

26 JULY 1973 15p

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AUTOSPORT

a 24-hrs: Quester and Hezemans win for BMW



PURE TVR-TVR

The days were when a TVR was in fact a Smith-TVR or a Jones-TVR... or an anyone-who-had-the-courage-to-put-one-together-TVR. Those were the good old pre-VAT days.

Nowadays TVRs are TVR-TVRs. Pure, unadulterated TVRs.

Made-and-assembled-with-loving-care-in-our-own-factory-TVRs.

Seriously though, now kit cars are no longer made at our factory, we have rationalised our efforts to produce a car which will be hard to beat in the two seater sports class.

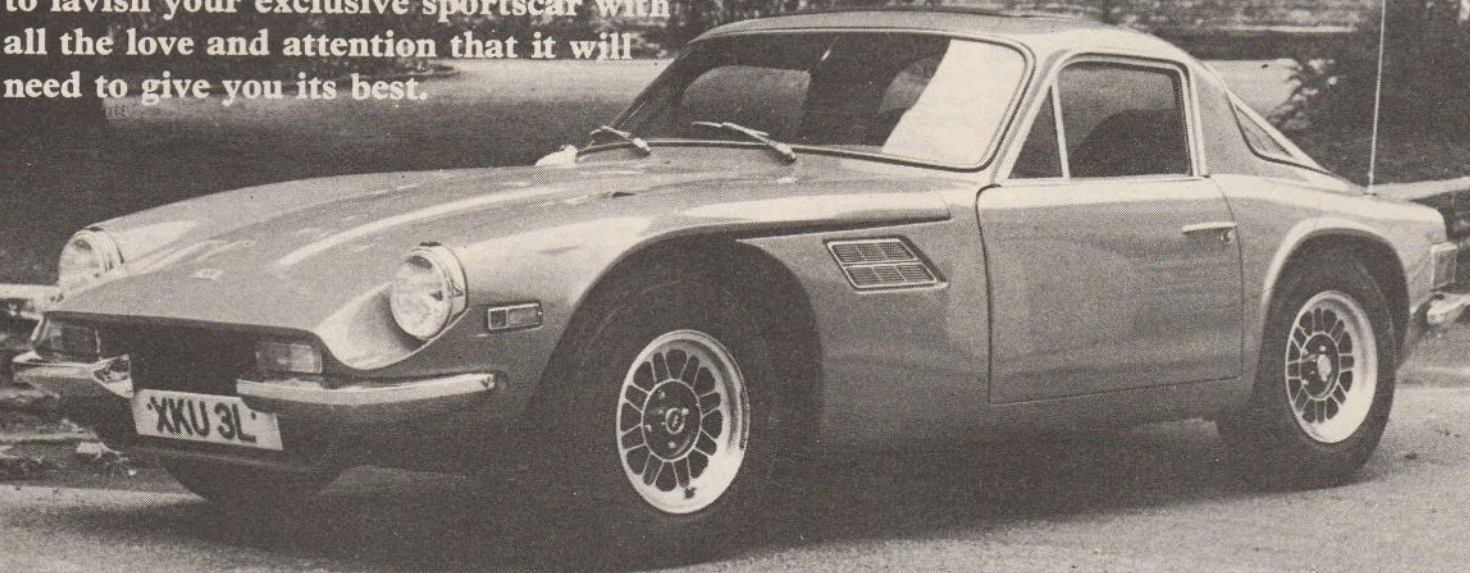
This car is the 3000M and only nine cars a week will be produced at maximum. So we'll have plenty of time to lavish your exclusive sportscar with all the love and attention that it will need to give you its best.

The TVR 3000M will give you the superb performance and handling that only you would expect from it; and for mile, after mile, after mile.

And those miles will be spent in the quiet comfort that only cubic centimetres can bring.

There are no 'extras' to budget for with the TVR 3000M. Everything is standard—from the distinctive alloy wheels to the top quality radio.

