Rolls-Royce Phantom
Product Guide

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For internal use of Rolls-Royce Motor Cars dealers.

Design Philosophy

Starting with a blank sheet of paper, and with a thorough understanding of the icons of the company's almost 100-year history, Rolls-Royce stylists created a modern, authentic interpretation of the Rolls-Royce marque – a motor car that is instantly recognisable as a Rolls-Royce.

The Authority Concept

The Authority Concept, which is applied throughout the design of the Rolls-Royce Phantom, is a fundamental rethinking of the ergonomics of a modern passenger car, with its aim being the stress-free comfort of the driver. A key application of the Authority Concept is the relatively high seating position of the driver and front passenger, giving them a commanding view of the bonnet and the road ahead.

Authentic proportions

Key elements that reflect classic Rolls-Royce design include: A long wheelbase, short front overhang, long rear overhang, long bonnet and relatively large wheels and tyres. Drawing on the proportions of coachbuilt Rolls-Royce motor cars of the past, the Phantom reflects a near 2:1 ratio between the diameter of the tyres and the vehicle height. The long wheelbase, essential for interior space, complements the substantial, rectilinear front-end, which is dominated by the classic Rolls-Royce radiator grille. The overall combination is the basis of a motor car with genuine presence.

Dynamic brightwork

An accent line of brightwork ties the classic Rolls-Royce radiator grille and long bonnet to the passenger cabin – like the reins from a horse to a carriage, the source of the power and the driver are connected. This brightwork serves as a discreet but dynamic element of the design, not merely ornamentation.

Waftability line

Waftability defines the smooth, resolute performance of the engine and driveline. It is manifested in the design by a long, graceful line running along the sill of the Phantom. This line gently rises as your eye moves from the rear to the front, visualising a motor yacht at speed.

Authentic Design

Stylists and engineers worked in harmony to reintroduce features not seen for decades on any automobile, a prime example being the Phantom's Coach Doors. While the classic Rolls-Royce Silver Cloud of the 1950s and coachbuilt Rolls-Royce motor cars of the 1920s and 1930s were held as design icons, new technology and innovative materials were developed to make the Phantom not just a motor car with timeless appeal, but the most advanced motor car ever to bear the Rolls-Royce name.

The "120 percent" car

Working with the authentic proportions appropriate to a Rolls-Royce motor car and the Authority Concept so central to the vehicle's architecture, Rolls-Royce stylists and engineers created a "120 percent" car – a vehicle whose overall size, length, height and wheels are notably larger than those of ordinary luxury saloons. A "clean-sheet" design, the Phantom is not based on a vehicle that was stretched or inflated to accommodate a certain package.

Not an aero-formed wedge

A decision was made early in the design phase to unchain the Phantom from the constraints of current aerodynamic trends. The prime directive was to design a quintessential Rolls-Royce motor car, not the common wedge-shaped vehicle that one sees on the road every day. At the same time, however, the Phantom does have aerodynamically optimised details which help reduce lift and enhance stability in side winds.

The Spirit of Ecstasy

The classic Rolls-Royce grille is upright and prominent, sitting slightly proud of the bonnet. "The Flying Lady," which has appeared on virtually all Rolls-Royce cars since 1911, is clearly in view. The radiator grille is constructed of aluminium for light weight and high strength, and has a special Sterling finish.

Sterling finish

A Sterling finish, with the look of finely polished silverware, was developed for the Phantom's exterior and interior brightwork. This special type of chrome was engineered not only to be durable and aesthetically pleasing, but also to have a softer, less reflective shine than traditional chrome – it allows you to see the shape and details of the piece, rather than having these elements disappear into a reflection.

Intuitive comfort

The entire rear compartment was designed around the concept of intuitive comfort – a concept that redefines passenger comfort and ease. This resulted in several innovations, including the virtually flat rear floor, the lounge seat with no lateral division and thus more lateral leg room, the implicit privacy of the large C-posts, and the Coach Doors, which allow easy entry and exit on either side of the vehicle.

Natural privacy

Large C-posts ensure privacy without the use of curtains or dark window tinting. Quarter Mirrors,

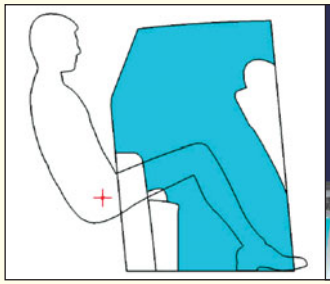
inspired by Rolls-Royce tradition, are located within the C-posts to reflect ambient light in the Phantom's interior. The result is natural privacy combined with a sense of spaciousness and light from within.

Coach Doors

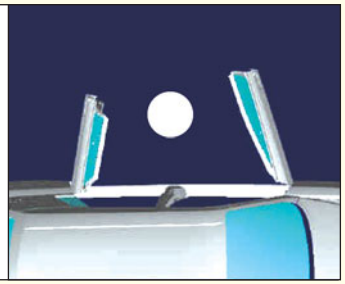
These unique doors – combined with the virtually flat rear floor, large and square-cut door openings, and relatively tall vehicle height – allow rear-seat occupants to enter and exit gracefully rather than climbing in and out. As one would imagine, there is considerable engineering behind these features. All four doors have continuous door stops without any set detent – the door will stay open at whatever angle you position it. In addition, rear Coach Door Closing Assistance allows passengers in the rear to shut the rear doors by pressing and holding a button on the C-post (rather than having to lean forward to shut the door manually).

Coach Door safeguards

Because Rolls-Royce has engineered such a comprehensive system of safeguards for this feature, it is the only manufacturer to receive EU approval to produce a vehicle with Coach Doors. For example, the door latches have their own electronic control units, which communicate with the rest of the vehicle's systems. In this way, the doors cannot be opened while the vehicle is in motion, and if the doors are open or even partially latched, the vehicle can only accelerate to an uncritical speed.



The positioning of rear-seat passengers is aft of the rear door, giving an inherent safety advantage in side collisions.

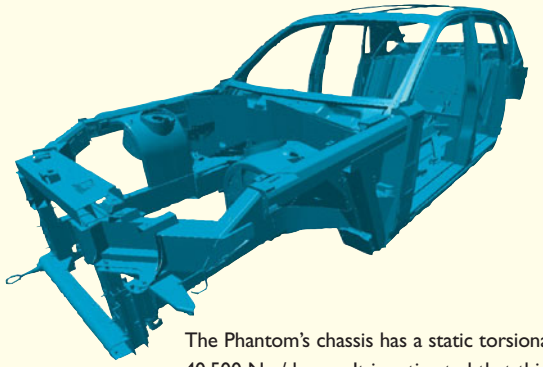


When open, the Coach Doors create a secure zone for passengers entering and exiting the Phantom.

"Strive for perfection in everything you do."
– Sir Henry Royce

Engineering Integrity: Body Details

The Phantom marks the first time in 50 years that a Rolls-Royce platform does not have to be shared with Bentley, thus giving engineers and designers the freedom to reflect Rolls-Royce values exclusively. An integrated engineering approach to the Phantom started with the authentic proportions appropriate to a Rolls-Royce and with the Authority Concept and the position of the driver. The rest of the vehicle architecture readily followed suit. At each step along the way, however, engineers looked to new solutions and synergistic approaches that would optimise heretofore conflicting goals, such as high strength with light weight, or comprehensive functionality with simple, intuitive controls.



The Phantom's chassis has a static torsional stiffness of 40,500 Nm/degree. It is estimated that this structure is twice as rigid as a typical luxury saloon.

Precision aluminium spaceframe

The Phantom's spaceframe, composed of more than 200 extruded aluminium profiles and more than 300 sheet parts, creates an ultra-rigid platform upon which body panels are fastened. The spaceframe is constructed using measuring equipment with an accuracy of plus/minus 0.1 mm (0.004 in.). Each frame includes 120 m (394 ft.) of welds in 2,000 separate locations. After completion, each spaceframe is placed in a computer-guided machining centre – a jig the size of a large conference room – where critical points, such as the mounting holes for the suspension subframes and engine, are machined with incredible accuracy. Tolerances at some points are plus/minus 0.50 mm (.02 in.) within the Phantom's 5834-mm (229.7-in.) overall length.

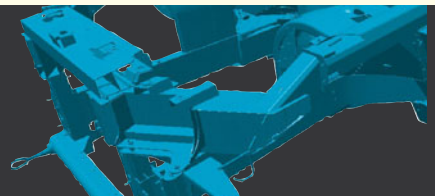
This spaceframe construction yields many benefits. Its relative light weight enhances performance and efficiency, while its extreme strength improves ride comfort and the margin of safety for occupants, and helps to isolate noise and vibration from disturbing the occupants. Two substantial subframes are used to mount the front and rear suspension systems, further insulating the cabin from road noise and harshness.

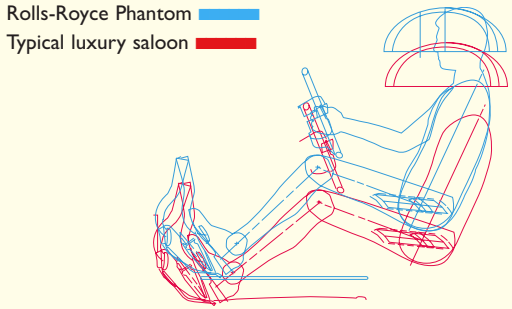
Fit-for-purpose materials

While the majority of the Phantom is composed of aluminium, the front wings are composite and the boot lid is steel – materials chosen for the specific duty that they perform. The front wings, for instance, are dent resistant and house the antenna for the GPS navigation system, while the steel boot lid material can withstand years of repeated opening and closing, plus, its additional weight at the rear of the vehicle helps the Phantom achieve an ideal 50/50 weight distribution.

Coach Door tolerances

There is a point, while opening both Coach Doors on the same side to about 10 degrees, when the doors come very close to touching. In fact, that measurement of their closest proximity is 2.7 mm (.11 in.). The Phantom was gruelingly tested to ensure that this close tolerance would be maintained after years of use.





Authority seating

As part of the Authority Concept, the driving position in the Phantom is about 150 mm (6 in.) higher than that of a typical saloon. The driver looks down at the instruments and out across the long bonnet and radiator grille, with the upright front wings clearly in view. Rear-seat passengers also enjoy Authority seating, since the rear seat is elevated about 18 mm (0.70 in.) higher than the front seats, giving passengers an excellent view.

