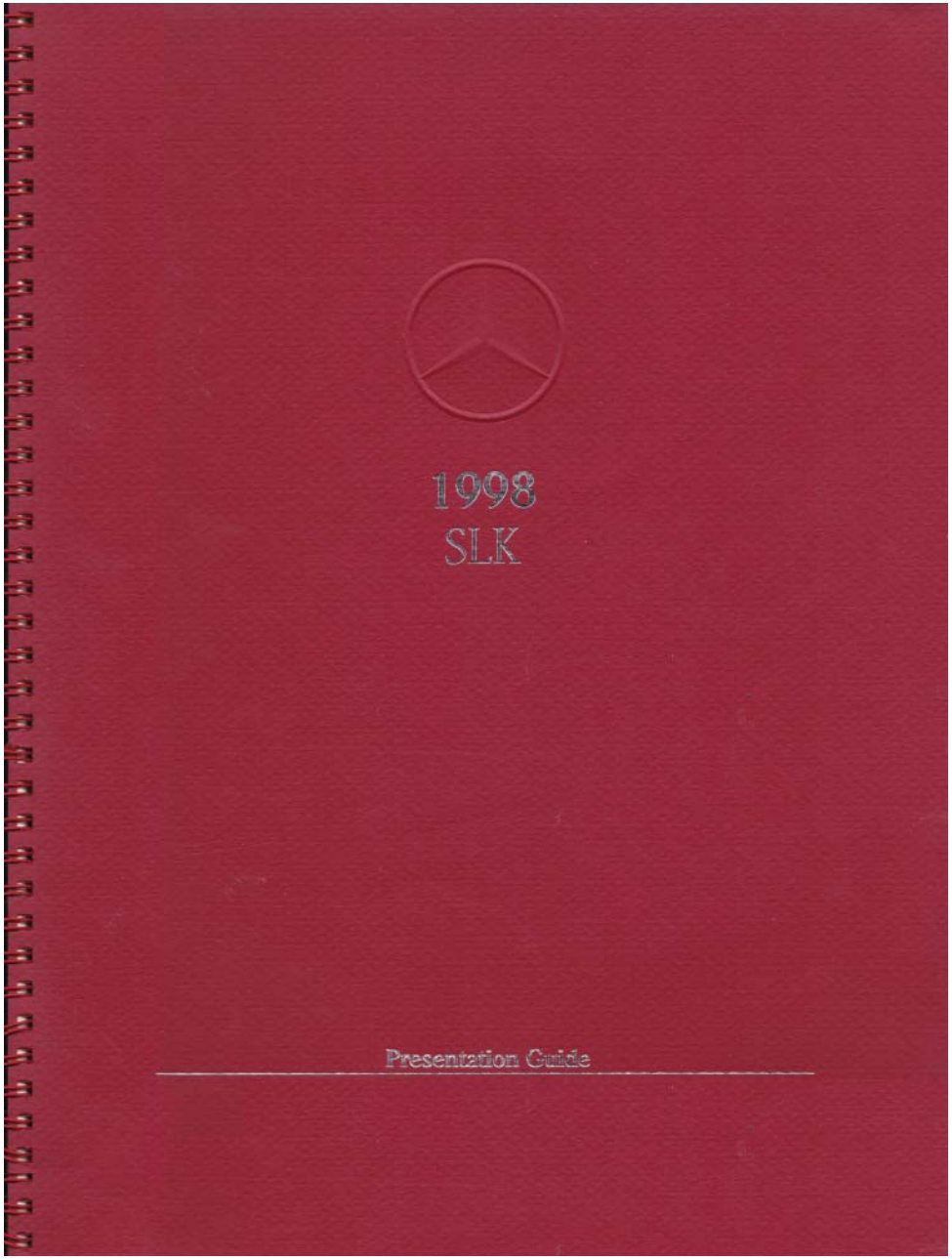
1998
SLK
Presentation Guide

1998 SLK Presentation Guide

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The 1998 SLK — Presentation Guide

Mercedes-Benz introduces the SLK, an all-new coupe/roadster, to its model lineup — a world-class sports car that joins E-Class in giving Mercedes-Benz a more dynamic, youthful image. With the SLK, Mercedes-Benz intends to lead the competition by providing more fun, innovation, distinctive styling, and value.

The SLK expands on a grand sports car tradition at Mercedes-Benz — one that reaches back to the 1920s and 1930s. Its technically sophisticated, highly refined capabilities are more than an enthusiast would expect. The United States receives the top of the line — the SLK230 Kompressor. Among its many unique attributes:

- *A powerful and responsive supercharged engine*
- *Alongside the SL-Class, the highest levels of protection for an open car*
- *An unrivaled driving experience all year round, with the combination of top-down convertible fun and the all-weather protection, security, and integrity of a fixed-roof coupe*
- *A dynamic, exciting style that will look striking for years to come*
- *A new standard for value within its segment, thanks to comprehensive standard equipment and performance*

Overview
Contents

The 1998 SLK — an all-new, world-class sports car attracting new buyers to Mercedes-Benz.

The SLK and the Luxury-car Market

Contemporary in its execution, the SLK's smart styling and innovative features will serve it well into the next century. Its arresting technology, crisp handling, snappy performance, and dashing interior make it extremely attractive to driving enthusiasts.

At the same time, the SLK230 Kompressor also recalls predecessors that are legendary. It hints at the glorious SSK, SSKL, 500K, and 540K from the 1920s and 1930s, as well as the 300 SL and 190 SL from the 1950s and 1960s.

This mix of old and new adds to the SLK's value — modern technology presented with an indisputably fine heritage of greatness. The SLK230 Kompressor will draw younger buyers with its styling and pricing.

Customers will probably be comparing the SLK to only a handful of other sports cars. Those considering the purchase of an SLK are likely to compare it against:

- BMW Z3 (2.8)
- Porsche Boxster

SLK Buyers

Eventually, Mercedes-Benz expects the SLK's customers to be evenly split between first-time buyers and loyal Mercedes-Benz owners. They will be successful people with expressive lifestyles. While some buyers will be looking for a recreational vehicle, others will use the SLK, with its year-round capabilities, for their daily commutes and weekend pleasure driving.

The median annual household income for SLK owners is expected to be $80,000. Sales are likely to be split evenly between male and female buyers, bringing more women into the ranks of Mercedes-Benz owners.

Expectations are that buyers will have a median age between 30 and 39 years old — younger than the buyers of other Mercedes-Benz models. About 65 percent will be college graduates, and thus well educated and sophisticated.

The SLK's Appeal

The SLK offers customers unparalleled value, with comprehensive standard equipment and technological innovation. (Only three options are available.) The SLK230 Kompressor's value and innovation are built squarely on a foundation of the core Mercedes-Benz attributes of:

- Quality
- Safety
- Durability
- Best-in-class Value

Juergen Hubbert, member of the Board of Management of Mercedes-Benz AG, captures SLK's appeal to customers:

"There are only a few cars which make your heart beat faster the moment you catch sight of them. The SLK is one of them. It has the sort of looks that turn heads and stir an itch to get behind the wheel and simply drive off. The actual destination does not matter. In a car like this, it is almost more important to travel than to arrive.... The SLK will write a thrilling new chapter in the proud roadster traditions of Mercedes-Benz."

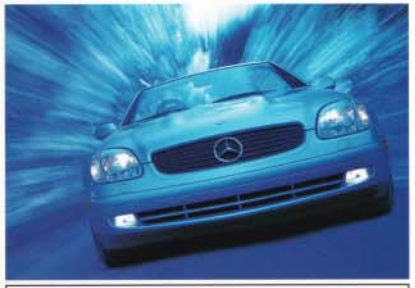
The SLK230 Kompressor Competition

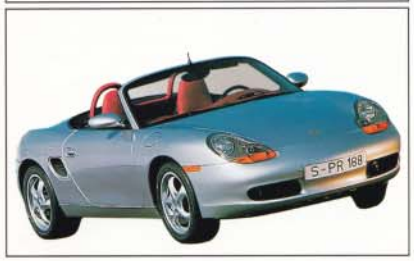
The New Era Roadsters

The SLK230 Kompressor enters the market in direct competition against two other German roadsters — the BMW Z3 2.8 and the Porsche Boxster. All three models are brand new. The BMW Z3 went on sale in the spring of 1996, and the Porsche Boxster went on sale in January, 1997.

In some ways, the three competitors are similar: all have styling intended to bring to mind images of the past — the SLK's power domes on the hood and retro-styled instrument panel, the Z3's side vents and kidney-shaped grille, and the Boxster's overall tub-like shape. All three profess sportiness and driving fun, and all are similarly priced, although the level of standard equipment varies considerably.

Still, the three German automakers — BMW, Porsche, and Mercedes-Benz — give their roadsters distinct personalities, reflecting their respective product and marketing philosophies.





- The SLK makes almost every feature standard, including leather upholstery and ASR. It's a balanced sports car in almost every sense — in its handling, safety provisions, and styling. And the SLK is innovative, employing such features as a completely automatic retractable steel hardtop, an intercooled supercharger, sophisticated suspension, Passenger Seat Occupancy Detection Sensor and the industry first Child Seat Recognition System.
- The Z3 is a roadster in a traditional sense, with the newly optional 2.8-liter engine finally giving it some power. Its standard soft top raises and lowers manually, and it offers optional 17-inch wheels and tires. It has no roll-bars. Traction control is standard.
- The Boxster has a performance orientation, with its flat-six engine mounted between the cabin and the rear axle. (The engine breaks new ground for Porsche — the first water-cooled flat six for a production car.) Standard equipment includes an automatic soft top, ABS, and a rear spoiler that raises at 75 miles per hour. Leather upholstery and traction control are among the many options.

A comparison of standard features proves SLK's value advantage. The SLK Kompressor holds an advantage compared to competitive technical features, as well.

A Comparison of Specifications

Philosophies aside, differences in the SLK, Z3 2.8, and Boxster can be found in a short list of their specifications. (See chart below)

SLK advantages include:

- Engine torque *(note the range, in particular)*
- Suspension sophistication
- Turning circle

Notes on specifications:

- Even though the engines are all different in configuration, displacement and performance are comparable
- 0-60-second performances are within a second of each other
- Pricing is competitive (with added options to give all models comparable equipment)

In light of its competition, the SLK is technically more innovative and balanced. It also has standard equipment that makes possible true year-round transportation in almost any climate.

Selected Competitive Technical Specifications

	Mercedes-Benz SLK230 Kompressor	BMW Z3 2.8	Porsche Boxster
Engine	2.3L I-4 w/intercooled supercharger	2.8L I-6	2.5L flat 6
Horsepower @ rpm	185 @ 5300	189 @ 5300	201 @ 6000
Torque (lb-ft) @ rpm	200 @ 2500-4800	203 @ 3950	181 @ 4500
Chassis layout	Front engine/rear drive	Front engine/rear drive	Mid engine/rear drive
Wheelbase (inches)	94.5	96.3	95.1
Curb weight (pounds)	3036	2844 (manual) 2932 (auto)	2822 (manual) 2954 (auto)
0-60 (seconds)	7.2	6.3 manual/6.7 auto.	6.1
Front wheels, tires	7.0 x 16, 205/55VR16	7.0 x 16, 225/50ZR16	6J x 16, 205/55ZR16
Rear wheels, tires	8.0 x 16, 225/50VR16	7.0 x 16, 225/50ZR16	7J x 16, 255/50ZR16
Front suspension	Double wishbone	MacPherson strut	MacPherson strut
Rear suspension	5-arm Multilink	Semi-trailing arms	MacPherson strut
Turning circle (feet)	34.7	39.4	35.8
Base price	$39,700	$35,900	$39,980

The Stuff of Which Legends Are Made

Superchargers and sports cars have played significant roles in the history of Mercedes-Benz. The SLK230 Kompressor invokes images from this glorious past with its exterior and interior styling and by its application of supercharger technology. It serves as a reminder of some the company's monumental triumphs in motorsports and of many fabled road-going models.

Early Mercedes supercharged models saw limited production. Referred to as "S" Series models, these were the S (Sport), SS (Super Sport), SSK (Super Sport Kurz — Kurz means "short," referring to wheelbase), and SSKL (Super Sport Kurz Leicht — Leicht means "light"). Only a total of 376 of them were built.

- In 1923, supercharger technology in automobile engines was in its infancy, with pioneering work in the field carried out by Paul Daimler. The 1923 Mercedes 10/40/65 HP Sports Car developed 65 horsepower (with supercharging) from 2614 cc. Top speed was 68 mph. This car's supercharger only engaged by pressing the accelerator pedal to the floor.
- The 1926 Mercedes 630 24/100/140 HP developed 140 horsepower from a 6243 cc, six-cylinder engine with a supercharger. Its top speed was 77 mph.
- In 1927, the 6.8-liter, 680 "S" Mercedes-Benz racing sports cars were introduced at the Nürburgring, where Rudolf Caracciola drove one to victory. The 1927 S 26/120/180 HP developed 180 horsepower at 3000 rpm with a supercharger. The six-cylinder engine displaced 6788 cc, and the car's top speed was 110 mph.
- The 1928 SSK 25/170/225 HP Sports Car with the 7068-cc, supercharged, six-cylinder engine developed 225 horsepower at 3000 rpm. SSK racing drivers Rudolf Caracciola, Manfred von Brauchitsch, and Hans Stuck won a long string of victories with it between 1929 and 1931. Caracciola won the 1930 European Sports Car Championship.
- In 1931, Rudolf Caracciola became the first non-Italian to win the Mille Miglia, driving an SSKL.

The SSK

Between 1934 and 1936, Mercedes-Benz produced only 354 supercharged 500K models. Between 1936 and 1939, it produced 419 540K models. Streamlined and built for speed, these models had supercharged, eight-cylinder engines capable of propelling them at the then-unbelievable speed of over 100 mph on the Autobahn.

During these same years, racing fans witnessed the era of the Silver Arrows — supercharged racing cars that established Mercedes-Benz' ranking as a powerful force in international racing.

- W25 — In 1934, the first series (A) W25 Silver Arrows were named for their appearance. They were raced with no paint on their aluminum bodies. Drivers Rudolf Caracciola and Luigi Fagioli won the Italian Grand Prix, and they came in first and second, respectively, in the Spanish Grand Prix of that year. The W25 (B) fared even better in 1935, when Caracciola and Fagioli won five of the nine grand prix races, and Caracciola drove a W25 (C) to another victory in 1936.
- W125 — With Alfred Neubauer as team manager, Mercedes-Benz' drivers Rudolf Caracciola, Hermann Lang, Manfred von Brauchitsch, and Dick Seaman were seemingly invincible between 1936 and 1939. W125 won seven races in 1937 alone. Driving a W125 with specially enclosed bodywork, Rudolf Caracciola set a class record that stood for decades for the highest speed driven on an ordinary road — 270.9 mph.
- W165 — Developed for 1939 to race in a formula previously dominated by Italian automobiles, this Silver Arrow had a supercharged, 90-degree V8 that developed 225 horsepower. The car was raced only once, with Hermann Lang beating 28 Italian cars in the Tripoli Grand Prix. The beginning of World War II marked the end of W165's racing career.

The 300 SL "Gullwing" coupe

Between 1954 and 1957, Mercedes-Benz built 1400 300 SL Gullwing coupes and, from 1957 to 1963, 1858 roadsters. With its six-cylinder engine, the 300 SL was capable of speeds up to 165 miles per hour. Racing versions of this car (SLR) were driven by Juan Manual Fangio, Karl Kling, John Fitch, Stirling Moss, Wofgang von Trips, and Peter Collins.

The 300 SL was joined by the 190 SL in 1955. The 190 SL was the company's first high-volume sports car, with 25,881 units built from 1955 to 1963. *With the introduction of the SLK, Mercedes-Benz once again offers two differently positioned roadsters.*

At left: The 300 SLR racer; Below: The 190 SL

Mercedes-Benz and the Environment

Customers concerned about the environment will find Mercedes-Benz to be a responsible corporate citizen. A primary mission of Mercedes-Benz is the production of completely recyclable automobiles, having compatibility with the environment throughout the manufacturing process, and that its automobiles run efficiently, with minimal emissions.

Some examples of environmental concern in Mercedes-Benz' manufacturing plants are:

- Assembly-plant lighting that provides excellent illumination for the workers while presenting no hazard to the geographic area's indigenous flying insects
- The separate usage, recycling and/or purification of water used during production, including on-site water treatment
- Thousands of trees planted on factory grounds

Mercedes-Benz' ecological concerns reflected in their production processes include:

- Energy developed for its own heat and electricity at 77-percent efficiency (35 percent is common for large powerplants)
- Sulfur dioxide emissions reduced by 92 percent
- Steel hardening by a process using natural gas, rather than salt baths, reducing the use of water while minimizing the release of carbon dioxide

Carburizing via natural gas

Mercedes-Benz treats waste water to be recycled and reused.

