Fake Ferrari?

Ferrari owners still look down their noses at the Fiat Dinos but in some ways they were as good as the real thing. Martin Buckley looks into their history and buying procedure.

Pictures: Julian Mackie

Name a Ferrari, or a car with a Ferrari engine, you can buy for less than ten grand these days. All the mid-engined Dinos are rocketing in value, the Stratos has gone through the roof, and you can't even think about most V12s for less than £30,000. It's a depressing picture.

But you *can* still buy a Fiat Dino coupé – with yer actual Ferrari V6 engine – for well under £10,000 in good condition, and Dino Spiders are available for about double that figure, which is peanuts compared to the prices 'proper' open Ferraris are bringing right now. Truly the Fiat Dinos are the last really affordable cars to come out of Maranello, but if you want one while prices are still sane the time to buy is now: by this time next year values could have doubled.

Of course, Fiat Dinos aren't Ferraris *per se* – it would be pointless to pretend otherwise – but they make all the right sounds and give all the right feelings, and in many ways that Fiat floorpan and running gear is no disadvantage: you can't help feeling that the cars are all the better for it.

As is fairly well-known, the Fiat Dinos came about because Ferrari wanted to get into the new 1.6-litre Formula 2, which at the time – 1964 – he saw as an important halfway-house for up-and-coming young Italian drivers. The snag was that the new rules demanded that the unit had to be production-based (using the same crankcase but not necessarily the same cylinder dimensions) and produced in numbers of not less than 500 in 1966. At that time Ferrari only had the capacity to produce 700 road cars a year, and couldn't hope simply to double his output overnight.

Thankfully, good old Fiat was waiting in the wings.

A dialogue was set up between Fiat's top brass (Valleta, Agnelli and Bono) and Enzo Ferrari, with Francesco Bellicardi of Weber as a go-between, and before long they had come to an agreement that kept everyone happy. Fiat – which had secretly sponsored Ferrari on numerous occasions – would build the V6 engine, for use in a new Ferrari mid-engined road car and a new Fiat sports car, thus homologating the unit for racing and gaining reflected glory for the new car. As things transpired, the Formula 2 cars that were the main reason behind the whole exercise turned out to be relatively unsuccessful...

The history of the V6 engine that Ferrari handed over to Fiat for reworking is too complex to go into here. Suffice to say that it started life as a Jano design in 1956, with a 65° angle to accommodate twin cams per bank, and it was chopped and changed over the years that followed to suit the competition requirements of the day. Aurelio Lampredi (who had defected from Ferrari in the mid-fifties) was given the job of making the Dino V6 into a viable production road car engine, and was presented with a 1596cc, 65° V6, attributed to Franco Rocchi in its latest form. The four cams were naturally driven by roller chains, and there was a four-bearing bottom end with a nitrided crank. Head and block were constructed in light alloy.

Lampredi left the stroke at 57mm, but widened the bore from 77 to 86mm, giving a capacity of 1987cc. Cast iron liners and pressed steel pistons were used and the compression ratio was set at a reasonable 9:1, so that the unit would be happy on regular fuel. The three Weber 40 DCN 14 carbs were set in the centre of the vee. The power output

Left: Dino spider was penned by Pininfarina – some love the shape but it takes time to grow on you. Alloy wheels on this 2.4-litre car are non-standard. Above: Ferrari Dino V6, with air cleaner removed, produces 180bhp. Below left: Dino coupé cornering, flat and stable with superb grip. Below left: Spider has shorter wheelbase and is more nervous but still safe; brakes excellent

Right: Bertone-styled Dino coupé has smooth shape by Giugiaro which has aged well – it was first seen in 1967; character is totally different to Spider's, build quality much better too. Car will touch 130mph, has vigorous acceleration. Below: Cabin is thickly trimmed in velour. Front seats in 2.4-litre coupés from Lamborghini Espada, rears split 50/50

was a creditable 160bhp at 7500rpm, but peak torque was only 126lb ft at 6000rpm. On paper the Ferrari Dino 206 was 20bhp up on the Fiat Dino and had a bit more torque, but the engines were identical, so presumably the extra power was quoted to massage the Dino 206 driver's ego, since he had paid somewhat more for his machine.

