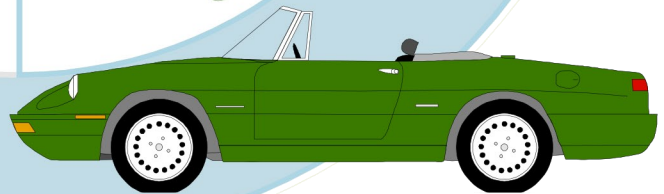
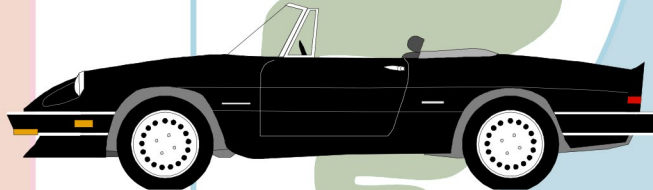
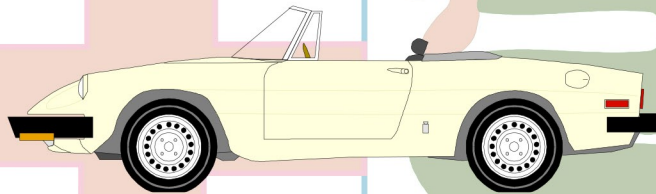
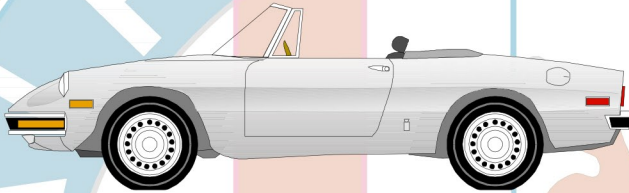
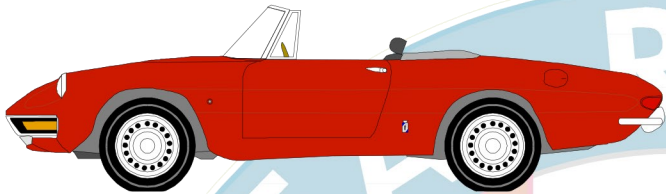


Alfa Romeo SPIDER FAQ

COVERING 105/115 CARS MANUFACTURED BETWEEN 1966 AND 1994



By Scott Johnson

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Development and History

Introduction and Initial Development

It's been said in other places that the Alfa Spider is a modern Morgan (for those of you who don't know what a Morgan is, it's an English sports car that is in production to this day whose origins go back more or less unchanged into the 1930s). This is only somewhat true. The fact that it soldiered on so little changed for so long a period meant that, at the end, it really did seem like an automotive fossil. However, when the 105/115 Spiders first appeared they were quite advanced for their time.

With a pedigree that goes back to before the designers of the Corvette or Mustang were even born, and a reputation for design innovation and sophistication, Alfa Romeo Spiders should be seen less as expensive Miatas and more as cheap Ferraris (the relationship is more than skin deep... Ferrari got his start at Alfa).

To avoid confusion I am going to make some very blunt and unsubtle generalizations of the various types of 105/115 Spiders. These are roughly based on what can be found in the British book "Alfa Romeo Spider", by David Sparrow (Osprey books).

NOTE: Throughout this document I will be referring to these cars as, variously, 105, 105/115, and 115 Spiders. This is the model numbering system Alfa Romeo used on their cars, and assists people telling the various Spiders apart (Alfa has produced a number of different Spiders, with model numbers like 750 and 101 as well as 105 and 115). This number can be found under the hood of the car, on a plate riveted to the top center of the firewall.

Also, you may wonder what "Alfisti" means. An "Alfisti" is a person who is thoroughly smitten with Alfa Romeo automobiles, who dedicates a large amount of their spare time and a good percentage of their income to maintaining, acquiring, and driving Alfa Romeos of all sorts. Alfisti are to Alfa Romeo what Trekkers are to Star Trek (we even dress funny and have conventions, but hardly any of us wear pointy ears).

Unless noted in the text, I will separate the models by their body style, and body style only (this I believe is valid, since the bodies were what changed the most through the years). Each car will be given a "Series number". They are as follows:

1966-1969: Duettos and other "roundtails" - Series 1

1970-1974: The first Kamm tails, "Coda Tronca" - Series 2

1975-1981: US Market Kamm tails - Series 2a

1982-1991: "Aero" bodies, "Aerodynamica"... the "Duck Tail" years - Series 3

1991-1994: "smooth" bodies - Series 4

For any non-American readers, I must apologize for the “US-centric-ness” of this document. US cars are the cars that I am most familiar with, and so will write the most about. I will try to make an effort to note where the European models differ from the US models. However, since a number of US Spiders are being “exported” by private individuals to Europe and other parts of the world, the entire document will probably be of some interest to you.

Series 1

It probably seems surprising to us today, but when the 105/115 Spider was first introduced (the Series 1 cars), it was quite poorly received in the press. It was thought “gimmicky” or “poured from a jelly mold” or other, even less kind things. Its coupe sibling, the 105 GTV, wasn’t treated any better. It is difficult to convey to readers who don’t remember what automotive designs were like in the 1960s, when the car was introduced, how different and avante garde it really was. To put it in some sort of perspective, it should be noted that the 105 Berlina (the four-door sedan version of the 105 series, also sometimes called a “Saloon”), whose styling, by current standards, can only charitably be called “plain”, was considered by far the most attractive body style of the 105 Series by the 1960s-era automotive press. Fashions change in automobiles no less than in clothing. (However, to avoid being lynched by all those Berlina owners, who if anything are even more dedicated to their cars than Spider owners, it should be noted that the Berlina outperformed the Spider in most respects, and is considered by many to be the only “real” Alfa of the 105 series.)

Time has caught up with the Spider’s design (this seems to be a common occurrence with Alfas of all sorts), since I have never heard anyone say anything bad about the looks of the cars today. Quite the contrary, their styling bears much more resemblance to modern cars than anyone could have predicted when it was introduced.

At least some of the design features of the body styling date back to the Superflow 1 and 2 show cars introduced in the mid 1950s. The final shape of the 105 Spider was heavily based on “aerodynamica” show cars that premiered in the early 1960s. It was probably the final design that Pinin Farina, the head of a famous Italian automotive designing firm, himself had a hand in. Pinin Farina, in case you aren’t familiar with the name, is the man, and the design firm, directly responsible for a great deal of the designs Ferrari produced in the 1950s and 1960s, as well as many other famous Italian cars. Indeed, a Pinin Farina-designed car (a 1951 Cisitalia 202 Gran Sport) is to this day on permanent exhibition at the New York Museum of Modern Art as one of the ten best automotive designs of all time.

When the Spider premiered it sported a “boat tail”... the rear sloped to a point just like the front. Alfa originally tried to name the car “Duetto”, a name picked from a contest held after the car’s introduction. Unfortunately (or not, depending on your point of view), the name was reserved by, depending on who you believe, either Volvo or an Italian pastry company, and the Duetto name was never officially adopted. The Italians called these Series 1 cars “osso di seppia”, or cuttlefish bone, a comparison that will be obvious to parakeet owners all over the world. Americans tend to call them “round tails” or “boat tails”.

These cars were equipped with a 1570cc (1.6 liter... about 96 cubic inches) dual-overhead cam all-aluminum engine, a design Alfa is justly famous for, four-wheel disk brakes, a five speed transmission, and dual Weber carburetors. It included such (at the time quite uncommon) comforts as roll-up glass windows, a simple one-pull-two-clips-it's-up top which actually sealed well against the weather, a real heater, and comfortable (if narrow) seating for two.

For comparison, most English sports cars of the time came with engines derived from sedans (at best) or tractors (at worst), four speed transmissions, drum brakes, and single, or even worse, multiple SU carburetors. They had "side curtain" windows (i.e. visqueen... plastic sheeting), erector set tops, and heaters that might keep your right foot warm on a 50 degree day. Some English designs neglected such "niceties" as exterior door handles and trunk (boot) lids

Indeed, the performance and sophistication of the Alfa Spider pretty much put it out of the leagues of the "classic" English sports car makes. It also was about 25% more expensive when new. Neither Germany nor France were producing open sports cars at the time, so the only real competition the Alfa Spider would have for a long time would come from the original Lotus Elan, a small, innovative automobile from the famous English engineer Colin Chapman. Although the Elan design was four years old at the Spider's introduction, it was still the only car in the Alfa's class. This would become a deeply ironic twist to the Alfa Spider's history in the distant future (FIAT also produced a Spider, but this was designed, and priced, more along the lines of the lower-cost English makes).

A Duetto was prominently featured in the movie "The Graduate", starring Dustin Hoffman. Indeed, the movie popularized the Spider so much that in later years Alfa created a "Graduate" trim level in their US cars.

Because of this, and because the body style was only produced for about three years, Duetto (and their round-tailed 1750 descendants) are the most valuable of all 105/115 Alfa Spiders. They are incredibly fun, extremely distinctive cars even among Alfa circles. One note: in 1968, Alfa did not import cars in the US because of tightening emissions standards. This would occur again in 1970, probably because of problems with the SPICA injection system (more on this later).

However, the interiors are quite primitive by today's standards, with metal dashes, rubber mats, and no center console. Wind noise is a problem with all Spiders at speed, especially so with the uncarpeted models. And they were originally not equipped with rear anti-sway bars, making them understeer very badly.

The interior ergonomics of the Alfa Spider would always receive a great deal of criticism from the American automotive press, especially the "arms-out" driving position. By US standards, the steering wheel is too close to the pedals, forcing the driver to "reach out" for it. It has been reported elsewhere that this position was actually the result of research that revealed that an "extended elbow" driving position was actually less fatiguing over a long trip duration. This may or may not be true. It is my experience that, while the position does take a bit of getting used to,

it certainly isn't any less comfortable than other makes or models with more conventional layouts, and may in fact be more comfortable over long trips.

Spider Junior

In Europe, Alfa made a lower-cost, smaller displacement Spider available from 1968 through 1972. Called the "Spider Junior", it differed primarily in engine displacement. The Junior was fitted with the same basic engine originally fitted to the 750/101 Giulietta series the 105 replaced. Displacing roughly 1300 cc's, the engine's output was about 30 hp less than its Giulia-engined brother. The car was also somewhat more basic than the 1750 and 2000 Spiders, most notably deleting both the headlight covers that came standard on European Spiders and the interior center console.

The Junior was created mainly as a response to Europe's very different tax structure on automobiles. Vehicles there, especially in Italy, are taxed on a steep sliding scale usually based on engine displacement. Although it is unclear to this author exactly where the cutoffs lie, it would seem that there is (or at least, was) a major one at 1300 cc's, and another at 2000 cc's. These taxes meant that while a certain class of people could probably afford to buy an Alfa, they couldn't afford to keep it very long. Introducing a 1300 cc variant of Alfa's 105 line allowed Alfa to fill this niche and broaden its market.

As with the later Series 2a in America, Juniors are noticeably less powerful than their bigger-engined brethren, but still recognizably Alfa and still quite a lot of fun to own and drive.

Because of the different tax structure in the US, the lower cost of fuel, and the typically longer distances Americans drive their cars, Juniors were never officially imported to this country. Some made it over anyway, but because of their smaller engines and lower performance are usually worth substantially less than big-engined cars of the same model year.

Series 2

Around 1970 Alfa made a major alteration to the Spider's appearance by "chopping off" the boattail. This would be the only real alteration in the car's appearance in Europe for the next twelve years. People who own Series 2 or 2a cars can still see the boattail lines by standing directly behind the car... a distinct "broad shoulder" impression is given, and the lines obviously once came to a point. As noted above, Alfa didn't import any cars to North America in 1970, and, since most Spider production went there, there probably aren't very many 1970 Spiders anywhere. Contemporary automotive press reports criticized the 1969 SPICA-equipped cars for having "flat spots" in their power curves, and this, in addition to radical changes in California emissions laws occurring at this time, was probably the cause of the "famine".

In the front, the Series 2 cars' center grille was made smaller, and the number of "crossbars" decreased from eight to five. In Series 1 cars the bumpers were so small and lightly built they led to speculation that "bumper" must have translated into "expensive, extremely fragile decoration" in Italian. The Series 2 bumpers were made at least somewhat more functional, and integration

was very, very good. The exterior door handles were switched from an “external handle-and-button” to an innovative semi-recessed design. Windshield wipers were changed from a then-unusual interlocking style (the blades pointed inward at each other and swung to the outside) to a more conventional side-by-side arrangement. The windshield rake was also increased somewhat, improving the car’s looks, and probably its aerodynamics as well.

In 1969 the engine displacement was increased to 1779 cc's, allowing Alfa to call the Spider a "1750 Spider", evoking a famous pre-war Alfa type. The engine produced more power, but retained the "zippy" feel and throaty exhaust that the 1600cc motors had. Alfa added a rear sway bar sometime around 1971, substantially improving the handling of the cars by greatly reducing the understeer exhibited by the Duettos.

