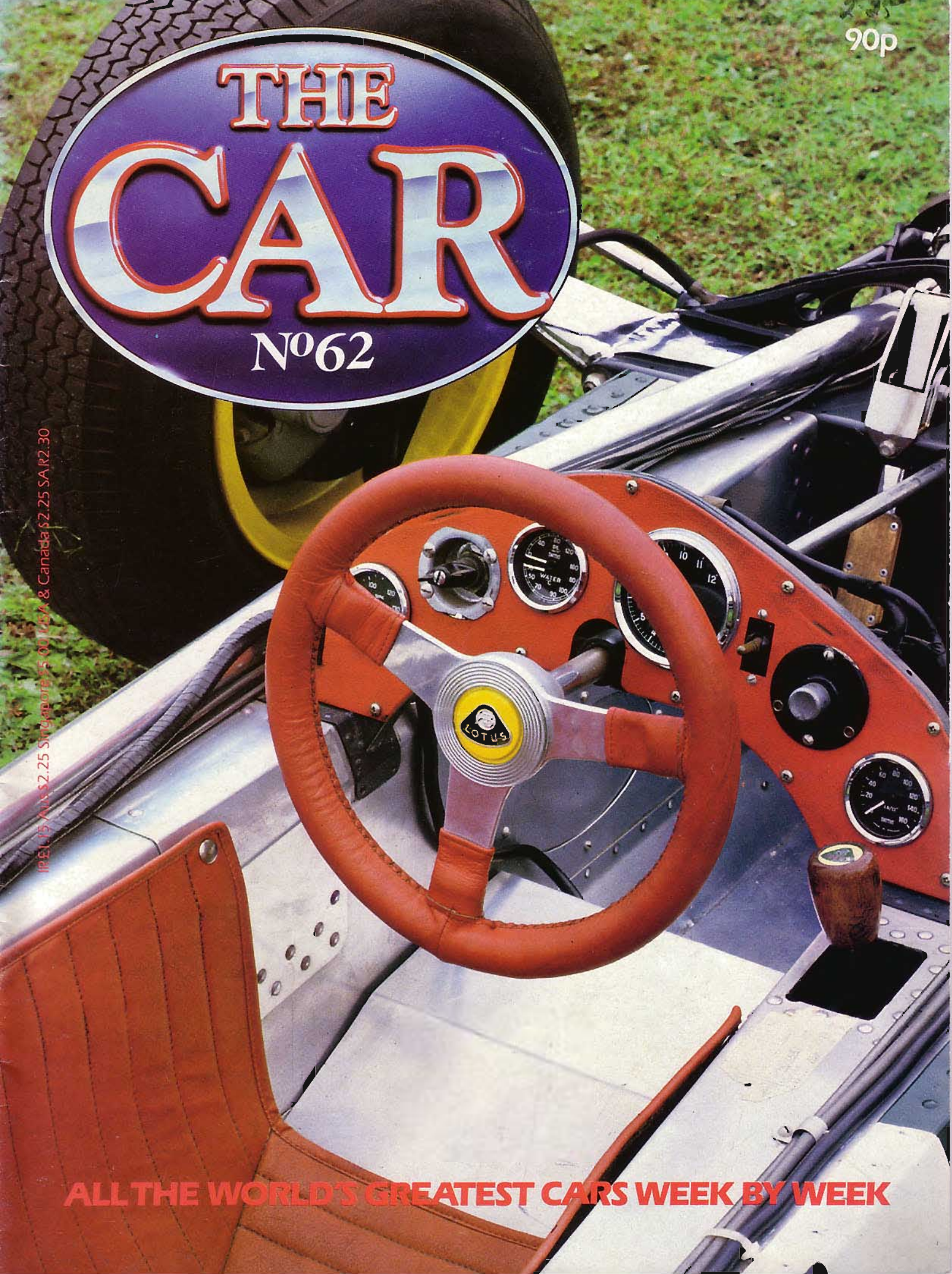


THE CAR

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