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Guide to Continental racing circuit

Autocar

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Autotest

TVR Vixen S2 (1,599 c.c.) 2245

At-A-Glance: Distinctively bodied small GT with all-independent steel tube chassis. Excellent performance from Cortina GT engine. Good handling except for too much kick-back in steering. First-class brakes and reasonable economy. Good fun and still an eye-catcher.

MANUFACTURER

TVR Engineering Ltd., Fielding's Industrial Estate, Bispham Road, Blackpool, Lancashire.

PRICES

Basic	£1,150	0s	0d
Purchase Tax	£337	6s	8d
Seat belts	£6	0s	0d
Total (in GB)	£1,493	6s	8d
EXTRAS (inc. P.T.)			
*Aluminium alloy 5½J wheels	£48	10s	0d
*Leather-rimmed steering wheel	£8	0s	0d
*Non-standard colour	£15	0s	0d
*Radio (fitted)	£45	0s	0d
*Aerial and suppression kit	£12	0s	0d
Laminated windscreen	£9	5s	0d
*Laminated tinted windscreen	£15	0s	0d
*Tinted side windows	£12	0s	0d
*Tinted back screen	£39	15s	0d
*Fitted to test car			
PRICE AS TESTED	£1,695	11s	8d

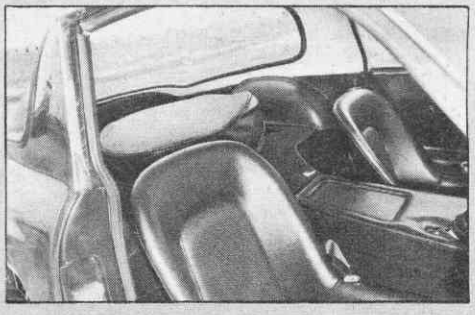
PERFORMANCE SUMMARY

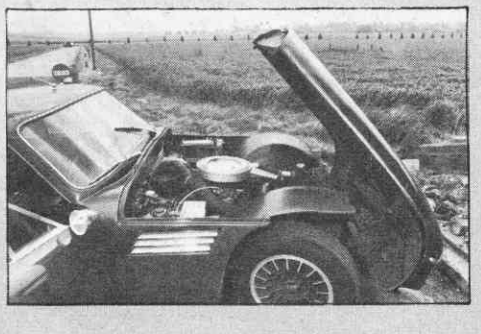
Mean maximum speed	109 mph
Standing start ¼-mile	17.2 sec
0-60 mph	10.5 sec
30-70 mph through gears	11.0 sec
Typical fuel consumption	28 mpg
Miles per tankful	420

Above: Abundant use of padding and carpet make the interior luxurious for this kind of special. Right: The spare wheel lies on a shelf and the only luggage space is on top of it. Far right: Accessibility is fair, although the tip-up front does not really hinge far enough forward

TVR's Vixen S2 is latest of a ten-year-old line of small-production glass-fibre-bodied specialist "grand touring" cars made in Blackpool. The car has a large-tubed frame which is basically of the backbone type, independent double-wishbone suspension front and rear, rack and pinion steering, disc/drum brakes and is nowadays powered by the Ford Cortina GT 1600 engine. The S2, introduced at last year's Earls Court Motor Show, has 6in. more wheelbase, a quieter final drive (TVR's aluminium-cased MG differential has been replaced by a complete Triumph Vitesse unit), modified front suspension and a lighter 3-section bolted-on body instead of the original 6-section bonded-on one. The interior has been improved and made "safer" with rocker switches and more padding.

Ford's 1,599 c.c. oversquare GT Cortina engine is an ideal power unit for a sports car. It delights in being revved hard, nowadays giving plenty of torque for most of its range and a reliable and healthy 88 net bhp at 5,400 rpm. From the specialist manufacturer's point of view it also has the great advantage over other mass-production competitors of being unusually small and reasonably light. Putting it in the "power-bulge"-blistered frog-like nose of the light Vixen results in a car with a very satisfying performance. The high-ish bottom gear prevents wheelspin starts on dry concrete—you must slip the heavy clutch carefully for best results—but once away the acceleration is excellent. 50 mph comes up in 7.4sec, 60 in 10.5, 80 in 18.8 and 100 in 41.8. At the quarter-mile post, reached in the fast time of 17.2sec, it is doing 77 mph and at the kilometre (32.4sec) the mean speed is 94mph. These figures were achieved with gearchanges made at 6,000 rpm, at which speed the Ford rev-counter was showing 6,200; the red mark on the tacho is at 6,000. The mean maximum speed of 109 mph is creditable for such a car, though in the main it is the zippy acceleration which makes the TVR a rapid cross-country road machine.