But of course if what you want is an *exclusive* exclusive TVR-TVR, we can customise your 3000M to your specifications. Although that still won't change the fact that you will be buying a real TVR—through and through.



TVR

Engineering Limited · Bristol Avenue, Blackpool, FY2 0JF, England

Since I last visited the TVR factory at Blackpool, much progress has been made. Previously, the small modern works, though efficient, did not give sufficient space for glassfibre body construction, which took place inconveniently in truly rural surroundings elsewhere. Now, a large extension has been built and no time is wasted in moving assemblies between different workshops.

TVR, headed by Martin Lilley, are out to prove that a small firm, by modern standards, can be as efficient as a big one. Actually, the Blackpool factory has an area of 40,000 sq ft, which is ample for the present programme and even for a moderate increase, though the intention is that the TVR shall always be a hand-built car. The total workforce is 73 people, including office staff, and the production is 450 cars per annum. This is an astonishing result and proves that everybody concerned is pulling his, or her, weight.

Some manufacturers of specialist sports cars are frightened to try the more difficult foreign markets. TVR aim to sell their cars to real enthusiasts all over the world and are being very successful in the USA, which has more extreme safety and pollution requirements than any other country.

In order to rationalise production, all chassis and bodies are interchangeable, whether for right-hand or left-hand drive. The Ford V6 engine of 3-litre capacity is standardised for all markets except the USA, where a special anti-pollution version of the Triumph 2.5-litre in-line six, fitted with carburettors for this application, is used. Again, these engines are interchangeable.

A new chassis frame has recently been designed by Michael Bigland and though it follows the same basic principles as the previous frame it is both more rigid and easier to construct. The chassis are assembled on jigs with CO₂ welding at the joints. The four main tubes are of round section but some square pieces are used, notably for the short uprights.

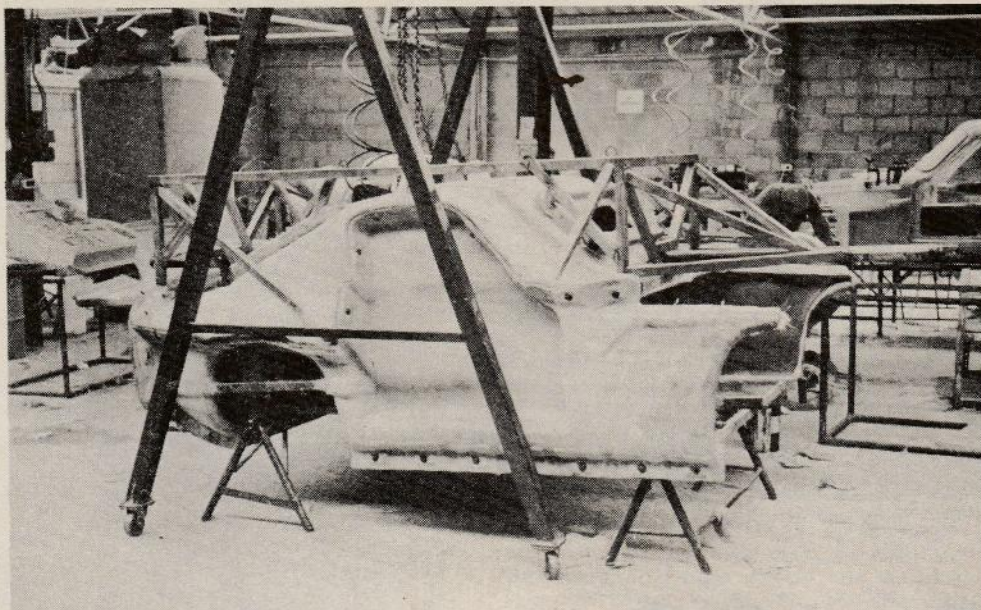
There are no moisture traps anywhere on the chassis and they are painted all over with Bostik underseal before the bodies are put on. A residue of oil is left inside the tubes and their ends are sealed, making corrosion impossible. The suspension parts are of TVR manufacture and it is the policy of the firm to make everything they can in their own factory. Those parts which are obtained outside are held in unusually large quantities, as an insurance against disruption of production flow by any supply problems.

