

M E R C E D E S - B E N Z 1 9 8 8



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If this publication appears to be uncommonly thick for an automobile brochure, it is because there is an uncommon amount that is well worth knowing about Mercedes-Benz—both the automobiles and the company that builds them.

It is a company whose origins trace back 102 years to the world's first gasoline-powered motor vehicles, and to the two men who built them: Gottlieb Daimler and Karl Benz. The twin enterprises they founded grew in time to become Daimler-Benz A.G., a world

figure today in automobiles, trucks, buses, electronics and aerospace.

Today as for over a century, Mercedes-Benz engineers strive to achieve multiple engineering goals: to excel not in one or a few areas but in all areas—to be a superb performer in virtually every category.

The goal is simultaneous automotive excellence. In the following pages you will learn how every Mercedes-Benz is engineered to meet and master this

challenge. And engineered, in the process, like no other car in the world.

MERCEDES-BENZ: ENGINEERED LIKE NO OTHER CAR IN THE WORLD





ROUEN, FRANCE, 1893: TWO AUTOMOBILES, EACH POWERED by a Daimler engine, share winner's honors in the world's first recorded automobile race. The machines average a brisk 11.5 mph, proving the gasoline engine an infinitely more practical power source than steam, compressed air, pendulums or the horse.

The history of Mercedes-Benz competition and performance research begun at Rouen nearly a century ago has since encompassed such milestones as the 131-mph land speed record achieved by the Blitzen Benz on the sands of Daytona Beach in 1910; the world's first 1-2-3 Grand Prix sweep in 1914; five world racing championships; 4,400 competition victories. And in recent years—a twelve hour speed and endurance record of 195.3 mph, accomplished with a five-cylinder turbo-diesel engine in the C-111/3 prototype—while averaging 17.6 mpg. And the streamlined Mercedes-Benz "economobiles" that have achieved in excess of 2,000 mpg.

In exploring the outer limits of powered over-the-road travel, Mercedes-Benz engineers have established one benchmark

after another in engine performance. In speed and power and in the equally vital areas of endurance, reliability, fuel efficiency and durability.

Thus it is no surprise that Mercedes-Benz developed a fuel-stingy 1.3-liter, four-cylinder, rear-mounted engine for the diminutive Type 130 Coupe while its racing machines were dominating world competition. That a Mercedes-Benz sports car—the fabled 300 SL—introduced direct-port gasoline fuel injection to production cars more than thirty years ago. Or that today's Mercedes-Benz passenger car engines span a gamut from four to five to six to eight cylinders. And incorporate some of the world's most advanced powerplant technology.



A Mercedes-Benz engine is designed to strike the widest possible balance of desirable characteristics. To be powerful in relation to displacement; yet light in relation to power. To be smooth and quiet. To be efficient in the use of fuel. To perform reliably over the miles and years, given proper care and service. Mercedes-Benz does not wait for its engines to be proven in the hands of customers. The proving is done in years of research and development.

Mercedes-Benz powerplants for 1988 reflect lessons learned through more than a century of engineering exactitude and pursuit of optimum performance. Evidence of advanced yet proven automotive science abounds throughout the range: The semi-hemispherical combustion chambers and low-friction components of the in-line four and six-cylinder gasoline engines; the hypereutectic light-alloy cylinder blocks of the V-8s; the electro-mechanical fuel injection and overhead cam valve trains common to all. Not necessarily new solutions to the challenges at hand, but simply the best available solutions.

The six exemplary engines of Mercedes-Benz. There may be no more technologically remarkable or more mechanically trustworthy machines in the field of powered transport.



MERCEDES-BENZ ENGINEERS BELIEVE THE ONLY WAY an automobile should perform is with maximum precision in virtually every situation. And since Mercedes-Benz cars are sold in over 170 countries, the situations are almost numberless. A Mercedes-Benz might be asked to endure a lifetime of driving in a remote unpaved corner of Africa. Or it could be employed in the service of a Munich businessman who routinely tours the autobahn at three-digit speed. It may encounter Arctic backroads, or a trail through desert sands. It might be required to endlessly cruise American interstates, or to spend long hours creeping through traffic jams. Thus a Mercedes-Benz must be engineered to excel in almost every mode imaginable, on every type of road surface—or lack of road surface—that might be encountered. In fair weather or foul; on slippery, wet or dry pavement.

A sedan that aspires to excellence in handling and agility is called a sports sedan. A sedan that aspires to excellence in riding comfort is called a luxury car. For many years Mercedes-Benz has built sedans, coupes, coupe/roadsters and station

DESIGNED TO STRIKE THE WIDEST POSSIBLE BALANCE OF DESIRABLE CHARACTERISTICS



Left, a small sample of the vast trove of Mercedes-Benz racing memorabilia.

Above are stamps issued by a German post office, commemorating the fiftieth anniversary of the Avus race track.



Rudolf Caracciola drove the pictured streamliner to a land speed record of 268.496 mph in January 1938.

A 1983 Mercedes-Benz 190E 2.3-16 is seen lapping the Nardò test track. The modified sedan averaged a phenomenal 154.06 mph for 31,000 miles.



wagons designed to be competent as both. Consider the near showroom-stock Mercedes-Benz sedans that dominated the pothole-ridden, dust-choked international rally courses of the early 1960's. And the regally smooth, sumptuously comfortable Mercedes-Benz 600 Sedan of the 1970s. A stately limousine of two-and-a-half tons mass on a 126-inch wheelbase, it was nevertheless capable of lapping a race track with a proficiency rivaling sports cars.

The logical engineers of Mercedes-Benz are not conditioned to think of ride comfort, handling capability, steering control and braking as separate categories. Or to design the mechanical components that regulate each as unrelated elements. As is true of all the systems that constitute a Mercedes-Benz, each is engineered to function in concert with the others. Each is a critical part of vehicle synergy. Through coordination of the various systems, outstanding results are achieved in every measurable category.

More than half a century ago, Mercedes-Benz engineered a rear suspension that allowed each wheel to interact with the road independent of the other. While this design was more expensive than a rigid axle, the results justified the cost: Suspension movement on one side of the machine had a reduced nega-

tive effect on braking traction, roadholding and ride at the other wheel. Today, Mercedes-Benz independent rear suspension systems extend this concept beyond mere isolation of each rear wheel, controlling steer angles and camber change. Thus while the rear suspension contributes to the automobile's roadholding and ride, it also works with the recirculating-ball steering to hold a steady line over twisting roads.

The negative or zero-offset geometry of Mercedes-Benz front suspensions contributes to accurate straight-ahead tracking, particularly when braking—another example of system interaction. But here a second level of synergy is at work; the Anti-lock Braking System (ABS)—on models so equipped—resists wheel lockup during hard braking to help maintain steering control and directional stability.

Because every Mercedes-Benz is shaped in a wind tunnel, even its form contributes to stability. By minimizing lift, its shape helps maintain traction. While largely negating the effects of cross-winds.

Melding a clear concept of automotive proficiency with advanced science, today's Mercedes-Benz automobiles achieve exalted levels of over-the-road competence. Competence that reflects a dedication to function. And deep concern for occupant well-being.

A CLEAR-SIGHTED CONCEPT OF TRUE AUTOMOTIVE PROFICIENCY



Count Giulio Masetti and his Grand Prix Mercedes are pictured above, pounding over ancient Roman roads in the 1922 Targa Florio. The Count went on to win the punishing Sicilian road race at a record speed of 39.1 mph. Of 42 starters, only 24 cars survived the harrowing event. Among

them were six Mercedes. A free-for-all, open to anything that vaguely resembled an automobile, the 268-mile race was a



formidable test of both driver and machine.

The cockpit schematic at right is a preliminary document in pursuit of a functional driving environment. From driver position, to vision in four directions, to accessibility of controls, to arm extension and fatigue-resistant comfort, no aspect of driver performance and convenience is overlooked in the engineering of an



ergonomically efficient cabin area. From computer studies and



schematics, the scientifically sound procedure progresses to development and extensive testing of prototypes.



THOSE WHO HAVE DRIVEN PREVIOUS MERCEDES-BENZ MODELS are always pleased to discover how easy it is to adapt to a new one. There is a reassuring familiarity about the driving environment of all Mercedes-Benz cars: the engineers have designed an ergonomically correct passenger cabin and they are not inclined to alter it substantially from model to model for the sake of mere novelty. In the belief that a properly positioned, wide-awake, comfortable driver is a better driver, these practical engineers will change the layout and seating only in pursuit of increased efficiency.

Once settled behind the steering wheel of a Mercedes-Benz, you should be pleasantly relieved to find that the dashboard layout does not resemble a jukebox or a video arcade. Instead, the effect is one of pure *automotive* function: Switches and controls can be reached without strain, operated by feel

alone and are not likely to be accidentally tripped. The view through the windows is expansive. Side-view mirrors are exactly positioned.

The steering wheel is substantial and thick-rimmed, in sharp contradiction to the shrunken "racing type" steering wheels styled into many cars today. The wheel's generous diameter allows a restful grip over the long hours, maximum steering leverage and an unobstructed view of the instrument cluster with its large, round, analog gauges.

A Mercedes-Benz is designed to be simple and easy to drive, even for the uninitiated. Thus, rather than expending energy on deciphering and manipulating complex controls, the driver can focus full attention on the critical task of driving.

Because the body's resistance to fatigue is largely dependent on proper physical support, both front seats are of steel-spring construction and are firmly upholstered over multiple layers of

padding that allow air circulation while comforting the occupants.

Seats are generously wide, deep and roomy



The Mercedes-Benz driving simulator can reproduce the driving experience with amazing accuracy. Forces are duplicated; road detail is projected on a screen in front of a modified production automobile. The device allows the simulation and study of realistic driving incidents.

to allow for occasional shifting of position when the hours and miles grow long. A full range of seat adjustment enables you to pinpoint your preferred position behind the wheel. Important details—like a door armrest that provides a near perfect cradle for your left elbow, a plump pull-down center armrest, and a properly positioned driver's left footrest—may seem almost insignificant; but they can contribute materially to minimization of driver fatigue.

The concept of a refreshed driver and passengers extends beyond seating position. A Mercedes-Benz is *psychologically* comfortable. Almost totally absent are wind noise, wallowing uncertainty and distracting interior trim rattles. Totally absent is superfluous decoration. Available in abundance is a constant supply of fresh air, automatically heated or cooled as necessary to the temperature level you select.

The sense of well-being common to occupants of a Mercedes-Benz passenger cabin is invoked by an environment engineered with minimization of stress in mind—a result of the car's having been conceived and constructed with driver and passenger well-being a fundamental priority.



MERCEDES-BENZ AUTOMOBILES have never been designed and built on the assumption that their owners will tire of their styling and trade them in every two or three years. They are designed and built to be efficient machines—and the lifespan of a machine, given reasonable care, can far

exceed the lifespan of a trend. It is this honesty and logic that has attracted so many Americans to the marque. And that shapes the engineering character of every Mercedes-Benz automobile.

Contributing to the integrity of every Mercedes-Benz is the fact that many of the priorities guiding its manufacture were not imposed solely by cost-control experts. Instead, a standard of quality is first established—then a manufacturing process is designed to meet that standard. One of the most



important criteria applied is simply that the chosen method produce the best possible result.

The ruggedness of a Mercedes-Benz is inseparable from the rigidity of its monocoque body/chassis. After precise electronic robots have welded numerous steel components into a single, solid unit, highly trained craftsmen apply their finely honed skills to its finishing. First, welds that can be made more effectively by hand are completed. Then, because the process lends integrity to the finished body/chassis while contributing to corrosion protection, craftsmen braze all vital body seams.

Extensive anti-corrosion protection is an integral part of the assembly process. Methods range from zinc-phosphatizing, to cathodically applied primer, to the lavish application of approximately 34 pounds of protective PVC plastic undercoating.

Suspension components are far more rugged than they would need be if cost were the principal criterion and vehicle life expectancy unimportant. Dampers are nitrogen gas assisted heavy-duty units. Many suspension control arms and steering links are steel forgings. Resilient rubber bushings are meant to resist deterioration.

At the heart of every Mercedes-Benz is an engine designed to

retain its smoothness and power over time. Every engine is based on a deep-skirt cylinder block with as many main bearings as possible. This makes for a rigid lower end that will resist flexing and the wear and vibration that result. Machined to fine tolerances, engine parts are assembled with exact clearances so that every part is thoroughly lubricated and runs at a temperature conducive to long life.

Perhaps most importantly, every Mercedes-Benz automobile is the product of a development period that averages seven years. Seven years of careful planning, precise calculation and punishing durability testing. Millions of miles of testing, over smooth roads, rough roads and no roads. Every new Mercedes-Benz is also subjected to extensive laboratory testing, including brutal sessions on a hydraulically pulsed machine that literally tries to shake a prototype automobile chassis apart.

The renowned strength and endurance of a Mercedes-Benz is, however, more than a matter of materials, engineering, manufacture and testing. It is the result of a firmly held belief, an ethic that embraces the motto of Gottlieb Daimler: "Das Beste oder Nichts." The best or nothing. Words that became and remain today the motto of Daimler-Benz A.G.

THE PRODUCT OF A DEVELOPMENT PERIOD AVERAGING SEVEN YEARS



Representing a century of automotive progress, the collection at left includes the latest Mercedes-Benz V-8 engine block, clusters from a modern gearbox, older straight-cut gears, the Three-Pointed Star atop an antique radiator cap, an early engine identification plate, a piston from a large displacement four cylinder of elderly vintage, some venerable Mercedes-

Benz spark plugs, a fire engine gauge, and tools from Daimler's workshop. The C111/4 race car pictured above holds the world's unofficial closed-course speed record. In 1979 this sleek machine lapped the Nardò track at 250.9 mph. Under its slippery bodywork was a high-revving, turbocharged, 500+



horsepower version of the passenger car V-8. The machine went on to establish four world speed and endurance marks that day. In the 1960s, factory motorsport participation turned to rallies—events that emphasize endurance as well as speed. The 1960 Monte Carlo event ended with a 1-2-3 sweep for the



Mercedes-Benz 220SE Sedans, a feat never duplicated. The marque's numerous rally wins include stunning performances in marathon events, such as the 19,700-mile London to Sydney run in 1977 and the 1978 18,600-mile Round South America Rally. Both ended with the Three-Pointed Star in the winner's circle.





MERCEDES-BENZ AUTOMOBILES RANGE IN SIZE from trim to large, but not even the largest is an inch longer or a pound heavier than functional efficiency demands. A Mercedes-Benz spares nothing in pursuit of superb transportation—yet so absolutely scrupulous is the engineering behind it that virtually nothing is wasted. In space, in weight, in energy, in any conceivable aspect.

For example, the very shape of a Mercedes-Benz is designed to enhance efficiency—and has been since long before aerodynamics became an automotive glamour term. (The first Mercedes-Benz wind tunnel was operational almost fifty years ago; the largest of the company's two current wind tunnels is one of the most powerful in Europe.) A body shape that minimizes aerodynamic drag reduces the amount of engine power needed to move the car at a given highway speed; reduces air turbulence; reduces annoying wind noise. Perhaps unsurprisingly, the latest Mercedes-Benz sedans and coupes represent some of the most aerodynamically efficient production automobiles on the road today.

Yet because every Mercedes-Benz must achieve a careful *balance* of functional priorities, total aerodynamic purity is sometimes

gladly sacrificed. Thus, those channeled windshield edges that are designed to route rainwater up onto the roof and away from the side windows: a slight increase in overall wind resistance, but a vital aid in maintaining foul weather driving visibility. And a balance the engineers are pleased to strike.

The cause of efficiency led the engineers to mount a single, centrally positioned windshield wiper on their newest passenger car designs—a wiper that uses a unique eccentric motion to sweep a record 86 percent of the windshield area, and meanwhile resists “lift-off” of the blade at high cruising speeds.

Even the trunk of Mercedes-Benz passenger cars is a study in design efficiency: rectangular in shape, flat-floored and remarkably capacious. Without resorting to such unfortunate compromises as an undersized “temporary” spare tire.

And not even so small a detail as the tail lamp lens is too insignificant to serve a functional purpose. On every Mercedes-Benz it is deeply ribbed, not for styling's sake but because wind-tunnel tests showed the recessed portions stay virtually free of spray and



When it was the best way to build an automobile, a Mercedes-Benz was built almost entirely by hand. The skills of craftsmen are still used where no other method has been proven better. But computerized manufacturing is a fundamental part of today's Mercedes-Benz.



mud churned up in the moving car's wake. And thus help keep the tail lamps visible to following traffic.

To most efficiently exploit engine torque characteristics, all Mercedes-Benz automatic transmissions utilize four forward speeds and all manual gearboxes offer five forward speeds. Automatic transmissions are designed to idle in second gear for reduced "creep," and to accelerate from a standstill in second. This minimizes engine rpm during takeoff and thus helps conserve fuel in normal driving while reducing both engine wear and operating noise. A firm push on the accelerator pedal immediately shifts the automatic transmission into first gear for maximum takeoff response.

All manual transmissions feature an overdrive top ratio to help maintain a relatively low engine speed during highway cruising—reducing wear, fuel consumption and engine noise.

Mercedes-Benz automobiles exhibit an almost obsessive rejection of casual thinking and execution. Everything serves a purpose. Every component enhances the functional efficiency of the machine in as many ways as possible. Fused into the mechanical totality that is a Mercedes-Benz, this produces a functionally efficient machine indeed.



MERCEDES-BENZ HAS BEEN ENGAGED in basic safety research and development for almost half a century. As long ago as 1939, for example, Mercedes-Benz engineers built a prototype safety chassis. And it was in 1951—long before government mandates required automobile makers to incorporate safety measures—that Mercedes-Benz patented the principle of controlled deformation: making the car's monocoque body itself a safety element, by designing its front and rear sections to progressively yield in event of a major impact, to help minimize the transfer of impact forces to the passenger shell. A passenger shell, that is, in turn, built to be as rigid and shock-resistant as possible.

Long experience and deep research have yielded a remarkably comprehensive approach to safety at Mercedes-Benz—embracing almost every aspect of a car's performance and function and the design of almost every component. Since the optimum form of safety is to never encounter trouble, even the largest Mercedes-Benz is designed

to be agile, with quick mechanical reflexes and predictable handling. Its steering is devised to impart a

AN ALMOST OBSESSIVE REJECTION OF CASUAL THINKING AND EXECUTION



The vehicle pictured above was launched into its apparently cataclysmic roll-over disaster, not by an errant driver but by an acceleration sled. The purpose: to test the crash-worthiness of a Mercedes-Benz production automobile and the level of protection



this might offer to the occupants. As long ago as 1951, Mercedes-Benz was a pioneer in the controlled scientific crashing of production automobiles. Today, an extensive crash testing program is used to evaluate numerous vehicle systems, including deformable, energy absorbing front and rear body sections, special monocoque body/chassis design elements that help the latest Mercedes-Benz passenger cars better manage the

considerable forces generated in offset front and rear impacts, and the Supplemental Restraint System (SRS).



SRS enhances driver and front-seat passenger restraint by means of a driver's-side air bag and knee bolster, and emergency tensioning retractors for both of the three-point seat belts.

sensitive "feel" of the road. Braking power and stability are reassuring. The cabin is designed around the driver's need to see, to quickly and efficiently operate controls, and to consult gauges at a glance.

Should trouble occur, a Mercedes-Benz is intelligently engineered with occupant *protection* in mind. Padding covers the cabin pillars, the doors, the roof lining and the front seat backs. The steering column is devised to yield to a frontal or oblique impact and resist thrusting rearward. The flat, padded steering wheel hub encloses a driver's-side air bag, part of a Supplemental Restraint System (SRS) that also incorporates emergency tensioning retractors for both front seat belts and a knee bolster on the driver's side.

Every Mercedes-Benz incorporates myriad safety-related elements so subtle that you may never know they exist—unless they are needed. The driver's foot pedals of 190 and 300 Class models, for example, are designed to move forward and away from your feet in event of an impact. The doors of all models are engineered to help resist jamming shut under the deformation of a major frontal impact. Sedan, coupe and station wagon roof pillars serve as rigid support elements in the rare event of a roll-over incident.

The fuel tank in sedan, coupe and coupe/roadster models is mounted as far inboard of the rear of the car as is practical. There are virtually no sharp or hard interior elements to pose hazards to the cabin occupants. The interior rearview mirror is mounted to give way under the force of a moderate blow.

The outside mirrors, meanwhile, are designed to yield to a blow from the front or rear, one of numerous provisions for pedestrian safety. The exterior of a Mercedes-Benz is smooth and rounded and free of sharp edges. The famous Three-Pointed Star grille ornament is spring-loaded, to give way in a collision.

Knowing that factors beyond its control play crucial roles in driving safety, Mercedes-Benz nonetheless believes that the cause of driver and passenger well-being is of high priority. A priority that the engineers have turned into an opportunity to exercise their unique expertise and experience.



The Mercedes-Benz eight-cylinder Nürburg Sedan as rendered by Cucuel Offelsmeyer for a 1929 poster.



block and dispersal of the alloy's silicon crystals is critical, a unique "closed deck" casting process was chosen: Utilizing a sand mold, the process casts cylinder sections that are longer than necessary, so that any bubbles formed as the molten metal is pumped into the mold rise to the top. And are eliminated when superfluous length is cut away. The result is an alloy of uniform density, which—after etching exposes the silicon—is virtually the equal of a cast iron block in resistance to wear and heat, but is far lighter.

The methodology of high-quality construction involves more than refined techniques. The brightly lit, spotlessly clean assembly halls of Mercedes-Benz provide a workplace that encourages pride and precision. Tireless robots perform much of the taxing, repetitive labor required in an industrial operation. Note that the floors in many assembly areas are not unyielding concrete but resilient wood, simply because it is kinder to the employees' legs and feet.

Mercedes-Benz design, testing and manufacturing methods have advanced immeasurably over the decades as technology and experience have revealed ever more efficient solutions. But Mercedes-Benz standards remain today what they have always been. And always will be.



THE BENEFITS OF MERCEDES-BENZ OWNERSHIP extend beyond the automobile itself, beyond the advanced capabilities of the machine. Although well served by the car itself, the Mercedes-Benz owner in North America is also extremely well served by a support system designed to greatly enhance the value of ownership.

Extra attention is bestowed on a Mercedes-Benz from the moment it arrives on this continent. Before being transported to the dealer, it is methodically inspected—and, if necessary, adjusted—at one of numerous Mercedes-Benz Vehicle Preparation Centers.

And once in the owner's hands, in everyday driving, the car becomes the beneficiary of extraordinary dealer service. Virtually all authorized Mercedes-Benz dealers benefit from a long association with the marque and employ highly trained Mercedes-Benz technicians. Technicians who usually have, at their disposal, advanced electronic diagnostic aids and as many as 230 specialized Mercedes-Benz tools.

Technicians who take a deep personal interest in the maintenance and repair of every automobile.

A SUPPORT SYSTEM THAT GREATLY ENHANCES THE VALUE OF OWNERSHIP



The Mercedes-Benz Roadside Assistance program maintains a dealer fleet of specially equipped 300 Class station wagons that stand ready to rush a trained



Mercedes-Benz service technician to the aid of the owner who experiences mechanical difficulty after normal dealer service hours.



The grille-mount badges pictured above are awarded to Mercedes-Benz owners whose automobiles have covered the kilometer distances indicated on the lower portion of each.