It preferred 100-octane to the specified 98-octane fuel—pinking occurred at low revs otherwise—and in spite of some very fast driving proved reasonably economical during the 1,100-mile test period. Overall consumption worked out at 26.5 mpg and on some fast touring runs out of town we achieved around 28 mpg, which is probably typical of what the majority of sports-car drivers should expect.

In the main, cornering, handling and ride of the Vixen S2 are very good, with some reservations. Getting those over first, there is still too much kick-back in the steering, a thing very obvious in the last Vixen we tried; the neat little 13in. leather-rimmed wheel bucks considerably over any irregularity in the road, probably because of the considerable off-set of those hefty 15x5in. wide rimmed cast wheels (an option). Together with the quite firm ride, this can make holding a really straight course over a bumpy road a little difficult. With two adults on board the exhaust pipe touches the road over bumps, another previous TVR failing. On the credit side the steering needs average effort (except on full lock when it becomes noticeably heavier), is pleasingly direct with plenty of feel and coupled with the grip of the big Avon Radial 165-15in. tyres gives one great confidence in the car.

Those Avons are remarkably effective. Their roadholding is very good indeed—you've got to be very brutal to break grip—and they stick so

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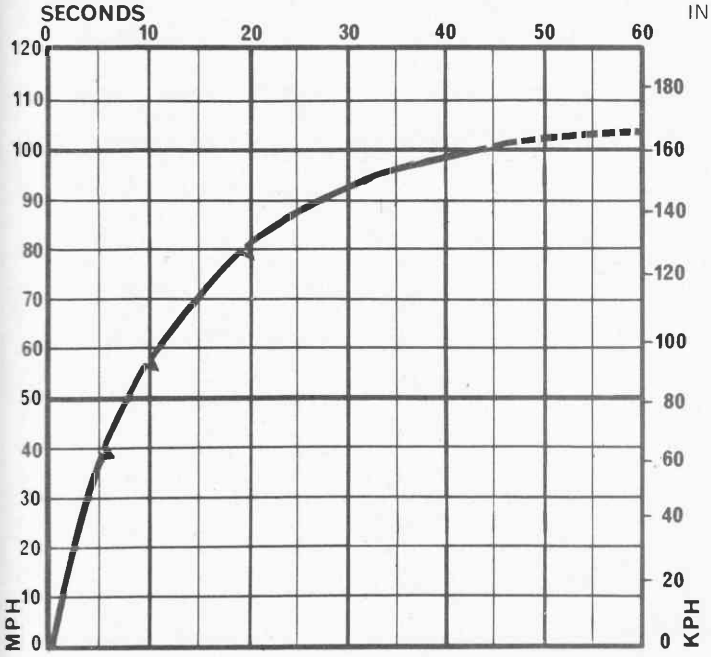
TVR VIXEN S2 (1,599 c.c.)

ACCELERATION



SPEED MPH TRUE / INDICATED	TIME IN SECONDS
30 / 30	3.6
40 / 40	5.1
50 / 50	7.4
60 / 60	10.5
70 / 72	14.0
80 / 83	18.8
90 / 94	26.4
100 / 105	41.7
110 / 116	—

SPEED RANGE, GEAR RATIOS AND TIME IN SECONDS

mph	Top (3.89)	2nd (8.02)	3rd (5.57)	1st (11.34)
10-30	—	3.7	—	2.7
20-40	9.3	3.2	5.1	—
30-50	9.1	3.9	5.5	—
40-60	9.2	—	5.9	—
50-70	9.5	—	6.8	—
60-80	10.2	—	8.4	—
70-90	12.4	—	—	—
80-100	22.5	—	—	—

Standing ¼-mile
17.2 sec 77 mph
Standing kilometre
32.4 sec 94 mph

MAXIMUM SPEEDS

Gear	mph	kph	rpm
Top (mean)	109	175	5,800
(best)	111	179	5,900
3rd	80	129	6,000
2nd	56	90	6,000
1st	38	61	6,000

COMPARISONS

Maximum Speed mph

TVR Vixen S2	(£1,487)	109
Fiat 124 Sports Coupe	(£1,438)	102
Lotus Elan Fixed Head Coupe	(£1,767)	114
Marcos 1600 GT	(£1,959)	109
MG MGB GT	(£1,217)	101