- Reducing the amount of paint per vehicle — 25 percent of the amount used 20 years ago while transitioning to completely water-based paint process
- Less than 85 gallons of water used in the manufacture of each automobile (5812 gallons used 30 years ago)

Examples of recycling are:

- More than 90 percent of a Mercedes-Benz components are recyclable
- Plastic parts weighing over 100 grams are coded to identify composition

Mercedes-Benz codes parts weighing over 100 grams (3.5 ounces) to identify their exact composition, easing the eventual recycling process.

- Use of recycled materials to manufacture components, such as the glove box liner and seat padding
- R-134a refrigerant used as a refrigerant instead of ozone-depleting freon
- Urethane foam used throughout the vehicles are manufactured without ozone depleting CFCs
- Involvement in pilot recycling plants

Water-based paints eliminate the use of petroleum-based solvents.

The 1997/1998 Model Lineup

For mid-year 1997, Mercedes-Benz groups its automobiles into five distinct model ranges. They are the C-Class, E-Class, S-Class, SL-Class, and the SLK. The five ranges include everything from trim, five-passenger family sedans to powerful, V12-powered sedans, coupes, and coupe/roadsters. These model ranges allow buyers to choose the luxury vehicle that best meets their transportation needs while expressing their individual identities. All models share a core technology that yields high levels of safety, quality, and durability.

The 1997 C-Class

Three unique models are defined by engine and function. The C230 has a powerful and economical 2.3-liter, four-cylinder engine. A 2.8-liter, in-line six powers the more luxurious C280. The third C-Class sedan is the C36. In its final year of limited production, this performance vehicle is modified by the German tuning company AMG. It features a 268-horsepower, 3.6-liter, in-line six.

C230, C280, C36 AMG Sedans

1998 SLK

The SLK230 Kompressor is powered by a 2.3-liter, in-line, four-cylinder engine that is supercharged, as indicated by the name, *Kompressor.*

SLK 230 Kompressor

The 1997 E-Class

The three E-Class sedans are designated by engine. The E300 Diesel features the innovative four-valve diesel engine introduced in 1994. The E320 is powered by the familiar 3.2-liter, in-line six, and the E420 has an exuberant 4.2-liter V8.

E300 Diesel, E320, E420

The 1997 S-Class

The S-Class represents the ultimate in automotive engineering quality, technology, and elegance. Six different models (with the S320 available in both standard and long-wheelbase versions) provide a choice of sedan or coupe body styles, standard and long wheelbase dimensions, and four different powertrains. Engines include a 3.2-liter, in-line six; 4.2- and 5.0-liter V8s; and a 6.0-liter V12.

S320 Standard Wheelbase Sedan, S320, S420, S500, S600 Long Wheelbase Sedans

S500, S600 Coupes

The 1997 SL-Class

Three coupe/roadsters are differentiated by their engines. Driving enthusiasts looking for quality in a highly personal luxury vehicle may choose from the SL320 with a 3.2-liter, in-line six, SL500 featuring a 5.0-liter V8, and SL600 powered by a 6.0-liter V12.

SL320, SL500, SL600 Coupe/Roadsters

SLK230 Kompressor At a Glance

Highlights

- 2.3-Liter, In-line Four-cylinder, 16-valve DOHC Engine, with ME 2.1 Electronic Ignition and Fuel Injection, Supercharger and Intercooler, and Variable Intake-valve Timing
- Horsepower (hp/rpm) 185/5300; Torque (lb-ft/rpm) 200/2500-4800
- Adaptive Five-speed Automatic Electronic Transmission with Standard (S) and Wet (W) driving modes, Lock-up Torque Converter
- Automatic Slip Control (ASR)
- Double Wishbone Front Suspension; Five-arm Multilink Rear Suspension
- Four-wheel Disc Brakes w/ABS (Antilock Brake System)
- Supplemental Restraint System (SRS) with Dual Airbags, Door-mounted Side Airbags, Knee Bolsters, and Emergency Tensioning Seatbelt Retractors (ETR) for Driver and Front-seat Passenger
- RF Remote Central Locking (global or local setting)
- Dual Zone Climate Control
- One-touch, Fully Automatic Retractable Steel Hardtop
- Integrated Dual Fixed Rollbars
- Mercedes-Benz Child Seat Recognition System
- Bose® Sound System
- Leather Upholstery

Standard Features

EXTERIOR

- Central locking of doors, trunk lid, and fuel door via key or RF remote
- Dual power and heated side mirrors
- Fully automatic, power-retractable steel hardtop w/one-touch control
- Headlamps w/computer-designed reflectors, H7 bulbs, polycarbonate lenses, dual front and single red rear fog lights
- Heated windshield washer nozzles
- Retractable heated headlamp washers
- Tinted glass
- 7.0" x 16" front and 8.0" x 16" rear aluminum alloy wheels, and 205/55R16 front and 225/50R16 rear V-rated high-performance tires

INTERIOR

- Dual Supplemental Restraint System (SRS) w/front airbags, door-mounted side airbags, knee bolsters, and Emergency Tensioning Retractors (ETR) and belt force limiters for driver and passenger, and passenger-side Child Seat Recognition System (BabySmart™)
- Passenger Seat Occupancy Detection Sensor
- Three-point seat belts w/ETR and belt force limiters
- Six-way manually adjustable seats, w/height adjustment
- Two-tone leather upholstery or one color (charcoal)
- Electrically operated windows, w/express down for driver and passenger, and central locking closure
- Classic-style instrument panel w/polished aluminum-rimmed gauges, ivory-color faces, and red needle pointers
- Liquid-crystal digital readouts for outside temperature, odometer, and trip odometer
- Climate Control w/dust and pollen filter (manual individual settings)
- Electronic cruise control
- Bose® six-speaker, electronic-tuned AM/FM/weatherband/cassette stereo sound system
- Manual telescoping, leather-wrapped steering wheel
- Center console w/storage
- Dual cupholders
- Carbon fiber optic accents
- Dual integrated roll bars mounted behind seats
- SLK design floor mats
- Integrated garage door opener
- First aid kit in trunk
- Pre-wiring for cellular telephone and compact disc changer
- Nylon mesh rollbar-mounted wind deflector

MECHANICAL

- 16 valve DOHC, in-line 2.3-liter four-cylinder engine, w/ME 2.1 electronic ignition w/CAN (Controller Area Network), electronic sequential fuel injection, supercharger and intercooler, computer-controlled variable intake-valve timing
- Adaptive five-speed electronic automatic transmission w/lock-up torque converter
- Automatic Slip Control (ASR)
- Double wishbone front suspension, five-arm multilink rear suspension
- Four-wheel disc brakes w/ABS (Antilock Brake System)
- Variable displacement AC compressor w/CFC-free coolant

Optional Features

EXTERIOR

- Metallic paint

INTERIOR

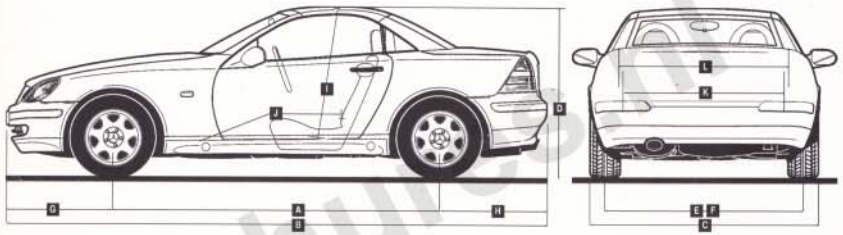
- Heated seats (not available separately)
- BabySmart™ compatible child seat (three available)
- CD changer, cellular telephone packages (mobile or portable)

MECHANICAL

Shaded items indicate features that are new

BabySmart™ is a trademark of Siemens Automotive Co.

SLK Dimensions



	SLK230 Kompressor
Exterior	
A Wheelbase	94.5 inches
B Overall length	157.3 inches
C Width	67.5 inches
D Height (top up)	50.7 inches
E Track, front	58.6 inches
F Track, rear	58.5 inches
G Overhang, front	31.2 inches
H Overhang, rear	31.5 inches
Interior	
I Headroom (top up)	37.4 inches
J Legroom	42.7 inches
K Hiproom	54.8 inches
L Shoulder room	51.7 inches
Trunk capacity	9.5 cubic feet (top up) 3.6 cubic feet (top down)
Fuel tank capacity	14.0 gallons/1.8 gallon reserve

A Word About Nomenclature

Mercedes-Benz describes its products by Class, series, and model designation. Model designations are followed by numbers that further identify the vehicles. The accompanying chart summarizes how the nomenclature relates.

Class	Series Designation	Model Designation
C-Class	202	C230 Sedan C280 Sedan C36 AMG Sedan
SLK	170	SLK230 Kompressor
E-Class	210	E300 Diesel Sedan E320 Sedan E420 Sedan
S-Class	140	S320 Standard Wheelbase Sedan S320 Long Wheelbase Sedan S420 Long Wheelbase Sedan S500 Long Wheelbase Sedan S500 Coupe S600 Long Wheelbase Sedan S600 Coupe
SL-Class	129	SL320 Coupe/Roadster SL500 Coupe/Roadster SL600 Coupe/Roadster

Overview

Model Line Technical Specifications

		SLK 230 Kompressor
Engine		in-line four with intercooled supercharger
Valvetrain		16-valve DOHC (with electronic variable intake-valve timing)
Displacement (liters)		2.3
Bore (mm/inches)		90.9/3.58
Stroke (mm/inches)		88.4/3.48
Compression Ratio		8.8:1
Power (hp/rpm)		185/5300
Torque (lb-ft/rpm)		200/2500-4800
Fuel System		ME 2.1 Engine Management System
Fuel Requirement		premium lead-free (minimum 92 octane)
Transmission		five-speed automatic, rear-wheel drive
Final drive ratio		3.27:1
Traction Control System		
ASR Traction Control		standard
Brakes		four-wheel disc, power-assisted with standard Antilock Brake System
Front		11.3-inch vented discs
Rear		10.9-inch solid discs
Suspension		four-wheel independent
Front		upper and lower control arms, coil springs, stabilizer bar, antidive geometry
Rear		multilink design, coil springs, stabilizer bar, antilift geometry
Steering		recirculating-ball, power-assisted
Turning circle (ft)		34.7
Turns, lock-to-lock		3.0
Wheels		front 7.0" x 16" aluminum alloy rear 8.0" x 16" aluminum alloy
Tires		front 205/55R16, V-rated rear 225/50R16, V-rated
Exterior Dimensions (inches)		
Wheelbase		94.5
Length		157.3
Width		67.5
Height (top up)		50.7
Track	front	58.6
	rear	58.5
Overhang	front	31.2
	rear	31.5
Interior Dimensions (inches)		
Headroom		37.4 (top up)
Legroom		42.7
Hiproom		54.8
Shoulder room		51.7
Trunk capacity (cubic feet)		9.5 cubic feet (top up) 3.6 cubic feet (top down)
Fuel tank capacity (gallons)		14.0/1.8 reserve
Weight (lbs)		3036
Performance – 0-60 mph (seconds)		7.2
Fuel Mileage (miles per gallon, City/Highway) *		22 city/30 highway

*For comparison purposes only. Your actual fuel economy may differ depending upon driving speed, weather conditions, and trip length. Your actual highway mileage will probably be less than the estimated highway fuel economy.

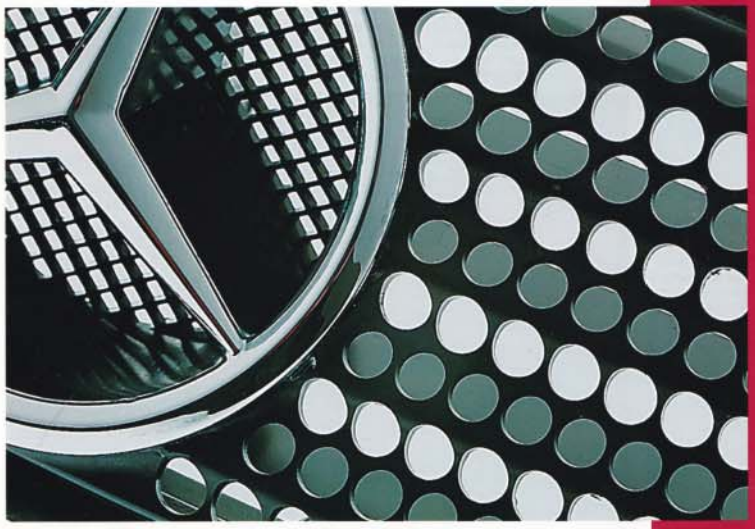
Part Two — Body Presentation

The SLK's body construction and features represent Mercedes-Benz innovation at its best. From the beginning, the SLK was designed and engineered to be a sports car with all the safety advantages of a sedan. It is both an open-topped roadster in the finest Mercedes tradition and a hardtop coupe, with all of a coupe's advantages. The result is the first, factory-direct standard metal folding roof of its type that provides customers with a year-round sports car!

Mercedes-Benz is a benchmark around the world with the quality of its automotive body structures. The SLK adds to the standards for structural design, rigidity, integrity, and safety in vehicles with open tops.

Key information in this section:

- *Advanced impact management offered by the body structure*
- *Features unique to the SLK that contribute to occupant safety*
- *Exterior design elements that manage water and air flow*
- *Unique body features that will attract younger, enthusiast customers*



Body Presentation Contents

● Indicates a Core Technology feature.

Color highlighted text indicates a new or revised feature.

Body

An Innovative, Contemporary Roadster Invoking a Magnificent Heritage

Designed to appeal to the young and to the young at heart, this roadster does so with unique features that are as functional and practical as they are alluring.

Innovations in Body Design

One way in which Mercedes-Benz has established its leadership role in the automobile industry has been through technological innovation. Pioneering body design — particularly as it affects occupant safety — has influenced the techniques used by other manufacturers. Among the innovations are:

- Extensive use of high-strength/low-alloy steel in critical areas
- Front and rear crumple zones
- Impact-dissipating longitudinal members that channel impact energy around the passenger cabin via three-prong forked members
- Safety door locks
- Pedestrian-safety considerations

As in the SL, the SLK's design and development follows in the tradition of innovative design. It encompasses new safety standards for roadsters, with a body that has the rigidity and strength of a sedan. The strength of the SLK's body provides a solid base for both ride comfort and handling safety.

The SLK advances crumple-zone and impact-dissipation technology with its introduction of ellipsoid bulkhead areas. Improving upon the three-prong forked member concept found on other Mercedes-Benz models, cup-shaped sections of the SLK's bulkhead perform the same task of transferring impact energy from the longitudinal members to the floor pan, transmission tunnel, and side members, and around the passenger cabin.

This first-of-its-kind ellipsoid design shape:

- Elongates the front crumple zone by about two inches, optimizing force absorption in a frontal impact
- Resists the movement of the engine and transmission to the rear in a frontal impact
- Enlarges interior leg room

Future generations of Mercedes-Benz automobiles will employ the ellipsoid bulkhead rather than three-prong forked members.

Having an open top (like the SL-Class coupe/roadsters), the SLK's body structure required particular attention, especially in regard to rollover protection. Striving for light weight, engineers rejected a pop-up roll-bar design for two fixed rollbars — one behind each seat. The rollbars are designed to withstand 10,000 pounds of force without deflection.

Adding to the protection provided in a rollover accident, the A-pillars are reinforced by two high-strength steel tubes — one inside the other.

Crash Testing — Paving the Way for Safer Body Structures

The number-one priority at Mercedes-Benz is safety, and, literally, the foundation for safety in its automobiles is the body. Mercedes-Benz constantly tests its vehicles and those from other manufacturers to continuously improve body-structure technologies. Many of the tests are more rigorous and comprehensive than those required by the U.S. Government.

Along with every other Mercedes-Benz model, the SLK is designed and built to withstand the forces of an offset frontal impact, generated in a 35-mph/40-percent offset impact test. This offset test is part of the intense and thorough work done in the Sindelfingen Crash Test Center, and it may provide the basis for future testing required in the United States.

Although not legally required, Mercedes-Benz routinely tests its provisions for rollover protection in open-top models. These tests included suspending the SLK 50 centimeters (about 20 inches) above the ground and dropping it onto the rollbars, which incurred no integral damage.

The full weight of the SLK was also dropped onto one A-pillar from 50 centimeters. Deformation was well within narrow tolerances determined by Mercedes-Benz to provide sufficient occupant protection.

From the beginning, emphasis in the design was focused on appeal to the young and to the young at heart.

Body

Track testing included a grueling one in the Texas desert.

The SLK is assembled in Bremen, Germany, where the manufacturing process makes use of robotic welding. Lasers are used to weld together the partition behind the SLK's seats. This wall is composed of a number of steel pieces that vary in thickness to provide the optimum strength required at every point without weighing more than necessary. Laser welding provides a smooth, continuous, consistent seam between the pieces that is exceptionally strong.

The resultant build quality and durability is especially important in an open-top car.

High Standards — Business as Usual

Testing goes beyond ensuring occupant protection. The SLK's body structure and retractable-hardtop system were tested for reliability and durability.

