Careful chassis development has given the Giulia Spider 1600 increased stability with none of the understeering of the Giulietta.

CAR and DRIVER ROAD TEST

Alfa Romeo 1600

Why did Alfa Romeo decide on 1,600 cc for the upgraded version of its best-selling open two-seater? Why not 1,800 cc as MG has done (and Sunbeam can be expected to do)? The question is easily answered after some experience with the car. Thanks to careful engine design and strict weight control, its 1.6 liters give performance comparable with that of the 2.2-liter Triumph TR-4 and the fuel economy of some 1,100-cc cars.

A comparison between the Giulia and Giulietta is inevitable. The differences amount to various subtle changes that have proved most effective. The new model is about two inches longer, both in wheelbase and over-all length, and its front track is slightly wider while the rear track remains unchanged. The Giulia has a new ball-bearing worm and roller steering box, but its suspension units are the same as in the Giulietta. Cooling water capacity (engine and radiator) is unchanged at 7½ quarts, but the Giulietta's four-blade steel fan has been replaced by a six-blade plastic fan.

Our Road Research Report on the 2600 Sprint (*September '62 C/D*) stressed the fact that Alfa's new six had been largely based on the 1,300-cc engine and not the 2000. The new 1600 is, naturally, also based on the Giulietta, and has been brought into line with the 2600 series, particularly in its cylinder-head design. Valve timing has been modified to give greatly improved low-speed torque:

	1600	1300
In. opens	24°40′ BTC	25°20′ BTC
In. closes	72°40′ ABC	68° ABC
Ex. opens	66° BBC	61°20′ BBC
Ex. closes	18° ATC	18°40′ ATC

The engine is remarkably silent under all conditions, and amazingly so when pulling hard. You normally shift up at about 3,500 rpm, but anything up to 6,250 is OK for sustained running. The engine revs freely to 7,500 rpm given the chance, but there are signs that at crankshaft speeds in excess of 5,000 rpm it's a bit short of breath.

We would remind you that this is the single-carburetor engine which also powers the Giulia TI sedan, and is not purely a sports-car engine. No doubt the factory is developing a Veloce version with twin carburetors, but it may be another year before that becomes available.

Even in its basic version, the Giulia Spider is easily the best performer in its price class, and unquestionably the most comfortable. There is no offset on anything—pedals, seat or steering wheel—and there is ample legroom, both in length and width. The seats are relatively inexpensive, offering no backrest adjustment, but give such good support in their fixed positions that non-stop all-day drives can still be pleasant. The Giulia is also one of the few cars where drivers of widely different heights can be accommodated and still find the positions of shift lever, steering wheel, and other controls to their liking. The one complaint we have here is the umbrella-type handbrake inherited from the Giulietta. We would have preferred the lever handbrake used on the 2600.

From inside the car you have an almost unrestricted view ahead—the hood slopes sharply and the full

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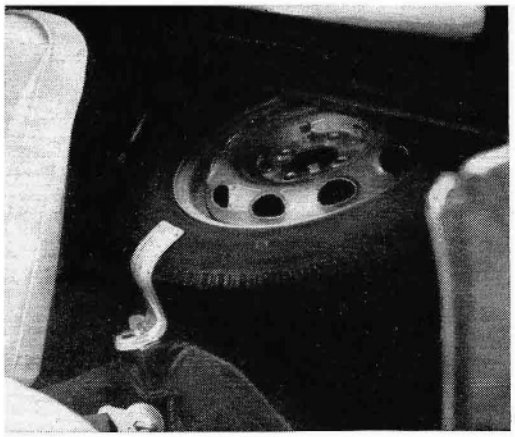


Spare wheel is stored inside the car and kept clean. The top folds down over it.

Luggage space is unobstructed; 12½-gallon fuel tank is hidden below trunk floor.

length of both fenders is visible.

The gently curved windshield's corner posts offer little or no obstruction, but the parked position of the wiper arms is a little strange (*opposite page*). The wipers are, however, quite effective.

The Giulia's unhesitant steering response surpasses what is ordinarily described as quick and precise—it has these qualities to a degree that calls for new adjectives. The Cinturato S tires certainly play their part in eliminating any delay in steering response, but we feel that the new low-friction steering gear is equally important. While the Alfa Romeo 2600's steering improves with higher speed, the Giulia's does not change at all throughout the speed range. There is absolutely no trace of the Giulietta understeer, the car remaining perfectly controllable up to the point of breakaway.

