

1 The history of the S series

The introduction of the S series was a pivotal moment in the history of TVR. These cars were responsible for introducing the marque to the many owners who either did not appreciate the angular style of the Wedges (such as the 350i or 400SE) or could not afford the entry level cost of these cars. The introduction of the S series quickly filled the factory and resulted in many new first time TVR owners.

The whole S series owes its inspiration, if not its design, to the first modern convertible that TVR produced — the 3000S based on the 3000M coupé (the Jomars made in the 1950s were convertibles but they were essentially race cars made for the US). So, when starting the history of the S series, we must begin with this car.

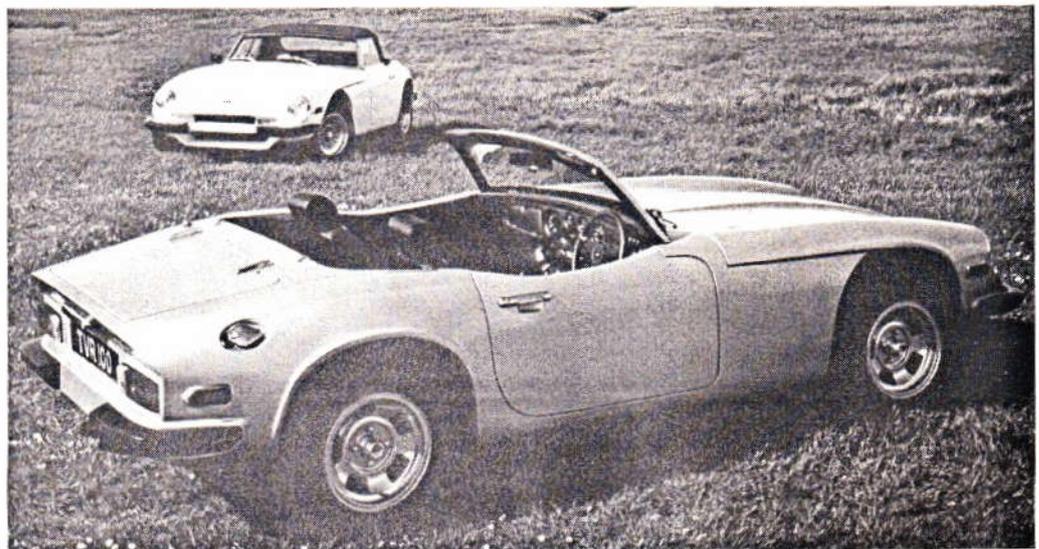
The 3000S

It is really surprising that it took TVR so long to bring out a convertible, especially when sales figures from other marques, such as MG, showed a significant market for 'wind in your hair' motoring. Some specials had been made, where a normal M series coupé was attacked with a hacksaw and had its roof removed. Indeed, Martin Lilley had a convertible M series made with two small aero windcreens in the early/mid 1970s.

The 3000S was based on the 3000M with its 3.0 litre V6 Ford Essex engine. The rear roof was removed and a boot replaced the large parcel shelf and wraparound window. The side windows were detachable and featured sliding window panes, similar to those used in the early Minis. From a distance, it was difficult to differentiate between the two but, from a side view, the changes are clear. The 3000S was always a balanced car, looking as if it had been designed as a convertible from day one. It did not look like many convertibles or cabriolets, where the 'rag top' appears to be out of place or just an afterthought.

The performance was quick, with its 142 bhp engine reaching a claimed top speed of 125+ mph and a 0 to 60 mph time of under 7.5 seconds. A turbo version was available which reduced the 0 to 60 time to six seconds and increased the top speed to over 145 mph. It was not until the V8S appeared that this level of performance was exceeded by an S series car.

The boot was electrically operated and had external hinges. The turbo versions were fitted with Wolfrace wheels. The interior was similar to that of the 3000M and the whole car was well received — but its sales were curtailed by the introduction and switchover to the Tasmin in 1980/81, when the production of M series cars stopped. However, it would



The TVR 3000S - from the July 1978 sales brochure. (TVR)

not be long before its concept and looks would be reincarnated.

The S1

The 280S was announced at the 1986 NEC Motor Show, where its combination of looks (the interest by the public in the old curvaceous TVRs had not waned) and price tag of £12,995 for a 2.8 litre fuel injected V6 caused immediate interest. This was the cheapest V6 car then available in the UK. It was also one of the few convertibles available and quick by almost any standard, being fast enough to show the then highly popular 'hot hatches' the rear of its exhaust system. With a claimed 0 to 60 mph of 7 seconds and a top speed of 140 mph, its price/performance ratio was incredible. A power to weight ratio of 177 bhp/ton ensured that acceleration through the gears was rapid. It sounded loud and noisy, just like a 'real' sports car should. Many claim that the S1 was aurally the best of the S series cars,

with its overrun burbles and pops. All this for not much more than the price of a family saloon! The public and press went into raptures over the car. The effect that it had on the company was amazing, as can be seen from TVR's press release issued a year later at the 1987 Motor Show:

"Making its first public debut in final production form at London, is the TVR S model. This was shown as a styling exercise at last years' Birmingham Motor Show and, due to the massive positive response, resulted in the Company going to full production in less than 12 months — something that larger motor manufacturers would have been unable to achieve.

The S model, with its more traditional rounded flowing lines is seen by the Company as a modern day replacement for the brutish Healey 3000 and should not be confused or compared to mass produced modern budget "sports cars". With a 160 bhp fuel injected Vee 6 engine in a very civilised yet lightweight 900 kg convertible body and retailing at just under £13,000, the S provides performance, style and excitement that cannot be matched by any other vehicle.

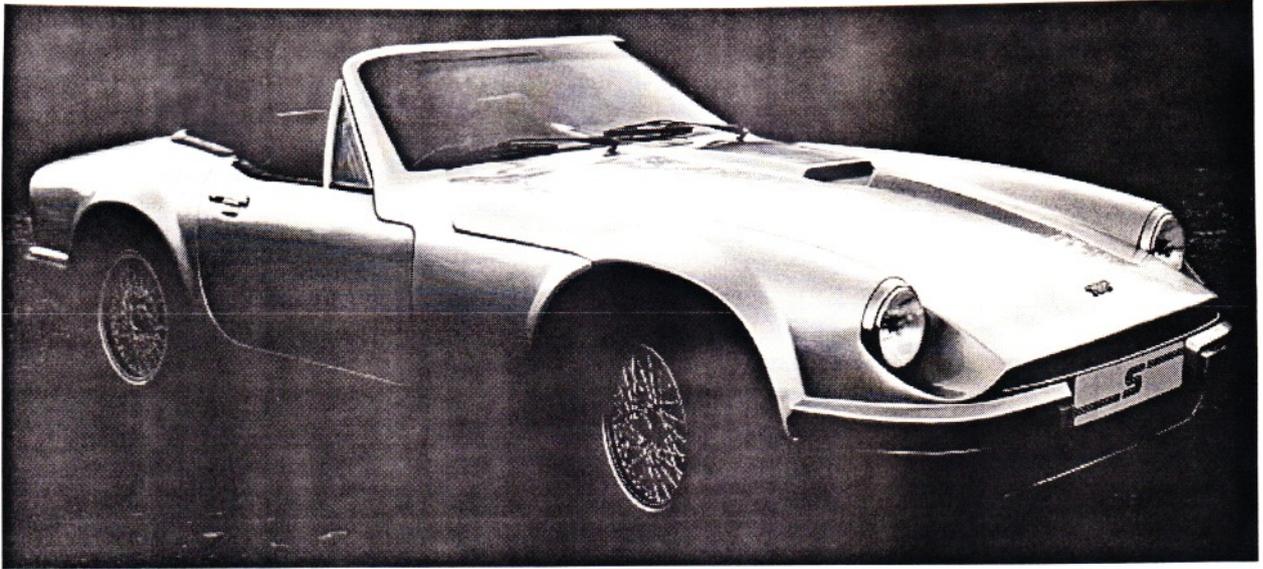
With some 250 pre-release orders for the new model, TVR are stepping up production to meet the