The five-speed gearbox of the Fiat Dino used a 2300 casing, with a separate casting bolted on the back for the geared-up fifth, plus an oil pump driven from the layshaft to lubricate the idling constant mesh gears. The chassis engineering of 'project 135' was undertaken by Fiat's Sergio Camuffo, Salvatore Bruno and Severino Nutarelli, and they took a conventional route, making use of various bits from the Fiat parts bin.

There was a stressed unitary chassis, of course, with a 90in wheelbase for the Spider and 100in for the coupé, closely related to the 124 Spider structure, which also had a 90in wheelbase, though definitely not the same. The coil-spring, wishbone and anti-roll-bar front suspension was also fairly 124-like, and the Dino used ZF Gemmer worm-and-roller steering. A 2300 live axle casing was employed at the back, but with a Borg Warner limited-slip diff, and was suspended on wide, single top leaf springs. Leading upper radius arms were used for location, and twin shockers either side of the axle cut out any possibility of axle tramp. Vented Girling disc brakes were used on all four wheels.

When the Pininfarina-styled Dino Spider put in its first appearance at the Turin Motor Show in November 1966, the car was far from being a complete surprise; the car-mad Italian public had known about it for a year or more, and the first 500 cars had already been sold before anyone knew what the thing looked like or what the price would be.

It has to be said that opinions on the styling of the Dino Spider fall into two definite camps. Some think it's a truly outstanding classic shape, squat and elegant, while many others aren't keen at all, objecting to its stubbiness and fussy detailing. There was a resemblance to the 206 mid-engined Dino in the bulbous wings and sharply cut-off tail, which displayed suspiciously Fiat 850-coupé-like circular lights. Cromadora knock-on wheels with eared spinners, fitted to the 206 Ferrari Dino, were a Spider feature too.

Fiat supplied the floorpan to Pininfarina, which fitted its bodywork, and then sent the whole lot back to Fiat's Rivolta plant for the installation of the mechanics.

The facia – finished in silver on very early cars, and horrid fake wood on later examples – was 124 Spider-inspired, and didn't look good enough for such an expensive car. Those early cars also had black plastic steering wheels but this was soon changed to wood. There were two tiny seats in the back; the hood was up to the usual Pininfarina standard – easy to erect and reasonably watertight.

The Dino coupé, styled by Bertone, made its debut at the Geneva show in 1967, using the same mechanics, but with a longer wheelbase so it could seat four in reasonable comfort. Bertone had started working on the design in 1963, as a replacement for the Fiat 2300S, the job being undertaken by Giorgetto Giugiaro. The first prototypes were finished in 1964 and the final touches were being put to the design late in 1965, by which time Giugiaro had moved on. This was a more subtle, svelte and practical car, a quite simply-styled fastback, with a slanted nose and four lamps set in a black honeycomb grille.

Compared with the Pininfarina car, it was much more nicely detailed and better-equipped too, with a stylish if rather plasticky facia, more substantial seats and electric windows. The rear seats folded and split 50/50, just like a modern hatchback, and there were ventilation outlets in the rear pillars that opened and closed automatically under acceleration and deceleration. Generally the whole thing felt more solid, more coachbuilt.

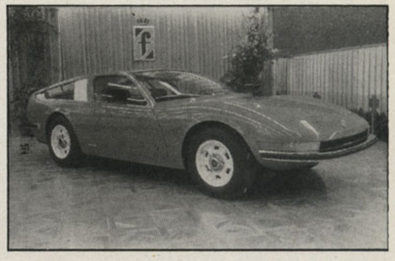
In Italy in 1967 a Fiat Dino was *the* car to have. It was the 'Fiat with a Ferrari motor' that every Italian enthusiast had been dreaming about for years, and although the cars had Fiat badges on the front, they looked, sounded and drove every bit as well as the real thing. Wherever a Fiat Dino stopped in Italy in the spring and summer months of that year, a crowd gathered and the Mafia were already placing orders for black coupés; their appearance as underworld transport in *The Italian Job* in 1969 was no fluke, and apparently the Mafia connotations of the model has kept secondhand prices of the cars down in Italy.