The Mercedes-Benz 220D at left has clocked more than 1,000,000 miles. Remarkable indeed, but like all Mercedes-Benz automobiles, it has benefited both from inherent durability and the exemplary service and maintenance provided by Mercedes-Benz dealers. Service that includes detailed reports and, at participating dealerships, the technician's signature on the work order of a completed job.



So that a Mercedes-Benz owner won't be unnecessarily delayed should a replacement part be needed, a fully computerized nationwide parts distribution system helps dealers maintain a substantial inventory of genuine Mercedes-Benz parts.

For the first four years or 50,000 miles, every Mercedes-Benz is extensively protected by a limited new-car warranty that covers not just the engine and drivetrain, but virtually every part of the automobile, other than those classified as wear parts and subject to normal maintenance replacement.

But Mercedes-Benz owners are not forgotten when the car leaves the dealership or after the warranty expires. Even while traveling a remote stretch of backroad in the dead of night, the Mercedes-Benz driver can feel secure in the knowledge that, should difficulty arise, a nationwide network of trained technicians stands ready to offer help—over the phone and on the spot if necessary. The Mercedes-Benz Roadside Assistance program puts highly qualified help only a toll-free call away. A dealer-implemented and sponsored program, Roadside Assistance is yet another example of the personal attention that authorized Mercedes-Benz dealers lavish upon their customers.

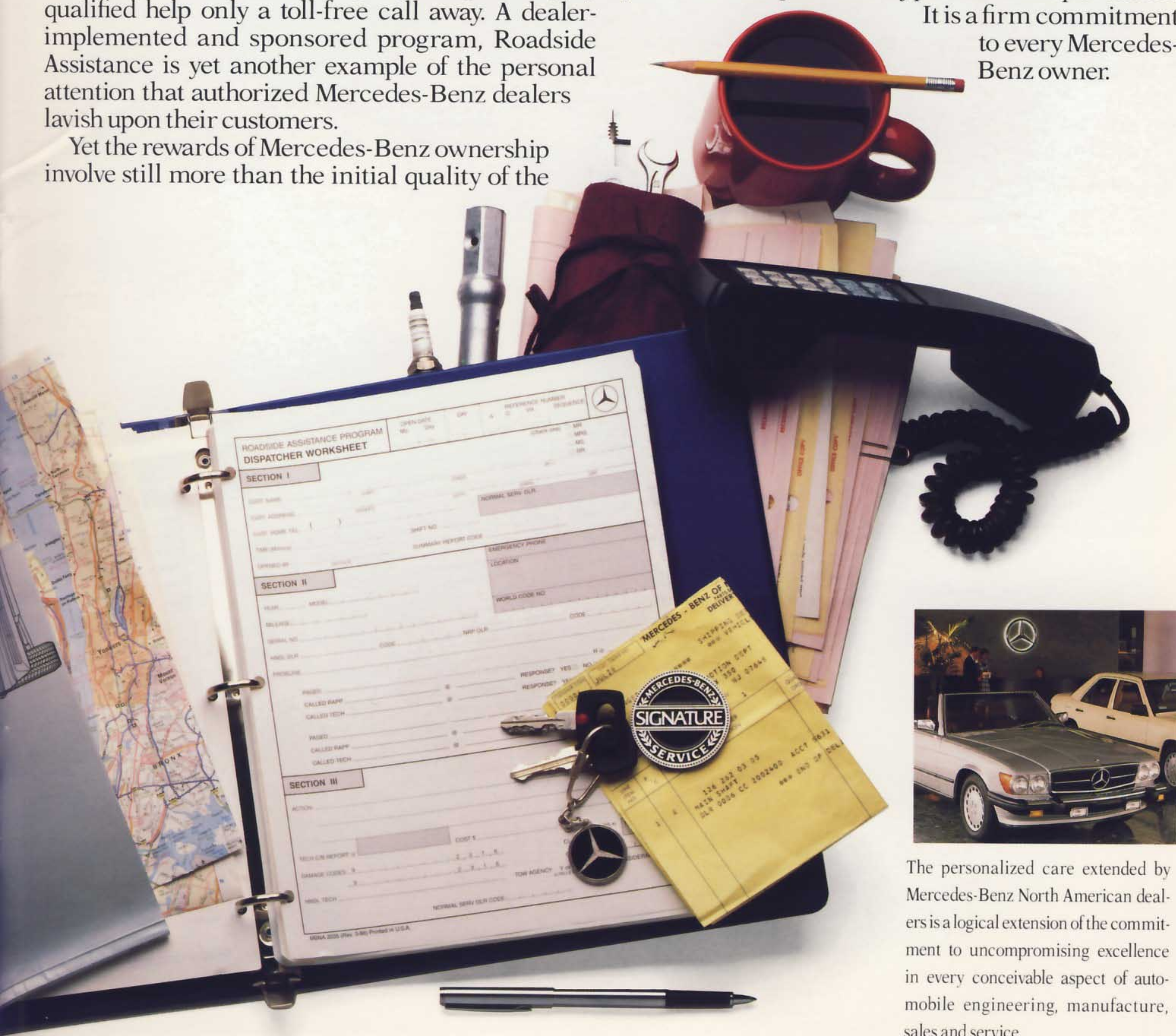
Yet the rewards of Mercedes-Benz ownership involve still more than the initial quality of the

product and the benefits of an attentive service network. Over the years, Mercedes-Benz automobiles as a line of cars have, on average, maintained a higher percentage of original value than any line of domestic or imported automobiles. Testimony not only to the desirability of the machine, but to its durability.

The durability of a Mercedes-Benz is underscored by the high-mileage badge program. When a Mercedes-Benz records 200,000 documented kilometers, it becomes eligible for a special grille badge commemorating the event. When 500,000 kilometer and 1,000,000 kilometer milestones are reached, additional badges are awarded. The demand for high-mileage badges is substantial and steady.

Thus, the concept of simultaneous excellence—the spirit that moves the marque to such high levels of performance in every category—extends even beyond the car itself. It is the hallmark of a company whose very roots grow out of a determination to improve on all previous types of transportation.

It is a firm commitment to every Mercedes-Benz owner.



The personalized care extended by Mercedes-Benz North American dealers is a logical extension of the commitment to uncompromising excellence in every conceivable aspect of automobile engineering, manufacture, sales and service.



Compressing the Mercedes-Benz philosophy of simultaneous excellence into an automotive equation of the trimmest, most agile size represented one of the great challenges in company history.

The outcome, ten years later, was a host of individual technological advances synthesized into an advanced automotive class: the Mercedes-Benz 190 Class. On the following pages you will encounter both the engineering features and significant details of the 190 Class and the end result in driving and functional terms.

You will discover that the 190 Class automobiles for 1988 deliver in virtually every measure—from integrity of construction to dependability, from occupant comfort to stringent safety provisions—what the world expects from a Mercedes-Benz. And you will discover that these automobiles are fit to compete with exotic sports sedans in their sheer driving excitement. Driver's cars, in brief. With the same carefully measured

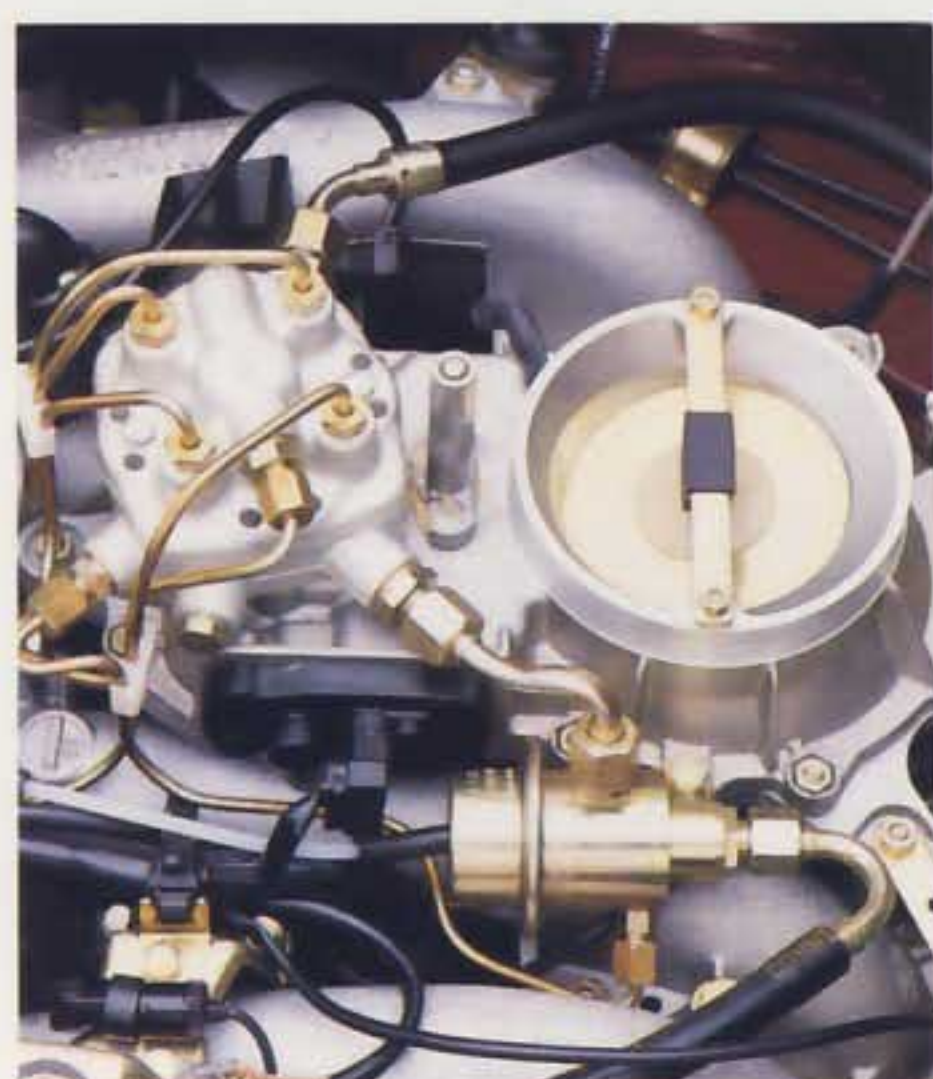
balance of virtues that is universally recognized as intrinsic to Mercedes-Benz.

THE 190 CLASS: A CONFLUENCE OF ADVANCED TECHNOLOGIES



THE ARTICULATE EXPRESSION OF ENGINEERING ARTISTRY THE MULTIPLE GOALS OF A MERCEDES-BENZ ENGINE

The two gasoline engines that power the 190 E 2.3 and the 190 E 2.6 offer two distinct philosophies of powerplant design. The spirited, efficient four-cylinder. The supple, high-torque six-cylinder. Yet both share attributes common to every engine of the marque: reliability, smoothness, substantial output, a civilized temperament, and engineering integrity.

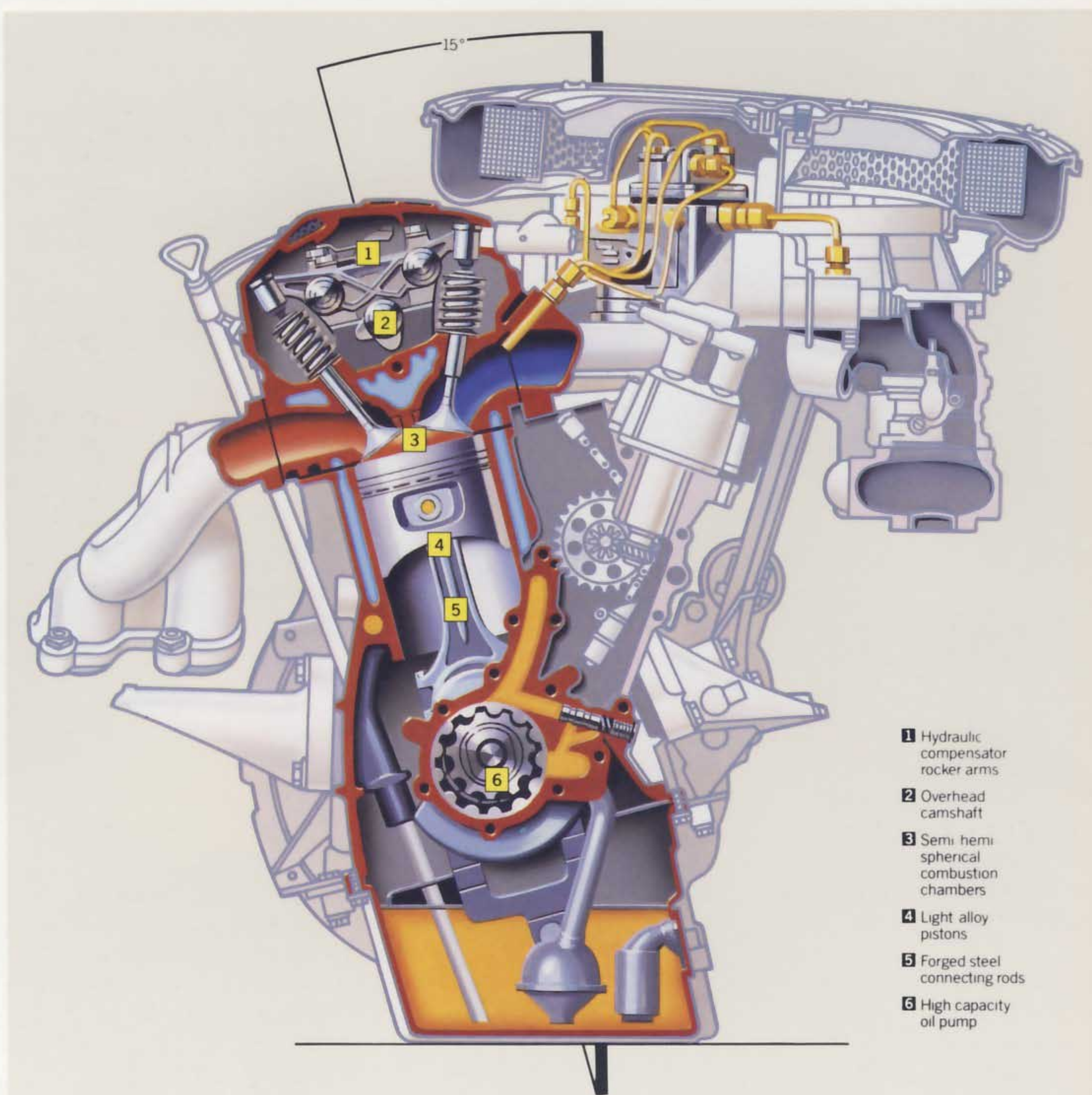


Fuel injection air sensor

THE 2.3-LITER FOUR-CYLINDER ENGINE generates an energetic 130 horsepower at 5100 rpm. Enough to propel the 190 E 2.3 four-door sedan to 55 mph in just a bit more than eight seconds.

A single overhead cam opens large valves via rocker arms with hydraulic compensators that reduce operating noise while eliminating the need for periodic adjustment. Inhaling and exhaling deeply through the cross-flow ports of its light-alloy cylinder head, the engine is capable of 6000 rpm. Exhaust valves are sodium filled for better cooling and durability. Hardened cylinder-head valve seats all but eliminate the possibility of compression leaks due to valve seat wear.

Forged-steel connecting rods and a forged-steel five-main-bearing crankshaft contribute to the reliable toughness of the engine's lower end. Mathematically exact crankshaft counterweighting, a vibration damper and hydraulically damped front engine mounts help minimize powerplant vibration.



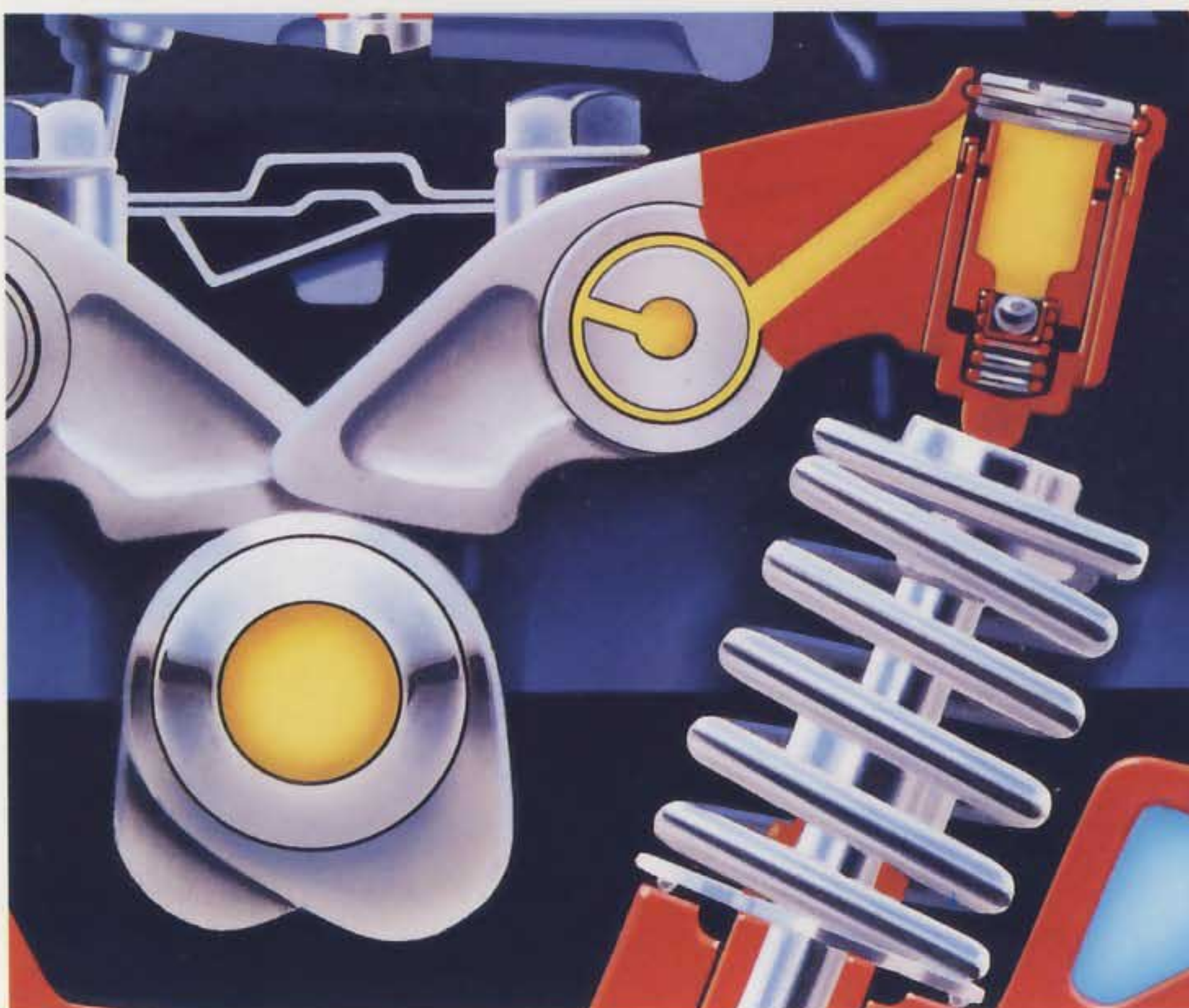
The 2.3-liter four-cylinder (pictured) and the 2.6-liter six-cylinder are of similar design

THE 2.6-LITER, 158-HORSEPOWER, SIX-CYLINDER ENGINE shares much of the four-cylinder's sophisticated

technology, but adds to it the inherent smoothness of additional cylinders and massive reserves of sheer, responsive

power. Broad, seamless power that pours out at a touch of the throttle, lending the 190 E 2.6 Sedan 129 mph test-track capability. Numbers that virtually any sports sedan in the world would proudly wear.

BOTH GASOLINE ENGINES SHARE ADVANCED MANAGEMENT SYSTEMS. Micro-processor-regulated ignition control systems adjust spark timing in respect to engine parameters and ambient conditions. Direct-port electro-mechanical fuel injection melds the virtues of time-tested mechanical operation and electronic fine tuning. Ignition and fuel-injection systems combine to exercise virtually perfect control of engine operation for near flawless driveability.

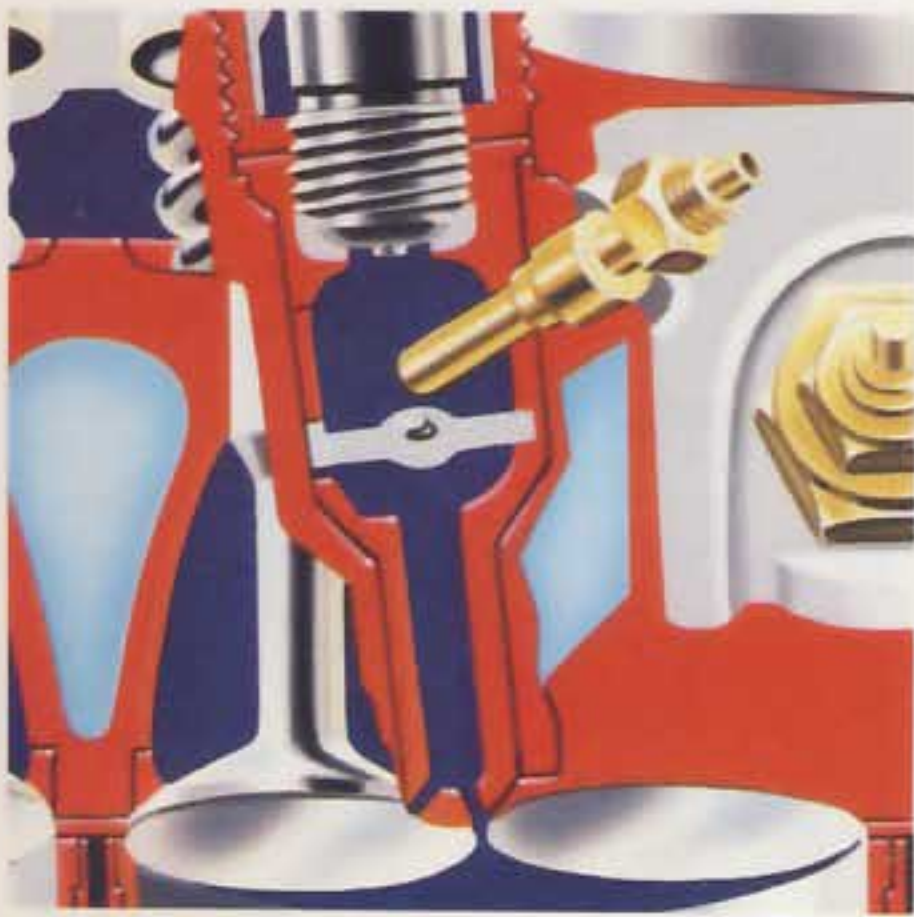


Overhead cam valve train with hydraulic compensator

THE EFFICIENCY OF A SOPHISTICATED DIESEL

THE 2.5-LITER FIVE-CYLINDER DIESEL that powers the 190D 2.5 Sedan adds all the stubborn reliability and granite durability of a compression ignition engine to a versatile 190 Class Sedan. Without sacrificing the machine's sporting verve.