MODEL

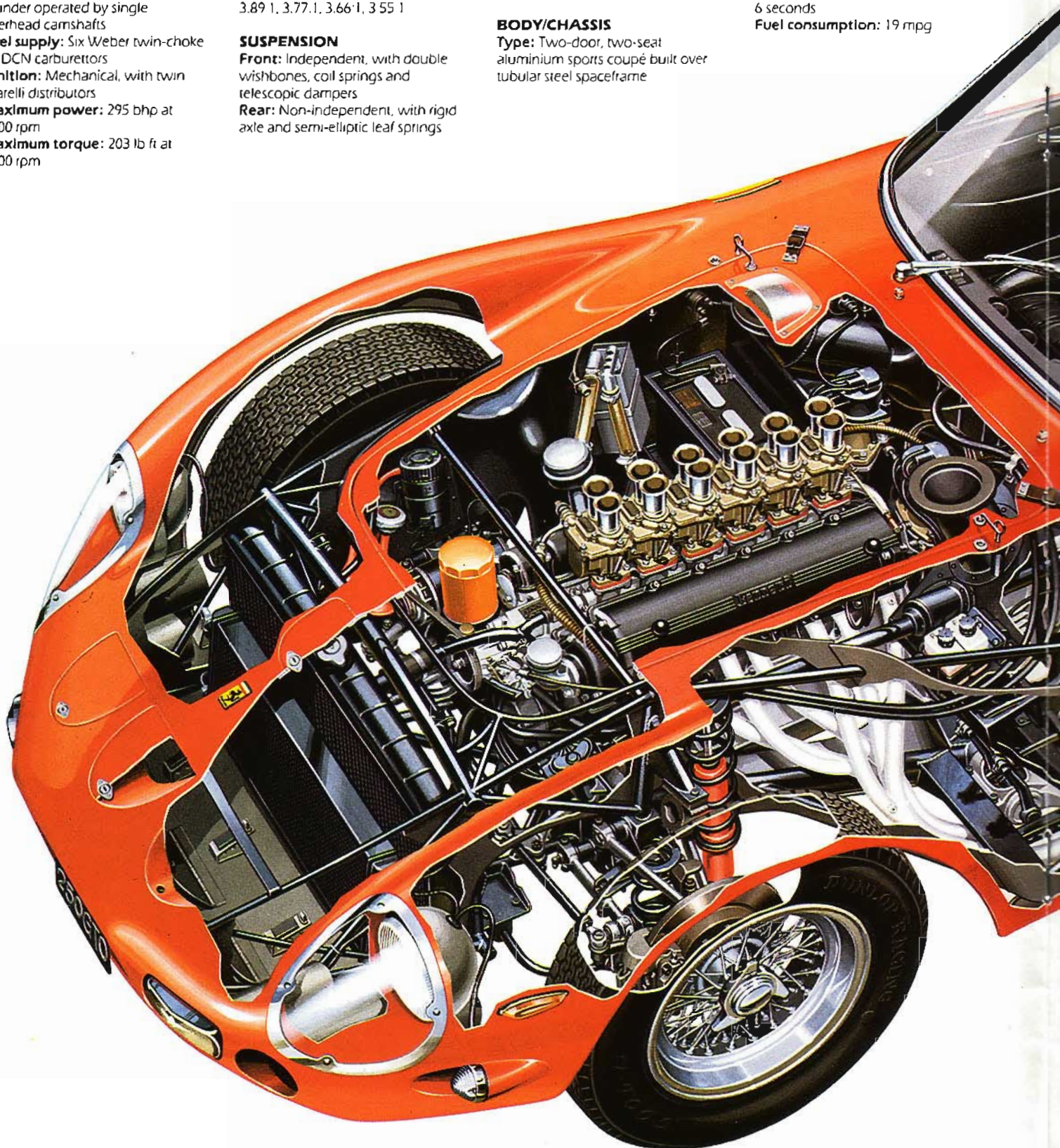
Ferrari 250 GTO (1962)