Centred on the driver

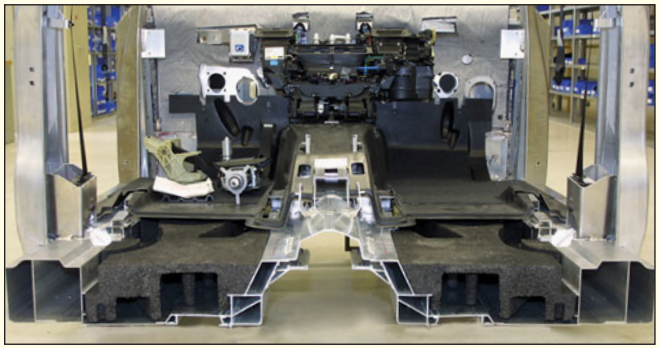
In a Rolls-Royce, superlatives are found in the details. A perfect example is the precise alignment of the steering wheel, throttle and brake pedals with the centre of the driver's seat. A slight offset between the driver's position and placement of these controls could cause fatigue on long trips. In the Phantom, the precise centreing allows more relaxed and comfortable travel.

A large boot

The flat floor and regular shape of the boot ensure its utility. Four golf bags, or two large and two medium-size Samsonite® suitcases can be accommodated easily. There is also a large, easily accessible compartment under the cargo-area floor. Total cargo volume is 460 litres DIN (16.3 cu. ft./SAE 14.1 cu. ft.).

Neither door sills nor footwells

The flat rear floor, made possible by a double-floor construction, eliminates the door sills and the footwells found in other saloons. When entering the rear of the Phantom, passengers do not climb over a sill and step into a footwell, but rather step onto a flat floor – a much more graceful entry. Exit is also enhanced for the same reasons, and there is much less chance of tripping while exiting.

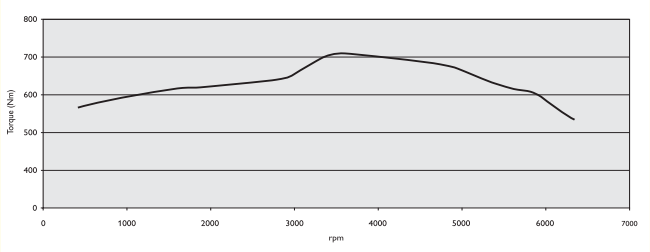


The double floor pays other dividends: Wiring harnesses and other "plumbing" are routed away from the passenger cabin, the double floor effectively insulates the passengers from noise, and it houses two large (16-litre) acoustic resonating chambers for the audio system's two subwoofers, mounted under the front seats, for spectacular bass response. In addition to the double floor, the Phantom also has a dual bulkhead to reduce noise and vibration emanating from the engine compartment.

"Accept nothing nearly right or good enough."
– Sir Henry Royce

Waftability: The Phantom Driveline

A short definition of waftability is "power without apparent effort." The term was first coined by a road tester from *The Autocar* describing the Rolls-Royce 40/50 hp (later known as the Silver Ghost) in 1906! More than anything, waftability defines the character of the Phantom's performance, emphasising the availability of tremendous reserves of torque at low engine speeds, and smooth, effortless power delivery at virtually any speed.



Max. power output: 338 kW (453 bhp/460 DIN PS) @ 5,350 rpm
Max. torque: 720 Nm (531 lb-ft) @ 3,500 rpm
0-60 mph in 5.7 seconds
0-100 km/h in 5.9 seconds
25-40 mph (40 - 65 km/h) passing acceleration: 2.2 seconds

A high plateau of torque

Not only does the new 6.75-litre Rolls-Royce V-12 produce an impressive 720 Nm (531 lb-ft) of peak torque, but 78% of that torque (that is, 560 Nm or 413 lb-ft) is available at 1,000 rpm – just off idle – perhaps more torque at 1,000 rpm than in any other automobile. This translates into effortless acceleration. One measure of this is that the Phantom can cover 44 m (144 ft.) from a standstill in just 4 seconds – performance more typical of a high-end sports car. Also note that the torque is linear, with no sudden or unexpected flow of power. The broad band of torque between 1,000 and 3,000 rpm provides ever-ready response during normal driving.

Power Reserve

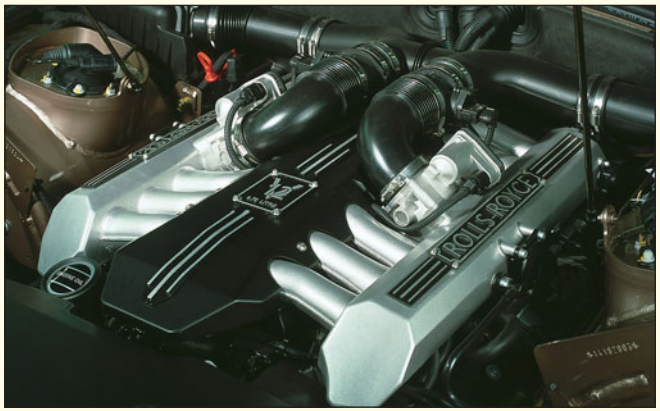
Calculating power based on torque measured at the gearbox, the Power Reserve gauge displays the tremendous reserves of motive force always at the ready. For instance, cruising at 161 km/h (100 mph), there is about 75% of the maximum power still available from the Rolls-Royce V-12.

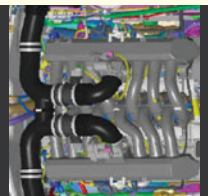
High-torque, naturally aspirated V-12

The Phantom V-12 features a unique combination of petrol direct injection, Variable Camshaft Timing and Variable Valve Lift to produce more power and fewer emissions from each litre of fuel. U.S. EPA certified as a Low-Emissions Vehicle (LEV) and EU4-compliant, the Phantom V-12 produces 453 bhp/460 PS without complex and heavy turbo- or supercharging. Combined with the Phantom's relatively low vehicle weight and the efficient engine, fuel consumption is surprising low – 15.9 litres/100 km EU combined (17.8 mpg Imperial, 13/19 mpg U.S. EPA city/highway mileage estimates).

Direct injection

A single high-pressure jet per cylinder injects a precisely metered dose of fuel directly into each combustion chamber (rather than into the intake manifold). The inner cooling effect of this evaporating spray of petrol allowed the engineers to specify a higher compression ratio at 11: 1. This, in turn, produces higher thermal efficiency and an increase in power and torque. This approach is more refined and efficient than the brute force and "on/off" acceleration that can result from turbocharging.





Whisper quiet

While the Phantom's stainless steel exhaust system was designed for a subdued exhaust note, Rolls-Royce engineers also realised that there are times when a driver would want a particularly quiet arrival or departure (such as late at night). So, during light-throttle operation, a "whisper valve" in the rear resonator closes to reduce the Phantom's exhaust to a mere hush.

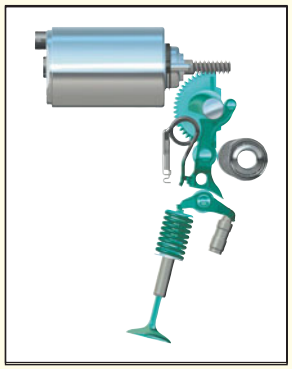
Twin alternator/twin battery system

For a highly reliable electrical system, two 180-amp alternators, two batteries and an intelligent charging/switching system are fitted. Since one battery is reserved exclusively for engine starting, prolonged use of the electronic entertainment features such as the audio system or TV, while the car is parked, will not affect reliable starting. For owners who use their vehicles infrequently, a charging socket is accessible in the boot to allow convenient charging while the vehicle is in storage. A special maintenance charger is available as an accessory.

The Phantom's twin alternators.

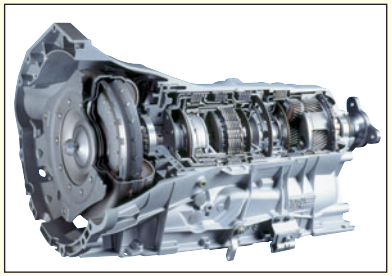
Variable Valve Lift

This sophisticated system helps to overcome some of the inherent inefficiencies common to internal combustion engines, and represents an entirely new and more efficient method of controlling engine air intake. The Variable Valve Lift system continuously varies valve opening (lift) between 0 and 9.7 mm (0 - .38 in.) to regulate air intake precisely throughout the engine's rpm range. The system maximises engine efficiency and, together with the Variable Camshaft Timing system, increases engine torque and helps to reduce fuel consumption.



Six-speed automatic transmission

This electronically controlled "shift-by-wire" (with no mechanical linkage to the gear selector) transmission features a very wide spread of ratios for both crisp acceleration plus relaxed high-speed cruising. Engine torque is so high, that the transmission is programmed for very early upshifting and late downshifting. Normal starts are accomplished in 2nd gear, although a kickdown switch on the electronic throttle will activate 1st-gear starts. There is also a driver-selectable Low Programme, selected via the "Low" button on the steering wheel, intended primarily for driving in mountainous conditions.



"The feeling of being wafted through the countryside..."
– 1906 *The Autocar* road test of the Rolls-Royce 40/50 hp

Passenger Comfort & Driving Pleasure

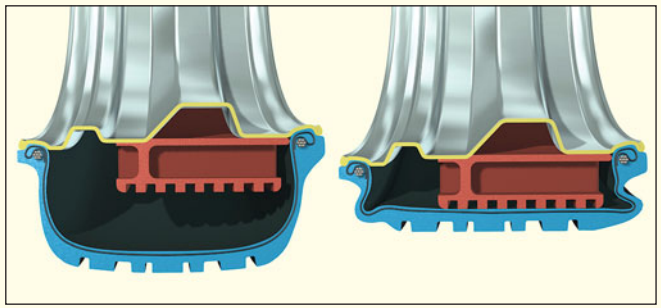
As befitting a Rolls-Royce, the new Phantom encompasses the optimal balance of all attributes. This is particularly noteworthy in the design and engineering of the brakes, suspension and driveline. The Phantom had to achieve more than the expected "wafting" ride, but also controlled performance and exceptional vehicle dynamics without placing undue stress on the driver – in short, applying the Authority Concept to vehicle dynamics. To achieve these challenging goals, the vehicle's long wheelbase, ideal weight distribution, highly rigid aluminium spaceframe and double-wishbone/ multi-link suspension with computer-controlled air springs all play vital roles.

Ideal weight distribution

A long wheelbase and short front overhang are not only hallmarks of Rolls-Royce design, but also offer significant benefits. The long wheelbase helps increase passenger room and inherently offers a better ride quality. The short front overhang, along with the positioning of the V-12 engine, yields an equal weight distribution for enhanced handling characteristics. In addition, the placement of the engine and front suspension further from the passenger cabin helps decrease the transmission of noise and vibrations.

PAX tyre system

The Phantom is the first car in the world to feature the Michelin PAX run-flat tyre/wheel system as standard equipment. This system features a special tyre bead and wheel design plus an internal support ring that keeps the tyre from completely collapsing if it loses air pressure.