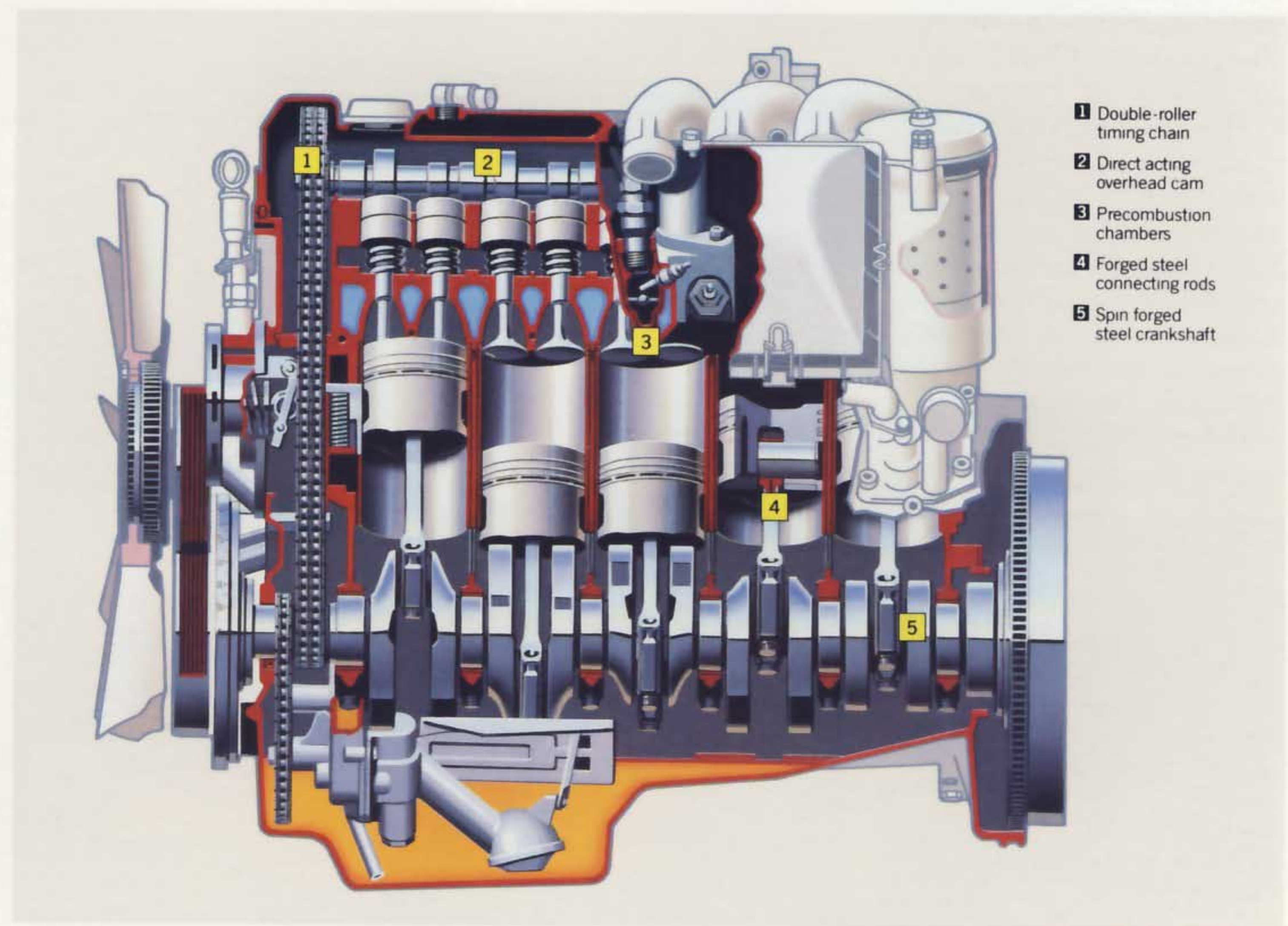
Although designed to minimize waste, this responsive diesel delivers 93 horsepower and a substantial 122 lb-ft of torque. Thus, the energetic powerplant can accelerate



The LVP prechamber

the 190D 2.5 to 55 mph in less than thirteen seconds.

THE ENGINE'S REMARKABLE PROWESS is due, at least in part, to the advanced design of Mercedes-Benz LVP prechambers. ("LVP" is



The tenacious five-cylinder diesel powerplant of the 190D 2.5 Sedan

derived from the German words for high performance, low fuel consumption and reduced particulate emissions.) Because combustion begins within these cylinder-head cavities, the powerplant's efficiency is significantly

affected by variables in pre-chamber engineering. The LVP concept places each injector nozzle off-center and incorporates a diffuser element to stimulate mixing of air and fuel, thereby improving combustion.

A DEEP-SKIRTED CAST-IRON BLOCK, a high-volume oil pump, forged-steel connecting rods, a spin-forged crankshaft, and a valve train free of pushrods and rocker arms all help the diesel engine achieve bulldog toughness.

REFRESHING, LUXURIOUS QUIET



Diesel encapsulation

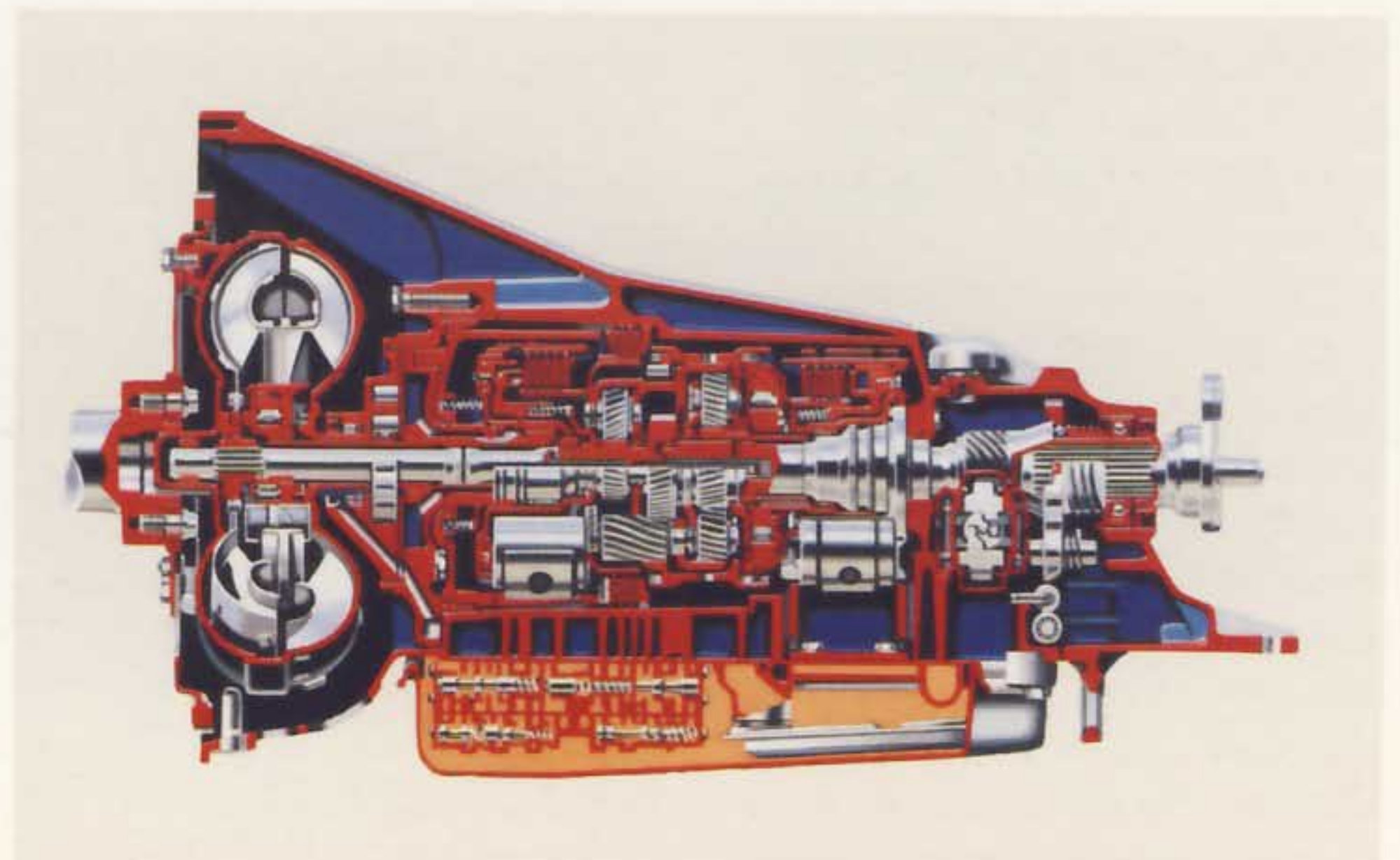
MERCEDES-BENZ ENGINEERS HAVE TAKEN STEPS to ensure that excessive diesel clatter will not diminish your enjoyment of the 190D 2.5 Sedan. To this end they have encapsulated the already quiet powerplant in a system of acoustic panels, including a sound-deadening mat inside the hood, strips that effectively seal the engine compartment, insulated polymer skirts, an underpanel shield and a second firewall. Thermostatically controlled vents ensure that engine compartment temperature does not rise excessively.

Hydraulically damped front engine mounts further reduce the transmission of vibration and noise.

TWO EFFICIENT AUTOMATICS ONE SMOOTH-SHIFTING MANUAL

A FOUR-SPEED AUTOMATIC TRANSMISSION idles in second to minimize creep and starts in second for best efficiency. Hard throttle pressure immediately shifts

it down to first gear for improved acceleration. A five-speed manual gearbox with overdrive is optionally available at no extra cost on the 190E 2.3 and 190E 2.6 Sedans.



Precise-shifting four-speed automatic transmission

THE DECELERATIVE POWER OF FOUR-WHEEL DISC BRAKES THE SECURITY OF AN ANTI-LOCK BRAKING SYSTEM

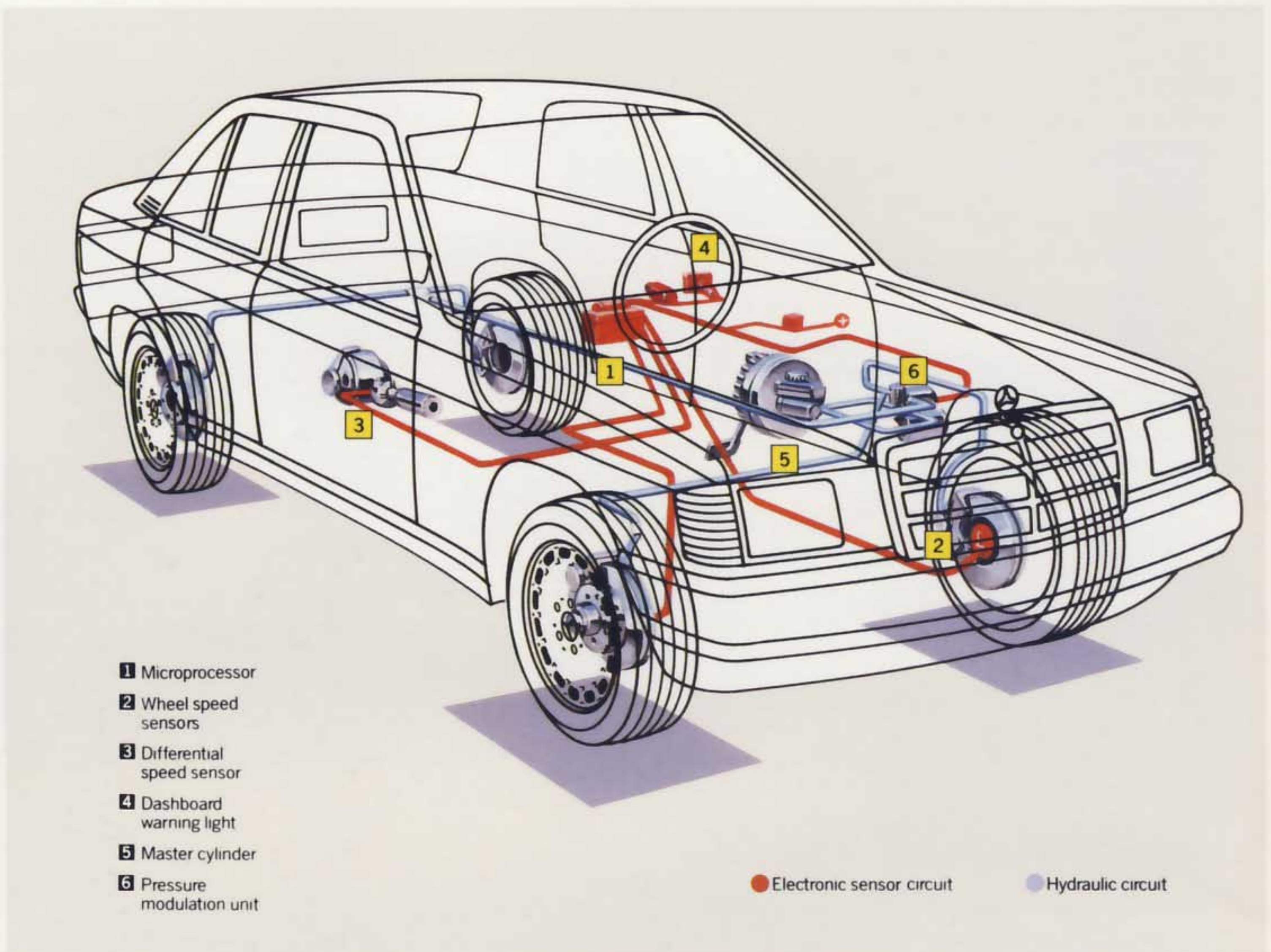
BECAUSE DRIVING A 190 CLASS AUTOMOBILE IS such a pleasure, stopping may not be high on your personal list of priorities. But to the safety-minded engineers of Mercedes-Benz, an automobile with high-performance propulsion capability must achieve an equally high level of stopping power. Thus each 190 Class automobile is fitted with large four-wheel disc brakes. On the 190 E 2.3 and



Vented front disc-brake

190 E 2.6 Sedans the front discs, which work harder than the rear discs, are vented for extra cooling. Both front and rear brakes are engineered to be more effective than is required in normal use. They are particularly resistant to fade.

A vacuum power booster is designed to provide assist in order that excessive pedal effort will not be required. Split hydraulic circuits help ensure that you will have



Principal components of the Mercedes-Benz Anti-lock Braking System (ABS)

braking capability, even if a hydraulic leak should somehow ever occur.

THE ADVANCED MERCEDES-BENZ ANTI-LOCK BRAKING SYSTEM (ABS) was engineered to help prevent wheel lockup and skidding in hard braking, even on roads that are wet or slippery. Thus it also helps prevent the loss of steering control and directional stability that can occur when one or

more wheels brake with less road traction than the others.

Sensors at each front wheel and at the rear differential measure rotational speed. An onboard computer processes the data. When a reduction of wheel speed indicates that lockup is imminent, the hydraulic unit modulates pressure in the respective brake lines up to fifteen times per second, maintaining wheel rotation.

Although it is a valuable supplement to disc brakes, the Anti-lock Braking System is not a panacea for poor driving habits. It is not primarily designed to reduce stopping distances. But it can help you retain steering control in situations where braking traction is less than ideal.

Anti-lock Braking is standard on the 190 E 2.6 Sedan, optional at extra cost on 190 E 2.3 and 190 D 2.5 Sedans.

EXTENDING THE FRONTIERS OF SOPHISTICATED ENGINEERING

THE ELEGANTLY SHAPED LIGHT-ALLOY WHEEL pictured to the right is not a machine or system in the visual sense but a single moving part. Nothing more, at first glance, than a means of transferring the rotational movement of a driving axle to the tire and road. Utilitarian though its role may be, this wheel incorporates a remarkable amount of advanced automotive science.

Of a rugged light-alloy, the wheel helps minimize un-

sprung weight for improved handling. Because it conducts heat efficiently, the front wheel bearings run at a relatively low temperature, one that is conducive to long-term durability. Designed with a smooth face, it contributes to the aerodynamic efficacy of each 190 Class automobile. Slots are cut into the wheel's perimeter to draw heated air away from the brakes. Cooler brakes are less susceptible to fade in repeated high-speed stops.

Mounted on each wide alloy wheel is a stout steel-belted radial tire. Matched



Light-alloy 190 Class wheel

precisely to the requirements of the vehicle's sophisticated suspension system, these advanced tires, with high-traction, open-block tread design, provide a superior bond between the automobile and the road surface, yet perform with minimal noise. And rated for sustained speed well into the three-digit range, their level of competence far exceeds what might possibly be required within the constraints of America's legal speed limits.

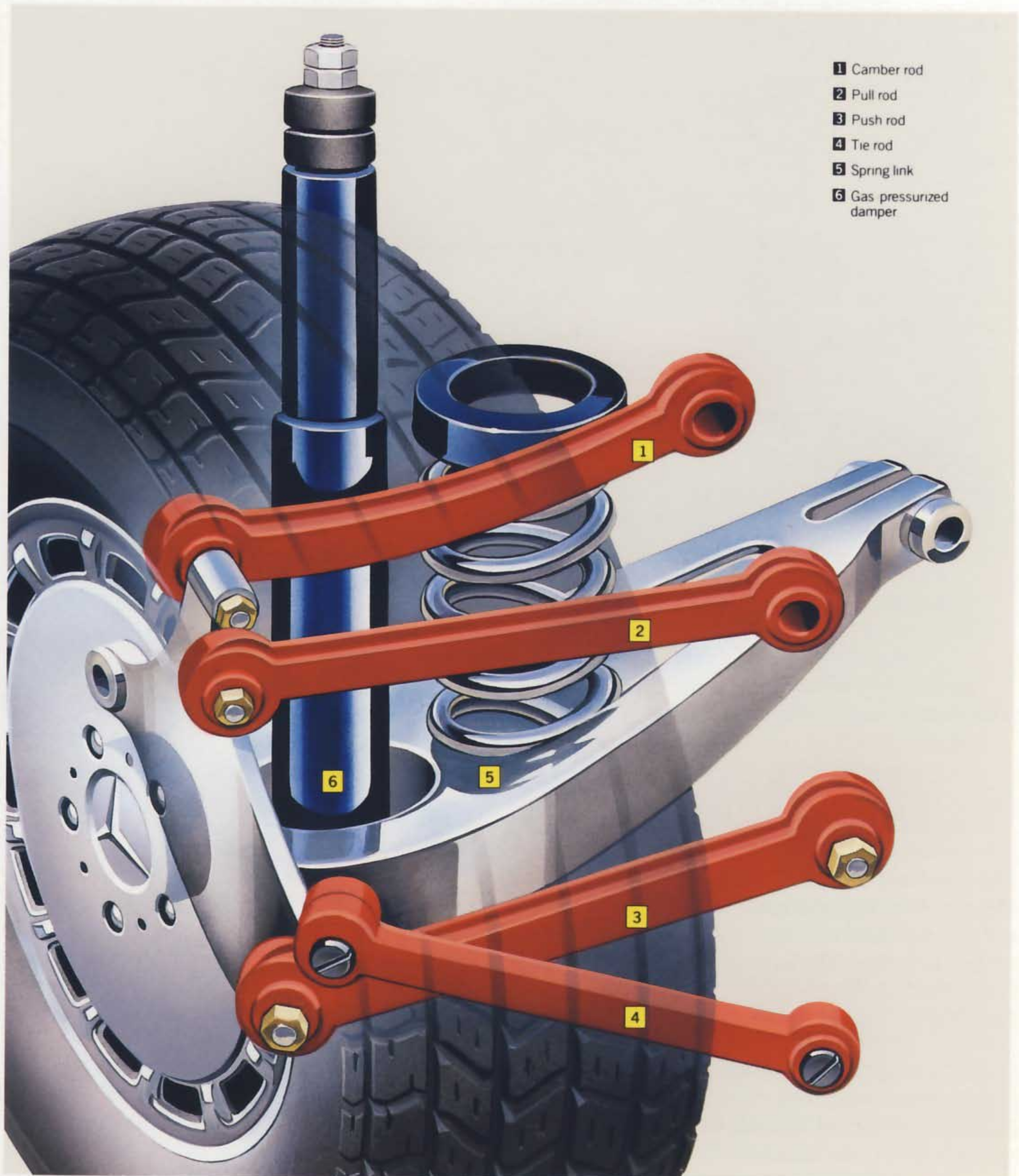
THE ENHANCED CAPABILITY OF A SUREFOOTED AUTOMOBILE THE ADVANCED TECHNOLOGY OF MULTILINK REAR SUSPENSION

THE HANDLING of 190 Class automobiles has been compared to that of exotic performance machines. But the ability to corner at exalted velocity was not all the Mercedes-Benz engineers had in mind when they designed the multilink independent rear suspension. Their goal was more practical: to design a suspension system that excelled in nearly *every* respect, and particularly in matters of stability.



Multilink, from above

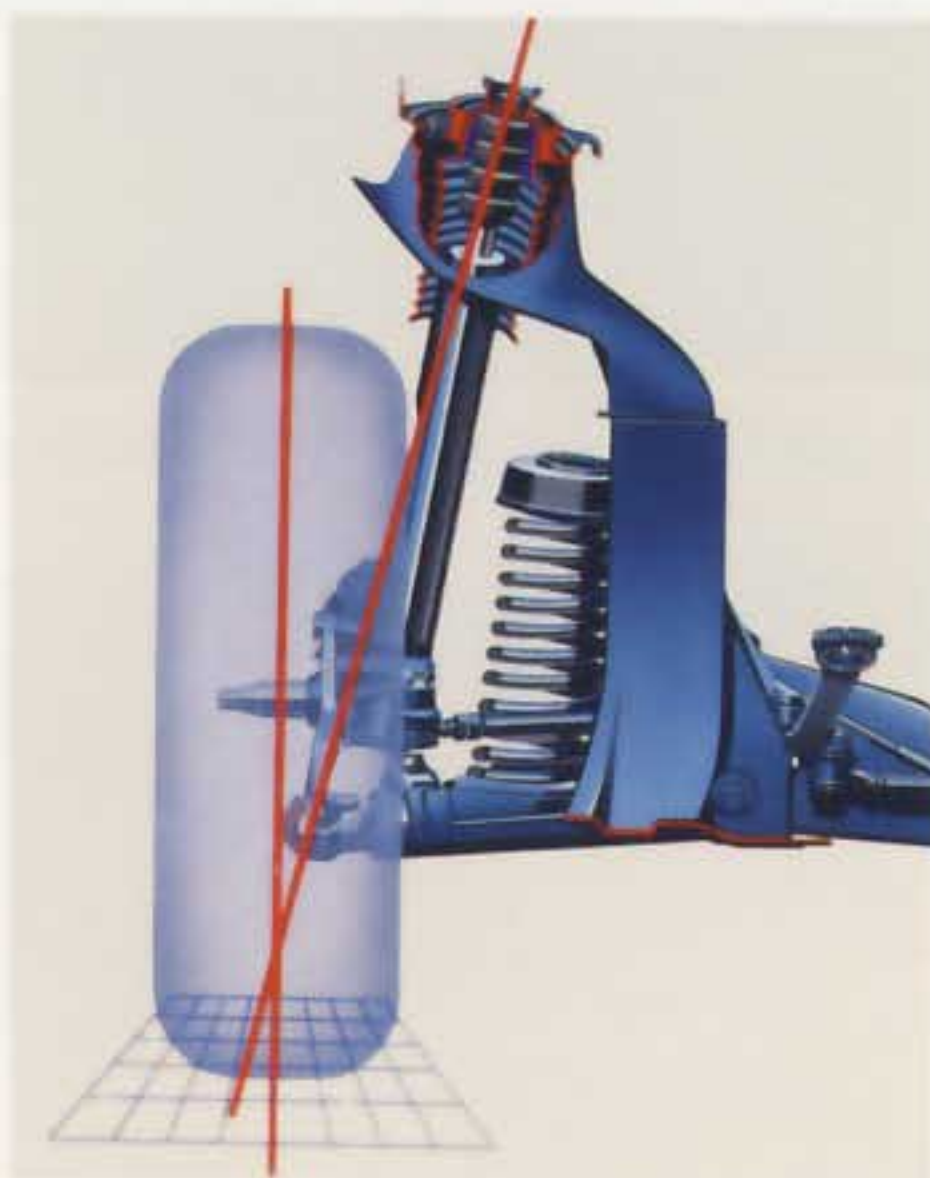
MULTILINK ROOTS TIRES to pavement by maintaining a near maximum footprint. Utilizing five links to locate each rear wheel, this suspension preserves the relationship between road and tire, while virtually eliminating undesirable steer effects. As *Road & Track* reports, a 190 Class sedan "will challenge some of the finest sports sedans in the world on just about any road you choose."



