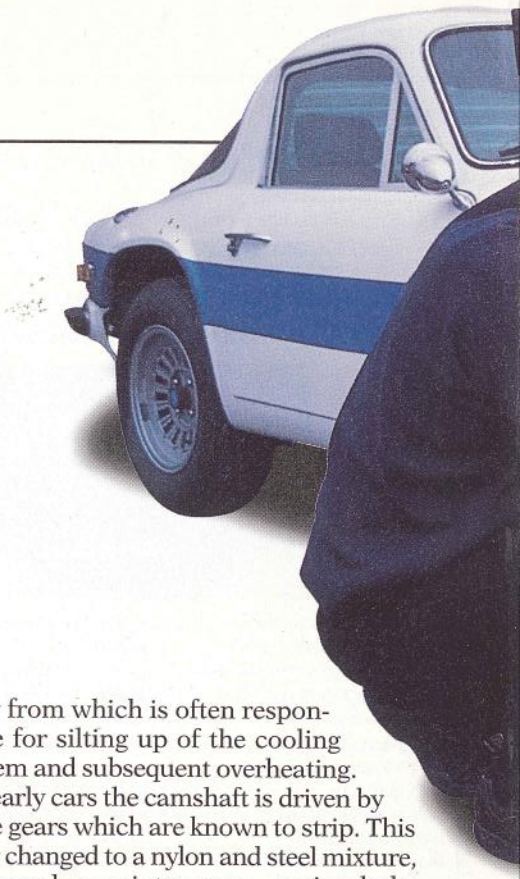
TVR 3000M & Taimar



In association with

DRAPER THE TOOL COMPANY

Want to service the TVR 3000M or Taimar hatchback? Ricky Morris quizzed M-series guru Adrian Venn to find out how it should be done.

Engine

The M-series TVRs were fitted with Ford's 3.0-litre V6 Essex engine. Early cars used TVR produced cooling systems with a shallow forward mounted cross-flow radiator, later (1979-'80) cars have a better upright Capri radiator. Exactly TVR boss Adrian Venn recommends the water pump with a cast impeller rather than the earlier pressed steel type, the lazy flow from which is often responsible for silting up of the cooling system and subsequent overheating. On early cars the camshaft is driven by fibre gears which are known to strip. This later changed to a nylon and steel mixture, but regular maintenance – a tiny hole, near the bottom of the distributor, allows oil directly onto the meshing point – means there's no real reason for failure on the original parts.

Apart from these odd problems this is a robust engine, though the parts supply is beginning to dwindle.