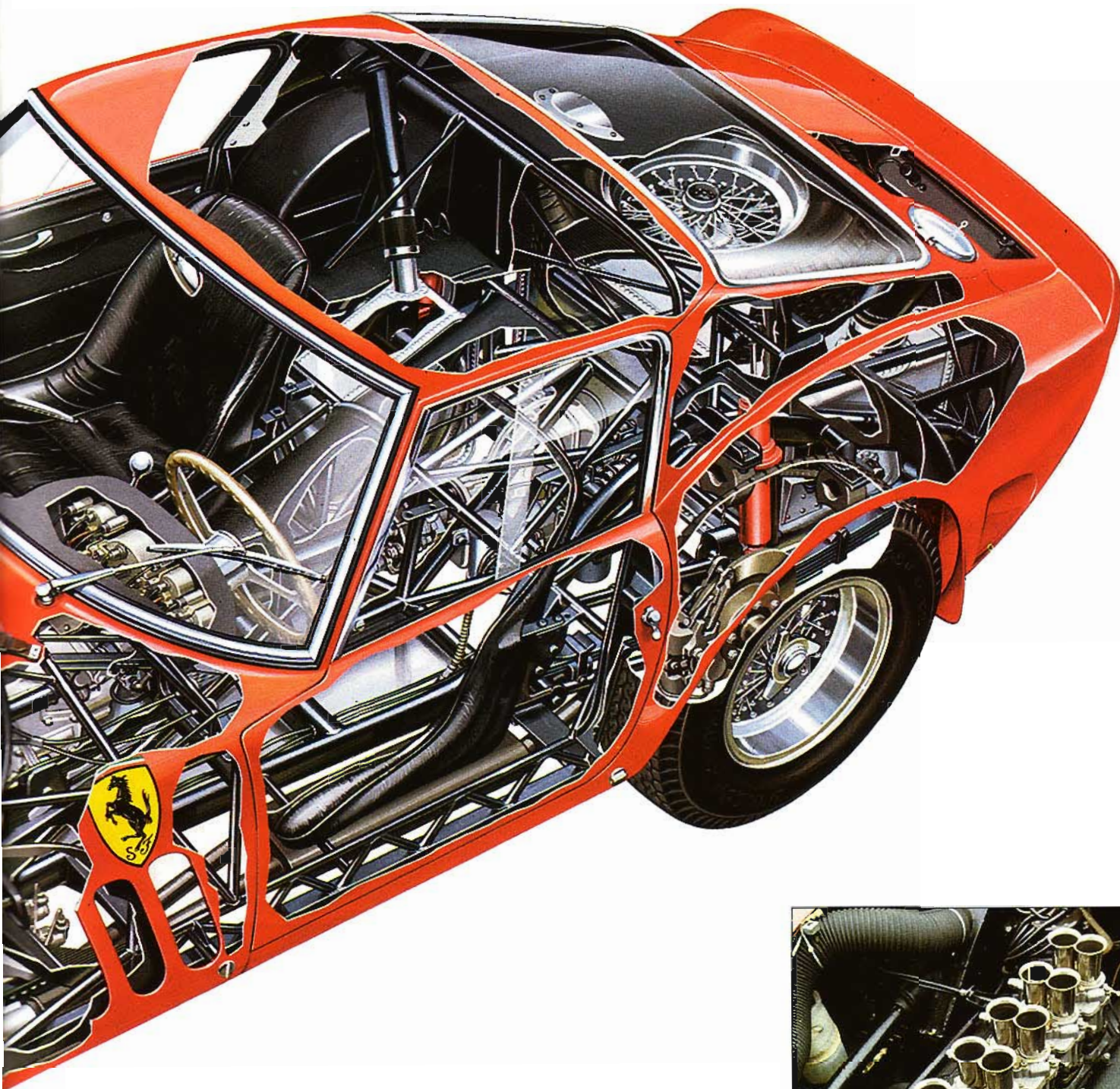
ENGINE**Location:** Front, longitudinal**Type:** Water-cooled, 60-degree V12, all alloy, with seven-bearing crankshaft**Cubic capacity:** 2953 cc**Bore x stroke:** 73 mm x 58.8 mm**Compression ratio:** 9.6:1**Valve gear:** Two valves per cylinder operated by single overhead camshafts**Fuel supply:** Six Weber twin-choke 38 DCN carburetors**Ignition:** Mechanical, with twin Marelli distributors**Maximum power:** 295 bhp at 7500 rpm**Maximum torque:** 203 lb ft at 5500 rpm**TRANSMISSION****Layout:** Clutch and gearbox in unit with engine**Clutch:** Fitchel & Sachs, single dry plate**Gearbox:** Five-speed manual with Porsche-patented synchromesh