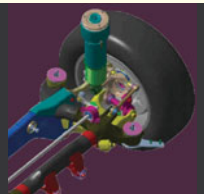


There are many benefits of this system. Even if there is a sudden loss of air pressure, the tyre never comes off the rim, helping to retain vehicle stability. To notify the driver in such an instance, a Tyre Pressure Alert display indicates loss of tyre pressure. Since a fully loaded Phantom has a minimum run-flat capability of 160 km at 80 km/h (100 miles at 50 mph), the driver can determine the time and place for tyre replacement. This system has also allowed the elimination of the spare tyre and jack, providing more luggage space.

North American vehicles feature all-season tyres and have an electronically limited top speed of 208 km/h (130 mph). Vehicles for the rest of the world use high-performance tires and have a maximum speed limited to 240 km/h (149 mph). For optimum ride comfort, these extremely large tyres (790-mm/31.1-in. diameter) have a high aspect ratio.

Intelligent control systems

The Phantom features four very large, ventilated disc brakes: 374 x 36-mm front and 370 x 24-mm rear (14.7/14.6-in.). These brakes are controlled via a four-channel ABS system, which also acts as the foundation of a wide range of dynamic control systems.

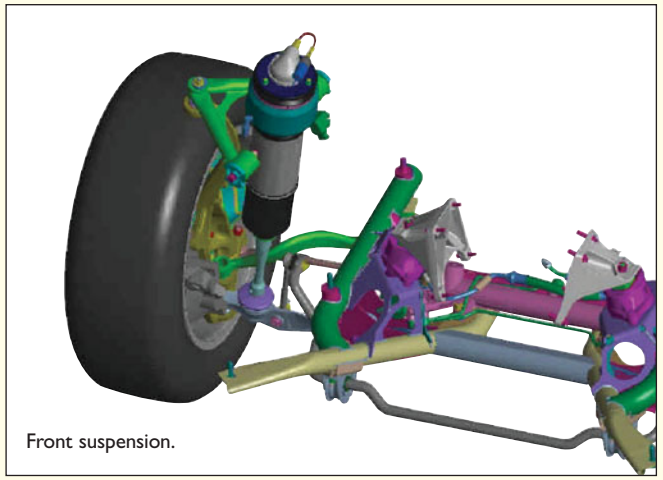


Cornering Brake Control (CBC) can help keep the vehicle on its chosen course when braking hard in a corner. Dynamic Brake Control (DBC) intelligently applies full braking force in an emergency braking situation. Anti-slip Dynamic Traction Control (DTC) helps prevent wheelspin on slippery surfaces. Dynamic Stability Control (DSC) selectively applies individual brakes to reduce the likelihood of an impending skid – especially helpful on a wet or icy road.

Idealised suspension design

The front double-wishbone suspension has highly controlled camber change and track change over its full range of movement, plus anti-dive characteristics under hard braking. There is even a hydraulic mount in the front suspension to help minimise any vibration that might be felt in the steering wheel. The front suspension mounts to a subframe manufactured from tubular steel, contributing to precise suspension geometry, reduced noise levels and enhanced crashworthiness in a frontal collision.

The multi-link rear suspension is designed for ride comfort, anti-lift under braking and anti-dive under acceleration. The rear subframe is constructed of hydroformed aluminium and uses four large bushes to isolate noise and vibration from the chassis. In addition, the front and rear anti-roll bars are mounted



Front suspension.

to the subframe with roller bearings for low friction and low noise.

Load-levelling air suspension

Air springs are specified for the Phantom for their constant, soft spring rate, regardless of load. The system provides full spring travel independent of the vehicle load, and can adjust for changing payloads. It is even sophisticated enough to adjust the suspension if a rear passenger should move from the left to the right seating position.

For particularly rough roads or when encountering steep ramps, the driver can raise the Phantom on its air suspension by approximately 25 mm (1.0 in.) at the touch of the "Lift" button (the centre button). The air suspension will return to normal levels when speed exceeds 60 km/h (37 mph).

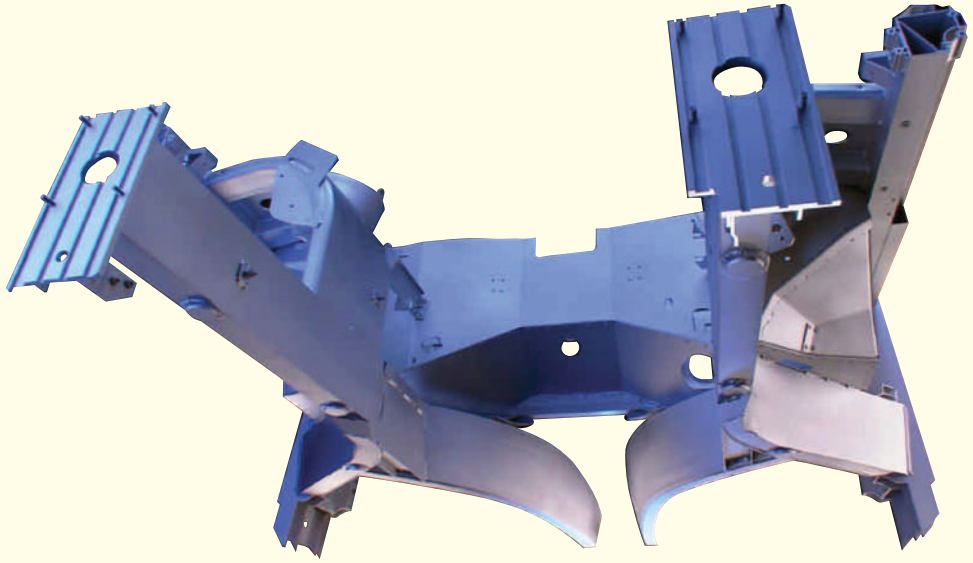
Continuous damping control

The Phantom's electronically controlled dampers are set for minimum damping forces when the motor car is driving on straight, smooth surfaces, but higher damping forces in cornering or on bumpy surfaces. In this way, ride comfort and controlled, precise handling are both achieved. The system monitors both the way the car is driven and the road conditions up to 100 times a second. For example, at 97 km/h (60 mph), the dampers are electronically adjusted every 305 mm (12 inches) that the vehicle travels along the road.

"Whatever is rightly done, however humble, is noble."
– Sir Henry Royce

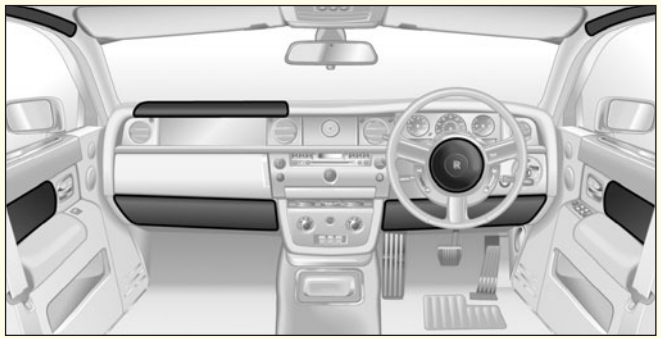
Engineering Integrity: Safety & Security

Safety features were not added on to the Phantom, but rather safety engineering was integral to the motor car's design. The extremely rigid aluminium spaceframe obviously serves as the foundation for these systems. In addition, the Phantom's Intelligent Safety & Information System (ISIS) uses decentralised sensors, rather than a single, centrally mounted sensor assembly, to deploy airbags and seatbelt pre-tensioners in an optimised, intelligent manner.



Rigidity plus progressive "crumple" zones

The aluminium spaceframe design yields significant benefits in the area of occupant safety. Frontal impact loads are progressively absorbed by "crumple" zones, and directed into Y-shaped chassis members and the main understructure – the strongest section of the spaceframe. Side-impact intrusion is minimised by the double floor, strong side sills and the side-impact beams within each door. In addition, the positioning of the rear seats alongside the C-posts – at the strongest part of the body, as opposed to alongside the rear doors – obviates the need for rear side-impact airbags. Crash tests of the Phantom reveal the exceptional integrity of the body, even in critical offset frontal collisions. In addition to meeting stringent Rolls-Royce standards, the Phantom is engineered to pass all current and anticipated worldwide safety requirements.

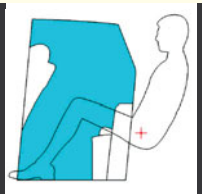


Dual front airbags SRS,* front-door airbags SRS, side-curtain head airbags SRS

Intelligent restraint systems

The Phantom's Supplemental Restraint Systems, such as airbags and seatbelt pre-tensioners, are controlled by the advanced ISIS system. This system uses multiple "satellite" sensors at relevant points throughout the vehicle – the doors and the A- and B-posts – and an optical network for extremely fast communication. ISIS communicates up to 4,000 times a second in a crash, and intelligently recognises situations that require airbag activation versus less critical crash situations.

* Plus front-seat active knee protection for the North American market for added protection for unbelted occupants. Please see airbag SRS information on page 28.



Advanced seatbelts & active head restraints

There are three-point seatbelts for all vehicle occupants. Outboard positions feature seatbelt pre-tensioners with force limiters. In addition, the front seats have active head restraints that help reduce whiplash injury in a collision.

Inertia safety switch

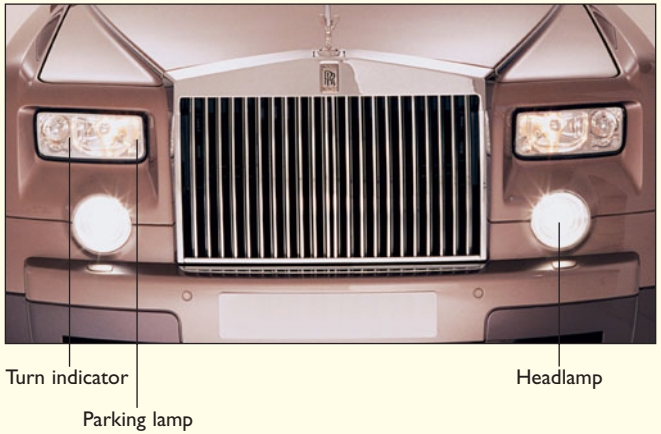
A significant collision will activate an inertia switch, which unlocks the doors, shuts off the fuel pump and turns on the hazard lights. The benefits of this include easier occupant exit after a crash, a reduced risk of fire and alerting other motorists of the incident.

Electric parking brake

The electric parking brake can be activated via a button on the instrument panel. This innovative system has several benefits. When the engine is running and the parking brake is activated, the full pressure of four disc brakes is applied. With the engine off, the system applies inner drum brakes within the rear discs, but does so in a secure, defined manner rather than relying upon the amount of pressure applied by the driver as with a manually operated parking brake.