In 1969 for the US market Alfa introduced the SPICA fuel-injection system for the first time. Created primarily for the famous Type 33 race car series, it was based on a diesel injection pump. This all-mechanical system provided precise fuel metering, allowing Alfa to squeak under the emissions laws of the US for several years without sacrificing power, driveability, or adding a catalyst. With the possible exception of Porsche, Alfa Romeo was the best adapted and most driveable car make available in the US at that time.

Unfortunately the new SPICA system was kept a tight secret at Alfa (perhaps, because of the SPICA system’s relationship with Alfa’s racing division, this was not entirely as inexplicable as would at first appear), and enthusiasts in the US greeted it for the most part with great suspicion. In actuality, the system provides better fuel control than the dual-Weber setup, without sacrificing any power or driveability. It is very straightforward, if somewhat unique, and once the proper manuals and (relatively) inexpensive equipment are acquired, very simple to set up and maintain. In delivery, it is quite similar to the "tuned port" injection systems introduced in American cars in the mid ‘80s, but is not anywhere near as picky about fuel quality.

None of this was clear to owners of Spiders in those days, so a sizable percentage were converted to Weber carburetors. Because today's emissions inspection requirements are becoming more exacting, and workings of the of the SPICA pump are becoming far better understood, an appreciable number of these Weber cars are being re-converted back to the SPICA setup. In Europe, where Spiders were nowhere near as popular and hence less common, people are actually beginning to import the cars back from the US, so they are now experiencing (some would say being afflicted by) the same troubles and joys of the SPICA system. A SPICA equipped car will probably have the only working example of a mechanical computer that you will ever see (except for maybe a slide rule). Once you understand the system, it’s really cool.

For a more complete set of recommendations about what to look for and what to avoid when buying a SPICA equipped Alfa, I refer the reader to Pat Braden's Alfa Romeo Owner's Bible (available from Robert Bentley publishers), at this writing obtainable at most major book stores.

In addition to the drivetrain changes, Alfa began a slow process of improving the quality of the interior. It was during the early Series 2 cars (probably 1970, but I'm not sure) that the well-known (and sometimes oft-cursed in the automotive press) "dual pod" padded dash was

introduced. At the time it was merely the most radical expression of a twin-pod theme carried throughout the 105 series. This was considered a pretty bizarre setup as late as 1985 (the last year it was produced), but it seems to have aged very well... it certainly doesn't look "antique", as the metal-dashed Duettos do, and seems more aesthetically pleasing than the similar executions of this theme in the coupe and the berlina.

A completely integrated center console, holding the ventilation, wiper, dash lighting controls, and some indicator lights, was introduced as well. However, for most of the Series 2 (and 2a) run, the interior retained rubber mats and vinyl seat covers, and only came in black.

In 1971 Alfa introduced yet another enlargement of the twincam engine, the (now ubiquitous) 2 liter. Despite this fact, very, very few 2 liter Spiders seem to have been produced in 1971. In one book only 2 are listed as having been imported into the US. It wasn't until 1972 that the 2 liter motor was produced in large numbers.

While this motor, in its pre-emissions form, produced (depending on who you believe) 129 to 135 hp (one source claims 155 hp for the European version), it has always had problems with the head gasket. Unlike other motors from other manufacturers, failing Alfa 2 liter head gaskets don't leak coolant into the cylinders, but rather first leak oil into the coolant, and then coolant into the oil (with potential major damage to the engine). This problem has never been completely solved, although advances in gasket design and the introduction of roller-pin-and-square-cut-o-ring kits have helped a great deal. The model designation of the cars changed around this time as well, becoming "115.XX" Spiders (the XX being replaced by various numbers, depending on the trim level of the cars and their relationship to the rest of the Alfa Romeo line). They will be referred to as such through the rest of this document.

In my own opinion, the Spider's overall combination of performance, refinement, and desirability peaked during the 1970-1974 years (in the US, at any rate). Which year is mostly a matter of taste. The 1750 engines, while less powerful in raw numbers, are a bit "zippier" and smoother than their 2.0L counterparts. They also do not have the head gasket problems of the larger motors.

However, 130ish horsepower out of a 117 cubic inch engine (the 2 liter) is quite impressive to your typical speed-shop crowd, and, again in my own experience, there are very, very few modern non-turbo cars with fewer than 8 cylinders that can keep up with a well-tuned '74 Spider. Unlike later years, these cars came hot from the factory.

The owners of Series 2 cars are also in a happy middle ground right now. The cars are clean, high-performance machines that will probably appreciate noticeably when the next "used classic" car boom comes along in about 5 years. Because the series was produced in Europe for another 7 years, most exterior trim is readily available (albeit for a price, in some cases). With the exception of the dash and center console, the interior trim is a complete match for the Duetto, whose boost in value has spawned a cottage industry reproducing like-new original interior fittings. The dash, the instruments, many body panels (including the all-important floorpans... see below), and nearly all the mechanicals are shared with cars produced as few as five years ago.

With the right set of parts suppliers, junk yards, and mechanical acumen, the Series 2 cars are probably the best candidates for "project" status for a do-it-yourselfer.

However, there were some detail changes in the appearance of the Series 2 cars. In 1970 (Europe) and 1971 (everywhere) there was a distinctive "pinch" on the tip of the Spider's nose, just above the shield-like grille, carried over from Series 1. This apparently was deleted some time around 1972 or 1973, making the nose of the Spider very smooth. Probably in 1973 an elegant wooden steering wheel replaced the thin, black plastic wheel found in the 1750 Spiders, and "turbina" style alloy wheels replaced the stamped steel items that previously equipped all earlier Spiders. The license plate lights were moved from the surface of the rear bumper to the rear valance panel after 1972. Finally, in the 1973 and 1974 model years, increasing bumper requirements forced a small but significant change in the front and rear bumpers of US cars. Because of this, the bumpers of a 1973-1974 Spider are probably some of the hardest to find (and hence most valuable) parts of any Spider in any year.

Series 2a

This will mainly concern US owners, since the Series 2 cars continued essentially unchanged (with Weber carburetors) until 1981 in the rest of the world.

After 1974 the US government really let the hammer down on the car industry in general. Safety requirements were "improved" by the addition of a 5-mph bumper requirement, and emissions tightened to the point that even Alfa had to add a catalyst and learn to live with low-octane gasoline.

The Series 2a cars are distinguished externally by the large, prominent black rubber (baby buggy) bumpers. It would seem that Alfa, like just about every other European manufacturer except for Porsche, had had it with Congress, who created all these noisome regulations, and NHTSA, the US regulating body responsible for enforcing them. The 5-mph bumpers seem to have almost universally (and probably rightly) been seen in Europe as a sop to the powerful US insurance lobby. While the integration of these new "safety" laws by Alfa was better than, say, MG, it still was nothing like the effort that Porsche went through with the 911 in 1975. In what would become a depressingly common event in the US Alfisti's life, the Germans beat Alfa to the punch. The increased safety requirements would eventually add over 300 lbs to the car.

Because California emissions required a catalyst earlier than the rest of the country, in 1975 and 1976 Alfa Romeo imported only "49 state" automobiles... i.e. for sale everywhere except in California. Because California continues to have the most restrictive emissions inspections in the entire country (by a long shot), it's doubtful if even today owners can bring cars from these two years into that state and get them licensed without substantial fees being imposed. If you live in California and are considering this, please be sure to check with your local motor vehicle department before you purchase the car.

Carpeting became standard equipment for the first time in 1978, and a plethora of interior colors were introduced (tan, blue, and gray being the most notable, although black was still quite common).

The cars lost an unknown but noticeable amount of horsepower as well, and as time went on became less and less driveable until the introduction of the Series 3 cars. Because of this, Series 2a cars, at least in their stock form, are probably the least desirable of all the Alfa Spiders produced.

In defense of the plucky Series 2a owner (or future owner), the cars are still recognizably Alfa in both appearance and character. Because they are (somewhat) newer than the Series 2 cars, they are (again, somewhat) less likely to have serious mechanical, rust, or collision problems. Those massive, ugly bumpers also mean that a Series 2a owner can laugh off impacts that would seriously damage a Series 2, and probably ruin a Series 1 ("IT'S A SPORTS CAR! NO!... IT'S A BATTERING RAM!!").

I believe that there are very few 2a's out there that haven't been modified in some way (and indeed, there are some very sneaky ways to modify them that will increase performance but fool Mr. G-man and his computerized minions), so the performance of a 2a you buy today will almost certainly be better than when they first appeared.

However, you can't really change how much the cars weigh, and so the performance of a 2a will probably never match the performance of a 2 with identical modifications.

While modifying a Series 2a to make it look like a Series 2 seems to be a good idea, according to owners who have tried the conversion there are actually a lot of changes in the structure of the 2a's that make it more complicated than it seems.

According to what I consider a reliable source, the cars themselves took a dive in driveability from 75-77, came up from 78-80, and then dove strongly again in 81 with the introduction of a single-throttle SPICA system. 1981 was the last year of the Series 2a cars (well, sort of), as well as the final year of the SPICA system.

Series 3

The Series 2a cars weren't QUITE finished, but changed in a significant enough way that I am including the '82 2a's in with the Series 3 cars.

Because tightening emissions standards finally strangled even the SPICA system, in 1982 Alfa converted the Spider to Bosch electronic fuel injection. I believe a few years before that they had converted to electronic ignition as well, making the two most fiddly parts of the car comparatively maintenance free.

The Bosch systems (first the L-jetronic injection system, and then in 1990 the Motronic engine management system) substantially improved the driveability and reliability of the cars. However,

according to at least one reliable source, they also lost a certain amount of character (the exact conversation was, "yeah, they went electronic, but now they drive like Toyotas", to which I replied, "yeah, but they also start like Toyotas"). While performance didn't increase noticeably at first, it did at least stabilize and, with the improved driveability of the Bosch systems, made the cars more fun than their immediate predecessors. Reliability also increased substantially. Indeed, it often seems that 90% of the problems experienced by Series 3 and 4 owners result mainly from poor electrical grounds.

In 1981 Alfa also switched the gearing of the rear axle from 4.5 to 4.1. This resulted in an approximate 400 rpm drop in engine speed at cruise, with the resulting improvement in fuel economy. However, it also reduced the car's absolute quickness noticeably. Depending on whom you believe, a limited slip differential probably became standard at this time as well.

In 1983 Alfa introduced the Series 3 car body, the first major revision of the Spider in the US for eight years, and in Europe the first in twelve.

Because the lion's shares of Spiders have always been sold in the US, and also because Alfa's financial troubles were beginning to get serious, the company decided to standardize on this body style. From this point on, European and US Spiders differed very little (although to what extent I am not certain).

Bumper integration was substantially improved from Series 2a, although still nothing like the elegance of the early cars, going from the ugly rubber bumpers to somewhat more stylish black plastic and metal. A prominent lower spoiler was added to the nose, giving it a distinctive "chin" (and something ELSE to bash on speed bumps and parking stops). Rear bumper integration was especially good, although a controversial "duck-tail" spoiler marred this integration somewhat. This item was a soft foam-rubber piece until 1986, when it was redesigned somewhat to accommodate a third, centrally placed brake light. The material was changed to a hard black plastic at this time. (special thanks to Stefan Stuerwald for advice on the spoiler)

Due to criticism from the automotive press, and a desire to begin fitting wider tires to the car, Alfa substantially stiffened the frame of the Spider at this time. However, the cars continued to be known, and criticized, for their "flexible flier" chassis. The increased weight also caused performance to continue to decline.

The interiors were substantially redesigned for the first time since 1971. Although the same dual-pod dash was retained, the center console underwent several detail revisions, and the rear portion of the passenger compartment, which before was a basic (if roomy) "well", was flattened, squared, and made smaller (mainly to accommodate electronics and the new shoulder seatbelt system).

What was once a very basic, straightforward car was beginning to get quite plush and complicated. Air conditioning, power windows, power mirrors, and leather upholstery began to become commonplace.

In the US, at least, the Series 3 cars were also separated into different trim levels at different times in the run:

In 1982, you had the Spider 2000 and the Spider Veloce (pronounced vel-OH-chay). The 2000 had steel wheels, vinyl seats and a vinyl top, while the Veloce got alloy wheels, leather seats and a cloth top.

In 1983 and 1984, there was just the Spider Veloce.

In 1985 the line was split into three models, the Graduate, Veloce, and Quadrifoglio (pronounced "kwah-drih-FOH-lee-oh"). The Graduate was the "introductory" level of trim, with vinyl seats, vinyl top, and steel wheels. The Veloce came with leather seats, a cloth top, power windows and power external rear view mirrors, and very attractive "star" alloy wheels. The Quadrifoglio came with specially designed leather seats, canvas top, "phone dial" alloy wheels, a/c standard, special carpeting, a redesigned front spoiler and tacked-on "side skirts", and a detachable hard top.