The 2-litre Fiat Dinos were magic machines to drive. 'Fiatised' as it was, that dohc V6 was a real jewel, no other word for it. With only 2 litres to pull 27cwt, they didn't go astoundingly well, but a top speed approaching 130mph, and zero to 100mph in 20sec, were not to be sniffed at by any means. They sounded superb when in full flight, too. Deep, throaty and burbly below 5000rpm, the whine of the cams, the thrash of the chains and the sucking of the carbs all fused together in a spine-tingling crescendo between 6000rpm and the sweet 8000rpm red line. The unit just seemed to sing at these speeds and owners talked of using 10,000rpm quite safely in their 2-litre cars.

Although the gearbox would prove not quite strong enough, it was a sweet installation, and a pleasure to use. Which was just as well, as the stout lever needed to be used freely to keep the engine on the boil, despite the tractability of the unit, which was not as poor as the torque figures suggested. Ordinary as the suspension seemed,.the cars handled superbly – you could turn the power on coming out of slow, tight bends without fear of the car get-

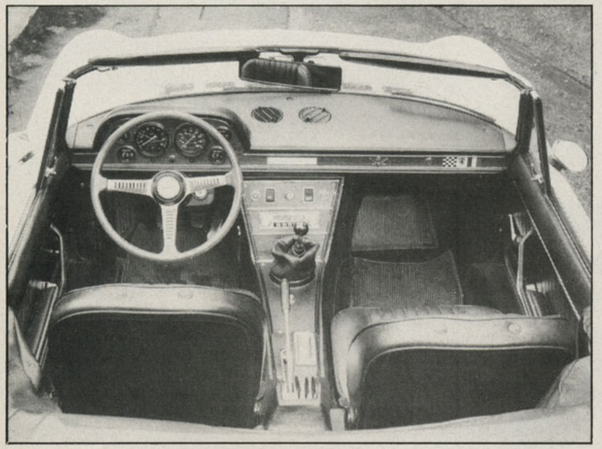
Specification	Fiat Dino Spider 2-Litre	Fiat Dino Coupe 2.4-Litre
Engine	65° alloy V6	65° V6, alloy head/iron block
Capacity	1987cc	2418cc
Bore/stroke	86 × 57mm	92.5 × 60mm
Valves	dohc	dohc
Compression ratio	9:1	9:1
Power	160bhp (DIN) at 7200rpm	180bhp (DIN) at 6600rpm
Torque	126lb ft at 2600rpm	159lb ft at 4600rpm
Fuel system	Triple twin-choke Webers	Triple twin-choke Webers
Transmission	Five-speed manual	Five-speed manual
Brakes	Discs all round	Discs all round
Front suspension	Ind by coil springs, wishbones and anti-roll bar	Ind by coil springs, wishbones and anti-roll bar
Rear suspension	Live axle with half-elliptic leaf springs, twin leading radius arms	Ind by coil springs, MacPherson struts, semi-trailing arms, anti-roll bar
Steering	Worm and roller	Worm and roller
Tyres	185-14	205/70-14
Dimensions		
Length	13ft 5.8in	14ft 9.5in
Width	5ft 7.4in	5ft 6.8in
Wheelbase	7ft 5.8in	8ft 4.4in
Height	4ft 2in	4ft 3.8in
Weight	2535lb	3042lb
Performance		
Maximum speed	127mph	130mph
0.60mph	8.1sec	8.7sec
Standing ¼ mile	16sec	16.1sec
Overall mpg	20mpg	20mpg

Pininfarina built a number of show specials on the Dino spider chassis. This coupé/estate cross (left) seen at Turin in 1967 didn't altogether work, looking too abruptly cut-off at the rear. A later try (below), seen at the Geneva show in 1968, had similar but more elegant lines on the same 90in wheelbase