1st 3.11:1 3rd 1.50:1

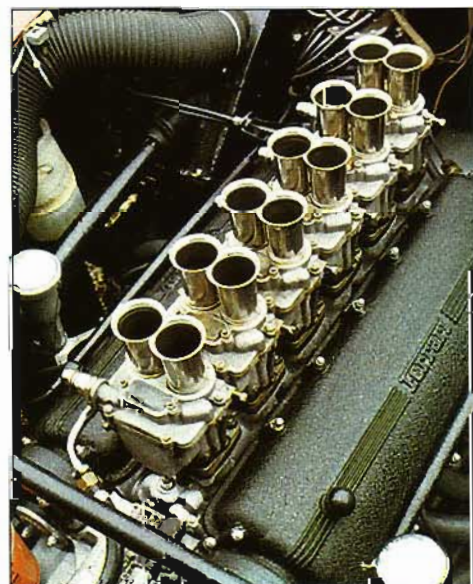
2nd 2.05:1 4th 1.21:1

5th 1.03:1

Final drive: Limited-slip differential**Ratio:** 4.85:1, 4.57:1, 4.25:1, 4.0:1, 3.89:1, 3.77:1, 3.66:1, 3.55:1**SUSPENSION****Front:** Independent, with double wishbones, coil springs and telescopic dampers**Rear:** Non-independent, with rigid axle and semi-elliptic leaf springs**STEERING****Type:** ZF worm and sector**BRAKES****Type:** Dunlop discs all round**WHEELS AND TYRES****Type:** Rudge hubs (42 mm) with 15 in (38 cm) Borrani wire-spoke wheels with Dunlop racing tyres, 600 x 15 RW3711 front and 700 x 15 RW3808 rear**BODY/CHASSIS****Type:** Two-door, two-seat aluminium sports coupé built over tubular steel spaceframe**DIMENSIONS AND WEIGHT****Length:** 175 in (4445 mm)**Width:** 63 in (1600 mm)**Wheelbase:** 102 in (2590 mm)**Track – front:** 53 in (1354 mm)**– rear:** 53.3 in (1349 mm)**Weight:** 2800 lb (1270 kg)**PERFORMANCE****Maximum speed:** 165 mph (266 kph)**Acceleration 0-60 mph:** 6 seconds**Fuel consumption:** 19 mpg



ABOVE The Ferrari GTO exposed, revealing its tubular spaceframe and aluminium bodywork (the latter was built by Scaglietti), main chassis members and suspension design. The car was noted for its excellent handling balance and traction, and the all-round discs provided adequate stopping power, although not as great as comparable cars would have today. The 300 bhp, Colombo-designed V12, **RIGHT**, gave prodigious performance, and its output is extremely good by today's standards. It was also a very noisy engine, sometimes deafening in the cockpit, and some drivers who use GTOs today wear earplugs for long journeys. Built by a company from which practically every model has become a classic, the GTO was a masterpiece of engineering and styling



which Ferrari's product planning was carried out in the 1950s – which is to say that broadly speaking, there wasn't any – that the 250 emerged by confused stages and with versions of both the available engines before finally settling, many years later, into the configuration which was to gain status as perhaps the most desirable of all Ferraris – the 250GTO. One of the seeds was sown in 1952 with the appearance of the 250 Sport, in which the short engine for the first time reached 3-litre capacity with a bore of 73 mm and stroke of 58.8 mm, giving an actual capacity of 2953 cc. The real point of interest here was that this engine replaced the long engine which had hitherto been used in Ferrari's larger sports models, the 340 America and Mexico.

Such was the improvement in handling achieved by the adoption of the smaller, lighter engine that the 250 Sport won the 1952 Mille Miglia, with Bracco defeating the might of the Mercedes 300 SLs. Eventually,

*... in this form was
reputed to deliver 200 bhp
at 6000 rpm... »*

this line of development led through the 250 Mille Miglia and thence to the deservedly famous 250 Testa Rossa. Yet the definitive Ferrari 250, the road-going GT car which first appeared in 1953, began life with a shrunken version of the long engine!

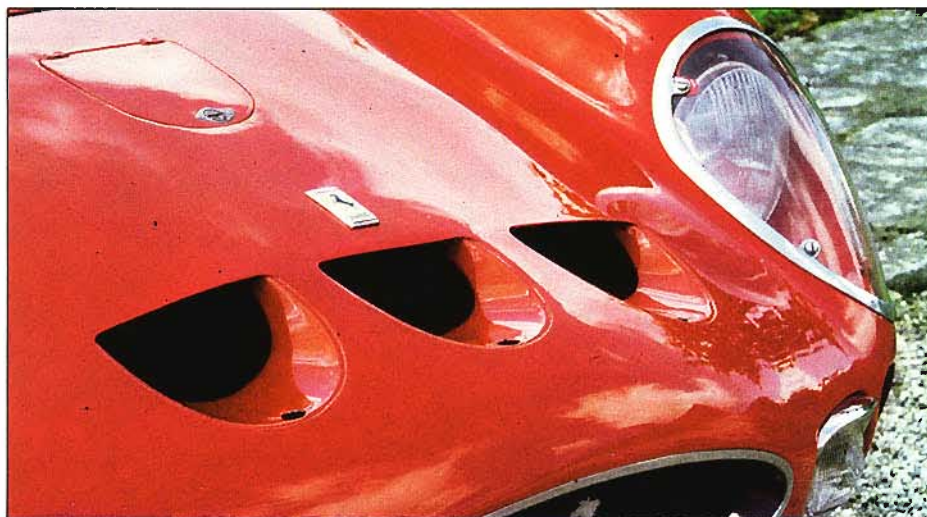
In essence, the original 250 Europa was seen as a version of the 375 America. While the more powerful car's 4.5-litre engine achieved its actual 4522 cc capacity with a bore of 84 mm and stroke of 68 mm, the 250 saw it sleeved down to the square dimensions of 68 mm × 68 mm, giving 2963 cc. The engine in this form was reputed to deliver 200 bhp at 6000 rpm, though this looks suspiciously simple arithmetic when you realise that the 4.5-litre 375 – half as much engine again – was rated at 300 bhp! Whatever the truth of the case, it didn't

matter much because the 250 Europa was a fairly awful car. It had perforce to use the America chassis, a huge device with a 115 in (292 cm) wheelbase and 54 in (137 cm) track, with suspension of rather doubtful merit (by Ferrari standards), consisting of front double wishbones with a single transverse leaf spring, and a live rear axle with simple leaf-spring location.

