an ambiance that is as progressive as it is exclusive, and which makes the Phaeton unmistakable and pleasantly independent. The styling is dominated by clear straight lines, timeless and yet contemporary design elements, logical intuitive controls and a good clear layout. At night, the cockpit is immersed in a subdued, warm light with column lighting. Also illuminated are the interior door handles. The centrepiece of the geometrically structured cockpit is the centre console with an integrated infotainment centre and gear-shift console just beneath it. Forming a contrast to these high-tech elements, in the middle of the horizontal line of fine wood trim on the dashboard – is the Phaeton's analogue clock with chrome bezel. The instruments of the instrument cluster, encased behind anti-reflective glass, are ideally visible to the driver.

The upper dashboard has an elegant texture; upon request, a leather version of the instruments may be ordered. The lower section of the

cockpit and the doors consist of a material that contrasts in colour from the upper section and is generally lighter.

The Phaeton offers an excellent amount of interior space. Just how optimally Volkswagen exploits the space of the car body is demonstrated by an interior length of 1,875 millimetres. In the chauffeur version with an extended wheelbase that is 120 millimetres longer, the interior length is 1,995 millimetres; these values guarantee exceptionally relaxed conditions at all four or five seating locations.

The effective head room is 974 millimetres in front and 970 millimetres in the rear. Also spacious: The dimensions for the front and rear elbow width – a reliable indicator of the feeling of ample space – are 1,562 millimetres (in front) and 1,528 millimetres (in rear). The same applies to the shoulder room dimensions. The saloon's luggage compartment can handle a superior 500 litres of volume. A fine high-tech side detail: The rear bonnet of the Phaeton W12 (and otherwise optional) opens and closes automatically with a servo mechanism. In this case, the rear bonnet hinge is made of aluminium; It is worth opening if only to enjoy its aesthetic appearance.

### **Infotainment systems**

The intuitive operation of the Phaeton was transferred unequivocally to the current generation of radio/navigation systems (RCD 810 and RNS 810). The systems, equipped with an 8-inch touchscreen – form a functional unit with controls of the climate control and multimedia

systems. The RCD 810 is offered as standard equipment; the RNS 810 navigation system can be added as an option. Either system may be combined with the 1,000 Watt, 12-channel, high-end “Dynaudio Temptation” sound system.

**Use of online services:** In the new Phaeton, Volkswagen is offering – for the first time – an Internet-based Google function as a supplement to the map display of the RNS 810 radio-navigation system with 30 Gigabyte hard drive. The relevant data are loaded into the system via mobile telephone using a specially set up Proxy Server. Visualisation on the touchscreen display is the same as the Google maps “Satellite” view or the Google “Hybrid” map on the iPhone, which are familiar from the conventional Internet. In the Phaeton, the satellite images are of course specified by the selected route recommendation of the navigation system.

Especially interesting are POIs – Points of Interest – which can be called up. Integrated in Google are addresses, attractions, businesses, sporting venues, physicians and restaurants that can be selected and directly transferred to the navigation screen in just seconds. Ideally, the system loads the data over a UMTS connection. The telephone itself is fully integrated in the system via remote SIM-Access-Profile (rSAP). If a user wants to use a mobile phone with Hands-Free Profile (HFP) as an alternative, this is also possible in the new Phaeton (in this case, Google is not activated). In HFP mode, products such as the iPhone from Apple are also “Phaeton-compatible”.

**Traffic sign detection:** Yet, the infotainment system in the current generation Phaeton can do even more. Now, thanks to an optional camera located near the rearview mirror, the Phaeton can recognise traffic signs and show the relevant information on the touchscreen and/or the screen of the multifunction display (between the speedometer and tachometer). Not only does it show the legal maximum speed; it also shows important supplemental information (such as “10 pm – 6 am” or “When wet”). By the way, this is the first vehicle in the world to indicate no-passing zones to the driver.

#### **Best climate control system in the world**

The 4-zone Climatronic of the Phaeton assumes a special place in the comfort area. This unique system offers three key advantages. First: In the Volkswagen flagship, passengers sitting on the left and right in the rear can also set their target temperatures individually. The four controllable zones give the system its name: 4-zone Climatronic. Second: The cooling or heating air is routed to the defined zones indirectly via automatically opening and closing air ducts that are essentially draft-free. Third: Humidity control is integrated; this function automatically detects condensation on the windows and preventatively counteracts it.