Bi-Xenon headlamps

The Phantom's bi-Xenon headlamps – both the high and dipped beams are Xenon – issue a bright, clearly defined, white light for excellent visibility, even in foul weather. Their low mounting position, along with the precise illumination pattern, helps minimise glare for oncoming traffic and makes front foglamps unnecessary. The headlamps feature automatic self-levelling as well as power wash.



Visibility is also enhanced at the rear of the vehicle. The rear brake lamps are composed of long-life LEDs, which illuminate more quickly than conventional bulbs, immediately alerting following vehicles of brake application.

"Take the best that exists and make it better. When it does not exist, design it."
– Sir Henry Royce

Interior: The Driver Interface

The Authority Concept – so central to the Phantom's design – is also very apparent in the driver's environment. With a seating position and consequent "eye point" higher than other luxury saloons, plus an emphasis on intuitive primary controls – those used in daily driving – the Phantom is designed for relaxed control. Logical placement and function of primary controls plus availability of secondary controls under hidden panels gives the Phantom all the functionality that modern vehicle technology has to offer within a pleasing, simple-to-use layout.

Primary controls: Traditional and intuitive

Controls needed for everyday driving are positioned clearly and intuitively in front of the driver. There are three large, clear gauges, and the location of primary controls, such as the gear selector, windscreen wipers and even the major audio system and climate control functions, is obvious. For example, the audio panel is placed high in the centre of the instrument panel, and features a large volume control knob, plus buttons to select AM, FM or CD and six station keys.

Secondary controls: Functionality upon request

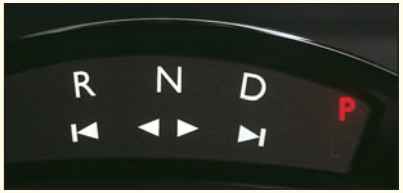
The philosophy behind the design and placement of secondary controls within the Phantom interior is "functionality upon request." A prime example of keeping technology hidden until needed is the centre panel on the facia which normally displays a round analog clock. At the touch of a button, it pivots to reveal the centre monitor. Additional settings for the audio system, as well as navigation and other secondary functions, can be accessed by using the Control Centre (see facing page).

Pushbutton start

The design of the ignition panel is simple and traditional – a layout that Rolls-Royce owners will recognise immediately – yet it contains technically advanced features, such as the electronic key which brings the car to life. When the electronic key is inserted into the ignition panel, it communicates with the Phantom's control systems. Drivers need simply to press the button to start the engine, and to stop, press the button again.

Electric gear selector

The electric gear selector, a Rolls-Royce tradition, has been modernised and improved, and features a light touch and simple operation. Pressing the "Park" button at the end of this stalk selects Park from Drive, Reverse or Neutral. An illuminated display on top of the steering column shows the selected function.



The Rolls-Royce Control Centre

The Control Centre is the principal means of gaining access to the Phantom's secondary functions, such as satellite navigation, communication, entertainment and vehicle settings – in other words, functions not always required for everyday driving.

Opening the drawer for the fold-out Controller automatically activates the 6.5-inch centre monitor on the reverse side of the clock panel in the centre of the facia. Alternatively, the monitor can be revealed by pushing the chrome "organ-stop" button next to this panel.

The fold-out Controller, normally hidden from view, is a solid-metal knob that works with a simple turn-and-

push motion in four directions – forward, backward, left, right. The layout of the menu options on the centre monitor matches the shape and movement of the controller knob. General menu items include: Communication (telephone and address book), Navigation, Entertainment (for radio, CD and TV systems) and Configuration (for individual settings, such as Imperial or metric, and the functions of the trip computer).

The GPS navigation system also has a button on the steering wheel that can repeat the last verbal instruction. Map discs for the system are inserted in the navigation unit reader under the left rear seat. The centre monitor also has a built-in TV tuner, which, where allowed by law, can be operated when the vehicle is stationary.

Integrated telephone

Several different telephone configurations are specified for different markets. Placement and operation will vary accordingly. All systems are integrated with the Phantom's intuitive controls and can be operated via Voice Recognition, controls on the steering wheel or via the Control Centre. Depending upon the market, either a cordless handset is specified, located in a convenient drawer with keypad, or a cellular telephone is fitted with a docking station in the centre console. For instance, an integrated phone with cordless handset is fitted for GSM markets, while a Motorola V60i cellular phone is standard for North America.

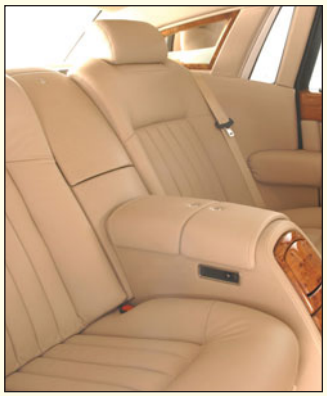
GSM telephone.

"Small things make perfection, but perfection is no small thing."
– Sir Henry Royce

Interior: The Passenger Experience

In the tradition of Rolls-Royce motor cars, the new Phantom interior uses the finest materials presented in a natural way. The wood looks and feels like wood. The leather is soft and supple. In addition, new production innovations and quality testing have resulted in new processes to help ensure durability and longevity for even the finest detail.

Lounge Configuration



Individual Rear Seating

Two rear-seat configurations

The Phantom is available in two different rear-seating configurations: Lounge or Individual Rear Seating. The latter is also available as a Theatre Configuration with DVD entertainment system. Whichever configuration is chosen, rear-seat passengers enjoy the excellent view afforded by the raised seating positioning.

Lounge Configuration

The standard Lounge seat not only accommodates three adults, but also features generously padded side cushions. Lounge seating and the flat rear floor give passengers the ability to turn toward one another comfortably as opposed to being forced to face in the direction of vehicle travel. This configuration was designed to mirror the intuitive comfort of sitting in one's home.

Individual Rear Seating/Theatre Configuration

Rear seating strictly for two can be ordered with either the Individual Rear Seating option or the Theatre Configuration. Both options include two separate seats with all the power adjustments of the front seats plus convenient storage in a rear centre console. The Theatre Configuration builds upon the Individual Rear Seating option, adding a rear-seat entertainment system with DVD, and many other features (see page 21 for details).

Interior lighting

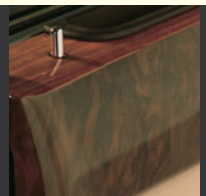
Four levels of night lighting are available inside the Phantom: Ambience lighting with tiny LEDs highlighting small areas of the interior; Boulevard lighting, which introduces soft lighting for more comfortable conversations with fellow passengers; "stereo" reading lights for rear-seat passengers, using two light sources on each side for more even illumination; and full entry/exit lighting.

Leather, cashmere and lambswool

Standard lambswool rugs are soft and elegant. The headliner is composed of a leather centre section flanked by wool/cashmere blend panels to provide a light and airy contrast to the leather surfaces. The wool/cashmere blend is specified in a carefully selected hue that complements every interior colour combination.

Leather selection and pigmentation

Approximately 15 to 18 hides from an exclusive European source are used to make up the 450 individual leather pieces within each Phantom. The leather in the Phantom is processed with a unique drum pigmentation system, which permeates the hides with colour. This process helps maintain the natural feel, softness and grain of the hides. It also helps minimise creaking and squeaking of



leather against leather, thus adding to the serene quiet of the Phantom's ride. The hides used on the seats feature a natural grain, while other leather panels feature "tipped" (embossed) leather for an aesthetically pleasing variation throughout the cabin.

Leather-wrapped steering wheel

Large in diameter but with a thin rim, the Phantom steering wheel is a modern interpretation of a traditional Rolls-Royce design. The rim is elliptical in cross-section to fit the driver's hands more comfortably. The leather wrap is applied with internal hemming – there is no exposed stitching, so the surface is perfectly smooth and more comfortable to the touch.

Preshrunk leather

The leather panels that will be exposed to the sun in the Phantom – on top of the instrument panel, in the door cappings and on the rear hat shelf – are preshrunk. In this way they are protected against shrinkage from exposure to the sun.

Duchess straps

Traditional leather straps (as used in many generations of Rolls-Royce motor cars) are located above each door. In addition to the Duchess straps, there is an integrated grab handle behind the headrest on the front seats to assist rear-seat entry and exit.

Woodwork

The look and feel of the wood veneers in the Phantom is truly unique. Wood is used as an architectural element – like fitted cabinetry – not only as ornamentation. Each of up to 60 separate wooden panels has a core wood-and-aluminium substrate of up to 40 layers (for crashworthiness and to help retain the form). Craftsmen then hand-select veneers to apply to this structure. Other than Black Tulip, none of the available woods is either stained or bleached. Straight grain is used on horizontal surfaces while the feature grain, with its characteristic "figuring," is used on vertical surfaces to add contrast and greater visual appeal. The size, architectural form and shear surfaces of each panel reveal the beautiful natural properties of the wood.

Bookmatched Wood Grain

A close look at the wood panels within the Phantom reveals that the wood grain is "bookmatched" on each panel – the right and left grain structure are mirror images of each other, within each panel and across the passenger cabin. The result is not just aesthetically appealing, but also shows attention to detail the equal of the finest cabinetmaker.

Hand-selected woods

About five or six times a year, the manager of the wood shop in Goodwood visits his supplier – the only one of its kind in England – to hand-select the veneers for the Phantom. This ensures that the veneers are not only of the highest quality, but also have the correct colour and grain characteristics appropriate to the Phantom's interior.

"To build, in all, not the most luxurious motor car in the world, but the most perfect – remembering that perfection respects all details, and ignores not one."
– Rolls-Royce advertisement from 1926

Engineering Details

From meticulous craftsmanship to computer-guided technologies, there is so much that goes into making a Rolls-Royce. Here are a few highlights of engineering details.

Lexicon Logic7™

The audio system in the Phantom consists of 15 premium speakers powered by a nine-channel amplifier with a total output of 420 watts. An AM/FM tuner and in-dash CD player are complemented by a six-disc CD changer in the lower glovebox. Dual 16-litre acoustic resonating chambers within the double floor for the two, under-seat subwoofers ensure expressive bass reproduction. The system's full, "transparent" sound quality accurately reproduces the same sounds that the recording engineer heard in the studio. Primary controls for the audio system are intuitive knobs and "violin key" buttons. For more details, see page 25.

Six-zone climate control

The Phantom's unique and fully automatic climate control system was designed to provide supreme comfort with minimal direct, forceful airflow; minimal noise; and the ability for each passenger to adjust controls to his or her desire. Not only are there individual zones for the driver and front passenger, plus for the right and left rear passengers, but the Phantom also features unique upper and lower zones for the front seat area. In this way, on a bright but cold day, the front passenger's feet can be kept warm while his or her upper body is in a cooler, refreshing zone. Large, colour-keyed "wheels" are intuitive in operation.

