PORSCHE
911 Carrera / 911 Turbo

Many considered it an anachronism when we began building sports cars at the end of the 1940's. With our small production quantities, lovingly crafted by hand, we could afford to build Porsches precisely true to our beliefs. Then, as today, there were sophisticated drivers who agreed with us. Over the years, their numbers have grown faster than we ever thought possible. Exceeded only by the growing demands that we – and they – make on ourselves at Porsche AG.

This is why, year after year, we invest our knowledge, our capabilities and our considerable means in research and development of new technologies. We have just completed a major modernization program at Zuffenhausen and Weissach, our Development Center. New facilities such as our new body works, paint facility and wind tunnel will help us continue to realize a product of very high quality. Through these efforts, we constantly improve not only the legendary performance of our cars, but their reliability and durability. At the same time, we continue to set new standards in environmentally sound, energy efficient engineering.

And yet, it's not just our research and development that lead to better and better Porsches. Porsche drivers the world over treasure many qualities in their cars... performance, the unmistakable Porsche shape, unfailing reliability and outstanding value retention. This "family" of demanding individuals provides us with a never ending flow of valuable feedback on how we are doing. We will continue to answer their desire for an extensive array of carefully refined features and equipment. The vital functions of a Porsche will always be built in, not added on.

Our success, rather than allowing us to rest on our laurels, motivates us to reach even higher. In the future we will continue to improve the safety, security and comfort of our cars – while maintaining the sporting qualities that every Porsche owner demands.

Sincerely,
Ferry Porsche


Carrera

DRIVING IN ITS PUREST FORM: THE 1988 PORSCHE 911 CARRERA®, 911 TURBO.

When the Porsche 911 was unveiled at the Frankfurt Auto Show in 1963, it created a sensation. Twenty six years later, it still does, as 911 owners and admirers – such as the world's motor journalists – continue to be fascinated by the 911 Carrera and Turbo. Consider...

Automobile Magazine: "Technological advances appear on the Carrera at every point, but the car's sensuality is easily traceable to the first 911, even to the original Type 356 roadster. Thanks to heritage and hard work, the Carrera is eminently satisfying." Several years ago, Car and Driver selected the 911 for "best fit and finish" of any car on the world market, noting "that the 911 outdistanced the likes of Rolls-Royce, Mercedes-Benz, BMW and a host of Japanese brands should tell you everything you need to know about how well it's put together." The same editors awarded the 911 "best braking," "best acceleration," and "best roadholding."

"..DESERVES TO BE A LEGEND."

Road & Track recently lauded the Carrera's "timeless design, distinctive, beautiful; a shape and a concept that have only gotten better." While Motor Trend called the 911 "a recognized standard of excellence." Perhaps our British admirers at Car captured the 911's mystique best when they wrote, "...a car that combines an ageless shape with wonderful levels of performance and maneuverability, and yet still makes ownership sense... deserves to be a legend."

AUTOMOBILES WITHOUT PARALLEL.

Compared to other high-performance sports car marques, the 1989 911 Carrera remains unique among the world's most sought after automobiles. With sensational performance from its continually refined, 214 hp engine. Effortless shifting from a recently redesigned 5-speed transmission and hydraulically assisted clutch. Precision tracking from newly standard 16 inch forged wheels and ZR series tires. Greater enjoyment from the new-generation Blaupunkt radio (available midyear), hi-fi amplifier and automatic speed control. Enhanced ownership protection from a new automatic alarm system. New colors and interiors. Excellence in engineering, construction and production quality. And unparalleled value leadership: the highest resale values of any sports car on the U.S. market.

1989 marks 15 years since the 911 Turbo emerged from Zuffenhausen, its exotic car status guaranteed from the beginning. Today, a decade and a half and countless refinements later, its breathtaking performance almost defies description. There remains on the world market no more direct transferral of racing technology and driving exhilaration to a road car than this superb sports car, available again for 1989 in distinctly limited quantities. Unless it would be the stunning Porsche 911 Turbo fitted with the spectacular race-bred Slant Nose option. For 1989, the 911 Turbo owner enjoys even greater performance (0-60 in 5.3 secs, 157 mph top track speed) via a new 5-speed transmission with short-throw gear shift, hydraulically assisted clutch, and recalibrated suspension for smoother transition from understeer to oversteer. Also standard are a limited slip differential for better traction under most conditions and a hi-fi amplifier.

A PERFECT SYNTHESIS OF SOUGHT-AFTER IDEALS.

At Porsche, desirable but seemingly contradictory design elements – ultrafast acceleration but acceptable fuel economy, high spirited driving enjoyment with great comfort, day-to-day reliability and long service intervals – all are combined ingeniously in ideal synthesis. This is not the product of chance. Such an optimum synthesis derives from extensive research and development at Porsche's own famed Weissach Development Center, where contract consulting projects are executed for many of the world's auto makers.

RACING: "...A VICTORY FOR EACH PORSCHE ROAD CAR OWNER."

Porsche's unparalleled racing success has long been a significant element of the famous Porsche "mystique". No other sports car has a richer heritage. Each 911 racing victory is a victory for each 911 road car owner. Because the same factors providing the best lap times in a competition Porsche provide unequalled driving pleasure and high safety reserves for the 911 driver.

PORSCHE EXCLUSIVITY AND PRACTICALITY.

Exclusivity in the Porsche context may be measured several ways. One is individuality in form, driving characteristics and qualities, in the version of one's choice: Coupe, Targa®, Cabriolet or Turbo. Another: Fewer than one in every one thousand new cars sold in the U.S. during 1989 will be a 911 Carrera or 911 Turbo.

New technologies and the use of lighter, more durable materials continue to be incorporated into the Porsche 911. Indeed, the car today easily meets contemporary requirements for safety, comfort, low noise and exhaust emissions – even optimum use of its engine output. While at the same time fulfilling increasing demands placed on its driving performance. The result is the highest possible blending of performance, practicality and exclusivity.

THE EXCLUSIVITY OF PORSCHE QUALITY.

Porsche quality is undeniably the standard of the industry, the benchmark for all sports car manufacturers. Porsche galvanized steel bodies are so corrosion-proof that for 1989 Porsche remains one of the few car makers to provide a full 10 year limited warranty against rust-through. And each Porsche 911 is painted using a 26 step process.

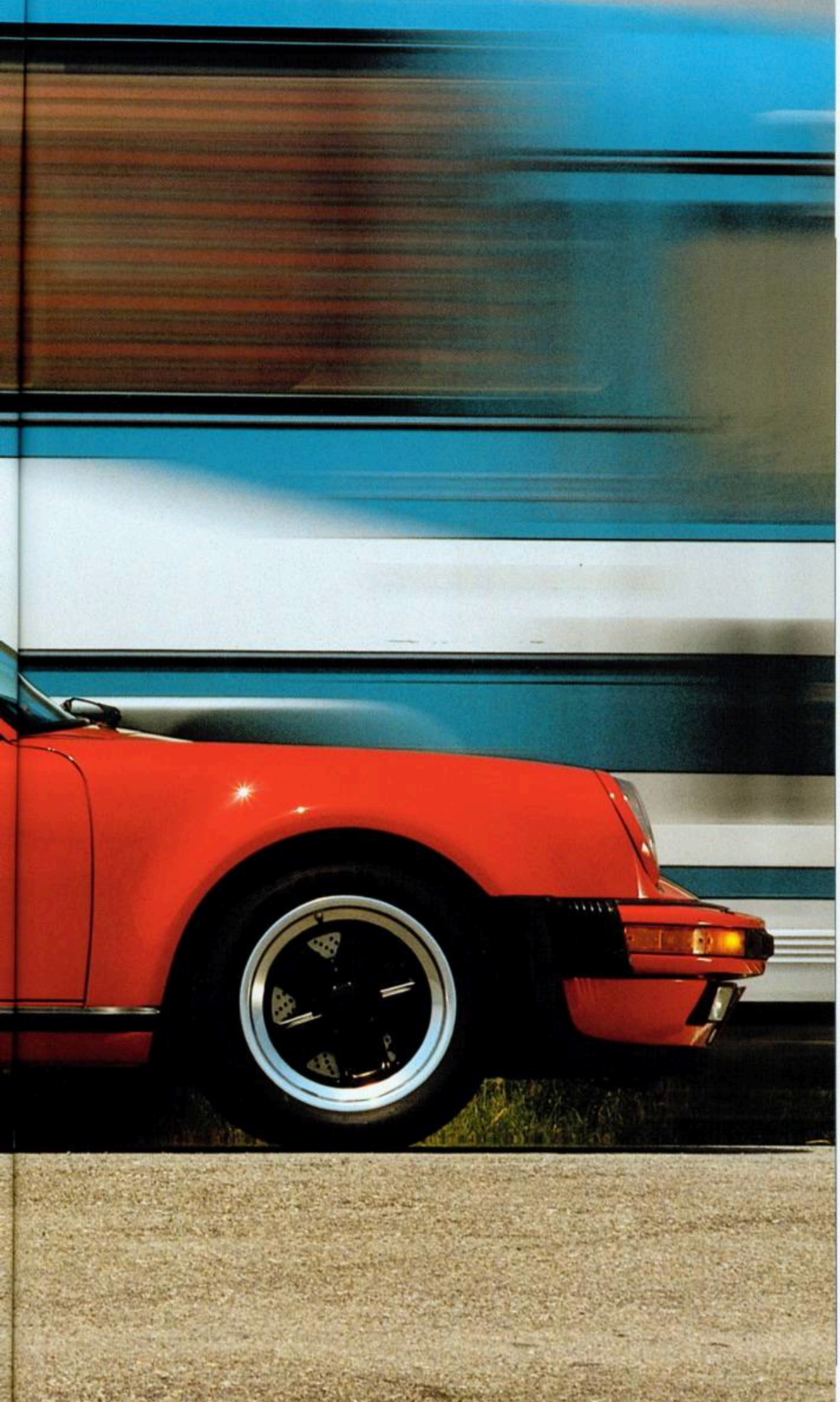
THE FASCINATION OF DRIVING UNDER THE OPEN SKY.