It is perhaps as well that this first 'production' 250 ran to no more than 20 examples, including the one seen on the stand at the 1953 Paris Salon where the model was announced. Probably the lesson of the 250 Sport was already being taken aboard, for by the following year the so-called Second Series 250 Europa had already appeared. This used the short engine first seen in the 250 Sport and was in effect a wholly new car, sitting on a much shorter wheelbase of 102 in (260 cm) and looking infinitely more handsome in its Pininfarina bodywork. The entirely different character of the engine can be seen in its power output of 220 bhp at 7000 rpm, achieved when breathing through three Weber 36 DCZ, twin-choke carburettors – a choke for each pair of cylinders, in effect. As in the former engine, there was a single chain-driven camshaft for each cylinder bank, operating the opposed valves

by rockers. Drive was taken through a four-speed gearbox, and the chassis too was much improved, with coil springs in place of the front transverse leaf and a rear Watt linkage to relieve the leaf springs there of the strain of locating the axle in the side-to-side sense. Since it was still only the mid-1950s, the brakes were of course drums all round, a major shortcoming in a car capable of excellent performance. In those days, even more than now, press road-tests of Ferraris were very hard to arrange, and one can best judge the potential of the 250 by dividing its 220 bhp output by its kerb weight of just over a ton (1016 kg).

The new, much improved 250 Europa officially lasted little longer than its clumsy predecessor. Perhaps 35 had been made when, in 1955, there came a shift of designation to 250GT. To some extent this reflected the needs of the moment: the Le Mans disaster of that year caused a welcome switch of emphasis away from long-distance racing with thinly-disguised GP cars and back to something like genuine road-going machinery. This pitched the Ferrari 250 against the Mercedes 300SL (and the Jaguar C-type) and it was understandable that Ferrari wished to emphasise the civilised GT nature of his car.





ABOVE LEFT & ABOVE A 1962 GTO, and TOP & LEFT, another '62 GTO, but with three side louvers instead of two; the former was a feature on later cars. Introduced by Ferrari at a press conference on 24 February 1962, only 39 were built during the next two years. The GTO was very successful in racing and is today one of the most valuable and sought-after classics in the world

Whatever the reason, the 250GT became outstandingly successful for Ferrari, in competition and in production terms. It stayed in production until 1964, when it was replaced by the 275, and even that was little more than a bigger-engined 250 with the vital modification of independent rear suspension. However, in the years on either side of 1960, the 250's handling was quite good enough with its well-located live rear axle.

What did happen through those years was that in true Ferrari fashion the basic 250GT was refined, chopped about, fitted with different bodies and generally treated in a way that could only have happened at Maranello.

The 250GT was quickly launched into racing; indeed, it had already collected its first victory by the time it made its official debut at the Brussels Motor Show early in 1956. From then on it was never really bettered in 3-litre GT racing until the 1960s appearance of the new generation of mid-engined racing cars. In particular it made a habit of winning the then-prestigious Tour de France; its nine wins in a row in this event speak volumes for the effort Ferrari was prepared to put into its development, for its rivals certainly did not stand still.

Those early race-winners retained the standard 260 cm wheelbase but were (naturally) substantially tuned and lightened. Much

of the weight-saving came from a new light-alloy body by Scaglietti; power output was eased up to 260 bhp, still at 7000 rpm. These cars, the 250 Berlinettas, were remarkable not only for what they achieved, but for the handicaps under which they did so: for they retained four-speed gearboxes and drum brakes as well as the live rear axle.

It was clear, though, that steady development of the existing car would not keep the Ferrari flag flying for ever, even in the Tour de France. Something altogether lighter and more nimble was needed; something which would, however, still be identified as a 250GT. There would be every justification.

‘What was done... was to chop a lump out of the wheelbase...’

for the main mechanical elements would be retained. What was done, quite logically, was to chop a lump out of the wheelbase – easily enough done with a simple tubular chassis frame – and commission new bodies for the result. One body (built by Scaglietti again, to a Pininfarina design) would serve for the new line of Berlinettas, while Pininfarina himself (again) would come up with an equivalent road-going car.