As an example, the top was continuously examined on test rigs and tracks all over the world. A non-stop program at the Sindelfingen Development Center exposed the new roof to various temperature and weather conditions. The hardtop completed an average of 20,000 activations without a fault. Afterwards, these test tops were still in working order. This test simulated opening and closing the roof six times a day for ten years!

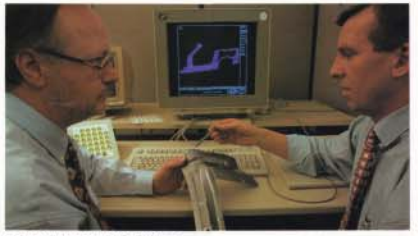
A non-stop test program at the Sindelfingen Development Center exposed the new roof to various temperature and weather conditions.

Testing at tracks included one in the Texas desert, where prototypes were run 24 hours a day over terrible roads that included gravel, railroad crossings, pot holes, ruts, manhole covers, and so forth. Here, the roof proved reliable under the toughest conditions.

Technology and Craftsmanship

Computers, robotics, and lasers that would have made compelling science-fiction reading only a couple decades ago are part of today's design and manufacturing experience at Mercedes-Benz. The SLK benefits from their utilization.

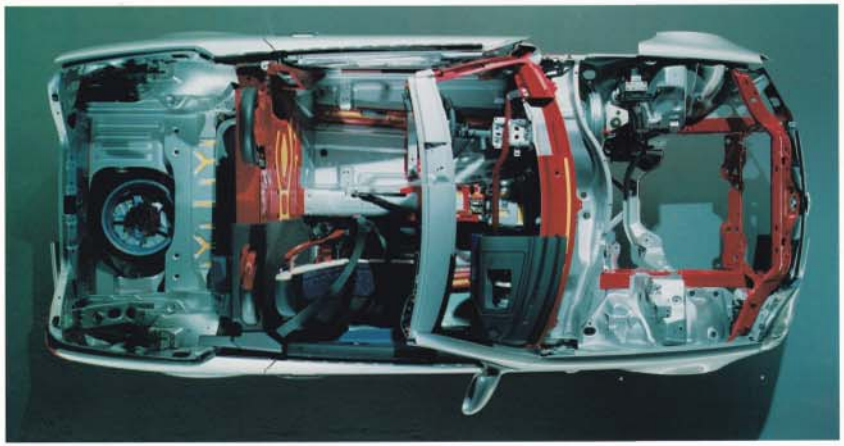
Computer testing alerted engineers to areas in the SLK's body structure that would benefit from the reinforcement provided by thicker sheet steel. Other sections were shown to require less strength, allowing a thinner gauge steel or other metals to be used to reduce weight. For example, the fuel tank partition is made of die-cast magnesium due to its light weight and easy recyclability.



On the computer-controlled testbed, body structure requirements are analyzed and calculated by simulation.

The manufacturing process makes use of robotic welding, including laser welding that provides a consistently strong seam.

The SLK Body Structure — a strong, rigid platform that serves as the foundation for the SLK's precise handling, reduced noise, and occupant protection.



Manufacturing Overview

Monocoque Structure

The SLK is manufactured utilizing monocoque (meaning "one shell") construction, which incorporates the body and frame in the same sheet metal. Monocoque technology provides the strongest steel automobile body for its weight.

High-strength/Low-alloy (HSLA) Steel

Used in critical structural areas, HSLA steel is stronger than standard steel of similar dimension (up to three times stronger). In fact, HSLA steel accounts for 32 percent of the sheet metal used in the SLK's body steel.

Note:In this section of the Guide HSLA steel is indicated in red.

Multiple-step Sheet-metal Fabrication

A large proportion of the SLK's sheet metal is rolled or stamped in multiple steps to maintain strength and integrity over the entire surface. The multiple-step process bends the steel a little with each stamping, allowing it to retain more of its integrity over a single-step stamping process.

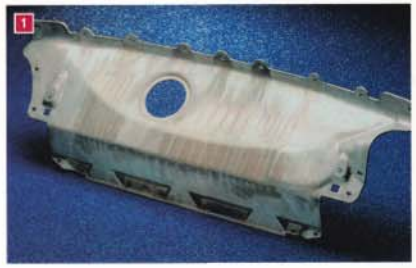
In addition, areas such as the floor pan and rear cabin wall consist of multiple pieces welded together instead of a single sheet, to improve strength and rigidity.

Crumple Zones

The SLK's front and rear sections are designed to crumple, or deform, in a programmed fashion during an impact. Crumpling helps to dissipate as much impact force as possible before reaching the passenger cabin. The SLK advances crumple-zone design with the introduction of its ellipsoid bulkhead.

1 Die-cast Magnesium Components

Contributing to the light weight of the SLK's body is the use of magnesium for the partition between the trunk and the fuel tank. Magnesium exhibits high strength at a weight savings of 50-percent over steel. Portions of the magnesium components that face high stress are cast with a thicker cross-section than areas that are not as highly stressed, adding to strength and rigidity.



This represents the first use of magnesium in the body structure by Mercedes-Benz.

Other body components utilizing magnesium include the two-part cover behind the rollbars and the engine cam cover.

Front Structure

1 Front Transverse Member and Upper Frame Crossmember

Across the front of the body, an HSLA-steel transverse member connects the two front longitudinal members. Solidly secured to the SLK's longitudinal members, the transverse member channels some of the impact energy from an offset collision to the side of the vehicle not involved in the collision.

The SLK's upper frame crossmember performs the same function in an offset collision.

2 Longitudinal Members

The SLK's longitudinal structural "frame" members increase in width and height as their span nears the bulkhead. In a frontal collision, the longitudinal members progressively absorb and dissipate impact forces as they approach the passenger cabin.

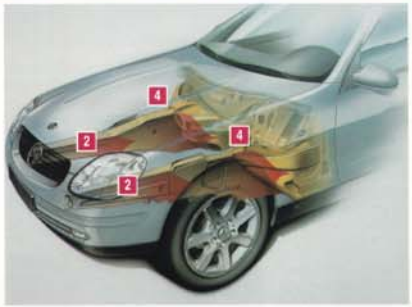
3 Diagonal Struts

Struts attach the outer ends of the transverse members to the longitudinal members, helping to resist bending forces in minor impacts in which the longitudinal members are not directly involved.

4 Ellipsoid Bulkhead Areas

Each of the SLK's front longitudinal members connects to an ellipsoid-shaped part of the bulkhead. New and unique, the ellipsoids are cup-like shapes made of thick sheet steel. Their function is to transfer frontal impact energy to the floor pan, transmission tunnel, and side members — and away from the occupants in the passenger cabin.

The ellipsoid bulkhead effectively enlarges the front crumple zone by about two inches compared to using a three-prong forked member in the same vehicle, which helps to enable optimum force distribution in a frontal impact.

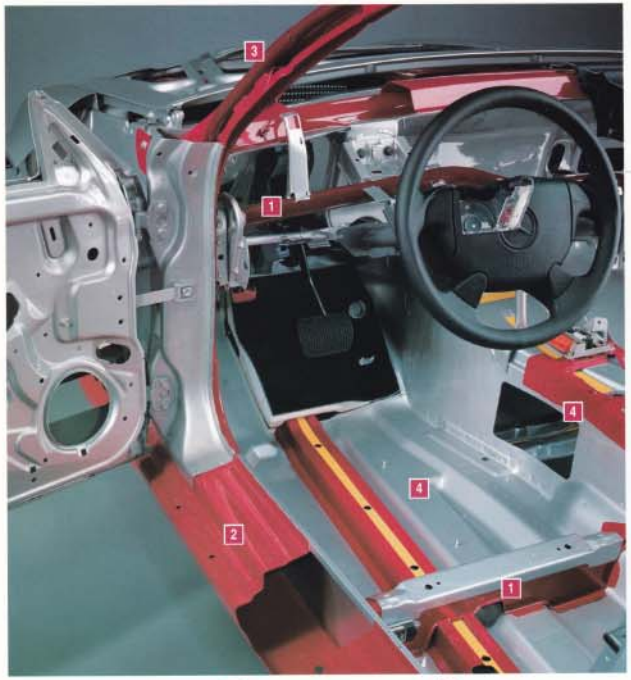


The ellipsoid area also helps to resist the rearward movement of powertrain components in a frontal impact. In addition, the design opens up interior floor space for extra leg room.

The ellipsoid bulkhead concept is planned to be used in forthcoming Mercedes-Benz models, replacing the three-prong forked member used previously. The ellipsoid feature is an example of the continuing effort that Mercedes-Benz is making to improve safety.

5 Diagonal Bracing

Braces attach the front-axle crossmember to the side members. They act as reinforcements, helping to stiffen the SLK's chassis, improving stability and ride comfort.



Cabin Structure

Safety Frame

The SLK's passenger cabin is surrounded by a safety frame structure consisting of reinforced pillars, crossmembers, door beams, a multiple-piece floor pan, sturdy rear bulkhead, and rollbars. The structure composed of these components helps to protect occupants in the event of an accident.

1 Passenger Area Crossmembers

An HSLA-steel crossmember connects the floor rails to the drivetrain tunnel underneath the seats. Another crossmember runs below the cowl between the A-pillars. A third crossmember connects the B-pillars above the rear panel. These crossmembers help to brace and maintain the integrity of the passenger compartment in side impacts.

2 Side Members

The SLK's side members are exceptionally strong, made of 1.5-millimeter-thick, high-strength steel. In addition, the members have a wide cross-section.

The materials and proportions of the side members improve their ability to help protect occupants in front, rear, and side impacts, acting as a rigid barrier against outside forces.

3 Reinforced A-Pillars

Since the SLK must be able to afford protection to occupants in a rollover without the benefit of a fixed roof, the windshield frame and fixed rollbars are designed to help retain passenger-cabin space. The A-pillars' three-piece sandwich design is reinforced with two HSLA-steel tubes within each pillar, one tube fitting inside the other. The inner tube reaches up to the upper part of the windshield frame. The tubes strengthen the A-pillars, which must withstand high forces in a rollover. The outer tube improves the stiffness of the windshield frame, and the inner tube helps to support the A-pillar at the height of the instrument panel.

The connection between the A-pillars and the side members has been reinforced by thick, high-strength steel plates. This connection contributes substantially to the safety cell's sturdiness. In tests conducted by Mercedes-Benz, one of the A-pillars proved capable of supporting the SLK's body weight with minimal deformation when dropped from 50 centimeters (about 20 inches).

Bonded Windshield

Adhesive bonds the windshield to the frame. The glass adds to the rigidity of the SLK's overall structure.

4 Floor Pan and Drivetrain Tunnel

The SLK's floor pan consists of multiple pieces welded together, which makes it stronger and more rigid than if it were a single-stamped steel sheet.

The drivetrain tunnel is made of thick sheet steel and reinforced by HSLA steel. It helps to deter drivetrain intrusion in case of a frontal impact and adds to longitudinal rigidity.

Integrated Doors

The SLK's doors incorporate tubular side beams and robust hinges and locks. These components integrate the doors into the body structure to help protect occupants in a side impact.

5 Fixed Rollbars*

The SLK's rollbars are bolted to the high-strength rear-bulkhead crossmember. Made of heat-treated, high-strength steel, the rollbars are about 1.6 inches in diameter. Foam-plastic sheathes cover the rollbars.

In rollover tests conducted by Mercedes-Benz, the rollbars maintained integrity when the SLK was dropped on them from 50 centimeters (about 20 inches).

6 Rear Bulkhead

Like the floor pan, the SLK's rear bulkhead consists of multiple pieces welded together by lasers. The thicknesses of the bulkhead's different parts are determined by computer to withstand varying degrees of stress. The bulkhead's outer edges must sustain high stresses, so they are made of steel that is 1.5 mm thick. The central portion is made of steel 0.9 mm thick. Tailoring the bulkhead helps to reduce overall weight while maintaining a high degree of strength.

The rear bulkhead separates passengers from the trunk and fuel tank. It also improves overall structural rigidity to resist body flexing.

* The rollbars can improve the level of rollover protection compared to an open vehicle without them. But no system, regardless of how sophisticated, can eliminate the chance of injury in an accident. Please always wear your seatbelt!

Rear Structure

1 Rear Transverse Member

A full-width, HSLA-steel transverse member enhances the SLK's protection against offset impacts. Attached solidly to the ends of the longitudinal members, it channels some of the strike forces from an offset impact to the side of the car not directly involved in the collision.

Forked Member

The rear longitudinal members split into the floor pan crossmembers and the side members. In the event of an impact, these forked members transfer some rear impact energy to the crossmember and side members, and around the occupants in the passenger cabin.

2 Trunk Lid

The SLK's trunk lid is hinged so that it can open from the front (during roof operation) or the rear (as a standard trunk lid). It has a tubular frame that adds to its rigidity. The lid has locks and a safety catch system that help to prevent intrusion into the cabin when it is retracted. Even with the roof lowered, special brackets help prevent the lid's frame from being pushed forward. In addition, the rollbars provide a second line of defense against intrusion.

3 Fuel Tank and Filler Neck

The SLK's fuel tank and fuel-filler neck are positioned above the rear axle. There, they offer some protection against deformation in an impact. Magnesium is used for the partition between the trunk and the fuel tank, providing high strength while lighter in weight than steel.

Corrosion Protection

Galvanization/Rust Inhibitors

Much of the SLK's body structure consists of galvanized steel. Other corrosion protection includes sealed A-pillars, front fender liners, zinc phosphate coating, cathodic primer dip, and PVC body undercoating. These measures inhibit rust and corrosion, helping to ensure the strength and durability of the SLK's body.

The SLK Exterior Features — snappy roadster appeal with consideration for occupant and pedestrian safety given to the design of every component.

Styling

Roadster Revival

In proportion and styling, the SLK is a classic Mercedes-Benz roadster. Visually, it immediately associates with the 300 SL and 190 SL of the 1950s and 1960s. The grille, the twin power domes on the hood, the wedge shape, the short overhangs, and the muscular body are all that is new, yet reminiscent of a grand heritage, in the SLK.

The SLK's innovative retractable hardtop accomplishes two seemingly contradictory objectives:

- Make the SLK a coupe when its top is raised
- Make the SLK a roadster when its top is lowered

Either way, it has elegant, contemporary styling that pays homage to its ancestors without sacrificing its own identity.

Aesthetically clean and simple, the SLK's lines flow into one another with top up or down. Styling communicates that this is a sporty, fun car.

Another quick note about styling is the use of the traditional Mercedes-Benz Three-Pointed Star with crest on the hood, steering wheel, and the wheel hubs. This touch of heritage helps aficionados recall the legendary Mercedes-Benz roadsters of the past.

The 190 SL

The legendary 300 SL – the powerdomes.

Air and Water Management

Air Flow/Coefficient of Drag

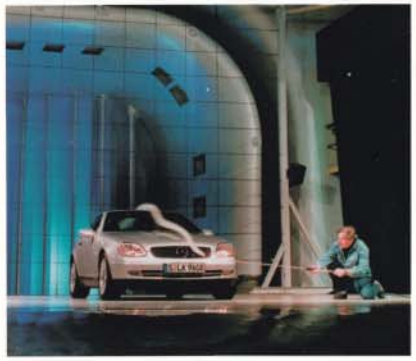
With the roof in place, the SLK has a low C_d of 0.35, remarkably good for a car of its proportions. This drag coefficient is sufficient enough to enhance fuel economy and interior quiet.

Still, air flow was engineered for proper engine cooling, roadholding, and cross-wind stability. Even with the top down, the SLK's design contributes to low wind noise and minimal buffeting in the passenger cabin.

Water Flow

Various body components manage water flow away from glass areas, improving visibility around the vehicle in wet weather.

- The A-pillars channel water onto the hardtop
- Channels on the hardtop direct water to the rear, away from the side windows and doors
- Channels continue on either side of the back window, down the C-pillars to the rear deck lid
- Water is directed around the deck lid, down the rear valance, and off the car
- Exterior mirrors direct water down and away from the side windows



Front

Pedestrian-considerate Surfaces

In the event of an accident involving a pedestrian or a cyclist, the SLK's front end is designed to help reduce the severity of injury. The bumper, grille, and headlamps are positioned to help lift a body onto the hood, which will yield to cushion the impact. The fenders are also designed to yield to a body's weight. If struck, the side mirrors will fold in either direction.

1 Bumper

The front bumper has a smooth, rounded cover that matches the color of the body. The bumper cover extends to the edges of the front wheel-arch openings, reducing the amount of body damage to that part of the SLK in a minor impact.

2 Mini Spoilers

Under the bumper, in front of the wheel arches, mini spoilers deflect air flow toward the road. These mini spoilers significantly reduce rolling resistance, thereby improving SLK's aerodynamics and roadholding ability.

3 Grille

The grille's positioning angles it to correspond to the angle of the front bodywork, offering a smooth transition onto the hood. Besides helping to reduce injuries to pedestrians and cyclists, the hood's design improves air flow.