Both the Targa and Cabriolet versions combine the exclusivity of Porsche fascination with the added exhilaration of driving under an open sky. The roof of the Targa can be removed, folded together and stored in the luggage area or behind the front seats with minimal effort. Opening and closing the convertible top of the Cabriolet is made even easier with full-power assist as an option. Simply flipping one switch while the car is stationary activates a multiple-motor system that effortlessly raises or lowers the top – even opening and locking its securing clips!

A CLASSIC, YET AERODYNAMICALLY EFFICIENT.

The lines of the 911 Carrera define the quintessential sports car...lean, functional, exciting. These are lines that have excited enthusiasts for over two decades. Aerodynamically effective lines that directly influence fuel economy, performance and handling of this high performance sports car.

Long before developing the 911, Porsche had conducted extensive wind tunnel studies on racing sports cars. Since the original 911 design was struck, new body detailing has further improved the body's dynamic properties, road holding and directional stability in all speed ranges and during braking. These characteristics were preserved with great care in the Cabriolet to celebrate the added exhilaration of top-down motoring.



THE PORSCHE 911 TURBO.

To discerning buyers, a Porsche is synonomous with certain qualities fundamental to an exciting driving and ownership experience: High assembly quality and finish. High-performance power train and suspension technologies. Exceptional ergonomics. Dependability in a class alone. Outstanding active and passive safety. Favorable operating and fuel economies. And, above all, the sheer exhilaration of driving a superb machine.

Simply put, the 1989 Porsche 911 Turbo offers each of these qualities in such abundance, even for a Porsche, that this automobile remains simply in a class by itself in the world today.

A RACING HERITAGE UNPARALLELED IN HISTORY.

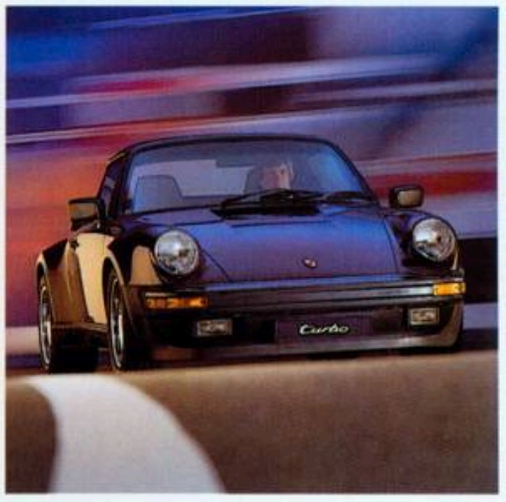
The first Porsche 911 Turbo was developed directly from the enormously successful Porsche racing cars. To this day, the Turbo's massive drilled brake discs are derived directly from the legendary Type 917. To intensify Turbo development, Porsche ran parallel development programs, transferring technology from production car to the track, and vice versa, as fast as it became proven – unique among the world's auto makers. Currently, Porsche is deeply committed to ensuring that lessons learned in competition are transferred to production cars as soon as new elements or details are proven. This commitment helps explain why production Porsches are so exhilarating to drive.

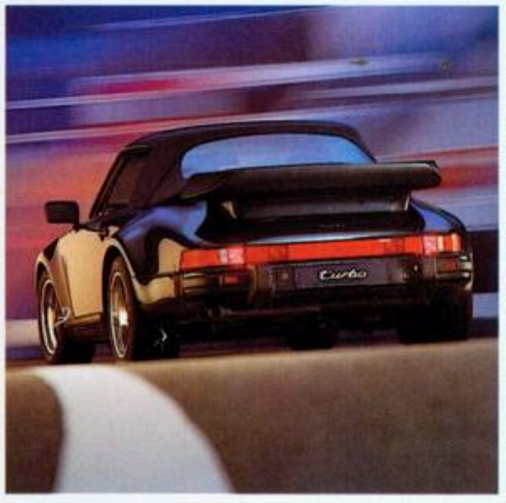

turbo


turbo

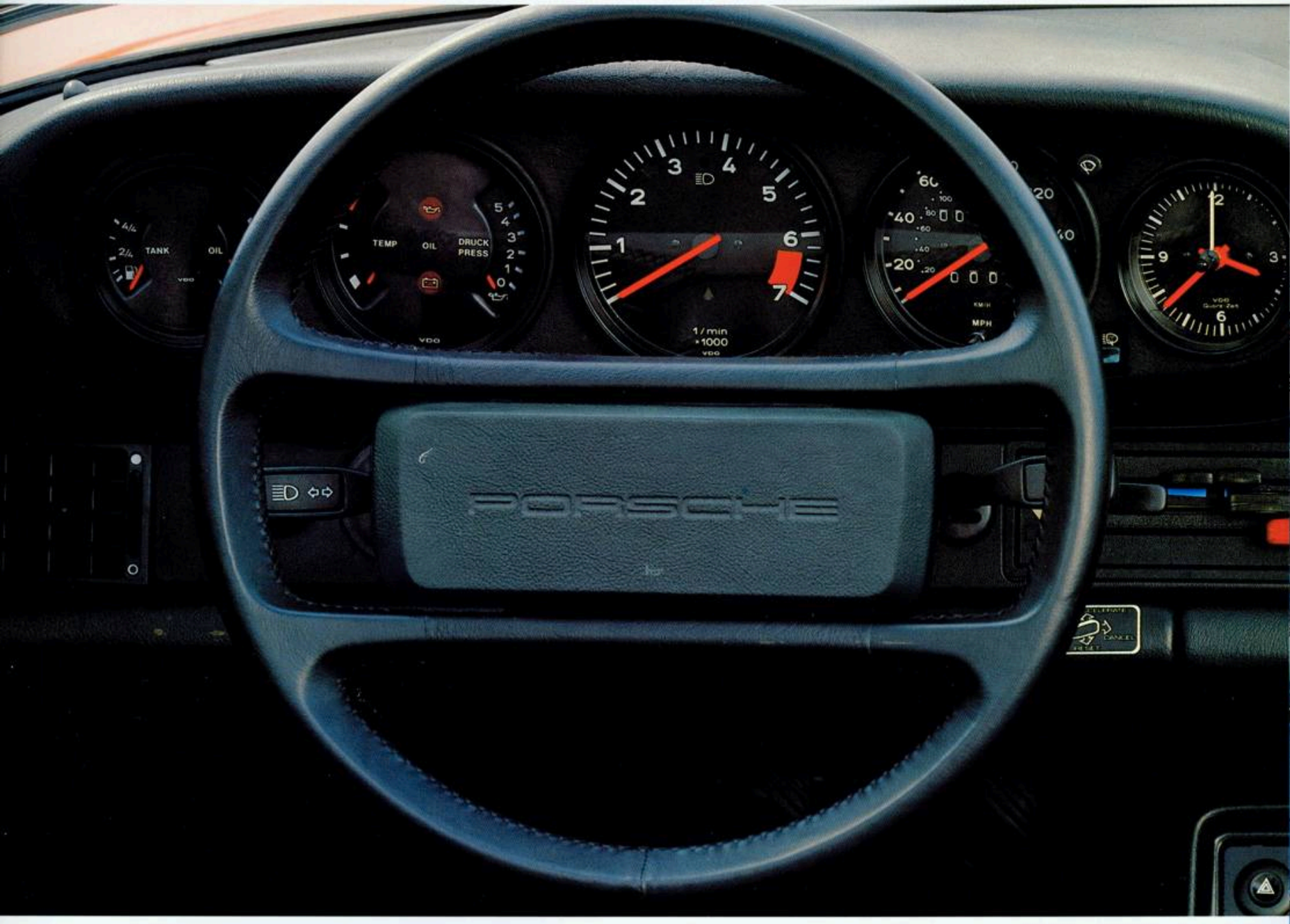
SIGNIFICANT REFINEMENTS FOR 1989.
Each year Porsche makes many refinements to each model. For 1989, Porsche has refined the 911 Turbo significantly through three synergistically related developments that originated several years ago. At that time, Porsche engineers at the Weissach Development Center began developing a new 5-speed transmission for the 911 Turbo. As the prototype phase progressed, it became clear that mating the transmission with a more robust version of the hydraulic clutch introduced on the 1987 911 Carrera would allow the 911 Turbo driver a considerable reduction in clutch operating effort. Further refinement led to the evolution of a new gearshift design, with lever movement in the gate shortened for even more sporting involvement.

A NEW TRANSMISSION, GEARSHIFT LEVER AND CLUTCH FOR THE 911 TURBO.
At Porsche, rarely is one component improved without improving each interfacing component. For 1989, Porsche's engineers redesigned the transmission, gear lever and clutch using a systems approach to optimize each component within the context of the total user environment. The short-throw gear lever encourages faster, more precise shifting. Hydraulic actuation and rubber torsional damping make the new clutch smoother acting and improve engine smoothness at low speeds. Accelerating hard in the refined car presents a new dimension to the driving experience: because the effective speed range of 157 mph* is spread over five gears instead of the former four, the car remains within a more intensive "boost" band, the Turbo building boost quicker for even more exhilarating acceleration. Turbocharger pressure rises more rapidly, torque builds quicker, and the car feels more responsive. Because Porsche's philosophy is to design-in more brakes and suspension than engine performance for safety, the 911 Turbo's enhanced sporting character is complemented by revised suspension settings. Larger diameter torsion bars at the rear, a matching anti-roll bar and somewhat firmer shock absorber calibration provide the final nuance of optimization in the '89 edition, with the transition from understeer to oversteer becoming even more fluid.





* Top speeds are noted to show performance capability. Porsche recommends that all speed laws be obeyed.