It is interesting that Alfa Romeo chose to standardize the five-speed all-synchromesh gearbox rather than such obvious alternatives as a four-speed with overdrive for third and top, or a simple four-speed transmission with a lower rear-axle ratio. After driving well over 1,000 miles with the Giulia, we believe that the five-speed solution gives greater satisfaction to the driver than the others would.

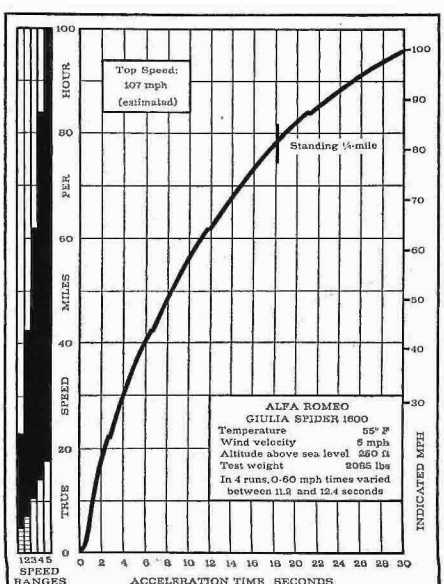
Its ratios are ideally spaced for road use and will no doubt prove highly suitable for racing. The synchromesh is faultless on all gears including first, and the clutch action has typical Alfa Romeo firmness while permitting leisurely engagements without sudden grab. And what fun! The simple addition of a fifth speed seems to make the car even sportier, the driver even more heroic than he thought he was.

With fifth gear an indirect overdrive, fourth (direct) becomes an extremely useful gear, both for low-speed-limit highways and for passing on faster roads. But the ease with which the car will maintain a steady 60 mph in fifth on a gradient of, say 8-10% was a surprise. In this gear it would even climb steeper hills, with turns, at about 40 mph, without apparent effort and in a silence that is curiously refined.

It is hard to describe the ride of the Giulia Spider in a few words. The suspension seems taut and works noiselessly even when observation tells you that considerable wheel travel is occurring—and this is true of both front and rear ends. The rear suspension, with radius rods and a left side A-bracket in conjunction with a rigid axle and coil springs, has been used on the Giulietta since 1954. It remains one of today's best arguments against accepting the additional cost of in-

ALFA ROMEO GIULIA SPIDER

Price as tested: $3,395 POE East Coast
Importer: Alfa Romeo, Inc.
231 Johnson Avenue
Newark 8, New Jersey



ENGINE:

Displacement	95.7 cu in, 1,570 cc
Dimensions	4 cyl, 3.08-in bore, 3.23-in stroke
Valve gear	Chain-driven dual overhead camshafts
Compression ratio	9.0 to one
Power (SAE)	104 bhp @ 6,200 rpm
Torque	81 lb-ft @ 3,220 rpm
Usable range of engine speeds	1,000–6,250 rpm
Carburetion	One double-throat Solex 32 PAIA 5
Fuel recommended	Premium
Mileage	26–36 mpg
Range on 12½-gallon tank	325–450 miles

CHASSIS:

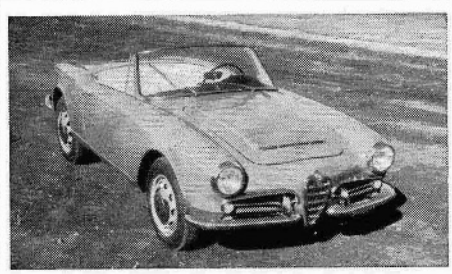
Wheelbase	89 in
Tread	F 51 in, R 50 in
Length	164 in
Ground clearance	6 in
Suspension	F: Ind., wishbones and coil springs, anti-roll bar. R: Rigid axle and vertical coil springs, A-bracket and radius rods.
Steering	Worm and roller
Turns, lock to lock	2½
Turning circle diameter between curbs	36 ft
Tire size	155x15
Pressures recommended	Normal F 23, R 24 psi; High-speed F 24, R 26 psi; Track use F 24, R 30 psi
Brakes	F 10½-in drums, R 10-in drums, 3 LS front, 212 sq in swept area
Curb weight (full tank)	1,930 lbs
Percentage on the driving wheels	47