The grille's design also strikes a balance between allowing cooling air into the engine compartment and improving aerodynamics. The stylish holes in the grille function to allow air to pass through to cool the radiator. The diameters of the holes at the center are greater than the diameters of the holes toward either side — allowing more air through where it is needed most.

4 Headlamps and Directional Assemblies

The SLK's headlamp assemblies present a smooth surface from bumper to hood, in keeping with the other front-end components.

The lenses are made of coated polycarbonate, a high-quality plastic. Headlamp design benefits are:

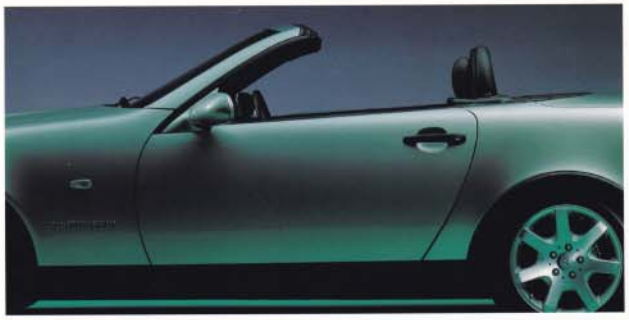
- Polycarbonate properties make it less susceptible to fracturing caused by stone chipping — improving durability and the quality of projected light
- Polycarbonate weighs less by about 50 percent, contributing to overall lighter weight
- The lighting unit yields contributing to injury protection in a pedestrian impact

5 Heated Headlamp Washers

A dash-mounted switch activates the washer assemblies, which project from under the headlamps and direct a high-pressure spray onto the lenses. The nozzle assemblies fit flush with the body when not in use. Clear lenses contribute to driving safety by maintaining better headlamp illumination.

6 Fog Lamps

In keeping with Mercedes-Benz tradition for the SL and coupe models, the SLK's fog lamps are mounted in the air dam below the bumper. Fog lamps provide additional illumination during inclement weather, complementing the low-beam headlamps.



The transmitter can be programmed to operate only the driver's door or both doors, along with the trunk and gas lids.

The system automatically locks the doors when the SLK reaches about three miles per hour, for added occupant safety. Central locking also locks automatically in 40 seconds if a door is not opened after unlocking the system.

With the first activation, the transmitter automatically changes codes each time it is used, adding to the SLK's security.

The locking system's receiver is mounted next to the inside rearview mirror.

Cabin

1 Double-arm Windshield Wiper

The SLK's double-arm wipers clear 91 percent of the windshield's daylight opening, helping to maintain the driver's forward visibility in inclement weather.

2 Side Mirrors

The body-colored side mirrors have an integrated appearance. Heating elements prevent frost and fogging, helping to maintain the driver's visibility to the rear.

Mirror design includes a groove around the perimeter of the housing and a spoiler along the bottom. Rainwater collects in the groove and flows down to the bottom of the housing. As the wind blows away the moisture, the spoiler deflects it so that it hits the rearmost area of the side window — out of the driver's line of sight. These small, aerodynamic tweaks contribute to driving safety.

3 Overlapping Doors and Wedge-shaped Strikers

The SLK's doors overlap the bodywork at the B-pillars, helping to prevent jamming in an impact. Robust door hinges and strong, wedge-shaped lock strikers are intended to keep the doors closed during an impact for enhanced safety, then allow them to open afterwards.

4 Door Handles

The door handles have a reach-through design, which allows a stronger grip than the typical automotive flipper-type handles. The design is intended to allow doors to be opened easier from the outside, especially in an emergency, for improved safety.

5 RF Remote Locking

A key-fob-mounted transmitter operates the central locking and antitheft systems. RF (radio frequency) signals can trigger the systems from as much as 100 feet away. The SLK's lights flash three times when central locking is locked and one time when it is unlocked.

6 Folding Hardtop

The retractable hardtop automatically folds into the trunk or raises at the push of one button on the console. When raised, the hardtop provides protection from the elements and added security for anything left in the passenger cabin.

The raising and lowering sequences are similar to those for the SL and Cabriolet models.

See "Ask the Engineer" for a detailed description of the top raising and lowering.

Rear

1 Bumper/Radio Antenna

The rear bumper has a smooth, rounded cover that matches the color of the body. The bumper cover extends to the edges of the rear wheel-arch openings, reducing the amount of body damage to that part of the SLK in a minor impact.

The radio and integrated telephone antenna is embedded in the bumper, where it is secure from car-wash damage and vandalism.

2 Decklid

The decklid serves a dual function, so it is hinged at the front and at the rear. It opens from the rear like a normal decklid, and it opens from the front to allow the retractable hardtop to lower into its storage position in the trunk. (See "Ask the Engineer.")

The decklid incorporates a spoiler that helps to counteract lift on the rear axle. Reducing lift improves roadholding.

The decklid opens at the top of the bumper to provide a low liftover height, for easier access to the trunk.

3 Decklid-mounted Stop Lamp

The center high-mounted stop lamp is mounted aesthetically on the rear edge of the decklid. It uses LED technology, which enhances its visibility under any light condition. The LED stop lamp also illuminates quicker than conventional lights, and the lights have a longer life. The smaller size of the LED assembly enhances the SLK's rear-end styling.

4 Rear Lighting Assemblies

The rear lighting assemblies have a familiar design — a bi-chromic triangular unit housing taillamps, stop lights, turn signal lamps, and rear fog lamps.

The bi-chromic red-and-gray coloring enhances the SLK's appearance. The lenses have a ribbed design with multiple surfaces, which helps to make the lamps more visible. Air flowing around the rear of the car carries away dirt and water, leaving the surfaces of lenses clearer to following traffic. When illuminated, the taillamps are instantly visible.

The brake lights are mounted at the highest point in the taillamp assembly — at the top of the fender. Their positioning contributes to their visibility.

A fog lamp is mounted in the outboard assembly. Its illumination increases the SLK's visibility to following traffic in very poor lighting conditions.

Fuel-filler Pipe

The SLK's fuel-filler pipe is located above the rear axle on the right-hand side, the location in which it is statistically the least likely to be involved in an impact and, therefore, the least likely to be damaged. Should the car run out of fuel, the right side is usually the side away from traffic. Adding fuel from the right in such an emergency is safer than standing between traffic and the side of the car.

Body

Ask The Engineer

Question:
How does the retractable hardtop work?

Answer:
Like the SL and Cabriolet folding soft tops, the SLK's hardtop retracts by an electro-hydraulic system. When lowered, the top fits in the upper portion of the trunk, covered with magnesium panels. Like the SL, the SLK's top requires no manual intervention.

Every opening and closing is a six-stage process that takes only 25 seconds. At the center of the process is a hydraulic pump, located in the trunk, which is managed by an electronic control unit (ECU).

The vehicle must be stopped, the roll-out luggage cover in place, and rear decklid closed for the system to operate.

The six stages in lowering the roof:

1. The front and rear side windows open
2. The roof unlocks
3. The rear decklid raises, hinged at the back
4. The roof opens and the cover behind the rollbars raises; the roof folds into the trunk; then the cover closes
5. The rear decklid closes
6. The front side windows close

Raising the roof reverses the process:

1. The front side windows open
2. The rear decklid raises, hinged at the back
3. The roof rises out of the trunk and closes; at the same time, the cover behind the rollbars raises and closes
4. The rear decklid closes
5. The roof locks
6. The front and rear side windows close

The hydraulic pump that manages these processes operates five hydraulic cylinders. Two operate the roof; two move the rear decklid, and one locks and unlocks the roof at the windshield frame. Sensors placed at critical points throughout the system provide feedback to the ECU to which it is connected. (This is the same ECU that controls the windshield wipers, turn signals, heated rear window, and power windows.)

Mercedes-Benz considers this to be the first standard metal folding roof of its type, for an automobile designed from the beginning to be a coupe and a convertible. To allow it to retract, the steel hardtop is divided into two parts. The front has a frame that bolts to the windshield frame in two places. The rear is made up of the back window and the C-pillars. The window is safety glass, and it includes a defroster.

When the top is in place, it protects against the elements and against wind noise — to a level that might be expected of a coupe.

The rear decklid opens at the front and the rear by a seven-link hinge on each side. The hinges mount to the decklid by its frame and to the body at the central crossmember.

Even with the top folded into the trunk, the SLK can handle 3.6 cubic feet of luggage — as long as it does not protrude into the space marked by the vinyl partitioning screen. (With the top raised, trunk capacity opens up to 9.5 cubic feet.) The screen must be in place or the top will not function.

Side window notes:

- The rear side windows only lower when the top is retracted
- Both front side windows may be lowered or raised by quickly double-clicking the hardtop control button on the console

Caution: Customers should be urged to use caution when raising or lowering the hardtop. The mechanisms that move the roof into position could prove dangerous. Children, especially, should be kept aside when the top is being operated.

Part Three — Chassis Presentation

While the SLK's body structure serves as the rigid foundation for the vehicle's passive-safety systems, it also provides the platform for its chassis. Chassis systems and components are at the core of the SLK's active-safety systems, which provide the driver with the capability of avoiding an accident before it can happen.

The SLK's chassis, body, powertrain, and interior systems function interdependently, with its chassis systems in a front-engine/rear-drive layout. Mercedes-Benz engineers made the SLK exciting to drive, with nimble, secure, and predictable handling. At the same time, it retains the luxuriously comfortable ride expected of a Mercedes-Benz.

Key areas to note in this section:

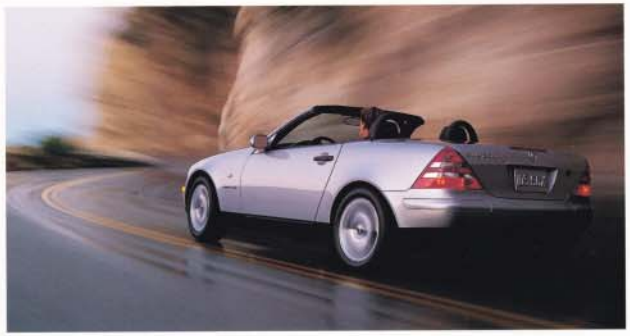
- *Double wishbone front and multilink rear suspensions enable high-performance handling*
- *Recirculating-ball steering dampened against road shock offers precision and comfort*
- *Four-wheel disc brakes and standard ABS add to the SLK's active-safety capabilities*

Chassis Presentation Contents

● Indicates a Core Technology feature.
Color highlighted text indicates a new or revised feature.

The SLK and Active Safety

Every Mercedes-Benz vehicle is engineered to provide responsive, predictable handling and agility. This only begins to describe the SLK's performance characteristics.



Chassis

More Than the Sum of Its Parts

In developing the SLK, Mercedes-Benz' engineers started with the C-Class platform as a base — the same platform up on which the high-performance C36 AMG is built. Chassis components best suited to providing sports-car handling were adapted from the C-Class and other Mercedes-Benz models, so most will seem familiar. However, their previous applications may not have provided as animated a driving experience as in the SLK.

The SLK's ride and handling exhibit all of the qualities that Mercedes-Benz deems necessary to promote spirited driving, helping to give the SLK its own distinct character. The handling agility that makes the SLK fun to drive also enhances active safety.

Avoiding an Accident

As shown in the preceding "Body Presentation," Mercedes-Benz endows its automobiles with comprehensive structural passive-safety systems that help to protect occupants in an impact. Every Mercedes-Benz model also has abundant active-safety systems as well — systems designed to enable the driver to avoid collisions.

An automobile's ability to respond to driver control in an emergency begins with its engine/drivetrain layout. The SLK's front-engine/rear-wheel-drive layout is a configuration that lends itself to the performance handling expected of a sports car. With the drive wheels in the rear, the front wheels can be applied to providing directional stability and braking control.

With the C-Class' rear-wheel-drive layout as a foundation, the SLK's chassis components were chosen for optimum responsiveness. In addition, its chassis design contributes to ride comfort, which has not been overlooked.

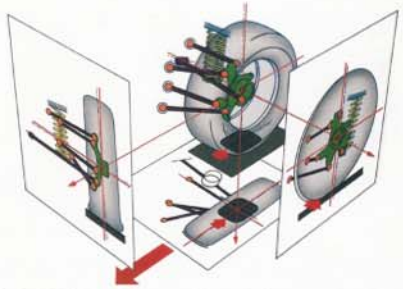
The wishbone-shaped upper and lower control arms patterned after C-Class, E-Class, and S-Class suspensions.

A Superior Suspension System

In its front and rear suspensions, the SLK differs significantly from its competitors. In front, the SLK has a double-wishbone suspension, with wishbone-shaped upper and lower control arms. This design permits dampers and springs to be mounted separately for greater control and comfort, and it allows substantial wheel travel.

Competitors use MacPherson struts in their front suspensions, which reduces wheel travel, lending to a rougher ride and reducing stability. The struts also help to limit their turning circles, which are wider than the SLK's.

The front suspension mounts to the body by large rubber bushings. They help to absorb road shock, contributing to control and to a smooth, comfortable ride.



Introduced in 1983, the multilink rear suspension is a standard feature on every Mercedes-Benz model, and it is still one of the most advanced suspension systems in the world.

The SLK's rear suspension is a version of Mercedes-Benz' sophisticated five-link multilink independent suspension system. Its five links are refined and tuned for the SLK so that it positions each rear wheel to help deliver neutral handling for improved driver control. The multilink system allows virtually no unwanted or unexpected rear-wheel steering motion. This rear suspension system contributes to the SLK's well-controlled, refined ride.

Other significant aspects of the SLK's suspension system are its antidive and antisquat geometries. These designs counter sudden weight transfer from rear to front during heavy braking and from front to rear during hard acceleration. Antidive and antisquat geometries help to keep the SLK as level as possible, with the front and rear wheels properly loaded and balanced. As a result, the driver has better control during acceleration and, especially, braking.

Braking Efficiency and Control

Since its earliest days, Mercedes-Benz' philosophy has included the idea that an automobile's braking system is basic to its ability to avoid an accident. The SLK's braking system is the result of decades of Mercedes-Benz development.

For example, Mercedes-Benz pioneered the development of the Antilock Braking System (ABS) for production automobiles. ABS has been standard equipment on every Mercedes-Benz model sold in the United States since 1988. Along with Robert Bosch, Mercedes-Benz continues to refine and evolve ABS, making it one of the most sophisticated systems in the industry.

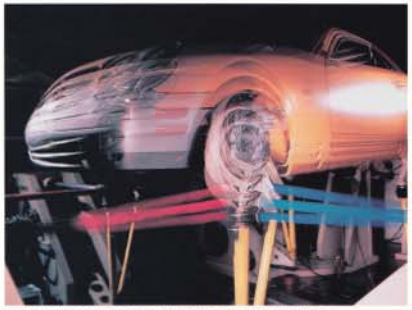
The SLK's brakes were adapted from the E-Class, with vented front discs and solid rear ones. In front, cooling ducts direct air to the brake discs to cool them, helping to reduce brake fade.

Steering Around Trouble

The SLK utilizes a recirculating-ball steering system derived from the C-Class platform. More specifically, the system is a modification of the one found in the C280 Sport. Because of the SLK's shorter wheelbase and narrower track, its linkage is more direct, so the steering ratio was reduced. The result is crisp steering that matches the feel of the system in the C280 Sport.

Other features of the SLK's steering system include:

- A deformable, corrugated steering column that collapses and bends aside in a frontal impact to help prevent it from pushing back toward the driver
- The steering box located behind the front suspension, helping to reduce the chances of it being pushed rearward in a frontal impact
- A standard steering damper, which helps reduce the effects of road shock on the driver



The body and suspension are tortuously tested on the "shaker" machine.

Up to the Test

Before track testing of the first SLK prototypes took place, they were "driven" by computer. Computers simulated the forces and vibrations that act on the wheels, enabling engineers to begin determining the optimum placement for suspension springs and dampers.

Then bench tests of components were run to measure actual performance during various maneuvers. Hydraulic machines to which bodies and chassis were attached simulated rough road surfaces to make sure that all components were rigid enough to ensure precise driver control.

Finally, engineers tuned the suspension system on test grounds, race tracks, and ordinary roads.

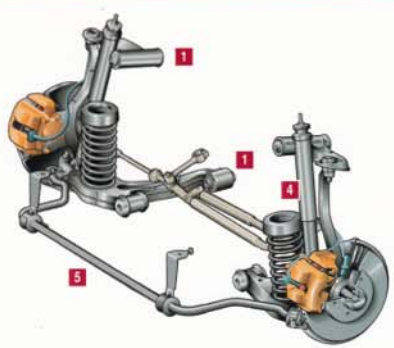
System Interdependency

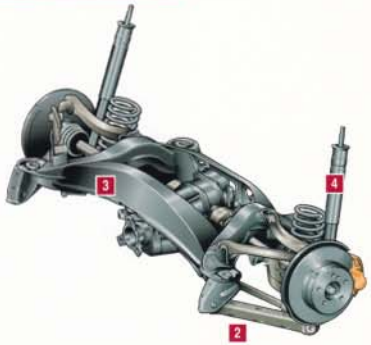
The differential and multilink rear suspension are attached to a rear subframe before being installed on the body. This process allows better access during assembly, so that the rear axle and the suspension's multiple links can be fitted precisely.