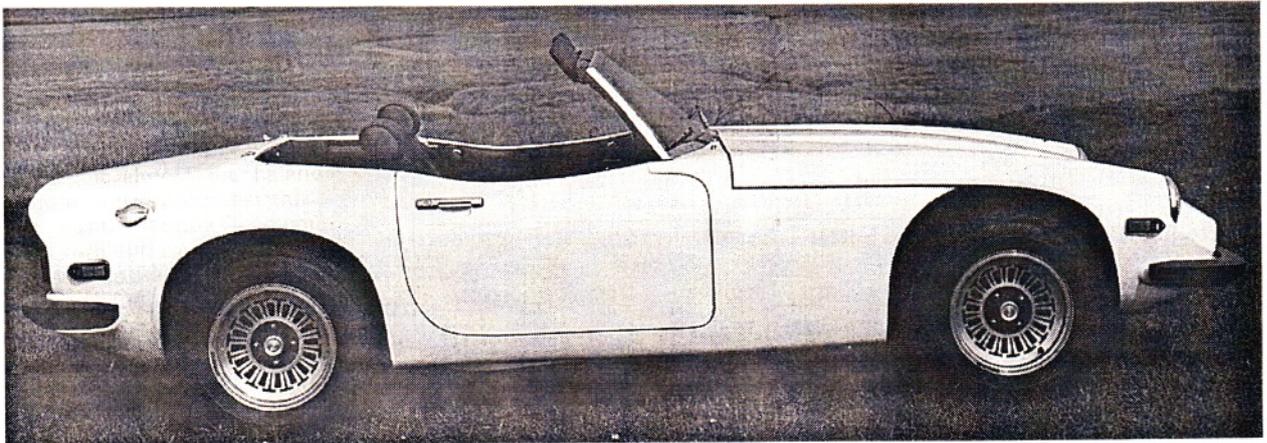
An 1987 S1. This car was one of the first production batch and has the twin bonnet release. Note the lack of chrome strip on the bumpers.



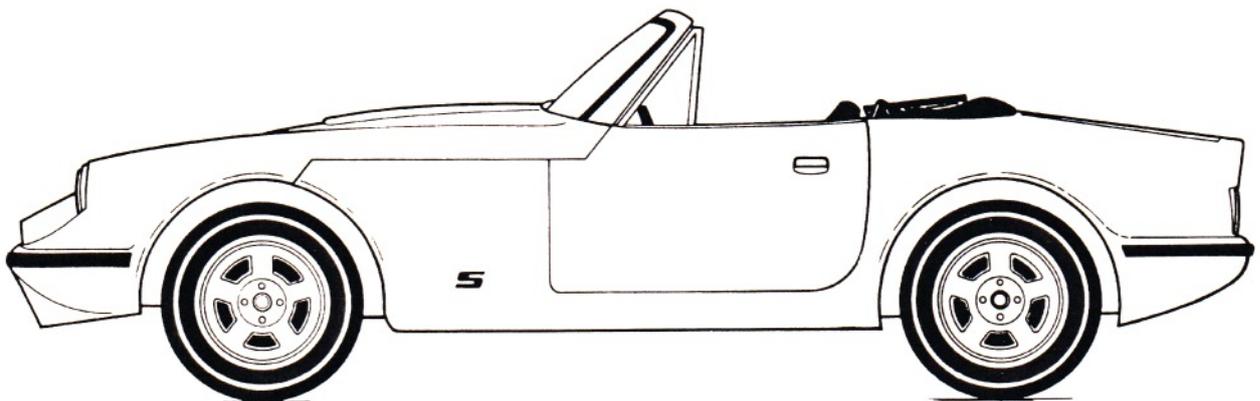
The same 1987 S1 from the front. A late V8S is in the background.



The S series production prototype. Compare this with the original production prototype below. Although using the same essential concept, there are many minor styling differences. (TVR Engineering)



The S prototype. Note that the windscreen wipers are on the left-hand side and not the right. The door handles were changed, as was the styling around the hinge end of the door. The wheels were also changed from those shown in the photograph. (TVR Engineering)



The production S line art drawing from the original sales brochure. Comparing this with the photograph above, you can see the changes that were made between the original 1986 Motor Show prototype and the production version. (TVR Engineering)



The S series production prototype. Note the different dashboard. (TVR Engineering)

demand. Currently manufacturing 12 vehicles per week, TVR are slowly expanding to achieve a target of 10 S models and 8 to 9 Vee 8 vehicles per week by the end of the year. This also means an increase in the workforce, taking the present 155 up to 185 with the addition of 30 staff, along with the completion of an additional building for chassis and sub component assembly on the Blackpool site."

Although the model is officially a 280S, according to early press material, logbooks and owner's handbooks, its name changed to the TVR S Convertible when the first production started to appear from the factory. It then became unofficially known as the S1 when the S2 and later models appeared. This nomenclature is an easier way of differentiating them and is used throughout this book.

With hindsight, the S1 introduction was just right as there was little competition, except for the Toyota MR2, which was not a convertible, slower and with arguably little character. The Triumph and MG convertibles had all gone out of production and the low price ensured a full order book. At the time, a top of the range Ford Sierra was about £12,000 — so the S1 price tag represented tremendous value.

Although the car looked similar to the older 3000S, it was a new design with all new body panels and components.

Engine

The engine was based on the Ford 2.8i V6 Cologne engine from the Ford Capri 2.8i. This 2,792 cc engine normally delivered about 150 bhp in the Capri but, with a better breathing TVR exhaust

manifold, the power output in the S1 increased to 160 bhp. It used the Bosch K-Jetronic mechanical fuel injection system fuelled from a 12 gallon (54.5 litre) tank at the rear of the car just behind the rear transmission and suspension. The engine bore was 93 mm and its stroke 68.5 mm with a compression ratio of 9.2:1. The engine was mounted quite far back, in behind the front wheels. This improved the weight distribution and thus the handling.

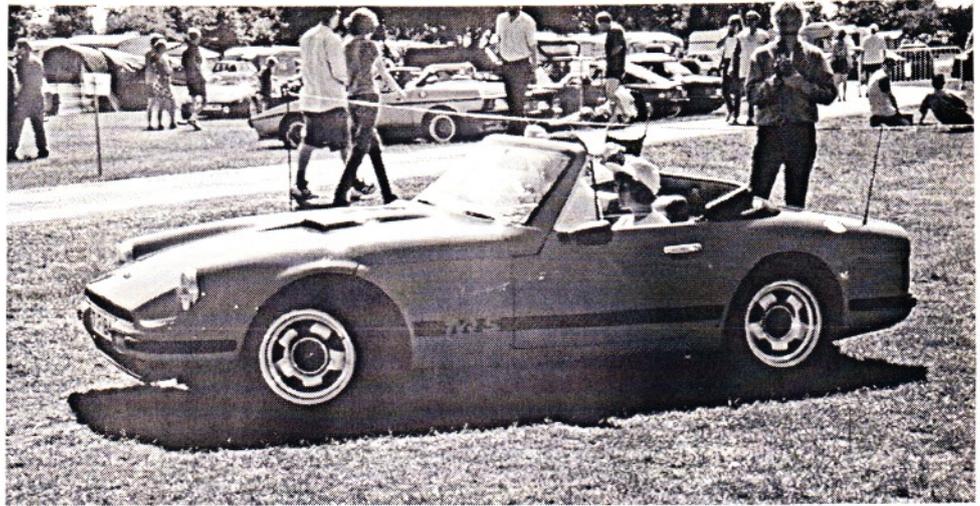
The engine was cooled through a front radiator, which was mounted in the nose of the car and employed a thermostatically controlled electric fan to provide cooling when stationary.

Chassis and suspension

The chassis was based on the traditional TVR approach of a multi-tubular steel backbone chassis made from 2.375 inch and 1.5 inch 16 gauge tubing which was plastic coated to prevent corrosion. The body was mounted on 'silentblock' mounts to insulate it from the chassis. The suspension was fully independent all round, using unequal length wishbones at the front and semi-trailing arms at the back.

The steering was manual with two and five eighths turns lock to lock. The turning circle was reasonable at 31.4 feet (9.6 metres).