The Climatronic, equipped with an automatic recirculation function, operates as follows: Outside air that is drawn in through the two large particulate filters with activated charcoal housed in the front bonnet clean the air of contaminants. A dual-duct blower distributes the primary air stream. Then 25 electric adjustment motors in the climate

control system help to achieve ideal control of air distribution. The large surface areas of the air outlets mean that the conditioned air is discharged at low speed into the car's interior; essentially this method avoids perceptible drafts. Indirect ventilation plays a crucial role here, which ensures a constant interior temperature either in concert with the conventional air nozzles on the instrument panel or by itself – depending on external conditions. In the latter case, the conventional visible air discharge nozzles are covered by fine wood covers.

Direct air discharge is only used as long as absolutely necessary; once a certain temperature level has been reached, and outdoor conditions allow it, it is important to distribute the air indirectly – that is, not blowing it onto the driver or passenger. The Climatronic then switches over to indirect mode, and the direct air nozzles are automatically closed and hidden by fine wood covers. Now a ventilation strip just inside the front windscreen and extending across the entire width of the interior, provides for air circulation that is hardly noticeable. Climate control specialists focused special attention on the rear seating area, offering individual temperature controls for the two outer seating positions. Temperatures of the individual air temperature zones are regulated via four temperature sensors in the air discharge system in the rear seating area.

#### **Award-winning seat system**

**Driver and front passenger seats:** Volkswagen offers the Phaeton in a basic 5-seat layout and an optional 4-seat version with two individual

seats in the rear. In the 5-seat version, the front seats are electrically adjustable in a 12-way system. The twelve ways: front/back functions for longitudinal (2), height (2) and seat angle (2) adjustments, backrest angle (2) and height and depth adjustments for the lumbar support (4). Electrical adjustment controls are located low on the outer side of the seat pedestal; a switch in the shape of a seat and backrest that is perceptible to the touch makes adjustments intuitive. The front seats also have standard active head restraints. In a rear crash, the reversible system is triggered by the momentum of the driver or front passenger. Specifically, a hinge mechanism in the backrest moves the head restraints forward and upward; this reduces the distance to the head and thereby the risk of the commonly known whiplash trauma.

On the Phaeton W12, an 18-way seat adjustment system is provided as a standard feature on the 4-seat version, and otherwise as an option. These seats were the first in the world to be awarded the German “AGR quality seal” (best back support) as well as the highly esteemed “Professor Ferdinand Porsche Prize”.

In addition to the functions offered on the 12-way seats, electrical adjustments were added for the top of the backrest, the head restraints and seat length (the front thigh support). In this case, the steering wheel also retracts to a neutral position during entry and exit as part of the Easy-Entry function. Also integrated: a memory function to store individual settings for three drivers (controls the seat, seatbelt height, rearview and outside mirrors as well as the steering wheel), seat

air conditioning by fans and a back massage function of the lumbar support.

**Rear seats:** Two alternative rear seat configurations are offered. The standard configuration for the saloon is a 3-person bench seat. The first upgrade that can be ordered as a special option are rear seats with 6-way adjustment, air conditioning and massage function. In the most exclusive version, Volkswagen offers the Phaeton with two individual seats in the rear with 10-way adjustment systems (including memory logic). In this version, an Easy-Entry system was also integrated in the rear: When the doors are opened, the individual seats slide backwards up to ten centimetres, depending on their initial positions, making entry and exit easier. In addition, with the 10-way system it is possible to adjust the front passenger seat from the rear.

### First Saloon with Camera-Based Main Beam Control

**Dynamic Light Assist enables driving with continuous main beam**

**Electronic assistance systems significantly enhance safety**

Wolfsburg/Sanya, June 2010. The extensive electronic assistance systems in the Phaeton include the new Dynamic Light Assist (dynamic main beam control), ACC (adaptive cruise control), Front Assist (surroundings monitoring system) and Side Assist (lane-change assistant) systems. A tyre pressure monitoring system also contributes to an even higher standard of safety.