It should be noted that the cars differed only in trim, not in anything important like engine output or handling goodies. The Graduate was advertised as an "Enthusiast's Car"... i.e. it's got all the important stuff, but not the gadgets or the plush things. (special thanks to Joel Hailey of International Auto Parts, John Burrows and Tess McMillan for the advice on trim levels)

Which reminds me... nearly all Alfa Spiders, going back to before the 105/115 Spiders, had hard tops available. I believe that the hard tops are interchangeable from 72-83, with a redesign in 84, which are then interchangeable from 84-94. I have been advised that, while the hard tops are nice, they are also a pain, especially if you live in the warmer climates. It takes two people to remove one, they are large and difficult to store, and make impulsive decisions to lower the top impossible (unless you want to leave it on the side of the road). I have been told that it doesn't seal much better than the folding top, and isn't much quieter. However, it is supposed to make the car noticeably warmer, and the rear quarter windows of the later configuration substantially reduce blind spots in these areas.

While the Series 3 cars have often been criticized for their gimmicky looks, it should be noted that Alfa was just following the trends. You only have to look at the Mustangs, 280 (and 300) ZXs, and Honda CRXs of the period to see that Alfa wasn't alone in these styling cues. And, as before, the Series 3 cars were still very recognizably Alfa.

In my own opinion, the production of the 115 Alfa Spider almost certainly should have stopped before the introduction of the Series 3 car. Alfa already had a very sophisticated chassis with the 116 Series, and a new V-6 engine in the works, neither of which could be easily adapted to the 115 body. Convertibles were coming back into vogue for the first time in over a decade, and the time was ripe for something spectacular from the Pininfarina design house. However, for whatever reason, this transition never occurred.

One likely explanation is the circumstances of the automobile market in the early 1970s, especially that of the US. The automotive marketplace of the US was completely different than it

is today. Oil crises, an increased awareness of safety, a growing environmentalist movement, and an activist mood in the government and the general populace of the US combined in such a way that many people saw cars as little more than toxin-spewing deathtraps built to create profits used solely to line the pockets of automotive executives.

There seemed at that time a very real possibility that the US government would ban convertibles altogether (indeed, this was a contributing factor to the US auto makers' decision to voluntarily cease producing convertibles at that time). It is possible that Alfa decided in 1975 (when the Alfetta coupe, the first of the 116-based cars was introduced) that, since the lion's share of Spiders was going to the US, it would be much more risky financially to create an entirely new automobile, since their main market might be completely shut down at any time, and instead chose to go with a proven design. By the time convertibles began to come back in the early '80s, financial constraints at the company prevented a new car from being developed. Besides, since the 115 Spider lacked any real competition in its marketing niche (the Elan went out of production in 1973), it sold quite well anyway.

An alternative hypothesis is that the Spider just wasn't all that important to Alfa. When one looks at the raw production numbers of any model year, spider sales were dwarfed by sedan sales, and the coupes outsold them by orders of magnitude as well. The line of thinking could have been, "the Spider keeps people coming to the showrooms, so why not just leave it alone?" Of course, such a hypothesis does not explain why Alfa went to such considerable trouble to keep the Spider legal in the US, and update its styling periodically with changes that required substantial retooling. These were not cheap modifications.

At any rate, the Spider stayed. Because convertibles were coming back into style, there are actually quite a few comparative road tests in the literature using the Series 3 cars. They were always praised for their road handling, styling, and (at the dawn of the dreaded cable linkage) silky smooth shifters, but were always criticized for the flex of the chassis (a trait which all Alfa Spiders share to one degree or another), the lack of power, and somewhat bizarre interior layout. However, it is apparent that the character of the cars always shined through, because when the votes were tallied the Spiders always came in the top 3rd, if hardly ever #1 (indeed, as I recall, the automotive journalists of the time, in their infinite humility, always seemed quite surprised that they liked the cars so very much, seeing as how "primitive" they were).

In 1986 the dual-pod dash was retired in favor of a large "monopod" or "single pod" dash that not only incorporated the tach and speedometer, but also oil pressure, temperature, and fuel gauges. The holes above the center console where these gauges once resided were not deleted but instead became air conditioning ducts. Indeed, the dash itself never changed after 1970, and, aside from color, is interchangeable with any model year, after 1970, with very few modifications.

Performance gradually increased from its all-time low of 1981. Alfa kept refining and tuning the engine as much as possible to get power, economy, and emissions control. To this end, in 1980 Alfa incorporated variable valve timing (or VVT). The system is essentially an electromechanical piston on the intake camshaft. Developed in the 1970s by Ing Giampaolo Garcea for Alfa, it was

termed "variator de fase" by the Italian engineers. This was promptly renamed "the phaser" by the Americans involved with the team, and the name stuck.

At first only used as an emissions control device, later versions allowed improved cam timing, giving better performance at high RPM but allowing controlled emissions at idle. I believe it was the only production car available in the US (perhaps anywhere) with such an advanced system until well into the '90s. FIAT has rediscovered this device and now fits it to several of its own engine designs. (special thanks to BD for information on the VVT system)

One gets the impression at this time of a company quite concerned with its convertible sports car, but seemingly unwilling or (more likely) unable to create a new car that would have incorporated the radically changed requirements of an automobile in the "emissions controlled" era from the outset. However, if you wanted a quick, small, two seat convertible sports car, Alfa was pretty much the only game in town. The Series 3 cars sold quite well, and are probably the most common Spider on the road today.

Series 4

After a serious upheaval at the company that led to its being purchased by FIAT, the 115 Spider went through its next, and what would prove to be last, major body revision in 1991.

Perhaps because of the influx of FIAT's cash, the Series 4 cars represent the most significant body redesign since the Kamm-tail premiered in the Series 2 cars. Pininfarina, the design firm that created the original Duetto some 25 years earlier, really went all out to make this revision work.

Bumper integration (always a sore spot with the cars going back, in the US, more than twenty years) was nothing short of wonderful. In front the inverted triangle grille that is an Alfa styling trademark reappeared, again for the first time since the Series 2 cars. The front "chin" spoiler was also redesigned, making it better integrated and more subdued than in previous cars. The "side skirts" were integrated and made part of the sheet metal rather than being "tacked on" as in the Series 3 Quadrifoglio cars. In the rear, the oft-cursed "duck tail" was eliminated completely, replaced by a subtle re-curving of the entire rear body shell, which now formed the rear spoiler. As with the Series 3 cars, rear bumper integration was especially good, and all bumpers were now body-colored, rather than black-and-silver plastic as in Series 3.

Performance continued to be enhanced, and I believe in 1992 the rated output of the 2.0L engine finally matched its 1973-1974 peak of 129 hp. Unfortunately, all the neat body integration came at the cost of added weight, and, coupled with new US safety laws, this caused the car to reach its all time weight level, coming in at slightly over 2500 lbs.

The ultimate result was a car whose performance was pretty much staying steady with the mid-'80s Series 3 cars (i.e. fun but nothing a Ford Probe or Honda CRX Si couldn't handle). The suspensions of the cars never changed much through the entire run, and handling was improved mostly through increased tire performance. Power steering was introduced in 1991. An automatic

transmission was added as an option for the very first time in 1992. This undoubtedly decreased performance even more, but to what extent I have not been advised. The interiors reached their highest level of luxury, especially in the Quadrifoglio, which did just about everything except brush your teeth. The seats were redesigned again, but there were no other major revisions to the layout of interior.

Because of these revisions, the Series 4 cars are, in the opinion of the author, the prettiest cars since the end of Series 2. Production continued until the middle of 1993 (although, because of slow sales, there may in fact be "1994" Alfa Spiders out there somewhere), when FIAT shut the entire line down and began tooling up for a totally new Alfa Romeo Spider.

However, these developments were not happening in a vacuum. In 1990 Mazda unveiled the Miata, a brilliantly designed sports car that evoked memories of all the brisk, fun-to-drive sports cars of the mid '60s. In fact, it is said that the team that designed the Miata (which ironically included a former Alfa Romeo service rep) did extensive research with the 101 and 105 Spiders, mainly, it seems, to get that exhaust note down.

But the Miata did without the (sometimes perceived, sometimes very real) quality and reliability problems of those earlier, "classic" sports cars. While its performance was nothing to write home about, it positively oozed charm and was zippy enough to at least feel fast. And, most importantly, it was relatively cheap, with an introductory sticker of, I believe, \$13,800 US in 1990. (special thanks to BD for advice on the relationship of the Spider and the Miata)

Perhaps the deepest irony of all, though, was that the Miata very closely resembled (in exterior appearance) the Spider's first primary competitor... the Lotus Elan!

The Miata immediately created a sensation and sold by the thousands. To this day I don't think anyone pays sticker for the things, with premium dealer mark-ups of over 20% being quite common at the marque's introduction. The introduction of the Miata spelled the virtual end of sales for the 115 Spider. Because of this, and the inability of the Alfa 164 to compete in the crowded mid-\$30,000 sports sedan market, FIAT made the surprising move of totally pulling Alfa out of the US market at the end of 1994.

The Alfa Spider and FIAT's Takeover

Was the Miata a car that Alfa should have, or indeed even could have, produced? Probably not. In the '60s, when at least a dozen "classic" sports car makes and models were available, Alfa was more expensive than most. If the company even wanted to produce a sub-\$20,000 Spider, its financial straits prevented anything but incremental updates to its already existing car. By the time the new Spider was ready, Mazda owned the niche. Even if all the variables had been in place at the right time, Alfa's nearly stupefying lack of marketing ability almost certainly would have torpedoed anything introduced.

Most of these developments seem to have been chronicled by, and, at least in the English-speaking world, seen through the eyes of American writers (this author included). Therefore most

of what has been written about the latest chapter in the history of Alfa Romeo is viewed through a very special set of colored glasses.

The US market was never as important to Alfa as the ones in Europe. While it was regularly outselling Porsche in Germany, Alfa was almost willfully ignoring both marketing and dealer quality in the United States. Indeed, it can be argued that the only real reason Alfa stayed in the United States so long was to give its executives an excuse to visit the country using government funds. The Italian government is rumored to have subsidized Alfa's presence in this country to the tune of \$1000 per car sold right up to the last vehicle made by Alfa as a government owned institution. When, in the early to mid 1980s, Alfa became desperate for new markets and expanded sales, its neglected US dealership network became an albatross around the company's neck (because of our penchant for lawsuits, it is nearly impossible for car companies of any country to rid themselves of incompetent dealers in the United States). Excellent, high-quality sedans redesigned extensively for the US market (the Milano and 164) were sabotaged by incompetent and indifferent dealers.

The final takeover by FIAT has been seen as nothing short of apocalyptic by Alfisti in many parts of the world. Cast as the archetypal villain in a David versus Goliath confrontation, many Alfisti now mention the name FIAT in the same way that Americans tend to say the name "Saddam Hussein". Rubbish. There is no guarantee that Ford (the primary competitor for FIAT in the final buyout) would have been any kinder to Alfa's employees, nor might they have kept the company's product line any more distinctive (would Alfisti have really wanted to see a Mazda-engined, Ford Capri-based spider successor?). Ferrari may be what the average American thinks of when someone says "classic Italian car", but to many Italians it was, is, and always will be Alfa Romeo. During the buyout FIAT had to reassure the Italian people publicly many times that they would keep the marque alive, and not merely add another badge to its vault (American journalists gave the distinct impression at least some Italians, and not just the ones that worked at Alfa, would have rioted otherwise).

Today Alfa's product line is revitalized. Newer, better cars are coming out with reassuring regularity, consistently rated in the European automotive press as distinctly better automobiles than similar offerings from their parent company, indeed often rated best in their class over all competitors.

It is quite striking how the British automotive press, to pick a European example, treat FIAT's takeover with a complete lack of drama. Their impressions seem to indicate that Alfa is doing just fine thank you. This optimism was once shared by US Alfisti just after the takeover, and one wonders how much of the criticism is due primarily to sour grapes over the pullout rather than to any fault in the new product line.

Has the company lost some identity since the takeover? Of course it has. But this is just a reflection of the realities of automotive manufacturing in this era of electronics, emissions, and economy. It can be said quite confidently that there are no truly independent automobile manufacturers today. It is a shame that we in America must view the new Spider from the proverbial sidelines, but this is changing.

In 2000 General Motors purchased a minority share in the FIAT auto group, and it was publicly announced that Alfa would in fact be returning to the US. As of this writing, they are scheduled to return in 2005, first with a new Spider, and then perhaps with other sedan and coupe models. Predictably, spy photos of the new car reveal what to current eyes could only be called “avant garde”, but only time will tell what we actually get, and how it will be perceived through the years.

While the GM acquisition has garnered the predictable lines of Alfisti tearing their shirts and weeping about how the cars will become even less distinctive, all indications are that Alfa will still be firmly in control of the design of things that really matter... suspension, brakes, and engine. It seems from this angle that, as much as any car marque can remain independent and distinctive, Alfa will remain unmistakably itself.

Final Comments

It is quite unfair to compare the 115 Spiders to the Miata and its imitators. Even though the cars were produced at the same time, and competed for the same customers, the Alfa Spider is most definitely a car from a different era. It should always be remembered that it was designed to compete with Austin Healeys, MGs, Triumphs, Lotus's and FIATs, all great names from the past, now gone or changed beyond recognition. The fact that it could and did compete with Miatas and their ilk is a testimony to the brilliance of the basic design, and the dedication of engineers hobbled by the unpredictable automotive regulatory climate of the 1970s and then later by the financial constraints of their own company.