0-60 mph, sec

TVR Vixen S2	10.5
Fiat 124 Sport Coupe	12.6
Lotus Elan Fixed Head Coupe	8.7
Marcos 1600GT	11.4
MG MGB GT	13.6

Standing ¼-mile, sec

TVR Vixen S2	17.2
Fiat 124 Sport Coupe	18.8
Lotus Elan Fixed Head Coupe	16.4
Marcos 1600GT	17.6
MG MGB GT	19.1

Overall MPG

TVR Vixen S2	26.5
Fiat 124 Sport Coupe	22.2
Lotus Elan Fixed Head Coupe	27.9
Marcos 1600GT	21.5
MG MGB GT	22.8

BRAKES

FADE

(from 70 mph in neutral to rest)
Pedal load for 0.5g stops in lb.

1	50-40	6	40
2	50-40	7	40
3	50-45	8	40
4	40	9	40
5	40	10	40

RESPONSE

(from 30 mph in neutral)

Load	g	Distance
20lb	0.25	120ft
40lb	0.55	55ft
60lb	0.86	35ft
80lb	1.05	28.6ft
Handbrake	0.46	65ft
Max. Gradient	1-in-3	

CLUTCH

Pedal 57lb and 5in.

GEARING

Top . . . . . 18.8 mph per 1,000 rpm
3rd . . . . 13.45 mph per 1,000 rpm
2nd . . . . 9.45 mph per 1,000 rpm
1st . . . . . 6.33 mph per 1,000 rpm

MOTORWAY CRUISING

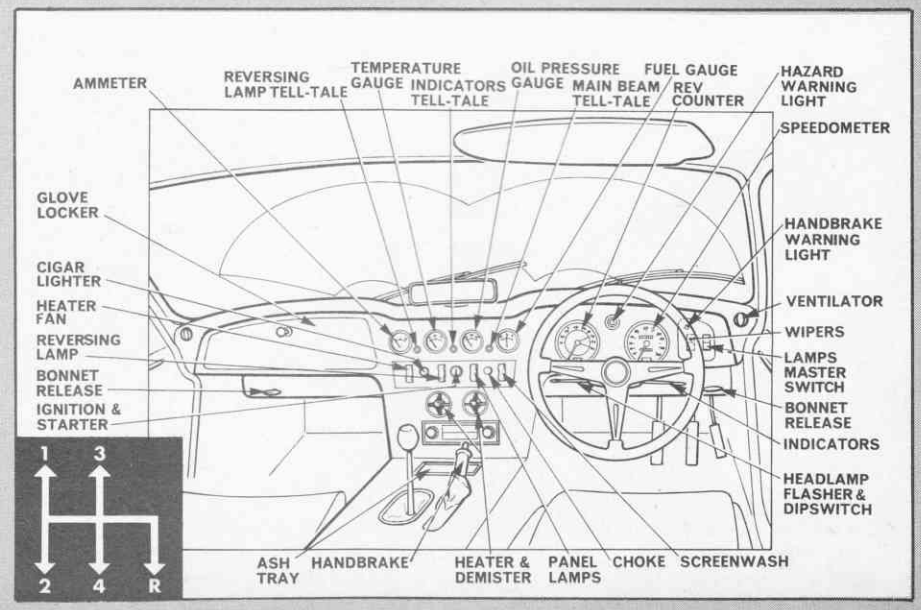
Indicated speed at 70 mph	72 mph
Engine (rpm at 70 mph)	3,830 rpm
(mean piston speed)	1,950 ft/min
Fuel (mpg at 70 mph)	30.5 mpg
Passing (50-70 mph)	6.6 sec

TEST CONDITIONS: Weather: Fine and sunny. Wind: 5-15 mph. Temperature: 9 deg. C (49 deg. F). Barometer 29.5 in. Hg. Humidity: 50 per cent. Surfaces: Dry concrete and asphalt.

WEIGHT: Kerb weight 14.5 cwt (1,624 lb—738 kg) (with oil, water and half full fuel tank). Distribution, per cent F, 48.3; R, 51.7. Laden as tested: 18.9 cwt (2,117 lb—960 kg).

