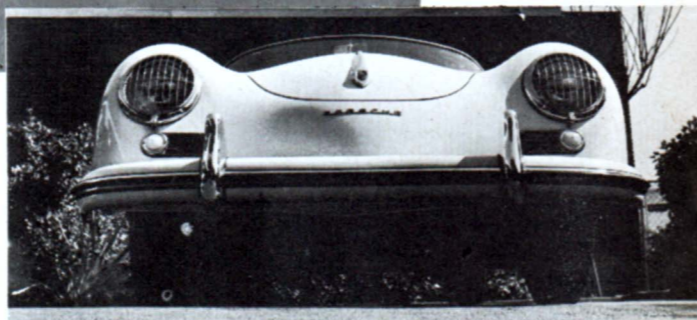


SCI

tests
the porsche
speedster 1600



Photos by Griff Borgeson

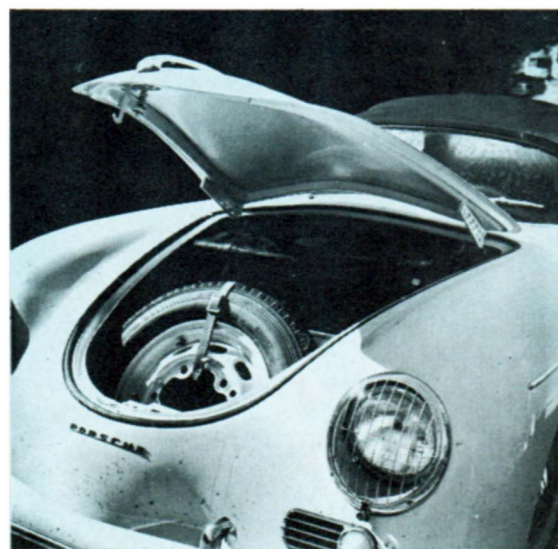


Rear engine design of Porsche keeps the Stuttgart machine clean and uncluttered in front. Bumper is protected by inserted rubber strip.

"...one of the most significant technical accomplishments of our time."

THE NEW Porsche 1600 is one of the world's truly fine cars. Every hour you spend with it adds to your appreciation of the excellence of its design, workmanship, and performance. It's a supremely good machine in traffic or on the open highway and a world-beater on winding roads. It makes you hunger for a handy Alp to slide up and down all day. As a precision instrument for maintaining high average speeds regardless of terrain, it's a revelation.

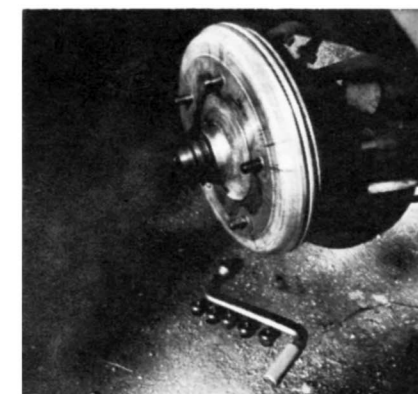
At no increase in price over its 1500 cc predecessor, the 1600 offers six percent increases in horsepower and displacement and a five percent increase in torque. Calculations based on the car's pulling power and tractive resistance indicate that the actual output of the 1582 cc, 96.5 cubic inch engine is more, not less, than the factory-advertised 70 bhp figure. The Speedster, as the roadster model is called, lists at \$2995 at U. S. port of entry and can be driven away for about \$3200 after all fees and compulsory options have been cared for. You don't get much iron as such for your money but you do get an engineering masterpiece in the full, literal sense of the term.



Sparewheel, fuel tank, jack, tools, and space for small articles of luggage ride up forward of the driver. Stone guards protect headlamps from flying road debris.



Porsche's tail slides toward outside of bend on standard test curve. This curve is not on a slope despite optical illusion, road is dead level. Car's driftability helps it achieve high average speeds.



Brakes of early Porsches fell short of perfection until 1952 when the larger bimetal drum with two-leading shoes was made standard for all production cars. The larger drum, shown here, makes stopping distances short without locking the wheels.