One only has to look at what happened to the Spider's original competitors to appreciate the accomplishments of Alfa's engineers. Austin Healey disappeared as an automotive manufacturer even before the 1970s. MG went to the absolute minimum with its MGB to accommodate the American market, eventually becoming a sad, unrecognizable, and anemic shadow of its former pre-70s self. Triumph lurched from one ridiculous failure to another before, like MG and Austin Healey, it too succumbed and ceased to exist entirely (these three events are tightly interrelated with the decisions of the parent British Leyland group, and if the reader is interested they are encouraged to research these three grand marques and their sad demise). Lotus moved so far up scale that today its cars compete more with Porsche and Jaguar than with anything else. FIAT kept plugging along with its Spider, and perhaps was the most successful at keeping their product alive. Yet FIAT itself pulled out of the US nearly a decade before it pulled Alfa, and very few people would claim that the FIAT Spider was ever a better car than the Alfa.

The Alfa Romeo 105/115 Spider has a history almost as impressive as its pedigree. What started out as an unpopular, somewhat underpowered roadster first turned into what amounted to a high-performance open race car, and then later into a high-class open touring car. Yet, despite all the changes, you can still see the Duetto deep inside even a Series 4. Hiding under all that distinguished sheet metal, luxurious interior detailing, and electronic wizardry is the same zippy little car that captured hearts nearly thirty years before.

“C’mon,” it whispers quietly, “quit reading the damned computer ... let’s DRIVE!”

Things to look for when buying a Spider

Especially when considering a Series 2a, 2, or 1 Spider, the most important thing you need to look for is rust. The cars are simple enough mechanically to be repaired by just about anybody (more on this later), and interior trim is readily available and reasonably easy to replace yourself. But the bodies of the cars can be rusted or bent to the point that it is not economical to fix them at all.

In truth, Alfas do not seem to rust more or less than any other car of their era, although there are certain areas that need to be looked at more closely than others.

Spiders tend to rust around the fender arches, the rocker panels, and the floorpans. Test the floorpans by **looking** at them, both from the top and bottom if possible (crawl under the car if you have to). If you can, tap lightly with a hammer and punch to make sure the metal is good. Pay special attention to the driver’s side footwell, as this seems to be the first area to go on many cars. On later model cars, or any Spider with a battery in the trunk, be sure to check the spare tire well in the trunk for rust-through. Again, these things can be repaired, and replacement panels are available, but, as they say, they ain’t cheap.

Collision damage should also be checked. Bring a magnet with you and make sure it sticks well to all major body panels. Be sure that all the trim and the doors line up properly (if they don’t it could be a sign of hidden collision damage). Take a long, hard look at the front nosepiece, as people seem to just love backing into these cars, and I’ve seen entire sections of that panel constructed from bondo and scrap metal. Look in the trunk under the mat for wrinkling in the sheet metal... this indicates a hit in the rear. None of these things necessarily disqualifies a car, but knowing where things are could make the difference between paying enough and paying too much.

The cars are pretty sturdy mechanically. However, especially with older cars, “PO’s” (short for Previous Owners) may have done unusual things to them in a misguided attempt to get more performance (more on this later). Pay special attention to empty brackets, wires that don’t hook up to anything, or misaligned mountings. As will be discussed later on, Alfas don’t normally have anything “extra” in the same sense as American cars, and missing pieces are usually the sign of a hamfisted owner, an incomplete restoration, or collision damage (the body shop didn’t put it all back together right).

Mechanicals should be checked in the same way as with any car. For further information on checking the mechanicals of any modern Alfa, the reader is again referred to Pat Braden’s Alfa Romeo Owners Bible (see above). Some mechanical generalizations:

It’s normal for a Spider to leak some oil. The engine is aluminum and expands and contracts quite a bit. Oil pooling in the spark plug recesses is a sign of a leaky filler cap rather than any major engine malfunction. It is NOT normal for a Spider to leak anything else like coolant, brake

fluid or gear oil. Leaks of this nature can indicate expensive repairs are needed. Pay special attention to rear ends coated with thick, greasy oil... engine oil usually doesn't drip THAT far back (and tends to be a lot less viscous than gear oil), and this could be a sign of a failed pinion seal (in and of itself not a problem, but if the owner let it go the rear axle will get and stay very, very loud).

Open the radiator (when the engine is cold) and run your finger around the filler neck. It should be clean and free of any goop. If you come up with a glob of Vaseline-like stuff, the car has a leaking head gasket. Again, this is not something to necessarily disqualify the car, but you should be able to knock several hundred dollars off the price.

“Choke cables” on SPICA-equipped Spiders should be examined very carefully. I know that Series 2 SPICA cars, at least, came with a choke-like mechanism that, at first glance, seems to act as a kind of mechanical cruise control. In fact, they are really intended to help set the throttle for the first morning cold start (if you have one that works, DON'T use it as a cruise control... it doesn't release with the brake and can be VERY dangerous if used in that fashion).

These must break a lot because I've only seen two cars with ones that functioned. These cables go to the throttle linkage. Cables that go all the way into the SPICA pump itself are mechanical aftermarket replacements for a device called a “thermostatic actuator”, called a “TA” for short.

TA's acts as automatic chokes for the SPICA unit, but are fragile, expensive, and tend to wear out over time. They are nearly identical in form and function to thermostats found on most older refrigerators. Because the replacement cost is so high (usually around \$200), many owners opt instead for a mechanical cable device. Whether you want to put up with one of these is your business (I tend to be of the opinion that “sophisticated” Italian sports cars with exotic induction systems shouldn't have something that I expect to see on an old International Harvester Scout, but I've been called a purist before). The system can be re-fitted with a proper actuator, but at some cost.

When driving, the cars should track straight and have very little slack in the steering, regardless of age or mileage. If the car has more than 1 inch of free play in the steering, then something has worn out under there. Diagnosing such problems can be difficult. If you don't feel qualified, take it to an alignment shop and have them look at it to tell you what, if anything, is wrong.

It is also quite normal for the cars (any year) to have poor second gear synchros. The symptoms of this are a “buzz” or “grind” noise when you try to quickly shift to second gear. Even long time Alfa owners sometimes graunch a second gear shift. Alfa never seemed to get around to fixing this problem, perhaps because it would have required a redesign of the entire gear box. The synchros themselves were designed by Porsche, leading more paranoid Alfisti to postulate conspiracy theories. The only real cure for this is to shift slowly, pausing briefly between first and second.

It is also normal for first gear to be difficult to engage after the car has been sitting still with the box in neutral and the clutch released. Lightly pull the shifter down to second before going up to

first to cure this problem (you can do this with reverse as well... touch fifth before engaging reverse). Many Alfisti recommend touching fourth gear rather than second, to lessen wear on the already beleaguered second gear synchro. I had one Alfisti insist that touching fifth to get it to go into reverse doesn't work. I can only say that it does in fact work on my Spider.

All the lights in the interior should do something, even if it's not quite clear what that something means (it took me 8 years to find out what the light marked "throttle" meant on my '74 Spider). Non-functional lights are quite common, and many times require only re-seating the wires, but you should still be careful.

While later model spiders are not as electrically sophisticated as their 116 sedan contemporaries, in Series 3 and 4 cars you may notice a phenomena that has come to be known as "Jonny's Disco". Warning lights and gauges flashing on and off occasionally for no noticeable reason and then working normally for long periods of time is the primary symptom of this syndrome. Again, this is usually the fault of flaky ground connections, something that is easily repaired, but as always be cautious. (The term originated from the owner of a Milano, who, tired of explaining why his car flashed so many lights all the time, replied once instead, "oh, that's just Jonny's Disco".)

On Series 2 and 2a SPICA cars, it is possible for the fuel pressure light (upper left red light, just to the right of the gauge) to flicker and still have the car run normally and read plenty of fuel pressure (my '74 did it for years, to the despair of several very competent mechanics, one of which spent two off-time hours trying to make it go out). However, if the light burns bright and the car runs roughly, it could be the sign of a failing fuel pump (which is expensive).

It is normal for the cars to show strong, nearly constant oil pressure when cold, and then have very variable oil pressure when warmed up. It is normal for a warm 2.0L engine to show zero oil pressure at idle on the gauge. It is not normal for the car to show zero oil pressure on the gauge and have the oil pressure light (top right red light on a Series 2 car... just to the right of the gauge) activate, or show pressures substantially less than 57 psi (usually half way on the gauge) at highway cruise speeds. Beware also of cars whose oil pressure drops off quickly regardless of temperature, or that never reach roughly the middle of the gauge. This problem is expensive and difficult to fix (although, maddeningly, the parts to fix it only cost about \$5.00).

Especially with the older cars, one of the best things you can do for yourself is find someone who owns a perfect Spider of the same series as you are considering (the same year is best). These people can be located through the nearest Alfa club chapter. Poke around on their car, stare at everything, ask for demonstrations with equipment you don't understand (even figuring out the door handles can be a challenge to someone sitting in a Spider for the first time). Ask, nicely, if you can take it around the block. Take pictures if you like. This is the greatest weapon against "ignorance buys"... purchasing a car you shouldn't simply because you didn't know any better.

With the exceptions noted above, buying a used Alfa is pretty much the same as buying any used car. The reader is strongly encouraged to purchase and read one of the many "guide to buying used car" books available in just about every book store around before making any purchase. I

have found Road and Track's guide to used classics very helpful, although I'm not sure if it's still in print.

Value and Your Alfa Spider

It seems a common phenomena that people who are looking to buy a car are very happy to find it is undervalued on the market, and then after purchase become incensed that this same market is holding their car back from what they now perceive as its true market value. An Alfa Spider is a rare enthusiast car. Why isn't it worth more, and why don't the cars seem to be appreciating?

All cars depreciate. When new, they typically lose between 40-60% of their value in the first three years of ownership. "Normal" cars, the ones you don't mind driving in the snow and don't flinch in when Old Mr. Jones is seen cruising up behind you, continue to lose their value at a much reduced rate until they are worth essentially nothing, regardless of condition.

Sporty cars (and I mean this in the broadest sense, from our beloved Spiders all the way to Mustangs, Jaguar XJS's, and Lumina SS's) tend to lose 40% of their value in the first three years and then (usually) stop. After that they tend to hold their value, with the lucky ones keeping up with inflation.

In the early years, a very few of them will appreciate immediately. These are typically the rarest, most desirable, and, of course, most expensive cars you can buy. Things like special edition Lamborghini Countachs or McLaren F1s. For the rest, it takes a very long time, usually something like twenty-five years, before appreciation begins to surpass inflation, and even then it is not guaranteed. When this finally does occur the car can be considered to be following the market trends of the "used classics".

A large number of variables affect what price a "used classic" can reasonably expect to fetch (NOTE: in all of these discussions I am assuming a car in excellent condition). Was the car popular when new? How expensive was it? Was the car produced in small numbers? Is the styling particularly appealing? Does it have any appeal beyond what it would have with a knowledgeable enthusiast? Was it produced for a short period of time?

Even unexpected questions can have a profound influence on a car's value. Was it featured prominently in a popular movie? Was it a type of vehicle used in some nefarious escapade? (To this day white Ford Broncos hold a higher value than other colors of the same car for this very reason.) Did a large number of young people own it as their first car, or first "performance" car? Are those people now in their late 40s and early 50s? The more questions that can be answered "yes", the more likely a given car will be to maintain a high value and appreciate, and the more that can be answered "no", the lower its value and the less likely it will be to appreciate.

Unlike most other Alfa models, the Spider can answer "yes" to a surprisingly large number of these questions (and, happily, "no" to the nefarious one). Although they were never produced in the volume of, say, a Ford Mustang or even a Chevrolet Corvette, they always sold reasonably well. It was also more expensive than most cars in its class. Since it is a classic convertible sports

car, it has a substantial appeal to the general public beyond what it holds for the enthusiast. The Spider, particularly Series 1 cars, was also fortunate that it actually WAS featured prominently in an extremely popular, very distinctive movie (The Graduate, Mike Nicols' first film).

To illustrate an example, the 105 series was produced in four major variants, the Spider, the GTV, the Berlina, and the Montreal (and no fewer than nine "special body" sub-variants... one wonders how Alfa stayed in business as long as it did). Of the major variants, the Montreal was produced in small numbers, had a very high price tag when new, was and is a very handsome car, and contains a large number of very unique mechanical features. Not surprisingly, it is easily the most valuable 105 variant today.

The Series 1 Spider was produced in moderate numbers for a limited time, is considered very pretty by just about everyone, has mass appeal both because it is a convertible and also because it was featured in a major motion picture, and is mechanically sophisticated enough to get just about any enthusiast's attention. It is the second-most valuable car type in the 105 line.