The glassfibre bodies are constructed on moulds and then go twice through the oven, in which they reach a far higher temperature than they will ever experience in tropical sunshine. This inevitably releases some bubbles which are dug out, filled, and hand finished. There is a great deal of skilled hand work in glassfibre body construction, but the team have been at it for years and are real experts in their own domain.

It is considered that specialists should be employed in every field, and a high sense of involvement in the building of the cars is obvious when one chats to the men. As Martin

A visit to TVR

By JOHN BOLSTER



Bodies taking form in the moulding stage of manufacture.



Completed TVRs — of which 60 per cent are exported, mostly to the USA.

Lilley said, "The car is as good as the people who put it together," and with a hand-built vehicle this is certainly true.

When the bodies are released from the moulds, they are mounted on chassis, but these are not the ones they will eventually clothe, though they are identical except for the large castors on which they are moved. It is curious that the fine gloss finish given by the moulds

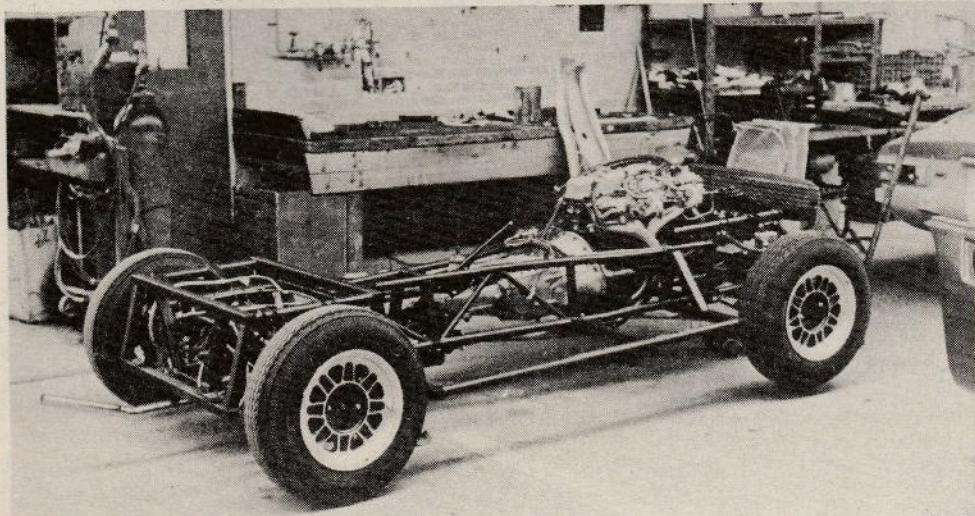
must be laboriously rubbed down, to provide a key for the paint. The bodies are still on the slave chassis when they are painted, a process which is carried out under strictly controlled conditions and with the complete exclusion of dust. The bodies are finally finished before they meet up with their own chassis, which are by then running on their own wheels and capable of being driven.

The light-alloy wheels have hitherto been bought outside, but now TVR are to manufacture their own. The machine shop is also to be re-equipped, again with the object of making more and more of the car in the factory. Incidentally, these really are all-British vehicles as no foreign parts are used.

Over 60 per cent of the production is going abroad and though the USA is still the best market, Britain's entry into the EEC has caused a useful expansion in European sales. There are now active concessionaires in Holland, Germany, and Spain, while the appointment of a French agent is being negotiated.

In England, there is now no purchase tax loophole as there used to be, and the products of the smaller manufacturers are liable for car tax and VAT. As the specialist car is no longer cheap, it must be at least as well made and finished as those produced by the industrial giants. Given that quality, there will always be a demand for something really different—a car none of the neighbours has got. Automation may be wonderful but there is a lot to be said for British craftsmanship.

