

STAYING OUT OF TROUBLE WITH THE STAG ENGINE

The Triumph Stag is a car with many qualities to recommend it and the reasoning behind the manufacturer's decision to build the car - the fact that perhaps only the Mercedes and perhaps the BMW ranges could offer the same sort of motorcar - still applies.

One of the interesting aspects of the Triumph Stag is that at a time when manufacturers had already established a tradition of making do with engines or a family of engines that could power a variety of cars, Triumph took the bold step of creating a new engine specifically for the Stag and never publicly revealed any intention of using it in other applications. This decision becomes even more surprising when one considers that within British Leyland, Rovers were already employing the 3.5 litre V8 engine design they had acquired when Buick had no further use for it.

Unfortunately, having chosen to start from scratch and produce a new V8, the Triumph division found that in service the engine earned an unwelcome reputation for going wrong and while some cars gave excellent service to satisfied customers, others seemed plagued by problems. While the American motor industry have a reputation for building virtually indestructible V8 engines which could be thoroughly neglected for 100,000 miles it became clear that the Stag engine was not of the same breed. However, towards the end of the Stag's production life (1970 to 1977) and particularly in the years that followed, it has become clear that the Triumph V8 can give excellent service and that the secret is not to rely upon luck, but to take certain basic precautions to avoid two or three known problems.

A Bad Engine?

It is easy to make sweeping statements based upon misunderstandings and half-truths, but the Stag engine has received more than its fair share of criticism. Yes, there are some deficiencies in the design and in the materials used and these have caused serious engine problems. On the other hand, plenty of Stag engines which have been properly used and maintained have achieved high mileages with complete reliability and one wonders what percentage of engines have suffered problems due to the negligence of owners who have not attached enough importance to the basic needs of these power units.

What goes wrong?

The faults which have given the Stag engine a bad reputation are; crankshaft wear, stretched and worn timing chains and a tendency to overheat causing warped cylinder heads and blown head gaskets. At one stage in production, there were problems with the finish on crankshafts, which resulted in rapid bearing wear.

Another aspect of crankshaft problems is that the standard hardening process as carried out by the factory only affects the outer 'skin' of the crankshaft to a depth of about 0.020", therefore once the crankshaft has been reground to the extent of perhaps 0.020" or 0.030" you have a mild steel crankshaft which is likely to wear quickly and destroy new bearings as well in a matter of 500-1000 miles. When dealing with crankshaft problems, nitrided

crankshafts are a matter of routine now and we understand that very few problems arise once this has been done.

Overheating is often caused by corrosion of the aluminium cylinder heads, the resulting silt finding its way to the radiator and partially blocking it. In this situation the cylinder heads tend to warp and a gasket blows. Unfortunately it has often been the case that a Stag in this condition is taken to a garage for repair, the heads are skimmed, new gaskets are fitted, nothing is done to discover the actual cause of the overheating and the problem repeats itself very shortly afterwards. Perhaps there would be less of a corrosion problem if the cylinder heads were made of a better quality aluminium, but even so corrosion can be prevented to a large extent by the use of anti-corrosive inhibitor such as PRIMAX, provided that it is used all the year round. In addition it is vital that the cooling system is thoroughly flushed out once every three years (if using PRIMAX) or more often which necessitates the removal of the $\frac{3}{4}$ AF drain plugs either side of the engine in order to get rid of the debris. When a Stag engine starts to overheat it is essential to stop the car and switch off immediately. It simply cannot be driven, however carefully, to the next petrol station or service area and much unnecessary engine damage has been caused in this way.

Timing chains wear and stretch and this can happen to the extent that they can jump the sprockets and cause serious engine problems. Factors contributing to this problem include the manner in which the car is driven (motorway driving appears to cause less wear than town driving) but more importantly the efficiency of the lubrication system. Low oil pressure, perhaps caused by crankshaft wear, results in less oil getting to the timing chains. Oil starvation throughout the engine is also caused by the continued use of old oil which is itself less effective because it is beginning to break down and contains all the products of engine wear and combustion. If the oil filter is long overdue for a change, this is likely to be clogged and obstructing the flow of oil to the engine and a significant build-up of sludge in the sump can even block the wire strainer in the sump thus greatly reducing the oil supply at its source. Experience recommends that the engine oil is changed every 3000 miles (change the filter too) and ensure that the sump and oil strainer are clean. The timing chains should be checked every 25,000 - 30,000 miles; don't wait until they get noisy but aim to prevent problems rather than cure them afterwards. Experience has shown that once checked, you may be able to refit all the components and reset the chain guides and tensioners.

Preventative maintenance

If the Stag engine is running satisfactorily and is in good condition, there is no good reason why it should not continue to do so provided that every care is taken that the cooling and lubrication systems can work to maximum effect, bearing in mind the other requirements outlined above and keeping a watchful eye on the oil pressure and water temperature gauges.