(left) The differential and multilink rear suspension are attached to a rear subframe before being installed on the body.

Chassis

The SLK Suspension System — tuned for precise handling, providing driving fun, superb control, and ride comfort.





Chassis Layout

Front Engine/Rear Drive

Spreading out the engine and drivetrain components along the length of R170's body structure helps to balance the overall distribution of the car's weight between the front and rear. A more even weight distribution contributes to balanced handling.

Front Suspension

1 Double Wishbones

The SLK has a double-wishbone front suspension, similar to the ones on the C-, S-, and E-Class.

The suspension consists of wishbone-type upper and lower control arms, coil springs, gas-pressurized dampers, stabilizer bar, and long suspension travel. These components are designed to provide superb ride and precise handling.

As a front wheel moves up and down, the double-wishbone suspension allows little change in toe-in and camber. The wheel maintains the same angle to the road, which enhances control and stability. A slight change in toe-in occurs with maximum compression of the springs, but that contributes to better straight-line stability, self-steering characteristics, and tire wear.

Rear Suspension

2 Five-link Multilink

The SLK's multilink rear suspension consists of five arms on each side, coil springs, gas-pressurized dampers, and a stabilizer bar. The suspension system allows independent movement of each rear wheel.

Most importantly, the Mercedes-Benz multilink rear suspension offers predictable handling. It inhibits rear-wheel steering effects when cornering or driving on bumpy roads, leading to more precise handling for a safe and comfortable ride.

3 Rear Subframe

A rear subframe is mounted to the SLK's floor pan by large rubber bushings. The differential and rear suspension are attached to the subframe. Besides providing a rigid foundation for these components, the subframe reduces the transfer of noise and vibration from the suspension and differential to the cabin.

Suspension Elements

4 Gas-pressurized Dampers

The SLK's dampers were derived from those used on the E-Class. All four are charged with gas to maintain their effectiveness, even during heavy use. The dampers are mounted close to the centers of the wheels to maximize their damping ability.

The dampers have degressive properties and built-in stop springs, which increase damper firmness as they near maximum compression. Degressive damping and the stop springs limit body roll, contributing to the SLK's level cornering ability.

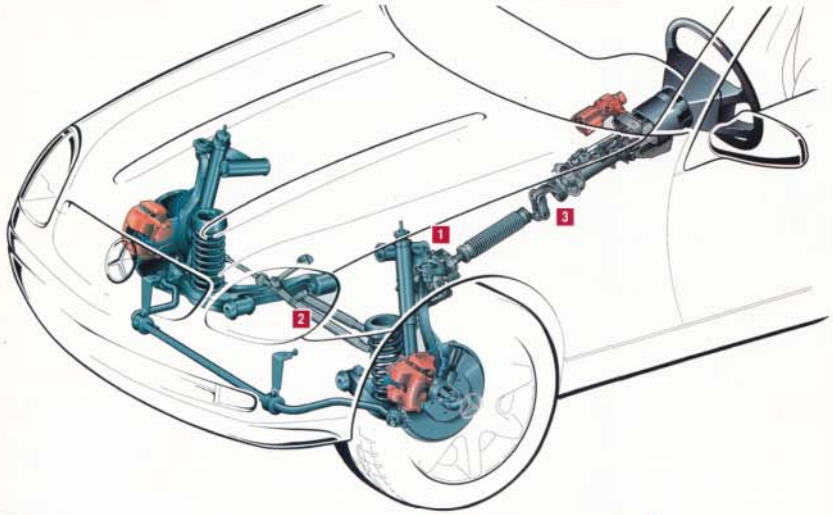
5 Stabilizer Bars

The SLK's front and rear suspension systems include stabilizer bars (also referred to as "antisway bars" and "antiroll bars"). A stabilizer bar twists during cornering, acting like a torsion bar to keep the body level and to reduce body lean.

Antidive, Antisquat Geometry

Along with all other Mercedes-Benz models, the SLK's suspension system is designed to resist diving forces during braking and squatting forces during acceleration. By reducing these forces, the suspension geometries contribute to proper headlamp aim, to a more comfortable ride, and to safe, predictable handling.

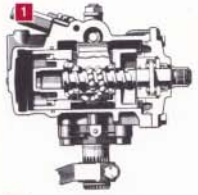
The SLK Steering System — precise control without harshness, providing greater driving comfort and active safety.



1 Power-assisted, Recirculating-ball Steering

The SLK's recirculating-ball steering system, adapted from the C-Class (C280 Sport) system, allows the driver to maintain precise steering control. Recirculating-ball steering is not prone to wear or damage, keeping the steering tight over a long time period.

Because the steering system was derived from the C280 Sport, provisions had to be made to allow for differences in the SLK's body length and front-wheel track. As a result, the SLK's steering is about 6 percent more direct than the C280 Sport's, resulting in a balance between steering comfort and the agility expected of a sports car. The steering is comparable to the C280 Sport's steering (SLK – 3.0/C280 – 3.2 turns lock-to-lock.)



2 Steering Damper

The steering system incorporates a transverse damper. It provides the SLK driver with enhanced steering comfort by reducing vibration and wheel shudder.

Idler-arm Bushing

A bushing in the SLK's idler-arm mount adds to the crispness of steering feel. It also helps maintain proper wheel toe-in, increasing steering precision and tire life.

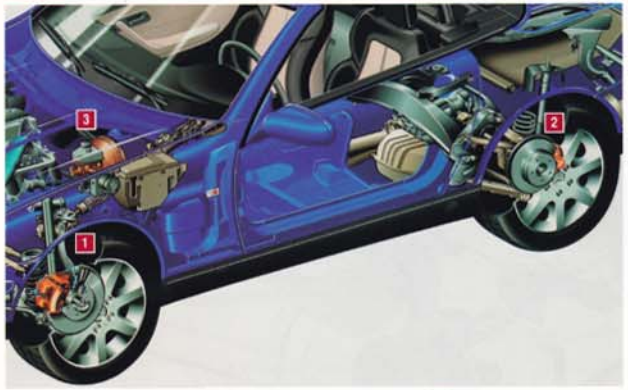
Quick, Crisp Steering

The SLK's wheels move from full left to full right in only 3.0 turns of the steering wheel. Quick handling is the result. Contributing to the quickness of the steering is a one-piece center link in the steering linkage.

3 Collapsible Steering Column

As in all Mercedes-Benz models, the steering column is designed to deform in an impact to help protect the driver. In addition to this core feature, the SLK's system incorporates a special link attached to the bottom of the steering column. The link is designed to help keep the column and steering wheel in position in a frontal collision.

The SLK Braking System — positive, fade-resistant stopping performance with provisions for maintaining steering control.



Four-wheel Discs

Disc brakes provide maximum stopping performance for the SLK with minimal fade. (Fade is the tendency of brakes to lose effectiveness as they heat up from heavy use.) The SLK's components were adapted from the E-Class' brake system.

Special cooling air ducts and deflector plates channel air to the discs.

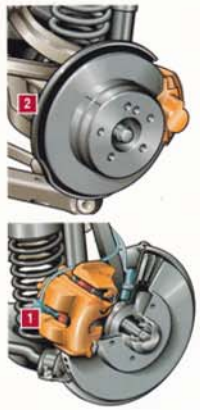
A warning lamp on the dash indicates that brake pads require replacement.

1 Ventilated Front Discs

SLK's large, ventilated front discs are 288 millimeters (11.3 inches) in diameter. The discs are cooled more effectively by air drawn into the internal cooling slots from air ducts built into the front bumper. Large brake pads, held by full-floating calipers, provide consistent performance, stability, and longer service life.

2 Rear Brake Discs

At the rear, the SLK has large, 279-millimeter (10.9-inch) solid rotors with fixed calipers. The disc brakes deliver well-controlled stopping power to the rear wheels.



3 Vacuum Brake Booster

The master cylinder for the SLK's brake system has a large vacuum booster that is 10 inches in diameter. The booster provides superb braking assistance and allows easy brake modulation, giving the driver a better sense of control when stopping the car.

Dual Hydraulic Brake Circuits

The SLK's braking system is controlled through two hydraulic circuits – one for the front brakes and one for the rear. Should one circuit fail, the other one provides emergency back-up, adding to occupant safety.

Plastic-coated, galvanized-steel hydraulic brake lines resist corrosion and enhance durability.

4 Parking Brake

The SLK's parking-brake system consists of brake pads that hold the rear wheels by drums built into the rear brake rotors. The system is actuated by a lever mounted on the transmission tunnel connected to a cable.

Antilock Braking System (ABS)

ABS, pioneered by Mercedes-Benz and Bosch for automotive use, provides better maneuverability and improves stopping on wet or dry roads, especially in emergencies. ABS senses when a wheel is about to lock up during braking. The system automatically modulates the hydraulic pressure to the affected wheel, providing pumping action to the brakes helping to resist lock up.

The system's wheel-speed sensors use gold-plated contacts for added reliability. In order to diagnose ABS for possible faults, it is tied into the diagnostics network through the CAN data bus.

The SLK Wheels/Tires — providing a balance between handling performance, sporty appearance, and ride comfort.

1 Light-alloy Wheels

The SLK has uniquely styled, seven-spoke, cast-aluminum wheels that have different measurements in the front than in the rear. The front wheels measure 7.0" x 16", and the rear wheels measure 8.0" x 16". The staggered sizes contribute to handling and stability, and they also add to the SLK's sporty appearance.

The light aluminum alloy reduces the SLK's unsprung weight, contributing to quicker suspension response and improved, sporty handling.

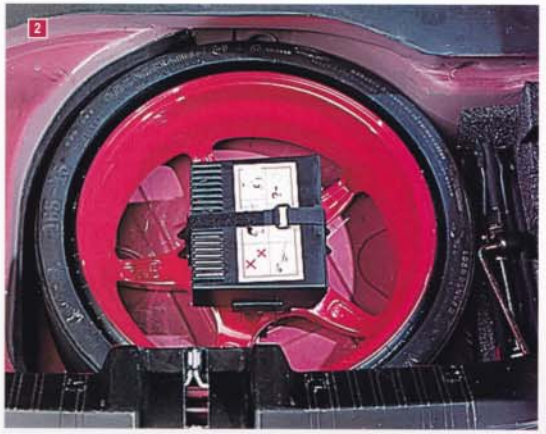
Low-profile Tires

The SLK's high-performance tires have staggered sizes, with wider, lower-profile tires in the rear than in the front. The wider rear tires provide a larger contact patch, adding to traction under hard acceleration and stability during cornering. Staggered tire sizes also enhance the SLK's dynamic appearance.

The front tires are 205/55R16, and the rear tires are 225/50R16. They are V-rated, which means that they can withstand sustained speeds of up to 150 miles per hour. The tires' low aspect ratios indicate relatively stiff sidewalls, which contribute to their performance cornering capabilities.

2 Spare Tire

In order to maximize space in the trunk, the SLK comes standard with a space-saving, collapsible spare tire. An electric air pump is provided to fill the spare when needed.



Ask The Engineer

Chassis

Question:
Why is the SLK equipped with recirculating-ball steering when the E-Class broke new ground with a rack-and-pinion system?

Answer:
Remember that the SLK's platform is based on the award-winning C-Class — not the E-Class. And C-Class models have a recirculating-ball system. Engineering a rack-and-pinion system for the C-Class' front suspension system would not have been economically efficient and would not have realized significant performance benefits.

Recirculating-ball steering offers substantial benefits:

- It functions with virtually no play within the system
- It experiences little wear, contributing to its long-term durability
- SLK benefits from the advanced linkage characteristics of the C-Class steering system

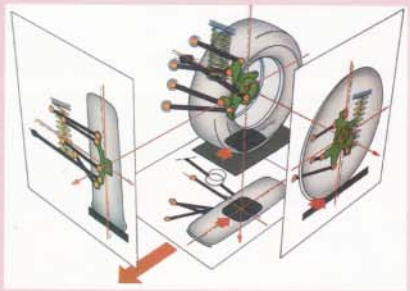
Question:
Other manufacturers claim to have multilink rear suspensions. How is Mercedes-Benz' multilink different? What makes it better?

Answer:
One of the major differences between Mercedes-Benz' multilink design and that of other manufacturers is its use of five links instead of three or four. Another difference is design itself.

Mercedes-Benz' multilink attaches each rear wheel by five flexibly mounted, separate links. They work together to limit wheel movement in five possible planes, guiding it through its up-and-down motion without deviating from its directional alignment. The geometry of the links allows a generous 205 millimeters of vertical travel, which provides greater comfort when traveling on rough roads.

Benefits of the five-link multilink rear suspension:

- Neutral handling — links comply to forces encountered from just about any angle
- Excellent straight-line stability — minimal toe-in and track width when springs compress or decompress
- Good cornering accuracy — negative rear-wheel camber only changes to a small extent and never becomes positive when springs rebound
- Optimum antisquat and antidive properties
- Virtually no undesired reactions in case of sudden load changes
- Low lateral roll in combination with the stabilizer bar
- Low road roar and tire vibration — flexible insulation between subframe and floor pan



Part Four — Powertrain Presentation

The SLK's powertrain utilizes the same sophisticated technology as the powertrains in the rest of the Mercedes-Benz lineup, and then adds more. The "Kompressor" — the SLK engine's supercharger — recalls technology associated with legendary Mercedes-Benz automobiles of the past.

A supercharged, four-cylinder engine was chosen to power the SLK because it could be designed to accelerate like a six-cylinder engine while achieving a four-cylinder's fuel economy. It enables the SLK to be as much at home on the Autobahn as it is tackling the gnarled turns of a favorite back road.

Along with its Kompressor engine, the SLK's five-speed automatic transmission, driveline, and ASR enhance driving pleasure and active-safety capabilities.

Key information in this section:

- *Changes made to the 2.3-liter engine to enable high-performance supercharging*
- *Sophisticated electronic engine management with CAN data bus network*
- *A five-speed electronically controlled automatic transmission that adapts to individual driving style*
- *Standard traction-control system — ASR*

Powertrain Presentation Contents

● Indicates a Core Technology feature.
Color highlighted text indicates a new or revised feature.

Sophisticated Technology
— innovation for more than a century

Influenced by millions upon millions of miles driven on every continent and by decades of consistent motorsports successes, Mercedes-Benz engineers have developed a range of engines that are envied by the world's other automakers.

Within the lineup for U.S.-bound Mercedes-Benz automobiles, the SLK230 Kompressor's 2.3-liter, supercharged and intercooled, 4-cylinder engine is unique. It is the only supercharged Mercedes-Benz engine imported to the United States.

Many aspects of the SLK's engine are familiar, since it is based on the C230's four-cylinder powerplant. It shares four valves per cylinder, dual overhead camshafts, and computer-controlled, variable intake-valve timing. However, it adds an intercooled supercharger, along with modifications to make the supercharger as efficient and effective as possible.

This particular engine configuration was selected for the SLK because it combines performance and economy. It negates the need for a six-cylinder engine.

One of the objectives for this engine was that it have good low-end torque. That led to the selection of supercharging (mechanically driven by the engine) over turbocharging (driven by the exhaust). (See "Ask the Engineer" for a discussion of these two systems and page 37 for an explanation of intercooling.)

By comparison, the resulting horsepower and torque developed by the supercharged 2.3-liter four is about the same as that developed by the C280's 2.8-liter six. Even more impressive is the range at which the 2.3-liter Kompressor makes peak torque available — from 2500 to 4800 rpm. Such mid-range power makes the SLK230 Kompressor fun to drive at almost any speed.

The use of supercharging may not be new, dating back to its invention for use in water pumps in 1860. But its application in the SLK is as sophisticated as any engine in the Mercedes-Benz lineup.

The 2.3-liter engine block and components were beefed up to handle the additional pressure and power that it generates with intercooled supercharging. The block is reinforced, as are the pistons. Considerations are made to enhance engine cooling and the cooling of individual components such as pistons and exhaust valves. (See "Ask the Engineer" for greater detail.)

Computers, Power, and the Environment

The SLK's engine also has sophisticated electronic controls. For instance, the engine's computer manages and coordinates these functions:

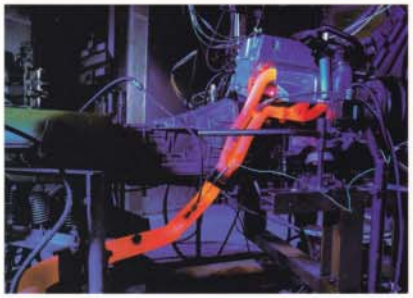
- Fuel injection
- Ignition
- Variable intake-valve timing
- Antiknock control
- Cruise control
- Supercharger
- Drive authorization system

This level of engine control enables the engine to provide optimum power output with a minimum of fuel consumption and harmful exhaust emissions.