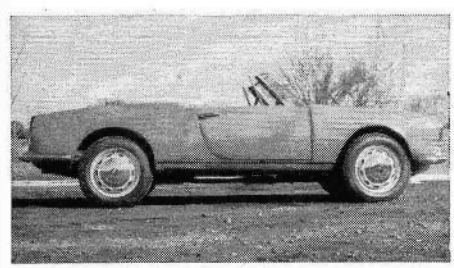
DRIVE TRAIN:

Clutch	Single dry plate

Gear	Synchro	Ratio	Step	Over-all	Mph per 1,000 rpm
Rev	No	3.01	——	15.43	—4.4
1st	Yes	3.30	66%	16.93	4.3
2nd	Yes	1.99	41%	10.19	6.8
3rd	Yes	1.36	36%	6.94	9.9
4th	Yes	1.00	27%	5.13	13.5
5th	Yes	0.79	——	4.05	17.2

Final drive ratio ..... 5.13 to one





dependent rear suspension. Axle tramp could be provoked only on the worst of surfaces, and even on sharp turns the rear wheels are simply trailing the front ones.

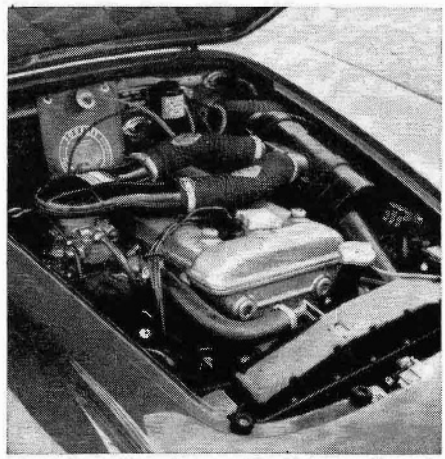
Of course there is a penalty for achieving near-perfection in steering, road-holding and ride in the same car. But it is a small one, to which no sports-car driver will seriously object: road shocks are transmitted to the steering wheel. The extent to which this happens is proportional to the wheel deflections, but we also found that the directional stability of the car was relatively unaffected by one single bump of any depth or height.

Directional stability remained surprisingly unaffected by lateral wind pressure for such a light car. Going from sheltered to unsheltered straights at 80 mph, with wind speeds ranging between five and 15 mph, created no problems.

Except for wind noise, the car felt no different at 100 mph than at half that speed — the steering didn't loosen up and the suspension didn't become flabby, the engine noise was never objectionable and conversation never became impossible.

The soft top could not be made to flap on its frame, but it was not draftproof and not even fully watertight. It takes a little while to learn to fold or erect the top, but once learned it is a fairly rapid operation. When folded, it is stored on top of the spare wheel, under its own cover, and when up the cover merely hides the spare (*opposite page*).

Even with the air leaks when the top is in closed position, the heater was just about adequate. The fan has a single speed, but most of our driving was done without it, as



If carburetion is as effective as the air ducting is complex, she really breathes.

enough warm air enters the cockpit when the controls are set for warm.