The five rubber-bushed control arms of the multilink independent rear suspension

THE LOGIC OF DAMPER STRUT FRONT SUSPENSION

A COMPACT DAMPER STRUT FRONT SUSPENSION contributes to aerodynamic efficiency by permitting a low hoodline. The design achieves advantages in ride comfort over MacPherson strut suspensions by separating the spring and the gas-pressurized damper strut, thereby allowing optimum placement of these components. Negative-offset geometry contributes to the excellent straight-line tracking of 190 Class automobiles.

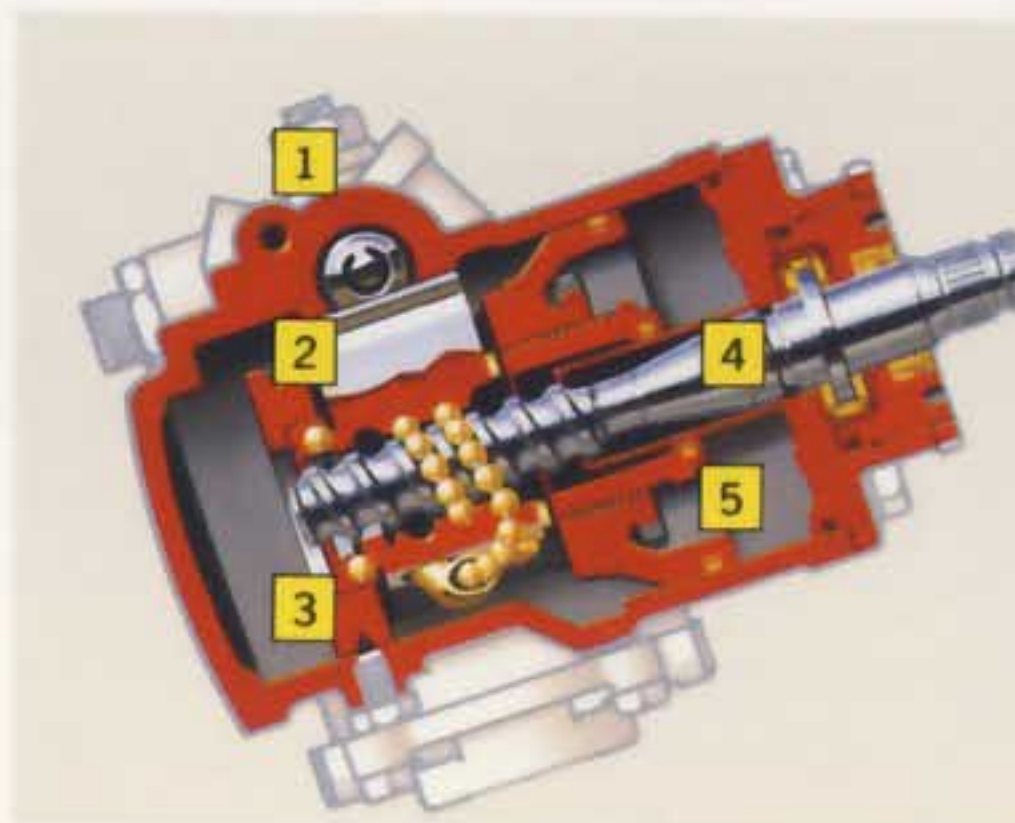


Damper strut suspension

BALLISTICALLY ACCURATE STEERING

PROVIDING SMOOTH feedback that helps keep you aware of the road, recirculating-ball steering with

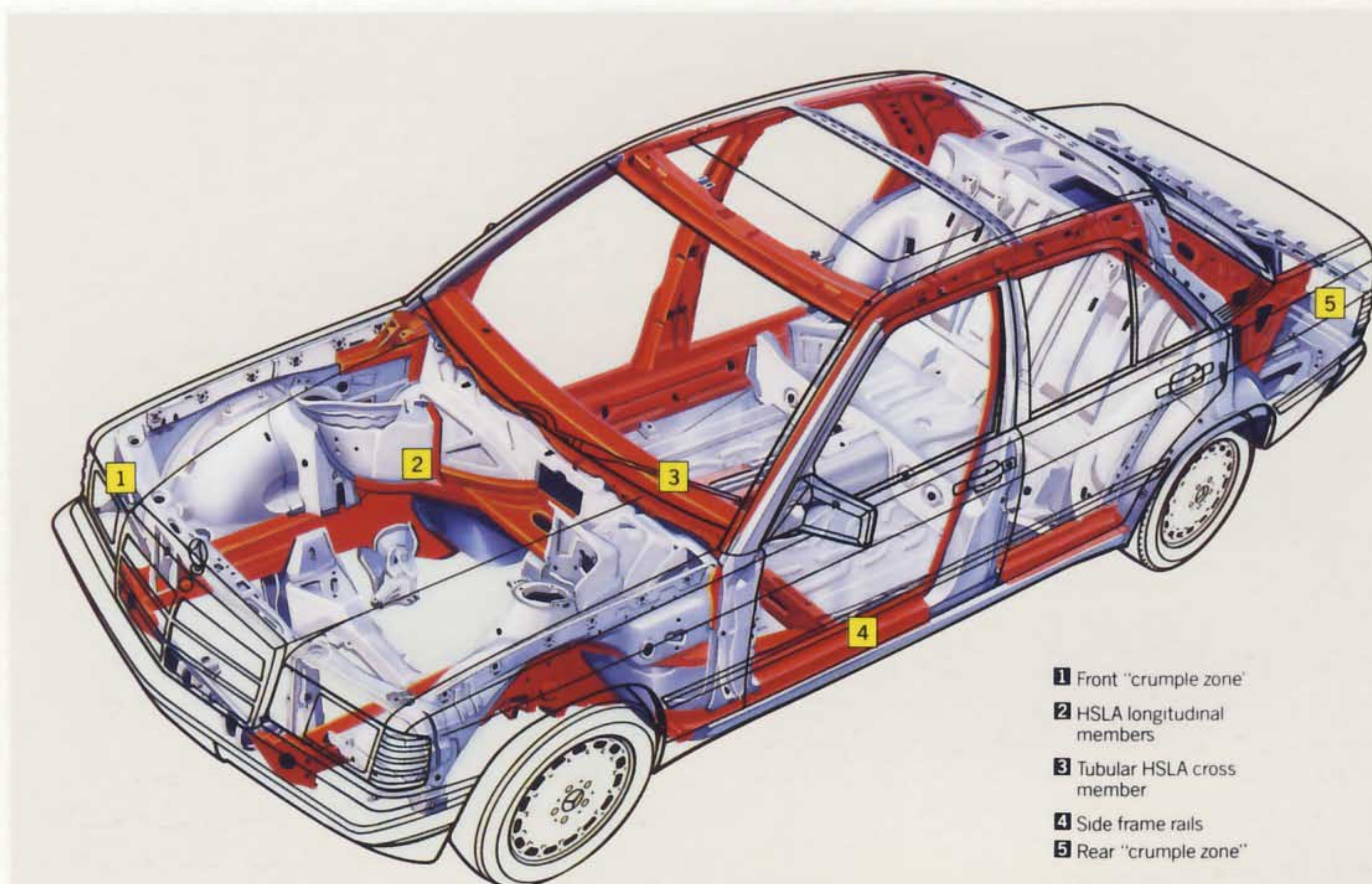
progressive power assist complements the 190 Class suspension with balanced effort and control.



- 1 Control valve
- 2 Steering nut
- 3 Recirculation balls
- 4 Steering worm
- 5 Working piston

Mercedes-Benz recirculating-ball steering system

THE INTEGRITY OF A MONOCOQUE BODY/CHASSIS THE FORMIDABLE STRENGTH OF UNITIZED CONSTRUCTION



The monocoque body/chassis unit. HSLA steel components are illustrated in red

UNDER THE SLEEK AERODYNAMIC SKIN OF A 190 CLASS AUTOMOBILE is an uncompromisingly tough steel structure. Welded at more than 4,000 points, this monocoque body/chassis unit functions as a single, rigid component, designed to withstand the jolts and stresses of hard driving on bad roads. Performing the dual role of body and frame, the structure is largely responsible for the granite-solid feel that 190 Class automobiles deliver to the driver and passengers. Utilizing advanced principles of engineering to achieve the right amount of strength in strategic areas, the monocoque unit is meant to control the way the car reacts to a severe collision—a safety concept pioneered by Mercedes-Benz in 1951.

FATIGUE-RESISTANT SUPPORT INGENIOUS ADJUSTMENT CONTROL

The front bucket-style seats of every 190 Class automobile are biomechanically engineered to sustain the human body over long hours and long miles.

THE FOUNDATION OF each seat is a sturdy network of formed wire and helical springs. This firm base is covered with several layers of

padding, designed to provide supportive fatigue-resistant comfort while permitting air circulation and eliminating excessive moisture.

STURDY HIDES for the optional leather upholstery are carefully selected. Once those hides with minor imperfections have been rejected, the best are cut to precise shapes using hand-placed patterns. The various sections are then carefully joined by expert seamstresses operating individual sewing machines. After the seat's spring core has been compressed, the supple leather upholstery is exactly hand fitted.

OPTIONAL ON ALL 190 CLASS models are electrically adjustable front seats and head restraints. An ingenious seat-shaped control system allows repositioning of each front seat by touch alone. For example, to lower the seat cushion you merely push down on the cushion-shaped adjustment control button.



Steel-spring seat assembly

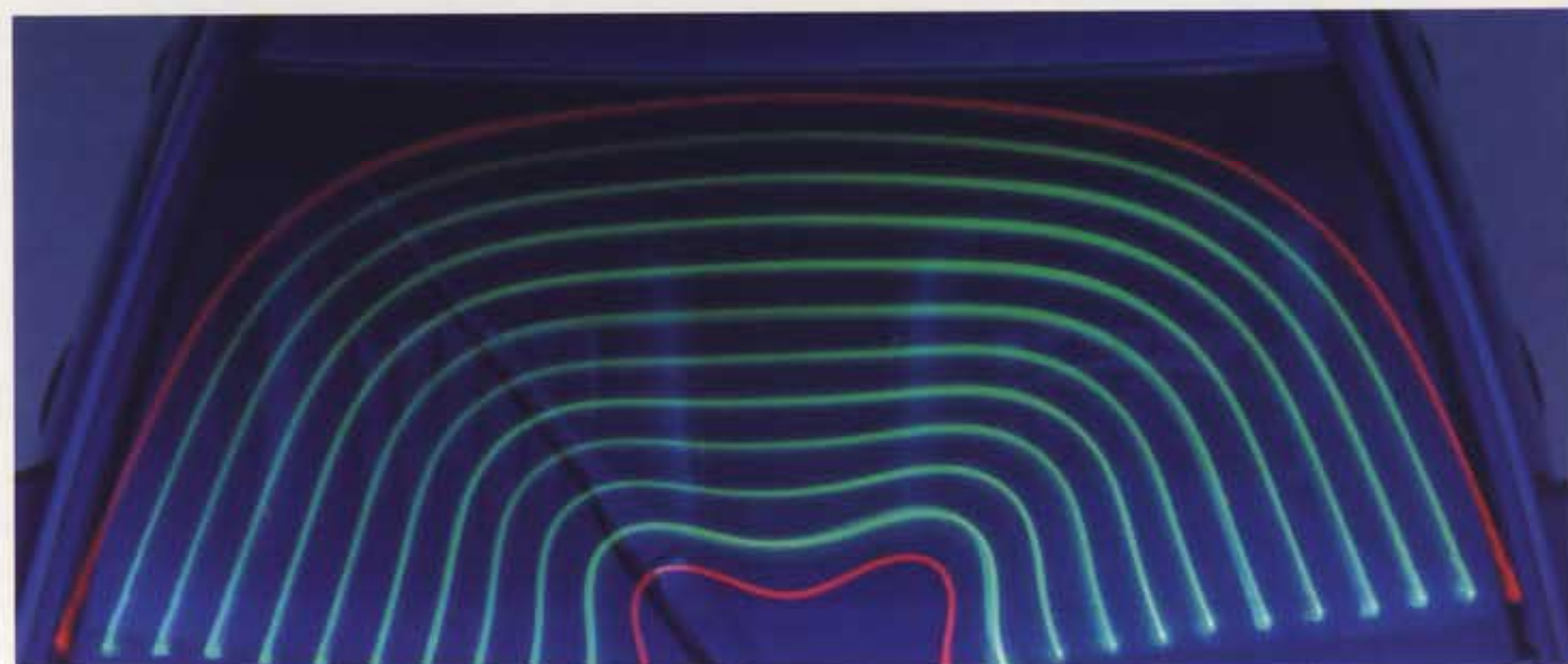
THE PRACTICAL, THE INTELLIGENT

AMONG THE MANY INNOVATIVE AND LOGICAL elements designed into every 190 Class automobile is a unique eccentric-sweep single wiper that clears a record 86 percent of the expansive windshield with every stroke. Channels at the outer edges of the windshield help direct rainwater up onto the car's roof, thereby helping keep

the side windows clear and enhancing overall visibility.

The wiper and several other important functions are controlled by means of steering column stalks that can be easily accessed by your fingertips with both hands on the steering wheel.

Sturdy, well-padded grab handles are fitted above both front and rear doors.



The efficient eccentric-sweep single windshield wiper



Steering column stalks

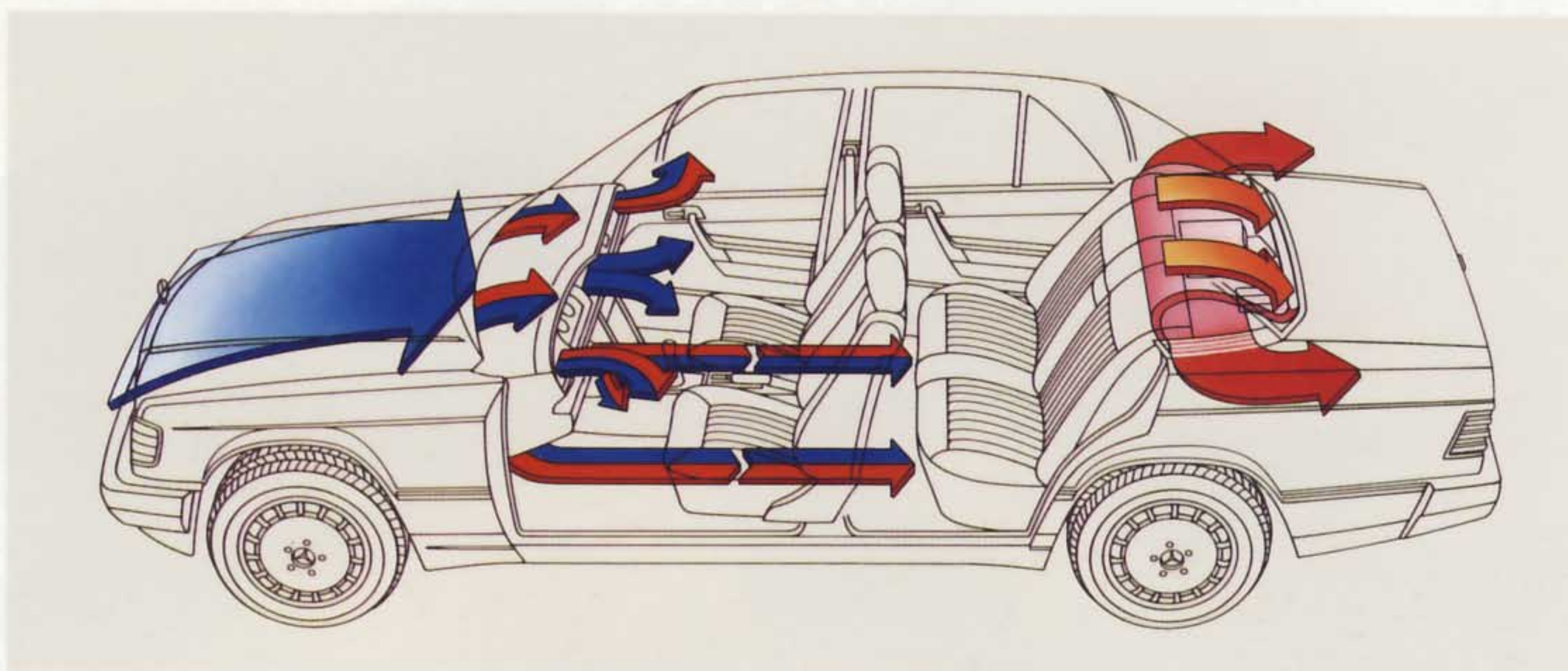


Over-the-door grab handle

THE ACCURACY OF TEMPMATIC CLIMATE CONTROL THE COMFORTS OF THOUGHTFUL DESIGN

The passenger cabin of a 190 Class automobile is engineered to keep the driver comfortable yet alert. Thus it is important that interior temperature be maintained at a constant level, that fresh air is plentiful, and that excessive wind and running noise be banished.

AN EFFICIENT, COMPUTER-REGULATED TEMPMATIC climate control system can be set to a desired interior temperature by means of a simple rotary dial. The system can then operate air-conditioning and heating units as needed to maintain that temperature year-round or until you choose to change the setting.



NUMEROUS CLIMATE CONTROL OUTLETS, strategically placed throughout the cabin of 190 Class sedans, exchange cabin air approximately

three times per minute with the blower fan set at high speed. A row of switches provides precise regulation of air distribution. Vent out-

lets for right- and left-front sides of the interior can be individually adjusted.

An electrically operated sunroof, which provides additional ventilation, is optional at no extra cost. A wind deflector automatically rises into position when the roof is opened. A rear pop-up feature provides a more modest level of cabin ventilation.

Advanced sound-control techniques, including a double firewall, render the cabin refreshingly quiet.



Second insulating firewall



Climate control switches



Electric sliding sunroof

CONVENIENT CENTRAL LOCKING ELECTRONIC STEREO SYSTEM

A central locking system—standard on 190 Class models—can be operated from either front door lock or from the trunk lock. An optional anti-theft alarm system, which includes the radio, is activated whenever the trunk or doors are locked with the key.

NEW FOR 1988 is an electronic stereo sound system that includes numerous special functions, including cassette "search" and "scan" radio tuning. The system develops 48 watts of power.

Enough to flood the cabin with music from your cassette tapes, or—if you prefer—to deliver selected AM or FM stereo radio broadcasts.



Convenient central locking



New features enhance the electronic stereo sound system

MORE THAN JUST A COAT OF PAINT

A COMPLEX MULTISTEP PAINT TECHNIQUE is employed in the finishing of 190 Class automobiles. This high technology procedure provides a brilliant, deep, durable coating devised to help resist the ravages of the world's most extreme climatic conditions.

Advanced application techniques include a preliminary zinc phosphating and chromate rinse for long-lasting corrosion protection. A cathodic primer bath utilizes electrolysis to "draw" the positively charged primer to the negatively charged automobile body, thereby ensuring full coverage. Anti-chip coatings that can absorb the impact energy of small, flying stones are applied to body surfaces below the belt line. Following application and baking of the final primer coat, it is carefully inspected

for the slightest surface flaw. After the color coats have been sprayed under the meticulous scrutiny of computers, metallic colors are treated to a final clear coat. When the last baking operation has been completed, quality-control specialists pore over the smooth surface, searching for the most minute imperfections.

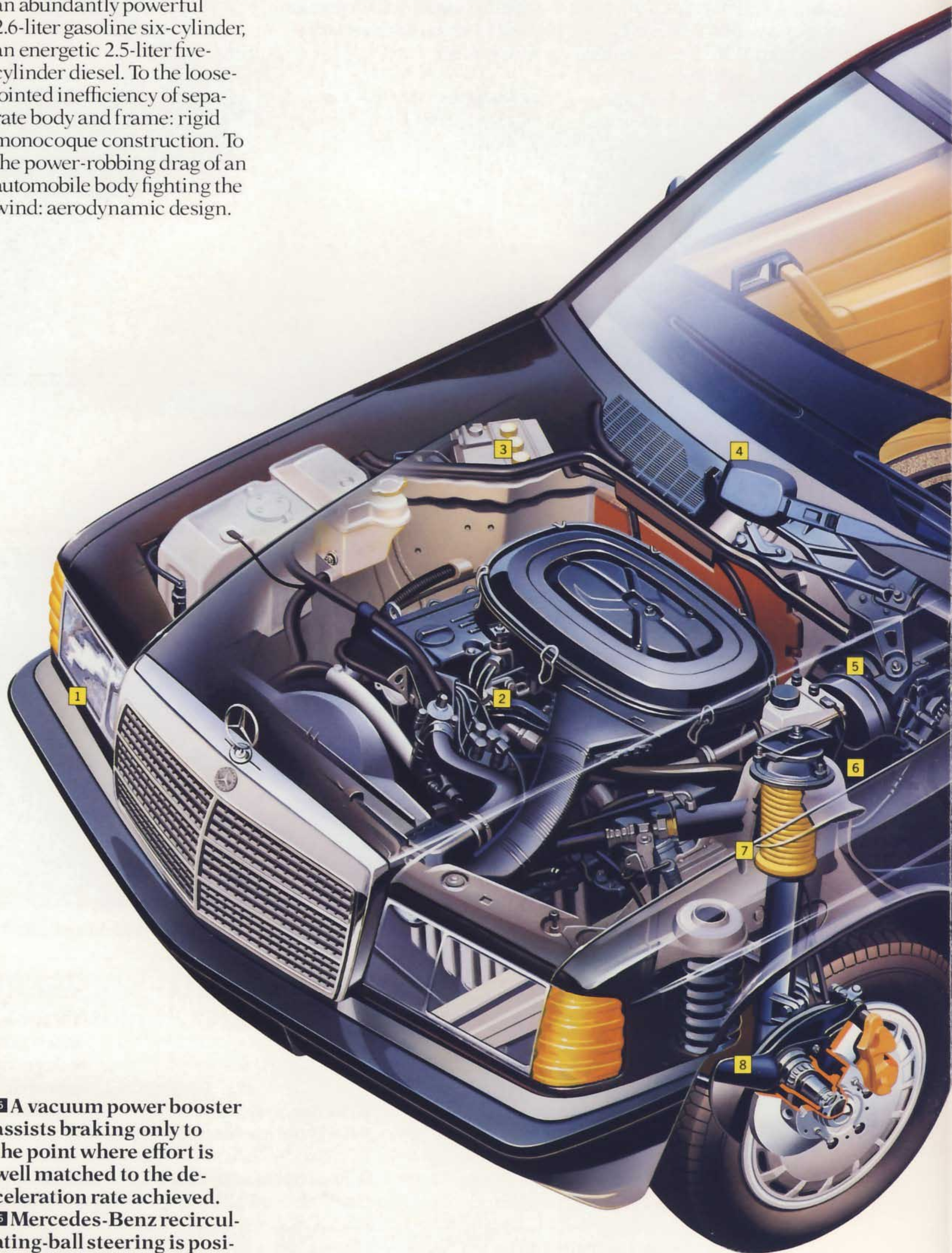


Immersion primer coat

A HIGHLY LAUDED DESIGN AN ENGINEERING SOLUTION

The sedans of the 190 Class present bold concepts in automotive engineering. Some ten years in development, they represent brilliant reformulations of traditional automotive equations. To the inherent complications in achieving a balance of ride and handling: multilink rear suspension. To the anemia of small-displacement engines:

a vibrant overhead-cam 2.3-liter gasoline four-cylinder; an abundantly powerful 2.6-liter gasoline six-cylinder; an energetic 2.5-liter five-cylinder diesel. To the loose-jointed inefficiency of separate body and frame: rigid monocoque construction. To the power-robbing drag of an automobile body fighting the wind: aerodynamic design.