The GTV was produced in moderate numbers for a limited time, is a very handsome car, shares the mechanical sophistication of the entire 105 line, and, because of its stiffer chasis, is actually a better performer than the Spider. It holds little appeal outside enthusiast circles, but through enthusiast appreciation alone is the third most valuable car in the 105 line, typically only a few thousand dollars less than a Series 1 Spider.

The Berlina was produced in large numbers, has styling that can only charitably be called "plain", and while it does have sophisticated mechanicals and performance that can match a GTV's, as a four-door sedan its broader base target would mainly be people with families. Unfortunately, people with families, even enthusiast people with families, tend to be more interested in modern amenities like air conditioning, power windows, and cruise control, as well as the greater reliability that modern electronics provide. Because of these factors, the Berlina is and probably always will be by far the least valuable (in monetary measurements, at least) of the 105 series. (It should be noted, however, that the 105 Berlina is a damned fun car to drive, and has a tightly-knit group of owners whose devotion to the car approaches levels that cause Scientologists to take notes. These enthusiasts, coupled with the ravages of time making the cars rare, may yet cause an increase in their monetary value.)

Unfortunately (or not, depending on which side of the ownership fence you are standing on right now), the Spider experienced one of the longest post-war production periods of just about any sports car in history. This is one of the biggest factors holding the value of Series 2 and later cars back. Also, because the cars' appearance differs only in the details, the non-enthusiast perception is that they are all the same car, and this too causes the value to stay low, and surprisingly homogeneous.

This is beginning to change. The Series 2 cars are finally hitting the twenty-five year mark, a time when most good to fair cars have been destroyed through the various ravages of time, leaving only the superb and those eligible for "project" status (which quickly become superb or evaporate into the parts bin). People who once owned early spiders are now in their late forties to early

fifties, a time when expendable income is at its highest and nostalgia its strongest. The end of production also means that the entire line will hopefully become more noticed overall, although this is small comfort for those who own cars still in the initial throes of depreciation.

Finally, there is the biggest influence of all on the entire market... the general condition of the economy. In “boom” times consumer optimism is high, expendable income is available, and most adults feel an urge to spend a little on themselves. After a certain amount of growth occurs due to these “natural” causes, speculators enter the field and cause a massive spike in the value of all enthusiast cars. In the past twenty years this has typically been followed by a turn of the business cycle that causes a recession in the general economy, which in turn causes the speculators to move away from cars and on to other commodities. The subsequent crash in market prices can leave the unwise or over-enthusiastic with massive car payments on vehicles worth half as much as they were a year ago. However, the “grass roots” swell that started the boom usually never goes away, so prices never seem to fall as far as they grew.

So what does this mean, bottom line, to the potential Spider owner or seller?

The original version of this document included rough guides to pricing. Unfortunately I have been out of mainstream Alfa culture for a few years now, and so I can really no longer speak authoritatively on how much excellent cars of the various model years are going for at this time.

However, it should be noted that, in general, Series 4 cars should be depreciating, Series 3 and 2a cars should be holding steady, Series 2 cars should be appreciating slightly (approximately 5-10% per year), and Duetts should be following market trends (down now but due for an upswing).

An Alfa Spider of any year probably isn't a very good investment when looked at through the cold green light of an accountant's visor. However, this perception changes noticeably in the warm orange light of a summer evening, and, after all, isn't that were you really appreciate a fine automobile?

Modifying your Alfa Spider

I think one of the biggest misconceptions purchasers of Alfa Spiders have (American ones, at least) is in thinking that the Spider is like an American high performance car. For those of you who live elsewhere, I will explain:

Americans tend to be very strange about high performance automobiles (we don't seem strange to us, but that's because we live here.) We have the largest network of “autobahn-style” roadways in the world, and yet until very recently had one of the lowest highway speed limits around. In general, Americans have traditionally tended to like cars fast, heavy, large, and plush.

We also have a very strong “hot rod” tradition dating back to the 1940s. Most American manufacturers from the end of WWII until well into the 1980s didn't really produce what Europeans would consider “performance cars” in any large numbers. Also, again until recently,

American manufacturers produced very basic cars that were available with, by European standards, a fantastic number of options. It was not uncommon to have well over four dozen different options for any given model of car, from trim to engine to body appearance (this is not to imply that Europeans, or any other national group in the world, do not have hot rod traditions of their own. It just seems that Americans were first, and as a result have the most deeply ingrained habits).

What this resulted in was a very large number of cars that had the potential to become very high performers, if the owner knew the right people, had the right skills, and possessed the right parts catalogues. It was not uncommon at all for an owner to buy, say, a Chevy Nova (a basic passenger sedan of the early 1970s), take it home and replace the exhaust system, the induction system, the shifter, the rear end, the springs, the shocks, the tires, and the wheels and end up with a car that performed a lot better than when the owner brought it home.

The reader should note that all of these “enhancements” are basically bolt-on... you really don’t have to remove much or take anything apart to do the stuff listed. Finally, to this day most American performance cars are basically hopped up family sedans, with all the handicaps to performance that a family sedan has designed into it.

This hot-rod tradition is so strong that even today, when American manufacturers are doing most of the “bolt on” stuff in the factory, and the cars are so computerized that any user modifications are difficult, we try to hop the cars up with computer chips, massive tires and wheels, and anything else we can get our hands on.

It is from this tradition (some would say handicap) that many first-time Alfa Spider buyers come from in America. It explains a lot of why many of us end up trying to do things to these cars.

Alfa Spiders (and just about any performance European car) simply aren’t built this way. These cars were created from the outset to be high performance machines. Because of this, they are much more “of a piece” than anything Americans came up with for decades. For the most part, this is a Good Thing.

Since the cars had high performance “designed in”, as it were, they incorporate features that an average owner would never be able to add on at a later date. One only has to look at the rear drivetrain of any Alfa Spider to see this “take-no-prisoners” approach. There’s a multi-piece driveshaft, integral “traction bars”, weird looking cloth travel limit straps wrapped around the axle, a strange “T” device bolted to the top of the axle, and a robust axle assembly with a center cast from aluminum and disk brakes on the ends. This is totally alien to your typical American speed shop crowd used to working on Ford Mustangs and Chevy pickup trucks.

Americans are also used to American car makers and their very conservative suspension choices and setups. Compared to what most European and Asian countries put their drivers through to get a license, average American drivers are so under-educated they are actively dangerous when on the road. American car manufacturers have historically compensated for this by making their cars forgiving to the point of total unresponsiveness.

It should be noted that this has changed profoundly for the better in the past two decades. Mostly because of competition from both Europe and Japan, modern American cars have come light years along in responsiveness, performance, and handling.

Again, Alfa Spiders aren't like this at all. Like most European car makers, Alfa is made by and for Europeans first. Unlike the Japanese (who adapt totally to whatever market they try to enter), Europeans have historically brought their cars over to the US with the minimum required changes to meet regulatory demands (more on this later).

Because of this, spring rates, shock rates, tire sizes, and suspension geometry have all been optimized by Alfa before your Spider ever left the factory.

The engine as well sounds, in description, like something someone put together in a speed shop. The next time a tobacco-spitting good ol' boy (that's what we call them here... in England I believe they are called "gits", and I'm sure the Australians in the audience will suggest even more colorful names for them) starts having a good laugh at your "lil' eye-talian engine", note these facts:

That "little" engine, in pre-'75 trim at least, gets quite a bit more than 1 hp per cubic inch (a nirvana-like goal of gearheads everywhere), is all-aluminum, has a forged steel crank, alloy pistons, forged rods, five main bearings, dual-overhead camshafts, a hemi head, and holds 7 quarts of oil (one more quart than your typical American 8 cylinder engine). Of course, you have to pay over \$100 for a water pump that will only cost him \$20, but you're not going to tell him that.

Please don't get me wrong. It most definitely is possible for an owner to modify an Alfa to perform better. Some people find the suspension is too soft, or the engine could be made to put out just a few more horses. It is really very subjective. But "bolt-on" modifications along the lines of what an American is used to simply don't exist (with one big exception, see below). In other words, the easy stuff has already been done before the car left the factory. Don't buy an Alfa Spider with the expectation that you will take it home and, with a few quick calls to your speed shop of choice, have half a dozen pieces you can bolt on to the car and double its performance. You are much, much more likely to be very unsatisfied with your results, or end up with a car suitable only for the racetrack.

The biggest exception to this, again pretty much in America only, are the emissions and safety controls in the Series 2 and 2a cars. While the Series 3 and 4 cars also come equipped with emissions devices, they are much more integrated with the car. Also, the Series 3 and 4 cars are more computerized, so some modifications may have unpredictable or negligible effects.

Because Europeans had gotten deeply into the habit of the "just enough" philosophy when importing their cars into America, most didn't realize until too late that the profound changes to the American car market in the 1970s caused the "minimum" approach to make their cars undriveable, and that these regulations weren't ever going to go away.

While Alfa started out taking the regulations very seriously (the SPICA system was a high-performance induction system adapted to cope with the American emissions regulations), they, like just about every European manufacturer except the Germans (who are culturally inclined to take everything seriously), seemed to have grown impatient and frustrated with the US government as time went on. Series 2 2.0L cars were equipped with “smog” camshafts, and Series 2a cars, with their ugly, poorly integrated bumpers, and their progressively strangled engines, seem to be the result of Alfa running out of time, patience, and money with the US market.

Because of this, the owner of a stock Series 2 or 2a can in fact noticeably (and, in the case of 2a owners, substantially) improve the performance of their cars through the “bolt-on” approach. Actually, you get it as much from what you “bolt-off”... the air pump, catalytic converter, and exhaust manifold can all be removed, resulting in substantial performance gains (well, you will have to replace the exhaust manifold with an earlier style system). Series 2 2.0L Spiders can be fitted with European-spec camshafts from either 2.0L or 1750 engines. Cars still equipped with SPICA systems can be converted to Webers or, even better, retrofitted with a high-output pump from 1974 (this keeps the car legal on equipment inspections). Many of these modifications will, of course, make your car illegal in states that perform emissions inspections (however, many states do not inspect cars over 20 years old... check your local laws).

But even a Series 2a owners should look to what the factory did as a guide to what they should do. Exhaust manifolds, camshafts, induction systems, exhaust systems, etc. should all be modified backward toward a Series 2 car (1973-1974).

Even though it is apparently very difficult to modify the 2a’s appearance to make it resemble a 2, I often wonder if there wouldn’t be a market for fiberglass “bumper replicas” that were designed to be fitted to the 2a’s mounting hardware. This would result in a large savings in weight. To my knowledge no such devices exist.

Tires and wheels are also another well-known area of improvement. Common knowledge in America, to quote a different car maker’s advertising, is “wider is better”. To some extent, this is true with Alfa Spiders as well. Indeed, contemporary reviews of Series 1 and 2 cars, especially the 1750 and Series 2 2000, often noted that performance was noticeably hampered by the cars’ smallish tires. So, it would actually seem that wider is better.

However, the car’s “flexible flyer” chassis, especially before the frame-stiffened Series 3 premiered in 1983, works against getting good performance from too big of a tire. I have personally caused bodywork damage to my Series 2 Spider by fitting too-large tires (the rockers tend to tear apart at the front corner of the door, causing rust to fester).

So, which size is right for you? It depends a great deal on which model year you own, and what you do with the car. The most commonly fit size seems to be 175 or 185/70-14s. However, it is my experience that a Series 2 2000 is simply too powerful for such a narrow tire, making them very prone to wheelspin, especially in the rain. 205/60-14 seems to be the biggest size you can

physically put underneath the car without clearance problems, but, aside from the body damage problem listed above, this size tends to have an unacceptable amount of sidewall flex when fitted to stock wheels. There is also the factor of speedometer error when fitting non-stock tire sizes. (However, Alfa's gauges are so well known for error one hardly expects any of them to be all that accurate in the first place.)

Any recommendation of this sort should always be taken with a grain of salt. That said, in my opinion, if you are using your car as a tourer and don't do a lot of high performance driving, 185/70-14s should do you just fine. However, if you like to "toss it about" a bit, or own one of the higher powered models, an upgrade to 195/70-14 is probably in order. For the people who want to really get the most from their chassis, it would probably be a good idea to perform a "plus-1" upgrade and go to 195/60-15s. This is probably the biggest wheel/tire combination you can fit to the car, and there will almost certainly be compromises in low-speed steering effort and ride comfort you may not be happy with. Tires of this size probably should not be fit at all to the earlier cars without some form of frame stiffening.

However, tire sizes seem to be a lot like spark plug choices... as much a matter of taste and opinion as anything else. Think about what you do with the car, what you want to do with the car, and always remember that it is a design more than 30 years old, and may not respond as much or as well to really gonzo tire choices.

Otherwise, owners of Series 1, 2, 3, and 4 cars should realize that, as the saying goes, There's No Such Thing as a Free Lunch. Modifying your Spider to go faster or turn better will usually result in adverse effects to driveability, ride comfort, and durability (not necessarily all at the same time though). If you feel the compromise is worth it, go right ahead! Spiders have always been three clicks shy of race cars anyway, so turn the wick up and have a blast. But be aware that the most effective modifications are not easily made, and can cost quite a lot of money.