The new chassis, designed by Michael Bigland, is more rigid and of simpler construction.





Roadholding and handling of a very high order are the outstanding features of the TVR.

Tough TVR; excellent road holding, but noisy

There has been a remarkable continuity in the story of the TVR. In its fairly long history, the firm has changed ownership more than once but the product has always been a sports two-seater coupé of compact overall dimensions. Furthermore, the construction is still based on a multi-tubular backbone, enveloped in a glassfibre body.

Of recent years, the TVR has been aimed at a wealthier clientele. Gone are the days of the kit-car, the smaller-engined four-cylinder models also having been abandoned. A single chassis has been standardised, with a new and stronger tubular frame, which carries a Triumph straight-six engine for the American market and a Ford V6 in England. The Ford unit does not satisfy USA pollution requirements but is approved for the European markets.

The 3-litre Ford engine has its own gearbox, with improved staging of the ratios. The short propeller shaft is coupled to a Triumph hypoid unit, which is lower geared (higher numerical ratio) than the Capri rear axle, but the bigger tyres of the TVR make the effective gearing virtually identical. The driveshafts to the rear hubs have plain splines, as there is very little telescopic movement.

Wishbone rear suspension is used, the tubular links incorporating a screw adjustment for tracking and shims for camber setting. The LM25 light-alloy uprights carry the outboard rear brakes, the suspension medium being coil springs with telescopic dampers. A rigid tubular box contains the hypoid unit and carries the inboard pivots of the wishbones. For the ultimate in roadholding, a wishbone rear end is ideal, but the assembly necessarily detracts from possible luggage space. This disadvantage is reduced by placing the large spare wheel in front of the engine, above the radiator. A crankshaft-driven fan is aided by an auxiliary electric component ahead of the matrix.

In front, the suspension is again by tubular wishbones and coil springs, with rack and

pinion steering. The servo-assisted brakes, with discs in front and drums behind, are by Girling. The body is of glassfibre construction of the highest quality, doubly heat-cured and using Class 1 fire-resistant resin. The chassis being abnormally rigid, the body is pulled down on to it without being asked to contribute to the stiffness of the structure.

The body is a two-seater with luggage space and at present it is not too easy to load heavy suitcases past the two bucket seats with headrests. It is intended that production cars shall have an opening rear window for this purpose, rather like the Jensen; the present folding roof is also to be replaced by a detachable flush panel. The equipment is particularly lavish, such things

as the radio and the heated rear window being standard.

Compared with the Capri, which has the same engine, the TVR, being only a two-seater, is naturally lighter. It also has a 3 in lower roofline, so the frontal area is less, but its greatest advantage is the shape of the nose, which gives a far easier penetration than the high, square front-end of the Ford. These things add up to a 5 mph gain in maximum speed and better acceleration all the way up the scale.

Though the doors are not particularly wide and the seats are low, it is reasonably easy to get into the car and the driving position is excellent, with a good all-round view. The pedals are properly arranged for heel and toe and all the controls are well placed. The acceleration is very vivid when the gears are used, but the TVR also picks up rapidly in top gear from quite low speeds. The lively top gear performance and flexibility add greatly to the pleasure of driving.