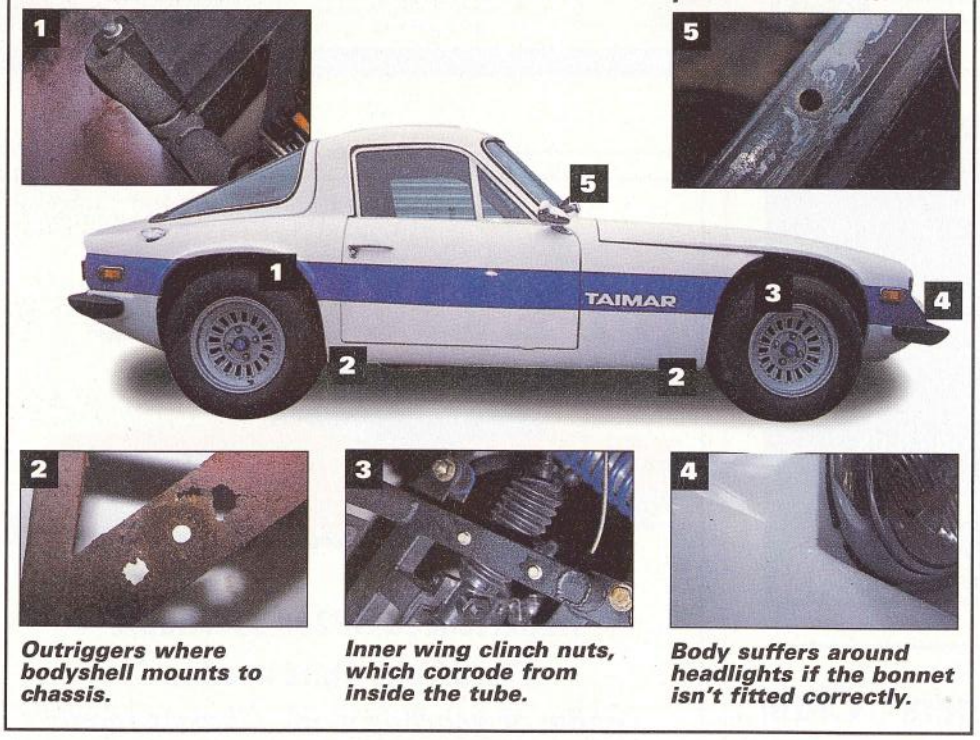
Transmission

The Ford, 4-speed 'E'-type gearbox was standard fitment. A few overdrive models use a Ford side rail unit, which often leaks oil and hydraulic clutch fluid (the 4-speed has a cable operated clutch).

Strong when looked after, age and abuse can take a toll. Forced gear changes can cause the nylon bush at base of the lever to break up, though this is easily replaced. Whines in first and second gear are usually caused by worn bearings, in third and fourth suspect the layshaft. Early propshafts have pressed-in sealed universal joints. The later greaseable type can be used, but nipples have to be inserted in place of blanking plugs fitted.

In 1976 the 3.45:1 TR6 differential was swapped for a taller 3.31:1 Jaguar ratio to make better use of the TVR's power. Diff

CORROSION CHECK POINTS



Top of the rear chassis tube ahead of wheel centre line.

Glass fibre cracks around wiper drives and pedal box mounts.

Outriggers where bodyshell mounts to chassis.

Inner wing clinch nuts, which corrode from inside the tube.

Body suffers around headlights if the bonnet isn't fitted correctly.

2500M first of the M-series TVRs, followed shortly after by the **1600M** and **3000M**.

Taimar has same specification as 3000M, but has hatchback bodystyle.

TVR M-series launched in 1972. Hatchback Taimar variant added in 1976. 2500M discontinued in 1977. Taimar

1600M phased out in 1973, but is reintroduced in 1975.

can
row their oil, and
run dry and the driveshafts can get noisy – be warned, some people swell the splines with a hammer!

Suspension and Steering

The Triumph 2000 steering rack was used on all cars, activated by a Triumph Herald, and later Spitfire, steering column.

TVR's double wishbone front suspension uses TR6 uprights. Failure only occurs due to lack of maintenance. The grease nipples catch people out, as the lower steering swivel should be oiled with EP90 through a grease gun – grease causes them to fail! ETVR advise the use of polyurethane bushes in the lower front wishbones; the original rubber items are prone to rotating out of place.

The TVR upright in the double wishbone rear suspension uses Triumph 2000 bearings. Any problems often relate to previous owners cutting costs by trying to change the rear bearing (£20) rather than fitting a complete exchange unit (£60). to keep the cost down to £20 for parts.

Brakes

Discs with twin-pot calipers up front and large drum brakes on the rear give few problems. The vast choice in modern friction material makes all the difference in stopping performance. Early cars have a TR6 master cylinder, using a pressure differential warning actuator, mounted in-line down by rack. The actuator is hard to source now and of poor design, as diagonally opposed brakes operate in failure conditions. The later Ford-type, has front to rear dual circuits.

Electrics

The standard Lucas bullet connections are usually the cause of electrical faults. Wiring problems escalate on post-'74 cars as all loom wires are black. TVR later used brown wire for both positive and earth! Over-heating problems and a misleading fuel gauge are often caused by a poor earth link at the voltage stabiliser.

Interior and Exterior

Pre-'74 cars used Mk1 Cortina 'ban the bomb' tail light clusters, later models used items from Triumph, Aston Martin, Jensen and Reliant. Early cars had vinyl bucket seats and chrome bumpers which were changed for US-spec rubber items. Wing and bonnet vents disappeared in '75. The padded interior trim of the '76 limited edition 'Martin' model (marking 10 years of Martin Lilly owning TVR) was adopted in subsequent cars.