#### **Dynamic Light Assist**

Dynamic Light Assist is a completely new development. In tandem with a camera integrated behind the front windscreen, the system keeps the main beam modules of the standard bi-xenon headlights continually active; they are simply masked in those areas where the system analyses potential glare to other traffic participants. This gives the driver considerably more light to work with, offering a clear gain in safety and driving comfort. The function is realised by an additional screen between the reflector with xenon filament and the lens. In conjunction with intelligent lateral swivelling of the entire module (by the cornering light function) and independent control of the left and right headlights, this additional screen geometry makes it possible to mask out the light source in just those areas from which glare could be emitted.

Thanks to the front camera, the cornering light control module is able to acquire the exact position of the vehicle ahead, and starting at a vehicle speed of 60 km/h it “shifts” the light beam to the rear of the

other vehicle, or even on its side as it passes – without glare reaching the driver. The gains in safety and comfort offered by Dynamic Light Assist are as significant as the introduction of xenon technology was at one time.

### **ACC and Front Assist**

Adaptive cruise control (ACC) relieves the driver of the tasks of active braking and acceleration. ACC significantly improves driving comfort and passive safety, especially on longer motorway drives. At the same time, the activated system avoids violating the legally prescribed minimum safe distance to the next vehicle.

An integral component of ACC is the Front Assist surroundings monitoring system. This ACC extension was designed to help prevent rear-end collisions. The system uses a radar sensor to monitor the distance to vehicles in traffic ahead of the Phaeton. When these vehicles are approached too closely, the system informs the driver in two stages. Simultaneously, the vehicle is also prepared for potential hard braking by the driver. Front Assist puts the brakes in a preconditioned state in anticipation of certain situations, a state that would otherwise not be activated until the brake pedal is pressed; the system effectively reduces stopping distance in this way.

Adaptive cruise control is operated by keys on the redesigned multifunction steering wheel. Its operation is very similar to that of a simple cruise control system. While ACC is active, the saloon auto-

matically brakes (if necessary to a stop) and accelerates the saloon within a speed range preset by the driver. ACC may be activated between 30 and 200 km/h. The system uses radar to acquire traffic driving ahead of the Phaeton over an angle of 12 degrees and up to 200 metres in range. ACC is activated or deactivated by an ON/OFF key on the left side of the multifunction steering wheel. In addition, all driver assistance systems including ACC can be activated and deactivated by pressing a central button on the turn signal stalk longer than one second. In addition, ACC is deactivated as soon as the driver presses the brake pedal. The system may be reactivated by pressing the “Resume” key on the steering wheel; the system resumes operation with the target speed that was set before deactivation. The driver can quickly and clearly read key information related to Adaptive Cruise Control on the screen of the multifunction display.

#### **Side Assist in detail**

Another assistance system in the Phaeton is the lane change assistant (Side Assist). Starting at a speed of 60 km/h this system uses radar sensors installed in the rear bumper to monitor surroundings behind and to the sides of the Phaeton (one sensor each for left and right areas on the vehicle), and it signals a potential risk of collision by a warning light in the outside mirror housing. The sensor monitoring range is about 50 metres to the rear and 3.60 metres to the sides of the saloon.

If Side Assist detects a critical situation to the left or right of the Phaeton without the driver indicating a lane change by activating the turn

signal, the warning lamp in the mirror housing is lit to call attention to the special traffic situation. However, if the driver activates the turn signal while the neighbouring lane is occupied, the lamp flashes four times to alert the driver of the potential hazard. The brightness of the warning lamps can be adjusted over five stages from the multifunction display. An interesting networking of systems: The momentary ambient light detected by the rain and light sensor automatically flows into computations for lamp brightness.

### Combined Fuel Consumption of V6 TDI Reduced by 0.5 Litre

Four engines with a power range from 240 PS to 450 PS

Comfortable V6 FSI is most purchased Phaeton engine in China

Wolfsburg/Sanya, June 2010. The Phaeton is offered with four outstanding engines; their power range extends from 176 kW/240 PS to 331 kW/450 PS. The most successful engine in Europe is the V6 TDI, a direct-injection turbodiesel with 240 PS (95 percent share of engines). In China, on the other hand, 94.4 percent choose the V6 FSI, a 206 kW/280 PS direct-injection petrol engine. In especially high demand on the Russian market (53.7 percent) is the 246 kW/335 PS petrol V8 of the Phaeton. Anyone wishing to transform the Phaeton into a sports car in saloon clothing, will choose a masterpiece of engine building: the W12 with 450 PS. All engines fulfil requirements that include the European EU-5 emissions standard.