Minimal draughts

For even distribution of heated or cooled air, there are 10 solid-metal air outlets plus numerous hidden ducts throughout the cabin. To minimise draughts, even while demisting, not only are the rear window and the exterior mirrors heated via embedded elements within the glass, but so are the front side windows. The result is almost noiseless demisting without disturbing blasts of air.

Standard Climate Control Glazing reduces heat build-up by cutting the amount of infrared radiation heating the cabin. For effective cooling even on very hot days, horizontal vents within the instrument panel's top shelf send a cascade of air downward. Not only does this cool the facia, which can otherwise absorb and radiate considerable heat, but it also sends a gentle curtain of cooling air onto the laps of the driver and front passenger. Even the glovebox is air conditioned.

Stationary Climate Control

Stationary Climate Control uses a separate remote control unit to start the engine and thus the climate control system. In this way, the interior can be heated or cooled by the time the passengers enter the car. (Available where permitted by law.)

Voice Recognition

As part of the Authority Concept, the Voice Recognition System allows the driver to control functions of the audio, telephone and navigation systems by voice commands rather than using manual controls. For instance, the driver can state, "Radio on," or even, "Radio station 98.7." The system recognises a driver's spoken commands and asks to verify the selected choice.

Steering wheel adjustments and controls

The leather-clad steering wheel features a power tilt/telescopic function and includes automatic tilt-away and memory positioning. Additionally, there is no ratcheting of the steering wheel when the ignition is turned off. Convenient buttons located on the lower left and right quadrants of the wheel control the following:

+ -	Volume	Low	Activate the low programme of the automatic transmission
< >	Previous/next/scan		
Talk	Activate Voice Recognition	Nav	Repeat the last verbal navigation command
Tel	Call, accept a call, hang up		

Park Distance Control

For ease of parking, sensors in both the front and rear bumpers issue an audio signal when the vehicle approaches an obstacle. With this assistance, drivers can be more visually aware of obstacles around the car while the PDC system assists them in judging distance to obstacles directly in front of and behind the car.

Integrated umbrellas

Both rear doors feature concealed compartments that house umbrellas that are custom-designed for this application. The umbrella fabric is Teflon® coated to help resist moisture and mildew. The umbrellas can be accessed with either the front door or the rear door open, and they lock into place when stored.

Multi-adjustable front seats

The front seats are power adjustable for: Fore/aft, height, seat angle, back-rest angle, lumbar support up/down, lumbar support in/out and head-restraint height. Three-stage heating is available at the push of a button. A memory system records the seat, steering wheel and exterior mirror settings for up to two drivers.

Rolls-Royce Assist telematics services

At the touch of a button in the headliner, this system

dials the Rolls-Royce Assist Centre for roadside assistance or other needs. In the event of airbag activation, the system automatically notifies the Centre of an emergency. (Planned availability in North America and select European markets.)

Electrically retracting "Spirit of Ecstasy"

The Spirit of Ecstasy can be lowered into the radiator shell, either at will, using a switch in the glovebox, or automatically in concert with locking and unlocking the car.

Picnic tables

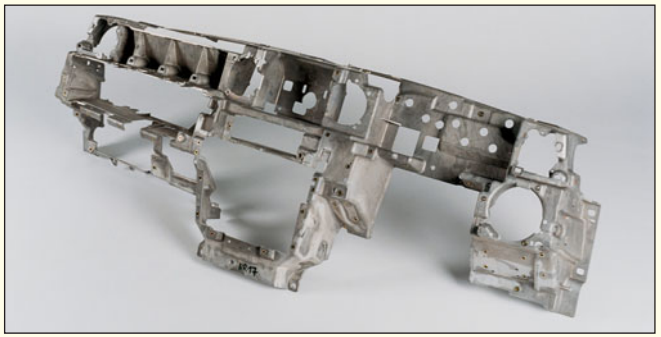
A Rolls-Royce signature, these leather-trimmed picnic tables with wood-veneered surfaces fold out from the backrests of the front seats.

"Creating a Rolls-Royce is not about achieving a single superlative but rather about finding an optimum balance of attributes. Excellence is in the detail often unseen to the casual observer."
– Tony Gott, Chairman and Chief Executive, Rolls-Royce Motor Cars Limited.

Engineering Details

Magnesium instrument panel carrier

This full-depth, full-width magnesium-alloy carrier, the first of its kind, provides the structure and mounting for the complete instrument panel and all ancillary



systems associated with it, including the climate-control ducting. It is cast in one piece as a single, solid structure, with no joints or added parts that can move against each other. This construction allows closer manufacturing tolerances, fewer vibrations, squeaks and rattles, and a robust mounting point for safety systems.

Organ stops & violin keys

Rolls-Royce's traditional "organ stop" controls are for the air vents found throughout the interior, but unlike previous practise, these are electromechanical controls – there is no mechanical linkage between the organ stop and the valve that it operates. Violin keys are used for other controls, such as the power windows and audio system buttons. This switchgear, which is shaped like the tuning pegs of a violin, has a solid yet elegant feel.

Computer simulations

The Phantom was developed using various computer-aided technologies available to BMW Group companies.

For example, computer simulations allowed minute evaluation of ergonomics, such as passenger entry and exit, and the operation of the Coach Doors, before the first prototype was built.

Synchronised wheel centres

There is a mechanical system in the wheel centre hubs that ensures that the Rolls-Royce emblem will always be upright, even with the car at speed. This design, particularly combined with the near-silent engine, contributes to the "waftability" of the Phantom as it appears to glide to its destination.

Soft-closing doors

All four doors and the boot lid feature Soft Close Automatic. As soon as the door reaches a point approximately 6 mm (0.2 in.) from the lock, the door is drawn securely closed by an electric motor.

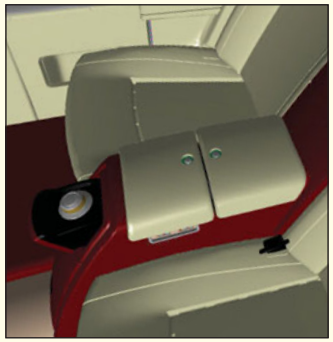
Charging socket

For owners who use their Phantom infrequently, a special charging socket is located in the right-hand side of the boot, and an optional auxiliary battery charger is available specifically for this purpose.

Options

Individual Rear Seating & Theatre Configuration

The standard Lounge Configuration features three-person rear seating with simple climate controls available at the rear of the front centre console. The Individual Rear Seating option (RS1) specifies twin seats in the rear, with the same range of power adjustments as the front seats (including power lumbar support and head restraints) plus additional storage space in a rear centre console. The Theatre Configuration option (RP1) includes Individual Rear Seating, and adds a rear-seat entertainment system. This consists of a DVD system with two adjustable 6.5-inch monitors on the front seatbacks, manual sliding covers for the monitors, sockets for headphones in the rear centre console, and a six-disc DVD changer located under the right rear seat. This option also includes a Controller in a fold-away compartment to operate the DVD, TV and audio systems. With headphones, it is possible for rear-seat passengers to listen to one audio source while front-seat occupants listen to another.

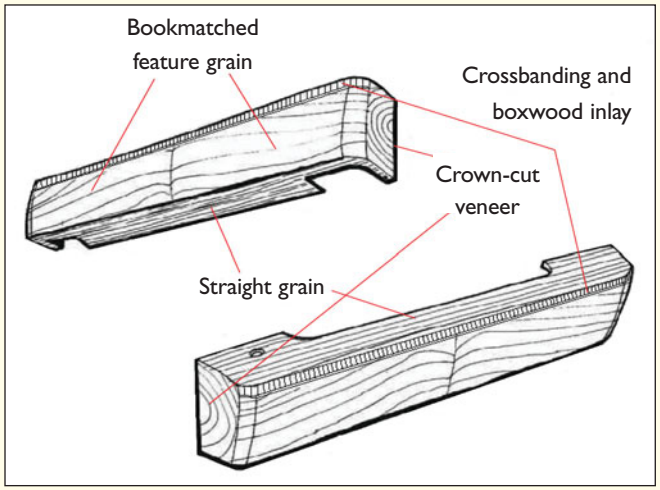


Reversible footrests (RA8)

Large, chromium-edged footrests for the rear passengers can be manually deployed or stored away into a recess in the floor.

Crossbanded veneers (RH1 or RH2)

The art of marquetry, often found on only the most exquisite cabinetry, is available in the Phantom. Five of the standard veneers (excluding Black Tulip) are available with more elaborate woodworking – boxwood inlays and crown-cut veneers for the ends of larger panels, such as the door cappings.

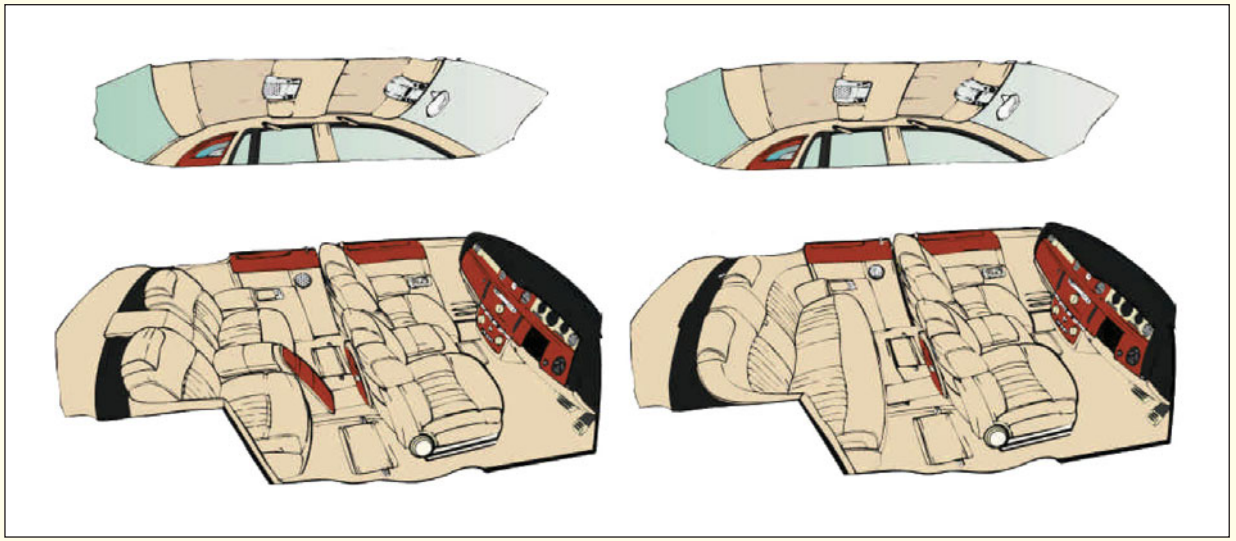


Auxiliary rear climate control (REC)

This option adds a separate climate-control circuit specifically for rear passengers. Its main benefit is to generate even colder airflow for the rear-seat area in order to cool the interior more quickly on the hottest days.