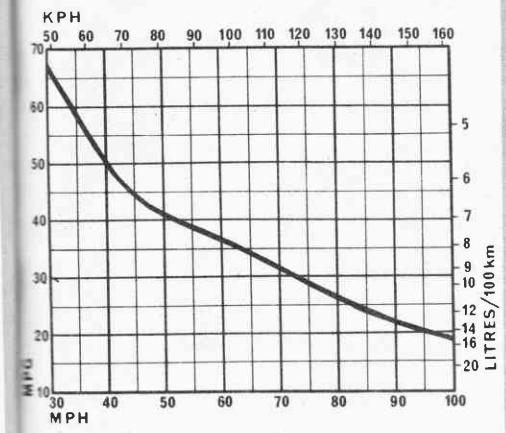
TURNING CIRCLES: Between kerbs L, 30ft 8in.; R, 29ft 0in. Between walls L, 32ft 2in.; R, 30ft 8in. steering wheel turns, lock to lock 3.75.

Figures taken at 6,800 miles by our own staff at the Motor Industry Research Association proving ground at Nuneaton Test mileage 1,119.



TVR VIXEN S2 (1,599 c.c.)

CONSUMPTION



FUEL

(At constant speeds—mpg)

30 mph	66.7
40 mph	48.8
50 mph	40.4
60 mph	35.7
70 mph	30.5
80 mph	25.5
90 mph	22.2
100 mph	19.3

Typical mpg 28 (10.1 litres/100km)
Calculated (DIN) mpg 27.7 (10.2 litres/100km)
Overall mpg 26.5 (10.7 litres/100km)
Grade of fuel Super Premium, 5-star (min 100RM)

OIL

Miles per pint (SAE 20W/40) 1,500

SPECIFICATION

FRONT ENGINE, REAR-WHEEL DRIVE

ENGINE

Cylinders . . . 4, in line
Main bearings . 5
Cooling system . Water: pump, fan and thermostat
Bore 81.0mm (3.19in.)
Stroke 77.6mm (3.06in.)
Displacement . . 1,599 c.c. (97.6 cu. in.)
Valve gear . . . Overhead; pushrods and rockers
Compression ratio 9.0-to-1 Min. octane rating: 98
Carburettor. . . One Weber 32 DFM downdraught progressive twin choke
Fuel pump . . . AC mechanical
Oil filter . . . . Full flow, renewable element
Max. power . . 88 bhp (net) at 5,400 rpm
Max. torque . . 96 lb.ft (net) at 3,600 rpm

TRANSMISSION

Clutch . . . . Borg and Beck, diaphragm spring, 7.54 in. dia.
Gearbox . . . . Ford four-speed, all-synchromesh
Gear ratios . . . Top 1.0
Third 1.40
Second 2.01
First 2.97
Reverse 3.32
Final drive . . . Hypoid bevel, 3.89-to-1

CHASSIS and BODY

Construction . . Steel, tubular chassis; bolted-on glass-fibre body

SUSPENSION

Front . . . . . Independent, coil springs, wishbones, anti-roll bar, telescopic dampers
Rear . . . . . Independent, double coil springs, wishbones, telescopic dampers

STEERING

Type . . . . . Rack and pinion
Wheel dia. . . . 13.25 in.

BRAKES

Make and type . Girling discs front, drums rear
Servo . . . . . Girling vacuum standard (not fitted to test car)
Dimensions . . F 9.1 in. dia., R 9.0 in. dia. 1.75 in. wide shoes
Swept area. . . F 203 sq.in., R 98.7 sq.in. Total 301.7 sq.in. (319 sq.in./ton laden)

WHEELS

Type . . . . . Cast aluminium-alloy (at extra cost) 5.5in. wide rim
Tyres—make . . Avon
—type . . SR/radial ply tubed
—size . . 165-15in.

EQUIPMENT

Battery . . . . 12 Volt, 58 Ah
Generator . . . Lucas CAO 22-amp d.c.
Headlamps. . . Lucas sealed beam 90/80 watt (total)
Reversing lamp . Standard
Electric fuses . . 4
Screen wipers . Two-speed, self-parking
Screen washer . Standard, manual plunger
Interior heater . Standard, water-valve
Heated backlight Not available
Safety belts . . Extra, anchorages built-in
Interior trim . . Ambla seats, pvc headlining
Floor covering . Carpet
Jack . . . . . Screw scissors
Jacking points . Anywhere on chassis tubes
Windscreen . . Toughened
Underbody protection . . Paint on chassis; non-corroding glass-fibre body