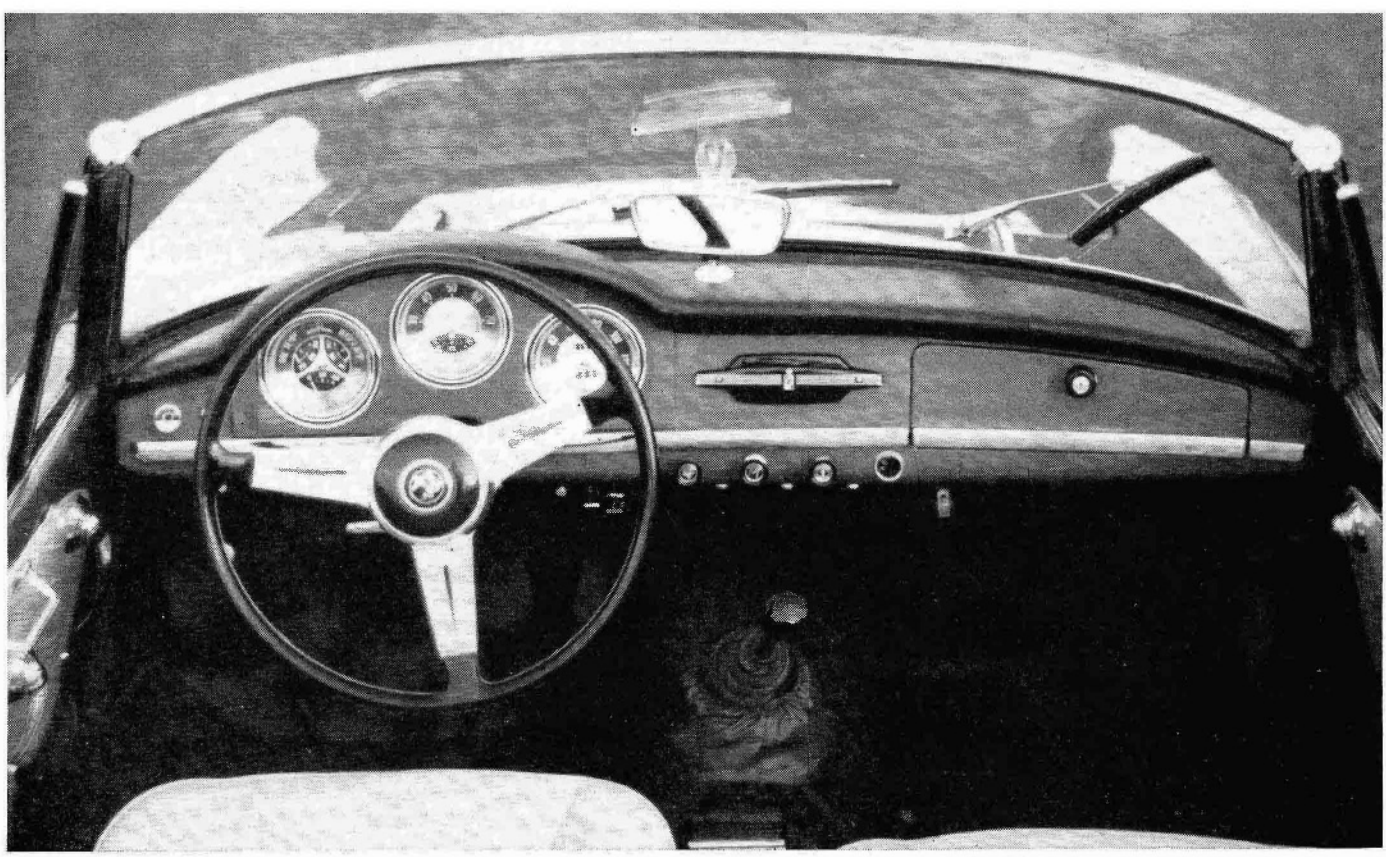
Cold starting was no difficulty. As usual with Solex, there is an immediate fast-idle start when the choke is pulled out and the accelerator has not been touched. Cold starts could also be made by pumping the accelerator while turning the key. Regardless of which method was employed the car could be driven off right away, and it warmed up quickly. Next to the choke button is a hand throttle control.

On hard driving (including performance tests) our test car returned 26 mpg, but in normal use gave 31 mpg and on several stretches of country roads 34 mpg.

In contrast with the Alfa Romeo 2000 Spider (*March, 1962 C/D*) the new Giulia did not use a drop of oil during the entire test. At all engine speeds above 1,500 rpm the gauge showed a steady 55 psi.

Disc brakes have not penetrated the full range of Alfa Romeos, for big drums are used all around on the 1600 Spider. They have tremendous stopping power and are well cooled. But the Veloce, when it appears, will probably have discs in front.

Few cars can rival the 1600 Alfa for sheer driving enjoyment, and the keen driver devoting his full attention to driving it will be amply rewarded. The car does everything so effortlessly, with proper use of the five-speed gearbox, that one gets the feeling of commanding much more power than it actually puts out. And as for fatigue, it just seems never to set in—this car's all fun. **C/D**



In spite of small exterior dimensions, the Giulia Spider has very generous hip-, leg- and shoulder-room for driver and passenger.