The tyres were 205/60VR15 Bridgestones fitted on a slotted 15 inch by 7J OZ wheel that looked remarkably like the Wolfrace wheel fitted to the 3000S Turbo. The spare was a 'space saver', located in the boot. The early documentation from the factory stated that it was located under the bonnet, in a



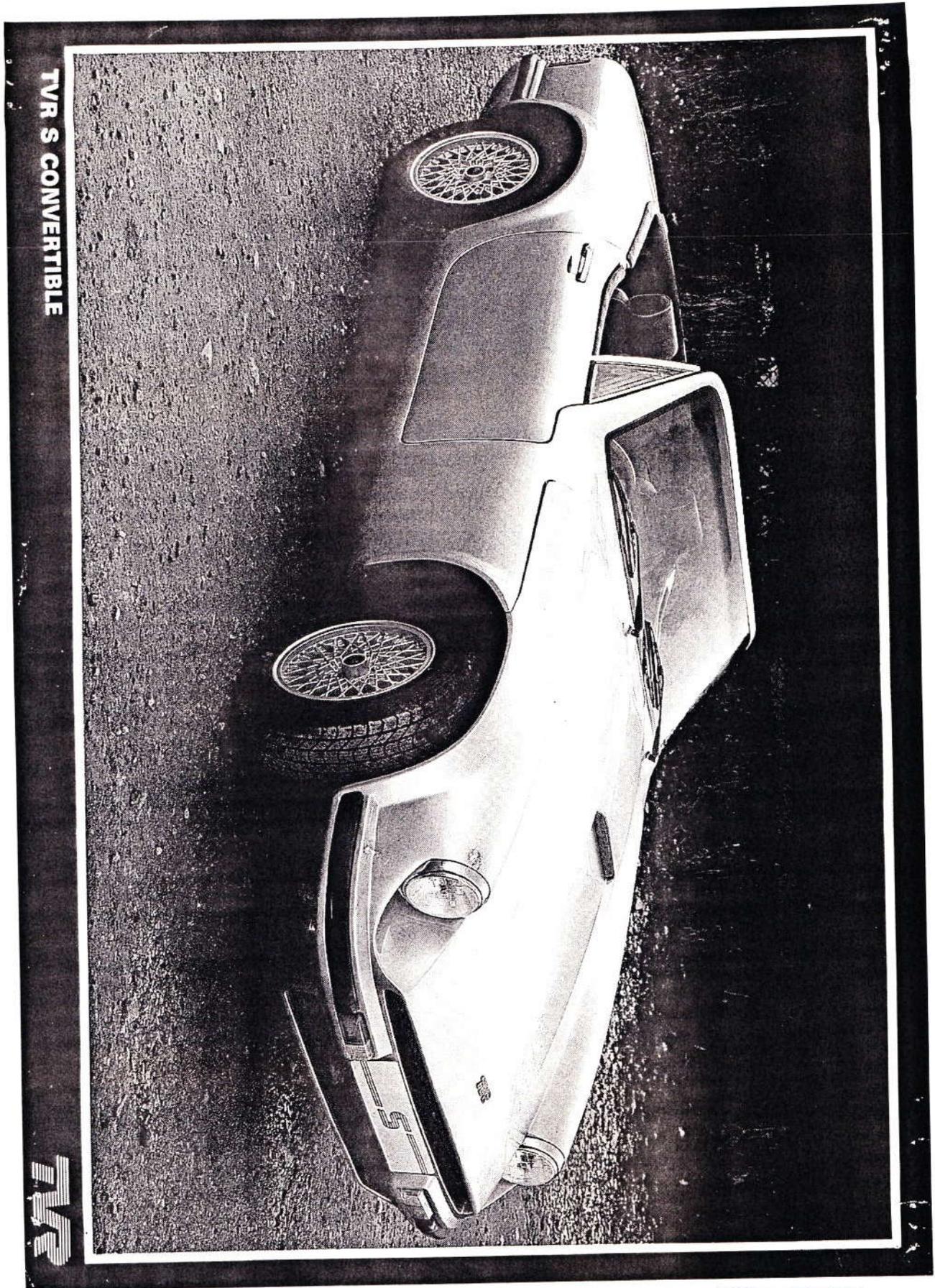
An immaculate S1 drawing admiring glances at TVR Mania '96. The side decals were optional but many cars were fitted with them.



One of the original S1 product brochures. (TVR Engineering)



A 1988 S1 in good company next to a Griffith and V8S at the Wicksteed Park rally.



TVR S CONVERTIBLE



The original S1 information card. The picture is of the S1 pre-production prototype. (TVR Engineering)

TVR "S" Technical Specifications

Two seal, two door Convertible body manufactured in glass reinforced polyester resin moulded in one section with top and bottom panels. The roof is formed with top and bottom plastic coated mild, tubular steel backbone chassis with outriggers. Laminated Sundyrm front screen with frameless toughened door, windows and quarter light, along with a detachable roof panel and fold down rear header complete the roof structure.

Special deformable rubber impact bumpers along with strategically designed internal body crumple zones protect front and rear portions of the vehicle. Steel intrusion beams located within the door structures conform to all current legislative requirements. Individual seats with fore, aft and tilt movements are combined with adjustable head restraint. Cupola Entry in leathercraft is available as an option. Contrasting clean pile carpet complements the colour chosen. Solid Brazilian mahogany dashboard houses complete instrumentation of speedometer, electric tachometer, oil pressure, water temperature and fuel gauges along with voltmeter and quartz clock. A warning light cluster informs on handbrake, low fluid levels, ignition, main beam and direction indicators. A vanity mirror is housed in the passenger survivor with cigar lighter and ashtray located in the centre console.

Engine

Front mounted driving the rear wheels. Vee slanted 6 cylinder with total capacity of 2792 cc 170.4 cu. in. Bore: stroke ratio of 93 mm 3.68 in. x 68.5 mm 2.07 in. Compression ratio of 9.2:1 with central camshaft, rocker arms and overhead valves. Four bearing crankshaft, electric fan light, 3 main manifolds and free flow system. Pressurised cooling system.

Power Output

Maximum power: 150 bhp at 5700 rpm
110.4 kW at 5700 rpm
Maximum torque: 152 kNms at 4300 rpm
22.4 kNm at 4300 rpm

Fuel System

Induction is by Bosch K jetronic fuel injection. A single Bosch electric fuel pump is utilised in conjunction with anti surge pot and filters. A single fuel tank is located above the rear axle with a total capacity of 12 gallons 54.5 litres.

Transmission

A five speed manual gearbox with 9.44 in 239.7 mm hydraulic operated single dry plate diaphragm clutch. Gear ratios: 1st 3.36:1, 2nd 1.80:1, 3rd 1.28:1, 4th 1.00:1, 5th 0.82:1. Reverse 3.36:1. Centrally mounted hypoid bevel final drive with ratio of 3.58:1 producing a 24.13 mph (38.8 kph) per 1000 rpm.

Performance

Maximum engine rpm 6000, 1st 33.8 mph (53.3 kph), 2nd 62.7 mph (100.9 kph), 3rd 90.1 mph (144.9 kph), 4th 113.4 mph (182.4 kph), 5th 133.0 mph (214.0 kph), 0-60 mph 7.0 seconds. Standing 1/4 mile 97.37 mph (156.6 kph). Speed in 5th gear per 1000 rev 24.13 mph (38.8 kph). Power to weight ratio, 169.69 bhp/ton. Carrying capacity 300 lbs (136 kg).

Chassis

Multi tubular steel backbone chassis with outriggers, protected by an epoxy coating for complete corrosion resistance. This separate chassis concept ensures that the body is fully insulated by "silent block" rubber mounts from the bodyshell. Protection for occupants is by well designed front, rear and side intrusion beams to conform to all current legislative requirements. Front suspension is by unequal length wishbones, coil springs, telescopic shock absorbers, and forward running anti roll bar. Rear suspension is by semi trailing arms, coil springs, telescopic shock absorbers, anti roll bar and constant velocity sliding drivoshafis.

Wheels and Tyres

Four stud aluminium alloy 15" x 7 J road wheels with 205/60 VHS low profile tyres. Aluminium alloy slanting spacerswair road wheel and fitted as standard.

Braking System

Servo assisted all round operated through separate front and rear circuits incorporating a "G" Valve for the rear. Front discs are 10.3" 260 mm diameter and rear drums are 9" 228 mm diameter with cable operated handbrake. Asbestos free pads and linings fitted all round.

Steering

Unassisted rack and pinion with collapsible steering column. This combines with a 14" leather trimmed steering wheel giving a turning circle of 30ft (9.14m) with 3.5 turns lock to lock.

Electrical

A 12 volt negative earthed fully fused system is utilised with a comprehensive fuse and relay board. A high rate 60 amp hour battery and 65 amp alternator are standard and the starter motor is pre engaged. Two H4 headlights are located in the forward opening bonnet; reverse, high parking, indicator, and side lights. Parking, reverse, high intensity fog and direction indicator units are located at the rear of the vehicle with three 57 electrically operated washer located under the bonnet. Twin interior courtesy lights and low level instrument illumination provide night time vision.

Heating and Ventilation

Heating is controlled by the current of air flow through an internal matrix. This flow is maintained by a rotating temperature selector dial mounted on the centre console which can be directed to screen or footwells. This in turn is boosted by a two speed fan. Fresh cool air can be admitted to the cabin by twin swivel vents mounts in the centre of the dashboard with stale air extracted by vents in the lower section of the passenger's door.