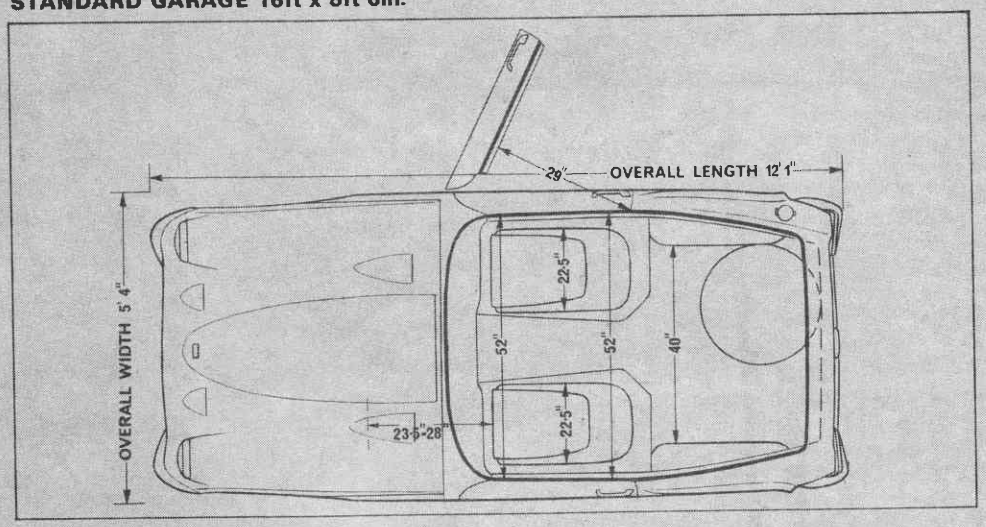
MAINTENANCE

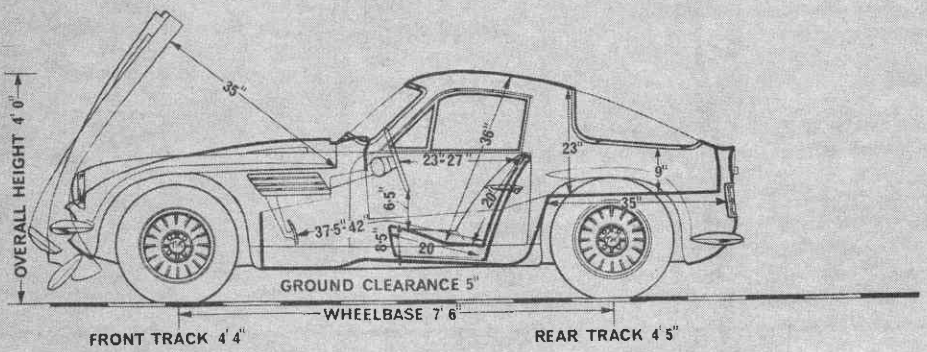
Fuel tank . . . 15 Imp. gallons (no reserve) (68 litres)
Cooling system . 14.3 pints (including heater)
Engine sump . . 5.7 pints (3.3 litres) SAE 20W/40. Change oil every 6,000 miles. Change filter element every 6,000 miles
Gearbox . . . . 1.75 pints SAE80. No oil change needed
Final drive . . . 1 pint SAE90. No oil change needed
Grease . . . . 12 points every 6,000 miles
Tyre pressures . F 22; R 24 psi (normal driving) F 22; R 24 psi (fast driving). F23; R25 psi (full load)
Max. payload. . 353lb (160 kg)

PERFORMANCE DATA

Top gear mph per 1,000 rpm. 18.8
Mean piston speed at max. power . . . 2,753 ft/min
Bhp per ton laden 93.2

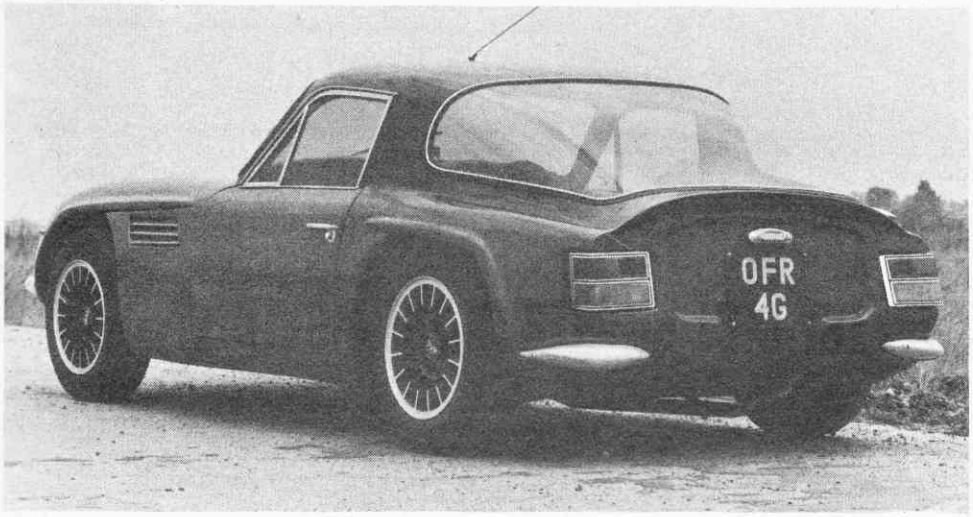
STANDARD GARAGE 16ft x 8ft 6in.