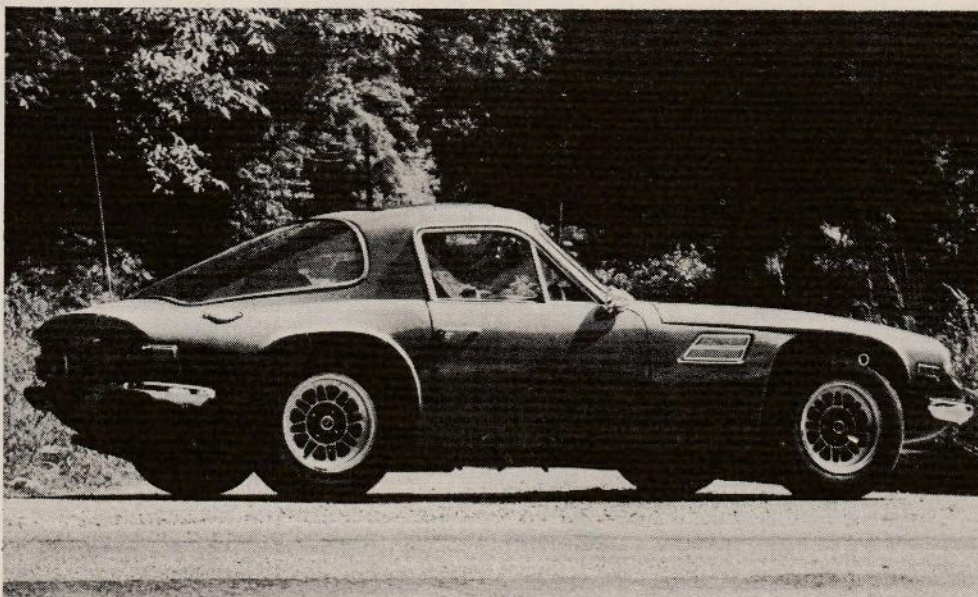
There is plenty of thick padding to reduce under-bonnet sounds and the car is outstandingly quiet mechanically. There is a deep and subdued rumble from the exhaust, but this is not noticeable inside the car; the level of road and tyre noise is also remarkably low.

It is therefore a pity that the level of wind noise at high speeds is objectionably elevated. At an easy cruising speed of 110 mph, the wind drowns all other sounds. Much of this will disappear when the flush roof panel is fitted but the window channels also require modification. My other complaint concerns the ventilation, for the well-placed eyeball vents give a very inadequate delivery of breathing air.

Roadholding and handling of a very high order are the outstanding features of the TVR. The cornering power is so high that one goes faster and faster through the bends as courage is gained. The ride is by no means soft but the general comfort is very satisfactory. Perhaps some owners might prefer more yielding seats, though they give good lateral location.

In spite of the short wheelbase, the stability at maximum speed is truly excellent. Neither bumps nor gusts of wind deflect the car, which makes a long journey pleasant and untiring. On sharp corners it is, of course, possible to bring the tail out under power, but in all other circumstances, the rear wheels seem glued to the road.

The body is a two-seater with luggage space but production cars should have an opening rear window for this purpose.



Road test

With a high maximum speed, outstanding acceleration, and roadholding which encourages one to exercise the full performance, the brakes are inevitably called upon to do a great deal of work. They never showed any sign of wilting, however hard I drove, and the characteristics of the suspension enabled their full power to be used without any drama.

The TVR 3000M is the best car which its makers have ever produced. It is a direct competitor with the Datsun 240Z, which is the world's best-selling sports car; indeed, it probably has a slight edge on the Japanese car as regards performance figures. It is one of the few European sports cars to comply with all the USA regulations and is the only car so far to remain steerable after the 30 mph crash test at MIRA. It is an immensely strong vehicle and it is totally immune from corrosion, thanks to its method of construction.

These are practical virtues, and so is the surprisingly moderate fuel consumption, but above all this is a real sports car that is a delight to drive—a driver's car if ever there was one.

SPECIFICATION AND PERFORMANCE DATA

Car tested: TVR 3000M sports two-seater coupé, price £2464 including car tax and VAT.

Engine: V6, 93.97 mm x 72.41 mm (2994 cc). Compression ratio 8.9 to 1. 142 bhp (net) at 5000 rpm. Pushrod-operated overhead valves. Weber twin-choke downdraught carburetter.