1 Flush mounted headlamps and aerodynamic grille integrate smoothly with fender and hood lines, contributing to the excellent 0.35 coefficient of aerodynamic drag.

2 Mercedes-Benz 190 Class engines achieve remarkable output relative to their displacements.

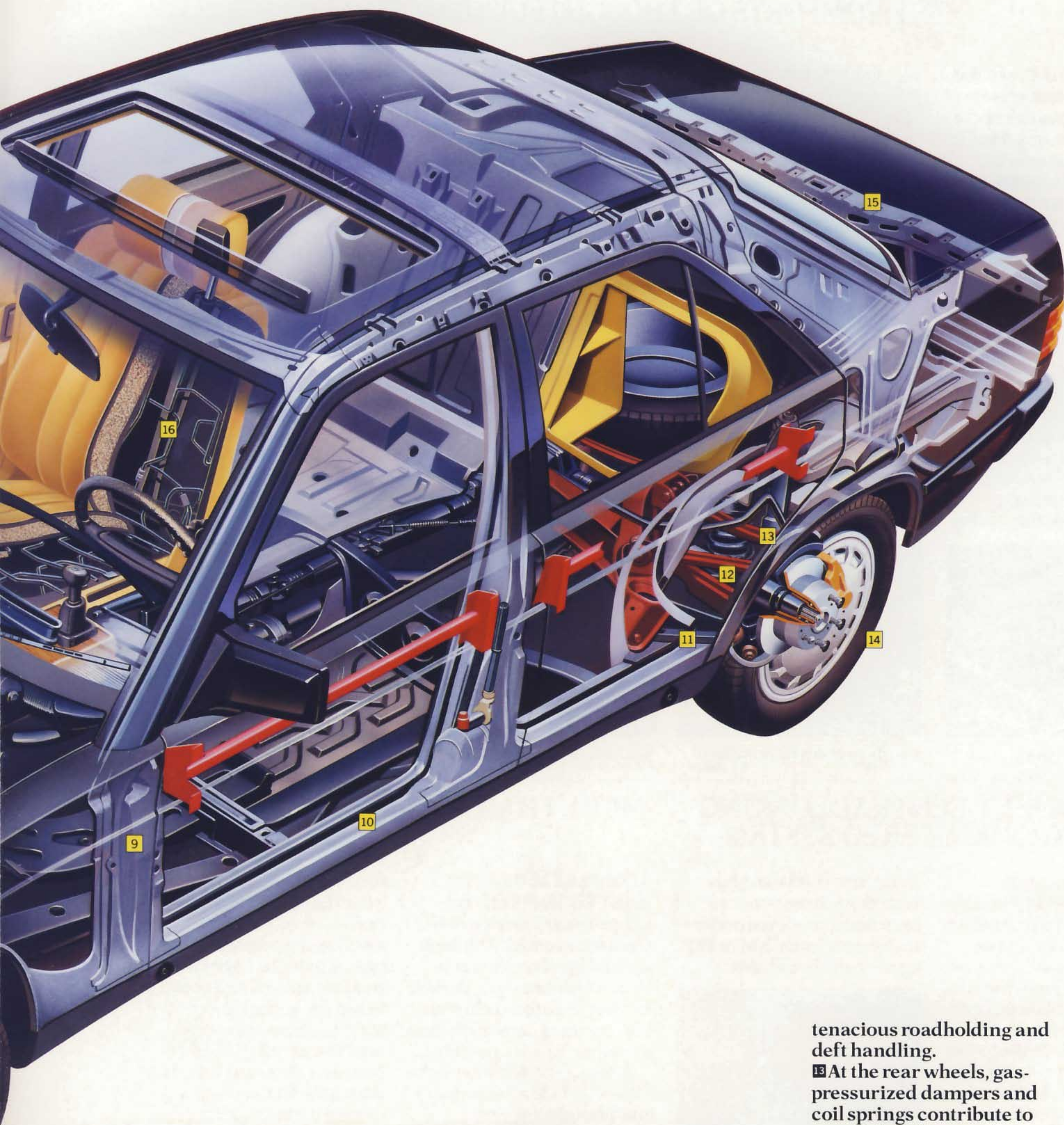
3 The battery and various other electric/electronic components are mounted between the two firewalls to help protect them from moisture and heat.

4 The single eccentric-sweep wiper clears 86% of the windshield area.

5 A vacuum power booster assists braking only to the point where effort is well matched to the deceleration rate achieved.

6 Mercedes-Benz recirculating-ball steering is positive and liquid-smooth, yet it maintains the driver's awareness of the road.

7 Damper-strut front suspension moves through its full travel with minimal camber change. Springs



and gas-pressurized damper struts are mounted independent of each other to optimize effectiveness of both isolation from road irregularities and oscillation control.

8 Four-wheel disc brakes are supplemented by the Mercedes-Benz Anti-lock

Braking System (ABS).

ABS is optional on the 190 E 2.3 and 190 D 2.5 Sedans.

9 The roof is supported by sturdy boxed pillars.

10 Boxed steel side rails contribute to chassis rigidity.

11 The sturdy monocoque body/chassis unit serves as a rigid platform for suspension mounting.

12 Multilink independent rear suspension is a key element in the achievement of

tenacious roadholding and deft handling.

13 At the rear wheels, gas-pressurized dampers and coil springs contribute to superb handling and comfortable ride.

14 Smooth light-alloy wheels contribute to aerodynamic efficiency. Slots at the circumference of each wheel help extract heated air from brakes for improved fade resistance.

15 The trunk is of 11.7 cu ft capacity.

16 Seats are of steel-spring construction to provide optimum support for long-term fatigue resistance.

THE ANATOMY OF A SAFETY-MINDED AUTOMOBILE THE UNIQUE STANDARDS OF MERCEDES-BENZ

Because driver and passenger well-being is inextricably woven into the company's engineering philosophy, Mercedes-Benz designs automobiles that demonstrate a concern for safety which runs much deeper than the legislated mandates.

THE AUTOMOBILES OF THE 190 CLASS are designed with a level of over-the-road prowess that enhances *avoidance* capability. Yet they are also engineered to provide considerable passive safety capability—constructed to help dissipate forces generated during collisions and minimize the transfer of full-impact energy to the passenger shell. This diligence extends into other areas as well—even to concern for the well-being

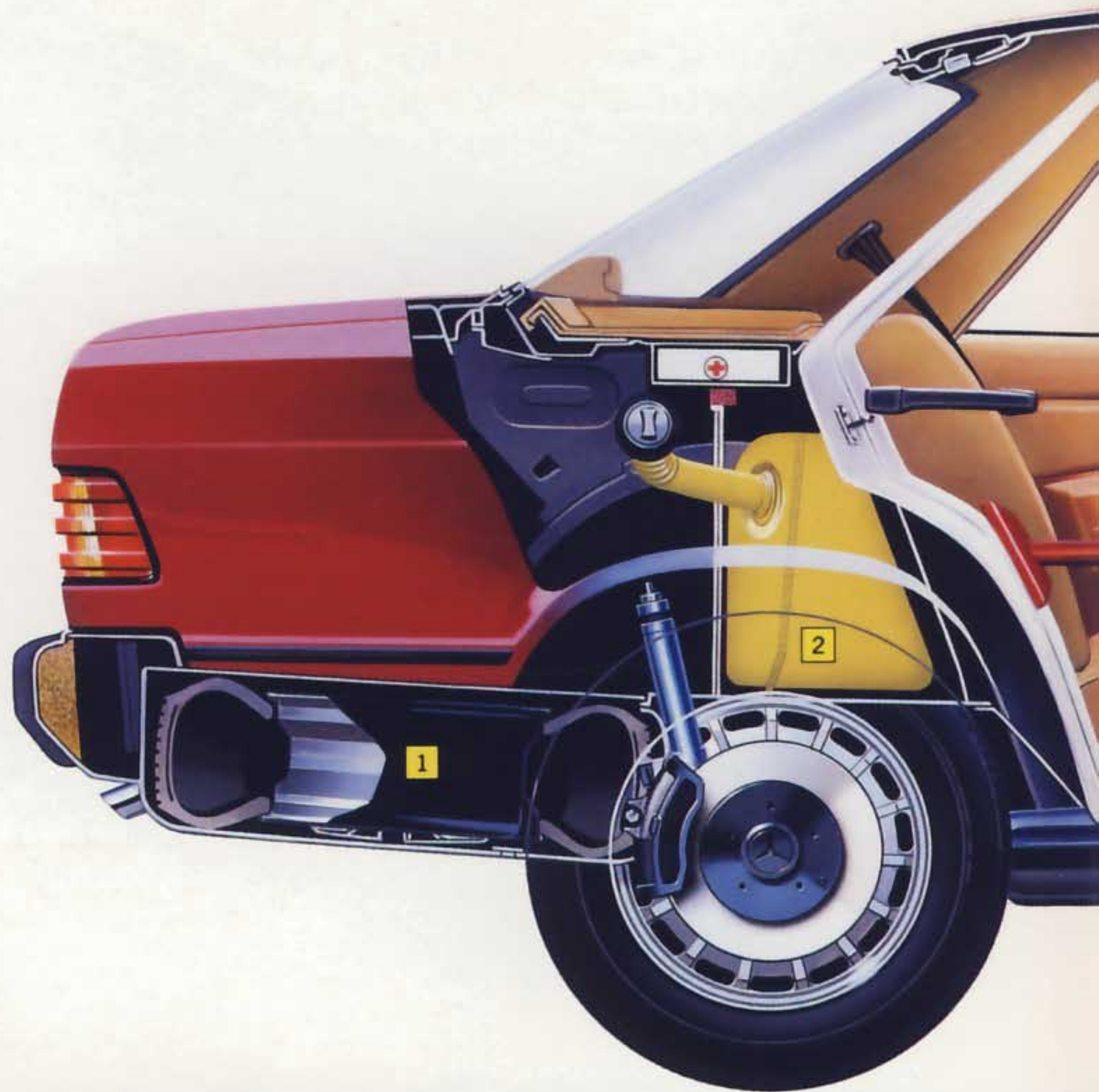
of pedestrians, as evidenced by a spring-loaded hood ornament, exterior mirrors that yield to impacts, and a lack of sharp edges.

1 The spare tire is mounted horizontally both to act as an absorber of crash energy and to increase useable trunk space.

2 The fuel tank is mounted between the rear wheels and as far inboard of the rear of the car as is practical.

3 Door barriers combine with the rigid cabin structure to help resist deformation.

4 The Supplemental Restraint System (SRS) provides enhanced restraint by means of a driver's-side air bag and knee bolster, and emergency tensioning



THE ADVANTAGES OF A SUPPLEMENTAL RESTRAINT SYSTEM

THE MERCEDES-BENZ SUPPLEMENTAL RESTRAINT SYSTEM (SRS) includes a driver's-side air bag and knee bolster and emergency tensioning retractors. When the air bag deploys it is meant to

provide a cushion between the driver and steering wheel. The emergency tensioning retractors automatically tighten both of the three-point front seat belts, together with air bag deployment.



A micro-second review of air bag operation



The inflated air bag in its fully extended position

THE EXTENSION OF ADVANCED ENGINEERING TO THE DESIGN OF EXTERIOR ELEMENTS



Heated side-view mirror

THE LOGICAL APPROACH OF MERCEDES-BENZ engineers is applied to every facet of the automobile. For example, the powerful halogen headlamps are flush mounted. Thus they contribute substantially to



Flush-mounted headlamp

the aerodynamic efficiency of the 190 Class sedans.

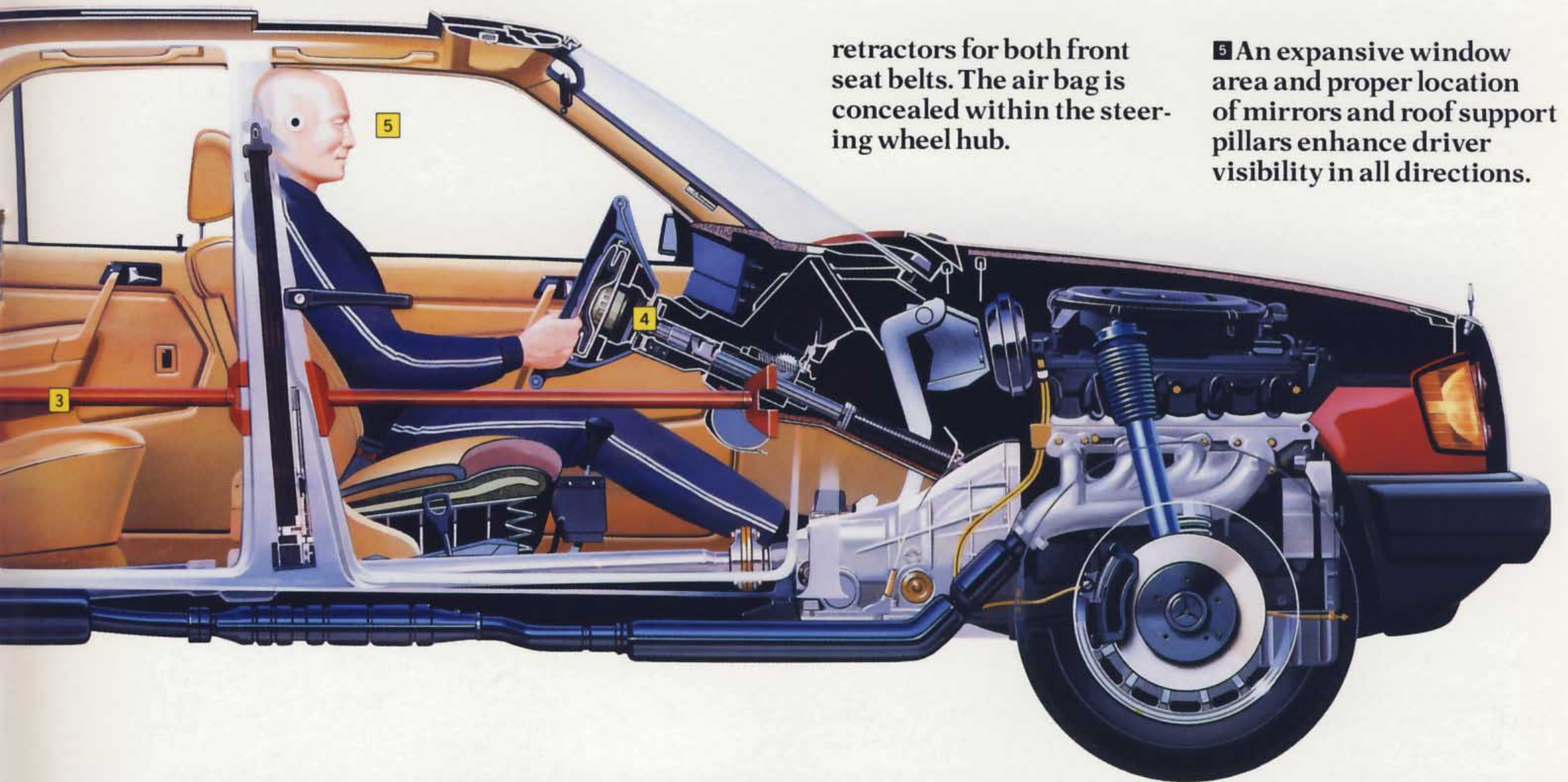
TAIL LAMP VISIBILITY is greatly enhanced by deep ribbing of the lens. This design helps prevent slush and



Deeply ribbed tail lamp

dirt—thrown up by air turbulence behind the moving car—from completely obscuring the tail lamp when driving in inclement weather.

EXTERIOR SIDE-VIEW MIRRORS are equipped with electrical heating elements that are automatically activated to quickly eliminate mirror icing when the outside temperature approaches freezing. When impacted from the front or rear, the mirrors fold away.

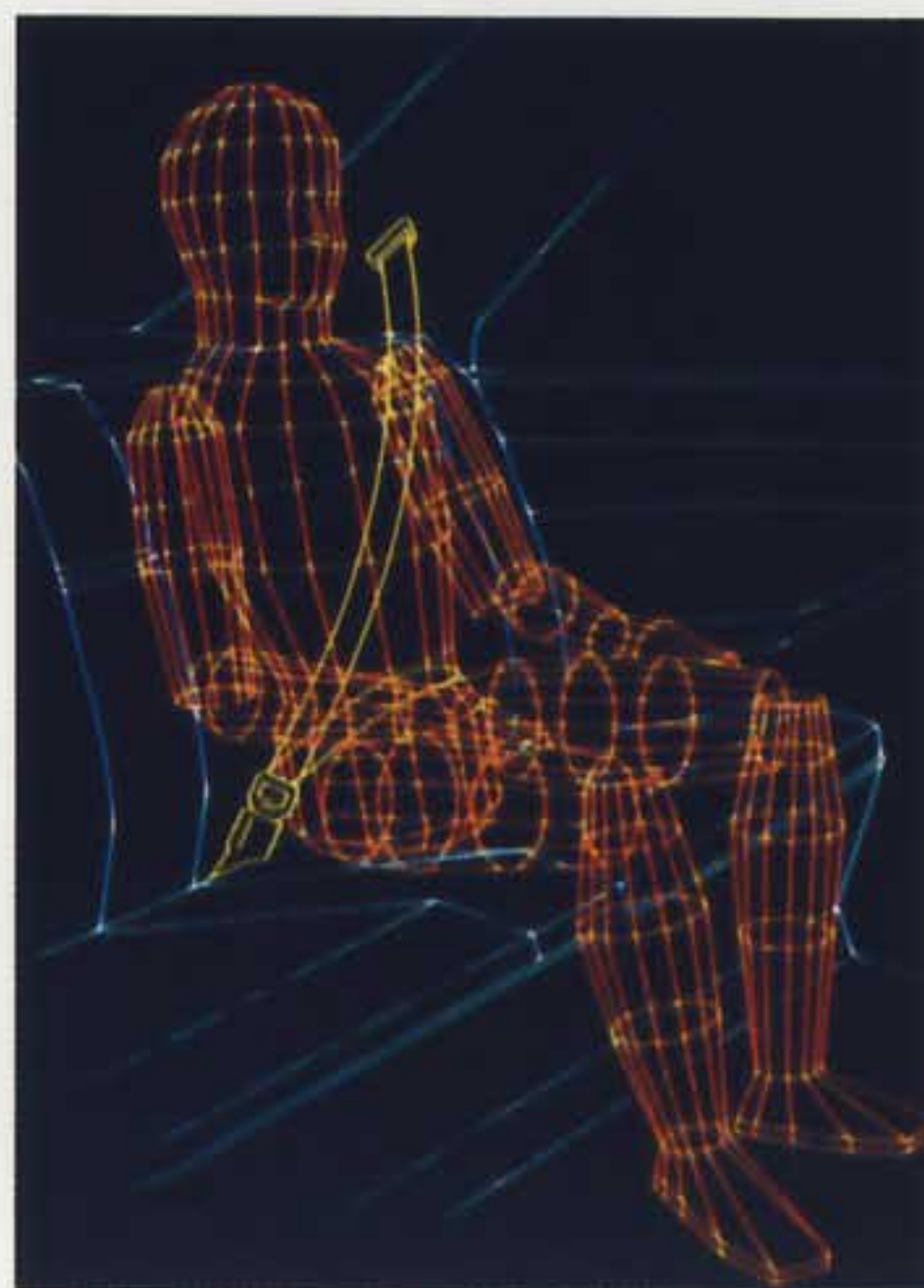


retractors for both front seat belts. The air bag is concealed within the steering wheel hub.

5 An expansive window area and proper location of mirrors and roof support pillars enhance driver visibility in all directions.

ELEGANTLY LOGICAL ACCOUTREMENTS

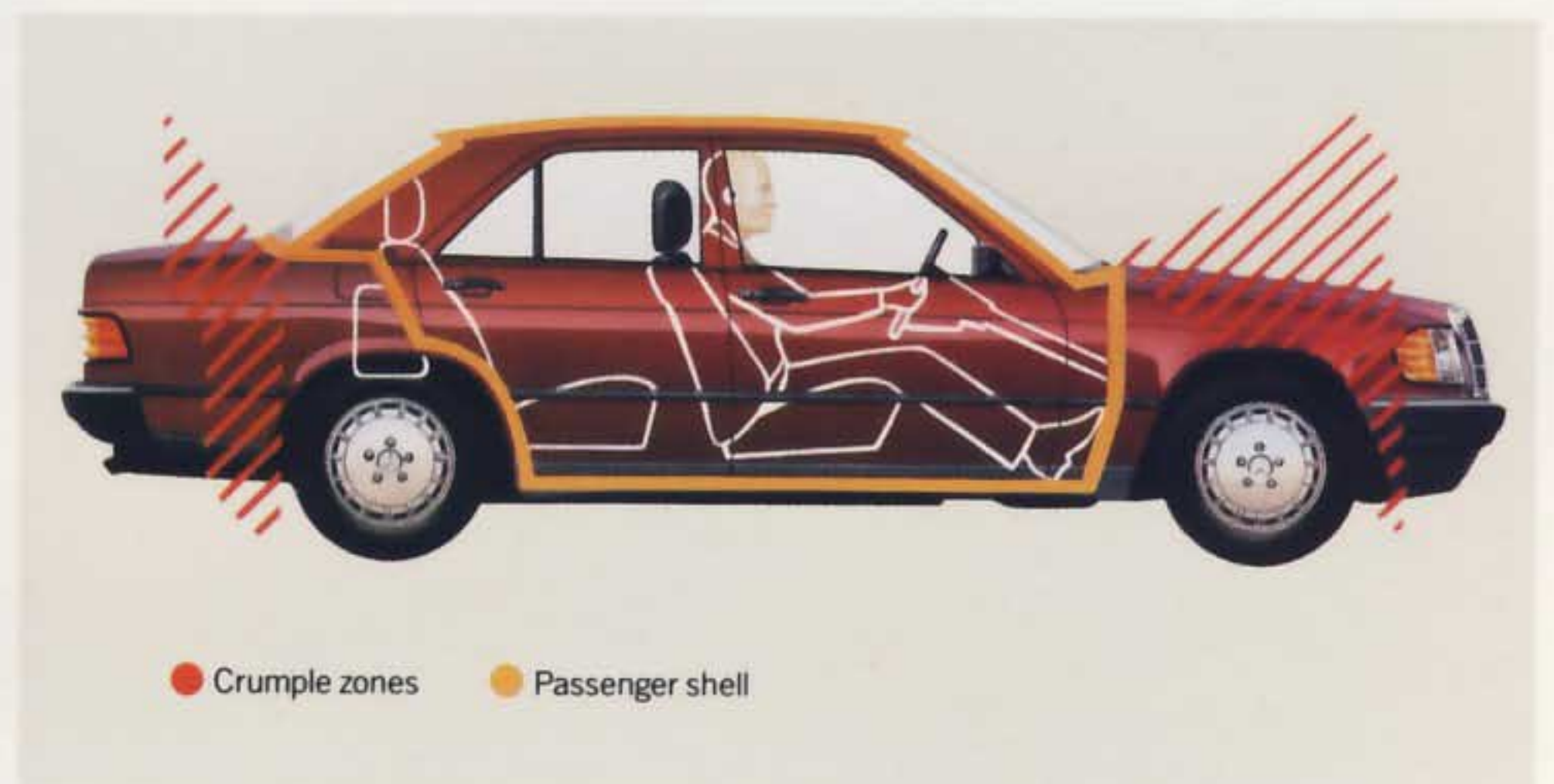
UNFLAGGING ATTENTION TO DETAIL and consistently clear thinking mark the advanced safety-oriented engineering of the three Mercedes-Benz 190 Class automobiles. Significant research and development has been invested in the design of even those components that may be taken for granted by some automakers. For example, certain impact conditions will cause the corrugated steering column tube to deform, thus reducing displacement rearward into the cabin. To enhance restraint



Rear seat three-point belts

of rear-seat passengers, securely anchored three-point seat belts are provided for the outer-rear seating.