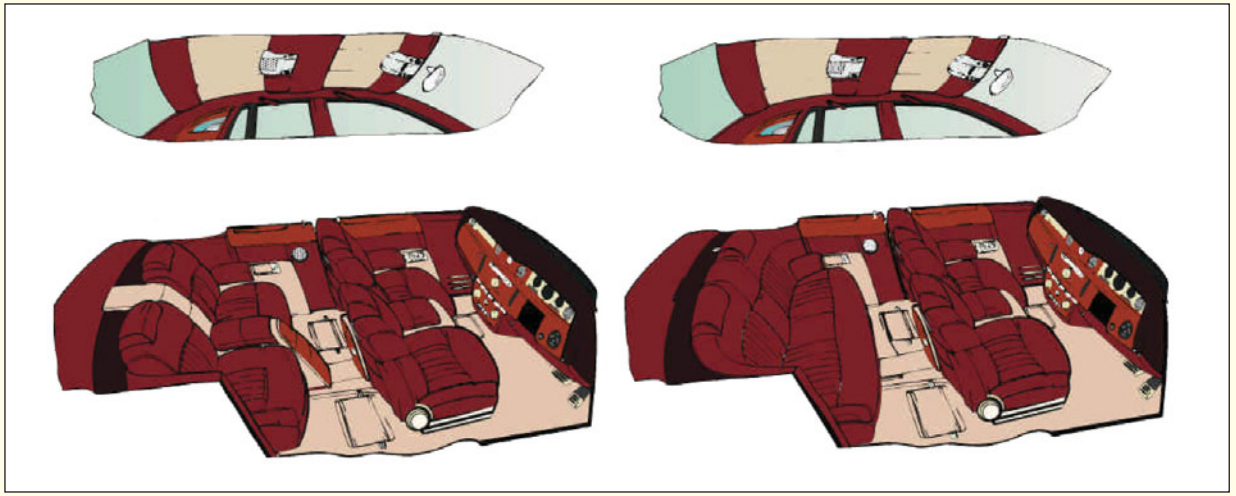
Interior Colour & Trim

Two different interior colour motifs – Mono and Contrast – are available using 15 exclusive hide colours, creating a standard palette of 19 combinations.



Mono colour combinations

The monochromatic combinations use same-colour hides and carpeting throughout the interior.



Contrast colour combinations

The contrast combinations apply the primary colour to the seats, main door panels and console cover, and the contrast colour to the carpets, door panniers and centre console.

Interior Combinations / Colour-Keyed Components	Mono Colours						Contrast Colours											
	Cornsilk Mono	Moccasin Mono	Black Mono	Navy Blue Mono	Oatmeal Mono	Consort Red Mono	Light Grey & Navy Blue	Cornsilk & Navy Blue	Cornsilk & Rose Leaf	Moccasin & Black	Navy Blue & Cornsilk	Blue Grey & Dark Spice	Dark Spice & Cornsilk	Cacao & Oatmeal	Dark Grey & Seashell	Rose Leaf & Moccasin	Smoke Grey & Rose Leaf	Seashell & Navy Blue	Tan & Moccasin
	RAR2	RAR4	RAR1	RAR5	RARB	RARC	RAT1	RAT4	RAS9	RAS3	RAT2	RAS6	RAS5	RAT3	RAS2	RAS7	RAS4	RAS1	RAS8
Seating Surfaces,[1] Main Door Panels[1] & Console Cover[1]	Cornsilk	Moccasin	Black	Navy Blue	Oatmeal	Consort Red	Light Grey	Cornsilk	Cornsilk	Moccasin	Navy Blue	Blue Grey	Dark Spice	Cacao	Dark Grey	Rose Leaf	Smoke Grey	Seashell	Tan
Instrument Panel Top[2]	Black	Black	Black	Navy Blue	Dark Grey	Consort Red	Navy Blue	Black	Black	Black	Navy Blue	Dark Grey	Dark Spice	Dark Spice	Dark Grey	Rose Leaf	Dark Grey	Navy Blue	Dark Spice
Centre Console[3] & Door Panniers[3]	Cornsilk	Moccasin	Black	Navy Blue	Oatmeal	Consort Red	Navy Blue	Navy Blue	Rose Leaf	Black	Cornsilk	Dark Spice	Cornsilk	Oatmeal	Seashell	Moccasin	Rose Leaf	Navy Blue	Moccasin
Rear Hat Shelf[2]	Cornsilk	Moccasin	Black	Navy Blue	Oatmeal	Consort Red	Light Grey	Cornsilk	Cornsilk	Moccasin	Navy Blue	Blue Grey	Dark Spice	Cacao	Dark Grey	Rose Leaf	Smoke Grey	Seashell	Tan
Upholstery Stitching	Cornsilk	Moccasin	Black	Navy Blue	Oatmeal	Consort Red	Light Grey	Cornsilk	Cornsilk	Moccasin	Navy Blue	Blue Grey	Dark Spice	Cacao	Dark Grey	Rose Leaf	Smoke Grey	Seashell	Tan
Carpet	Cornsilk	Moccasin	Black	Navy Blue	Oatmeal	Consort Red	Navy Blue	Navy Blue	Rose Leaf	Black	Cornsilk	Dark Spice	Cornsilk	Oatmeal	Seashell	Moccasin	Rose Leaf	Navy Blue	Moccasin
Lambswool Rugs	Cornsilk	Moccasin	Black	Navy Blue	Oatmeal	Consort Red	Navy Blue	Navy Blue	Rose Leaf	Black	Cornsilk	Dark Spice	Cornsilk	Oatmeal	Seashell	Moccasin	Rose Leaf	Navy Blue	Moccasin
Seatbelts	Sandstone	Sandstone	Slate	Slate	Travertine	Grenadine	Slate	Slate	Sandstone	Sandstone	Slate	Granite	Grenadine	Grenadine	Slate	Granite	Slate	Slate	Sandstone

1 = Natural grain leather. 2 = Preshrunk natural grain leather. 3 = Tipped leather.

This chart reflects the current status of interior combinations as of March 2003. These combinations are subject to change. Please refer to the Rolls-Royce Dealernet for the most up-to-date information.

Paintwork Options

Optional two-tone paintwork – which reflects traditional coachbuilt designs of the 1920s and 1930s – is available in a wide variety of colours. It is important to note that only contrast colours can be ordered with two-tone paintwork. For instance Platinum/Contrast Platinum can be ordered in two-tone, while Titanium cannot.

Upper two-tone

With the upper two-tone motif, the boot lid, roof and bonnet are painted in the same contrast colour as the sill. For example, selecting Anthracite/Silver Sand will specify an Anthracite body with Silver Sand sills, boot lid, roof and bonnet.

Upper two-tone.

Side two-tone

With the side two-tone motif, the bodyside "inlay" is painted in the contrast colour normally used on the sills, and the sills will now be painted in the main body colour. For example, selecting Anthracite/Silver Sand will specify an Anthracite body and sills with Silver Sand inlays on the front wings (following a body accent line), doors and rear wings.

Side two-tone.

Single coachline

A single coachline is a no-cost option. It runs parallel with the brightwork from the radiator to the C-posts. All coachlines are applied by hand by Goodwood craftsmen.

Twin coachlines

Twin coachlines, also a no-cost option, run along the body contour from the front wings to the rear.

Side two-tone with single coachline

The bodyside two-tone motif can also be specified with a single coachline running along the edge of the two-tone paint.

Painted wheel centres

All Phantoms have painted wheel centre hubs. Cars with mono paintwork have wheel centre hubs painted in the body colour. Cars with contrast paintwork have wheel centre hubs painted in the contrast colour.

The Lexicon™ Logic7™ Audio System

The engineering philosophy behind the Rolls-Royce Phantom's Lexicon Logic7 audio system was to create acoustic realism and tonal accuracy in the notoriously difficult automotive environment. While some high-end home audio systems can provide a satisfying surround-sound experience, within the confines of an automobile, each occupant is restricted to sitting near just one speaker, and cannot experience the full effect.

To overcome this limitation, Logic7 uses a patented surround algorithm to convert stereo sources, such as radio broadcasts and CDs, into surround sound. This dramatically increases the "sweet spot" and provides a much more realistic listening experience, even within the confines of an automobile.

Real-time analysis

The Logic7 system analyses the music being played – in real time – and determines the placement and acoustic reverberation of individual sounds. For example, consider a favorite CD featuring a lead a vocalist singing with a band. With Logic7, you will hear the vocalist singing in front of you, the music from the instruments will be arrayed around the singer, and from the rear you will get a sense of the natural, ambient acoustics contained within the recording. In other words, the Lexicon system puts you in the audience, recreating the music around you – as though you were there when it was recorded.

Full, spacious, natural sound

Some Digital Signal Processing systems add an artificial sense of being in a cathedral or an auditorium. The Logic7 system creates an incredibly natural, full sound with a very large and naturally positioned sound stage, and with the perfect degree of ambient sounds in the appropriate places. It is not an artificial effect – quite the contrary, you are hearing the inherent sounds of the original master recording.

The Lexicon Logic7 system is also an integral part of the optional Theatre Configuration with DVD player. Here, modern multi-channel DVD recordings offer an even richer foundation for the magic of the Logic7 digital analysis and playback.

A large, acoustic "sweet spot"

With remarkable loudspeaker development as well as full integration of the loudspeakers into the fabric of the Phantom, the Lexicon Logic7 system delivers an unrivalled surround-sound experience on the road. The system generates a 360-degree sound field that envelopes the listeners – regardless of their position within the vehicle – with a rich, sonically accurate acoustic experience. In short, the much-talked-about acoustic "sweet spot" is now available for all passengers.

Lexicon Logic7 System Configuration

Logic7 signals are replayed via 15 Metal Matrix (MMX) speaker transducers – including the first automotive use of hybrid neo/ceramic, ultra-linear motor structures – producing the lowest distortion and the most linear performance ever experienced in automotive audio.

The system uses a combination of 100-mm mid-range speaker transducers and 25-mm tweeter arrays in the front and rear doors, and on the parcel shelf, plus another 100-mm driver mounted centrally above the instrument panel. Two 200-mm sub-woofers – each with a double-neo, long-throw motor structure for greater dynamic control at all volumes – use 16-litre resonating chambers within the vehicle's double floor.