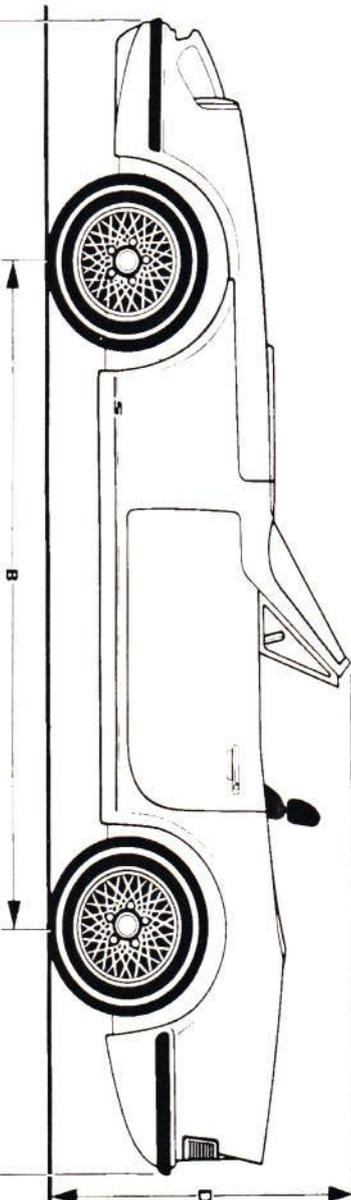
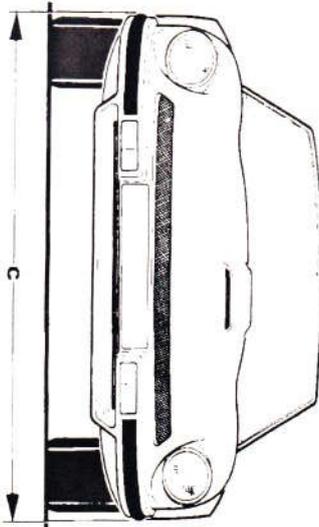
Audio

An Alpine LW/MW/FM stereo radio cassette player is fitted as standard. This plays through 20 watt speakers located in the door trim. Reception is transmitted via an electric operated aerial.

Dimensions	
Length overall	A 4000 mm 156 in.
Wheelbase	B 2286 mm 90 in.
Width overall	C 1450 mm 57 in.
Height overall	D 1117 mm 44 in.
Front track	1398 mm 55 in.
Rear track	1398 mm 55 in.
Ground clearance	140 mm 5.6 in.
Luggage capacity	0.225 cu m 8 cu ft
Fuel capacity	54.5 litres 12 gallons
Overall weight	900 kg 1984 lbs

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Blackpool Courier Advertising & Print Preston

TVR S

The S1 technical details from the original brochure for the S1. This used the same format as that for the Wedges and consisted of a A4 card with a picture on the front and this technical detail on the back. (TVR Engineering)



An S3 with the S2 type bonnet. Later S3s were fitted with a bonnet with side slits. (TVRCC)

similar way to that used for the M series. Several owners modified their cars to actually do this, which involved moving part of the cooling system and building a special bracket. However, when the production cars appeared, the spare wheel was in the boot.

Braking was via 9.4 inch ventilated discs at the front and 9 inch drums at the back. The system used a dual circuit and was servo assisted.

Bodywork

The body was moulded in glass reinforced polyester resin (GRP) and featured a large front opening bonnet, reminiscent of the style used from the Grantura through to the M series. The body was designed with crumple zones and provided with black deformable bumpers at each corner. The roof was based on the TVR patented design first used on the Tasmin and its derivatives. It consists of a movable hoop that braces two targa panels in place, which allows several configurations: roof fully in place, either or both targa panels removed or with no panels and the hoop laid flat behind the driver.

Interior

The interior was designed around the large transmission tunnel and was in Ambla and Moquette as standard, with an option of full or half leather. The most striking feature of the interior is the instrument panel where the warning lights were grouped in a quarter arc to the side of the driver. Windows and mirrors were manual, although elec-

tric options quickly became available. Central locking was not available as an option, but many dealers fitted it for customers.

The early documentation referred to a ski flap in the back of the boot to allow long objects to be stowed. This was removed to prevent fumes getting into the car.

Transmission

The S1 had a front engine, rear wheel drive configuration. The transmission was based around the Ford Capri 2.8i gearbox and used a Sachs rear differential. The half shafts were connected via sliding constant velocity joints using the same system as on the V6 powered Ford Sierra.

Introduction

Although the car was announced at the 1986 NEC Motor Show and one car was made in 1986, the main production cars were not delivered until the late summer of 1987. The price had gone up by a £1,000 but the car still represented good value. Such a production delay is not uncommon with any car manufacturer and was caused by the additional work needed to get the car into production. TVR will present a car at a show to gauge its appeal and interest. If this is favourable, the production work continues. This delay can be annoying for a prospective buyer — but it does allow TVR to try out ideas and reduces the risk and expense of launching an unpopular car.



A 1990 S2. Note the chrome strips on the bumpers and the seven spoke wheels. These are the major exterior changes.



The same car on the promenade at Blackpool during Back Home '96.

The S2 and S2c

With the S1 a resounding success, the S2 (or 290S, as it was originally known) was released in 1989. The main reason for its creation, apart from some slight cosmetic changes to the interior and exterior, was the change to the new Ford 2.9 litre V6 Cologne engine — the 2.8 litre version was being phased out and becoming increasingly difficult to source. The new engine had the Bosch L-Jetronic electronic fuel injection system and increased the power to about 168 bhp. Performance improved by about 0.5 seconds for the 0 to 60 mph time. The 2.9 litre engine, with its increased power and low down torque, meant that the car would pull in almost any gear and did not need to be constantly revved, like

the old 2.8 litre engine. Its full electronic ignition system generally improved the whole reliability of the power plant.

With this major engine change, the opportunity was taken to update the car. Most of the other changes were cosmetic, except for one: the rear semi-trailing arm suspension was slightly modified to reduce the dipping and weight transfer when accelerating or braking heavily. This was quite important. Although the S1 is a fine handling car, this weight transfer can catch out the unwary driver. The S2 rear suspension dramatically reduces this effect.

Other changes were minor: the slotted wheels were replaced with seven spoke OZ wheels and the rubber bumpers had a small chrome strip added. The digital clock was replaced with an analogue one.

Internal front wheel arches were fitted, along with inner brake dust shields. Electric windows were also fitted as almost standard and the whole build quality was generally improved.

The S2c was the same as the S2 but fitted with a catalytic converter. It was announced but rapidly overtaken by the S3c. Although the S2 is relatively common, I have never seen an S2c. It is possible that the only examples were exported.

The biggest problem with trying to describe the S2 is that the changeover was not clean — i.e. some cars were made that were neither 'true' S1s or S2s, in terms of their specification. These intermediate cars are affectionately dubbed S1.5s. The confusion that this causes many prospective and new owners warrants a dedicated section and this is covered in more detail later in this chapter.

The S3 and S3c

The S3 and S3c were radical updates to the car. Although they retained the basic engine, transmission and suspension, the interior was changed and the exterior bodywork modified.

The exterior changes were the lengthening of the driver and passenger doors by about four inches, which made getting in and out a lot easier, especially for taller drivers! The mechanical boot release was replaced with an electrical one that required the ignition to be turned on for it to operate.

The bonnet on the early S3 cars was based on the S2 but later models had a new design, where the air intake was removed and replaced by side slits, similar to those used later on the Chimaera.

The interior was changed radically. The old S1/S2 swooping instruments design was replaced with a more traditional in-line arrangement. Some think this was a step forward because it removed the reflections that appeared on the windscreen, like a head-up display when driving at night. Personally, I like both but prefer the swooping dashboard. Electric mirrors and windows and additional driving lights at the front were standard and the glove compartment was lockable.

The S3c was an S3 with a catalytic converter; it offered more low down power and torque than the non-cat version. This led to a ground-swell of opinion that says that the S3c and the S4 are the quickest V6 S series cars available.