The actual choice of wheelbase was equally logical. If the original was 102 in, the shortened version would be 94.4 in (240 cm) which was quite sufficient to allow the design of a snug two-seat coupé – or even a generous one, given the greater front and rear overhangs permissible in a road car – while making the 250 substantially lighter

and quickening its steering response. The results of these labours emerged in 1959 and met with deserved acclaim. It was not just that the car was lighter and more nimble, or even that the Berlinetta at least looked very pretty; at last the 250GT had been given Dunlop disc brakes, and this was enough to sharpen their competitive edge – being worth a good deal more, in terms of lap times, than the further engine tuning which lifted power output to 280 bhp.

If the short-wheelbase Berlinetta was almost an instant classic – and there are Ferrari enthusiasts who today rate it the best of the entire breed – the Pininfarina road cars were less of a success. There were two, a coupé and (for the first time) a convertible Cabriolet whose body was certainly not stiff enough; despite their use of chassis frames, Ferraris also depended on the extra torsion-

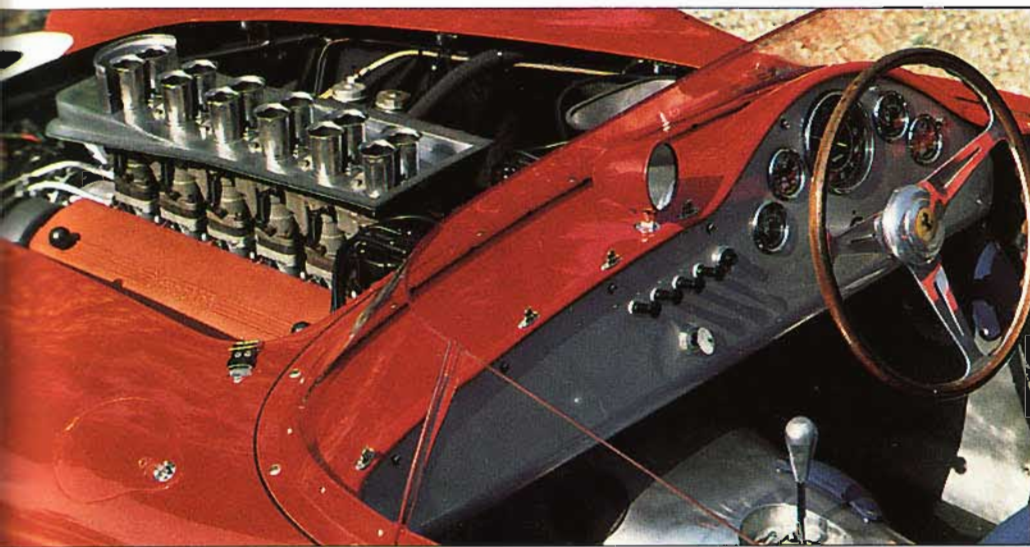
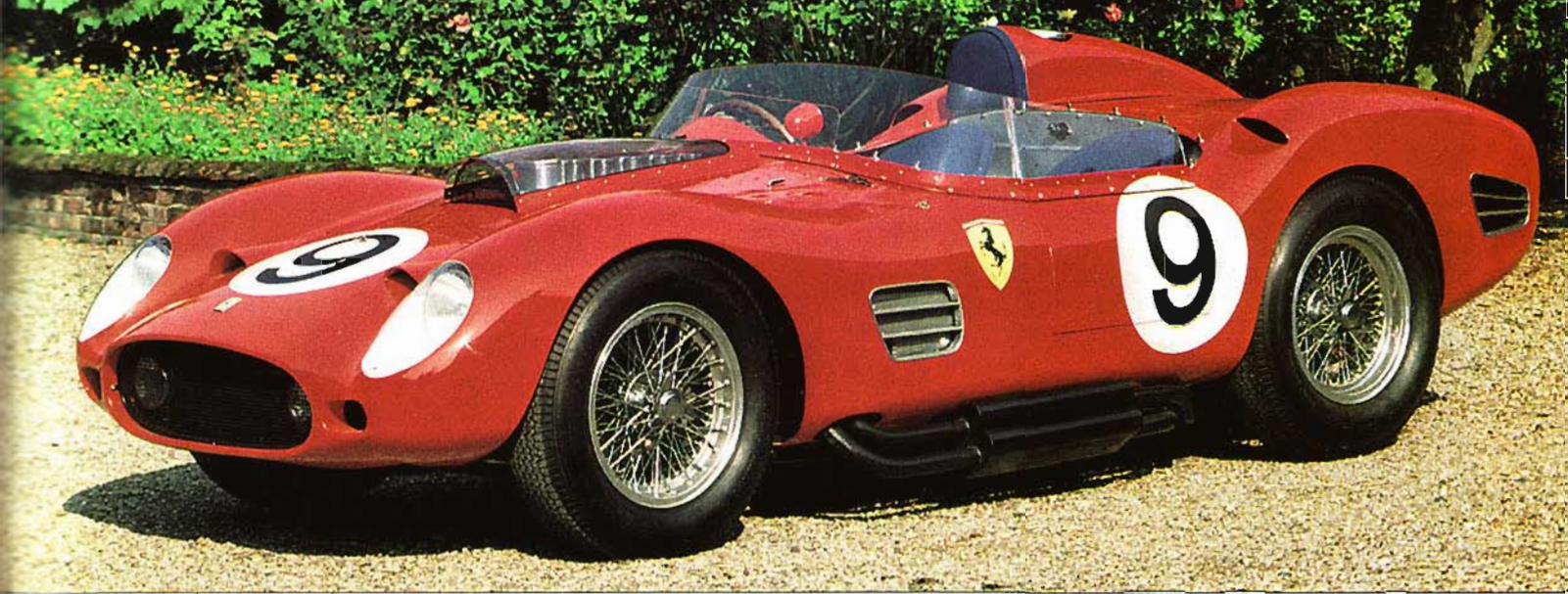
*‘...entirely capable of
being driven legally... if
not... easily... on the road’*