ERGONOMICS: THE GUIDING PRINCIPLE.

Porsche engineers have always insisted that, to be truly entertaining, a high performance sports car must be easy to operate and readily mastered. Based on its program of continuing research in ergonomics and its experience in automobile racing, Porsche has developed an interior system for the Porsche 911 Carrera and 911 Turbo in which operating comfort and safety are intelligently optimized.

THE CONCEPT BEHIND THE DRIVER'S COMPARTMENT.

In laying out the 911's interior, Porsche engineers carefully considered individual driving habits and the driver's body size. The logical grouping and layout of instruments, switches and levers permit the driver to devote their attention fully to driving conditions. All controls are easily reached. Taller drivers may even specify that the steering wheel be extended by 30 mm.

Safe, effortless operation of the 911 Carrera and Turbo is ensured in numerous ways. The pedals are positioned optimally. The electric fully adjustable seat height and seat backs allow the driver to operate the clutch,

throttle and brakes most naturally. Driver effort and fatigue are thus minimized. This exact harmony of pedals, seat position and steering is to a great measure responsible for the superb long distance touring qualities of these Porsches. Qualities that prompted Automobile to remark, "This is an inviting interior – nothing gets in the way of your spending a perfectly comfortable 500- or 750-mile day behind the wheel."

ENSURING A TEMPERATE CLIMATE. The 1989 Porsche 911 Carrera and 911 Turbo are equipped with a high output heating and ventilation system, quickly warming the interior to the desired temperature.

Tinted glass is standard equipment on all models. For warm weather motoring, each car is equipped with a powerful air conditioning unit. For 1989, all carpets are of "silk velour" quality. The Coupe's sliding steel sunroof – now standard equipment for 1989 on both Carrera and Turbo – includes an automatic wind deflector. The removeable Targa top is lined; the Cabriolet folding top is also lined and insulated. Such thoughtful engineering contributes to the comfortable environment in these true sports machines.

SEATS TAILORED TO YOUR DIMENSIONS.

The 1989 Porsche 911 Carrera and 911 Turbo are equipped with what Car and Driver called "the best seats" in their "10 best features" issue. The seats support in every respect the demands placed on seating in a high performance sports car: to transmit precise road and vehicle dynamic information while simultaneously providing an ergonomically beneficial seating position. That's why the seat cushioning, vehicle suspension, stabilizer bars and shock absorber system compose a carefully matched functioning unit in the 911 Carrera/911 Turbo.

The anatomically correct design of the seat shell, the fixed position of the headrests, and the upholstery ensure a safe, relaxed driving environment during long trips and firm lateral support when driving through curves. Electric motors adjust seat height and tilt (standard in 1989 for the passenger seat as well) simply by pressing a button.

Seat options include electric adjustments for reach and seatback angle; heating for all electrically adjustable seats; lumbar support for the standard comfort seats; and, for drivers with a more dynamic driving style, specially contoured sport seats affording additional lateral support.

SURPRISINGLY EFFICIENT SPACE UTILIZATION.

For true sports cars, the Porsche 911 Carrera and 911 Turbo offer unexpectedly high utility. The two rear seats, newly equipped with combination shoulder and lap belts, are comfortable for children, or two adults for short trips. When driving with the rear seats unoccupied, the backrests may be folded down to provide additional luggage carrying space. The cavity created by the folded seat back makes an excellent place to "hide" cameras or other valuable objects from prying eyes while the car is parked.

LUXURIOUS SOFT LOOK LEATHER SEATS.

Comfort seats in the 911 Carrera and Turbo may be specified in Soft Look Leather, adding to the already inviting nature of the car's interior. Soft, rich, gathered at each seam, Soft Look Leather seating is the most luxurious seating surface Porsche has ever offered.

911 Turbo

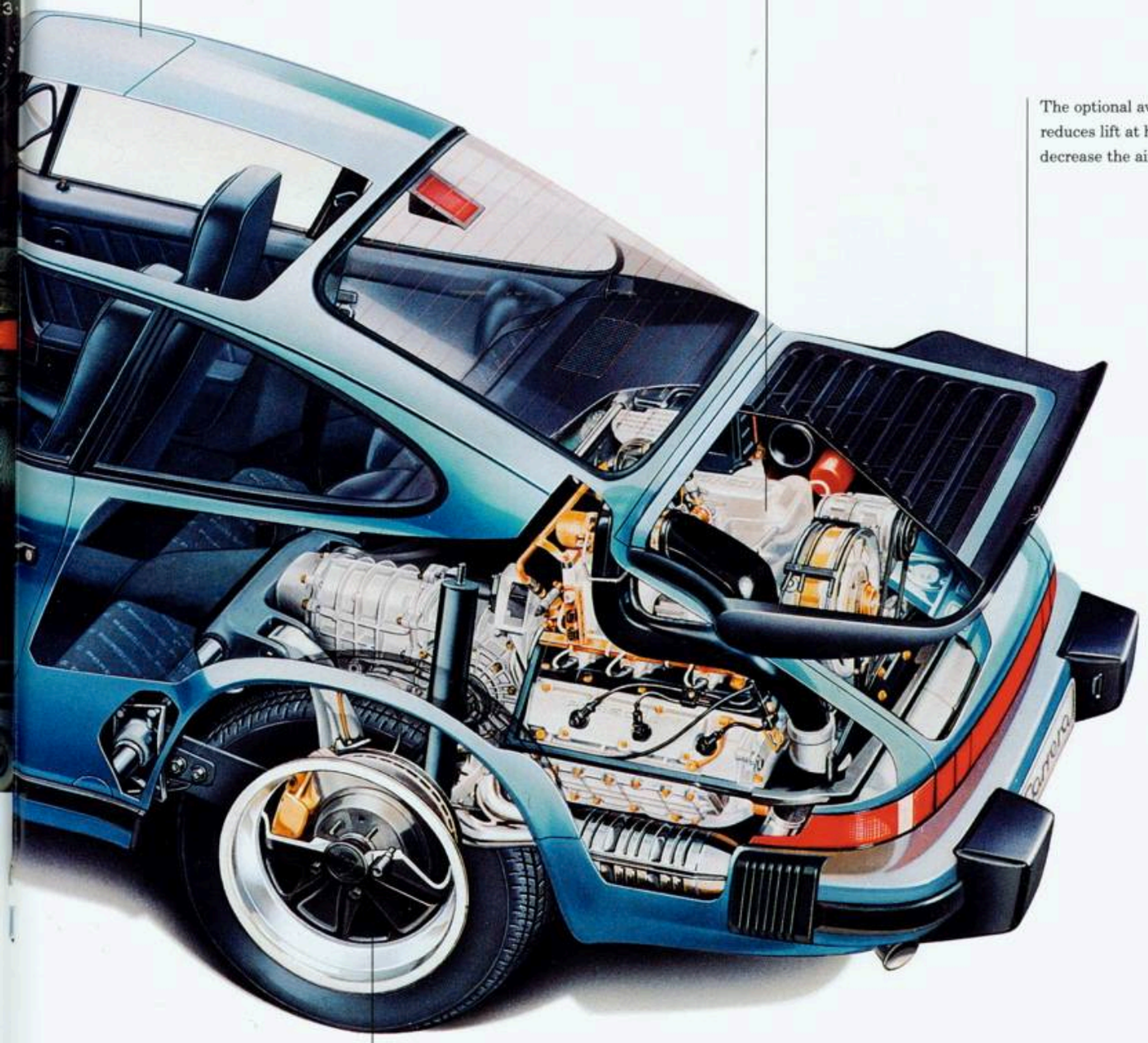
Power assisted hydraulic dual-circuit brake system, internally vented discs, independent transverse control arms, independent torsion bars mounted in the direction of travel (transversely at the rear) 22 mm stabilizer bar, forged alloy rims 6 J x 16 with 205/55 ZR 16 tires.

Anatomically correct seats, electrically adjustable with the press of a button for seat height and tilt of the seat.

Double-sided zinc-galvanized steel body, drag coefficient CD = 0.39, frontal area A = 1.77 m^2, top track speed 149 mph*, acceleration 0 – 60 mph 6.1 seconds.