#### Phaeton V6 FSI

The V6 petrol engine is a FSI (petrol direct injection) with 3.6 litres displacement and 206 kW/280 PS. The comfortable FSI develops a maximum torque of 370 Newton-metres (at 2,500 rpm). The 24-valve six-cylinder engine's maximum power is reached at 6,250 rpm. Powered in this way – and equipped with a 6-speed automatic and 4MOTION all-wheel drive – the luxury class saloon impresses with dynamic performance: The Phaeton V6 FSI reaches the 100 km/h mark in 8.6 seconds; its top speed is 250 km/h. This contrasts with a low combined fuel consumption of 11.7 litres (equivalent to 273 g/km CO<sub>2</sub>), which is low considering the vehicle's class and driving performance.

### **Phaeton V6 TDI**

The V6 TDI of the new Phaeton, with 176 kW/240 PS, has common rail injection and is a dynamic and efficient engine. The 3.0 litre displacement, 24-valve, six-cylinder engine reaches its maximum power at 4,000 rpm. Its maximum torque of 500 Newton-metres takes charge at a low 1,500 rpm and remains constant up to 3,000 rpm. The Phaeton V6 TDI sprints from a stop to 100 km/h in just 8.3 seconds. The saloon's top speed here is 237 km/h. Its fuel consumption has been reduced from 9.0 to just 8.5 l/100 km (equivalent to 224 g/km CO<sub>2</sub>). This V6 engine also comes with a 6-speed automatic.

### **Phaeton V8**

The Phaeton's V8 petrol engine guarantees exceptional, superior driving performance. It has a power of 246 kW/335 PS (at 6,500 rpm) and develops a considerable maximum torque of 430 Newton-metres (at 3,500 rpm). The top speed of the Phaeton V8 is electronically limited to 250 km/h. The saloon covers the sprint to 100 km/h in just 6.9 seconds. The extremely quiet engine has a combined fuel consumption of 12.9 l/100 km, which is equivalent to CO<sub>2</sub> emissions of 298 g/km.

### **Phaeton W12**

The 6.0 litre displacement W12 engine of the Phaeton sets standards when it comes to its torque curve, responsiveness and comfort. When shifted by a 5-speed automatic gearbox (Tiptronic with alternative

sequential shift gate), the twelve-cylinder engine accelerates the Phaeton W12 with long wheelbase to 100 km/h in just 6.1 seconds – a sports car value. Its top speed is electronically limited to 250 km/h here. The car's combined fuel consumption is 14.5 litres per 100 km (equivalent to 348 g/km CO<sub>2</sub>).

## Air Suspension and All-Wheel Drive

### Performance and Comfort of the Top Class

**Air spring suspension lowers automatically at higher vehicle speeds**

**Phaeton has air suspension and all-wheel drive as standard equipment**

Wolfsburg/Sanya, June 2010. The running gear on the Phaeton is designed for maximum levels of driving performance, comfort and safety. The basic layout of the running gear consists of a four link front suspension and a trapezoidal link rear suspension. A standard feature – and this is by no means a given in this class – is the four-wheel air suspension coupled to the running gear. The bottom line is that this air suspension plays no small role in creating one of the most comfortable suspension systems in the world. In parallel, a standard 4MOTION all-wheel drive system leads to an exceptionally high level of active safety. An entirely new brake system solidifies this fact in the latest Phaeton.

#### **Four-wheel air suspension**

The high level of driving safety on the Phaeton, which goes hand in hand with its superior vehicle dynamics, was achieved while realising extremely good comfort properties. One reason for this, already mentioned, is the standard air suspension system. The goal of running gear developers was to design a spring system that would fulfil the highest standards in terms of both driving comfort and vehicle dynamics. Air spring systems with controlled damping are extremely well suited for this purpose, since they offer numerous advantages compared to conventional steel spring systems.

The levelling system of the air suspension enables a soft, load-independent and therefore comfort-oriented spring layout and

intentional lowering of vehicle ride height at high speeds. The results: lower fuel consumption and less tendency to roll.