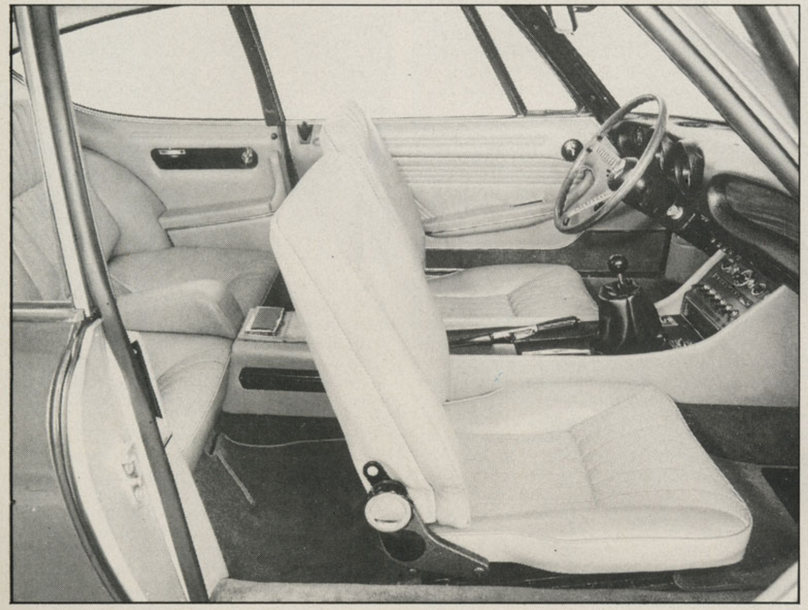


Production History

November 1966: Fiat Dino Spyder introduced at Turin Motor Show with 2-litre V6, live axle and Pininfarina bodywork.
March 1967: Bertone-styled coupé introduced at Geneva Motor Show.
Late 1968: Production of 2-litre cars stops.
September/October 1969: Production of 2.4-litre Fiat Dino begins. Final assembly of both models transferred to Maranello.
Late 1972: Fiat Dino production discontinued.



Top: Dino 2-litre coupé as introduced in 1967 with black honeycomb grille and extractor vents on the rear side windows. Centre: Spider cabin was stark and Fiat 124 Spider-like, with a cheap-looking dash, slim plastic seats, and no carpets. Original 2-litre coupé cabin (below) also used plastic, but was better built



ting out of shape, and it was easy for the sensitive driver to steer the car on the throttle.

Late in 1968 Fiat stopped building the Dinos in 2-litre form, by which time 1163 spiders and 3670 coupés had been built, not a bad total considering the price and the lack of rhd availability. Production didn't start up again for the best part of a year, during which time the cars were thoroughly reworked to make them less specialised, easier to drive and, in the end, rather less pure.

The engine had more Fiat identity than before, with its iron block, and the bore and stroke now measured 92.5 × 60mm, giving a capacity of 2419cc. The reason behind the change was a need for more torque, now 166lb ft at 5500rpm, but power was also up to 180bhp at 6600rpm. Dinoplex electronic ignition had been introduced on the 2-litre in 1968.

Instead of that delicate but weak Fiat five-speed 'box, there was now a sturdy ZF unit, with a dogleg first, and the ratios closed up somewhat. At the back, the live rear axle had gone, replaced by an independent system using semi-trailing arms, MacPherson struts, track control arms and an anti-roll bar, borrowed from the new Fiat 130 saloon.

The 2.4-litre cars received some marginal cosmetic changes. Spiders got a new front grille (mostly matt black but with chrome centre strips), the Farina badges were moved to the near three-quarter panel and wheels became bolt-on only. The coupé's grille was cleaned up somewhat and the interior was totally revamped, with a good-looking new dash and cloth-trimmed seats, the front ones coming straight from the Lamborghini Espada. All cars now had black sills and rubber bumper inserts.

Were the 2.4-litre Fiat Dinos any better? Well, yes and no. Yes, because the performance was much more easily attained, the cars were more flexible, quieter (the iron block quietened things under the hood), more comfortable and had better roadholding. No, because the ZF wasn't ideal (though not as bad as people think), and also ultimately the handling was not as well balanced. With that big lump of iron up-front there was also more understeer.

Still, it wasn't a bad trade-off, and the 2.4-litre Dinos, particularly the coupés, had more of the qualities buyers expected to find in a car in this class. Purity had given way to sophistication.

Fiat bought Ferrari in 1969 and expanded the Maranello production facilities. This meant that the Fiat Dinos could be completely assembled at Maranello, Bertone and Pininfarina supplying fully trimmed bodies to Ferrari, which then fitted the engine, drivetrain and suspension.