al stiffness contributed by the body. The earliest road-going cars were also hampered by retaining drum brakes.

However, these cars were relatively short-lived, for the development bandwagon was really rolling and Ferrari had plans to split the 250 line far more positively between racing and road-going cars (it is worth noting, in passing, that while the Berlinettas were the ‘racing’ as distinct from ‘road-going’ models, they were in keeping with the spirit of their age and were entirely capable of being driven legally, if not always easily or quietly, on the road). The results of these further deliberations emerged in 1962 with the 250GTO and the 250GT Lusso.

The GTO designation resulted from one of the more famous linguistic accidents. Ferrari needed his new lightweight coupé to be homologated for GT racing; in Italian, ‘omologato’. Thus the car was named the GT





the stability. Bizzarrini used the University of Pisa's wind tunnel, plus a good deal of cut-and-try track testing, to achieve a shape which says much for the innate Italian ability to make cars look good even when working within this kind of technical constraint. Even so, the final touch remained to be added as an afterthought: having solved the problem of front-end lift, Bizzarrini discovered at a very late stage that the back was going light instead, and the final solution was to add two rear spoilers. The first, easily visible above the Kamm-type tail panel, became a kind of GTO trademark. The second, beneath the fuel tank, was equally valuable but much less obvious. The production GTO bodies were yet again built by Scaglietti.

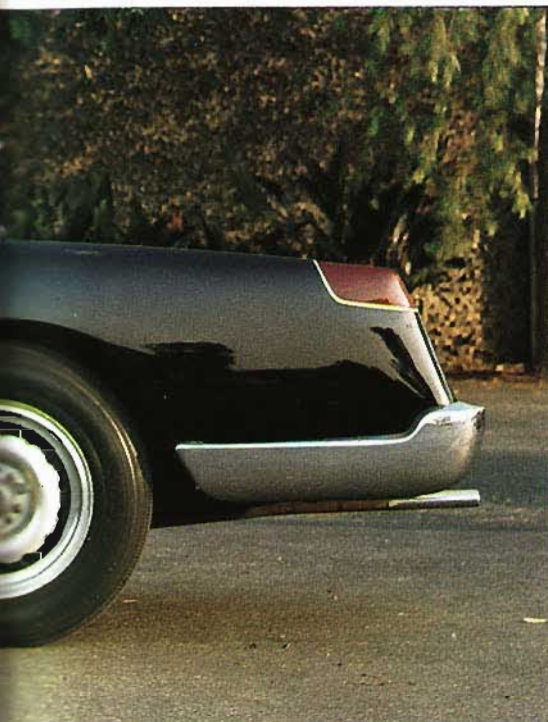
It was Scaglietti also who built the corresponding road-going car, the Berlinetta Lusso. This was an extremely beautiful machine, but with none of the hard-won aerodynamic refinement of the GTO. In some ways it resembled a stretched version of the Alfa Romeo GTV of the same period, but was none the worse for that: its real drawback lay in the shape of the elegant but high-set nose which must have been worth a substantial amount of Cd all by itself. Against that, it is probably one of the easiest of the classic V12s to see out of, with extremely slim pillars all round and none of the blinkered tightness of modern exotics.

The GTO engine was itself an interesting unit, since in effect it was the famous Testa

TOP LEFT & LEFT A 1963 Ferrari 250 LMB, in fact most LM models had 3.3-litre V12s and should have been called 275 LMs
TOP & ABOVE The 250 Testa Rossa had a 300 hp V12 and was successful in the World Sports Car Championship
BELOW A 250 GT Pininfarina Cabriolet,
BOTTOM RIGHT A 250GT Pininfarina Coupé

Omologato, or just plain GTO.