Transmission: Single dry plate clutch. 4-speed all-synchromesh gearbox with central change, ratios 1.0, 1.41, 1.95 and 3.16 to 1. Hypoid final drive, ratio 3.45 to 1.

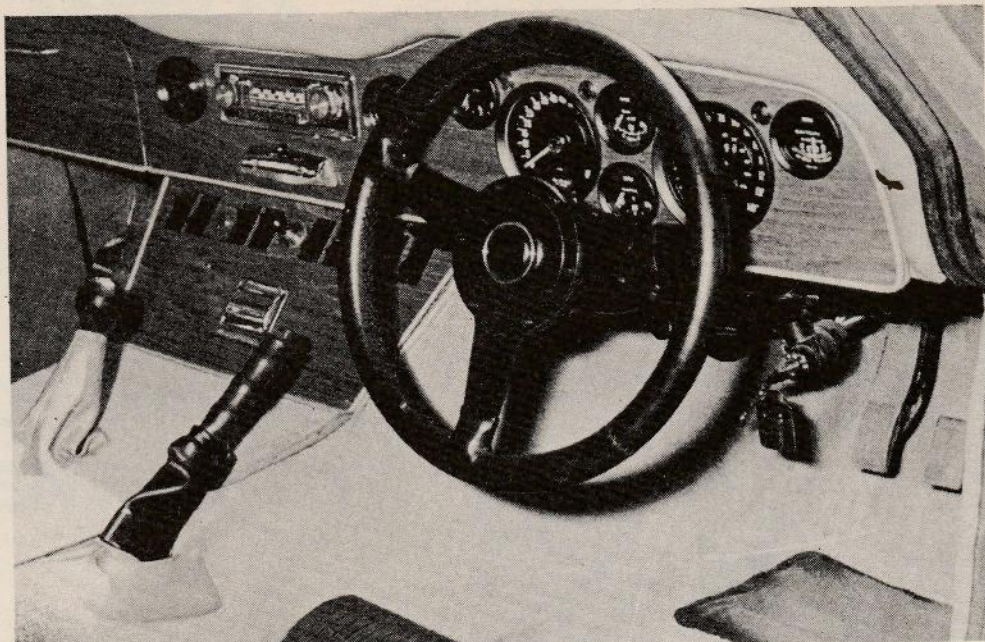
Chassis: Multi-tubular steel backbone chassis. Independent suspension front and rear by double wishbones, coil springs, and Armstrong telescopic dampers. Rack and pinion steering. Girling servo-assisted disc front and drum rear brakes. Aluminium alloy wheels fitted 185-14 HR radial ply tyres.

Equipment: 12-volt lighting and starting. Speedometer. Rev-counter. Oil-pressure, water-temperature, and fuel gauges. Voltmeter. Two-speed windscreen wipers and washers. Heating, demisting, and ventilation system, with heated rear window. Reversing lights. Flashing direction indicators with hazard warning. Cigar lighter. Radio. Sunshine roof.

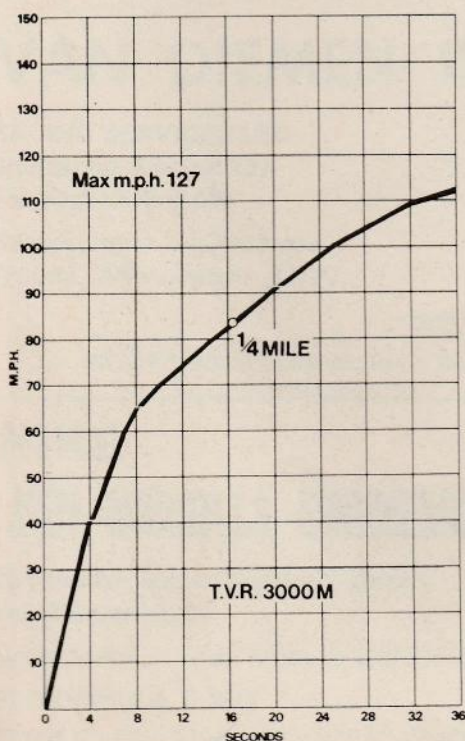
Dimensions: Wheelbase 7 ft 6 in. Track 4 ft 5 3/4 in. Overall length 12 ft 10 in. Width 5 ft 4 in. Weight 1 ton approximately.