Even though this is a country in which the fact or illusion of size is often a criterion of quality, enough Americans dig the Porsche right now so that, if not another order were placed, the factory could continue to operate at full tilt for at least a couple of years. The cars are *very* difficult to come by. For example, the last shipment for the Southwest consisted of ten 1600's to be doled out among 38 howling dealers. I managed to obtain a test car only by the grace of the deity and film producer Manny Post, whose passion for Porsches caused him to add Europa Motors of North Hollywood to his properties. Mr. Post handed me the keys to his personal, spanking new Speedster and said, "Don't let the low mileage inhibit you. Just get the lube oil warm, then go ahead and stand on it." His instructions were obeyed to the letter and with profoundly educational results.

In a road test last month I mentioned that I am not an exponent of the controlled slide. Now, thanks to living with the Porsche for a few days, I am.

I don't like to push my driving prejudices at others but it's necessary here to illustrate the point. In a car with a mushy, tentative road-bite I drive with caution born of doubt. In a car with a tenacious, glued feel I'm so grateful for the being-on-rails sensation that I have no desire to exchange it for a technique of skidding that would only serve a purpose in competition. And then along comes the Porsche.

Its engine, of course, is mounted at the rear, aft of the pendulum-type rear axle. Our test car, with the fuel tank about three-quarters full, weighed 1680 lbs. and almost 58 percent of this bore on the rear wheels. The springing is typically Porsche, by laminated transverse torsion bars acting through trailing links at the front and solid, adjustable transverse bars at the rear acting through trailing arms. The unorthodox weight distribution and suspension give the car handling qualities that are rather unique. At slow speeds it handles quite normally in turns, and the feel is on the moderately "glued" side. Then, at only slightly higher speed, its character changes entirely. In place of a four-square chassis bite on the road you have the rear end of the car slipping toward the outside of the curve.

Most of us have an instinctive aversion to this sensation which, in the average car, means you've lost it. When it happens to you in a Porsche for the first time you're more than likely to be startled if not plainly scared. This rear-end slip is *not* like that of a "glued" chassis when it hits a patch of dirt—biting firmly, then sideslipping for a split second, then snapping into the rails again. The Porsche does not break away suddenly. It drifts from inside to outside in a gentle, casual way. The sensation is very much like cornering on half-inflated tires.

Is this bad? Only if you believe it is. Is it good? Emphati-



In moderate turns, the Speedster is slipped through under power all the way, directing the car by a combination of rear-wheel or four-wheel slip and throttle.

cally yes, if you accept and understand it. You can corner a Porsche in a sedate and conventional manner if you choose. Just as easily, you can wag its tail and get through short, tight-radius turns with amazing nimbleness and speed. In more open curves you can drift all four wheels and the smooth transition from bite to slip is almost imperceptible.

The slip effect is as though the car were on a pivot at the front end. You pop the Porsche into a tight turn, deliberately flip the rear end outward so that the car is perfectly aimed to leave the turn, then head for the straight under full acceleration. In turns that are not too tight you can steam through under power all the way, directing the car by a combination of steering wheel, rear-wheel or four-wheel slip, and throttle. Thanks to these characteristics and a set of magnificent brakes the Porsche is hilariously controllable and agile.

PERFORMANCE PORSCHE 1600 SPEEDSTER

TOP SPEED

(At sea level, with 1.5 mile approaches to ¼-mile timing traps.)

Two-way average97.3 mph
Fastest one-way run ..98.1 mph

ACCELERATION

From zero to:

20 mph 2.1 secs.
30 4.6
40 7.1
50 9.5
60 13.3
70 16.6
80 20.7
Standing ¼ mile 18.8
Standing mile49.6 (72.5 mph avg)

SPEEDS IN GEARS

Recommended max.:

First 15 mph
Second 49
Third 71

SPEEDOMETER CORRECTION

20 mph indicated 19 mph actual
30 27
40 37
50 46
60 56
70 66
80 75
90 84

FUEL CONSUMPTION

Hard test driving, actual 18.9 mpg
Moderate cruising, estimated 28 - 30 mpg

SPECIFICATIONS

POWER UNIT

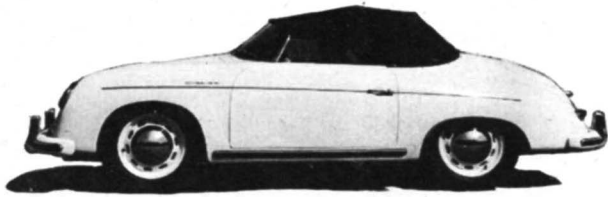
Type Opposed four, air cooled
Valve arrangement ... Vec-inclined, pushrod operated
Idle speed 900 rpm
Maximum bhp 70 bhp @ 4500 rpm
Maximum torque 82 lb. ft. @ 2700 rpm
Piston displacement.. 96.5 cu. ins./1582 cc.
Bore and stroke 3.25 x 2.91 ins./82.5 x 74 mm
Stroke-bore ratio 0.89 to one
Compression ratio 7.5 to one