	S3	S3c
Power	168 bhp @ 6,000 rpm	168 bhp @ 5,400 rpm
Torque	172 lb/ft at 3,000 rpm	191 lb/ft @ 3,575 rpm

The S3c power is lower down the curve while the peak torque is higher up the range. However the

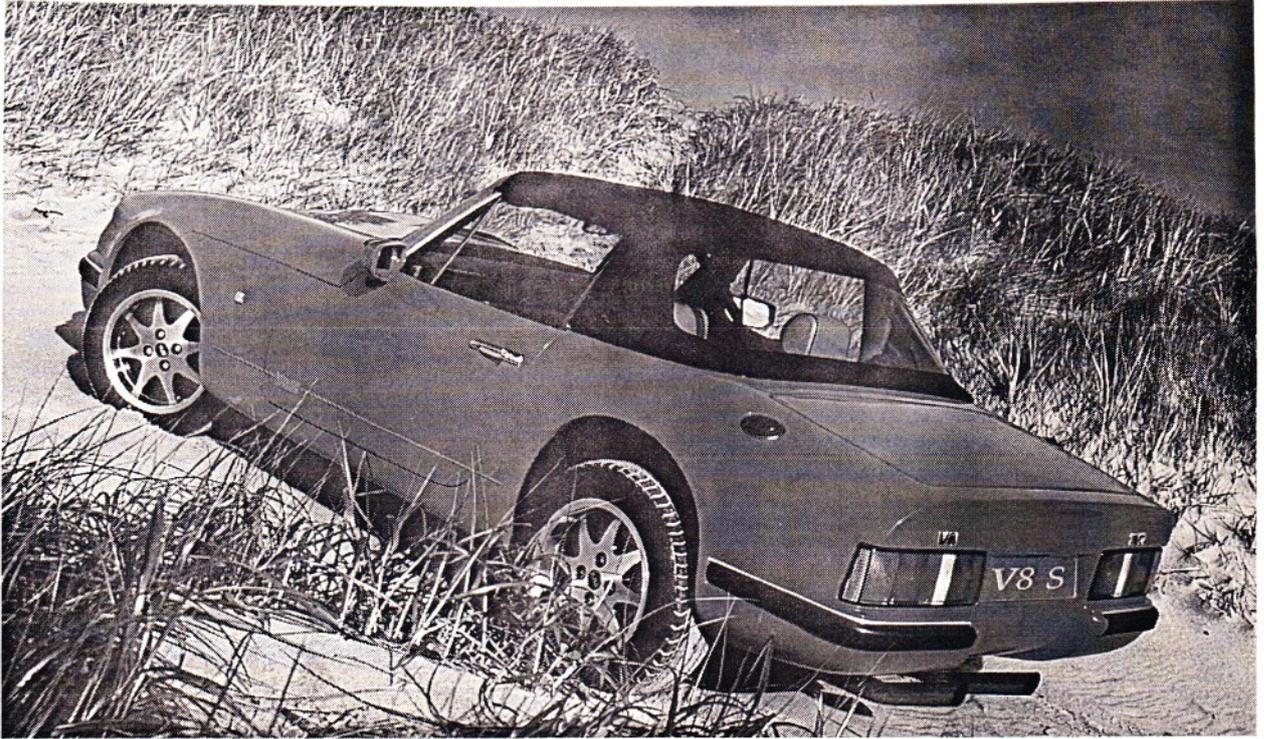
S3c's peak torque is about 10% higher, so I would imagine it is about the same at 3,000 rpm. All in all, it does make the characteristics of the engine a lot more peaky and probably explains why the S3c feels quicker, especially when pulling away from corners.

The V8S

The V8S is undoubtedly the ultimate production S series car. The idea was simple: take an S series chassis and body and drop in a V8 engine. The indications that TVR were thinking of doing this were apparent with the announcement of the ES model in 1987 but it was not until 1991 that the car came into production. Part of the reason for this was that the Rover V8 was the main engine for the other cars in TVR's range and that TVR had limited resources to modify the basic Land Rover engines to TVR's specification.

In 1990, TVR bought a Coventry based company called NCK Racing. This company was renamed TVR Power and this acquisition allowed the Rover V8 to be considered as an alternative engine for the S. So, in 1991, a more powerful S appeared on the market called the V8S. Instead of an uprated Ford engine, a 4.0 litre TVR Power upgraded Rover V8 engine was used. Instead of 168 bhp and about 190 lb/ft of torque, the car was rated at 240 bhp and about 270 lb/ft torque. This was sufficient to get it a 0 to 60 mph time below 5 seconds and a top speed of about 150 mph. What was even more impressive was the timing through the gears. Here was a car that was faster than a Ferrari Testarossa, a Porsche 911 and the 3000S Turbo. Descriptions such as 'steroidal', 'constantly flat torque', 'awesome power', and so on, started to litter the gibbering and drooling motoring press. All TVRs have a 'big grin' factor but the V8S has a bigger one than most.

The V8S also had a relatively smooth and soft suspension, which meant that it appealed to both the 'grand tourer' type of driver and the speed freak. Despite this user friendly side to its character it had a meaner side, in that its exhaust system was incredibly loud. This has been claimed to be antisocial but anyone who has heard one start up would understand that this is just another reason to own one! One of the advertising slogans used was 'Hear the thunder... feel the lightning!' and this aptly sums up the car. The catted cars were a bit quieter but it must be said that they were still a bit over-the-top. Many of the cars have had quieter exhausts fitted, mainly to make the more socially acceptable and to allow them to meet the noise regulations associated with various tracks. There is no point having a car that is so loud you can't drive it on a track!



A V8S photographed in sand dunes. (TVR Engineering)



Another V8S with slightly different wheels. (TVRCC)

Although cosmetically similar to the S3/S3c (the bonnet is slightly different with a bigger hump caused by the need for greater clearance for a supercharger and not for the V8 engine, as commonly thought) the rear differential was replaced with a limited slip version and the gearbox was replaced with the LT77 Vitesse specification unit from the Rover 3.5 SD1 car.

4.3 and 5.0 versions

Some TVR owners can never have enough power so, despite a resilient defence against putting

some of the bigger V8 engines into the V8S, two cars were built with 4.3 litre V8 engines, putting out about 275 bhp and 310 lb/ft torque.

These cars, one white and one Italian red with grey hide interior, were built in 1991 and were the ultimate expression of TVR's ability to build hand-crafted cars. The buyers had to sign disclaimers because it was not clear if the cars still met the type approval regulations.

The main problem with these cars concerns the rear mounting bolts on the trailing arms and their ability to cope with the increased power. They certainly appear to be able to handle the additional



The last V8S ever made. This car is owned by Roger Shakespeare.



The rear of the V8S.

power, according to Team Central who ordered and serviced the cars.

There are a handful of 5 litre versions, which must be the ultimate road going S. These were often standard cars that were converted by TVR Power. There are rumours, however, that one such car was built by the factory as a personal favour.

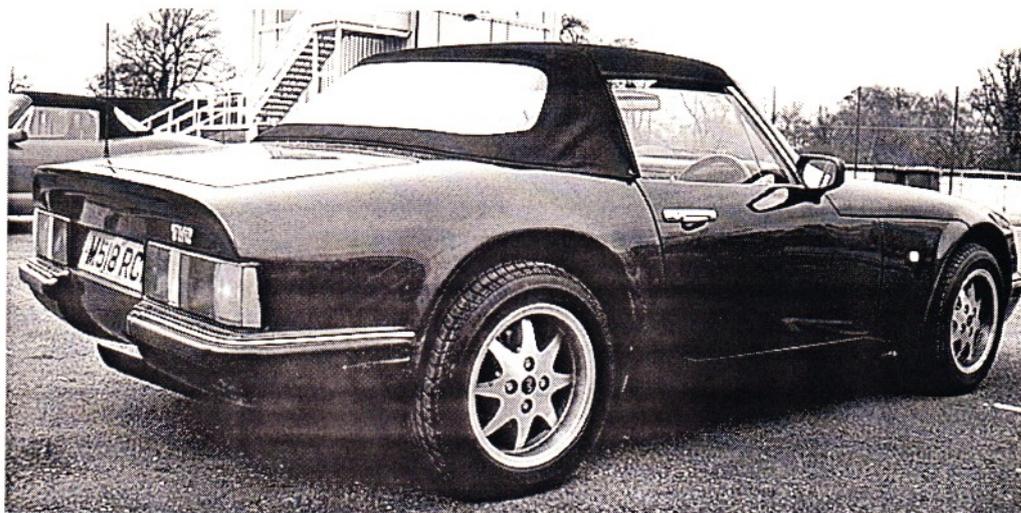
The S4c

The S4 (or S4c, as it was also known) was essentially a V8S chassis with a 2.9 litre V6 instead of the V8 engine. There are some styling differences,

in that the bonnet was the late S3 type with the slits instead of the V8 hump. The price differential with the V8S was only about 15%, so it was not surprising that the majority of S series sales were for the V8S. Between thirty and forty cars were made. The last ever S4 is an M registered car that was retained by TVR Engineering until early 1997. It was in the care of Vicki Swift, who organised the factory Performance Technique Days during 1996. The car was originally moth-balled for a possible museum but this never happened. It was then 'lost' for a year or so, rediscovered and registered. When I first saw it, I could not believe my eyes!