Performance: Maximum speed 127 mph. Speeds in gears: Third 91 mph. Second 66 mph. First 41 mph. Standing quarter-mile, 16.2 s. Acceleration: 0-30 mph, 2.9 s. 0-50 mph, 5.6 s. 0-60 mph, 7.2 s. 0-80 mph, 14.2 s. 0-100 mph, 25.0 s.

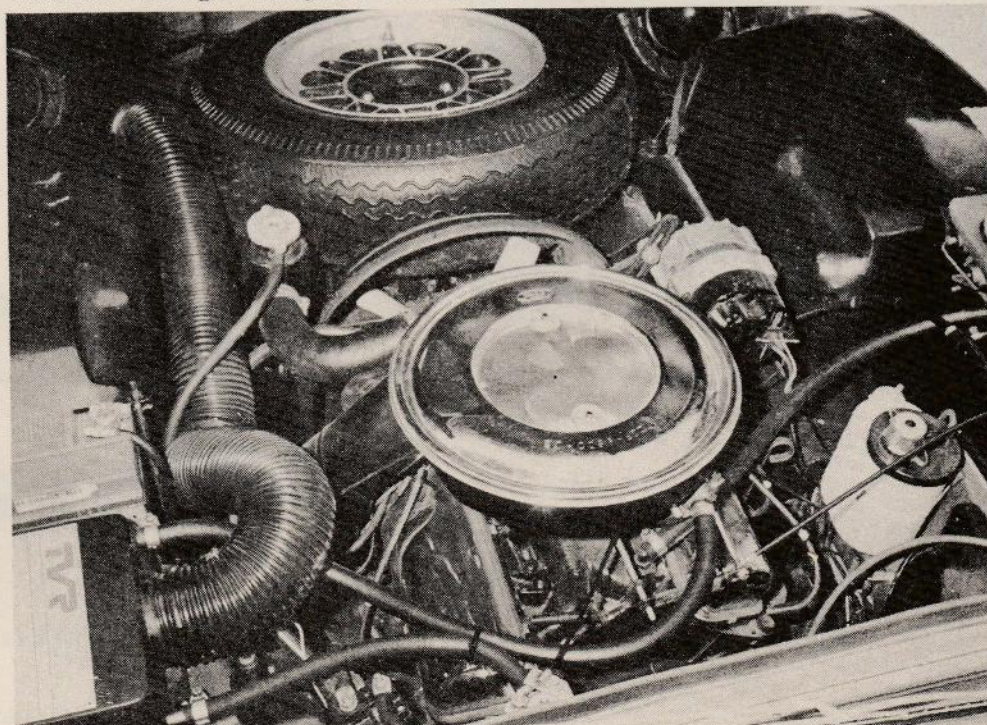
Fuel consumption: 20-25 mpg



The driving position (above) is excellent with all the controls well placed, although the vents give a very inadequate delivery of air. In spite of the short wheelbase, stability at maximum speeds is truly excellent, neither bumps nor wind gusts deflecting the car.



The 3-litre Ford engine is coupled to a Triumph hypoid unit.



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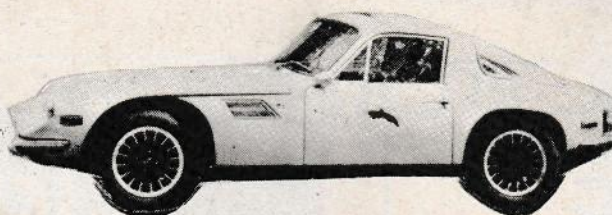


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