SCALE 0.3in. to 1ft
Cushions uncompressed

AUTOTEST TVR VIXEN S2 . . .



The fashionable snub tail gives this ten-year old a stylishly new lease of life. The special wheels are the best part of £50 extra

well under braking that we recorded well over 1g for only 80lb pedal effort with the front tyres just beginning to lock and not too much nose-dip. The test car was not fitted with the brake servo, now standard; braking will require even less effort with servo assistance. The hand-brake surprised us by giving nearly $\frac{1}{2}$g retardation—an unusually high figure for a conventional car and due mainly to the slightly rearward weight distribution. Repeated stops from 70 mph produced no fade at all.

Driven round a closed circuit really hard, the Vixen counters its initial understeer with marked tail-out attitudes easily held with the quick steering. There is very little roll. You must of course be careful in the wet—14$\frac{1}{2}$ cwt and 88 bhp demand some respect, but not fright; given the right place where no-one's looking, the Vixen is great fun.

Another strong point in its favour is its size. It is only 12ft 1in long, 1$\frac{3}{4}$in. shorter than a BMC 1100 and has a very good lock—just under 30ft mean between kerbs. Parking is therefore easy even if one must be chary of brushing light-alloy wheels against unforgiving kerbs. With the noted exception that one must still be very careful about what is hidden by those too-wide blind rear quarters, its manoeuvrability and immediate "go" make the TVR an effective little tool in traffic.

Driven gently the car is pretty quiet. There isn't much engine noise, little exhaust noise—certainly very little by sports-car standards—and no gearbox whine. Go faster and wind roar spoils it, plus a gradual build-up of commotion from the engine. Sustaining conversation at the car's otherwise happy cruising speed of 80 and 90 may make one hoarse. Bump-thump is average. There are various body or chassis squeaks and on the test car we heard a momentary clicking noise on take-up of drive or over-run, possibly from a faulty universal joint.

The driving position is reasonably good. One sits very low in the car, too much so for short- or even medium-sized drivers, the scuttle being high. Getting in isn't too easy because of the low roof, and short doors which lack hold-open straps. Once in one is very snug, and immediately impressed by the quite good standard of finish of the black padded facia. Where trim is concerned this TVR is generally better than the average run of specialist small production sports-cars. Details let down the air of opulence. There is a clumsy all-winker-warning switch between the tacho and speedometer and the otherwise excellently full set of subsidiary AC instruments look a little cheap. On the other hand all switches are a neat rocker type set in clearly labelled panels. It is a pity that the two-speed wiper and washer switches are separated each side of the steering wheel.

The gearlever works very well, one's left arm lying along the padded top of the central backbone of the car. The handbrake gaiter keeps moving too far up the handle and, when on, the lever fouls the gear-knob when selecting reverse. Pedals are reasonably well arranged for heel-and-toe changes but it is too easy to catch the welt of a shoe under the brake pedal. Every one of them having smooth faced pads, it is all too easy for a wet shoe to slip off on a rainy day.

Seating is very comfortable, and one is held well during fast cornering. A shortcoming of nearly every car such as this is heating and ventilation. The heater heats, but not really controllably. There is no provision for through-flow ventilation and so that big rear window is difficult to demist, even with windows down. You must thread all your luggage and the spare wheel through a door and over the seats as there is no rear opening to the "boot".

The basic TVR shape has remained largely unchanged for years; it has a cocky, aggressive look which is more than just skin-deep and still catches a lot of admiring glances from other road-users. The Vixen S2 is priced on the high side, though not nearly so much so as other similar cars. It needs further refinement to bring it up to current standards, but is undeniably enjoyable to drive. □