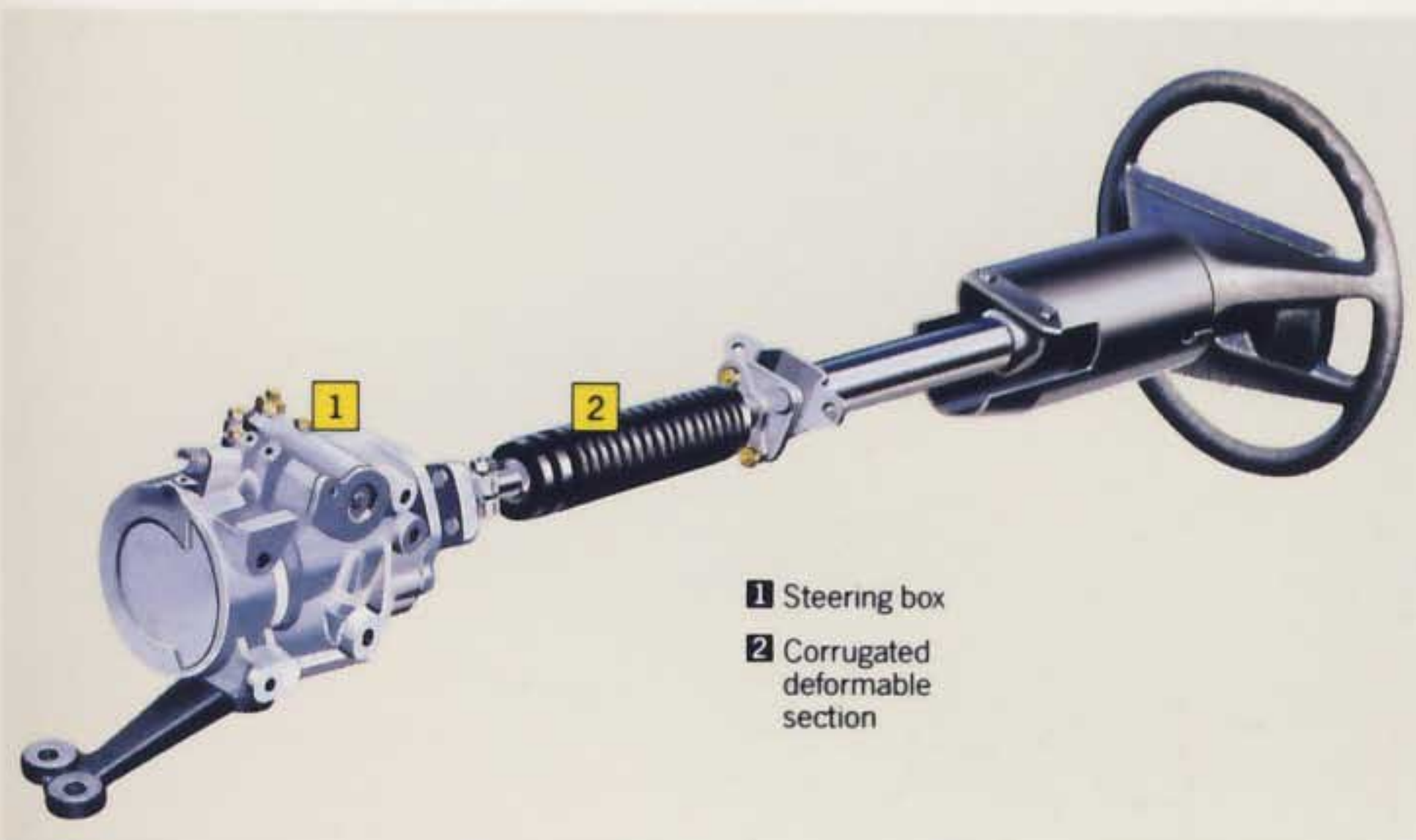
THE TIME-HONORED PRINCIPLE OF CONTROLLED DEFORMATION



Location of deformation zones and passenger shell

IT WAS SHEER LOGIC that led Mercedes-Benz engineers to conclude, more than 36 years ago, that an automobile could

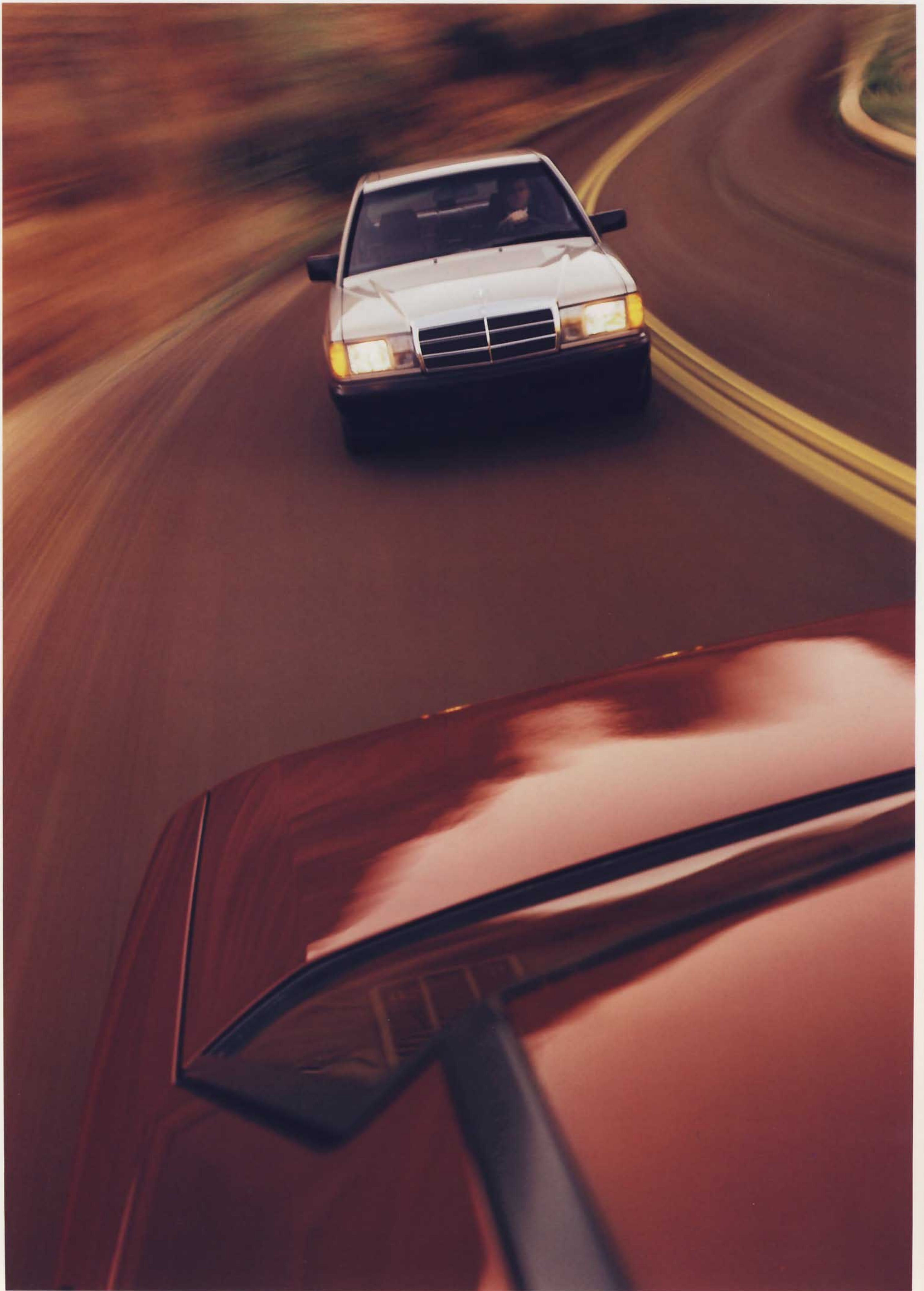
absorb some impact energy if it were designed to deform in a controlled manner. As illustrated above, the front and rear body/chassis sections of 190 Class automobiles are built to progressively yield to the force of a major impact, absorbing kinetic energy in order to prevent its full force from being transmitted to the passenger shell. The 190 Class monocoque body is also designed to help cope with the forces of an offset frontal collision. Because both sides of the body/chassis unit are structurally joined by a front crossmember, the impact load is shared.



Steering column deforms in certain impact conditions



Offset impact testing



The sedans of the Mercedes-Benz 190 Class are trim automobiles in every key dimension, yet there is absolutely nothing minimalist about them. Each of these distinctive automobiles, in its own unique way, has conclusively proven that advanced engineering, superlative comfort and driving excitement do not require vast size or great mass.

For 1988 the 190 Class incorporates three versatile automobiles. Each is described in detail on

the following pages.

The 190E 2.3 Sedan, with its responsive four-cylinder gasoline

engine, is a practical four-door sedan with the over-the-road capability of a sports sedan. Markedly quiet running, the 190D 2.5 Sedan retains the bulldog traits of a diesel without compromising the sporting nature of the 190 Class. The 190E 2.6 Sedan blends silk and fire in the form of an advanced six-cylinder gasoline engine, and then blends its scalding performance with near-incredible agility and tenacious roadholding. Like all of the

190 Class automobiles, it is much more than a sports sedan. And nothing less than a Mercedes-Benz.

PRESENTING THE THREE MODELS OF THE 190 CLASS





Above, Right: The 190E 2.3 Sedan combines the logic of a highly functional design with a deep concern for occupant safety and comfort. The Mercedes-Benz Supplemental Restraint System (SRS) enhances driver and front seat passenger restraint. Contoured front seats are designed to provide critical back support as well as long term comfort. A capacious trunk offers as much storage area as that of some larger sedans.





IT IS WHILE OCCUPYING THE SPACE pictured to the left that one can best appreciate the vivid personality of the Mercedes-Benz 190E 2.3 Sedan for 1988. Within the design strictures of a four-door, four-cylinder gasoline-powered sedan has been created one of the most exhilarating driver's cars of our time.

The 190E 2.3 owes some of its over-the-road prowess to its taut 104.9-inch wheelbase, and some to its agile 2,790 pounds of total weight; considerable credit belongs to the sheer engineering enlightenment of its individual mechanical systems and the total concept of the car—the result of almost ten years of research and development. You may choose to interpret the 190E 2.3 as a sports sedan or a family sedan, or as a versatile machine that alternates effortlessly between the two. You will prize it because in so doing, it upholds—in every respect—the exalted standards that mark a Mercedes-Benz.

Outfitted with amenities that characterize the larger sedans of the marque, the 190E 2.3 is a fully equipped automobile, complete with such delights—to name a few—as a full-featured stereo system, tempmatic climate control, central locking, electrically operated windows, cruise control, an electric sunroof with rear pop-up feature that is optional at no extra cost, and the wood trim (*continued*)

190 E 2.3 SEDAN





Left, Above: Whether dependably traversing mile after mile of highway or negotiating a tricky and treacherous S-bend, the 190E 2.3 Sedan calls on a superbly balanced system of complementary mechanical components to provide precise control, agile handling, uncommon ride comfort and reliability. In brief: blending the attributes of a sports sedan and those of a Mercedes-Benz.

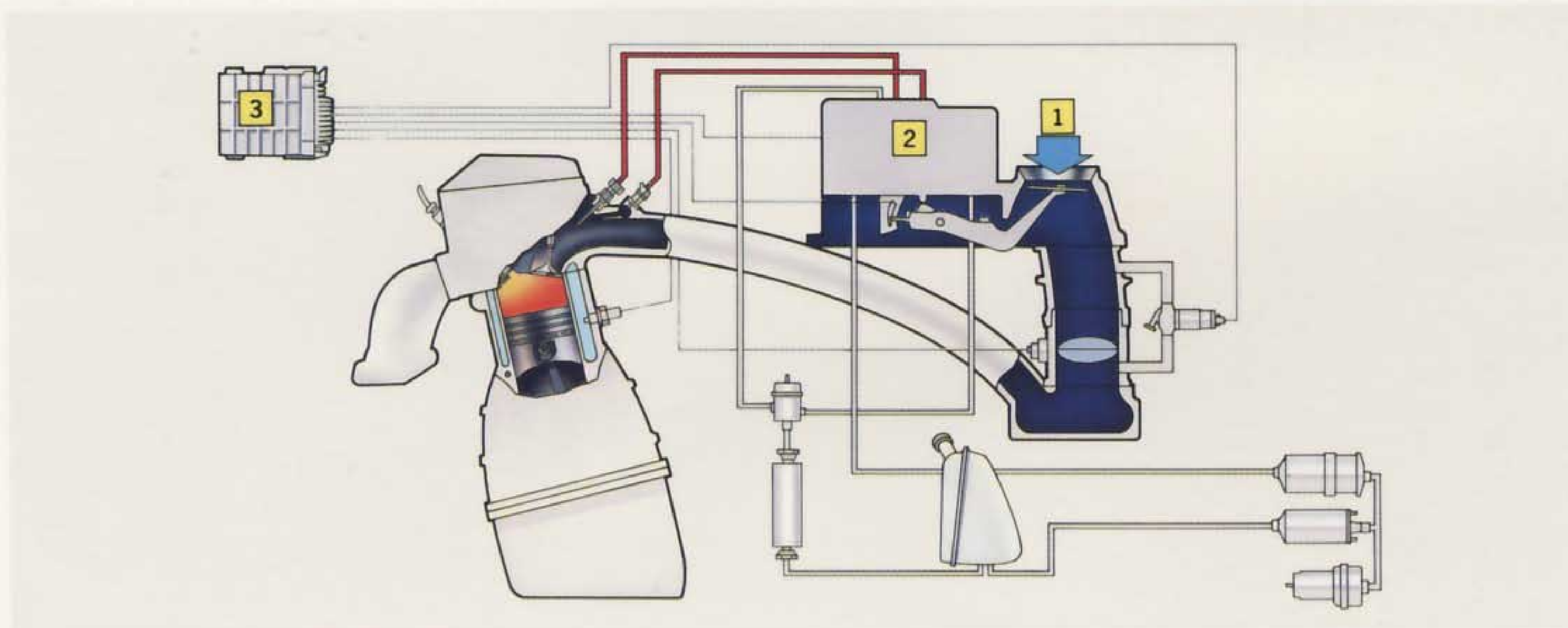
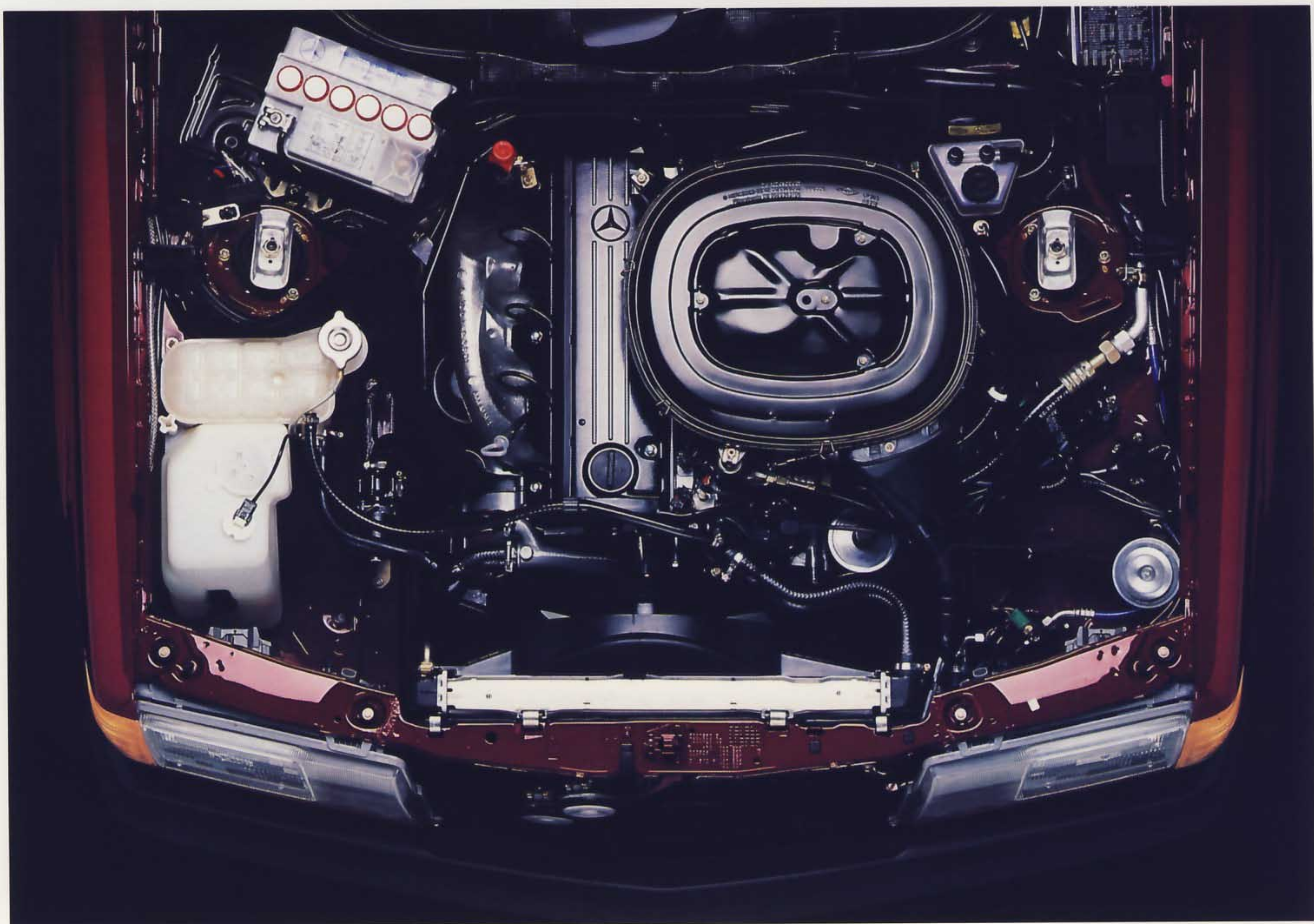
Right: With a coefficient of drag measuring only 0.35 the 190E 2.3 Sedan manages the air to its advantage, minimizing interior wind noise while improving high-speed stability and contributing to engine efficiency.



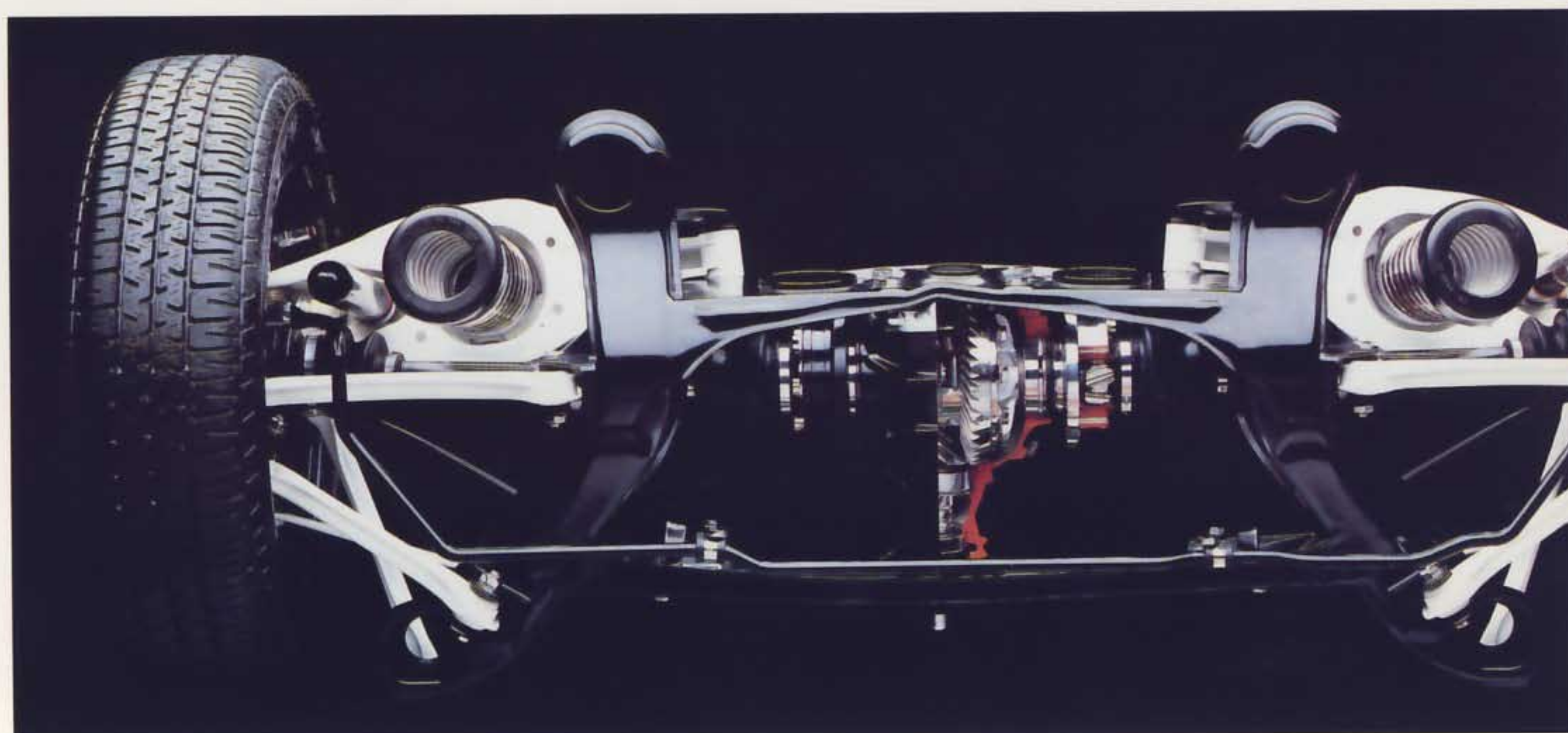
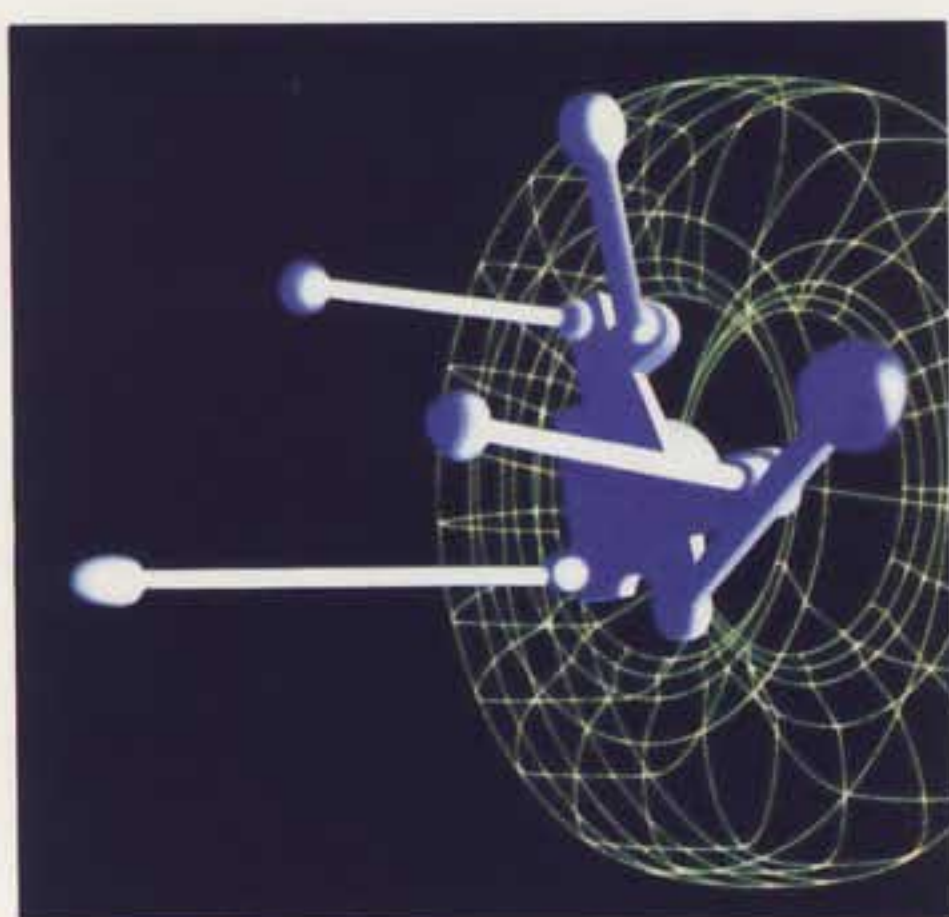


Above: The traditional grille and the Three-Pointed Star link this automobile to every Mercedes-Benz ever made. But it is the 190E 2.3's polished road manners, stouthearted performance, proven dependability, precise construction and stubbornly logical design that provide the strongest evidence of its regal roots. Benefiting from almost ten years of rigorous re-

search, clear-minded development and exhaustive testing, the 190E 2.3 Sedan is a fresh concept in automotive transportation: An automobile that can fully satisfy myriad transportation needs, yet is equally adept in the role of high-performance sports sedan as it is in that of a four-door family sedan. But its versatility is not the result of compromise: the 190E 2.3 is highly competent in every category in which either type of machine might conceivably be judged.