Quality and Durability

The 2.3-liter SLK engine is built at the Untertürkheim plant to the same exacting standards applied to the V12 engines used in the S- and SL-Class models. To help ensure that each engine is as trouble-free as possible, Mercedes-Benz takes exceptional care in its manufacture. The engines must pass demanding tests.

Before installation, each engine undergoes a comprehensive running test. In addition, engines are selected at random from each day's production and are subjected to a four-hour dynamometer test. This test includes stressing the engine at such high speeds that the exhaust manifold glows red hot. These engines are then disassembled and evaluated.



Top: Random engines are tested at high speed for such long durations that the exhaust pipes glow bright red. These engines are then disassembled and evaluated.
Above: SLK's engine was designed, engineered, and tested to be as sophisticated as any engine in the Mercedes-Benz lineup.

Similarly, transmissions, differentials, and drive axles are subjected to constant quality and durability testing during production.

Technology and Craftsmanship

The individual production processes used in manufacturing different powertrain components produce high-caliber results. For example, all crankshafts are hardened twice, in stages. Dual hardening reduces brittleness in the metal and hardens the steel more deeply than with other, less costly methods.

Bearing surfaces on the crankshafts are also polished in stages. This polishing technique results in a finer, longer-lasting, lower-friction finish.

At the assembly facility, production takes advantage of contemporary technology. Driverless electric dollies carry components around the factory floor. Valvetrain assembly is carried out by robots.

Like the body structure, the powertrain components are quality checked by eye as well as by laser at various stages in the production process. Lasers, for example, can more quickly and accurately determine that valves, valve springs, and locks are properly installed in the cylinder head.

Such advanced automation is combined with the most irreplaceable and priceless of resources — the talents of skilled craftsmen. The use of lasers frees up trained craftsmen to perform other tasks not efficiently done by machine. For example, teams of skilled workers perform the final assembly of each Mercedes-Benz engine, transmission, and drive axle by hand.

The SLK230 Kompressor Engine — proven technology maximizing performance, efficiency, and safety while minimizing emissions.

SLK230	
	Layout/Cylinders
	Designation
	Bore x Stroke (mm)
	Displacement (cu. in./ c.c.)
	Fuel System
	Valvetrain
	Compression Ratio
	Net hp @ rpm
	Net Torque (lb.-ft.) @ rpm

SLK230 Kompressor Engine At a Glance

2.3-liter, In-line, Four-cylinder Engine

Engine Block Features:
- Thinwall cast gray iron with external ribs and a deep-skirt design
- Oil-cooled pistons
- Double-hardened and polished crankshafts

Cylinder Head Features:
- Cast aluminum alloy
- Dual overhead camshafts with four valves per cylinder
- Self-adjusting valves
- Sodium-filled exhaust valves
- Duplex-chain-driven camshafts
- Variable intake-valve timing
- Pentroof combustion chamber with centrally located spark plug

Electronic Engine Management Features — ME 2.1:
- Electronic sequential multi-port fuel injection
- Dual-orifice injector nozzles
- Direct electronic ignition and multiple-spark firing
- Electronic Control Units (ECUs) with high-speed CAN data bus network
- Hot Film Engine Management (HFM) with cylinder monitoring and knock sensors

Other:
- Poly-V belts
- Silver-plated, locking electrical connectors in critical locations

The SLK Powertrain — dependable power output and efficiency from durable systems.

General

Staggered Components

The SLK's engine-compartment components and accessories are positioned to be less likely to stack up and move rearward during a collision. Staggering the components reduces the potential for intrusion into the passenger compartment.

Low-friction Design

Mercedes-Benz engines are designed to develop as little friction as possible when operating, which improves engine performance and fuel economy. Low friction is accomplished by reducing the mass of moving parts, such as aluminum-alloy pistons, axially guided connecting rods, and hollow camshafts. Smaller valves and lighter valve springs also reduce the amount of power the engine must expend to operate them.

Engine Block

Cylinder Block

For light weight, the engine block is made of thinwall cast, gray iron. External ribs and a deep skirt add strength and durability. The four-cylinder block features added reinforcement to handle the pressures caused by supercharging.

The combustion chamber features stainless-steel surrounds in the area of the head gasket, to help handle the added pressure and higher output caused by supercharging.

High-performance Pistons

The 2.3-liter engine's aluminum-alloy pistons have a high nickel and copper content, which aids in heat dissipation. Piston crowns are shaped for a lower compression ratio, which is required of them due to the engine's supercharging. The pistons and crowns have steel reinforcements, for added durability.

Oil-cooled Pistons

Oil is sprayed at the pistons' undersides to reduce piston temperatures. For the SLK's supercharged four-cylinder engine, the oil-spray jets are located at the back of the main bearings. Oil spray improves performance and durability.

Cylinder Heads

1 Aluminum Alloy Cylinder Heads

The engine's cylinder heads are cast of lightweight aluminum alloy. The alloy dissipates heat quicker than iron, improving engine performance.

Contributing to light engine weight is the magnesium engine cam cover.

2 Dual-overhead Camshafts with Four Valves per Cylinder

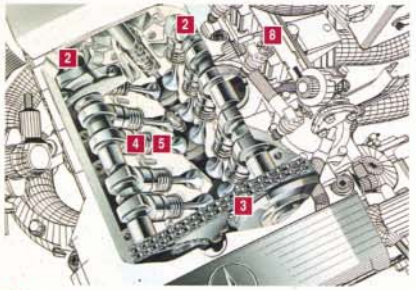
Within the cylinder head, lightweight, hollow, double-overhead camshafts (DOHC) actuate four low-mass valves per cylinder. The DOHC configuration improves engine performance, for quick acceleration during highway merges and emergency maneuvers.

3 Chain-driven Camshafts

The dual-roller chain that drives the camshafts is stronger and more precise than toothed rubber belts. It contributes to the engine's low maintenance requirements and long life expectancy.

4 Self-adjusting Valves

For reduced maintenance, the intake and exhaust valves are operated by self-adjusting, hydraulic, bucket-type tappets.



5 Sodium-filled Exhaust Valves

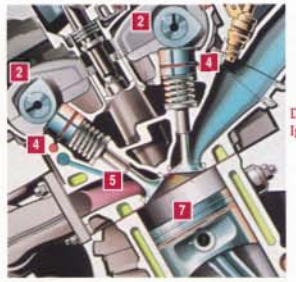
The stems of the exhaust valves are filled with sodium. At engine-operating temperatures, sodium liquefies, transferring heat more rapidly through the valve stem, improving valve durability.

6 Variable Intake-valve Timing

For smooth idle and improved performance, the SLK's electronic control units (ECUs) manage intake-valve timing. At lower rpms, timing adjusts for smooth idle. At mid-range, timing advances for improved torque. At higher rpms, timing returns to the normal setting, for high-speed performance. Timing changes occur in a fraction of a second.

7 Pentroof Combustion Chamber

The SLK's cylinder head forms pentroof combustion chambers. The pentroof design and centrally located spark plug maximize fuel efficiency and engine performance.



Fuel Injection and Ignition

ME 2.1 Engine Management

The engine utilizes the ME 2.1 Engine Management System. A single control unit integrates fuel injection and ignition requirements more precisely, for better performance and lower emissions. The system networks with the transmission and other components for optimized performance, including shift quality, fuel economy, and emissions control.

8 Fuel Injection System

The SLK's engine features an electronic sequential multi-port fuel injection system. This system determines the amount of injected fuel based on input from highly accurate engine-monitoring sensors.

Dual-orifice Injector Nozzles

Each fuel injector's two nozzles are aimed so that they spray fuel at their cylinder's two intake valves. For this supercharged version of the 2.3-liter engine, the injectors have a higher capacity for greater fuel flow. Dual orifices enhance combustion and improve engine efficiency.

Fuel System Monitoring

Should engine speed (rpm) rise to its mechanical limit, the engine's ECU shuts off fuel in stages for safe, predictable engine protection. With the transmission in neutral or park, engine speed is limited to 4000 rpm.

The fuel pump automatically shuts off if the engine stalls in an accident, stopping the flow of fuel as a safety precaution.

Direct Electronic Ignition

The engine ECU, instead of a distributor, controls the ignition coils and fires the spark plugs. Direct ignition increases reliability and ignition accuracy.

Multiple-spark Ignition

During engine cranking at temperatures below 32 degrees Fahrenheit, the ignition fires the spark plugs up to 10 times after the midpoint of a piston's cycle. Multiple firing ensures quick starts in cold weather.

Electronics

1

Electronic Control Units (ECUs)

The SLK's electronic control units (ECUs) compensate for changes in altitude and wear over the life of the car, producing accurate engine control. One ECU controls fuel injection, ignition, antiknock control, cruise control, ASR, the engine disabler for the antitheft system, and on-board diagnostics (OBD II). It also controls the supercharger clutch and boost pressure.

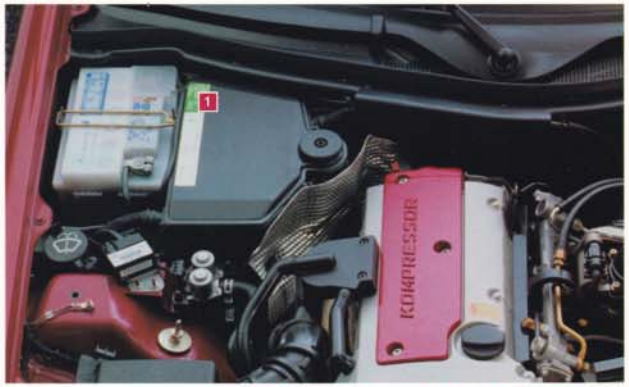
A CAN data bus networks together the engine's ECU with others. CAN's sophisticated circuitry ensures that the car is still driveable (via limp home or emergency running) in the event of certain electrical-component failures.

2

Control Area Network (CAN)

With the SLK's Control Area Network (CAN), single, high-speed, information-carrying wires connect the various ECUs. The wires, called *data busses*, link the ECUs in parallel instead of series. Among the tasks of the ECUs is management of the engine, the automatic transmission, ABS, ASR, the engine fan, and the instrument cluster.

In some other manufacturers' engine-management systems, specific bytes of information must first flow in series through one ECU before it can go on to the next. CAN allows the sensors' information to be shared by all ECUs almost simultaneously so that they can make instantaneous adjustments to the systems.



3

Hot Film Engine Management (HFM)

A sophisticated ECU monitors and controls the SLK's fuel injection and ignition timing. Both fuel and spark arrive at each cylinder at the precise moment in a given cycle to provide optimum power with efficiency and reduced emissions.

The hot-film air mass sensor is located immediately downstream from the intercooler, where it can take the most accurate reading of the volume and density of the intake air.

HFM Cylinder Monitoring

If a spark plug fails to fire, the engine's ECU signals the fuel injection system to cut off that cylinder's fuel. Stopping fuel flow protects the catalytic converter from damage.

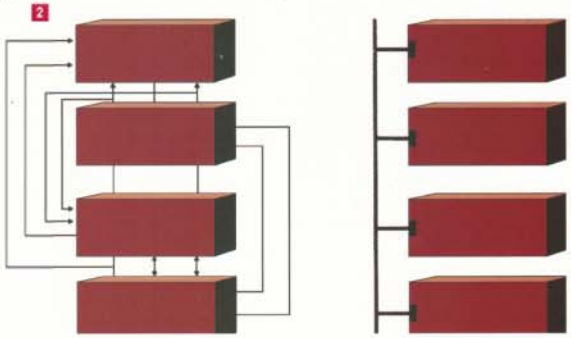
HFM Knock Sensors

An engine ECU keeps timing at the most efficient point by relying on sensors that detect the faintest, earliest traces of engine knock. Each cylinder's ignition timing is checked and adjusted with every engine revolution, providing proper spark timing and making the best use of the quality of fuel in the system.

The engine was designed to operate on premium fuel, which will maintain durability and performance.

ECUs connected in series

ECUs connected by a data bus



Kompressor

1

Supercharger

A supercharger mechanically forces air into the engine, compressing it before it enters the cylinders. Compressing the air enhances engine breathing, for improved performance, fuel economy, and lower emissions. (See "Ask the Engineer" for a comparison with turbocharging.)

Air entering the supercharger is forced through the air induction system. Two rotors inside the supercharger's oval housing suck in air from the air cleaner and force it into the intake manifold. The rotors each have three lobes that mesh with one another, turned by gears that are driven by the engine via a poly-V belt.

The rotors are cast in a process that leaves them hollow, and therefore lighter in weight. The lightweight design reduces inertia, thereby helping to improve the supercharger's overall response time, which is shorter than a turbocharger's response time.

The two rotors feature a special plastic coating that reduces the clearance between the rotors to less than 0.2 millimeters. Such tight clearance minimizes air leakage and allows the air to be compressed at high capacity even at low engine speeds. Because of the coating, the supercharger's efficiency increases by more than 30 percent.

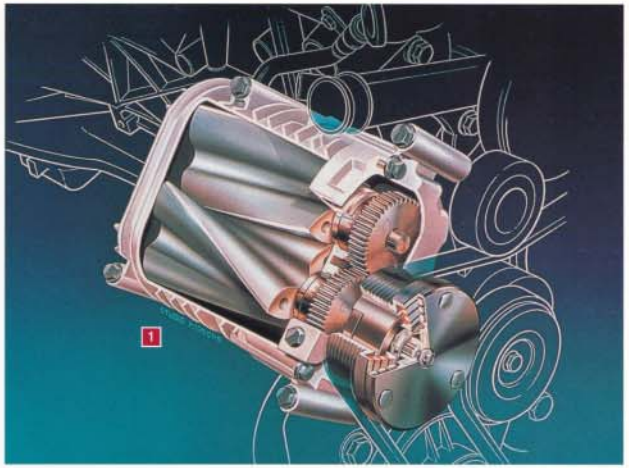
Electronic Control

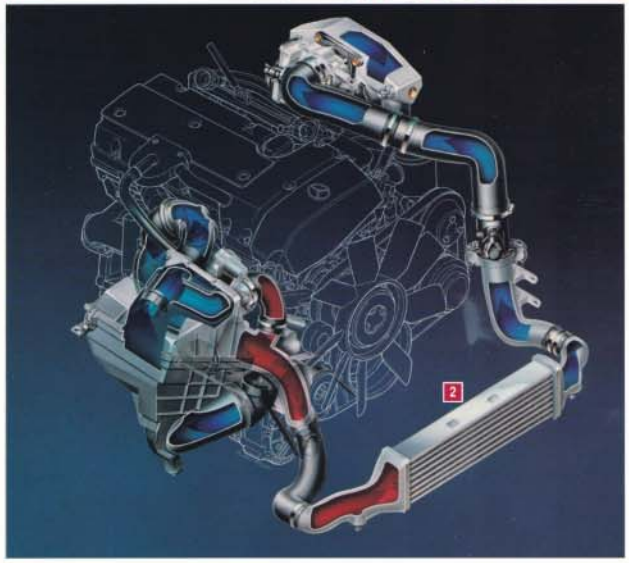
A magnetic coupling engages the supercharger. The engine's ECU determines if the intake air should pass through the supercharger or be routed around it, based on driver demand, engine load, and pressure of the charged air. The ECU controls the operation of a bypass flap in the air filter that functions in conjunction with the magnetic coupling to smoothly engage the supercharger. Disengaging the supercharger at low speeds reduces friction and improves its life span.

2

Intercooler

Boosting air pressure has the effect of heating the air. From the supercharger, the compressed air flows through an air-to-air intercooler, which reduces air temperature. Cooled air is also more dense, so more of it can be forced into the engine, improving performance and efficiency.





Ancillary Engine Features

Large-capacity Exhaust System

The SLK's exhaust-system components were designed to reduce back pressure to improve engine breathing, for better performance. The stainless-steel exhaust system adds to the powertrain's long service life.

The exhaust manifold is made of sheet steel, which heats up quicker than cast iron, helping to reduce the warm-up time for the catalytic converter. As a result, emissions are reduced.

Tri-metal Catalytic Converter

The large catalytic converter further reduces harmful exhaust emissions and increases fuel economy. It contributes to maximum efficiency for over 100,000 miles.

A new coating for the catalytic converter cells adds a third metal — palladium — to the platinum and rhodium normally used. Adding palladium helps to shorten the converter's response time during cold starting, contributing to reduced emissions.

Also helping to reduce emissions quickly after cold starts by raising the catalyst to optimum temperature:

- Retarded engine ignition timing
- Delays in transmission shifting
- In the meantime, the supercharger injects additional air into the exhaust system to help oxidize unburned components of the exhaust gas, which contributes to reduced emissions.

Accessories/Maintenance

Poly-V Belts

The engine turns two durable poly-V belts. One of them drives the alternator and the supercharger, and the second one drives all other engine accessories. Each of the belts has a self-adjusting tensioner, for reduced maintenance.