The physical behaviour of the air suspension makes it possible to automatically adapt the spring rate and vehicle's ride height to the given load, and so the system simultaneously performs the function of a classic level control system. This maintains driving comfort at the same high level in all load states. Moreover, the system reduces load-related changes in vehicle dynamics. Continuously variable damping control improves ride comfort and driving safety significantly.

The air suspension itself consists of these basic elements: a total of four air spring arms at the front and rear axles, an air supply unit, a pressure reservoir, a control module, a total of four level sensors at the front and rear axles, three accelerometers on the vehicle body and four accelerometers on the wheel suspensions.

The core system components are its four air spring modules. Their specially fabricated outer bellows guarantee a very gentle response to every suspension movement. The desired low spring rate is ensured by an additional volume as well as special piston contouring, which has a positive effect on the dynamic behaviour of the air spring. In addition, the damping force at each spring arm is adapted to momentary demand in just milliseconds via an electrically controlled valve integrated in the piston of the hydraulic damper. Data from the wheel accelerometers on the dampers and the total of three body accelerometers are used to compute optimal damping forces for direction and stability. This

is an intelligent engineered system that gives the luxury class saloon exceptionally responsive handling, yet makes it extremely comfortable. The air spring system with dynamic damping produces a running gear configuration whose advantages in vehicle dynamics do not sacrifice ride comfort.

The Phaeton can adjust to three different chassis height levels: the Normal level (NL), High level (HL) 25 millimetres above the Normal level, and the Low level (LL) 15 millimetres below the Normal level. This level is automatically controlled as a function of speed to optimise driving properties and fuel consumption (from 140 km/h).

Of course, the driver can also intervene manually in tuning the running gear. There are controls for levelling and damper control behind the gearshift lever on the centre console. These buttons give the driver a choice of two height levels (NL and HL) and four damper characteristics (Comfort, Basic, Sport, Sport2).

#### **4MOTION all-wheel drive**

The Phaeton is equipped with all-wheel drive in all versions. The 4MOTION all-wheel drive offers significant advantages primarily in traction and handling compared to the rear wheel drive that is usual in this market segment. In particular, 4MOTION plays out its advantages in critical load alternation effects – nearly independent of control systems such as ESP that is standard in the Phaeton. Power distribution of the 4MOTION drive is fully variable, and power is directed to each

four wheels based on slip. This means that propulsive power is always distributed individually, and this makes it possible to maintain optimal traction and cornering force for each wheel.

The Torsen differential plays a key role in power distribution; it reacts to even the slightest of speed deviations. Specifically, the 4MOTION system works as follows: Power is transferred into the Torsen differential along a path over the planetary gears of the automatic transmission and the spur gear stage. Normally, half of the torque is directed to the propshaft and thereby to the rear axle, and half via an intermediate stage to the front axle (power distribution 50:50). The rigidity of the drivetrain is exemplary; this has a positive effect on noise behaviour in start-off and in load alternation.

### **Touchscreen Command Centre and 4-Zone Climatronic are Standard**

Versions with individual rear seats automatically get leather upholstery

Phaeton customising possibilities are nearly limitless

Wolfsburg/Sanya, June 2010. The Phaeton is characterised by an extremely extensive set of convenience and comfort features. Even the six-cylinder model has a 4-zone Climatronic as standard equipment – with draft-free operation and air quality and humidity sensors – as well as 12-way electrically adjustable front seats. When the Phaeton – whose basic version has 5 seats – is ordered with two individual seats in the rear, they also have 10-way electrical adjustment; in this case, the car comes with front seats with 18-way adjustment, seat heating at all seating locations and a memory function (for three different drivers and front passengers).

#### **Safety**

Every Phaeton leaves the Transparent Factory in Dresden with eight airbags on board – driver, front passenger, side and window airbags). The driver airbag has an air volume of 62 litres, while the front passenger airbag has an activated content of 115 litres. They both ignite at two different levels, depending on crash intensity. If small children are sitting in the front with rear-facing seats, the right front and side airbags can be deactivated via a separate lock using the ignition key.

To reduce the risk of head injury in a side crash, Volkswagen is implementing window airbags (with 28 litre volume) in the Phaeton;

they run from the A-pillar to the C-pillar and from the roof down to the window sill. Additional protection is offered by thorax side airbags housed in the front and rear seat backrests, and the windows themselves whose edges consist of compound glass. The head restraints on the front seats are active in design, and they help to reduce the risk of whiplash injury. In the rear, the outer seating positions also have Isofix mounting points, plus the Top Tether feature to securely anchor suitable child seats.