Day to day in an Alfa Spider

One of the best pieces of advice that can be given about owning an Alfa for any length of time is GET TO KNOW THE CAR. Drive it around a lot, especially when you first get it (this shouldn't be tough... the cars practically beg to be driven). Learn what noises your car makes and doesn't make. Drive it with the top up as well as down. Get used to it.

From that point on, PAY ATTENTION. Cars are not like people... they don't fix themselves. If your Spider starts doing something out of the ordinary, then something is wrong. It doesn't matter how small a glitch it is... if it begins making a new noise, or starts a slight vibration, or gets a new smell, these are signs that should be examined quickly. As with any car, a certain amount of redundancy is built in to a Spider's systems. Just about any one thing can fail and still allow the car to be driven for miles. But, left unchecked, these small problems can turn into very big problems, and then, like cancer, spread and effect other systems of the car. If something is strange, get it looked at. If something is broken, GET IT FIXED.

There are, however, some things that tend to wear out in an Alfa that don't normally wear out in other cars. Some examples:

TIE ROD ENDS AND LOWER BALL JOINTS. The cars tend to be very hard on the two tie rod ends that connect the center link to the steering box and idler arm. The classic symptom of tie rod end failure is loose steering. If your Alfa's steering starts getting a little flaccid, check these tie rod ends first. Lower ball joints tend to fail as well. This can cause the car to feel "jiggly" and be affected by roadway imperfections. Fortunately, neither item is expensive, and both are relatively easy to replace by even a novice mechanic.

U-JOINTS. The cars also seem to enjoy eating U-joints at regular intervals. The classic symptom of U-joint failure is drivetrain vibration. If your Alfa gets a vibration that seems to be coming from UNDER the car, and especially if it seems to get worse while you change speed, check the U-joints. Again, these items aren't very expensive, but I have been told by two different professional Alfa mechanics that it is a very bad thing to try to hammer them in and out of the U-joint yokes. Apparently the yokes are fragile and bend easily. Take the assembly to a machine shop and have them pressed in instead.

NOTE: your Spider's driveshaft is a balanced, multi-piece affair. Before removing it for whatever reason, be sure to mark its position with chalk so you can put it back together correctly.

RUBBER DRIVESHAFT DONUT. While nothing as bad as the 116 series cars, Spiders do have a single donut and it does sometimes fail. This device acts in place of a U-joint just behind the transmission. Failure is usually indicated the same way as U-joint failure... a sudden increase in drivetrain vibration. Always inspect the donut twice a year by getting under the car and checking it visually, and manually by feeling for cracks and tears. If it is damaged, get it replaced. Letting a damaged donut go can ruin the output shaft on your transmission.

ELECTRICAL FAILURES. 90% of all Alfa electrical problems seem to be caused by loose connections. Before getting out your multimeter (or taking it to an auto electrician), turn the device's switch ON, then run your finger across the fuse box (just under the driver's side dash, on the left of the steering wheel). Be sure to turn each fuse at least a quarter turn as you rub it with your finger. Many times this will bring back the failed connection. Note which fuse it is, and next time you are cleaning the car get some sandpaper or steel wool and clean that connection. Especially on the later cars, be sure to clean all the ground wires you can see with a special-purpose electric connection cleaner.

REAR PINION SEAL. This is one that isn't mentioned much in the books, but I've seen pinion seals fail no fewer than four times on different cars. The symptoms of this failure are a puddle of fluid at the REAR of the car, a differential housing wet with very sticky oil, and a very strange burning smell coming from the rear of the car after a long drive. You can keep the car going by making sure the fluid in the rear axle is topped off. Be aware that if you let this one go too long, your rear axle will get progressively louder and louder, and it will stay loud even after you fix the seal and fill the rear end.

The Care and Feeding of your Convertible Top

For many people, an Alfa Spider is the first convertible they've ever owned. While the Spider's top is relatively trouble-free, there are some basic care tips that a Spider owner should know about.

One of the biggest shocks that first time convertible owners receive is that driving one with the top down in the summer is HOT. I often wondered what the point was in installing air conditioning in a convertible. My first drive to Houston Texas (in the southern US) showed me.

It is very easy to get sunburned in your convertible, especially in the spring when most people don't have much of a tan. During high summer it is quite possible to experience "sun poisoning"... severe sunburns and heat exhaustion. Always be careful, bring sunscreen, and don't be too proud to put the top up on a really brutal day (it actually makes a pretty good sun shade).

Be very careful during late fall and early spring. Many times, the days will be just warm enough to put the top down, but nighttime temperatures will get very cold. The rear window "glass" gets brittle when it gets cold, and trying to put the top up in cold weather can result in severe damage to the window. It cracks and tears rather than flexing and folding. If you must put the top up after the temperature drops, do it VERY SLOWLY. This should allow the material time to flex properly.

Convertible tops tend to last about three to five years, depending on care, the quality of the top itself, and use. Many times, the top itself will be fine but the glass will be torn or clouded to the point of opacity. I have heard of places that offer to replace just the window, but it requires removal of the current top (no easy task without damaging it), and I have not been advised of the results. I have heard reports of people attempting to put zippered windows in the tops, but have not heard of any of those results either (the "glass" on an Alfa Spider is a lot bigger than most other tops, making zippers impractical).

Make the "glass" last longer by keeping it clean. Try dusting it off with a soft cloth before you put it down. Don't get armor all or other vinyl preservation products on it... these seem to soften the material and make it more vulnerable to scratching. There are special cleaners designed exclusively to clean the sort of clear vinyl that makes up your rear window. I have been told that they are quite effective. Contact your local auto body supply store for more information on these products. Glass cleaning products seem too harsh and tend to cloud the window a bit. Be careful the back shelf is clear before you put the top down, or you may punch a hole in the window when it hits whatever is down there. It is possible to repair small boo-boos with clear packing tape, but large tears or holes will ruin the top.

Always buy a high quality convertible top. The cost usually runs about \$250 for vinyl, and about twice that for cloth (however, Caribou products produce a cloth top for ~\$200 US, and come highly recommended). I'm not sure what advantages there are in owning a cloth top, and it seems that the cloth tops are prone to fading. Many parts places that specialize in Alfa Romeo carry an

installation book for convertible tops. This is taken from a factory shop manual. Get this book and follow it religiously if you want a leak-free top. Always replace the windshield-to-top gasket every time you replace the top.

Other than that ownership is similar to other cars. Wash it when it's dirty, change the oil regularly, follow a maintenance schedule religiously and your Spider should last a long, long time.

Maintaining your Alfa

Many people are afraid to purchase an Alfa Romeo of any sort because they think it will be impossible to work on, difficult to find parts for, or repairable only by a handful of mechanics.

Nothing could be further from the truth. With the exception of the SPICA system, Alfa Spiders are very straightforward cars. 75% of the things that go wrong with them can be fixed yourself if you have the right set of tools and a garage. Even the SPICA system is easy once you get the right manuals and tools.

Parts are in fact harder to find than, say, Chevy or Ford, or even Toyota or Nissan. You won't be able to walk in to just any old parts store and find what you need. However, most foreign auto parts stores will carry at least some parts for them, and there are at least a dozen places scattered over the US that specialize in Alfas (if you live in a major metropolitan area, one is probably near you... check your yellow pages.) This means that even if you live out in the middle of nowhere nearly all of your parts needs are just an overnight shipment away.

A word on the parts peculiarities of Alfa:

Alfa Romeo before WWII was a company that built hand made, very expensive cars in very small numbers (in this, they were somewhat similar to what Ferrari has become today). Even though the company switched strategies and went to midrange mass-produced automobiles, they never really lost that "hand built" legacy.

While not as bad as the 750/101 Spiders before them (when entire drivetrains would be placed in cars they weren't listed for), your Alfa Spider will probably have quirks unique to it AS A SINGLE CAR. The older the car, the more likely you are to have unique features. For instance, I have never seen the radio antenna on a pre-'75 Alfa Spider in the same place twice. I have also seen at least one '74 model with totally different interior door handles and window cranks than what I found on other '74s (it was a one owner car that had never needed restoration... it just came from the factory that way). Wiring and brakes seem to be the most likely areas for these "off part" occurrences.

This tendency also led to some interesting transitions in the models as time went on. For instance, Alfa's 2.0L engine was introduced in 1971, but I have only seen 1750 engines in '71 models (in the US at least). It was quite common for Alfa to introduce significant mechanical changes without the slightest bit of promotion or notice (again, this had gotten better than it was

before... it is my understanding that the 101 series was never even announced to the public... it just started showing up on the docks). Sometimes cars would be built in one year and, if sales were slow, sit on the docks and be sold, and titled, in the next.

There has also been at least one reported occurrence of something I call “back-production”, a practice I had previously only heard associated with much lower-volume marques such as Ferrari and Lamborghini.

Everyone knows emissions and safety regulations got tougher and tougher in the US in the late ‘60s and early ‘70s. It would appear that 1969 was the last year that car companies could easily pass these inspections with very minimal adjustments to their designs. 1969 cars are also protected from later, more restrictive regulations.

It would seem that some of the more devious people at places like Ferrari and Lamborghini got a really great idea. “Since cars produced before 1970 don’t have to bother with all those fiddly emissions laws,” you can almost hear them say in the board rooms, “let’s just stamp ‘Made in 1969’ plates on all our new cars!”

Apparently they did exactly that, and it took the customs people about a year and a half to catch on. To this day, apparently, people trying to bring in certain makes’ 1969 models have the serial number of the car cross-checked by customs. If the number is below a certain threshold, in you go. Above, and you have to conform to later, more stringent rules.

It is unknown exactly how many Alfa Romeo automobiles slipped by customs in this fashion. Most were probably brought in through Canada. An easy way to find out is if you have a Series 2 car titled as a 1969 model. Alfa didn’t MAKE any 1969 Series 2 cars (I don’t think they did, anyway), so, if you are one of these people, try and cross-check your serial number. You may just own a 1970 after all! (Special thanks to David Mericle for bringing his “1969” Series 2, and its story, to my attention.)

For these reasons it is not always possible to rely on parts catalogues for accurate dates of transition. For the most part, mechanics and specialist auto parts stores are aware of the really troublesome model years, and will advise you if you need to go out and check the number on a part you want replaced. But there is always the possibility that Luigi just happened to run out of one part that day, and substituted another instead when your car was built.

This does add a certain maddening charm to the cars. In comparison with the cookie cutter cars of today, you can legitimately claim that your Spider is unique in all the world... because it came from the factory that way!

Again, with the exception of the SPICA system, most mechanics familiar with other European makes should be able to work on an Alfa. The electrical and suspension systems especially are generic enough to be worked on by just about any competent mechanic. However, the cars do have their quirks, so if there is a shop in your area that specializes in Alfas (or Italian cars in

general), you almost certainly will be better off going there. Asking for mechanics in your area on the Alfa Romeo digest (<http://www.digest.net/alfa>) will usually net good results.

Joining the Alfa Romeo Owner's Club is also recommended. You will receive a monthly magazine called the Alfa Owner that will contain all sorts of useful information. You also gain access to the Alfa tech support network... a group of volunteers who you can call that will be happy to give advice on how to work on the cars, or what a certain sound or smell might mean. There are also a large number of publications available only to AROC members, and members of your local chapter (with a few exceptions, there's at least one in each state) will be able to give you tips, perhaps loan you specialized tools, and, as mentioned above, give you access to perfect examples of just about any model Spider you may be looking for.

One final word on shortcuts and "enhancements". As discussed in the performance section above, the factory did most of the performance work already. Be very careful about any advice you may get that seems to "get around" the factory. Ask around about these "tips", especially from mechanics very familiar with the car. Many times, a shortcut will only work for a short amount of time, and then either fail or cause serious damage.

If you're working on your own car, always be sure to put back what you removed. Even if you had nuts so tight on their studs they had to be ground off with a motor tool, if they had lock washers be damned sure to put those lock washers back. Nothing is "extra" on these cars, everything has a place and a purpose, even if that purpose is not immediately apparent.

If you are coming to these cars after owning and working on American cars for years, be especially careful. Like fine watches, they are designed to tight tolerances, and because of their small overall size tend to have parts that, while bulletproof on a Ford, may be quite fragile on an Alfa. What you can get away with on a Chevy (such as tightening a nut down until it hurts, prying on a surface with the longest screwdriver you have, or whacking away with a hammer) will very likely do permanent damage to your Alfa. Be careful.

Insuring your Alfa Spider

Insurance companies like to write policies for brand new cars and trucks that are used primarily as daily transportation. They will also write policies for new sporty cars, but don't much like to. Finally, they hate to write policies for new sports cars, because they are usually more expensive to fix and are statistically more likely to be involved in an accident.

One of the least noted influences on the post-war auto industry is that of automotive insurance companies. An important limiting factor, at least in the US, on the purchase of very high performance automobiles and pure sports cars (like the Alfa Spider) is not government regulation, absolute price, safety or reliability, but rather the cost of insurance. Especially at the beginning of the 1970s, and then again in the middle of the 1980s, the incredible cost of insuring high performance automobiles has had a profound braking effect on the sales of those automobiles. To this day, it is quite possible to own a car (especially if one is male, single, and

younger than 25) with an insurance payment noticeably greater than the payment for the car itself.