Electrical Connectors

Critical electrical connectors are silver-plated. Silver resists corrosion that could cause the connections to fail. The connectors interlock, making it almost impossible for them to work loose due to vibration. The interlocking design and silver plating add to the engine's reliability.

1

Hand-held Tester

The SLK's engine-management computer retains the fault codes for engine malfunctions in its memory. A technician can make a quick and accurate diagnosis of a problem using a hand-held, computerized tester, which accesses the vehicle's various systems via a single, 38-pin connector.

Maintenance Costs

Mercedes-Benz reduces engine-maintenance costs through low-friction design, high efficiency, automatic adjustments, and tight sealing. Driven under ordinary conditions, the SLK's engine has a 7500-mile oil-change schedule, with major service recommended every 15,000 miles. The first service is at 7500 miles.

A service reminder in the dash indicates when service is due — in about 1200 miles or 30 days in advance.

The SLK Drivetrain — efficient power transmission with imperceptible vibration, improving fuel economy and ride comfort.

1

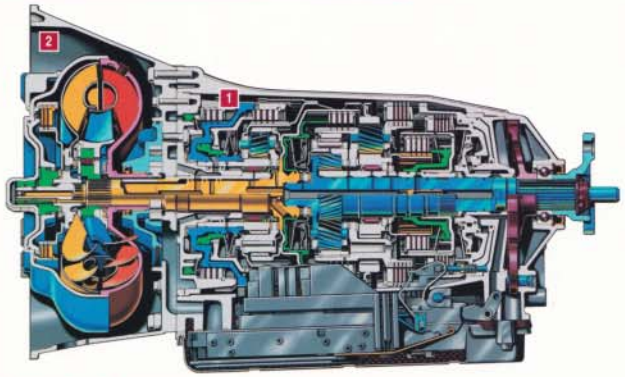
Five-speed, Electronically Controlled, Automatic Transmission

The SLK has an electronically controlled, five-speed, automatic transmission designed to recognize driving style and adapt to that style. The adaptive transmission's operation is managed by an ECU that is networked with engine ECUs by the CAN data bus. The transmission's ECU bases decisions to shift on input from sensors that monitor speed, engine load, throttle opening, engine temperature, and the status of the cruise-control system. The ECU also measures how quickly the driver presses and releases the accelerator, adjusting shifting to the driver's spirited or relaxed style. The computer recognizes whether the car is going up or down a steep grade — holding a higher gear when going up a grade (avoiding hunting between gears) and delaying upshifts when descending a grade (using the engine to help brake the car).

Electronic control enhances shift smoothness by reducing torque at shift points. Also, gearing is closer than in a four-speed transmission, making shifts smoother and improving comfort. Transmission operation is more refined (helping to minimize fuel consumption), but the engine's full performance potential is available at any time.

The transmission has two settings — Standard (S) and Wet (W). The W setting starts from rest in second gear rather than first, and it shifts at lower engine rpm than the S setting, adding to driver control on slippery roads.

Other features of this transmission include clutch (rather than band) operation, a limp-home mode, automatic downshifting on a hill, wear compensation, overload protection, and computer diagnostics.



Transmission Fluid

The five-speed's 9.5 liters of transmission fluid is sealed inside the housing, making it filled for life. There is no dipstick. A temperature sensor monitors fluid heat for the transmission's control unit. This system contributes to durability and reduces maintenance costs.

2

High-efficiency Lock-up Torque Converter

The SLK's torque converter is small in size and has excellent build quality, both of which help to reduce fuel consumption.

A clutch locks up the engine to the transmission in third, fourth, and fifth gear to help reduce power losses and improve fuel economy. Using a clutch minimizes the harsh change to and from lock-up present in some other manufacturers' transmissions.

Delayed Ignition Timing at Shifts

When the transmission shifts up or down, either automatically or by driver selection, the engine's ECU retards ignition timing for a few milliseconds. Retarded ignition results in smoother shifts and reduced wear on drivetrain components.

Two-piece Driveshaft

The driveshaft is fixed by a center bearing to restrict movement and reduce vibration, giving the SLK a more comfortable ride.

Differential Mounting

The SLK's differential is tested at the factory before being mounted to a subframe. The subframe is attached to the body by large rubber bushings, which help to isolate the body from rear-end noise and vibration.

Automatic Slip Control (ASR)

ASR senses when either of the rear wheels slips. It then applies the brakes to slow the slipping wheel and direct engine power to the wheel with the greatest traction. If necessary, it adds the ability to throttle back the engine as part of gaining control.

The system uses either or both functions, depending on road speed and the severity of wheel slippage. ASR works at all speeds, improving both low-speed traction and high-speed stability.

The "ASR Off" switch deactivates the throttle control function, allowing the wheels to slip a little and dig in. A warning triangle in the speedometer stays lit, alerting the driver that the switch is off.

Pressing the switch again or operating the brakes reactivates the entire system. If the engine is shut off with ASR off, ASR will reactivate when the vehicle is started.

Ask The Engineer

Question:
What changes had to be made to the 2.3-liter engine to adapt it for the supercharger?

Answer:
The basic 2.3-liter, four-cylinder engine also used in the C230 was modified to be able to handle the additional internal stress caused by a supercharger. These modifications include:

- Reinforcing the block between cylinders by reducing the size of the cooling passages, allowing improved sealing
- The use of stainless steel in the combustion-chamber areas of the head gasket, for added durability
- Raising the copper and nickel content of the aluminum alloy used for the pistons, increasing their resistance to heat
- Adding reinforcements to the piston crowns, increasing durability
- Use of sodium-cooled exhaust valves, for added durability
- Reconfigured crankcase ventilation and variable inlet camshaft, due to changes in the engine's performance characteristics
- Oil spray jets located on the main bearing web to cool the pistons

Question:
What is the difference between a supercharger and a turbocharger? What does "normally aspirated" mean?

Answer:
Both superchargers and turbochargers are mechanical devices that pump additional air into the engine's combustion chamber. Forcing more air into a combustion chamber enables it to burn more fuel, which improves power output. Differences between these two devices have to do with how they function rather than their end result.

A supercharger is driven directly by the engine via gears or a belt (or chain). Compressed air from it is available at all engine speeds. The additional belt turns rotors that pump air into the intake system. A supercharger has a quick response time, since it is directly connected to the engine and responds according to engine rpm.

A turbocharger is driven by the flow of gases in the exhaust system. The exhaust turns a rotor in the turbocharger housing, which is connected to a compressor wheel that forces air into the intake system. As engine speed increases, more exhaust gas turns the turbocharger, and the turbo compresses a greater volume of air for better engine performance. A turbocharger's effectiveness depends on engine speed — it's more effective at higher speeds. Therefore, a turbocharger is a reactive device, requiring engine speed (and exhaust flow) to build up before it can add to performance. The time between response to engine exhaust and noticeable input is referred to as "turbo lag."

A normally aspirated engine is one that does not employ a mechanical compression device to force air into the intake system. Air flow is affected only by the intake manifold's design.

Question:
What was done to reduce noise caused by supercharging the engine?

Answer:
Supercharging has a tendency to make engine operation louder. Mercedes-Benz engineers determined that the supercharger's intake accounts for 41 percent of the noise and the components account for 18 percent. The intake noise is caused mainly from the transfer of air from the intake to the outlet side of the supercharger — entering the device at normal atmospheric pressure and leaving under higher boost.

Mercedes-Benz took several steps to quiet the engine:

- Using triple-vane rotors rather than the more conventional double-vane rotors to reduce pulsations by distributing air into smaller parcels
- Installing two resonators on the intake side of the supercharger
- Employing offset rotors to ensure the uniform delivery of air
- Using triangular air outlet slits on outlet side of the supercharger to optimize flow
- Using heavy-duty air hoses

Powertrain

Part Five — Interior Presentation

The SLK's interior incorporates Mercedes-Benz standards for systematic safety, engineering, intuitive ease of operation, and long-term occupant comfort with youthful, bold design. The seating, appointments, and instrumentation express individuality and driving fun, with a stylistic nod to the SLK's heritage.

Designed to accommodate two occupants, the interior does so with ample spaciousness and comfort. Leather upholstery and racing-style instruments set off a cockpit that incorporates innovative seats and safety features. With styling reminiscent of the legendary Mercedes-Benz sports cars, this interior also advances the utilization of contemporary electronics.

Key information in this section:

- *Mercedes-Benz' comprehensive Supplemental Restraint System (SRS), including the Front Passenger Seat Occupancy Detection Sensor and the "BabySmart™" Child Safety Seat Recognition System.*
- *An interior design incorporating innumerable features intended to make travel more appealing, with everything from conveniently placed cupholders to a Bose® Sound System.*

Interior Presentation Contents

● Indicates a Core Technology feature.

Color highlighted text indicates a new or revised feature.

The Focal Point –
Appealing to the Senses

The occupant is the primary consideration in the design of every Mercedes-Benz.

Integrating Safety and Comfort

The SLK's interior, like those of all Mercedes-Benz models, was designed with priority given to safety and ergonomics. These priorities result in an interior that contributes to driver control, provides stylish comfort, and surrounds the occupants with provisions for their safety.

When seated in the SLK driver's seat, the shift knob is located readily at hand. It has a comfortable touch, with no buttons to confuse operation. The steering wheel feels natural. Switches are easy to operate and intuitively simple. Their shapes make physical operation easy.

Unique Approach to Driver Research

Mercedes-Benz' concern for physical detail — no matter how seemingly minute — is not happenstance. It results from analysis and evaluation of the driving characteristics of not only its automobiles, but the people who drive them.

Using actual vehicles, Mercedes-Benz systematically studies drivers' reactions to various on-the-road situations inside its own driving simulator. The results of these studies are life-like responses to how a car feels. Engineers use the findings of these studies to create automobiles that are best suited to the realities of driving.

Distinctive, with a Touch of the Past

The SLK's passenger cabin reflects a fresh, youthful approach to automotive interior design. Three of the four available upholstery combinations incorporate contrasting colors across the dash, seats, and door panels. The fourth choice is a charcoal interior.

Instrumentation takes a departure from customary Mercedes-Benz design. Recalling the legendary sports cars of the past, the instruments are round, with polished aluminum bezels. The faces of the analog instruments are ivory, and they have black markings. Orange needles make them easy to read.

At night, when the lights are turned on, the colors reverse on the faces of the these backlit instruments. The faces turn dark, with illuminated markings.

The large gauges are flanked by logically arrayed clusters of instantly recognizable warning lights.

The design of the instrumentation is reflected by the oval shape of the interior rearview mirror.

Another departure from the norm is the SLK's implementation of carbon-fiber optic inserts. This contemporary looking trim adds to the sporty styling of the console and the areas surrounding the vents and door handles.

Recalling the drilled metal components that earlier race cars used to help reduce weight, the SLK has drilled door sills, brake pedal, and gas pedal. Rubber inserts fill the holes to provide sure grip.

The interior provides ample storage space, which is usually at a premium in a sports car. Space is available in the glove box, center console, and door pockets. Dual cupholders and coinholder slide out of the dash, and nets are available behind the seats.

Passive Occupant Protection

The SLK's interior is an evolution of the "occupant friendly" concept that Mercedes-Benz pioneered more than 35 years ago. The SLK reflects the traditional Mercedes-Benz interior safety features, adding some of its own:

The rollbars are made of solid tubing, sheathed in impact-absorbing foam.

- Impact-absorbing interior surfaces, softly rounded breakaway switches and controls, and large, upholstered panels (in Mercedes-Benz automobiles since 1959)
- A steering column programmed to deform in an impact (Mercedes-Benz patented safety steering system introduced in 1967 and a deformable steering column introduced in 1968)
- A seat design that provides hours of supportive comfort, which helps occupants to stay fresh and alert, and that holds occupants firmly in place during handling maneuvers

- Brake pedals designed to swing down and away from the driver's feet in severe offset-frontal impacts (originated by Mercedes-Benz over ten years ago)
- A Supplemental Restraint System(SRS), with airbags, knee bolsters, and Emergency Tensioning Retractors (ETR) with force limiters

Front side airbags are a part of every SLK.

SLK's seats incorporate a new structural design, yet still provide traditional Mercedes-Benz support and safety features.

Testing for Quality

Mercedes-Benz operates a full-time durability testing laboratory in Sindelfingen. Passenger cabin components are subjected to endless hours of testing, regardless of their tasks.

Specially designed machines tirelessly open and close doors, raise and lower windows, enter and exit seats, and slam trunk lids for millions of cycles. Even the locks and keys are tested. The entire vehicle is shaken for days, simulating years of heavy-duty driving.

As an example, the leather chosen for the SLK's seats originates in southern Germany and is considered the best in the world. It has an even, smooth surface and is very strong.

But the leather's reputation did not excuse it from testing. The leather had to pass:

- A rub test, where it was rubbed with dry felt 2000 times, then with wet felt 1000 times, to ensure that no traces of leather dye rubbed off
- A temperature test, where it was exposed to continuously changing high and low humidity as well as to temperature fluctuations (from about 50°-248° F) for two weeks, without shrinking or stretching

Another example of the testing that Mercedes-Benz carries out is the research that it did to improve the comfort of cabin occupants when the SLK's top is retracted. Engineers developed a special dummy with an outer surface containing temperature sensors to measure the effects of wind conditions in the interior. Test results indicated where to mount the SLK's wind deflector for even air distribution within the interior. The resultant deflector design allows the driver and passenger to enjoy a quieter, more relaxed ride.

Interwoven Systems

The function of each of the SLK's interior component impacts many others. The design of one is interwoven with the design of other components and systems that it affects.

One example would be the seemingly incidental location of speaker enclosures. They must be carefully designed not to interfere with any other structural or passenger-cabin safety feature.

Assembling for the Long Term

Components that have faced the merciless testing are often hand assembled by master craftsmen. Mercedes-Benz' philosophy is that nothing can substitute for experienced and highly skilled workers.

Precision on the SLK's assembly line is mandatory, in order to maintain the high quality standards expected of every Mercedes-Benz automobile. To that end, the assembly line workers are trained especially with difficult procedures.

As a result, Mercedes-Benz' manufacturing standards produce an industry benchmark for trim, fit, and finish.

Engineers developed a special dummy with an outer surface containing temperature sensors to measure the effects of wind conditions in the interior.

The SLK Instrumentation and Controls — information at a glance, with the ability for quick, confident driver response.

Instrumentation

Dashboard Layout

Although designed for an appearance that is different from other Mercedes-Benz models, the SLK's dashboard has the same basic layout. The dash is carefully shaped, with an airy open feeling in keeping with its sports car orientation. The instrument panel and center console give the driver a user-friendly, performance-oriented command center.

The dashboard is dark colored to reduce annoying and dangerous glare and reflections.

1 Instrument Panel

The SLK's traditionally styled instrumentation retains the same basic layout of other Mercedes-Benz models. Its centrally mounted speedometer and flanking secondary gauges provide the driver with maximum information in a minimum amount of time. Warning lights immediately signal a problem, such as a headlamp failure.

Large, round, black-on-ivory analog gauges — speedometer, tachometer, coolant temperature, and fuel level — are instantly readable. Turning on the lights at night reverses the coloring to white-on-black. Bright orange pointers ensure high visibility and easy assimilation of vital information, regardless of ambient lighting.

Analog gauges have the added benefit of providing rate-of-change information.

The panel also includes digital instruments — clock, external temperature gauge, odometer, and trip odometer. These are mounted in the faces of the analog instruments, providing information using liquid crystal technology. A service reminder is incorporated into the odometer's information, indicating that service is due in about 1200 miles or 30 days.

Driver Controls

2 Steering Wheel and Horn

The SLK's padded, leather-wrapped steering wheel provides excellent control and road feel. The spokes are carefully placed to allow the driver clear view of the gauges and warning-light assemblies.

The horn buttons are located on the upper spokes, allowing most drivers to sound the horn without lifting their hands from the wheel. The wheel manually telescopes to adjust to drivers of various sizes, adding to driving comfort.

Small and sporty looking, the steering wheel and horn carry out the interior's two-tone color scheme.

3 Switches and Dials

Switches for the most frequently used equipment — high beams, turn signals, windshield washer and wipers, and cruise control — are controlled by stalks mounted on the steering column. They are clearly visible and close at hand, regardless of the SLK driver's size or reach.

All switches, dials, and buttons are designed to be easy to understand and use. Wave-shaped switches allow them to be operated more positively by sense of touch, improving convenience.

Windshield Wipers and Washers

The windshield-washer system features provisions to prevent freezing in cold weather. Heated fluid passes beneath the wiper area to minimize ice build-up and to help ensure that the wiper blades do not freeze to the windshield. The washer nozzles are heated to prevent freezing.

Mirrors

The external rearview mirrors are electrically adjustable via a control on the center console. They are heated to keep them free of fog, snow, and ice.

Interior

4 Windows

Console-mounted switches — accessible to the driver and passenger — operate the SLK's front side windows.

Both front windows can be express-opened with a single touch. In addition, double-clicking the retractable top's switch will fully lower or raise both side windows simultaneously.