Above, Left: The immediate response and excellent driveability of the 190E's 2.3-liter, overhead cam, four-cylinder gasoline engine are due in part to the precision of its direct-port electro-mechanical fuel injection. This advanced system controls the air/fuel mixture by means of a lever-type airflow sensor (1) that acts directly on a mechanical mixture control unit (2). An electronic control unit (3) measures ambient conditions and operating variables, then fine-tunes fuel volume.



and velour carpeting of a Mercedes-Benz sedan.

Like every Mercedes-Benz, the 190E 2.3 achieves a supple ride without resorting to a soft and unresponsive suspension. Although light of weight, it offers the same substantial feel as its larger brethren. The solidity of this trim sedan has surprised and delighted even jaded reviewers of automotive hardware. *Road & Track* reports: "You would be hard pressed to tell what Mercedes you are in."

When power is needed, the 190E 2.3 responds with alacrity. Propelled by a 2.3-liter four-cylinder gasoline engine that delivers 130 horsepower, it sprints to a test-track maximum of 119 mph. A five-speed manual gearbox with overdrive top gear snicks smoothly from one gear to the next. Or you can choose an automatic transmission that progresses through its four speeds with almost imperceptible shifts. And even allows confident manual shifting, when you so prefer, via a deeply notched selector gate.

Yet, this is an automobile that reflects deep concerns for passenger safety. Concerns that are met both actively and passively—in both avoidance capabilities and in the advanced engineering of its occupant protection features.

In spirited driving or simply going about the day-to-day business of transportation, the 190E 2.3 Sedan is smooth and even-tempered, civilized and quiet. Exactly what you expect from Mercedes-Benz.



Left, Far Left: Providing directional stability and maximum tire contact area, while tuning out harshness, is the ideal objective of a suspension system. The Mercedes-Benz multilink independent rear suspension uses five rubber-bushed links to join each wheel to the chassis subframe. These links control wheel movement exactly, minimizing changes in the geometric relationship between tire and roadway as the wheel rises and falls, thereby maintaining maximum footprint. By counteracting forces generated when cornering, the multilink

configuration virtually eliminates unwanted steer effects. Precisely calibrated bushing compliance, spring rates and gas-pressurized shock absorber damping isolate the passenger compartment from roadway imperfections without resorting to the insipid mushiness of some suspension systems. Above: Should the delights of a summer day prove too tempting to resist, a sunroof is optional at no extra cost.

SPECIFICATIONS

Body Type	4-Door, 5-Passenger Sedan
Engine Type	Gasoline, In-Line, 4-Cylinder, OHC, 2.3 Liter
Net Power hp/kW @ rpm	130/97 @ 5100
Net Torque lb-ft/N•m @ rpm	146/198 @ 3500
Displacement cu in/cm ³	140.3/2299
Compression Ratio	9.0:1
Transmission	4-Sp Auto w/Torque Conv or 5-Sp Man, Fully synch.
Rear Axle Ratio	3.27:1
Fuel Capacity: US gal-res/ltrs-res	14.5-1.8/55-7.0

DIMENSIONS

EXTERIOR

Overall Length in/mm	175.0/4445
Wheelbase in/mm	104.9/2665
Overall Height in/mm	54.7/1390
Overall Width in/mm	66.1/1678

INTERIOR

Headroom—Front in/mm	36.9/938
Legroom—Front in/mm	41.9/1064
Headroom—Rear in/mm	36.0/915
Legroom—Rear in/mm	30.9/784

NOTE: Standards used to determine dimensions and measurements shown above are listed on the inside back cover.

OPTIONAL EQUIPMENT

Anti-lock braking system (ABS)
Anti-theft alarm system, including radio
Electric sunroof, with rear pop-up feature (No charge)
Electrically adjustable front seats and head restraints
Electrically heated front seats
Front seats with electro-pneumatically adjusted orthopedic backrests
Front seats with reinforced frames
Headlamp wipers and washers
Head restraints, rear
Metallic paint
Upholstery, leather or velour



Above, Right: Taut and trim, the 2,880-pound 190E 2.6 responds with a flourish throughout the entire range. Equipped with Mercedes-Benz power-assisted recirculating-ball steering, it holds a precise line through corners and tracks straight and true on the highway, at all times providing vibration-free feedback that alerts the driver to changing road conditions. Precisely shaped body surfaces manage airflow to control front and rear lift, while minimizing the destabilizing effect of crosswinds.





MOVING QUICKLY AND GRACEFULLY THROUGH THE TIGHT CURVE at left is the silently swift Mercedes-Benz 190E 2.6 Sedan. Introduced last year, this most recent addition to the 190 Class offers the same highly versatile four-door configuration and remarkable handling prowess as the 190E 2.3 Sedan. Yet the superb reflexes of the advanced 190 Class chassis are enhanced by the performance generated by an advanced level of power.

As the curve straightens out, the 190E 2.6 responds instantly with the thrust of a mighty 2.6-liter six-cylinder, 158-horsepower gasoline powerplant. Providing the smooth rush of turbine-like power that can be achieved only through the comparatively large displacement and inherent balance of an in-line six-cylinder design, the engine revs quickly to 6200 rpm. The 190E 2.6—with a gusto exceeding that of many automobiles presumptuous enough to go by the name “sports sedan”—accelerates to the legal speed limit at a breathtaking rate. Aerodynamically shaped to manage the wind, it can reach a test-track maximum of 129 mph. Four-wheel disc brakes, supplemented by the Mercedes-Benz Anti-lock Braking System (ABS), bring it quickly and surely to a halt—without loss of steering control on slippery surfaces.

While the formidable performance capabilities of the 190E 2.6 Sedan may color its personality, the uncompromising intelligence of Mercedes-Benz engineering renders it a most practical *(continued)*

190 E 2.6 SEDAN



Left: Fully independent suspension, with multilink geometry at the rear, controls wheel movement in such a way that the car's tires maintain a proper geometric relationship with the pavement. The result is tenacious roadholding. Substantial front and rear anti-roll bars help resist the body's natural tendency to roll toward the outside of a turn.



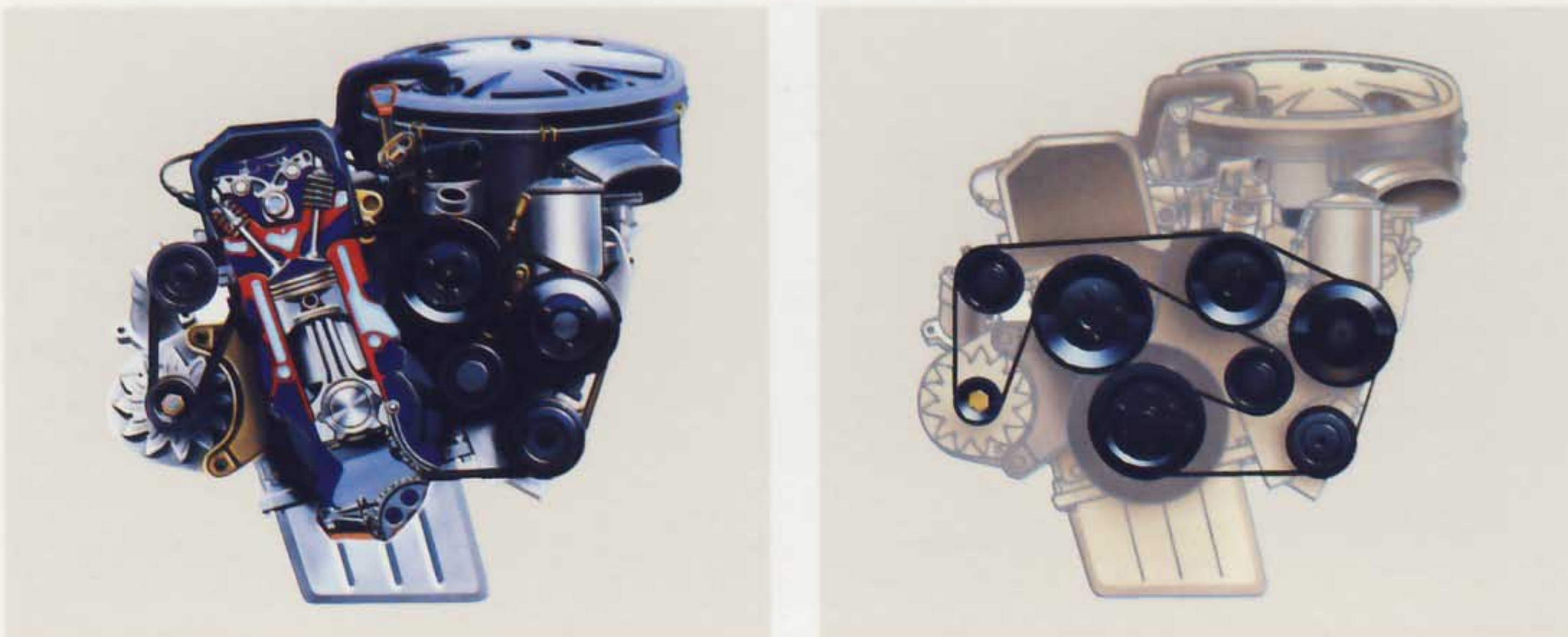
Above: The 190E 2.6's exterior design contributes to its overall efficiency. Devoid of garish trim, the sleek body incorporates aerodynamic headlamps, a curving swept-back grille, virtually flush door handles and integrated side mirrors. Even the tail lamp lens design emphasizes function rather than decoration. Its deeply ribbed contours ensure that the lamp will remain visible, even if the tail of the car is covered with road dirt in foul weather driving.

Right: A single windshield wiper with an eccentric motion sweeps 86% of the windshield, directing rainwater into channels within the windshield pillars. The airstream then carries the displaced water upward onto the roof, keeping the side windows relatively free of rain.

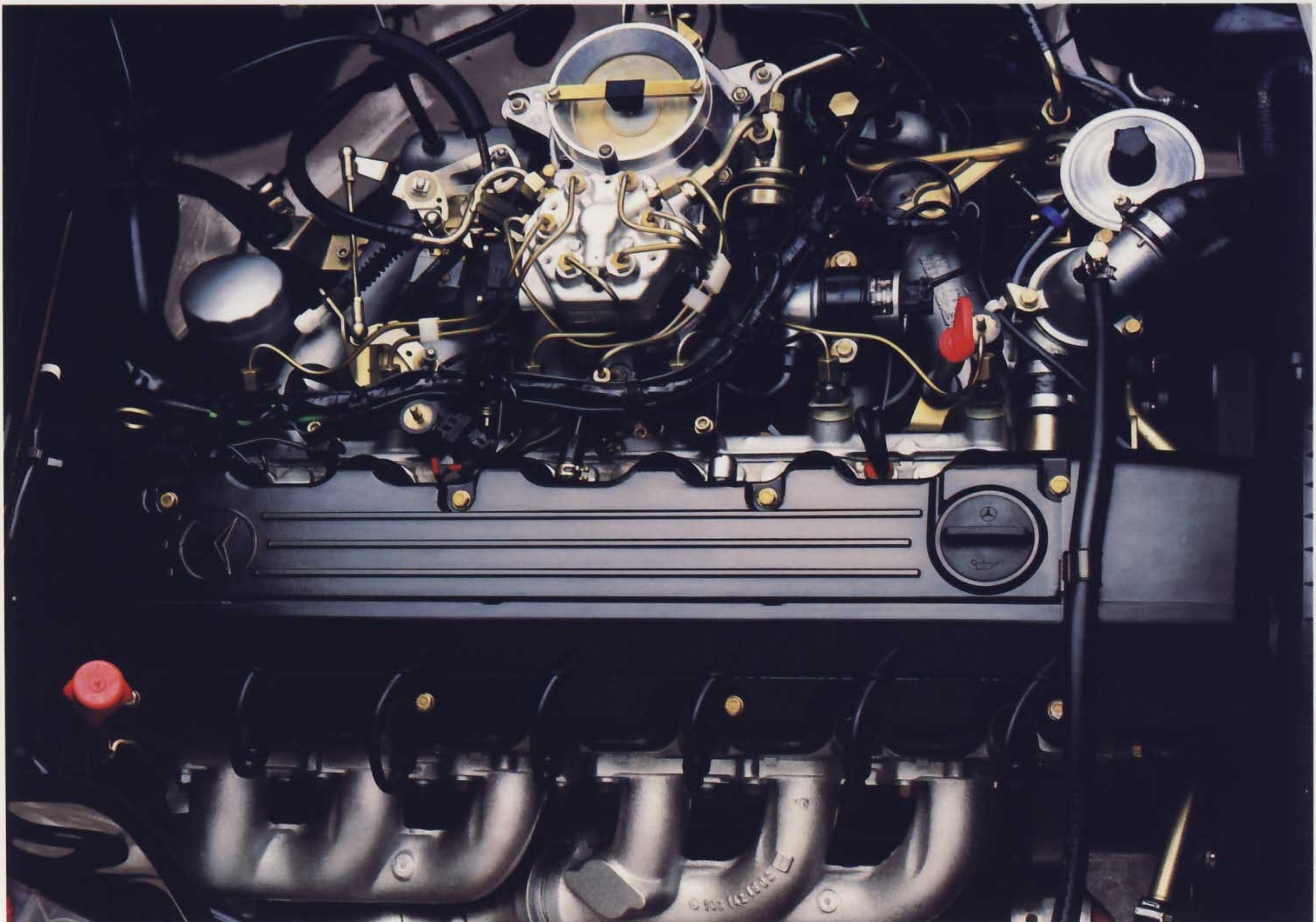




Above, Left: Large analog gauges update you in regard to critical functions. A battery of dashboard lamps alerts you to—among other types of important running information—low coolant, engine oil or windshield washer fluid levels. An electronic AM and FM stereo radio with cassette player is standard. Tempmatic climate control regulates cabin temperature. Deeply contoured seats with folding center armrests provide supportive comfort, front and rear.

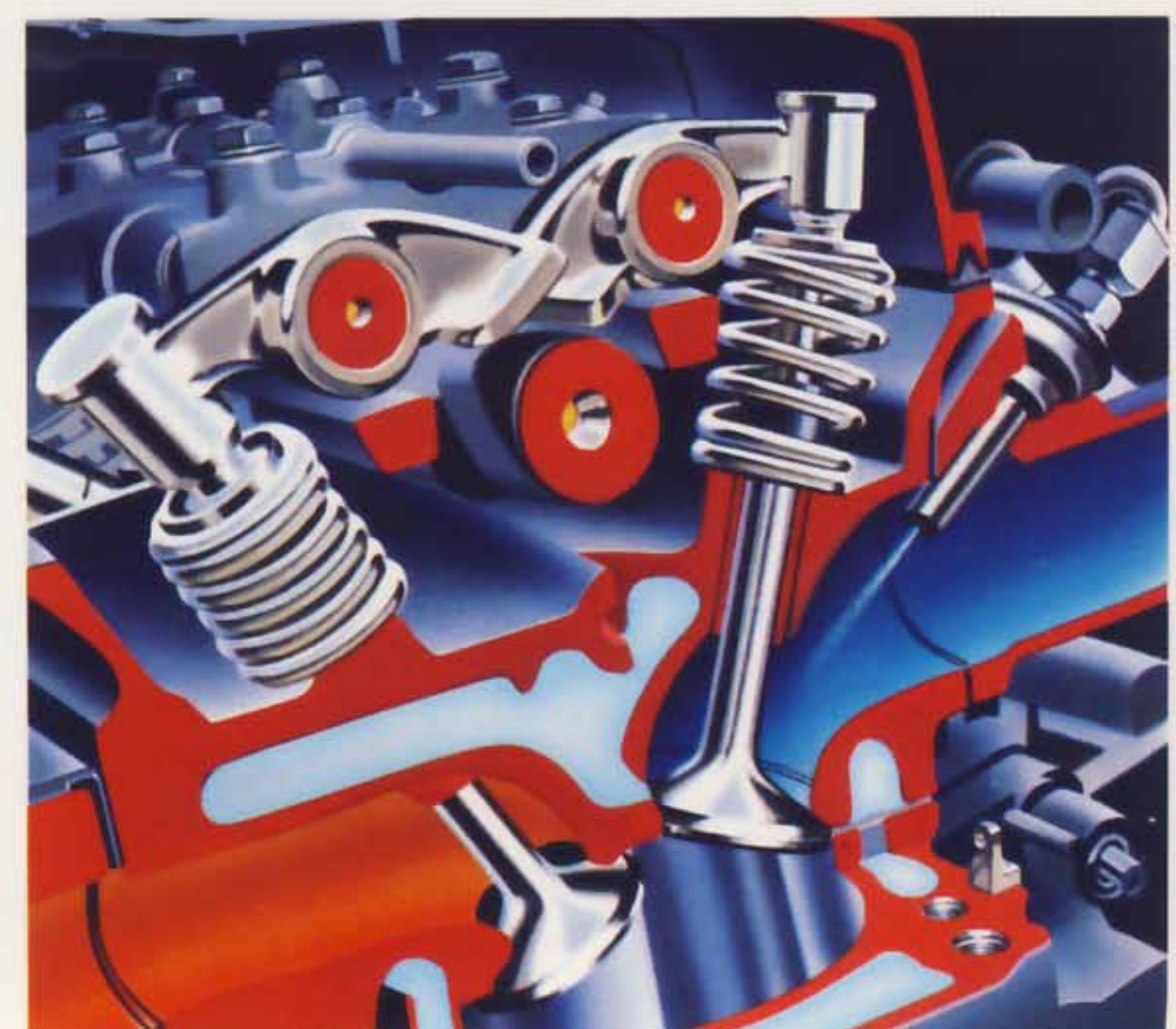


Far Left, Left: Like all 190 Class engines, the 2.6-liter six-cylinder powerplant is slanted at a 15 degree angle, for a lower hoodline and to allow room for long, tuned intake runners that promote low-speed torque. Eliminating the complexity of multiple engine V-belts, the single, automatically tensioned, ribbed poly-V belt simplifies service.



Above, Right: The 2.6-liter six-cylinder engine's ingenious direct-port electro-mechanical fuel injection provides near flawless driveability and superb responsiveness. At the heart of the system are a mechanical airflow sensor and mixture control unit. Electronics is used only to fine-tune the air/fuel ratio in respect to engine operating parameters and changing ambient conditions. Thus an electronic failure would not cause the engine to shut down. A single overhead cam, driven by a durable simplex timing chain, operates large valves via rocker arms

with hydraulic compensators that function with a minimum of noise and eliminate the need for periodic valve clearance adjustment. The valves are mounted in a light-alloy cylinder head with hemispherical combustion chambers and cross-flow ports that promote efficient breathing. A substantial squish area within each chamber causes turbulence, thereby promoting a fast burn. This reduces the engine's tendency toward spark knock, allowing a high compression ratio of 9.2:1—a factor that contributes to the engine's impressive horsepower output.



transportation tool. Benefiting from the near ten-year development time that marked the creation of the 190 Class, it is a thoroughly proven design. With the persistent reliability that has long been a principal attribute of the marque.

Inside there is serene quiet, broken only by the muted hum of the engine. There is sufficient space—far more than you might reasonably expect based on the 190 E 2.6 Sedan's trim exterior dimensions. There are all the thoughtful accoutrements that are standard equipment in every 190 Class automobile. There is, in the Mercedes-Benz Supplemental



Restraint System (SRS) and the substantial rigidity of the passenger compartment, telling evidence of a deep concern for occupant safety.

Powerful, nimble, uncompromisingly competent, sumptuously comfortable, the 190 E 2.6 Sedan is unmistakably a Mercedes-Benz.

Right: In keeping with the aerodynamic excellence that characterizes the 190 E 2.6, its smooth light-alloy wheels play their own role in reducing aerodynamic drag. Large cooling slots at the circumference of each wheel draw heated air away from the brakes to minimize fade under extreme conditions.