The 2.4-litre cars didn't last long. They were an extravagance, and neither Fiat nor Ferrari had any real use for them, especially as they were about to dispense with the V6 and introduce a new quad-cam V8 in the 308 in 1973.

Production of Fiat Dinos stopped in 1972, although the cars were still on sale well into 1973. Only 420 2.4-litre spiders were built, and 2398 coupés. The Fiat Dinos were easily the most exciting cars Fiat produced in the sixties and among the best sports cars available anywhere in their day, though few people knew much about them. For a long while after production stopped they were forgotten and unloved, and many of the coupés were scrapped just to supply engines for Ferrari Dinos!

People have fully woken up to the cars now, though. The spiders are already beginning to hit the big time, and the coupés, though much cheaper, will not be far behind if classic car prices carry on rising.

Buyer's Spot Check

To find out more about what to look for when buying one we spoke to Fiat Dino guru Mike Elliott of Superformance.

"A few years ago the Fiat Dinos fitted nowhere and were owned by people who bought them as dogs already, and tried to repair them without spending any money; that never works, of course! Most of the engines I used to see then were awful, with bits of metal behind main bearing shells to put them a little closer to the crankshaft..."

Problems tend to be common to the 2- and 2.4-litre, though long-term, the latter is certainly more reliable. Blue smoke under hard acceleration is a sign of bore wear, especially on the shorter-stroke 2-litre, but the 2.4 has trouble with its sodium-filled exhaust valves, which are brittle and tend to break. Two-litres aren't so prone to dropping valves, probably because the clearances between the piston cutaways and the valves themselves are more generous. The guide is certainly longer, and keeps the valve operating in a straight line for a longer period.

The camshafts are very prone to wear, made even worse if the previous owners didn't warm up the unit properly, and it's very important to keep the valves properly adjusted, or there's a chance of knocking a lobe off a camshaft. Adjusting the valve clearances on these engines was often overlooked, because it was so time-consuming, and needed to be done every 6000 miles at least. Listen for worn, rattling chains, and look for a leaking core plug in the iron-block 246. Sender units for the oil pressure gauge are not reliable and often give the wrong reading. You need 50lb at 3000rpm with the unit warm.

The Achilles heel of the engine is the distributor, which wears badly inside. Mike Elliott will fully rebuild your distributor for about £57, and is working on an advanced system; with a sensor taken off the front pulley so the engine can set its own advance curve, getting away from the advance weights inside the original unit which were not particularly good.

The Marelli Dinoplex electronic ignition is not the most reliable unit in the world, but in its early form, at least it is repairable. Usually it's just the oscillator transistors that give trouble. The smaller, later types are not repairable, as they don't come apart.

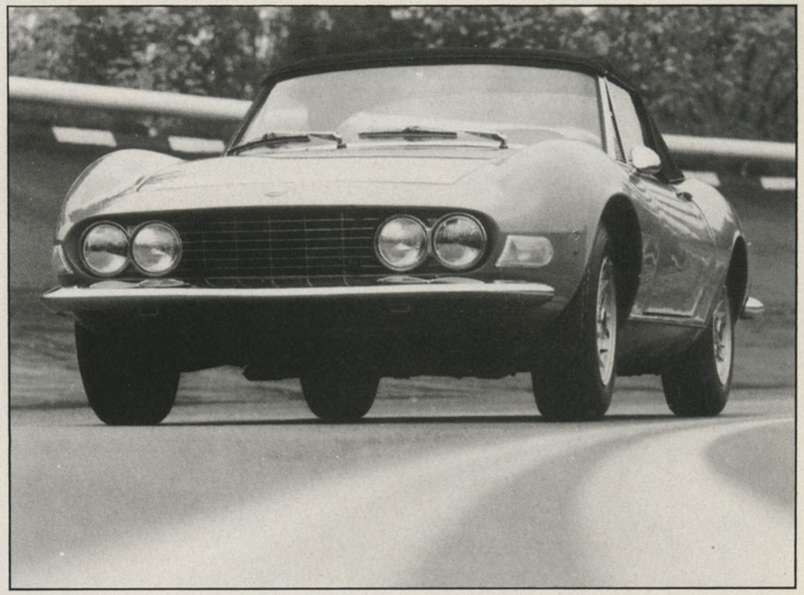
Superformance can fully rebuild a Dino engine for anything between about £1500 and £3250, depending if it's generally worn, or has major problems like dropped valves, cracked head or crankshafts.

