For decades, the large Mercedes coupés have embodied exclusivity, elegance, technology and outstanding achievements in automotive engineering. They set new standards in design and equipment, combining exemplary safety with the highest degree of comfort and a superior driving experience.

1 History

The new CL-Class heralds the beginning of the seventh generation of the large Mercedes coupés. The two-door model replaces its globally successful predecessor, which was the highest-selling luxury coupé, since it was introduced into the market.

The history of the large Mercedes coupés extends back to 1952 when Mercedes-Benz launched the legendary 300 S Coupé – a „car for the world’s elite“ – was the verdict of the automobile press at the time. In 1956 it was followed by the 220 S Coupé as part of the W180 model series, which fired the public's imagination with such features as its unitized „pontoon“ body. It was succeeded in 1961 by the 220 SEb Coupé (W111 model series) with its elegant, elongated body.

Based on the S-Class of that time, the SEC Coupés of the C126 model series were introduced in 1981 and remained in the line-up of the Stuttgart-based automotive brand for 10 years. In 1992, the successor model (C140 model series) was unveiled at the Geneva Motor Show, featuring a 290 kW/394 hp twelve-cylinder engine for the first time. This coupé was succeeded by the predecessor to the new CL-Class, which celebrated its debut in March 1999 and set new standards with pioneering Mercedes innovations such as the ABC suspension (Active Body Control) and Bi-xenon headlamps.

As the most exclusive model series from Mercedes-Benz, the new CL-Class also convincingly underscores the brand’s leadership position. At the same time, it is equally honour-bound to uphold the traditional brand equity, continuing as always to set the pace in the industry with its unparalleled exclusivity.
2 Design

Even more so than preceding models, the new CL-Class perceptibly projects self-assuredness, prestige and presence. Its exterior or design captivates with a stylistic body language composed of surfaces, lines and shapes that flow into one another.

The character of workmanship is immediately evident in the high-grade interior: fine surface areas made of wood, aluminium, chrome and leather, combined with a dynamic sporting design approach to the appointments. They conjure up an exclusive ambiance that provides passengers in all four seats with the ultimate in comfort.

2.1 Exterior Design Concept

Strikingly different from the sedan yet with the same self-assured appearance, the new CL-Class follows the course set by its successful forerunner, Figure 1.

It is the front in particular that – compared to its predecessor – creates a much more expressive and commanding impression, with its more assertive pillars and emphasis of breadth, bolstered by a broader radiator grille and the distinct, expansively long hood surface, Figure 2. Beyond this, flat free-form headlights define the face of the vehicle through the intricately detailed Xenon lamps. These elements are harmonically embedded between a superb “eyebrow” and the compact unit consisting of turn signal and position light.

Viewed from the side, it is the dome-shaped line spanning the roof and entrance – specific to the CL-Class – that catches the eye. This has been realized even more elegantly than in its predecessor, thanks to the lengthened roof and entrance – to a typical Mercedes V-shaped trunk lid – to a typical Mercedes V-shaped trunk lid – to a typical Mercedes V-shaped trunk lid – to a typical Mercedes V-shaped trunk lid – to a typical Mercedes V-shaped trunk lid – to a typical Mercedes V-shaped trunk lid – to a typical Mercedes V-shaped trunk lid – to a typical Mercedes V-shaped trunk lid. The tapered C-pillar has been adopted from the preceding model and reinterpreted as a unique and characteristic design element: it flows into the rounded rear end and helps form a vigorous, sinewy vehicle body. Together, the taut body edge and the characteristic line (swage line, with a light undercut) that rises from front to rear form a side silhouette that is an assertive and dynamically stylistic entity. This characteristic line gives structure to the side wall and generates sporty dynamism. Rub strips along the side have also been dispensed with in the coupé in favour of a modern, clean surface approach.

In the plan view, the rear area is strongly drawn-in and adopts the taut surfaces and distinctive character lines of the side, Figure 4. The tail lights, drawn far around the corner towards the front, shorten the rear again in visual terms and provide for sporty, elegant proportions. They also pick up on the character line as it wraps its way around from the side, continuing it by means of colour separation in the lens, and then contributing – together with the V-shaped trunk lid – to a typical Mercedes rear profile. The assertive rear is accentuated by the horizontally structured bumper design, with two cut-outs for the standard visible tailpipe trim. These add substantially to the sporty and powerful appearance of the vehicle.