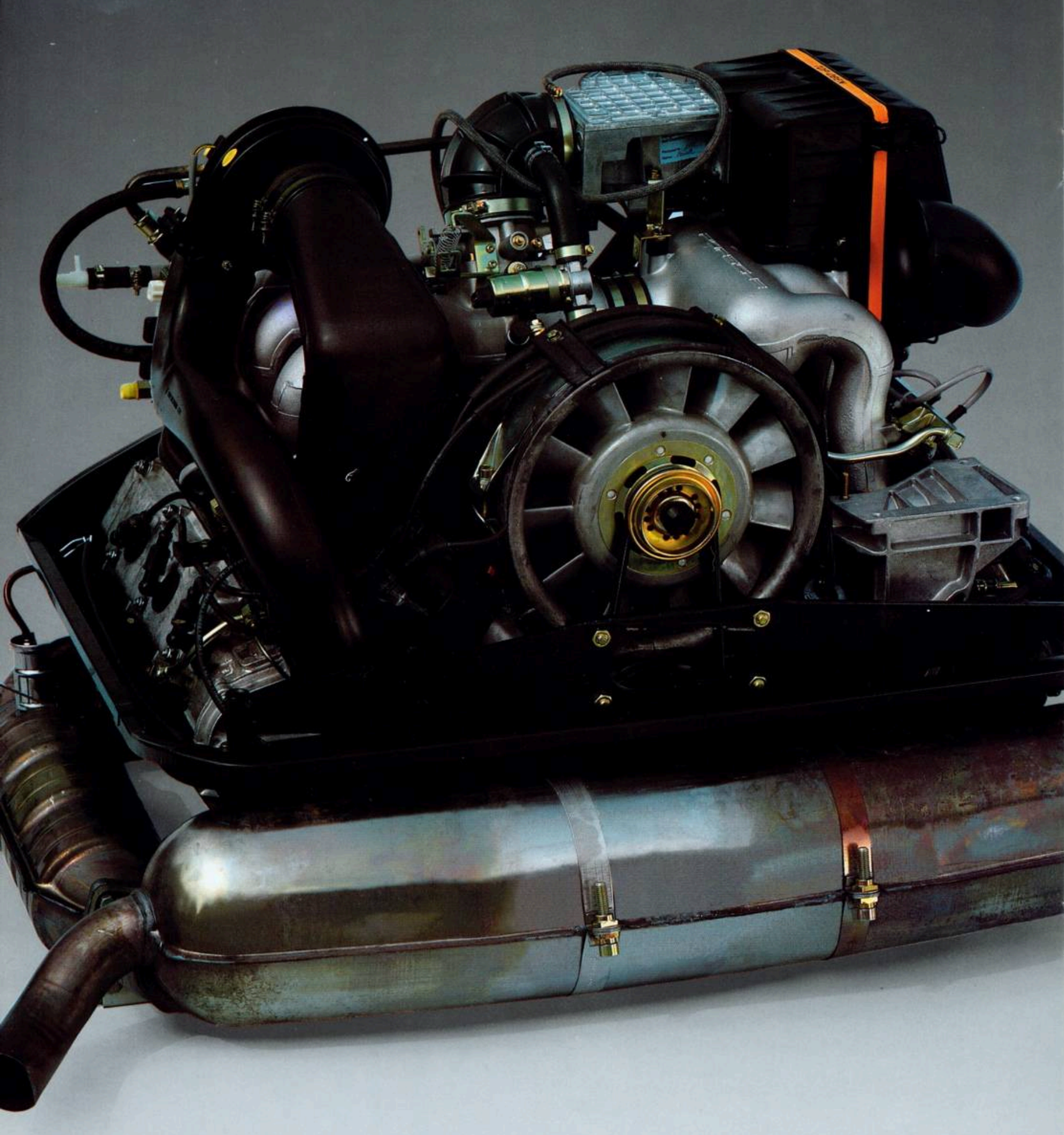
Air-cooled, horizontally opposed, lightweight 6-cylinder engine, 3.2 litres displacement 214 net SAE HP.

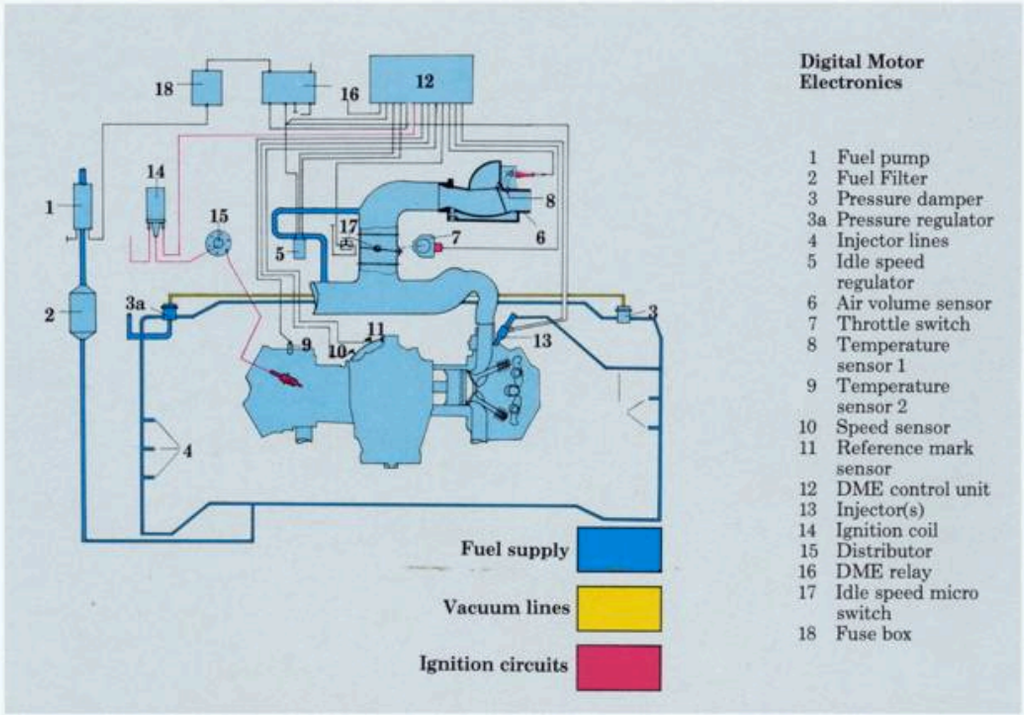
The optional available large spoiler reduces lift at higher speeds and helps decrease the air drag.



Independent suspension, forged alloy rims 8 J x 16 with 225/50 ZR 16 tires, 21 mm stabilizer bar.

* Top speeds are noted to show performance capability. Porsche recommends that all speed limits be obeyed.





PORSCHE ENGINE TECHNOLOGY: AN ENGINE WITH "PERSONALITY."

The spontaneous reaction and smooth response of the 911 engine, coupled with low vibration levels, derive from finely balanced connecting rods, together with the forged steel crankshaft – which in turn is balanced by twelve counterweights.

The Porsche six cylinder engine is of compact, opposed layout with three cylinders for each opposed bank. This cylinder configuration allows a low center of gravity – desirable in serious high performance sports cars.

THE CARRERA'S POWERPLANT.

With its displacement of 3164 cc and a compression ratio of 9.5:1, the Porsche 911 Carrera engine develops 214 horsepower at 5900 RPM. The maximum torque curve is 195 lb-ft at 4800 RPM, with more than 80% torque available from 1,500 rpm to the redline – indicating the extremely strong low-end response of this engine. Such specifications allow the 911 Carrera to accelerate from 0 to 60 mph in 6.1 seconds and reach a top speed of 149 mph. Road testers have written glowing articles about this engine's response, Automobile calling it "a paragon of flexibility and response, an element that adds incalculably to the sensation of driving a 911." The same writer noted it to be "magnificent whether you're accelerating hard all the way through the gears or simply stroking on some more power."

CARRERA ENGINE MANAGEMENT: THE DIGITAL MOTOR ELECTRONICS.

In the 911 Carrera, state-of-the-art digital motor electronics (DME) are responsible for exact fuel mixture and cylinder charging. The DME ensures that the breakerless transistorized ignition system always delivers sparks exactly at the right instant.

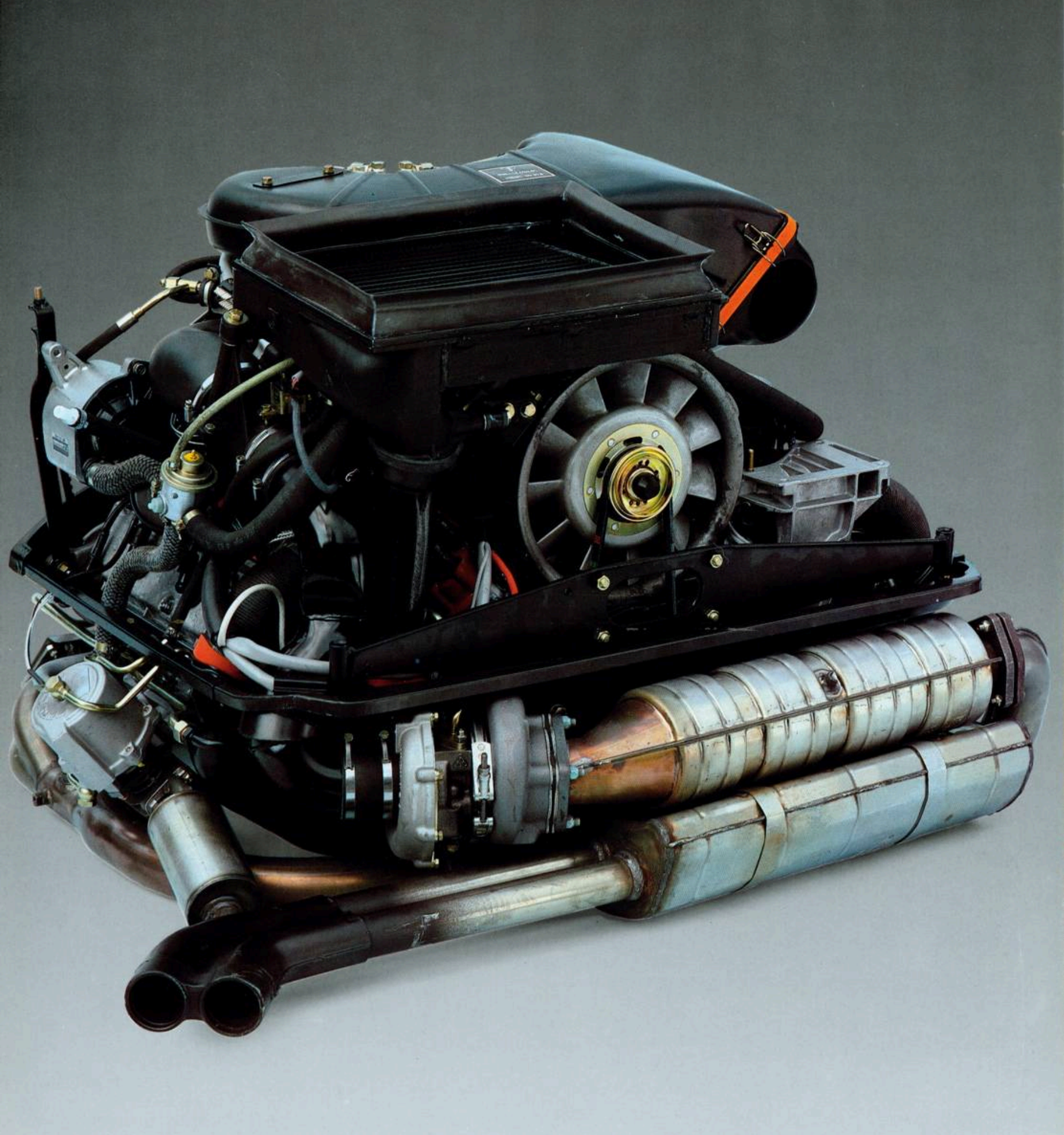
The Porsche 911 Carrera uses the advantages of this system to realize an optimum combination of performance and fuel economy. Its precisely controlled ignition timing produces excellent fuel economy even during warmup. Optimum fuel/air mixtures in all power ranges help increase fuel economy through increased engine efficiency, thus further reducing exhaust emissions. Idle speed is automatically stabilized by an electronic idle regulator regardless of whether accessories such as the air conditioner are turned on.