This is the last ever S4, pictured at Oulton Park. It has the slotted bonnet of a late S3 and not the V8S hump version.



The last ever S4 from the rear. This car was rediscovered around 1995 and was a TVR Engineering company car in 1996, when this photograph was taken. The car was sold privately for about £10,000 about 12 months later. Note that although it has the wider track of the V8S it does not have the bonnet hump.

With the advent of the Griffith, the demand for the V8S and S4 diminished and, by August 1994, the car was no longer in the price list. The production during these last months was limited by the factory focusing on the Griffith and Chimaera.

American imports

It is generally thought that TVR stopped shipping cars to the US in 1987 and that no S series cars were ever shipped there. This is not strictly true as many S series cars are available through TVR North America Ltd. in Scarborough, Ontario, Canada. Due to legal problems, none have officially made it to

the US, although one or two have got across the border under temporary permits.

Derivatives

There have been several S series derivatives during its lifetime. Some were production prototypes, others were racing specials and a few were simply cosmetic changes.

The ES

The ES model was announced at the October 1987 Motor Show as the 'Evolution S', although at some point it was also called the 'HP S' (high per-



The ES prototype. Only one was made and it was eventually sold to a private owner. The car was successfully hillclimbed, although many of the modifications were removed when the car was restored a few years ago.

formance S). The concept was simple: take the current S and drop in a bigger V8 engine. Rumours were circulating before the show that a Ford Cosworth V6 would be used but, as with many rumours, that was only partly correct, as TVR's press release shows:

"Company Chairman, PETER WHEELER, views the S Convertible as the starting point in the new model line up. However, as seen in the development of the Vee 8 range of vehicles, with the 3.5 litre engine going up to 3.9 and finally 4.2 litres and 300 bhp, the TVR derived power plants dramatically increased power and performance. It was always planned that the S model would also evolve from its basic role as introduction to the vehicle line up to join the other TVRs as truly high performance sportscars. This it has done in the form of the ES — the Evolution S model on display at the London Motorfair today. Designed to go into full production next March, the ES will be powered to achieve 0-60 mph in 5.5 seconds combined with a maximum speed in excess of 145 mph. Three power plants are currently under development and assessment ranging from a turbo-charged 4 cylinder unit, a 3.2 litre fuel injected Vee 6 and a completely new 3.3 litre fuel injected Vee 6 which is currently being developed and evaluated by TVR in conjunction with a major engine manufacturer. Extensive chassis and bodywork development has already been undertaken which includes uprated disc braking all round. Modifications to the suspension includes wishbone and front uprights along with spring and shock absorber rates. At the rear a viscous coupled limited slip differential is incorporated with modified semi trailing arms.

To reduce lift at very high speed, the front of the vehicle has been extensively modified with revisions to the lower apron and wheel arches. This also includes long range driving lights. Rear arches are also wider, accommodating the 225/50 VR 15 Bridgestone RE71 low profile tyres, running on 5 spoke 32 stud split rim aluminium alloy road wheels. The bonnet has been

modified to include venting for the standard equipment oil cooler. Interior additions to the standard specification on the S model reflects the increase in price for the ES. With power to produce the stated performance, TVR expect the final vehicle to retail at around £20,000.

TVR plan to restrict production numbers on the ES to a maximum of 150 per year."

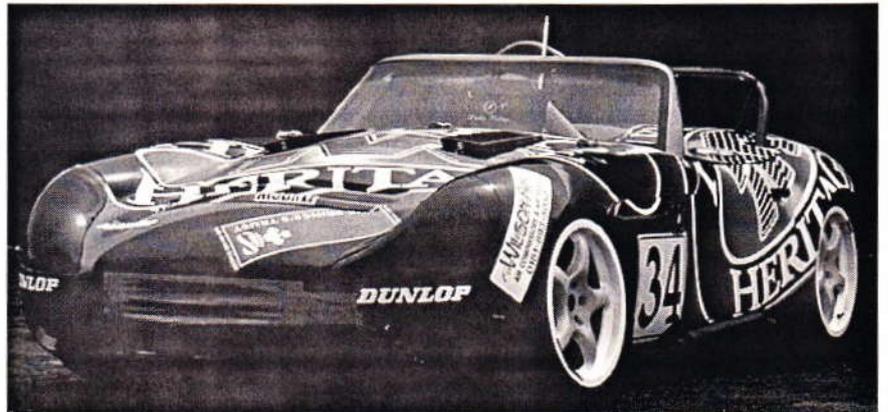
The initial plan, sparked off by fears that the Rover V8 engine would not meet the planned emission regulations, was to use the GM-Holden 3.8 litre V6 engine but nothing came of this, despite several long discussions.

TVR then started to look at alternatives and were approached by GM-Holden of Australia to see if there was any interest, initially in the 5 litre V8. It is interesting to note that Peter Wheeler's special TVR hatchback was built in 1986 using this Holden engine to see how good the engine was. This car has been nicknamed the 'white elephant'. TVR's fears about the Rover engine were unfounded and, when it became clear that the engine could meet the emission regulations, interest in alternatives waned.

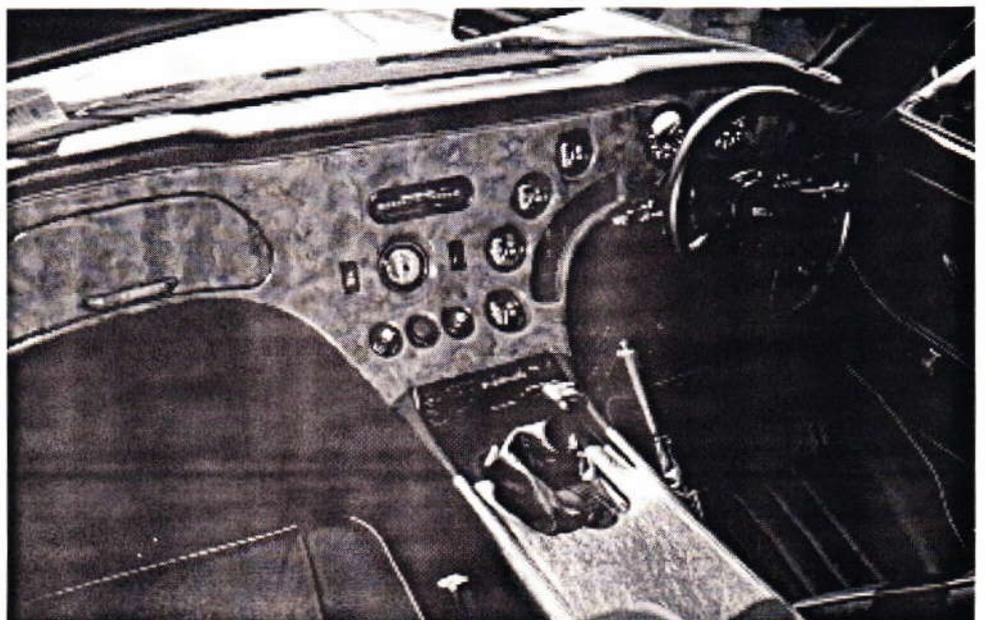
The ES never went into production as planned, although the concept of a V8 powered S model survived and reappeared when the V8S was launched. The ES model at the Motor Show was built with a Swaymar 3.2 litre fuel injected V6, which gave it about 240 bhp. It was the only one ever built. The car was very successfully raced in hill climbing events and, as a result, the suspension was heavily modified to maintain its edge. It was restored by the factory to its original specification a few years ago and was bought by Team Central. The



Peter Wheeler's one-off TVR at the TVR Mania '96 event. This car is a hatchback and was used by Peter Wheeler as his own transport for himself and his dogs, including Ned, who was part of the Chimaera stylist team. The car has a 5 litre V8 GM-Holden engine and was used as a test bed for this power plant. I last saw the car in the Bristol Avenue car park minus its rear window. Apparently, this had been removed to act as a pattern to make replacement rear windows for the FHC Tasmins.