2.2 Interior Design Concept

The interior of the new luxury coupé is stylistically defined by the verticality of its interior space architecture in the dashboard and centre console area, also drawing inspiration from its predecessor here, Figure 5. In addition, the arrangement of the doors and rear passenger compartment side areas along with their adornments provide a modern, luxurious sense of spaciousness. A perfectly matched material and colour concept presents the vehicle interior as if it were cast seamlessly from a single mould. Wood has been generously integrated into the dashboard, the centre console and the doors in particular.

As in the sedan, a new control and display concept has been introduced here, setting new standards for a modern appearance worthy of the vehicle. One particularly refined aspect, as in the sedan, is the metallised switch surfaces and genuine aluminium controls, which fit in especially well with the high-contrast black panel technology setting, Figure 6.

2.3 CL600 Design Concept

Exquisite details on the exterior of the V12 (CL600) underscore its refinement: a chrome strip in the front bumper that discreetly wraps around the fog lamps, as well as two-toned forged wheel rims that emphasize the side view.

The V12’s level of distinction can be seen even more clearly in the interior: the materials used for the Passion Exclusive leather appointments are accentuated by means of hand-crafted quilted seams of the highest quality on the door panelling, seats and headliner. Chromed V12 emblems inset in the centre console, floor mats and seat backs underscore the high value of the materials. The door sill panels and trunk sill are also finished with chrome stainless steel. The appearance is highlighted by poplar wood grain with a natural sheen, reserved exclusively for the V12.

3 Overall Vehicle and Drive Train

3.1 Overall Vehicle

For decades, the large Mercedes coupés have combined exemplary safety with the utmost in comfort and a superior driving experience. When developing the current Mercedes-Benz CL-Class, with the in-house code C216, further enhancements were called for in all three disciplines.

As was the case with the previous models, the overall concept, Figure 7, was derived from the S-Class (model series 221) [1]. Yet it also continues the CL-Coupé tradition with classic design elements, such as fully retractable side windows that are not interrupted by a B-pillar.

The wheelbase and outer dimensions have been enlarged slightly compared to the predecessor. As a result, the interior spaciousness and comfort of all four seats have been increased, Table 1. Compared to the model series 221, the C216 is slung 55 mm lower – as befits the character of a coupé. The new control and display concept, with a large 8-inch screen and central “Comand” controller, is already a familiar feature from the S-Class and has proved itself superbly.

The packaging of the components, Figure 8, has been thoroughly optimized as well. In particular, the rear area is worth mentioning. Compared to the preceding model, the fuel tank has been relocated under the rear seats and the arrangement of the E/E components has been completely redesigned, Figure 9. This makes it possible, for the first time, to carry a ski bag restricting neither the trunk nor the tank capacity. The trunk now offers 490 litres of volume (as per the VDA measuring method) – a capacity hitherto unattained in this class - and is now easy to load, offering high utility (e.g. for up to four golf bags).

In the vehicle speed range of 65 km/h to 140 km/h, the Active Body Control system lowers the vehicle body by up to 10 mm, further improving aerodynamic drag and driving stability. The drag coefficient has been improved compared to the preceding model from $c_{D}=0.28$ to $c_{D}=0.27$, compensating almost entirely for the expansion of the frontal area and the performance-related increase in the cooling air flow rate. With its aerodynamic design, the lift force and the crosswind sensitivity have also been further optimized. Thus, the coefficient of lift is 0.08 to 0.09 for the front axle and just 0.04 to 0.05 for the rear axle.

As in the new S-Class, for the CL the Pre-Safe safety philosophy has been systematically refined by Mercedes-Benz. The Pre-Safe functions move the front passenger seat into an advantageous position, the side windows and sliding sunroof are closed and the air cushions of the dynamic multi-contour seat (standard equipment for the CL600) are inflated in a manner that provides the driv-