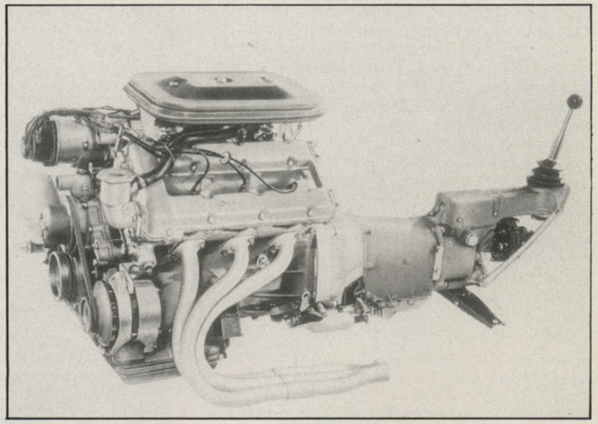
As you might expect, there's plenty of scope for boosting the output of these engines. You can buy a big-bore kit for the 2-litre engine that brings the capacity up to 2300cc, with special liners and standard 246 pistons. Larger valves, high performance camshafts, high capacity oil pumps, flywheel lightening, oil-cooler kit, high-performance air filters, and 246 specification radiator are options to improve performance even further.

Though the 2-litre Fiat gearbox is a joy to use, it's weak, so you may find that the synchromesh on second or third is on the way out. Bearings can get rattly. The 2-litre differential is also rather delicate: see if there's any noise coming from this area; if there is, do a left turn and a right turn, which should tell you whether the problem is in the diff or the rear half-shaft wheel bearings, which often give trouble. Diffs on the 2.4-litre cars are better but they do pack up occasionally.

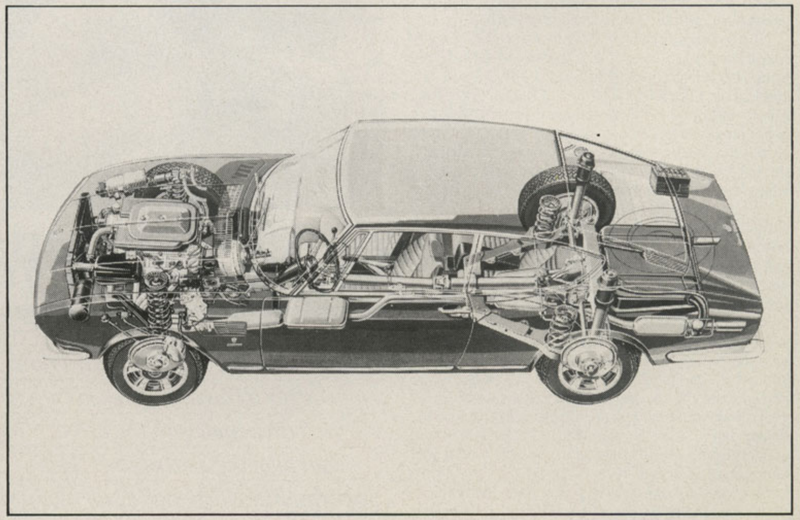
No gearbox spares are available for the 2-litre gearbox at present, but parts for the ZF unit, which hardly ever goes wrong, are no problem. New rear shock absorbers will transform the handling of a 2-litre Dino (many are still on their originals) while the independent rear end of the 2.4-litre is strong – over-engineered, in Mike's opinion. You might get the odd worn universal joint or noisy wheel bearing, but little else.

All models give problems with the front suspension. If the car has a little 'mind' of its own, steering to the left or right when you go over a bump, then you can count on the ball joints being shot. They are sealed units but once the rubbers split, dirt gets into them, and they deteriorate from then on rapidly. Many of the suspension parts are common to the 124, 125 and 2300. Apart from normal things like track-rod ends, the steering hardly gives any trouble, though the oil sometimes drains out of the steering damper and it may need a new seal. You





Top: 2-litre Dino spider, with chrome grille, no rubber bump strips on bumpers. Right: This is the dohc V6 in 2-litre form with alloy block, producing 160bhp but little torque. On the back is a 2300 based five-speed 'box. Bottom: This is the long 2.4-litre coupé, with iron-block 180bhp engine, Fiat 130 irs



Three black Dino 2-litre coupés were supplied by Fiat for the 1969 film The Italian Job

may get steering kickback if this is the case.

