

## Building Something Special

Ned Buck



With the crank fitted, the obvious next step was to fit the cam, However I had unfinished business on the front axle to sort out.

The king pins were an excellent fit in the 'shrunk' axle holes and I managed to fit the new bushes and ream them out without too much drama, although never having done this before I was apprehensive.



*Using a vice and sockets to push the old bushes out, I also used a bolt and nut to pull them out.*



The front suspension was then rebuilt again completely, hopefully for the last time!!

I had previously sent off the cylinder block for rebores and skimming of the head, so my next step was to lap and install the valves and springs, something I had done many times before on overhead valve engines. So this was fairly straight forward, although I did manage to fire one of the collets across the garage never to be seen again, which delayed things a bit.





I also decided that I had to get on with installing the new pistons, rods etc. These have shell bearings with which I was familiar, only the orientation of the offset big ends had me reaching for the phone to Tony Betts to ensure they went in the right way around.

It was interesting to note that at some point the barrels had been sleeved back to standard bore, and the top edge of the bores had been slightly chamfered. This, and the fact that the inlet valves had been increased in size from standard, suggested the engine had been worked on in the past.



When fitting the pistons I thought at first that I could put them in the barrels first and then lower the whole thing on to the crankcase. However, this proved to be quite difficult with only one pair of hands, so I reverted to fitting the barrels to the crankcase first. I had read that this joint between the two parts can be a serious source of leaks (but on the advice of a chap I bought the oversize oil pump from) I used a gasket and some Threebond sealant which he reckoned the racing boys use?? The pistons were then inserted into the barrels fairly easily.

Fitting the reworked cam came next, and I had a lot of fun trying (at least 6 times) to get the 9 rollers to stay put when sliding the cam into place. I eventually used an elastic band from a bunch of spring onions to hold them in place, along with a load of grease, and that worked. (I should have listened to the advice I had read!!). The bush for the cam was replaced with a better version and the pin that holds it in place also changed for an Allen key bolt as per Bob Garrett's advice, with a thread cut into the bush. I lined up the 'O' marks on the pinions and hopefully this will set the correct valve timing. The tappet gaps still need setting.



*Note the 'O' s – two on the cam pinion and one on the crank pinion which need to align as shown.*

*The nut clearly needs to be very tight.*

Having fitted the barrel block, pistons and cam, I made sure that the tappets were set at the right gap. Again, this took longer than I expected, as I was slightly unsure that I was doing it correctly. In the end, after turning the engine over several times to check the gaps, I was satisfied they were done correctly, time will tell!



A trip to the Le Mans Classic in my MGA interrupted progress for a while, but I soon had the front cam and crank pinions on, and tightened up. The crank being locked in position with a steel plate and a long length of steel whilst I leaned on the dog nut with a big socket in my torque wrench and a length of pipe. I didn't trust myself to get the torque right (not sure what it should be, except very tight), so I hit the dog nut with my impact wrench a couple of times, and then ensured the lock washer was bent over.



Next came the fitting of the Cylinder Head. I had bought an 'Alta' aluminium cylinder head

earlier in the year, and now I realised I need to check that there was sufficient clearance for the valves when they were fully open. I did a quick check without the gasket in place – all was well-so

the head was fitted using the correct sequence for tightening, and also some 'Wellseal' on the surfaces. Not what everyone would do, but in my experience a good idea.



Next came the fitting of the clutch. I had had the lining recovered very early on by a company called 'Saftec' – centring it whilst fitting the clutch pressure plate was done using a tool I made to the dimensions in Woodrow's big red book. The actual fitting of the toggle levers with 'mousetrap' springs and spigots was very difficult, until I realised I could fit the 'mousetrap' spring on the toggle arms to the outer plate before trying to fit all the clutch springs, and then it went very smoothly.



I am now looking for a larger aluminium sump which, when fitted, will complete the engine.

*To be continued*