#### **Standard features of the V6 FSI, V6 TDI, V8**

The seats and matching trim of the 5-seat Phaeton are upholstered in an elegant and high-end fabric (Pearl design). The 4-seat versions have standard leather upholstery in Vienna Classic Style and a centre armrest with front and rear height adjustment on each seat – for a total of four armrests.

Always on board is the infotainment centre (RCD 810 and optional RNS 810) including an 8/10 audio system with 8 channels and ten loudspeakers as well as an 8-inch touchscreen and a CD changer in the glove box. Along with the many equipment features that are customary in this class, the Phaeton has numerous additional convenience and high-tech features inside. They include “Eucalyptus” wood trim (instrument panel, upper door panels, frames around the infotainment centre and gearshift boot, ashtrays or two storage compartments), centre armrests in front and rear, the new leather-trimmed multifunction steering wheel design, stainless steel pedal caps, aero wipers with heated washer

nozzles and heated park position on the front windscreen, as well as electrically regulated wiper field, electrically adjustable and heated outside mirrors and a cruise control system.

Basic features are supplemented by an automatically dimming rearview mirror, steering column with fully variable adjustment in four directions, front and rear footwell illumination and reading lamps, indirect instrument panel lighting and interior lighting, rain sensor for intermittent windscreen wipers, Coming Home /Leaving Home light function for the bi-xenon headlights and central locking with RF remote control.

Standard equipment on the Phaeton V6 and V8 with long wheelbase also includes electrically adjustable front passenger seat that can also be adjusted from the rear seat (on 4-seater), seat covers in leather as well (heated seats in front), an electric tilt/slide glass sunroof, illuminated make-up mirror in the rear as well as an electrically actuated sun shade for the rear windscreen and manual shades for the rear side windows. The Phaeton V8 is also distinguished from the V6 models by its two chrome tailpipes and laminated glass for all windows. Identical, on the other hand, are its 17-inch alloy wheels in “Impression” design with 235 tyres.

### **Standard features of the W12**

The range of features on the particularly exclusive Phaeton W12 is even more extensive than on the V6 and V8 models. For example, the 5-seat

version also has standard leather seats (Type: Vienna Classic Style); the genuine wood accents extend to the upper side of the centre console and the front cup holders as well; also upgraded in combination with wood trim are the leather-trimmed multifunction steering wheel and the gearshift lever for the automatic gearbox.

Additional details include an anti-theft warning system with passenger compartment monitoring, automatically dimming rearview mirror with memory function (plus self-dimming and electrically folding outside mirrors), electrically opening and closing boot, electrically adjustable head restraints (4-seater, also in rear) and steering column with entry assist function (steering wheel retracts for more comfortable entry) plus memory function.

The seat system is arranged to be especially comfortable in the Phaeton W12: The front seats come with the 18-way system with lumbar supports and memory function plus seat heating; the 4-seat version includes seat ventilation and a massage module and seat heating in the rear. On its exterior, identifying features of the top model of the series include four chrome-plated exhaust tailpipes, 18-inch "Innovation" type alloy wheels with 255 tyres and laminated glass.

### **Special options**

On the Phaeton, individualisation means that nearly all wishes for specific features can be satisfied by special options and the customising services of Volkswagen R GmbH.

**Leather:** As an alternative to the “Vienna Classic Style leather pack”, Volkswagen offers the optional “full-leather option”; here, not only are the seats and parts of the door trim fitted in leather; the upper and lower sections of the instrument panel and door trim panels are also upholstered in the “Sensitive” variant of this elegant natural material. The highest quality leather packs are offered under the “Volkswagen Exclusive” badge. Here too, customers can choose between a leather and full-leather option. In this case, the centre seat panels and door inserts are styled in “Sunny Beige”, while the seat lateral supports, backs of the front seat backrests and centre armrests are in Anthracite. Also on board in front are stainless steel tread plates with the “Exclusive” signature.