LUBRICATION TECHNOLOGY PROVEN IN RACING.

To ensure that the lubrication system functions efficiently even at high lateral acceleration, the Porsche 911 Carrera and 911 Turbo engines are equipped with a high-pressure dry sump lubrication system with separate oil tank. Normally used only in race cars, this system allows a lower center of gravity and a large oil capacity (13.7 quarts) while ensuring that every lubrication point receives precisely the correct amount of clean, cool oil – even under high cornering forces. Such engineering is responsible for the exceptionally long oil change interval – up to 15,000 miles between oil changes.*

Facing page: 911 Carrera engine

* Because oil consumption may vary according to use, oil level should be checked regularly.



THE TURBO'S POWERPLANT.

The 911 Turbo engine has a capacity of 3299 cc and a compression ratio of 7.0:1. This air-cooled engine with exhaust driven turbocharger produces 282 hp at 5500 rpm. The Porsche 911 Turbo accelerates from 0 to 60 mph in 5.3 seconds and achieves a top speed on the track of 157 mph. Road & Track was so impressed with the 911 Turbo's engine that it wrote, "The intercooled, turbocharged, fuel injected motor is brawny enough to make the present-day Turbo... quicker than any other production automobile in R & T tests. Quicker than a Ferrari Boxer or Testarossa. Quicker than a Lamborghini Quattrovalvole. Merely firing up the engine gets your adrenaline pumping as you think about what lies in store."

911 TURBO PRINCIPLES AND TECHNOLOGY.

In basic, schematic form, the principle behind the exhaust turbocharger may be explained in the following manner: a turbine wheel is accelerated to up to 90,000 RPM by exhaust gases, powering a second turbine wheel, the "charging wheel," located at the other end of a common shaft. This charging wheel then pulls fresh air through the air filter, compresses the air and forces it past the intake butterfly to the motor. This technology allows the Porsche 911 Turbo to produce more horsepower at all RPM solely by optimizing the filling capacity of the combustion chamber.

For their 911 Turbo, Porsche engineers refined earlier proprietary turbocharging technology. In addition to the compression ratio of 7.0:1, an extremely compact turbocharger was selected. With an exceptionally small amount of rotating mass, it reaches boost conditions very quickly. In this way, turbo boost is available at lower RPM and onset of boost conditions is less noticeable. The result is day-to-day reliability and low end response coupled with excellent all-around driveability.

Porsche engineers developed special technology to ensure that the turbocharged engine in the 911 Turbo functions with full Porsche reliability. If an increase in exhaust pressure causes the boost pressure to rise to 0.7–0.85 atmospheres, a bypass valve opens automatically. As a result, the excess exhaust gases never reach the turbine, but are directed around it through a separate muffler. A backflow valve prevents an over-pressure condition between the charging wheel and the intake butterfly. When the valve opens, fresh air is allowed to circulate around the charging wheel. The turbines are then not subjected to extreme braking conditions; the whole system rotates freely until the next time acceleration is needed.

RACE-PROVEN INTERCOOLER TECHNOLOGY.

To ensure that maximum air density is available for the optimum charging of each cylinder, intercooler technology was borrowed from highly successful competition versions of the Porsche 911 Turbo. An air-to-air intercooler in the rear spoiler cools hot, compressed air on the way from the charging wheel to the intake butterfly.

LOW-MAINTENANCE TURBO ELECTRONIC FUEL INJECTION AND IGNITION.

The Porsche 911 Turbo engine uses a K-Jetronic system for optimum fuel/air mix and uniform cylinder fill. The right sparks at precisely the right instant are delivered by a transitorized ignition system. Other than an occasional change of spark plugs, this ignition system is virtually maintenance-free, operates with an extremely high degree of precision, and is partly responsible for the dependability of the 911 Turbo and for its conveniently long service intervals: 7,500 miles between services and fresh oil.*

Facing page: 911 Turbo engine

* Oil level should be checked regularly. Oil consumption may vary depending on use.

SPORTING EXCELLENCE WITH SAFETY AND ECONOMY.

An essential prerequisite for the driving safety, or "active safety," of the Porsche 911 Carrera and 911 Turbo is to be found in the engine's power reserves. The seemingly inexhaustible power and torque implicit in these remarkable engines allow a driving style combining sporting excellence and fuel economy. Even without frequent recourse to the gearbox, the Carrera or Turbo will accelerate powerfully away from low revs. Passing maneuvers on the read therefore require only the briefest of times and are consequently safer.

EXCEPTIONAL CORNERING SAFETY.

An important safety feature of the 911 Carrera or 911 Turbo is its very high difference between used and possible adhesion factors. An average Porsche 911 driver seldom intentionally uses the full possible limits of adhesion. He may, in fact, routinely use only 30 to 40 percent of the absolute possible lateral acceleration capability. On the skidpad, the Carrera or 911 Turbo can be driven through curves using a lateral acceleration of up to 85% of the gravitational force – an extremely high cornering ability exclusive to a mere handful of the world's automobiles. The 911's handling prowess inspired Motor Trend to observe, "flying around in the mountains with this car underlines the many subtle features that make it such a good driver's car."

SAFETY, SPORT AND COMFORT.

"Active safety" – an automobile's designed-in accident avoidance ability – is developed on four fronts at Porsche: through excellent driving position and ergonomics; no-hesitation acceleration; quick, responsive handling; and superb brakes having linear response and outstanding performance. The perfect synthesis of active safety, dynamic handling and a high degree of driving comfort becomes especially apparent with the 911's unique combination of power train, tire selection and suspension tuning.

The front wheels are suspended by independent transverse control arms and shock absorber struts, the rear wheels by alloy diagonal trailing arms. The front axle carrier is also of alloy construction for precise spatial location. The front suspension is accommodated by independent torsion bars mounted in the direction of travel. The rear wheels are sprung by torsion bars mounted at 90 degrees to the direction of travel. Additionally, standard equipment stabilizer bars are mounted front and rear to further optimize handling in curves without significantly affecting comfort. These help minimize body roll while driving through fast corners or if an object must be quickly avoided. Thus, road contact is maintained to a great extent without sacrificing driving comfort.

For 1989, the Porsche 911 Carrera is equipped with 205/55 ZR 16 (front) and 225/50 ZR 16 (rear) high performance radial tires mounted on 6 inch (front) and 8 inch (rear) forged alloy wheels. The Carrera can optionally be equipped with wider profile tires and alloy wheels together with a complete "Turbo Look" option.

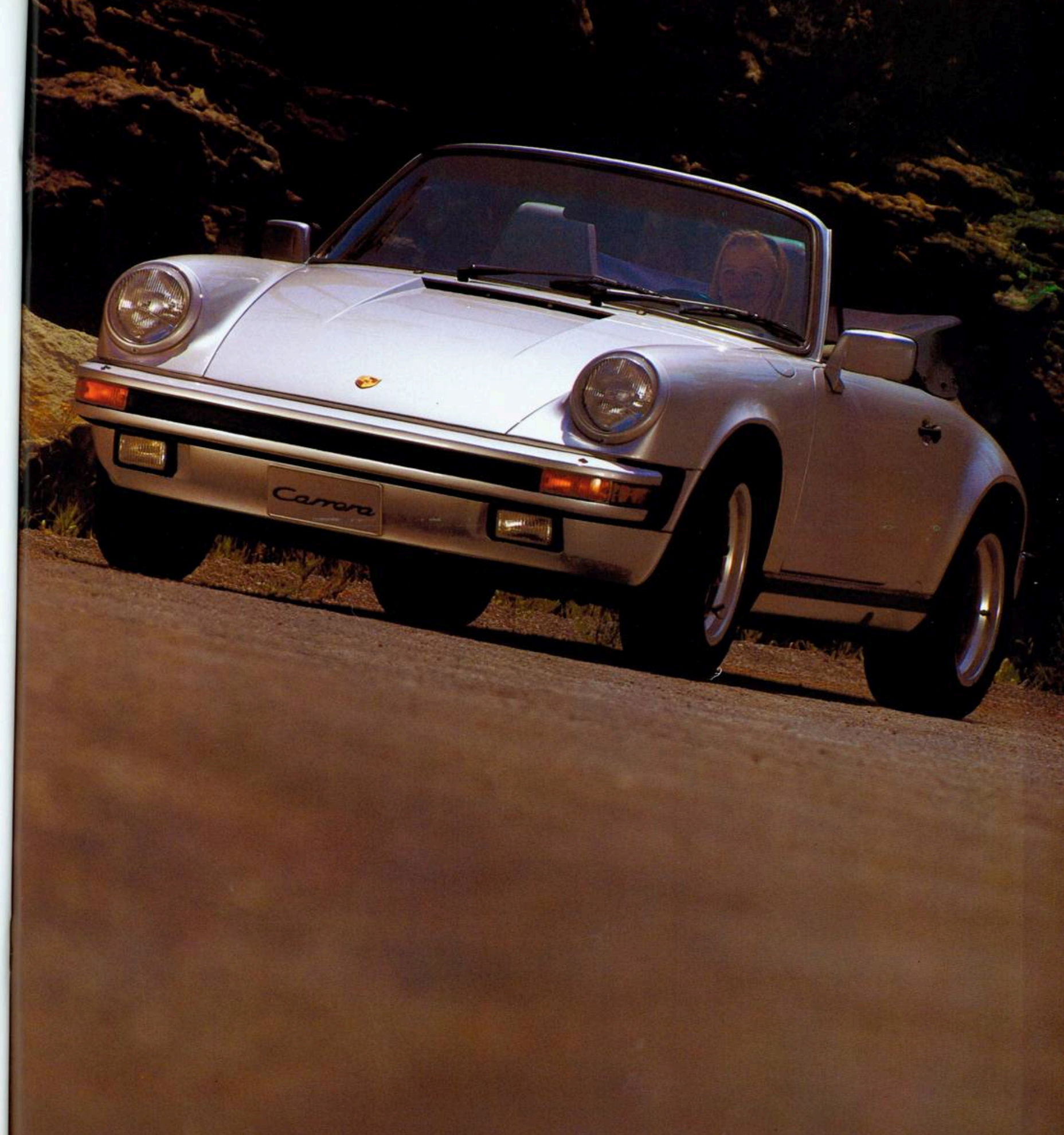
The Porsche 911 Turbo is equipped with 205/55 ZR 16 (front) and 245/45 ZR 16 (rear) high performance radial tires mounted on 7 inch (front) and 9 inch (rear) forged aluminum alloy wheels. All wheel rims can be delivered as an option with Grand Prix White centers instead of black.