Although not an S series car, the first Tuscan were loosely based on the S series. They rapidly evolved and provided a lot of the design knowledge for the Griffith and Chimaera cars. (The link is tenuous, but who cares if it means that I can include this picture!) The photograph was taken at the April '96 Oulton Park Performance Technique day.



The rare walnut S2 dashboard.

car is now in private hands and was recently for sale again.

The Cosworth Turbo S

When TVR goes racing, its cars tends not to hang about. 'Take a chassis, find the biggest engine you can, drop it in and see if the rest of the pack can keep up.' This simple approach resulted in the 420SEAC, which was so good that it was banned from racing — if you didn't have one, you were unlikely to finish in the top three.

The TVR S Turbo was built for Modsport class racing. On the outside, it was a slightly modified S with a huge rear wing. Mechanically, it was totally different. Under the bonnet was a Ford FS500 Evolution Cosworth turbo-charged engine, as used in the Touring car Sierra Cosworth saloon. The engine was prepared to the full Group A specification by Terry Hoyle and produced 470 to 500 bhp at 6,800 rpm. The car only weighed 810 kg, which gave it a huge power to weight ratio.

The transmission was based on a Hewland FGB Formula One gearbox and mounted in the rear of the car. As a result, the prop shaft rotated at the engine speed and not at the lower gearbox output speed, as in a standard S. The clutch, brakes and suspension also used Formula One sourced parts.

The result was a truly awesome car. 0 to 60 mph in 3.5 seconds... 0 to 100 mph in only 7.2 seconds. The car won its first major event when raced at the Macau Formula Three Grand Prix meeting — and the victory was achieved after starting fourteenth on the grid. The car was driven by John Kent who raced the Project 12/7 car in 1997.



The Cosworth S Turbo. TVR were offered £150,000 for the car by their Japanese importer. (TVRCC)

A 2.0 litre supercharged S for Italy

Italy has car tax regulations which heavily penalise cars with an engine capacity greater than 2 litres — so if you wanted a high powered S in Italy, you needed plenty of money! TVR's solution was simple: sleeve down the standard engine to two litres, add a supercharger to bring the power back up to about 240 bhp and you have a car that is both quick and tax efficient. Three of these cars were built

for export to Italy. Whilst largely forgotten, they did leave their mark, in that the V8S bonnet hump was designed to clear the supercharger fitted to these three cars, and not to clear the plenum chamber of the V8 engine.

The Penthouse S

This was a standard V6 S with the name 'Penthouse' added underneath the bonnet badge, done as part of a Penthouse magazine promotion in the late 1980s. Judging by the photographs, it came with its own mechanic!



The Penthouse S. (TVRCC)

The Clubsport or Japanese S

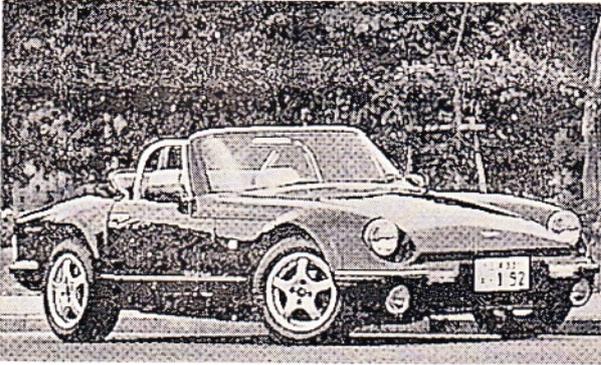
The S series was given a big push in Japan with the launch of both the V8S and the S4 in 1993. In the following report, which was sent from Japan to the TVRCC, there are some interesting references to air conditioning and power steering. Unfortunately, they are a little ambiguous and actually refer to work that was being done for the Griffith. Air conditioning and power steering were not options on the S series.

"In the S series, there is a type, V8S, which is equipped with the same V8 engine that the Griffith 4.0 has. We asked TVR Japan about the difference between the two, the V8S and the Griffith. V8S is the type that is suited for a long touring by enjoying the traditional feeling, while Griffith is a sports car that is seeking to be the ultimate performer off the road. Griffith is currently situated as the flag ship of TVR, and this characteristic will be further enhanced by placing the AJP-V8 in the future.

Another V6, ClubSport uses S4c, Ford 2.9 litre V6 OHV unit as a base, and seeks for sportier character. First, the engine performance has been improved from the S4cs 168PS to 188PS. The brakes were also improved to 10.6 inch ventilated disc for the front, and

9.9 inch solid discs for the back. And, real leather sports seat, chrome plated roll bar, and LSD has become a standard feature roll. It also has its Cooper green metallic body paint and biscuit colour interior.

As you can see, when one actually sees the car, it is clear that TVR has worked well in the modifications for the Japanese version. If we take Griffith as an example, they have (needless to say) made further several checks for the finished installation of air conditioners that will be actually used. Coping with the over-heat (compared to the types sold in the UK, the radiator was enlarged by 20%, also using stronger fans), and installation of stainless steel exhaust pipe. And, power steering will be optional from this fall. We see not only TVR's flexibility in the changes they have made for the Japanese version but also its emphasis to the Japanese market. Thus, TVR's new generation lines have increased its charm."



The Clubsport S with Chimaera wheels. Note the roll-over bars. Some S series cars were factory fitted with this as a customer request. The bar fits just under the roof hoop and does not replace it. Tower View Race Services can provide these roll-bars which can be fitted to an S series car. (TVRCC)

The S1/S2 changeover - the S1.5

Although not an official model number, the term 'S1.5' has become generally used to describe the cars that were made during the phase-over from the S1 and a 2.8 litre V6 engine to the S2 model with its 2.9 litre V6 engine in 1988/89. By the beginning of 1990, the S2 had become fairly standardised but during the six month phase-over, almost every S that was produced was unique, in terms of its specification! Many cars appeared that were amalgams of the two specifications. I have seen S2 cars with the 2.9 litre V6 engine that look exactly like an S1 with the 'Wolfrace' wheels, plain bumpers, manual windows, and so on. This frequently leads to confusion amongst owners and potential buyers.

While the term 'S1.5' is a convenient way of grouping these cars, it does mean that trying to determine what makes an S1 and S2 very difficult. A common way is to say that if the car has a 2.9 litre V6 engine, it is an S2. Sorry: some S2s were fitted

with 2.8 litre engines. If the car has a 2.9 litre engine and the S2 seven spoke wheels, it is an S2. Sorry again, I have seen 2.9 litre V6 engined S2 cars with S1 wheels. In practice, it is virtually impossible to emphatically say what model the car actually is during this period. In reality, probably the only sure way is to see what was printed on the invoice or registration document. If it says 280S, it is an S1. If it says S2 or 290S, it is an S2. Er... sorry, my 1990 S2 was registered as a 280S! At this point, start pulling out hair...

Taxation Class	PRIVATE/LIGHT GOODS (PLG)
Make	TVR
Model/Type	280 S SPORTS
Colour(s)	GREEN
Type of Fuel	PETROL
VIN/Chassis/Frame No.	[REDACTED]
Engine No.	[REDACTED]
Cylinder Capacity	2933 CC
Seating Capacity	
Taxable Weight	920.0 KG UNLADEN
Date of Registration	05 03 90

Is it an S2 or a 280S? Despite the registration document, this car is definitely an S2 made in March 1990.

Identifying the models

To help identify the models and give some idea of the options and variations that exist, I have constructed a matrix that goes through the various models and features. The catalytic versions of the cars have not been included as they were essentially the same model with the addition of a catalytic converter. The matrix should be read in conjunction with the notes below it.

S series performance figures

The table below is derived from various magazines that have road-tested S series cars. The Cosworth S Turbo has been included to give some idea of the difference between a racing TVR and a road version!

Some owners claim that their cars are a bit faster — and that is indeed possible. The S3c and S4c might be quicker lower down and I have certainly heard claims that the Chimaera engined V8S will outperform a Chimaera with the same engine. If this true, the V8S must be getting down to 4.8 seconds for a 0 to 60 dash! Who knows — but it makes for a good topic of discussion at Club meetings and events!