Brake discs can present a problem as they are no longer available, and every version has a slightly different disc. You can have a new disc made for about £120.

Both the spider and the Bertone coupé rust badly, because of the poor quality steel that was used and the minimal rustproofing. However it's generally accepted that the spider was more haphazardly put together than the coupé; if the panels didn't fit, filler was used as they came off the production line.

Look first at the backs of the front wings on both models, particularly at the bottom of the A-post, caused by mud thrown from the wheel and building up. The sills corrode all the way along, though it's the out-of-sight inner and middle sills that take the hammering, and will certainly be on the way out if the outer sections are rough. Do the spider's doors shut easily and sit square? If not, then the structure of the car could be twisted. Spider floors are often rusty because water finds its way in. All cars are prone to corrosion around their jacking points and outriggers.

Check the bottoms of the doors on all models, and the back edge of the boot and the front edge of the bonnet on the coupés. The boot lid on the spider is made of aluminium. Check around the scuttle and the windscreen rubbers; the Italian method of fitting the screen usually resulted in the paint being scraped off and subsequent corrosion.

Rear valances go very badly on both models, and when the section is cut away it usually reveals rust in the inner structure, not easy to put right.

Prices

Fiat Dinos, for the most part, are affordable. Coupés with potential are available for around £4000. Better, usable cars go for £7500. You can pay £10,000 for a smart Dino coupé now and the best will be making £15,000 before long. The era of the £20,000-plus Dino coupé will soon be with us.

Spiders, unsurprisingly, are in a different ballpark. There's *nothing* below £10,000 and you really need £12,000 before you can think of ownership. You might find something good for £17,500-£19,000, but top examples are now making *at least* £25,000. Not bargains by any means but at £60,000 (or more) for a Condition One Dino 246 GTS, a Fiat Dino Spider suddenly starts to make considerably more sense.

Clubs

The Fiat Dino Register, formed in 1980 and now with 830 members in 22 countries, is the only club to join if you run, or intend to run, one of these cars. It's free to join and benefits include full technical advice and information service, club meetings, photostatted copies of articles, manuals and parts books. Write to the Secretary, Mike Morris, Owls Barn, 59 Sandown Park, Tunbridge Wells, Kent TN2 4RT.

Specialists

R.W. Banks, Commerce House, Wickhambrook, Newmarket (tel: 0440 820291).
Superformance, 36 Maypole Drive, Chigwell, Essex (tel: 01-500 7127).
Dino Services, Unit 7, Endsleigh Industrial Estate, Endsleigh Road, Norwood Green, Middlesex UB2 5QN (tel: 01-571 2122).
This is not a complete list of Fiat Dino specialists, but a guide. Exclusion does not necessarily imply criticism.

Books

Fiat Dino – Ferrari by Another Name *by Mike Morris* (price not yet finalised). Full history with 220 pages and over 150 illustrations in colour and black and white, many never seen before. Brochure and scale-model details, racing history and bibliography of all published articles.
Fiat Sports Cars *by Graham Robson* (£12.95). History of all Fiat sporting cars from the 1100S to the X1/9, with good chapter on the Dinos. Good selection of all black and white pictures.