The Taimar (Martin) is simply an M with a hatchback.

M-series replaced by all-new **Tasmin** models.

Convertible introduced in 1978. Last M-series cars produced in 1979.

Convertible is the first drophead series-production TVR and takes over the majority of TVR sales.

Total M-series production all models: **2402**

SPECIFICATIONS

■ 1972-'80 TVR 3000M and Taimar

Engine	2994cc V6 ohv
Power	138bhp @ 5000rpm
Torque	174lbft @ 3000rpm
Transmission	4-speed manual
Brakes	Front: Discs. Rear: Drums
Suspension	Independent all-round coil springs and telescopic dampers
Wheels	6x14in alloys
Tyres	185HR/14 radials
Performance	Top speed: 125mph 0-60mph: 7.8sec

REFERENCE DATA

■ 1972-'80 TVR 3000M and Taimar

Spark plugs	NGK BP6ES
Firing order	1-4-2-5-3-6
Ignition timing	12-14°BTDC @ 800rpm (tickover) with vacuum disconnected and plugged
Carburettor	Weber 38DGAS
Fuel pump	Mechanical diaphragm
Capacities	Engine oil: 5.65-litres Gearbox oil: 1.1-litres Rear axle: TR6 1.3-litres (Jaguar 1.6-litres) Coolant capacity: 12.5-litres

IMPROVEMENTS

■ Fit a Ford dual circuit brake master cylinder
■ Upgrade front suspension bushes to polyurethane for better control
■ Fit alloy steering rack mountings
■ Electronic ignition conversion to eliminate distributor wear problems

EASY JOBS

■ All general mechanical jobs

DIFFICULT JOBS

■ Building up universal joints on driveshafts

TOOL BOX

Draper Tools' range of hand and power tools includes these items, ideal for service work on the TVR 3000M and Taimar.

DRAPER THE TOOL COMPANY

	STOCK NO
Trolley jack	37137
Axle stands	36524
Pry bar	31496
AF socket set	25360
AF spanner set	29548
Screwdriver set	27021
Oil filter strap wrench	23759

■ There are thousands more quality hand and power tools in the Draper range. For details of your nearest stockist, visit the Draper website at www.draper.co.uk/stockist.htm or telephone 01703 494333.

1 Inspect the inlet and fuel system

■ **Annually or every 6000miles change the air filter.** Using a ½in AF socket, undo and remove the two nuts retaining the lid of the filter pan, lift out the old element (below) and replace.
■ **Ensure automatic choke is working.** While the engine is cold, press the throttle pedal twice and the butterfly should close. As the engine warms, kick the throttle pedal and the butterfly should open. If it doesn't adjust accordingly.
■ **Check carburettor spindle for wear.**
■ **Check the fuel filter**, if fitted, and replace as required. Old solder does come loose inside the tank and can be flushed out if becoming a problem.
■ **Inspect the fuel supply lines.** Originally steel items now often replaced by rubber.

2 Check all the ignition parts

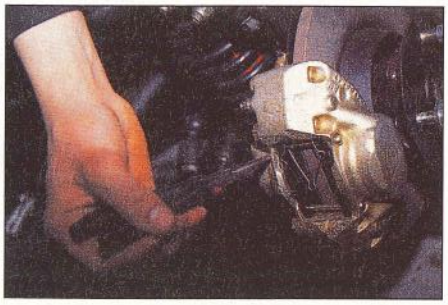
■ **Check the spark plugs are in good condition** and the gap is set to 0.025in at every 6000mile service, and change all six every 30,000miles. They are easily accessed and removed with the standard plug socket and ratchet (below), but watch your shoulder on the bonnet.
■ **Inspect the distributor cap and plug leads for cracks and deterioration.** Replace as required. The distributor is easily found, and worked on, at the centre top of the engine. Simply unclip the cap and remove the leads.
■ **The rotor arm, points and capacitor should be changed every 6000miles.** Set the points gap to 0.024in and lock with the clamping screw. Using a strobe, set the timing to 12-14°BTDC @ 800rpm (tickover), with vacuum disconnected and plugged.