SAFETY AND EXCELLENT VISIBILITY.

The 911's designers specified a clear field of vision to all sides. Visibility to the front is ensured by the large safety glass windshield. The standard windshield washing system is equipped with heated nozzles.

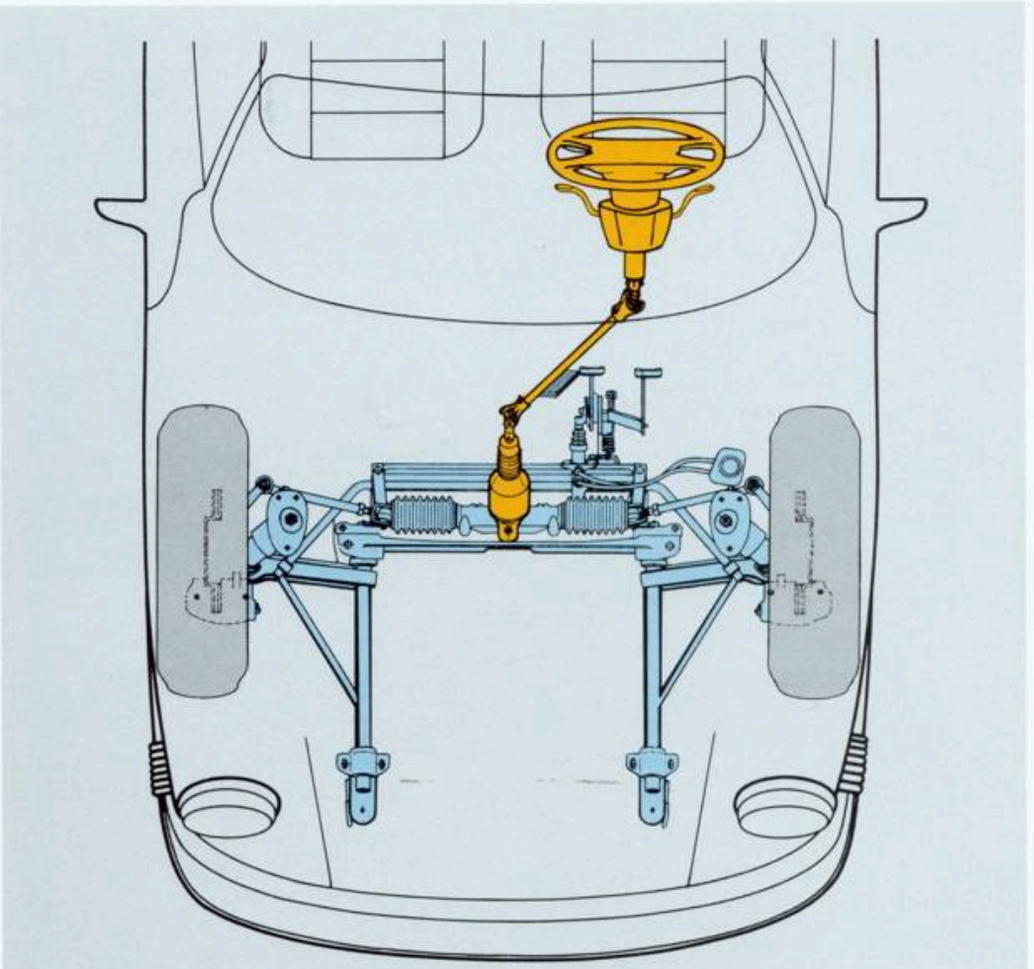
For night-time driving, the high-output quartz-halogen headlights have their own separate headlight cleaning system to ensure excellent light and vision even during the most unfavorable weather conditions. Instead of wipers, which might be susceptible to damage, the cleaning system delivers a high-pressure stream of washing fluid directly onto the headlights for effective cleaning even at high speeds.

Also fitted as standard equipment are fog lights integrated into the front apron, electrically adjustable and heated outside mirrors, and a rear window defogger (not available for the Cabriolet). A rear wiper is optionally available for the Coupe and Targa. Exterior rear view mirrors are automatically heated when rear window heating is switched on.


Carrera

SAFETY THROUGH PRECISION.

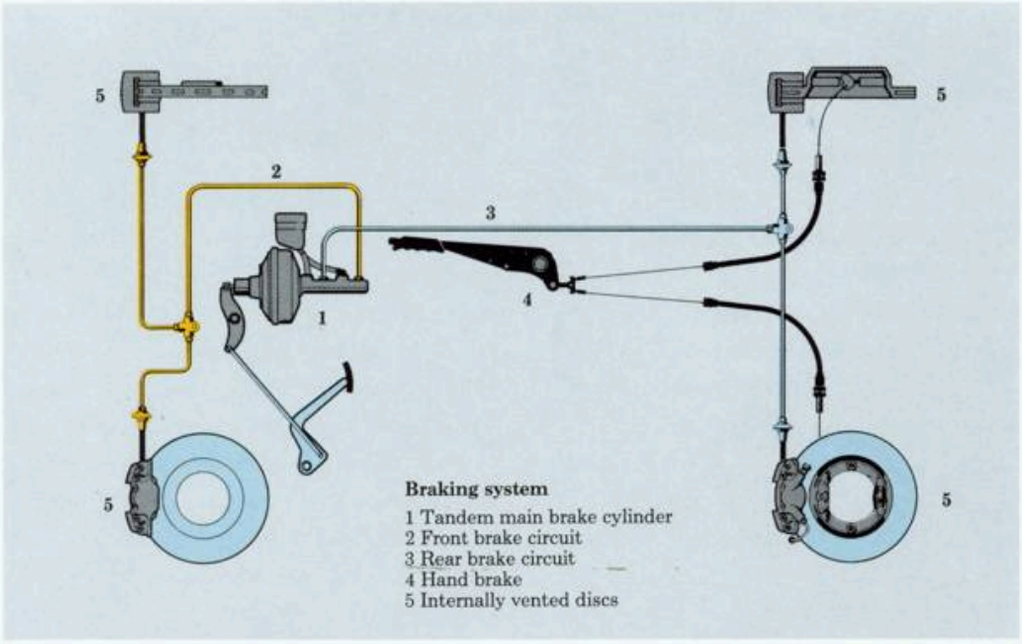
The precise, spontaneous reaction to steering commands in the Porsche 911 Carrera, and 911 Turbo is a benefit of the proven rack and pinion steering system, which sets the industry standard for road surface "feedback." It is characterized by optimum efficiency and excellent contact between the steering wheel and the front wheels. The rack is actually a part of the steering tie rod, adjusting automatically and is designed to allow no "play" from lock to lock. It delivers the driver dependable, precise information – for example, if the car is nearing limits of adhesion or when puddles, ice or dirt reduce the tires' friction coefficients.



The steering system of the Porsche 911 Carrera.

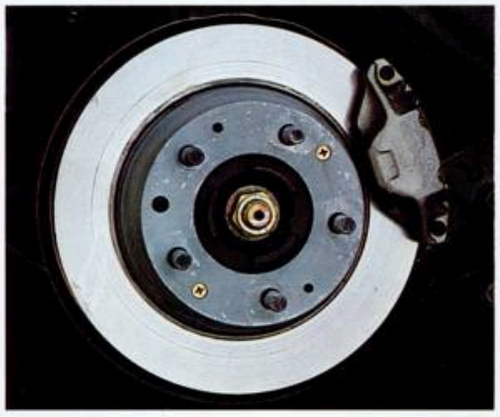
FROM 60 MPH TO 0 IN 3.3/3.4 SECONDS.
For more than 40 years Porsche has fitted each sports car with brakes that are matched to each car's acceleration and top speed capabilities. "More brakes and chassis than power" is a popular saying at Weissach, where Porsches are designed for enjoyment with safety. The dual-circuit hydraulic brake system of the Porsche 911 Carrera and 911 Turbo, with its internally vented disc brakes at all four wheels, is an integral component in the high performance capabilities of these vehicles. The discs are vented to avoid brake fade – the reduction in braking capability incurred in repeated braking from high speeds or while descending mountain roads.
The Carrera's braking values stand up to any comparison: A full stop on dry pavement from 60 mph with an elapsed time from brake application of just 3.4 seconds (3.3 seconds for the Turbo). From 90 mph on the track, the 911 Carrera stops in 5 seconds flat (the Turbo, slightly less). These are benchmark accomplishments among sporting vehicles.
The Turbo's physical braking value is 8.5 m/s^2, a very high rate of deceleration capable of being repeated over and over again. To achieve such an exceptional value under maximum load, Porsche engineers specified that the Turbo's massive disc brakes be additionally perforated to achieve maximum possible thermal stability. The aluminium brake calipers designed by Porsche for ultrahigh-performance vehicles have four pressure pistons per wheel and additional cooling fins. Road & Track called them "perhaps the most overengineered component one is likely to find on the Turbo, for the simple reason that they are probably never used to their full potential."
A power braking system designed expressly for 911 models helps keep the driver's brake pedal effort to a mimimum and assists the driver in applying an optimum braking force. The 911's brake system provides ideal linear braking action – superb stopping power in direct ratio to the pedal pressure applied by the driver.