To ensure that the sophisticated speaker matrix is optimally powered, Lexicon's processing is supported by a powerful 420 watts of amplification, distributed through nine channels – seven for the main speakers and two for the subwoofers.

Specifications: U.S. Vehicles

Body/chassis construction

- Aluminium spaceframe with tubular steel front subframe and hydroformed aluminium rear subframe. Double-floor construction. Coach Doors.
- Composite front wings (SMC). Boot lid composed of double-sided, zinc-coated steel. All other body panels are aluminium alloy.

Engine

Type	60-degree V-12.
Construction	Cast aluminium-alloy crankcase and cylinder heads. Silicon-impregnated cylinder walls.
Displacement	6.75 litres (412 cu. in.)
Bore x stroke	3.33 x 3.62 in.
Valvetrain	Chain-driven double overhead camshafts, four valves per cylinder. Variable Valve Lift and Variable Camshaft Timing.
Compression ratio	11.0:1
Power output @ engine speed	453 hp (SAE) @ 5,350 rpm
Max torque @ engine speed	531 lb-ft @ 3,500 rpm
Fuel management	Bosch MED 9.2.1 high-pressure petrol direct injection. Mass airflow sensor. "Drive by wire."
Ignition	Distributorless ignition system. Six knock sensors. Adaptive knock control. Pushbutton, one-touch starting.
Alternator output	Twin, 180-amp, liquid-cooled alternators. Twin batteries: 90 + 70 Ah.
Fuel requirements	Premium unleaded.[1]
Fuel capacity	26.4 gallons

Driveline

Drive system	Rear-wheel drive. All-speed electronic Dynamic Traction Control (DTC).
Transmission	ZF 6HP32 six-speed electronically controlled automatic. Locking torque converter. Normal and Low shift modes. Adaptive transmission control. Electric gear selector. "Shift by wire."
Gear ratios	1st - 4.17:1 2nd - 2.34:1 3rd - 1.52:1 4th - 1.14:1 5th - 0.87:1 6th - 0.69:1 Reverse - 3.40:1
Final-drive ratio	3.46:1

Suspension

Air suspension with automatic self-levelling and High Mode (+1.0 inch). EDC-K continuously variable electronic damping control.

Front

Double-wishbone suspension with air springs.
Sway bar with comfort-optimised roller bearings.

Rear

Aluminium multi-link suspension with air springs.
Sway bar with comfort-optimised roller bearings.

Steering

Type	Rack-and-pinion. Vehicle-speed-sensitive power assist.
Overall steering ratio	15.5:1
Turns lock-to-lock	3.3
Steering wheel diameter	16.1 in.
Turning circle	45.3 ft.

Brakes

- Power-assisted ventilated four-wheel disc brakes.
- 14.7-inch ventilated front, 14.6-inch ventilated rear discs. Two-piston front calipers. Single-piston rear calipers.
- Electric parking brake.
- Four-channel Anti-lock Braking System (ABS).
- Electronic Brakeforce Distribution (EBV).
- Dynamic Brake Control (DBC).
- Cornering Brake Control (CBC).
- Dynamic Stability Control (DSC).

Wheels & Tyres

Wheels	PAX 265 x 540A aluminium alloy.
Tyre size	Michelin PAX 265 x 790 R540 A111V AS all-season radial tyres.[2] Run-flat capability of 100 miles at 50 mph fully loaded. Elimination of spare tyre. Tyre Pressure Alert system.

Exterior dimensions

Overall body length	229.7 in.
Overall body width	78.3 in.
Overall body height	64.3 in. (5 ft. 4.3 in.)
Wheelbase	140.6 in.
Track, front/rear	66.3/65.7 in.
Curb weight	5,577 lb.
Weight distribution front/rear	50/50 percent
Gross Vehicle Weight Rating (GVWR)	6,680 lb.
Payload	1,102 lb.

Interior dimensions

Seating capacity	Five (four optional)
Head room, front/rear	40.2/38.5 in.
Leg room, front/rear	40.5/37.3 in.
Shoulder room, front/rear	59.4/56.3 in.
Trunk volume (SAE)	14.1 cu. ft.

Performance[3]

Top track speed	130 mph[4]
0 to 60 mph accel.	5.7 seconds
1/4-mile acceleration	14.3 seconds
Power Reserve at 100 mph	75 percent

Aerodynamics[3]

Coefficient of drag (Cd)	0.383
Total drag (Cd • A)	11.5 sq. ft.

Fuel consumption (preliminary manufacturer data)

U.S. EPA fuel economy	13/19 mpg estimate[5] city/highway
Range	Up to 450 miles

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1. The engine is designed for 98 RON grade fuel, however it may be run on fuel with a minimum octane grade of 91 RON.
2. Michelin PAX tyres are run-flat tyres. Michelin PAX is a registered trademark of Michelin.
3. Manufacturer's test results. Actual acceleration results may vary depending on specifications of the vehicle, road and environmental conditions, testing procedures, and driving styles. These results should be used for comparison only and verification should not be attempted on public roads. Rolls-Royce urge you to obey all posted speed laws and always wear seatbelts.
4. Speed electronically limited.
5. Preliminary figures. Use estimated mpg for comparison to other cars. Your mileage may vary with options, driving conditions, driving habits, the car's condition, speed and trip length. Actual highway mileage will probably be less.

Specifications: European & Other Markets

Body/chassis construction

- Aluminium spaceframe with tubular steel front subframe and hydroformed aluminium rear subframe. Double-floor construction. Coach Doors.
- Composite front wings (SMC). Boot lid composed of double-sided zinc-coated steel. All other body panels are aluminium alloy.

Engine

Type	60-degree V-12.
Construction	Cast aluminium-alloy crankcase and cylinder heads. Silicon-impregnated cylinder walls.
Displacement	6.75 litres (6749 cu. cm)
Bore x stroke	84.6 x 92.0 mm
Valvetrain	Chain-driven double overhead camshafts, four valves per cylinder. Variable Valve Lift and Variable Camshaft Timing.
Compression ratio	11.0:1
Power output @ engine speed	338 kW (460 PS DIN) @ 5,350 rpm
Max torque @ engine speed	720 Nm @ 3,500 rpm
Fuel management	Bosch MED 9.2.1 common-rail high-pressure petrol direct injection. Mass airflow sensor. "Drive by wire."
Ignition	Distributorless ignition system. Six knock sensors. Adaptive knock control. Pushbutton, one-touch starting.
Alternator output	Twin, 180-amp (2520 W), liquid-cooled alternators. Twin batteries: 90 + 70 Ah.
Fuel type	Super unleaded (98 RON).[1]
Fuel capacity	100 litres (22.0 Imperial gallons)

Driveline

Drive system	Rear-wheel drive. All-speed electronic Dynamic Traction Control (DTC).
Transmission	ZF 6HP32 six-speed electronically controlled automatic. Locking torque converter. Normal and Low shift modes. Adaptive transmission control. Electric gear selector. "Shift by wire."
Gear ratios	1st - 4.17:1 2nd - 2.34:1 3rd - 1.52:1 4th - 1.14:1 5th - 0.87:1 6th - 0.69:1 Reverse - 3.40:1
Final-drive ratio	3.46:1

Suspension

Electronic air suspension with automatic self-levelling and High Mode (+25 mm). EDC-K continuously variable electronic damping control.

Front

Double-wishbone suspension with air springs.
Sway bar with comfort-optimised roller bearings.

Rear

Aluminium multi-link suspension with air springs.
Sway bar with comfort-optimised roller bearings.

Steering

Type	Rack-and-pinion. Vehicle-speed-sensitive power assist.
Overall steering ratio	15.5:1
Turns lock-to-lock	3.3
Steering wheel diameter	410 mm
Turning circle	13.8 m

Brakes

- Power-assisted ventilated four-wheel disc brakes.
- 374 x 36-mm ventilated front/370 x 24-mm ventilated rear discs. Two-piston front calipers. Single-piston rear calipers.
- Electric parking brake.
- Four-channel Anti-lock Braking System (ABS).
- Electronic Brakeforce Distribution (EBV).
- Dynamic Brake Control (DBC).
- Cornering Brake Control (CBC).
- Dynamic Stability Control (DSC).

Wheels & Tyres

Wheels	PAX 265 x 540A aluminium alloy.
Tyre size	Michelin PAX 265 x 790 R540A 111 W radial tyres. Run-flat capability of 161 km (100 miles) at 80 km/h (50 mph) fully loaded. Elimination of spare tyre. Tyre Pressure Alert system.

Exterior dimensions

Overall body length	5834 mm
Overall body width	1990 mm
Overall body height	1632 mm
Wheelbase	3570 mm
Track, front/rear	1685/1670 mm
Unladen weight	2495 kg
Weight distribution front/rear	50/50 percent
Gross Vehicle Weight Rating (GVWR)	3050 kg
Payload	555 kg

Interior dimensions

Seating capacity	Five (four optional)
Head room, front/rear	1020/979 mm
Leg room, front/rear	1028/947 mm
Shoulder room, front/rear	1509/1431 mm
Boot volume (DIN)	460 litres/16.2 cu. ft.

Performance

Top speed	240 km/h (149 mph)[2]
0 to 100 km/h accel.	5.9 seconds
0 to 1000 m	25.6 seconds
Power Reserve at 160 km/h	75 percent

Aerodynamics

Coefficient of drag (Cd)	0.383
Total drag (Cd • A)	1.07 sq. m (11.5 sq. ft.)

Fuel consumption

Fuel consumption: Urban	24.6 litres/100 km (11.5 mpg[3])
Fuel consumption: Extra-urban	11.0 litres/100 km (25.7 mpg[3])
Fuel consumption: Combined	15.9 litres/100 km (17.8 mpg[3])
CO_2 emissions	385 g/km
Range	Up to 625 km (390 miles)

The contents of this brochure were correct at the time of going to press (March 2003). The colours reproduced in this brochure may vary slightly from the actual paint colour or trim material due to the limitations of the printing process. Rolls-Royce Motor Cars Limited reserve the right to change prices and specifications at any time without prior notice. The information contained in this brochure does not constitute an offer or any part of a contract written or implied. Quoted speed and acceleration may vary with optional equipment. Photographs may show optional equipment.

1. The engine is designed for octane grade 98 fuel, however it may be run on fuel with a minimum octane grade of 91.
2. Speed electronically limited.
3. Imperial gallons.