3 Change the oil and filter

■ **Every 6000miles change the oil and filter.** Run engine until warm then switch off. Jack up the front of the car and support safely on axle stands. Remove the drain plug found at the offside rear of the sump and drain the oil into a suitable receptacle.
■ **Remove the filter canister.** If the nearside engine mount has been altered with a slim nut and shortened stud, the filter canister is easily removed with a strap wrench (below). If not this can prove quite fiddly. Ensure the new filter has the rubber seal in place and is lightly oiled. Screw on just hand tight.
■ **Replace the sump plug** and lower car to the ground. Fill with oil to the dipstick (offside adjacent the centre plug) level. Run the engine and check the level again, topping up as required.

6 Inspect the front brakes

■ **Check the front brakes** annually or every 6000miles. With the car safely up on axle stands and the front wheels removed, visually check the calipers and hydraulic hoses for general condition and any signs of leaks, and the discs for cracks and general condition. Replace as required.
■ **To remove the brake pads** for close inspection (below), use long nose pliers to remove the 'R' clips. Drive out the pad retaining pins. Lift out the pads and check for overall condition, replace in full sets as required. It is best practice to reassemble using new pins and 'R' clips whenever possible, and certainly new anti-rattle kits, available from ETVR for just £8.36.
■ **Replace wheels** using a smudge of copper grease on each wheel nut and tighten accordingly.



7 Check the rear suspension

■ **Jack up the car and support safely.** Make sure the trolley jack and axle stands are under the chassis not the GFRP body.
■ **Test all the pivot joints and wheel bearings for play,** use the wheels as extra leverage.
■ **Crack off the wheel nuts** and remove the rear wheels, get someone else to press the brake pedal while you do this.
■ **Check the condition of rubber boots on driveshafts,** there should be no leaks.
■ **Spanner check all the pivot bolts** to ensure tightness, and visually check all bushes (below). A worn bush usually starts to fall apart by spreading over the retaining washers.
■ **Check the dampers** for leaks and general condition, ensuring the top and bottom bushes are intact.

8 Inspect the rear brakes

■ **Check the rear brakes** annually or every 6000miles. With the car safely up on axle stands and the rear wheels removed, visually check the hydraulic hoses for general condition and any signs of leaks. Replace any parts as required.
■ **Remove the screws retaining the rear drums,** with the handbrake off. De-adjust the shoes with a ¼in square drive brake spanner (below), and the handbrake cable at the back plate. Now gently tap the drum with a nylon mallet and lift off.
■ **Clean out any dust and ensure the cylinder is fluid tight.** Check the shoes and replace as required. Replace drum and screws and adjust up, centre shoes by depressing the brake pedal. Reconnect the handbrake cables and adjusting so that there are three clicks of travel on the lever.

4 Checking the valve clearances

■ **Use a ½in AF socket to remove the air filter** and release the fan belt to let the alternator drop down.
■ **Undo the six Philips screws** securing each rocker cover and remove the covers.
■ **Adjust the tappets.** Using a 5/8 in AF ring spanner and a feeler gauge (below) set follow the routine below, turning the crankshaft to open the valves:
adjust 7in and 10ex with 1 and 6 open
adjust 4in and 5 ex with 8 and 11 open
adjust 9in and 12ex with 2 and 3 open
adjust 6in and1ex with 7 and 10 open
adjust 11in and 8ex with 4 and 5 open
adjust 2in and 3ex with 9 and12 open
(inlets 0.013in) (exhaust 0.022in)
■ **Re-assemble with new rocker cover gaskets,** being careful not to overtighten the screws and and split the gaskets.

5 Inspect the front suspension

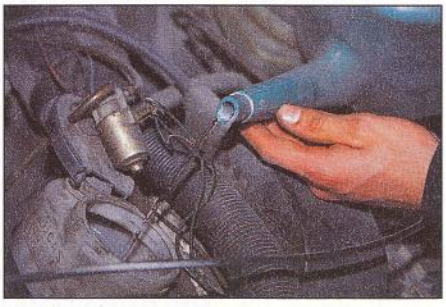
■ **Check the front suspension and steering parts** annually or every 6000miles. Using a trolley jack under the chassis – **not** the GFRP body – jack up the car and support safely on axle stands, again under the chassis.
■ **Test all the pivot joints and wheel bearings for play**, using the wheels for extra leverage.
■ **Crack off the wheel nuts and remove the front wheels**. Get someone to put the brakes on while you do this. Grease the top swivels with a grease gun (below), and oil the lower joints using a grease gun filled with EP90 oil. Grease in these joints can cause seizure, and possible suspension collapse. Check all joints, including steering rack knuckles, damper mounts and lower bushes.