The good news for Alfa owners of all types is that Alfas are considered “good” cars by most insurance companies. “Good” in that they are usually owned by adults, driven rationally (or rather, driven well), and tend not to be stolen all that much. The bad news is that since they are rare, they tend to be hard to find body parts for.

There is also the problem of the way the entire 105 series was designed. Alfa has always engineered their automobiles as if they were race cars. This extends not only to the engine and suspension, but to the design of the body and layout of the interior as well. And, in a race car, one is not very concerned about what will happen to the body of the car during an accident. Rather, one is very much concerned about what will happen to the driver, and if designing the car to crush itself rather than the driver will increase his or her chance of survival, so be it.

This goes a long way to explaining why all of the 105 series have such long overhangs (especially the Spiders) and ridiculous bumpers. The former is the result of careful design considerations toward crumple zones and areas of energy absorption, while the latter is the disdain of (to a race car engineer, at least) the unimportant. The bottom line is that the entire 105/115 series are probably some of the safest cars of their era, certainly as safe as contemporary Volvos, and inarguably a heck of a lot more fun to drive.

Unfortunately this means that when an Alfa gets in an accident, it really GETS IN AN ACCIDENT. Both the front and rear zones of the car are meant to destroy themselves in an impact of any real force. Where other car makers designed the seats and seat restraint systems to help absorb the impact of a collision and thereby reduce overall damage to the car (if they considered designing any sort of safety features into their cars at all... many didn't), Alfa designed the entire CAR to absorb the impact, thereby reducing damage to the driver. Ultimately this means that, in any given accident, an Alfa Spider will almost always come out more damaged than the initial impact would at first indicate, and this damage will subsequently be more difficult (and more expensive) to repair.

Nowadays there's no such thing as an owner of a “new” Alfa Spider in the US. Even the last models manufactured are now several years old. Insurance companies as a whole are not used to dealing with used sports cars. Further, they very, very seldom account for regular maintenance or general condition of a car. As a whole the insurance industry is a large, downright paranoid bureaucracy that likes well-established, insurance industry-maintained tables of value for all the different cars of the world, with fixed rates of depreciation that in no way account for market changes. If any square pegs are presented that don't fit these round holes, they are usually hammered away at until they fit, regardless of what this means for the client or the vehicle.

So what is a potential Alfisti to do? DOCUMENT ****EVERYTHING****. When you purchase the car, take dozens of pictures of it... all angles, underside, engine compartment, interior, close-ups of every individual body panel. Update these pictures at least once a year. Make a videotape of you showing every angle of the car, the condition of the engine, etc. If possible, get a notary

public to sign off that yes, these pictures were taken before this date, and yes, they are of that car. Keep every single stinking receipt for every little thing you have done to the car (this is one of the few ways that the do-it-yourself Alfa owner is at a real disadvantage... they can only provide receipts for parts, not for installation), and keep it organized and neat.

Which sort of policy you take out on your car depends a great deal on how you intend to use it. If you plan on driving the car less than 3,000 miles a year, then you should seriously consider “specialty” insurance either from your own provider or from an insurance agency that deals exclusively with unusual and/or rare automobiles.

For those who wish to drive their Spider considerably more than 3,000 miles a year, I have been advised that it is best to maintain a standard, full-coverage insurance policy with reasonable deductibles from a major insurance company. This will allow you to drive the car as much as you want.

Be EXTREMELY careful of setting some “fixed value” on your car with your insurance agent, i.e. you and your agent agree the car is worth, say, \$5,500 when you get your policy. WATCH OUT! Many, many times what the agent is ACTUALLY doing is setting a maximum value on WHAT THEY WILL PAY YOU, NOT on what your car may be worth. Even the agent may be convinced and sincere that, should your car be in a severe accident that destroys it, you will get the agreed on amount. But your agent isn’t the one that approves or pays the claims, and all the good intentions in the world won’t get your car fixed. Finally, READ YOUR POLICY VERY CAREFULLY. Especially any sections on what happens when you and the company disagree on a given settlement. This can be incredibly important when it comes time to settle a claim.

Another kind of insurance is worth considering. “Agreed value” policies, different and distinct from fixed value policies, are an extremely valid way of insuring your Alfa. Rates are very reasonable if your car meets certain restrictions, usually regarding the age and sometimes the mileage of the car in question. In the event of an accident, you inform the insurer of your loss (well, probably an adjuster will). The insurer then pays for the loss. No assessors, no value judgements, very clean, very simple.

If your Alfa is more than ten years old and you do get in an accident, assume the insurance company is going to “total” the car, regardless of what your agent said. As it would imply, “totaling” a car means that the insurance company has decided that the repair amount is greater than the value of the car (more on this later). While this seems rather dastardly, most people who own cars more than ten years old are perfectly happy to have their old vehicle declared junk, receive a check, and use the money to buy a new one. Insurance companies, in their own heavy handed way, are assuming they’re helping you out by doing this.

If your policy allows, tell the adjuster that you know where parts are... don’t let them try and find parts for you. The standard procedure on an older car is to call a large junkyard and see if there are parts available in your area (in the US most salvage yards are on a nationwide data exchange system that allows them to check availability over a very large area). Alfas are too rare to be profitable for junk dealers, so even when they are offered to salvage yards (rarely) they are

seldom purchased. Because of this, your sources will almost certainly be far, far better than theirs. An example from my own experience: my '74 Spider was once hit very hard in the rear (as I said, people love running into these cars, crumple zone worked as advertised). After two weeks, the adjuster called and told me used body panels were "impossible to find". After getting off the phone with him and making three calls, I had an entire rear body shell purchased... total time: 15 minutes.

If the insurance company is undervaluing the car (a very likely occurrence), whether you want it fixed or not, you will have to fight them. And make no mistake, you can fight them. By reading your policy very carefully you will be fully aware of your arbitration options. If you disagree with the company, say so and ask to enter the arbitration process. They can't say no to you. By keeping receipts religiously, you have a documented, official record that the car was maintained properly and in good condition. Any improvements (rust repair, major mechanical repair) will also be documented and must be included in any value estimate. You will have the high ground, as they say. Many times, if you are really that well prepared, the adjuster will be so intimidated he or she will agree rather quickly to substantially raise the offered settlement.

However, if you do go into arbitration, be aware that you have probably now irritated a very large, very rich bureaucracy. Some insurance companies will assume that you are trying to cheat them, and do their very best to wear you down. This means never returning your calls, taking the absolute longest time to do anything, putting you off when you do call, and sometimes other, less subtle tactics. TAKE HEART! You aren't trying to cheat them; you just want what's right. Be pigheaded about it. Never, ever take no for an answer. Always be polite, but always be firm. The bad news is, it will probably take three to six months to settle. The good news is, you will win.

Be wary of having the car totaled and then buying it back from the insurance company (usually for a 25% deduction on your settlement). Many states require a notice that the car has been totaled to be printed on the title. Needless to say, this will slay the resale value of your car, even to another Alfisti. Repair first, salvage last.

I don't mean to be discouraging. However, I have found in both my own experience and from my conversations with others that, of all aspects of automobile ownership, people know the very least about insurance. In some respects this is probably a conscious conspiracy on the part of at least some insurance companies... what you don't know helps them. In other respects insurance companies are sincerely trying to help you out in the same way they help out thousands of car owners every year. It's not their fault you treat your Spider better than members of your immediate family. Be careful, realize that insurance companies are one of the top three employers of both lobbyists and lawyers (just like the administrators of any successful protection racket), and always assume that you are right and they are wrong. Remember, there's no such thing as a car that just can't be fixed.

Driving Your Alfa Spider

It has been said that every Alfa is a race car. This actually isn't much of an exaggeration. Alfa has a long, deep, and successful history of racing in many different classes, and the cars they

designed have always reflected this. They are built to be DRIVEN. One of the worst things you can do to an Alfa Spider (ANY Alfa, for that matter) is to let it sit or drive it conservatively. These cars are designed with the expressed intent of going fast and hard.

This is not to say you should go out and be an idiot in your Spider. Never drive any car hard before it has spent at least five minutes at full operating temperature. You run the risk of very serious damage if you don't. Always obey your local traffic rules. Seriously, driving your Spider hard isn't worth you slamming into a family of five in a minivan or bouncing off a lorry. Trust me, the minivan wins every single time.

The cars were designed in northern Italy, and tend to be at their best on twisty mountain roads rather than dragstrips or interstates (Spiders' drivetrains are too fragile for the former, and the cars are too noisy for the latter). Try to find some low-traffic back roads that you can go ripping up and down on and still remain under the speed limit.

It is interesting how tolerant the locals tend to be of this. In Northwest Arkansas (where I owned my first Alfa), no one would move aside when I came up behind them on the twisty mountain roads the region is famous for in my Plymouth Duster (exercising their rightful Christian duty to protect me from myself, in this case). However, about 40% of the time they would happily move aside and wave me through when I came whistling up behind them in my Alfa.

Every once in awhile go tearing through the gears, right up to the red line, when you're accelerating onto the highway. And while they are not built for it and you should be careful, it's always fun to shut down an uppity Ford Probe or Chevy Cavalier at a stoplight.

Because of the weakness of the synchros in the gearbox, the reader is advised to learn, and practice, "double-clutch" shifting, especially on downshifts. To do a successful double-clutch shift, quickly... put the clutch IN, pull the shifter into neutral, let the clutch OUT, blip the throttle, put the clutch IN, select the next gear, let the clutch OUT. It makes shifting much easier, especially on a cold gearbox, and sounds really cool.

The bottom line is you should always take your Alfa out at least once a month and just drive the heck out of it. Not only will it keep the car's seals and gaskets functioning, it will also put a smile on your face so wide the top of your head will be in danger of falling off.

Spider Trivia and Other Questions

What do those little "F" logos on my rear fenders mean?

Those are the symbol of the Pininfarina (pih-nin-fah-REE-nah) design firm, the design house that created the body style of your Spider. The "F" itself stands for Farina, because originally the design firm's name was split in two (Pinin Farina). Later model cars have the name rather than the "F".

It is a tradition in Italy dating back to the days of carriages for one company to make a chassis that other companies take and design bodies for. FIAT, Maserati, and Ferrari (many of whose car bodies carry that ornate “F” as well) are other well-known marques who engaged in this practice in the post-war era.

In the case of the Alfa Spider, at least, this relationship goes deeper than just having someone else design a body. The majority of a 105/115 Spider was actually built by Pininfarina. Pininfarina was responsible for the construction of the body shell, interior, wiring, interior trim, and the painting of the car. These semi-complete shells were then shipped to Alfa plants in Arese or Portello, depending on model year. Alfa then added drivetrains, engines, and suspension bits on the corners of the car. The completed Spider was then rolled to the docks and shipped wherever it needed to go. (special thanks to BD for clarifying this aspect of Alfa Spider production)

How interchangeable are these cars?

More than you would think. Mechanically, with the exception of engine displacement, induction system, and rear axle gearing, they are essentially identical for the entire run. This is especially true with the Kamm tail Series 2-4 cars. This is both a boon and a curse. It means that probably well into the 21st century all sorts of parts will be easily obtainable to keep your car on the road. However, it is this homogeneity that is keeping the value of the earlier Series 2 cars so low. Also, just as a general rule, the part you really need is many times the part that can't be found. Don't feel left out or unlucky... this seems to be the Murphy's Law of classic auto ownership.

Externally the story is a bit different. I believe that the hood of the car is interchangeable throughout the entire run. The Series 1 cars share very little else with their descendants, which is one of the reasons why they are so much more valuable.

As mentioned in the history section, '71 Spiders have a unique “pinch” on the top of the nose, smoothed over in '72. Other than that, the car bodies of both the 2 and 2a cars differ very little and, with the possible exception of the lower front fender (which I have heard changed configuration in '79), the body panels are essentially interchangeable. I say “essentially”. In my experience there are very slight shape differences in the fenders of the later cars, but these are only noticeable if you look closely.

Series 3 cars share doors, hood, nosepiece, and (I believe) trunklid with the Series 2 cars. However, because of increasing safety regulations and the addition of power windows, the doors are noticeably heavier.

Series 4 cars share doors, hood, and nosepiece with the Series 2 and 3 cars. Again the doors are heavier than even the Series 3 cars.

With the exception of the dash, interiors are interchangeable from '66 to '79. After '70 (when the padded dual pod dash was introduced) the entire interior is shared all the way to '79. After this point it's not so much that things don't interchange, but that the variety of colors make matching

more difficult. The dashes stayed the same from 1970 all the way to the model's phase-out in 1994. On cars without air conditioning, the side panels of the center console are interchangeable until at least the introduction of the Series 4 cars.

How do you lock the bloody doors on this thing from the inside?