Features

Safety & security features

- Intelligent Safety & Information System (ISIS) for deployment of safety systems.
- Supplemental Restraint System (SRS)* consisting of: Driver and front-passenger airbags, side-impact airbags (front), Head Protection System (front and rear), and pre-tensioning seatbelts for outboard seating positions.
- Front-seat active knee protection (U.S. models only).
- Side-door impact beams in the front and rear doors.
- Front and rear progressive crumple zones.
- Four-channel anti-lock disc brakes.
- Collision-activated automatic fuel pump shutoff.
- Battery safety terminals.
- Front-seat active head restraints.
- Front and rear three-point seatbelts. Pre-tensioning seatbelts in all outboard positions. Automatic tensioners and force limiters.
- Vehicle security system with interior motion detector and engine immobilisation. Keyless entry.
- Central locking system for doors and fuel-filler door. Selective unlocking. Active safety locking of Coach Doors.
- Assist telematics services with one-button activation.**
- Automatic-dimming interior and exterior rearview mirrors.
- Dual electrically adjustable and power folding heated exterior mirrors. Automatic dipping of passenger-side mirror in Reverse.
- Heated front-side windows and rear window.
- Laminated glass with Climate Control Glazing (infrared protection). Cut-out for electronic toll-collection devices.
- Bi-Xenon headlamps with auto-levelling and power washers.
- Rain-sensing, variable-speed windscreen wipers. Heated washer jet supply.
- Rear foglamps (except for North American vehicles).
- Park Distance Control, front and rear.

Audio, entertainment & navigation systems

- Lexicon Logic7™ audio system consisting of: 420-watt, nine-channel amplifier. Fifteen speakers, including six 25-mm tweeters, seven 100-mm mid-range speakers and two floor-mounted 200-mm subwoofers with double 16-litre under-floor resonating chambers. AM/FM/Weatherband tuner and single in-dash CD player. Speed-sensitive volume control.
- Six-disc CD auto-changer in lower glovebox.
- Integrated rear-window antenna system.
- Steering-wheel-mounted audio controls.
- Built-in TV tuner. Optional DVD rear entertainment system with dual monitors and six-disc DVD changer.
- GPS navigation system.

Comfort & convenience features

- Automatic climate control with six temperature zones (front: left/right, upper/lower. Rear: left/right). Pollen micro-filter. Individual fan controls. Ventilated glovebox. Stationary climate control via remote engine start-up (available in select markets).
- Cordless telephone.
- Voice Recognition System for select vehicle controls.
- Outside temperature display.
- Electronic cruise control.
- Power tilt-and-telescopic steering wheel with automatic tilt-away.
- Leather-wrapped steering wheel with multi-function controls.
- Electrically adjustable front seats with lumbar support.
- Heated front and rear seats.
- Memory for driver's seat, steering column and exterior mirrors.
- Power windows with one-touch "up" and "down" feature on front windows. Anti-trap function. One-touch "down" on rear windows.
- Soft Close Automatic for all doors and boot lid. Continuous door stops (infinite detents).
- Rear Coach Door Closing Assistance.
- Full leather interior with natural grain hides on seating surfaces, and tipped hides on door panniers and centre console.
- Bookmatched veneers with alternating feature grain and straight grain on instrument panel and door cappings. Choice of: Figured Mahogany, Burr Walnut, Elm Cluster, Birds Eye Maple, Oak Burr and Black Tulip.
- Veneered picnic tables in backrests of the front seats.
- Wool/cashmere and leather headliner. Hinged leather Duchess straps.
- "Time out" feature (retained accessory power) for power windows and audio/entertainment systems.

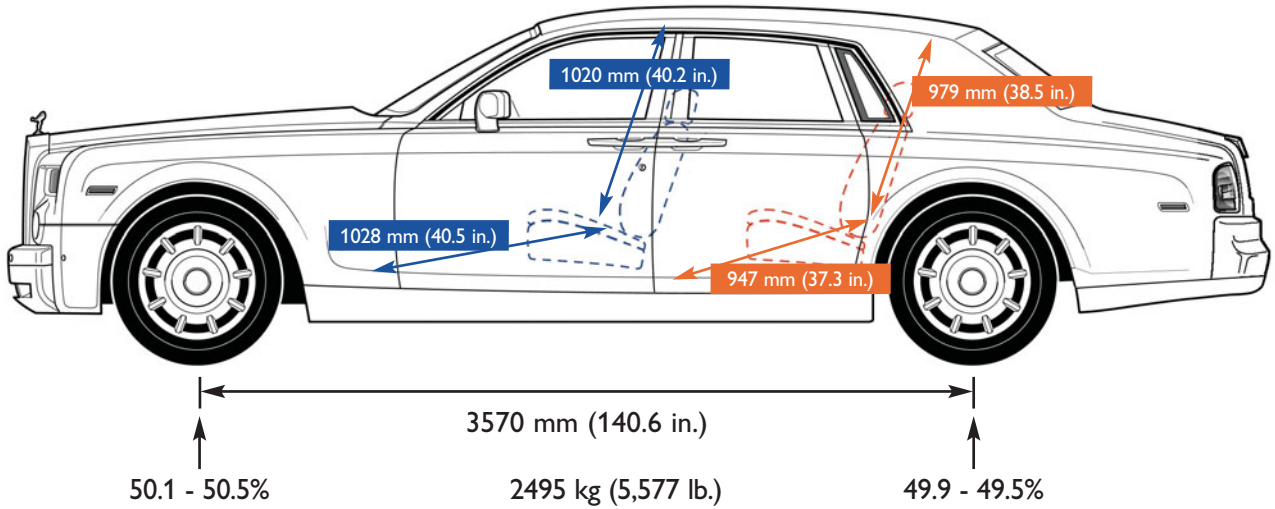
Comfort & convenience features, continued

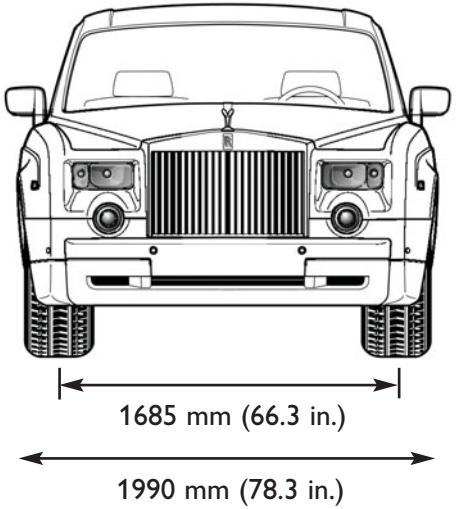
- Integrated universal remote control (garage-door opener) for U.S. and German markets only.
- Four levels of interior lighting: Ambience, Boulevard, Reading and Entry/Exit.
- Wood-framed Quarter Mirrors in C-posts.
- Centre console storage, ventilated glovebox, front- and rear-door pockets, front seatback storage pockets.
- Control Centre with fold-away Controller and 6.5-inch monitor with integrated controls for: Telephone, navigation system, audio/entertainment and vehicle configuration.
- Instrumentation includes Power Reserve gauge and analog clock. Comprehensive message centre.
- Integrated umbrellas in rear Coach Doors.
- Carpeted boot with luggage tie-downs.
- Electrically retracting "Spirit of Ecstasy" hood ornament.
- Synchronised wheel centres.

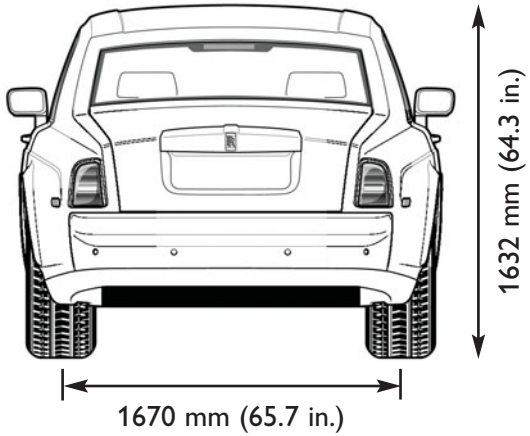
* Please remember that the seatbelts in Rolls-Royce motor cars constitute the primary protection system for passengers in collisions. The airbag Supplemental Restraint System (SRS) is a supplement to the seatbelts. Although airbags provide additional protection, airbags alone are not sufficient. Always wear your seatbelts. Children younger than 12 years old should always be properly restrained in a back seat, away from airbags. Never place a rear-facing infant seat in the front seat.

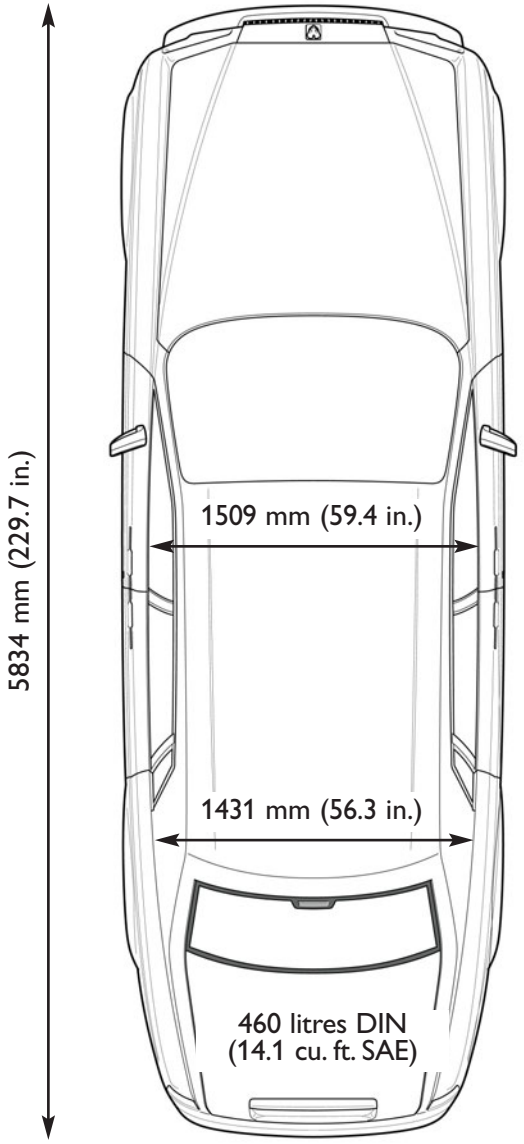
** Planned availability in North America and select European markets.

Dimensions


1020 mm (40.2 in.)
979 mm (38.5 in.)
1028 mm (40.5 in.)
947 mm (37.3 in.)
3570 mm (140.6 in.)
50.1 - 50.5%
2495 kg (5,577 lb.)
49.9 - 49.5%


1685 mm (66.3 in.)
1990 mm (78.3 in.)


1632 mm (64.3 in.)
1670 mm (65.7 in.)


5834 mm (229.7 in.)
1509 mm (59.4 in.)
1431 mm (56.3 in.)
460 litres DIN
(14.1 cu. ft. SAE)