DRIVE TRAIN

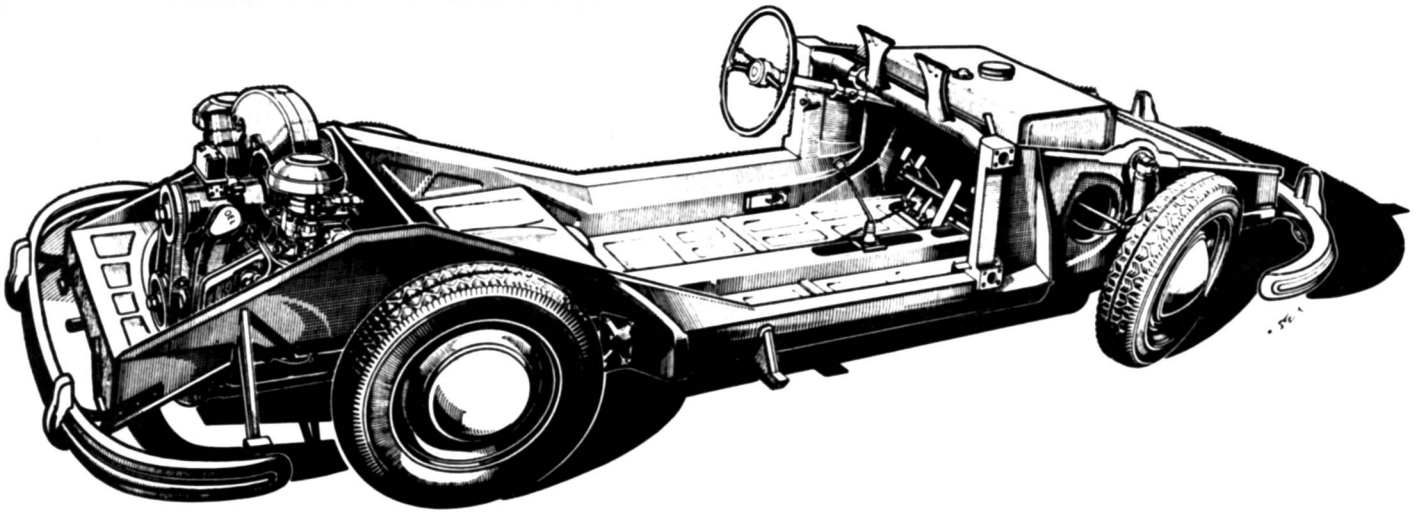
Transmission ratios... I - 3.18 - 1
II - 1.76 - 1
III - 1.13 - 1
IV - 0.815 - 1

CHASSIS

Suspension, front Porsche trailing links and transverse laminated torsion bars
Suspension, rear Swinging half-axles, adjustable transverse torsion bars, trailing arms
Shock absorbers Tubular double-acting
Steering wheel turns. 2¼, lock to lock
Turning diameter 33 feet
Brakes Two leading shoe front hydraulics; ribbed light alloy drums, cast iron liners
Brake lining area 124 sq. ins.
Wheel studs 5½-in. studs; 8 in. circle diameter
Tire size 5.00 x 16
Rim width (outside) .. 4.6 ins
Wheelbase 83 ins.
Tread 50.8 ins. F/49.2 ins. R.



Profile view of Porsche speedster with top up. It can be erected in half a minute by one man.