Production History

November 1966: Fiat Dino Spider introduced at Turin Motor Show with 2-litre V6, live axle and Pininfarina bodywork.
March 1967: Bertone-styled coupé introduced at Geneva Motor Show.
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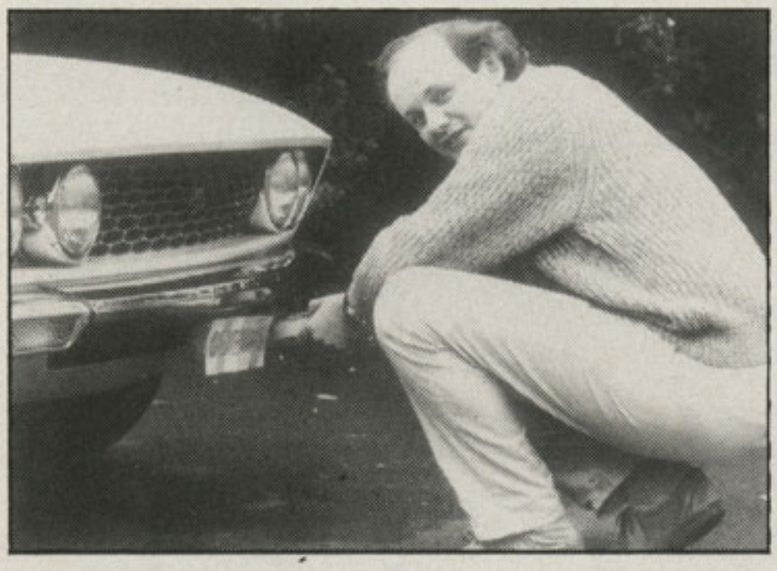
Acknowledgements

Thanks to Richard Banks for allowing us to photograph his silver Dino 2.4-litre coupé, which is currently for sale (details on 0440 820291) and Brian Boxall, owner of the red Dino Spider. I would also like to thank Mike Morris of the Fiat Dino Register for kindly supplying much of the historical background.



OWNER'S VIEW

Owner of two Fiat Dinos and now looking for a third, Jeremy Heath is a firm believer in the extra charm of the 2-litre cars. His superb white coupé has a sad history

Jeremy Heath must have the most beautiful 2-litre Fiat Dino coupé in Britain which, with only 4000 miles on the clock, is just as it left the factory late in 1967 – apart from a high quality respray that was needed because the original had faded so badly.

"It was brought in from Italy by a great Italian guy called Pino, who takes British sports cars to Italy and brings back Fiat Dinos, 130 coupés and the odd Alfa and Lancia. I went round to look at the car with Mike Elliott and once we had managed to stop the guy going on about how much he loved the car and how he could never be parted from it, we got him to open the garage door. As soon as we saw this gleaming white object we just thought 'Wow!'.

"We asked Pino a lot of questions about how authentic it was and he just kept on telling us about how it was his whole life, though he was very keen to talk money!" A price was eventually agreed and a week later the Dino, still on its Italian plates, was Jeremy's.

Its history prior to coming to this country is rather sad: the original Italian owner bought it for his wife, who died a few months later and only covered 5700 kilometres in it. Her husband didn't want to be parted from the car and it stood in his garage for 20 years until eventually he decided to sell it back to the dealer who originally supplied it. "As far as I'm concerned," says Jeremy, "I've bought a new Fiat Dino coupé – I'm just 20 years too late."

Mechanically the car has not been without its problems; "It leapt out of second and fourth gear with abandon. Mike Elliott has sorted that out but we're now worried that it's down on power – the performance is very flat. We think one of the pistons could be stuck in a groove, and that may mean taking the sump off to take one of the pistons out."

Yet despite the car's current lack of power, Jeremy thinks his Dino is absolutely brilliant to drive: "My day-to-day car is an Opel Manta 240 which puts out the same power as Fiat claims, but the Dino just puts it in the shade for sheer enjoyment – it really is quite something. I've taken it for five fairly irresponsible laps of Castle Combe at the *C&S* Action Day and it was really fantastic in the corners. It may not have as much roadholding as the 2.4 but at least it doesn't go straight on at the front and you've a tremendous amount of throttle steer – you can steer the whole car through bends without changing the angle of the wheel at all."

Jeremy, who also owns a 2-litre spider which he bought as a non-runner some years ago, summed up his whole philosophy towards owning a Fiat Dino: "When you can spend ten or 15 grand on a piece of tin that's just rolled off the Ford production line then on fundamentals, a Dino coupé is *so* undervalued. It's a proper GT car, not in the supercar class but certainly quick enough for today's environment.

"And if you know the right people in the 'trade' who you can trust to work on the car for a reasonable amount of money it doesn't cost very much to own. People run scared of them but if you get a sound car, anything mechanical can be put right."