SPECIFICATIONS

Body Type	4-Door, 5-Passenger Sedan
Engine Type	Gasoline, In-Line, 6-Cylinder, OHC, 2.6 Liter
Net Power hp/kW @ rpm	158/118 @ 5800
Net Torque lb-ft/N • m @ rpm	162/220 @ 4600
Displacement cu in/cm ³	158.6/2599
Compression Ratio	9.2:1
Transmission	4-Sp Auto w/Torque Converter or 5-sp Man, Fully Synch
Rear Axle Ratio	3.27:1
Fuel Capacity: US gal-res/ltrs-res	14.5-1.8/55-7.0

DIMENSIONS

EXTERIOR

Overall Length in/mm	175.1/4448
Wheelbase in/mm	104.9/2665
Overall Height in/mm	54.7/1390
Overall Width in/mm	66.1/1678

INTERIOR

Headroom—Front in/mm	36.9/938
Legroom—Front in/mm	41.9/1064
Headroom—Rear in/mm	36.0/915
Legroom—Rear in/mm	30.9/784

NOTE: Standards used to determine dimensions and measurements shown above are listed on the inside back cover.

OPTIONAL EQUIPMENT

Anti-theft alarm system, including radio
Electric sunroof, with rear pop-up feature (No charge)
Electrically adjustable front seats and head restraints
Electrically heated front seats
Front seats with electro-pneumatically adjusted orthopedic backrests
Front seats with reinforced frames
Headlamp wipers and washers
Head restraints, rear
Metallic paint
Upholstery, leather or velour



Above: A masterwork of ergonomic engineering, the passenger compartment wraps both front and rear seat occupants in firmly supportive seating and the tasteful ambiance of a Mercedes-Benz automobile. Full analog instrumentation and functionally efficient control systems enhance driver performance.



DIESEL FRUGALITY AND SPORTS SEDAN PLEASURE might at first seem an incongruous blend. A brief excursion behind the wheel of a Mercedes-Benz 190D 2.5 Sedan will immediately resolve this apparent contradiction. This four-door model is constructed on the same advanced monocoque body/chassis unit as the other 190 Class models, making it, like the others, a remarkably versatile sedan. Yet for those times when you feel so inclined, it is a superbly capable road machine.

But in the 190D 2.5, these over-the-road talents and the versatility of a four-door sedan are coupled with the frugality and reliability of a highly refined diesel engine. An engine that requires neither spark plugs nor the complexity of electronic ignition components. Like all diesels, it idles with a minimum of fuel consumption, stretching the machine's per tank range. It is based on designs proven unusually durable over billions of highway miles—since Mercedes-Benz pioneered the production diesel passenger car, 52 long years ago. *(continued)*

190 D 2.5 SEDAN



Left: The almost aggressive stance of the 190D 2.5 Sedan is not misleading. Its spirited diesel engine generates 93 horsepower, more than enough to provide alert and powerful response. Its aerodynamically efficient form (coefficient of aerodynamic drag = 0.35) combines with modest overall weight and the engine's significant output to make three-digit test-track speeds attainable. Thus, at highway speeds, this automobile—unlike most diesels—is not taxed.



Above: As the 190D 2.5 Sedan leans into a curve its stout anti-roll bars, fore and aft, help prevent excessive body roll. Fully independent suspension with damper-strut components up front and multilink geometry at the rear provides remarkably steadfast roadholding. The advanced rear suspension design maintains the proper tire/road relationship even as each wheel rises or drops in relation to the chassis. Because the five links that locate each wheel yield to dynamic forces in a precisely calculated way, unwanted rear-wheel steer effects are virtually eliminated.

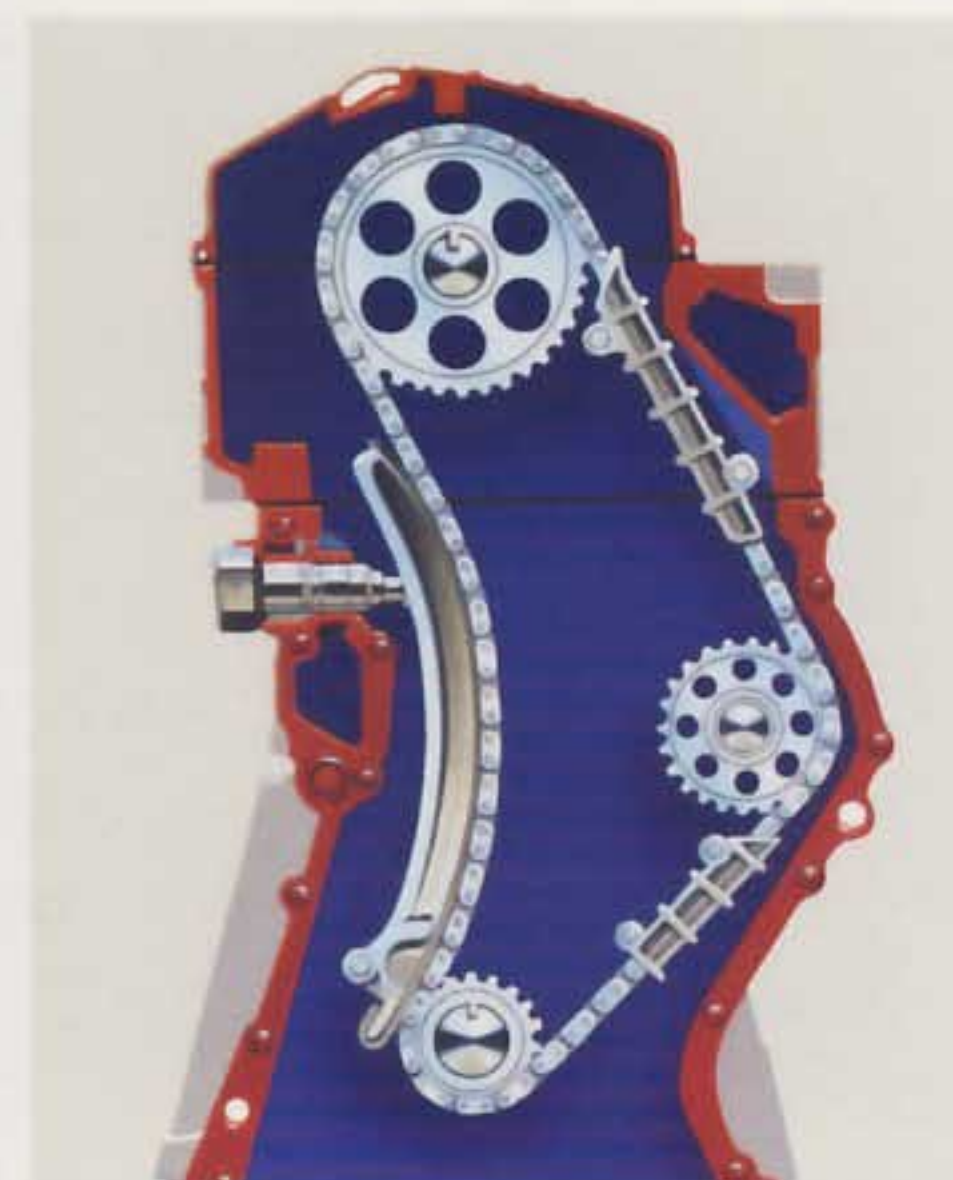
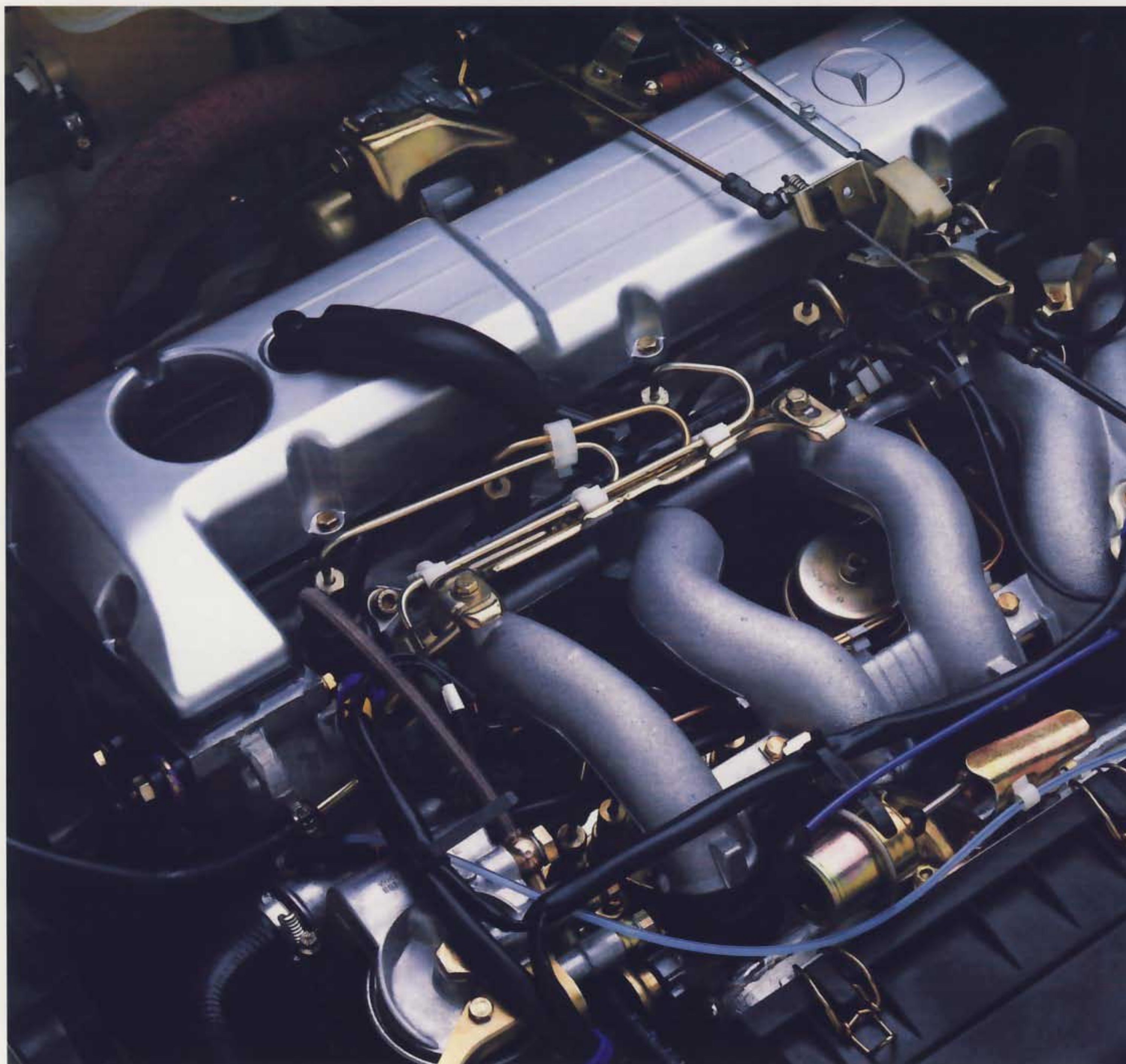
Right: Steering control in sudden stops on slippery surfaces is enhanced by the Mercedes-Benz Anti-lock Braking System (ABS). This computer-controlled electronic device, which is optional at extra cost, monitors wheel revolutions via three sensors. Should the deceleration of a wheel indicate that lockup is imminent, the ABS hydraulic unit cycles brake hydraulic pressure to the affected wheels.





Above: Combining the stalwart character of a diesel, the surefootedness of a high-performance sports sedan and the refined personality of a Mercedes-Benz, the 190D 2.5 defies all traditional stereotypes.





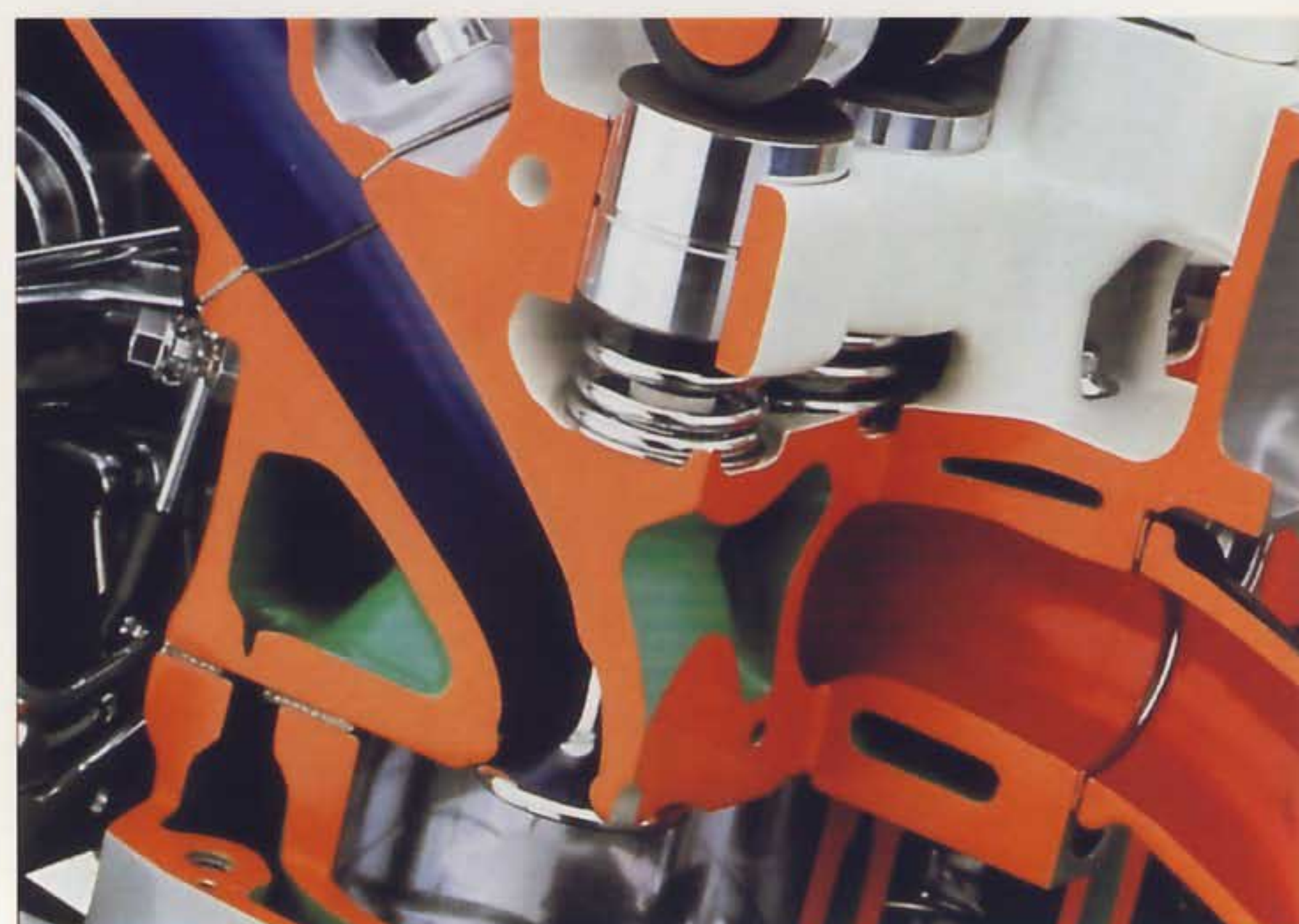
Above: A sturdy double-roller timing chain drives the diesel engine's single overhead camshaft.

Left: The powerplant that moves this sedan with such exemplary enthusiasm is a five-cylinder diesel of 2.5-liter displacement. A cross-flow aluminum alloy cylinder head combines with an advanced prechamber design and sophisticated fuel-injection pump to enhance the powerplant's performance capability. A sturdy six-main-bearing, ten-counterweight crankshaft and vibration dampers help minimize engine vibration.



Far Left: To prevent diesel fuel "waxing", which can occur when ambient temperature is low, a preheater automatically warms the fuel when outside temperature drops below a preset limit. The fuel is automatically diverted through a heat exchanger that is warmed by engine coolant. This device helps inhibit the formation of wax crystals in the fuel that can severely restrict flow. Thus cold weather engine performance is substantially improved.

Right: The enthusiastic response and dependable performance of the 190D 2.5 Sedan's diesel powerplant are the result of advanced design. This cutaway view shows the smooth contouring of the engine's large cross-flow ports. A direct-acting overhead cam and bucket-type tappets with hydraulic compensators enhance powerplant reliability.



To ensure that noise will not disturb the refined interior environment, acoustic panels encapsulate the engine. The very pleasant result: a diesel automobile that doesn't sound like a diesel.

Yet in terms of power output the engine is as potent as some diesels of considerably larger displacement. Utilizing advanced prechamber design and a precise in-line mechanical fuel injection pump, it generates a lively 93 horsepower and 122 lb-ft of torque. Enough to climb hills without running out of wind. Enough to propel the 190D 2.5, to a test track maximum of well over 100 mph. Enough to move this 1½-ton sedan adroitly over challenging roads, where the advanced 190 Class steering and suspension components manage roadholding in a manner not unlike that of a fine sports car. In keeping with the dual personality of the 190D 2.5 Sedan, its engine is mated to an ingenious four-speed automatic transmission that allows you to manually change gear ratios by feel alone when you are so inclined.

This most efficient of the efficient 190 Class automobiles reconciles the apparent disparity between diesels and true driver's cars. It is thrifty, yet sporting. Solid and fully equipped, yet trim and athletically agile. Tenaciously durable and reliable, yet a pleasure to drive. In brief, the 190D 2.5 Sedan displays a combination of virtues that might never be found in one automobile—save in a Mercedes-Benz.

SPECIFICATIONS

Body Type	4-Door, 5-Passenger Sedan
Engine Type	Diesel, In-Line, 5-Cylinder, OHC, 2.5 Liter
Net Power hp/kW @ rpm	93/69 @ 4600
Net Torque lb-ft/N • m @ rpm	122/165 @ 2800
Displacement cu in/cm ³	152.4/2497
Compression Ratio	22.0:1
Transmission	4-Speed Automatic with Torque Converter
Rear Axle Ratio	3.07:1
Fuel Capacity: US gal-res/ltrs-res	14.5-1.8/55-7.5

DIMENSIONS

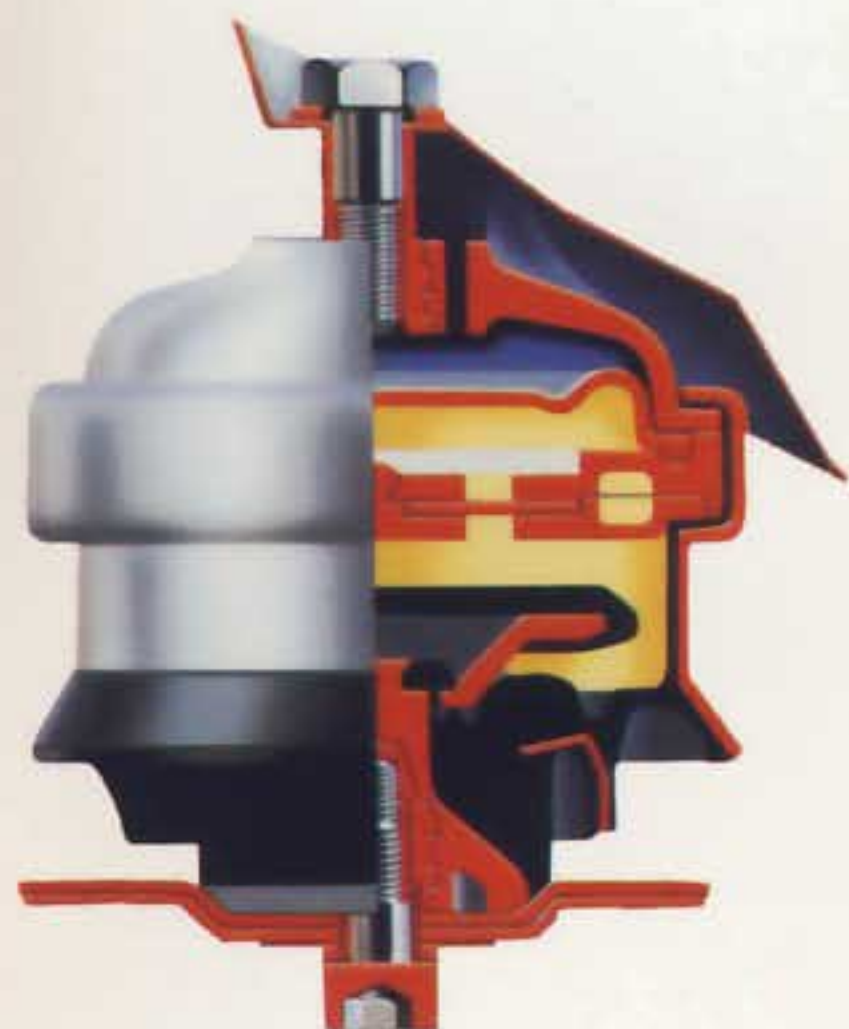
EXTERIOR

Overall Length in/mm	175.0/4445
Wheelbase in/mm	104.9/2665
Overall Height in/mm	54.7/1390
Overall Width in/mm	66.1/1678

INTERIOR

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Legroom—Front in/mm	41.9/1064
Headroom—Rear in/mm	36.0/915
Legroom—Rear in/mm	30.9/784

NOTE: Standards used to determine dimensions and measurements shown above are listed on the inside back cover.



Left: Ingenious hydraulic front engine mounts effectively damp certain low-frequency powerplant vibrations. This further limits the transmission of annoying noise and vibration to the uncannily quiet passenger compartment of the Mercedes-Benz 190D 2.5 Sedan.

OPTIONAL EQUIPMENT

Anti-lock braking system (ABS)
Anti-theft alarm system, including radio
Electric sunroof, with rear pop-up feature (No charge)
Electrically adjustable front seats and head restraints
Electrically heated front seats
Front seats with electro-pneumatically adjusted orthopedic backrests
Front seats with reinforced frames
Headlamp wipers and washers
Head restraints, rear
Metallic paint
Upholstery, leather or velour



The 190 Class has become one of the most successful Mercedes-Benz series ever sold in America because it offers what no automobile series had ever offered before: the sheer driving excitement of a sports sedan within the sheer automotive integrity of a Mercedes-Benz.

For 1988, this blend of mechanical sophistication and traditional Mercedes-Benz practicality is available in three personalities: the spirited, versatile 190E 2.3 Sedan, the seductively sporting 190E 2.6 Sedan, and the efficient yet ener-

getic 190D 2.5 Sedan. Each a beneficiary of the intense almost ten-year development that marked the creation of the 190 Class.

One of these three models is sure to meet your personal tastes and needs. All of them steadfastly adhere to the Mercedes-Benz ideal of simultaneous automotive excellence—that uncanny ability to perform every vital function, uncannily well. And all of them deliver this remarkable balance of virtues with a

sense of sheer driving enthusiasm duplicated nowhere else in the automotive world.

THE 190 CLASS: DEDICATED TO THE ART OF ENTHUSIASTIC DRIVING

DIMENSIONS AND MEASUREMENTS

Dimensions made in accordance with SAE specifications. Front and rear legroom derived with front seat adjusted to designed driving position for 95th percentile male occupant. Front and rear headroom dimensions are for automobiles equipped with electric sliding roof. The power values are measured in accordance with SAE J1349 for kilowatts. Horsepower values are by standard conversion.

All illustrations and specifications contained in this brochure are based on the latest product information available at time of publication. Mercedes-Benz reserves the right to make changes at any time, without notice, in colors, materials, equipment, and models. Any variations in colors shown are due to reproduction variations of the printing process. Illustrations of test situations may include automobiles without U.S. equipment.

All interior photographs show genuine leather seat upholstery.



Mercedes-Benz of North America, Inc.
One Mercedes Drive
Montvale, New Jersey 07645

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