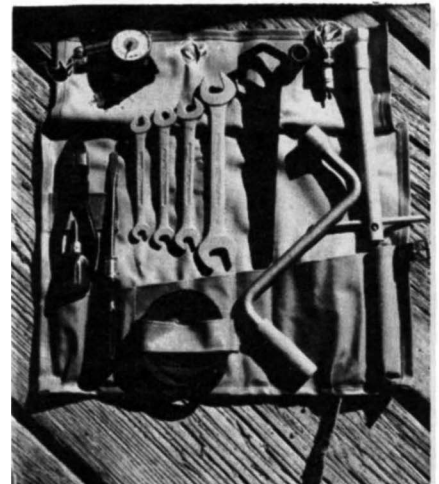
Frame of the Porsche is constructed of pressed steel welded in box section form. Longitudinal members are built up as large thin-walled sections which provide maximum resistance under moments of stress. Tunnel in middle of frame is passage for gear shift rods, and other control cables.

GENERAL

| | |
|-------------------------------|-----------|
| Length | 155 ins. |
| Width | 65 ins. |
| Height | 51 ins. |
| Weight, test car | 1680 lbs. |
| Weight distribution F/R | 42.5/57.5 |

RATING FACTORS

| | |
|---------------------------------------|-------------------|
| Bhp per cu. in. | .72 |
| Bhp per sq. in. piston area | 2.11 |
| Pounds per bhp, test car | 24.0 |
| Piston speed @ 60 mph | 1518 ft. per min. |
| Piston speed @ max. bhp | 2185 ft. per min. |
| Brake lining area per ton, test car.. | 148 sq. ins. |



Tool kit. TOP: Tire gauge; rubber spark plug sheath; and spark plug. CENTER: Cutting pliers; stubby screwdriver; screwdriver; four metric-sized wrenches; generator pulley wrench; lug wrench; and spark plug wrench. Extra fan belt is strapped to tool kit case.

Drifting this ultra-light car seems to have no undue effect on tire wear. Charging down a steep mountain road containing 63 hairpin switchbacks produced the impression that the 1600 spent all its time on the tires' sidewalls. But at the bottom I got out and checked the German Dunlops and found that the shoulder where tread joins sidewall was as sharp as when new. Incidentally, marks were made on the rims and sidewalls at the beginning of the road test. In spite of much heavy acceleration and braking, there was no slippage of the tires on the rims.

It's clear that the Porsche's delightful "driftability," which helps it to achieve high average speeds, impressed me as the car's most spectacular feature. But it's a distinguished car in many other ways.

In spite of its light weight the 1600 is rock-solid and stable at all speeds. There is scarcely any perceptible difference in sensation inside the car between speeds of 20 and 80 mph. Above that, our test machine's suspension became slightly harsh, possibly because it was too new for lubricant to have fully penetrated the leaves of the laminated front torsion bars. In common with the ride of many continental cars, the 1600's is slightly firm on a good road surface and scarcely different on the very worst surface.

The steering, like most of the Porsche's other organs, is superlative; the right now kind—quick, light, positive, and completely devoid of play. It is very sensitive to tire pressures. When I received the test car it was carrying "town" tire pressures of 20 lbs. front and 26 lbs. rear. While this

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Porsche Speedster

(Continued from page 17)

gave an extremely comfortable ride, although too soft for optimum cornering, it was not until pressures had been raised to 28 front and 32 rear that the full precision of the steering could be enjoyed. It's not the sort that seems to anticipate your commands, it just translates them into instantaneous movement. It contributes to the solid, stolid feel of the whole car. It has a few ounces of resistance to any change in direction which renders the system steady, but effortless to operate. I drove as far as a half-mile at a stretch with my hands away from the fine-feeling, 15½ inch wheel. The car, travelling at 55 mph, held a perfectly straight line.

The 1600's brakes are as good as its steering. The brakes of early Porsches fell considerably short of perfection until 1952, when the big, bimetal-drum, two leading-shoe hydraulics used on the Liege-Rome-Liege rally winners were made standard for all production Porsches. These brakes have as much authority at 100 mph as they do at ten. Stopping distances are laughably short *without* locking the wheels, without leaving skid marks. These powerful stops scarcely pitch the passengers at all and fade failed to show during deliberate, demanding downhill tests.