Unlike any previous Ferrari, the GTO was not styled as such. Bizzarrini, then Ferrari's chief development engineer, had realised the need for proper aerodynamic research – since even GT races were already being fought out at speeds above 150 mph (241 kph) on the longer straights. It was already accepted that the existing Berlinetta body had a nose shape that caused both drag and front-end lift at high speed, and these faults needed urgent rectification, as did the narrow rear track which did nothing to assist







EVOLUTION

First tested in 1952, the Vignale-bodied prototype 250 Sport was the earliest Ferrari fitted with a 3-litre version of Colombo's V12, also shown that year was the 250 MM, based on the Sport. In all, 17 Pininfarina coupés, 13 Vignale spyders and one coupé were built

1953 The road-going version of the Sport was introduced, the 250 Europa, fitted with a 3-litre, sleeved-down version of Lampredi's 4.5-litre V12. Approximately 20 were built

1954 The Second Series 250 GT Europa was announced, fitted with the short Colombo engine and with a shorter wheelbase; styled by Pininfarina, about 32 were made

1956 The 250 GT Boano 'low-roof' coupé was announced, of which 70–80 were made, along with the 250 GT long-wheelbase Tour de France Berlinetta Coupé, of which 74 were made over the next three years

1957 The 250 GT Pininfarina Cabriolet was launched at the Paris Salon; in all about 45 were built. The 250 GT 'high-roof' Ellena coupé was introduced (of which 50 were made), as was the sports-racing 250 Testa Rossa, designed for the 1958 World Sports Car Championship. This it won, as well as in 1960 and '61. In all, 34 were built. Also introduced was the long-wheelbase, Pininfarina-styled 250 GT California Spyder, 46 were made

1958 The 250 GT Pininfarina Coupé was launched, a highly successful model of which 350 were built

1959 The short-wheelbase GT Berlinetta was launched for racing, 162 were made

1960 The short-wheelbase 250 GT California Spyder was launched, 55 were built

1962 The 250 GT 2 + 2 was introduced, styled by Pininfarina; about 900 were made. Also offered was the 250 GT Berlinetta Lusso, styled by Pininfarina, of which 400 were made, and the 250 GTO of which 39 were built



LEFT & BELOW Views of a 250GT 2+2 (GTE), designed for the family man and styled by Pininfarina. It was first seen as a course car at Le Mans in 1960

Rossa racing engine but without the red cam-covers which gave it its name. This retained the familiar short 3-litre engine dimensions but was revised in many respects. Most important was the change in breathing arrangements, the siamesed inlet ports of the standard 250 V12 being replaced by six separate inlet ports per head (and by six Weber 38 DCN carburetors to feed them!). This was not as simple an exercise as it sounds, since the existing spark-plug positions could no longer be used and the plugs had to be switched to the other side of the heads. The whole bottom end of the engine was also stiffened through the adoption of

... the theoretical maximum speed... worked out at 180 mph...

seven main bearings for the crankshaft instead of the previous five.

In this form, the GTO engine delivered a genuine 295 bhp at 7500 rpm. At this point the power curve was still climbing, but that was the maximum officially stressed speed of the engine. It is possible that drivers brave enough to go past the red line may have seen the 310 bhp sometimes claimed for the unit...for a while! The drive was taken through another innovation, a proper five-speed gearbox (later road-going 250s had offered an overdrive, but never a genuine five-speed box) driving through a ZF limited-slip differential. As befitted the car's competition status, various final-drive ratios were available ranging from a 'sprint' 4.85:1 to a 'Le Mans' 3.55:1. With the latter ratio and standard tyres, the theoretical maximum speed at the red line in fifth gear worked out at 180 mph (290 kph), though it seems unlikely that the GTO would ever have exceeded 165 mph (266 kph) in practice. Acceleration depends even more on the final-drive ratio fitted, but the GTO's ratio of torque to weight suggests that it should have bettered 6 seconds to 60 mph (97 kph) without too much trouble.

There was just one problem with the 250 GTO. Although it was Omologated on the understanding that the requisite number would be produced, they never were. The most authoritative record suggests that 40 GTOs were built in total, and three of those certainly didn't count because they were powered by vastly stretched 4-litre engines. The FIA countenanced this failure but made sure it wasn't repeated when Ferrari presented his planned GTO replacement, the mid-engined 250LM. It was three years before the necessary papers were issued – and in just about that time, the 250 GTO itself had made the transition from front-running GT racer to sought-after classic.