Well, it's usually not a great idea to lock the doors on a Spider (do you really want them to cut your \$400 top to get at your \$200 radio?), but, on Series 1 and 2 cars at least, the doors are locked from the inside by pushing the interior door handles FORWARD, rather than pulling them back.

I want to upgrade my lap-belt-only Spider to shoulder belts from a later Spider. How difficult is this?

At first glance it would not seem difficult at all. As has been noted above, the cars' interiors are pretty interchangeable. It is unclear exactly when Alfa converted the Spider to a shoulder belt system. Certainly, it was later than most of the rest of the automotive world. There is at least one report of a Series 2a with factory shoulder belts. If this is when the transition occurs, then an upgrade is as simple as unbolting the hardware out of a wrecked 2a and bolting it in to your Series 2 or 1. I've never actually heard of anyone even attempting this conversion. This is almost certainly because four-point aftermarket seatbelt systems are easily available and are meant to be fit into cars not designed for them. If you want more protection in a Series 1, 2 or 2a, it is probably a lot less trouble to fit one of these third-party four-point systems (although many, if not all, require a rollbar to be added as well).

Recently an aftermarket kit has appeared for a three-point system that is meant to fit on the earlier cars. I have only seen pictures of this, but it seems well designed.

What about roll bars?

Roll bars are required by most racetrack-level sporting events, and do add substantial protection to your Alfa Spider. However, "competition" roll bars do not allow you to put the top up (making you safe but a bit on the damp side during a rainstorm). There are other roll bar designs that allow you to put the top up. These provide somewhat less protection but are still better than nothing at all. Contact your favorite Alfa parts specialist for further details. It should also be noted that roll bars *do* alter the appearance of the car noticeably.

I've heard it's a Bad Thing to run a SPICA equipped Spider completely out of gas. Is that true?

Yes. The pump section has four tiny pistons milled to fantastically small tolerances that move up and down inside cylinders to push fuel to the engine. The gasoline is used as a lubricant in this area, and running a pump completely dry can be disastrous. If you start running out of gas, SHUT IT OFF. This is also true for Bosch-equipped Spiders, where the gas is used as a coolant instead of a lubricant.

How do I flash the headlights quickly?

On Series 1, 2, or 2a cars, press the headlight stalk in to flash the lights.

My windshield wipers, radio, and defroster fan don't quit when I turn the key off. Is that normal?

Apparently yes, on Series 1, 2, and 2a at least. On a rainy day shutting down a Spider can feel like getting out of the space shuttle (“windshield wipers: OFF, headlights: OFF, fan: OFF, radio: OFF”).

I've got a flat... how does this damned jack WORK?

In spite of what common sense tells you by looking at it, you just lift the swing arm, shove it into the jack point, and turn the crank. It really will lift the car (took me years to figure out exactly how). Be VERY careful if you have rust on your floorpans. The jack can rip the jack point completely out of the car if it has been weakened by rust.

Sometimes my trunk and hood lights work, sometimes they don't... what's up with that?

On Series 1, 2 and 2a Spiders at least, the parking lights have to be on before the trunk and hood lights will work.

What's the proper oil filter to use on these cars?

Even though the engine on the Spider never changed in any real way except displacement, many different sizes of oil filters were fitted to the cars over the years. This is probably the result of clearance problems with the later cars' accessories forcing smaller and smaller filters to be fitted. The original filter listed for Series 2 cars (PH-2 in Fram numbering, I believe) is enormous, much too large for any standard filter wrench to fit it. It is also quite difficult to find. The filter recommended for the final Series 4 cars, in contrast, is very tiny.

However, the filter recommended for the Series 3 cars is big (but not huge), and not terribly hard to find in most auto parts stores. If you can't find the filter listed in the book for your particular year, or don't want to mess with a special filter wrench on an early car, fitting a filter recommended for a mid-'80s spider is probably the way to go. I did it for years with no detectable adverse results.

One final word on filters. SPICA equipped cars come with two fuel filters and two oil filters. There's a fuel filter in the back, just “downstream” of the gas tank. While this filter *resembles* much cheaper Ford fuel filters, they are actually constructed quite differently, mainly to accommodate the substantial fuel volume and pressure the SPICA system requires. If you want your Alfa to maintain proper fuel pressure, always use the original Alfa part (it will last longer anyway).

The second fuel filter is under the hood of the car, in a large housing on the passenger's side (follow the fuel lines as they come up the firewall... they will go into this round housing). According to factory maintenance schedules, this filter actually needs to be changed more often, so when you do change it ALWAYS, ALWAYS DISCONNECT THE BATTERY FIRST. The housing is metal, and sits right above the wiring for the starter motor. One false move and at best you'll have a cheery-beery fire in your engine compartment. At worst you'll end up one barbecued Alfisti!

In addition to the obvious oil filter, there is a very small filter in the bottom of the SPICA pump, just under a round access plate held in place with three small studs and nuts. This should be replaced at least every other oil change. Be very careful when removing this... it's quite easy to break off the little studs.

Is that area behind the two seats supposed to be an extra seat?

Not really. I've never even considered it as such, but I've had this asked of me so often I thought it worth including. The rear area is too small to hold people (but can be a pretty good place to put a rambunctious beagle... ask me how I know), and I don't think it was ever designed to. In the later Series 3 and 4 cars this isn't much of a problem, since the shelf is a lot smaller and squared for luggage. If you own a Series 1, 2 or 2a, don't let people sit back there ever... they will tear up the vinyl trim, which is becoming downright irreplaceable. It does make a wonderful supplement to the smallish trunk, and holds about six old-fashioned paper grocery bags just low enough (on a Series 1, 2 or 2a at least) that you can travel down the interstate with the top down and not worry about blowing eggs all over that 18-wheeler behind you. A gentleman in Europe has informed me that the Spider actually was rated to carry three people there, with one of these sitting in the back. Judging from the room in the back area, I can only conclude that leprechauns, kobolds, gnomes, and halflings really do exist, and they have designers working for Pininfarina!

Are there any other secret "gotchas" I should know about?

Alfa Spiders have significantly more front overhang than most other cars. Be sure to leave some extra room between you and the car in front of you until you get used to the car's dimensions.

90% of later cars' mechanical problems seem to be caused by poor grounds. These should always be the first thing you check, even if what is wrong seems to be fuel-system related.

Spiders (all of the 105 series, in fact) also have relatively fragile finned aluminum sumps that extend below the rest of the car (this helps cool the oil). These are quite vulnerable to parking stops and road hazards. Since they form the bottom of the engine, impacts at any sort of speed can be disastrous.

Don't wait for the tires to bump the parking stop before you stop the car... you'll usually only bash the sump (at parking lot speeds the sump is tougher than it looks, but, since it's hooked intimately with the car's frame, the impact can be quite frightening). Always try to drive around

rather than over road hazards, especially if you have lowered the car in any way. An impact with something as innocent as a smallish rock can literally shatter an engine. Sump guards are available, but project under the car even more, and may create a risk of frame damage in an impact at speed.

Be careful with the front spoilers on Series 3 and 4 cars as well, as these can be almost as expensive to replace as cracked sumps.

The early cars' crumple-zone design means there is precious little to hang a tow rope to in case you get stuck or need a bump start. I have had the most success from the front by wrapping a tow strap (not chain) through the front shield grille and around the cross brace for the front bumper (on a Series 2... goodness knows what a Series 1 owner would do). From the rear, the closest thing you can wrap a rope or chain around is the torque-T over the top of the rear axle... almost half way under the car. There is probably a risk of frame or mounting damage if you try to pull the car this way. Call a tow truck instead.

When cruising long distances in a Spider, try to keep your foot totally parallel with the accelerator pedal (heel under the pedal). The more natural foot position seems to be with the heel under the brake pedal and the ball of the foot on the accelerator, but this can lead to your right thigh cramping up after a few hours.

Never tighten the mounts to the signal light lenses (front and rear) on the early cars more than JUST snug. Overtightening can break the mounting points and ruin the lens.

What's *the* most important tool I should take with me when I go on a long trip in my Spider?

A cellular phone. Think about it.

Final Words

In the long run, I have found the Alfa Spider to be a surprisingly practical car, for all its sports car heritage. Its comparatively large size and superb layout give it far more cargo space than is available in any modern counterpart (indeed, my '74 Spider had roughly the same cargo capacity as my brother's '77 Pontiac Trans Am, a car over twice its size). It also has amenities such as real roll up glass windows, a convertible top light years ahead of its original competitors, a real heater that can keep you warm on the coldest of days, and seats that, while narrow, are still quite comfortable.

Mechanically the car was years ahead of its time. Aluminum dual-overhead-cam engines would not become commonplace in the general automotive market for another twenty years after the Duetto's introduction (and Alfa had them already for years). Five speed transmissions, four wheel disk brakes, fuel injection... all were standard equipment on Alfas literally decades before they became well known anywhere else in any numbers. It is a testimony to the soundness of the design that, until the introduction of the Honda CRX Si in 1984 and the Mazda Miata in 1990,

the Spider (and even more so its 105 stablemate, the much rarer GTV coupe) was a force to be reckoned with in racing circles. Only today, more than thirty years after its introduction, is the car really ready to be “retired” to the vintage auto classes. And yet they still race, and they still win.

It has been said many times but deserves repeating... when you buy an Alfa Spider (really any Alfa at all), you’re buying The Real Thing. This is no chopped-up econobox sedan, nor an amalgamated copy of memories of what had been. The Alfa Romeo Spider is that memory, made real in steel and aluminum, fire and noise.

After the intense competition of the 1960s, and the sudden, crushing weight of regulations, oil crises, and general malaise of the 1970s, only the Alfa Spider was left standing, alone in what was once a field rich in depth and promise. Names synonymous with sports cars... Triumph, Austin Healy, even MG, the marque that arguably invented the sports car, had all utterly ceased to exist. It was only in the 1990s and the introduction of the Miata, a car that is in essence nostalgia on wheels, that the Spider quietly faded from view.

But even the very last Spider that rolled off the assembly line, 28 years after the first, was still a DAMNED fun car to drive.

And, after all, that’s the whole point, isn’t it?

Appendix A: Factory Recommended Maintenance Intervals

3,000	6,000	9,000	12,000	24,000	36,000
Check Battery Electrolyte levels	Check Fan & Alternator Belt Tension	Check Front Wheel Toe-in	Change Brake and Clutch Fluid (or at one year, whichever comes first)	Change Engine Coolant	Change Alternator Belt and inspect SPICA Pump Belt (if so equipped)
Check Brake Pad wear	Check Valve Timing- Chain Tension		Inspect Spark Plugs and Replace as Necessary	Change Gearbox Oil	Change Radiator and Heater Hoses
Check Clutch & Brake Reservoir levels	Air Cleaner Element Cleaning (replaceable element only)		Inspect Distributor and Check Ignition Timing	Check Brake System	Change Differential Oil
Change Oil and Replace Oil Filter	Replace Under-hood Fuel Filter (SPICA only)		Check Ignition Wires	Check Ignition Wiring	
			Check Valve Clearances, Adjust as Necessary		
			Change Fuel Tank Filter (SPICA only)		
			Check Fuel System for Conditioning and Leaks		
			Clean Intake Throats and Check Throttle Plate Alignment (SPICA only)		
			Check Injection Pump Linkage Clearances (SPICA only)		
			Clean Oil Vapor Separator and Check Crankcase Ventilation System		
			Check Fuel Evaporator System (SPICA only)		
			Road and Driveability Test		
			Check Idle Speed		
			Check Exhaust Emissions		
			Check Engine Coolant Hoses, Replace as Necessary		

Taken from 1974 2000 Owners Manual, with some content added for later models. Special thanks to Dana Loomis.

Appendix B: Capacities and Recommended Consumables

Capacities

Item	Capacity (U.S / English)	Capacity (Metric)
Cooling system	2.5 gal (includes .5 Gal for catch tank)	
Fuel tank	12.2 gal	
Fuel tank reserve	1.3-2.1 gal	
Engine oil - full	7.1 qts	
Engine oil - total in circuit	7.8 qts	
Engine oil - danger level	4.75 qts	
Transmission	3.8 pts	
Differential	3.0 pts	
Steering box	0.8 pts	

Consumables

Item	Factory	Common	Recommended
Spark Plugs	Lodge 2HL	Champion N9Y	N/A
Oil	10W/50	10W/40 winter, 20W/50 summer	15W/50 synthetic
Tires	155/80-14 to 195/60-15	185/70-14	195/70-14 or 195/60-15*
Gear Oil	85W/90	80W/90	Redline HTL
Top Material	Vinyl, Cloth, Canvas	Vinyl	Cloth
Brake Fluid	DOT 3	N/A	N/A
Grease on Spline	NLGI 1	N/A	N/A
Bearing Grease	NLGI 2/3	N/A	N/A

N/A: Either no clear recommendation can be made, or the factory recommendation is the most commonly used type of the item.

Common: Item that many Spider owners have used with good results.

* Post-1983 only.

Capacities and factory recommendations (except tire recommendations) taken from a 1978 Spider Owner's Manual. Special thanks to Jim Schmukal.