* Tests performed on dry road with good traction by professional driver. Your braking times and/or distances may be longer.



Braking system
1 Tandem main brake cylinder
2 Front brake circuit
3 Rear brake circuit
4 Hand brake
5 Internally vented discs

Brake 911 Carrera, front



Brake 911 Carrera, rear

Brake 911 Turbo, front

Brake 911 Turbo, rear

DESIGNED-IN PASSIVE SAFETY.

The 911's "passive safety" – accident survivability – is enhanced by its three-zone body design, with programmed crush zones; designed-in integrity of its unibody; 10 year anti-corrosion protection; and unibody passenger cell. Its passive safety is also enhanced by its inherent structural integrity and long-life quality throughout the automobile.

INTERIOR SAFETY.

The 911's interior is padded at all critical points with energy-absorbing materials. Dashboard items such as switches, handles and the glove compartment lock are either deformable or recessed. The rear view mirror is designed to move away on impact. The automatic seatbelt retracting mechanism is built into the interior walls. All interior materials are flame-retardant.

EXTERIOR BODY SAFETY.

The Porsche 911 possesses large deformation zones and energy absorbing structures. Damage to body components is reduced through deformable body elements, and hydraulic impact tubes which are attached directly to the vehicle frame. The front hood is designed to fold progressively in a frontal impact.

The fuel tank is protected by the mounting points for the front suspension. The windshield is laminated safety glass. Safety locks with integrated reinforcements ensure that the doors remain closed in a side collision. The shell of the Carrera Coupe and Targa further ensures that even after a severe impact the doors can be opened from the inside or outside.

OPTIONS FOR EVEN MORE INDIVIDUALISM AND PERFORMANCE.

For 1989, both the 911 Carrera and 911 Turbo are more thoroughly equipped than ever before. However, there remain a wide array of options to personalize and tailor these classic Porsches to one's lifestyle.

THE "TURBO LOOK" OPTION.
All Porsche Carrera versions (Coupe, Targa and Cabriolet) can be delivered in U.S. legal trim with special Carrera front and rear spoilers, or in a "Turbo Look" configuration including the same suspension, brake system, and wide body configuration with spoilers, wheels and tires as the 911 Turbo.

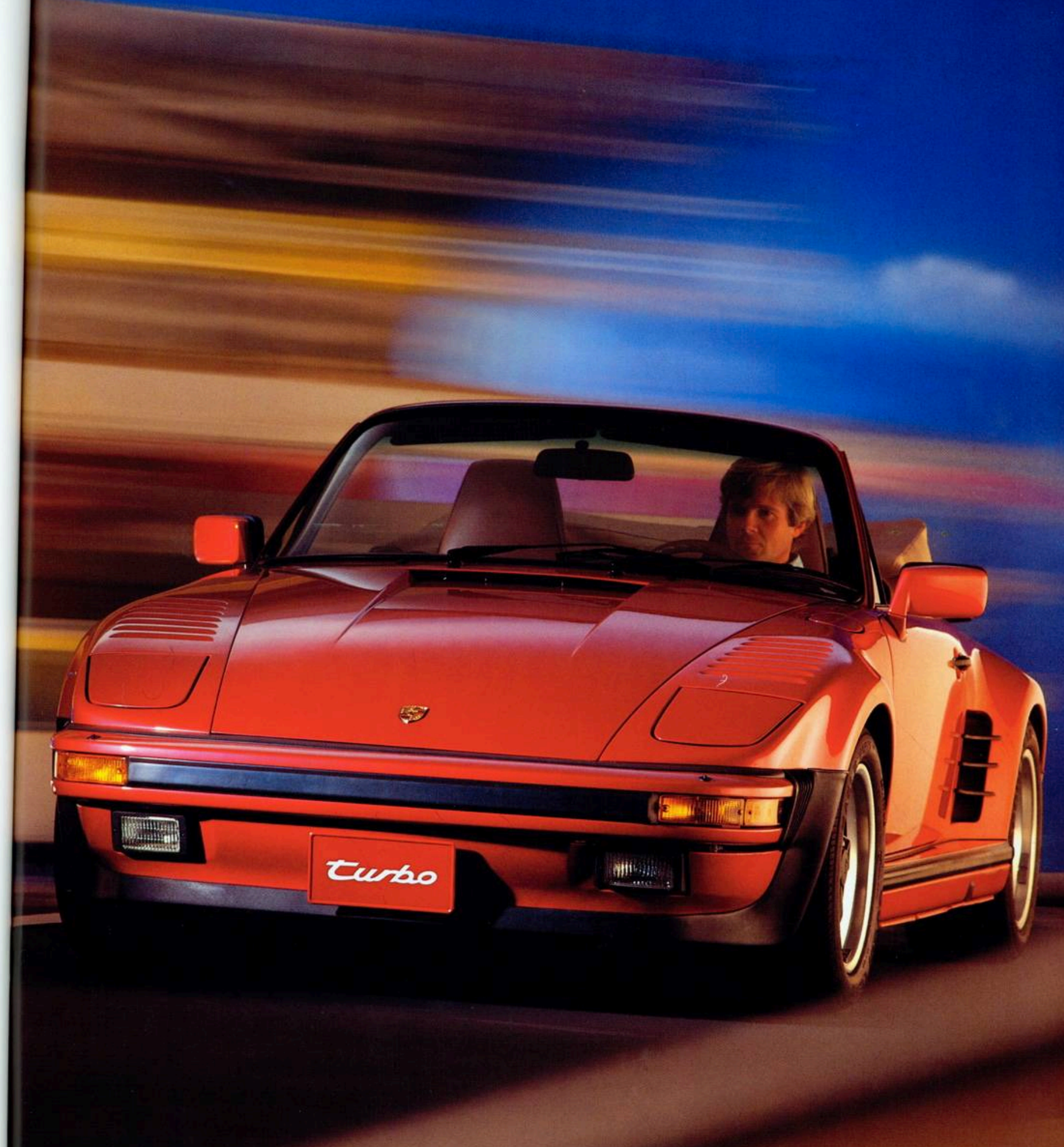
OTHER OPTIONS.
The 911 Carrera and 911 Turbo may be ordered to include the following options: leather covered steering wheel with center extended by 30 mm; tonneau cover for Cabriolet; shortened shift travel (NA Turbo); sport seats; automatic heating control (Std Turbo); rear window wiper (Std Turbo); sport shock absorbers (Std Turbo); compact disc player; cellular telephone preparation; deletion of model designation, rear; an extensive selection of interiors in leather, including Soft Look Leather; and door panels, rear side panels and backwell bottom section covered in cloth, to match cloth seats. The following additional optional accessories are also available for these cars. Plus a full range of "Porsche Exclusive" boutique items.

LIMITED SLIP DIFFERENTIAL.
The Porsche 911 Carrera (already standard, 911 Turbo) may be ordered with a self-actuating multi-disc limited slip differential. It is advantageous when driving through curves at higher speeds, and reduces significantly the chance that one tire will spin during acceleration or while driving on snow or ice, and wet or unimproved and rough roads. The self-locking properties have been purposely limited to 40%.

NEW STANDARD EQUIPMENT.
For 1989, several features that formerly were options are now standard: All 911 Carreras and 911 Turbos are now equipped with a newly developed alarm system. Automatically armed each time the car is locked, the system protects both doors, the engine lid, luggage compartment, the fuel pumps and the Digital Motor Electronics system. LEDs in the door locking pins flicker to indicate that the system is activated and the Porsche protected.
Other newly standard equipment on the 911 Carrera includes: 16 inch forged wheels, the front (6 inch) wheels fitted with 205/55 ZR 16 tires, the rear (8 inch) wheels with 225/50 ZR 16 tires; a new Blaupunkt radio (available midyear); hi-fi- sound enhancement package; automatic speed control and the electrically operated steel sliding sunroof is now standard on the Coupe model.
The 911 Turbo includes all 911 Carrera equipment, plus an auxilliary hi-fi amplifier, limited slip differential and 5-speed transmission.

911 TURBO WITH SLANT-NOSE BODY OPTION.

In recent years, a unique "Porsche Exclusive" body shop at "Werk I" modified special customers' 911 Turbos (known in Germany as the Type 930) to resemble the LeMans-winning Porsche Type 935 race car. For 1989 this new model, with its stunning "slant-nose" body, is again available in very limited production as an option for the 911 Turbo. The option includes slanted front fenders with retractable headlights and fully functional air vents, side air vents behind the doors providing added engine and brake cooling, and new sill extension styling. All special detailing is painstakingly hand formed in the finest Old World tradition reminiscent of the first 356 series Porsches, matched within close tolerances to each car, and fully backed by Porsche's industry-leading 10-year warranty against rust perforation.