Model feature	S1	S1.5	S2	S3	S4	V8S
2.8 V6 Ford "Cologne" engine	•	?1				
2.9 V6 Ford "Cologne" engine		•	•	•	•	
TVR Power Rover 4.0 l engine (original)						•
TVR Power Rover 4.0 l engine (Chimaera spec)						•
Sweeping dashboard	•	•	•2			
Traditional dashboard				•	•	•
Traditional dashboard with rectangular switches				•	•	•
Traditional dashboard with round switches				•		
Electric windows	○	○	•3	•	•	•
Manual windows	•	•				
Chrome bumper trim			•	•	•	•
Walnut trim on door interior			○	•	•	•
Walnut trim on door interior (simulated)			•			
Mechanical boot release	•	•	•			
Electrical boot release				•	•	•
Driving lamps	○	○	○	•14	•	•
Longer doors				•	•	•
Griffith rear window stay						•
Catalyst			○	○	○6	○
Wooden steering wheel	○	○	○	○	○	○
Vinyl upholstery	○	○	○	○	○	○
Half hide leather upholstery	○	○	○	○	○	○
Full hide leather upholstery	○	○	○	○	○	○
Single wipe wipers	•7	•	•	?8		
Delayed wipe wipers				?8	•	•
Forward facing bonnet vent	•	•	•	•		
Side slits bonnet vents				•	•	
Rearward facing bonnet vent (The hump)						•
Single bonnet catch release	•	•	•	•	•	•
Dual bonnet catch release	?9					
Internal wheel arches		?10	•	•	•	•
Wheel brake dust covers		?10	•	•14	•	○
Walnut dashboard	○	○	○	•	•	•
Analogue clock	?11	?11	•	•	•	•
Digital clock	•	?11				
Central locking	○	○	○	•	•	•
Limited slip differential	○	○	○	○14	○	•
Standard (l-r) instruments	?12					
Offset (r-l) instruments		•	•	•	•	•
Headlamp wash-wipe	○	○	○	○	○	○
Fixed aerial	•	•	•	•	○	○
Electric aerial					○	○
Ski flap	?13					
Heated seats				○	○	○
Side decals	○	○	○	○	○	○

Key: • Standard fitting ○ Optional fitting ? Uncertain

The S series features matrix.

Notes:

- 1 The supply of engines from Ford at this time was a little sporadic. As a result, some S1.5 cars were fitted with 2.8 litre V6 engines.
- 2 There are rumours of some S2s with the later S3 in-line instrumentation but I have not seen any. If they do exist, I suspect that these were cars that were retrofitted with the S3 dashboard.
- 3 Although S2s normally have electric windows and the documentation describes this as a standard, some early cars were fitted with manual windows.
- 4 Both 'Wolfrace' and seven spoke wheels were fitted and used. Early S1.5 cars tended to have 'Wolfrace' wheels.
- 5 I have seen V8S cars with all these wheels. The choice does not follow any pattern, except that Chimaera wheels were fitted to the last cars and the OZ Competition wheels were fitted to the early and middle cars.
- 6 From 1993, all UK cars had to be fitted with a catalytic converter, so differentiation between the S4 and S4c vanished.
- 7 The first 20 S1 production cars had a special Ford switch that did not support single wipe operation, despite the fact the switch action was present and that it claims in the Owner's Handbook that it does. Subsequent cars were fitted with a switch that did support this.
- 8 These share the same switch but the delayed wipe has an additional electronic relay to support the delay. This was fitted to later cars.
- 9 The first 20 S1 production cars had a bonnet catch on either side of the car, just inside the footwells. This is reminiscent of the Vixens and the M series.
- 10 Although standard on the S2, some S1.5s were not fitted with them.
- 11 The S1 generally used the digital clock but very late cars switched over to the analogue version. S1.5s used a mixture.
- 12 Fitted to the first production cars.
- 13 Mentioned in the handbook but never included in the production cars, apparently to prevent fumes from entering the cabin.
- 14 These items were originally optional on the S3 but standard on the S3c. However, the later S3s had them as standard, just to confuse matters!

Engine size	S1 2,792 cc V6	S1 2,792 cc V6	S2 2,933 cc V6	V8S 3,950 cc V8	V8S 3,950 cc V8	Cosworth S Turbo Group A Sierra Cosworth 500 bhp
Power	160 bhp	160 bhp	168 bhp	240 bhp	240 bhp	500 bhp
Source	Autocar	Fast Lane	What Car	Autocar	Performance Car	Fast Lane
Date	Oct. 1987	June 1988	Aug. 1989	Sept. 1991	Sept. 1991	Sept. 1988
Max. speed (mph)	128	130	131	146	146.6	180+ with the right gearing!
Acceleration (s)						
0-30 mph	2.4	2.5	2.3	2.0	2.2	1.8
0-40 mph	3.8	3.7	3.9	3.1	-	2.2
0-50 mph	5.6	5.2	5.3	4.1	-	2.9
0-60 mph	7.6	7.0	6.9	5.2	5.0	3.5
0-70 mph	10.4	9.0	9.3	7.1	-	4.2
0-80 mph	13.5	11.9	11.7	8.7	-	5.2
0-90 mph	17.1	15.0	14.9	10.8	-	6.1
0-100 mph	22.8	19.0	19.8	13.5	12.4	7.2
0-110 mph	30.6	24.5	-	16.3	-	8.5
0-120 mph	-	-	-	20.2	18.3	10.2
0-130 mph	-	-	-	27.0	-	11.9
Standing 1/4-mile (s)	15.9	-	-	14.0	13.7	-
Top gear acceleration(s)						
10-30 mph	-	-	-	-	-	-
20-40 mph	9.0	9.9	-	6.5	-	-
30-50 mph	8.8	8.9	7.6	6.1	5.4	-
40-60 mph	9.2	9.1	7.6	6.0	-	-
50-70 mph	10.5	9.7	7.7	6.0	5.9	-
60-80 mph	11.8	10.1	8.1	6.2	-	-
70-90 mph	13.6	10.5	-	6.6	5.7	-
80-100 mph	13.9	11.8	-	7.0	-	-
90-110 mph	-	-	-	7.7	-	-
100-120 mph	-	-	-	8.7	-	-
110-130 mph	-	-	-	11.2	-	-

The S series performance figures. (Various sources)

UK reg.	D	D/E	E/F	F/G	G/H	H/J	J/K	K/L	L/M	Total
Model	1986	1987	1988	1989	1990	1991	1992	1993	1994	
S1	1	89	515	-	-	-	-	-	-	605 ¹
S2	-	-	-	421	618 ¹	-	-	-	-	668 ¹
S3	-	-	-	-	-	467	49	-	-	887 ²
V8S	-	-	-	-	-	208	173	29	?	410 ²
S4	-	-	-	-	-	-	-	34	?	34 ²
								Total	All	2604
									V6	2194

¹ This figure is based on S2 and S3 production. I personally estimate that about 40% were S2 and 60% were S3, based on when the last S2s and first S3s were made, but this may not be accurate.

² There were about 3 or 4 V8S sold in 1994 but I believe some of these were unsold 1993 cars. For all intents and purposes, 1993 was the last year of production for the S series, although some did trickle out in 1994. Both the last V8S and S4 are M registration cars.

S series production figures. (Based on information from TVR Engineering.)

S series production

These figures are reasonably accurate, with the exception of the production figures for the last year, which get a little difficult as some of the 1993 cars appeared in 1994. This mainly affects the V8S and S4 figures. The catalytic equipped cars like the S3c are included in the figures for the generic car e.g. S3. The peak output years were 1990 and 1991 and production dramatically falls in 1992. It is no coincidence that it was in this year that the Griffith entered production and the fall is without doubt due to the Griffith's success. These figures are not TVR's total output as the V8 Wedges were still being made during this period (well up to 1993). It is fair to say that the S series cars did fill up the factory when production of the Wedges was also starting to decline. Peter Wheeler actually claimed that although the Wedges were a great success with the public and TVR made a lot of them in a very short space of time, they didn't actually make any money on them. How accurate this is I don't know but I was told that the Griffith took 100 less man hours to make than an S series car and sold for several thousand pounds more.

There are several methods of telling when a car was made. Sometimes, the date is written on the

back of part of the interior upholstery, such as the covered steering column shroud used on the S3 and later cars. Alternatively, looking at the serial number can help. All the cars are marked with European VIN numbers. The last eight characters can indicate when the car was made. The eighth character in from the right of the serial number is the manufacturing year letter. The characters to the left of this date code define the model and other information. 1986 was G, 1987 was H, and so on. The next letter to the right indicates the manufacturing plant, which varies! The next three numbers are the model and manufacturer code and the final three are the build sequence number for all the cars that TVR made that year.

START _____ R J 011 783 END
 Year Plant Model Build
 Code Code Code No.

Year codes:

G	1986	H	1987	J	1988
K	1989	L	1990	M	1991
N	1992	P	1993	R	1994

VIN manufacturing year codes.

Note: the year of manufacture may not be the same as the year of registration.