**Wood:** The extended wood pack contains an additional accent in the lower section of the door panel and B-pillar trim, as well as roofliner grab handles with genuine wood accents. Customers can also choose from the wood types “Eucalyptus”, “Burr Walnut”, “Burr Poplar” and “Vavona”. Volkswagen Exclusive extends this range with the additional accents “Burr Poplar Black” and “Piano Paint Black”.

This is just a sampling of the catalogued programme. Through Volkswagen R GmbH it is essentially possible to design a car to a customer’s personal tastes and customise a one-of-a-kind model.

### **Phaeton is created in one of the world's most unique factories**

**Production in Transparent Factory resembles high-tech motorsport workshop**

**After the final check the new owner can drive off for a first trip**

Wolfsburg/Sanya, June 2010. The name “Transparent Factory” stands for the development of an entirely new production concept in the German metropolis on the Elbe River, Dresden; it was created especially for the production of the Phaeton. The goal of this production site: to implement a world-leading level of quality in car making.

Individual components are delivered to the plant from other Volkswagen plants and external suppliers via a separate logistics centre outside of the city. Two zero-emissions logistics trains powered by electric motors (CarGoTrams) shuttle between this delivery and warehousing terminal at Dresden’s “Freight Transportation Centre” and the “Transparent Factory”. The 60 metre long logistics trains make use of the city’s public streetcar system for the 18 minute long trip.

The logistics trains were specially developed by a German machine factory for their intended use in Dresden. They deliver prefabricated components to the subterranean logistics level of the “Transparent Factory” just in time. Components of the luxury saloon arrive as sequenced deliveries immediately before assembly. From the logistics level, individual parts and preassembled modules (e.g. seats and instrument panel) are transported in automatically guided boxes – a “driverless transport system” (DTS) accompanying the entire assembly process – to the “floor-mounted conveyor”. The advantage: Parts are no longer stored on shelving alongside the production line, and this eliminates unnecessary paths.

Yet, the DTS accomplishes even more. An example is the “marriage” of chassis, drivetrain and body: Chassis components are fully assembled, and the transmission, engine and exhaust system are installed on the lower level of the “Transparent Factory”. The DTS automatically takes this stately assembly of technology to the second floor in a transparent elevator to what is known as Cycle 34. That is where the module is joined to the body on the floor-mounted conveyor.

The only aspect common to both the floor-mounted conveyor and conventional conveyor belts lies in their cycle control of assembly steps; this refers to the distribution of production into stations such as the “marriage” (mounting of the engine). The surface of the floor-mounted conveyor consists entirely of light-coloured maple-clad elements on which the vehicles are securely mounted and conveyed; but the vehicles can be rotated and moved up or down on elevating platforms. The overall situation resembles a Formula-1 workshop more than an assembly line with its parquet flooring and well-organised sorting of assembly parts in “part boxes”.

Since the vehicles in the “Transparent Factory” are assembled on three vertical levels, an “electric overhead conveyor” (EOC) is used; this conveyor transports the cars through airy heights to other vertical floors and to special assembly cycles such as fueling: Here the entire car “hovers” in from above, is lowered by hydraulics to working height and is simultaneously swivelled 90 degrees.

Subdivision of the production process into precise assembly cycles, the markedly well-organised and clean production situation, optimally trained production workers and continual production controls by “quality control loop points”, Volkswagen actually does achieve a world’s top level of production quality.

Quality assurance dominates throughout the production process. Just two examples here: The seats are checked by a 3D measurement machine so that uniform ergonomic properties can always be ensured. The second example relates to the wood trim used in the interior: All interior woods are inspected and selected by specialists so that each car gets individually matched and fault-free grained wood that is press-laminated with up to 30 different material layers.

The individual production cycles were adapted to the people working in production. Take the example of the “Manipulator”: This is a machine helper that can be navigated by a roller system; workers use it to align large parts such as entire instrument panels for installation in the body, easier than before and with millimetre precision.

Toward the end of the production process, the cars are transported via electric overhead conveyor from the top floor of the “Transparent Factory in Dresden” to the middle level where they are once again placed on the floor-mounted conveyor. Now the process of final assembly begins. This is followed by further quality checks, a test drive on the factory’s test track and water spraying in a leak checking unit. As soon as all of these checks have been passed, the luxury class Volkswagens are

released to Sales on the lower level for worldwide delivery or directly to customers who are picking up their cars in person in the Event area.