Turbo

TECHNICAL SPECIFICATIONS	911 Carrera	911 Turbo
ENGINE		
Number of cylinders	6	6
Bore in. (mm)	3.74 (95.0)	3.82 (97.0)
Stroke in. (mm)	2.93 (74.4)	2.93 (74.4)
Displacement cu. in. (cm^3)	193.1 (3164)	201.3 (3299)
Compression ratio	9.5 : 1	7.0 : 1
Maximum horsepower SAE net at RPM	214/5900	282/5500
Maximum torque – SAE net ft. lbs. at RPM	195/4800	288/4000
Fuel requirement	Unleaded premium octane (91 CLC)	Unleaded premium octane (91 CLC)
Engine design	Air-cooled, 6 cylinder, horizontally opposed, rear mounted	
Crankcase, cylinders	Light alloy	Light alloy
Valve position in cylinder head	1 intake, 1 exhaust, inverted V-pattern	
Valve train	Single overhead camshaft for each cylinder bank	
Camshaft drive	Double chain	Double chain
Crankshaft	Forged, 8 main bearings	Forged, 8 main bearings
Engine lubrication	Dry sump with separate oil tank, thermostatically controlled oil cooling, full flow oil filter	
Fuel supply	Electronic fuel injection, DME controlled	CIS fuel injection, DME controlled, KKK exhaust turbocharger
Emission system	3-way catalyst, oxygen sensor	
ELECTRICAL SYSTEM		
Battery voltage	12 V	12 V
Battery capacity	88 Amp./hr	88 Amp./hr
Alternator output	Max. 1260 watts	Max. 1260 watts
Ignition system	Fully electronic, DME controlled	CDI breakerless
DRIVE TRAIN		
Clutch	Single disc, dry, hydraulically assisted	Single disc, dry, hydraulically assisted
Transmission	Engine mounted	Engine mounted
Number of gears	5 forward, 1 reverse	5 forward, 1 reverse
Final drive	Spiral beveled, pinion and differential	
Rear axle half shafts	Double constant velocity joints	
Shift lever location	Floor mounted shift control	
Final drive ratio	3.44 : 1	3.44 : 1
CHASSIS, SUSPENSION		
Body design	Welded, unitized construction; double sided zinc galvanized steel	
Front suspension	Independent MacPherson strut	
Front springs	Torsion bars	
Rear suspension	Independent semi-trailing arms	
Rear springs	1 transverse torsion bar per wheel	
Shock absorbers	Front and rear hydraulic doubleacting shock absorbers	

TECHNICAL SPECIFICATIONS	911 Carrera	911 Turbo
Stabilizers	Front 22 mm, rear 21 mm	Front 22 mm, rear 27 mm
Service brake	Power-assisted, internally vented discs front and rear	Power-assisted, internally vented and cross-drilled discs front and rear
Wheel rims	Front 6 J x 16 forged alloy Rear 7 J x 16 forged alloy	Front 7 J x 16 forged alloy Rear 9 J x 16 forged alloy
Tire size	Front 205/55 ZR 16 Rear 225/50 ZR 16	Front 205/55 ZR 16 Rear 245/45 ZR 16
Steering	Rack and pinion	Rack and pinion
Coefficient of drag	0,38	0,39
CAPACITIES		
Engine oil	13.7 US qts. (13.0 ltr.)	13.7 US qts. (13.0 ltr.)
Gearbox and final drive	0.90 US gal. (3.4 ltr.)	0.98 US gal. (3.7 ltr.)
Fuel tank	22.50 US gal. (85.0 ltr.)	22.50 US gal. (85.0 ltr.)
Windshield washer tank	2.11 US gal. (8.0 ltr.)	2.11 US gal. (8.0 ltr.)
DIMENSIONS		
Wheelbase	89.45 in. (2272 mm)	89.45 in. (2272 mm)
Track, front	55.06 in. (1398 mm)	56.40 in. (1432 mm)
Track, rear	55.34 in. (1405 mm)	58.70 in. (1492 mm)
Length	168.94 in. (4291 mm)	168.94 in. (4291 mm)
Width	65.04 in. (1652 mm)	69.88 in. (1775 mm)
Height (unloaded)	51.97 in. (1320 mm)	51.57 in. (1310 mm)
Ground clearance at maximum load	5.12 in. (130 mm)	4.72 in. (120 mm)
Turning circle-curb to curb	35.92 ft. (10.95 m)	35.92 ft. (10.95 m)
WEIGHT		
Curb weight	2756 lbs.	2976 lbs.
PERFORMANCE		
Top track speed, mph (km/h)	149 (240)	157 (253)
Acceleration 0 – 60 mph	6.1 seconds	5.3 seconds
Fuel consumption*	18 City, 25 Highway	14 City, 21 Highway

Technical data subject to change without prior notice

* 1989 EPA estimates. Compare these estimates to the "estimated mpg" of other cars. Your actual mileage will vary with speed weather, and trip length. Highway mpg will may be less.

STANDARD APPOINTMENTS GEARED TO PORSCHE'S HIGHEST LEVEL OF LUXURY

Porsche 911 Carrera, 911 Turbo

- Oil cooler, front
- Four-wheel independent torsion bar suspension with stabilizer bars, front and rear
- Welded, unitized construction; double-sided zinc-galvanized body
- Dual circuit four-wheel vented disc brakes, power-assisted
- 16" Forged alloy wheels
- Aluminium spare tire rim with space saving tire
- Electrically adjustable and heated outside rear-view mirrors
- Brake pad wear indicator light
- Integrated fog lights
- Anti-theft device for wheels
- Windshield with graduated tint
- Halogen headlights
- Heatable windshield washer nozzles
- Steel belted radials
- Rack and pinion steering
- Inertia reel 3-point seat belts, front, and lap belts, rear
- Front seats with electric height and backrest adjustment
- Electric door lock system
- Reclining bucket seats
- Choice of partial leather seats
- Leather covered steering wheel
- Transistorized tachometer
- Trip odometer
- Sun visors with covered vanity mirrors
- Quartz Analog clock
- Electric rear window defroster, two stage (Coupe + Targa)
- Power windows
- Tinted glass all around
- Deep cut carpeting
- Carpeted luggage compartment
- Heavy duty electric windshield wiper with intermittend wipe cycle
- Air conditioning
- Windshield antenna, 4 loudspeakers, suppression kit
- Blaupunkt "RENO" AM/FM cassette radio
- Electric door-locking system
- Headlight washers
- High intensity windshield washers
- Alarm system, one key
- Automatic speed control

ADDITIONAL STANDARD APPOINTMENTS

Porsche 911 Turbo

- KKK exhaust turbocharger
- Air-to-air intercooler
- Dual circuit four-wheel vented cross-drilled disc brakes, power assisted
- Boost pressure gauge
- Rear window wiper (Coupe + Targa)
- Automatic heating control
- Hi-fi sound package
- Fully electrical seats, front
- Sport shock absorbers
- Electric sliding sunroof (Coupe only)
- Flared fenders
- Front and rear spoilers
- Shortened shift lever
- Wider and larger diameter forged alloy wheels with ower provile tires
- Metallic paint

CUSTOMIZING YOUR PORSCHE THE PORSCHE WAY

Porsche 911 Carrera and 911 Turbo Options:

A wide range of options is available to help you personalize your 911 Carrera:

- Electric sliding sunroof (Coupe only)
- Automatic heating control
- Tonneau cover color coordinated with Cabriolet Top
- Carrera sports package
- Sport seats, front
- Heated seats, front, adjustable heat range
- Fully electrical front seats
- Fully adjustable lumbar support for front seats
- Optional wheel centers painted Grand Prix White – Black headliner (Coupe only)
- Limited slip differential
- Heatable windshield
- Rear window wiper (Coupe + Targa)
- Front and rear spoiler
- Sport shock absorbers
- All leather and special leather interiors
- Shortened shift lever
- Full power convertible top

For other comfort and appearance items, ask your Porsche salesperson.


Turbo

THE TEST DRIVE IS THE KEY.

In 1948, Professor Porsche created a sports car that in turn created a new driving experience for those fortunate enough to own his Porsche 356 sports car.

Today, as in the earliest chapters of automotive history, the name "Porsche" excites the imaginations of those who find exhilaration in driving a superb automobile.

Given Porsche's traditions of revolutionary engineering innovations, it is not surprising that most drivers describe their initial experience behind the wheel of a Porsche – any Porsche – as "astonishing."

And yet, this can be merely the hint of a new relationship between owner and machine proving to be exceptionally satisfying in many dimensions.

It is possible to be so satisfying because of an all-encompassing attitude at Porsche AG, where quality has been shaped and nurtured for four decades into a solid commitment.

A commitment demanding that the most aggressive quality controls be applied at virtually every step in the research-development-racing-testing-production chain. Quality applied by dedicated people precisely where it counts: In materials and componentry. In construction technology. In assembly, testing, final calibration. Even in a hundred-point final road check by a veteran factory driver.

For 1989, the Porsche experience is available through any of six exciting models – the 944, 944 S 2, 944 Turbo, 911 Carrera, 911 Turbo and 928 S 4 – in 14 body types. For each, Porsche remains committed to setting new standards. In design, engineering, performance, handling, fuel economy, fit and finish, reliability, long life and resale value.

And most certainly for the sheer exhilaration of driving!

Which you may experience at your nearest authorized Porsche dealer, where a certified sales representative is waiting to assist you with a full presentation followed by a test drive.

Warranty coverage for 1989. Reliability, durability, longlife and value have always been designed into every Porsche. These benefits receive added impetus in 1989 through the comprehensive, limited warranty coverage on every Porsche imported through Porsche Cars North America. Inc. Reliability of the entire automobile is backed by a 2-year, unlimited mileage limited warranty. Porsche's research and development on "longlife" car concepts during the 1970's resulted, in 1980, in a 6-year corrosion perforation warranty on production cars. The following year this was increased to 7 years of protection. In 1986, Porsche's limited corrosion warranty, already the longest in the industry, was further extended to 10 full years.

Porsche Cars North America, Inc.
200 South Virginia Street, Reno, Nevada 89501
Printed in West Germany, WKV 103 321