The Porsche's four-speed all-synchro transmission with overtop fourth is another factor in determining this car's unique personality. On up-shifts the smooth, silent, butter-slicing engagement of gears is uncanny, positively spellbinding. On down-shifts it's the same, providing speed limits are not exceeded. These limits are 62 mph for shifting into third, 37 for second and 12 for first. However, equally smooth down-shifts can be made from higher speeds by use of the simplest crash box double-kick technique. This gearbox design was created originally for the stillborn Cisitalia Formula I car and has since been used on Ferrari and Maserati grand prix machines. Enough said.

On the negative side for a change, the floor-shift lever is long and springy and the shifting linkage has a spongy feel. The lever's travel is excessive and getting it into reverse frequently degenerates into a stubborn struggle between drive and mechanism. Even when reverse (not synchromesh, of course) can be engaged readily, merely overcoming the spring-loaded safety re-

quires far too much muscle power. The clutch takes hold softly and smoothly but its pedal travel also is undesirably long.

Some previous Porsche models have been guilty of excessive engine noise even when new, but this charge cannot be brought against the new 1600. With its 900 rpm idle it emits a pleasant, low-level buzz when standing still. In motion, those riding in the car can hardly hear the engine at all. A very faint, pleasant chirp, probably in the venturis of the twin Solex carbs, is the most pronounced sound, and it is only apparent when manifold vacuum drops. The exhaust note is an impeccable purr. The designers know their bite is good; they can do without an exhibitionistic bark.

Although the 1600 engine's published torque curve is fairly flat and high from 2000 to 4000 rpm, it struggles against its harness for a long moment in getting away from a dead stop. This is in spite of the fact that first gear is abnormally low. Once the engine starts winding in this gear the rev counter is redlined in less than two seconds, calling for a lot of alertness on the part of the driver who wants to get the most out of every shift. It's much better for the engine not to wind it too tight in first but to get into second as soon as the car is rolling nicely, say at about 3000 rpm. The red "pie slice" on the rev counter starts at 4500.

Third gear in the 1600 is tremendously handy, offering gutty acceleration from about 25 to 70 mph. The less than one-to-one fourth is surprising for its pulling power. It's perfectly adequate for tooling along in traffic all day. The town driver in a hurry can stay in the very flexible third; he'll have no trouble in staying with or leaving the horsepower leviathans.

One of the most salient of the 1600's features is its solid, built to last and last feel. Its body is this way. When you close the light doors they seat with a *chunk* that translates as quality. On one occasion I drove about ten miles before discovering that one door was on the half-latched position — it had not rattled once.

There were no squeaks or rattles at all in the test car's body and everything worked perfectly and smoothly — doors, hood, engine cover and, above all, the convertible top. This is a device that

one person can raise or fold in half a minute and with complete ease. Being simple, perfect, and well finished it is in harmony with the rest of the car.

Its paint is like porcelain. The upholstery is of very good quality. The small, curved windshield is beautifully and substantially mounted and is without visual distortion. The method of mounting the rear view mirror makes it possible for a driver of any height to make the adjustment that is exactly right for him. The bucket seats have ventilated backs and a wide range of fore and aft adjustment. Heat from the air-cooled engine supplies a built-in heating and demisting system in the passenger compartment. For a car of its very modest dimensions luggage space behind the seats is good and of course there is more useful space under the hood. A couple of suitcases or overnight bags can be carried in the Speedster with no strain. The only area in which there's an aching need for more space is that where the occupants' feet must repose. It's narrow, and it enforces a position that can be tiring on a long run.

The spare tire and wheel are stowed under the hood, at the front of the car. Also in that space are the fuel tank (1.5 gallon reserve), a dip stick, a jack built to outlast ten cars, and a tool kit. This contains a set of fine metric end-wrenches, a special spark plug wrench (without which you're likely to be grounded), one of the world's best lug-nut wrenches, a fine dial-type tire pressure gauge and a number of other tools. Also in the kit are spare drive belts, a spark plug and, just in case, an extra lug nut. Such a set in this country would cost about \$25, yet it comes with the Porsche and is *not* an extra.

When our test was complete, Mr. Post's personal 1600 still had less than 500 miles on its speedometer. This optimistic instrument had been pushed to indicate almost 110 mph at an actual clocked speed of 98 mph. If the saying is true that if you want a car to be fast you should break it in fast, this should be a rapid car indeed. One thing for certain is that in another 1000 miles it will be capable of breaking an honest 100 mph and its acceleration times will be even better. #