9 Check the transmission

■ **Check the clutch cable adjustment.** With the rear of the car safely supported on axle stands Pull the outer cable at the bell housing and it should leave a 3–4mm gap. There is a nut and lock nut to adjust the play accordingly.
■ **Grease the propshaft universal joints** (below). Where the early sealed type have been replaced by newer versions the blanking plugs should also have been replaced with grease nipples. If not, you will need to do the job now.
■ **Top-up the gearbox with EP90 oil.** The gearbox filler hole, on the nearside, is also the level.
■ **Top-up the diff with EP90 oil.** The filler plug for the Jaguar diff is on rear, with the TR6 diff it is on the side. The filler doubles as the level on both.

10 General service checks

■ **Check the fan belt tension** is set to approximately 13mm (½in) at the longest run. Adjust accordingly.
■ **Top-up the battery level,** and washer bottle. Top-up hydraulic fluid reservoir as required, using DoT 4 fluid. Check the coolant level and has a 30% anti-freeze to water ratio, top-up as required (below).
■ **Lubricate all boot,** bonnet, door hinges and catches using WD40, especially as excessive stiffness will put unnecessary strain on the GFRP mounting points.
■ **Check all lights,** bulbs, fuses and other electrical components for condition. Bullet connectors can become corroded due to exposure, poor or suspicious ones should be replaced to avoid failure later on.
■ **Check the tyres** are in good condition and correctly inflated.

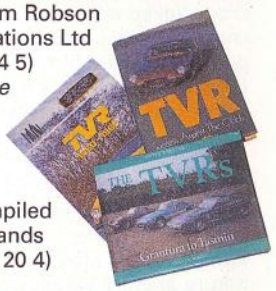


CLUBS

■ **TVR Club** PO Box 36, Telford TF6 6WF (01952 770635)

BOOKS

■ *The TVRs* by Graham Robson (Motor Racing Publications Ltd £7.95 ISBN0 900549 64 5)
■ *Success Against The Odds* by Peter Filby (Gentry Books Ltd, £9.95 ISBN 0 905064 08 9)
■ *TVR 1960-1980* compiled by RM Clarke (Brooklands Books ISBN 0 907073 20 4)



SERVICE ITEMS

■ Prices from **Exactly TVR** (0956 956042). All prices include VAT

Spark plugs (each)	£1.85
Air filter	£4.53
Oil filter	£2.75
Capacitor	£3.56
Contact breaker points	£2.82
Rotor arm	£3.05
Front brake pad set	£17.06
Rear brake shoe set	£17.50

SPARES

■ Prices from **ETVR**. All prices include VAT

Ball joints top	£17.50
Lower swivel	£21.00
Track-rod end	£8.50
Clutch cable	£21.50
Clutch kit	£105.00
Brake discs (each)	£23.00
Brake caliper (reconditioned)	£55.00
Gear lever lower bush	£4.50
Thermostat	£3.50
Electronic ignition	£78.00

BODY PARTS

■ Prices from **ETVR**. All prices include VAT

Bonnet	£528.75
Inner wings	£60.00
Rear lamp (new)	£96
Rear lamp (refurbished)	£40
Headlamp rim	£8.50
Headlamp bowl	£8.00
Sealed beam headlamp	£9.00

THANKS TO:

■ **Adrian Venn** of **Exactly TVR** (024 76 596883), www.exactly-tvr.demon.co.uk ETVR covers everything from ground-up restorations to servicing, race preparation and other performance upgrades, for the M-series and other older TVR's. Adrian's reputation for perfection brings custom from all over the world, and ETVR boats one of the most competitive price lists for new and secondhand parts in the market.