5 Transmission Control

The shift lever follows a notched gate that allows the driver to quickly select the proper gear. The shift knob is also designed to minimize injury if struck in an accident.

The driver can select from two transmission shift modes — Standard ("S") or Wet ("W"). The S mode starts the car in first gear and allows full use of the engine's speed range. The W mode starts off in second gear and reduces the shift points of each gear.

6 Parking Brake

The SLK's parking brake is engaged by a console-mounted lever, in keeping with the car's sporty nature. The lever operates drum-like parking brakes incorporated into the rear brake discs. Cable-operated, the system holds the vehicle firmly in place. Since the parking-brake system is separate from the service brakes, it will have a longer service life.

7 Retractable Hardtop Switch

Pushing down or lifting up the SLK's hardtop switch completely controls the top's automatic operation. Pushing down the switch lowers the top in 25 seconds. Lifting up the switch raises the top in the same amount of time.

Releasing the switch halts the operation, which then may be continued or reversed.

Interior

Ventilation and Climate Control

1

Temperature Control

The SLK's driver and passenger each have separate temperature control wheels to manually set the temperature for their sides of the cabin. Once set, the Temperature Control system maintains that temperature through heating or air conditioning. The center of the control wheel corresponds to about 75° F.

The ATC system is all electronic, including the five-stage fan. Positions on the fan control and the directional control switches send signals to the electronic control unit (ECU) that manages the system.

Dust Filter

The SLK's climate-control system features a replaceable dust and pollen filter. The filter traps airborne particles five microns or larger.

Variable-displacement Air-conditioning Compressor

The SLK has a variable-displacement compressor. Rather than cycling full-on and full-off, the compressor constantly alters its working volume as temperatures vary, saving fuel and operating with less noise and vibration.

The CFC-free air-conditioning system uses R-134a refrigerant, which contains no environmentally harmful freon.

2

Vents and Circulation

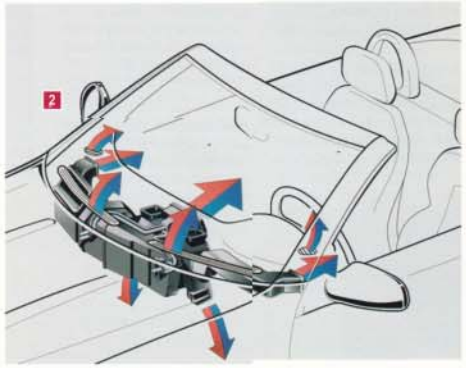
A large number of carefully placed, high-volume vents provides a balanced flow of air throughout the SLK's passenger cabin. Fresh air helps to keep the driver alert, enhancing the safe operation of the vehicle. Occupants arrive at their destinations feeling refreshed.

3

Air Recirculation

The SLK's air recirculation button is regulated by the climate control's ECU. Depending on ambient air temperature, the ECU prevents air from being recirculated for too long a time by automatically restoring fresh air flow. The system receives a reading of outside-air temperature from the SLK's external temperature gauge.

At temperatures below 20° F, the system automatically turns off air recirculation after five minutes. At temperatures above 20° F, air recirculation is turned off after 30 minutes.



The SLK Seating System — long-lasting materials carefully constructed to provide superb support and comfort.

2

Seat Controls

Both the driver's seat and passenger's seat have six-way manual controls for setting fore-and-aft position, seatback angle, and height, allowing occupants to travel in optimal comfort.

1

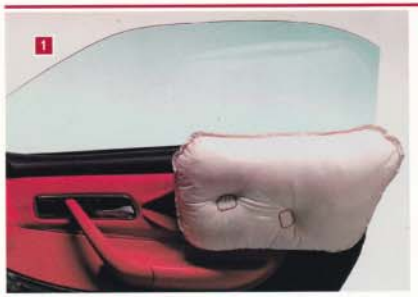
Seat Construction

Conventional Mercedes-Benz sedan seats would be too bulky for a youthful, trim vehicle like the SLK. So in place of the usual steel springs, the SLK's seats were given a different, lower-profile suspension system.

A plastic shell contains the polyurethane seat cushion. The shell is jointed to the seat frame at the front and suspended by two coil springs at the rear, allowing the seat to "float" on the frame. The springs add to the damping effect of the cushion. Rubber buffers prevent sharp contact between the shell and the seat frame.

The seats provide a high degree of lateral support to hold occupants firmly during spirited maneuvers. They also have anatomically shaped back rests, which contribute to ride comfort.

The SLK Interior Safety System — comprehensive protection designed to improve occupant survivability in a collision.



Supplemental Restraint System (SRS)

SRS is a comprehensive system of interior features that function together to supplement seatbelts, helping to reduce injuries in frontal impacts of a severity exceeding a preset threshold.

Three-point Seatbelts

The SLK's seatbelts anchor at three points — on each side of the seat base and at the shortened B-pillars. The shoulder-belt anchor's positioning allows a comfortable fit for most occupants. Seatbelts are the most important of the provisions for occupant safety in the interior. They are intended to hold occupants in place during a collision.

Note that seatbelts are the core of Mercedes-Benz' safety systems. Although some of the other safety features and considerations will act to help reduce injury on their own, they were designed to function along with the belts. Seatbelts provide the best all-around protection for the various types of collisions in which someone may be involved.

Dual Airbags

Airbags for both driver and front-seat occupant supplement the SLK's seatbelts. Mercedes-Benz pioneered the development of this critical, and now widely accepted, passive-safety device.

1

Side Airbags

In a side impact, the SLK's door-mounted side airbags provide a cushion between the impact forces and an occupant to help reduce torso injuries. Each side airbag holds 16 liters of air.

Electronic Crash Sensors

Front and side airbags and the ETR systems are triggered by an electronic crash sensor. Satellite sensors respond to side impacts of sufficient severity by triggering the side airbags. Along with the engagement of these SRS components, the alternator is disconnected to prevent sparks.

Front Passenger Seat Occupancy Detection Sensor

The sensor is designed to prevent the passenger airbag and side airbag from deploying when the seat is not occupied. The ETR is also deactivated.

* Requires accessory Mercedes-Benz child seat. Warning: Seat Recognition System does not operate with non-Mercedes-Benz child seats. See warning and instructions in Owner's Manual with regard to use of child restraints.

Automatic Child Seat Recognition*

Child seats designed to be used in the SLK (BabySmart™ compatible child seats) automatically deactivate the passenger front airbag. Transponders in the child seats reflect a low-power radio signal sent by transmitters in the passenger seat, indicating that a child seat is in place.

When the airbag has been deactivated by the system, a yellow light reading, "Airbag Off" illuminates on the center console. (See "Ask the Engineer" for more detail.)

2

Emergency Tensioning Retractors (ETR), with Force Limiters

Triggered in impacts creating linear directional deceleration above a preset threshold, the ETR system instantly and automatically removes excess slack from both front seatbelts. Doing so helps to compensate for loose clothing like coats and jackets. ETR can be triggered by both front and rear impacts.

A force limiter is a provision within the SLK's ETR assembly that allows the assembly to "give" a little with the force of the occupant's body against the seatbelt.

As a result, the body's deceleration is not as abrupt, helping to reduce shoulder and chest bruises from contact with the belt and increasing airbag effectiveness in circumstances when the airbag deploys.

Knee Bolsters and Seat Squabs

Under the dashboard, knee bolsters are padded sections with aluminum backings. Seat squabs are wedge-shaped areas beneath the seats. Together, they help to prevent occupants from sliding out from under their seatbelts in a severe frontal collision.

Ancillary Safety Systems

Swing-away Brake Pedal

The SLK's brake pedal is designed to swing down and away from the driver's feet and ankles in a frontal collision. The swing-away pedals help minimize injury.

3

Collapsible Steering Column

The SLK's collapsible steering column reduces the chance of serious upper-body injury.

Impact-considerate Surfaces

Throughout the interior, various features were designed with occupant safety as a priority. They include:

- The design of all switches and control knobs, which are flush or rounded, to help reduce injury in the event of an accident
- The cushioned instrument panel (mounted on aluminum) and door panels
- Energy absorbers built into armrests
- A hard-foam covering on door sills
- Thick padding on the floor
- The rearview mirror that breaks away from its mount upon being struck

The SLK Comfort/Convenience Systems — considerate features that help to take the stress out of travel.

Sound System

The SLK's standard radio is a high-performance AM/FM/weather-band/cassette stereo with Bose® six-speaker sound system. The Bose system was specifically designed for the SLK interior. (See "Ask the Engineer" for more detail.)

The radios have antitheft circuitry.

Central Locking

The central-locking system can be operated by an RF (radio frequency) remote transmitter, the door key, or the console-mounted switch. The doors, rear deckdid, and fuel-filler door can be locked or unlocked by the system.

The system features selective or global opening, which can be programmed by the transmitter. The system also automatically locks after 40 seconds, as a convenience. In addition, it automatically locks the doors when the vehicle reaches about three miles per hour.

The receiver for the transmitter is located in front of the inside rearview mirror. Signals can operate the system from as far away as 100 feet.

Key Transponder

To help reduce theft, the SLK's keys have an embedded transponder (computer chip) that will activate or deactivate the engine management system. Each time the key is placed in the ignition, an exchange of electromagnetic data takes place between the transponder in the key and a coil in the ignition. Then they are evaluated by the engine ECU. If they match, the engine can be started. This system functions whether or not the vehicle is locked.

The system also has a rolling code — meaning that the code recognized by the engine ECU changes each time the key is used. The code change adds to vehicle security.

1

Integrated Garage Door Opener

A three-button garage door opener integrated into the interior rearview mirror is "HomeLink®" compatible*.

Cruise Control

Cruise control sets and maintains a specified speed for relaxed driving over long, open stretches. The driver can change the speed in 0.62-mph (one kilometer-per-hour) increments at the touch of the control stalk.

2

Cupholders/Coin Holder

Two cupholders slide out of the top of the center console as a single unit, along with a small coin tray. Another drawer at the bottom of the console has slots for coin storage.

*May not be compatible with all garage door openers or other remote-operated systems.

Prewiring for CD Changer and Cellular Telephone

The SLK is prewired at the factory for the installation of a CD changer or cellular telephone. Prewiring simplifies installation and eliminates the need to disassemble any interior elements or drill new holes.

3

Trim

The SLK has carbon-fiber optic trim on the center console and surrounding the dash vents and door handles. The carbon-fiber look enhances the interior's contemporary, high-tech, sporty appearance.

The door sills and foot pedals have the appearance of drilled metal, which alludes to the use of drilled metal in race cars to help reduce weight for better performance. Rubber fills the holes for improved footing.

4

Wind Deflector

A nylon screen hooks onto the SLK's rollbars to deflect the wind, reducing turbulence in the cabin while driving with the top down. It also helps to keep in the heat, improving occupant comfort.

Optional Equipment

Heated Front Seats
(not available separately)

Cellular Telephone

Six-disc, Trunk Mounted, Integrated CD Changer

Baby Smart Seat

Question:
How does the automatic BabySmart™ child seat recognition system work?

Answer:
Based on the latest government statistics, the forces of a deploying front airbag can cause serious or fatal injury to a child under age 13. The rear seats are the safest place for children, however, there are times when this is not possible, i.e., no rear seat, monitoring for medical reasons, etc.

The BabySmart™ child seat recognition system is a fully automatic electronic system, utilizing a transmitter in the vehicle's right front passenger seat and receivers, called transponders, in a BabySmart compatible child seat. The BabySmart compatible child seat does not require a battery or power system. A low-power radio signal is sent from the vehicle seat transmitters and reflected back by the child seat transponders which turns off the passenger-side front airbag via an electronic control unit.

The electronic control system deactivates the passenger-side front airbag and illuminates the "Airbag Off" warning lamp on the center console. The passenger side-impact airbag and the ETR remain active since they pose no risk to any occupants.

Mercedes-Benz dealers sell BabySmart compatible child seats. Three models are available for different child sizes.

A
Infant Restraint — 5 to 20 lbs.

B
Toddler Restraint — 20 to 40 lbs.

C
Child Booster Seat — 40 to 100 lbs.

BabySmart™ is a trademark of Siemens Automotive Co.

Question:
How was the Bose® sound system designed? What are its components?

Answer:
As with the Bose systems in the other Mercedes-Benz models, the system created for the SLK delivers superbly clean, clear, and distortion-free sound equally to both seating positions.

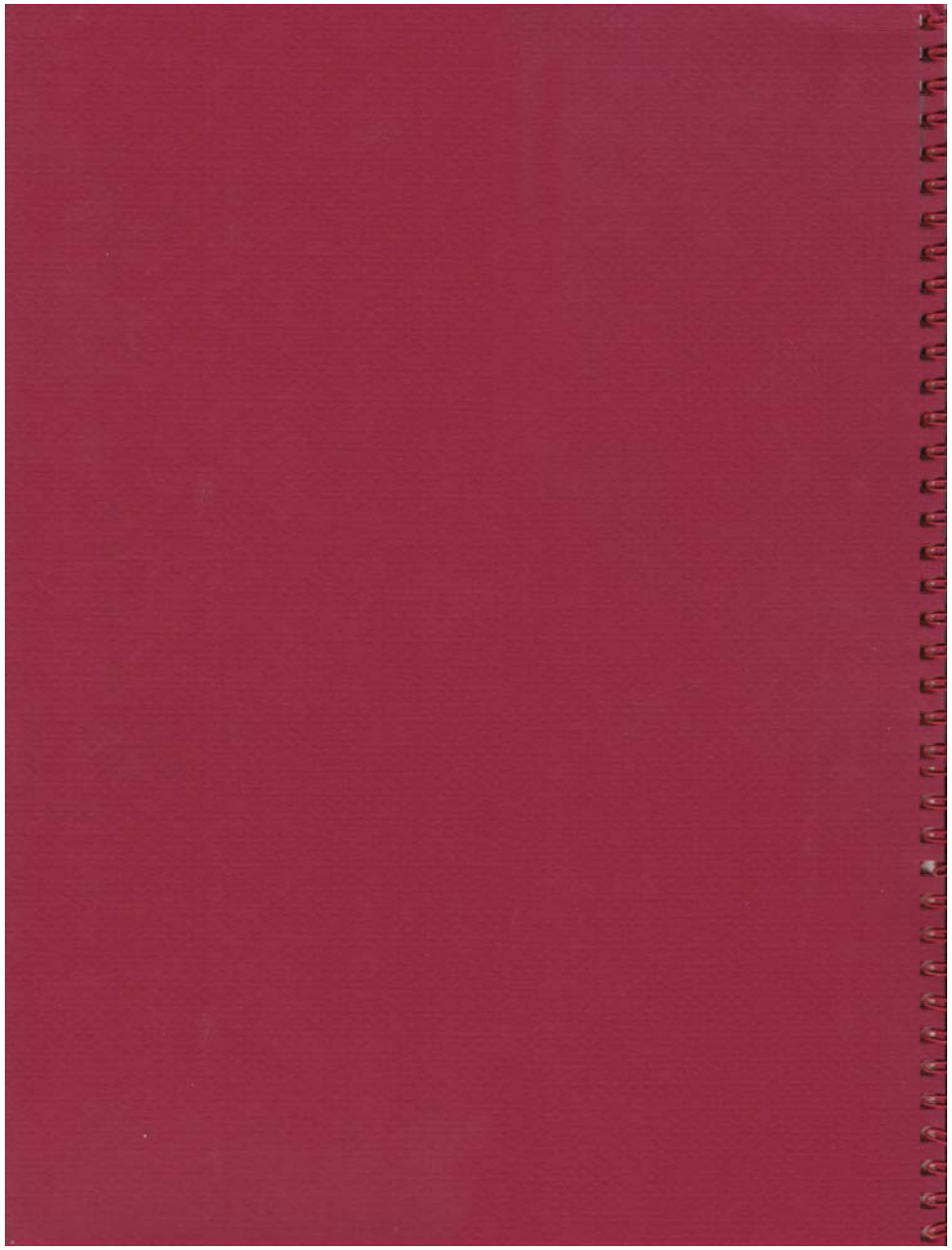
The Bose system was developed jointly by a team of acoustical engineers from Mercedes-Benz and the Bose Corporation. It was designed specifically for the SLK. The team considered the size, shape, contour, and materials of every surface inside the passenger cabin — seats, seatbacks, door panels, windows, dashboard, and headliner (with the top raised).

The results are six specifically designed and carefully placed speakers that faithfully reproduce the sounds generated by the AM/FM/cassette stereo in the dash as well as those from the optional trunk-mounted compact disc changer.

The Bose system includes:

- Two linear switching amplifiers with integrated, parametric equalizers and compressors in front of the right-hand door
- One high-performance amplifier with integrated parametric equalizer and compressor using digital switching technology for low range
- 100 watts of continuous power
- 1.5-inch tweeter in each door
- 5.25-inch wide-range speakers in each door
- Two 6.5-inch low-frequency transducers behind the seats

Interior



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