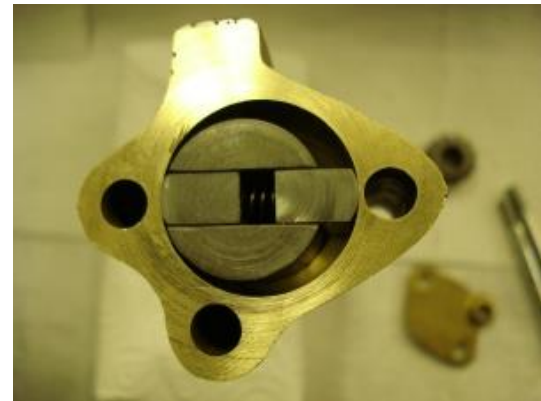


## A7 oil pumps

It is generally accepted that the flow of oil to an A7 engine can be usefully increased by boring the oil pump body 1/32" oversize on diameter and offsetting the centre of this new bore by 1/64" in the same direction as the original offset. It would be difficult to make the bore any larger due to the proximity of one of the pump retaining bolt holes (the right hand hole in the photo). This modification is described on page 254 of the 750 Club 'A7 Companion' (6<sup>th</sup> impression 1990) and allows the use of standard springs and vanes.



Heavily over-bored pump

Just out of curiosity, I measured the bores of six A7 oil pumps that I have accumulated over the years. I also measured the maximum clearance between the rotor and the housing but of course this should simply be the bore diameter less the rotor diameter if any over-boring has been done accurately so as to preserve the original minimum rotor to bore clearance (the left hand side in the photo). The resulting dimensions were ....

Oil pump dimensions (inches)						
Example:	Ex 1 – In spares box	Ex 2 – In spares box	Ex 3 – In spares box	Ex 4 - In recently acquired engine	Ex 5 – Bought from Tony Leslie as 'high capacity' pump	Ex 6 – bored years ago and much used in recent years
Housing bore dia:	1.000	1.008	1.005	1.003	1.020	1.048
Max clearance:	0.125	0.133	0.130	0.124	0.145	0.173

From this sample, it seems that the standard pump housing bore is 1.000" dia perhaps increasing by a few thou' when worn and the two over-size bores in my collection are 20 and 48 thou' above standard (note 1/32" = 31 thou').

Example 6 (and shown in the photo) is a pump I bored-out many years ago that has proved reliable for many thousands of miles and shows no signs of wear. This is not a difficult job in the lathe so long as you make a suitable jig to hold the pump body at the correct offset and exactly in-line with the axis of the lathe. You also need a sharp boring tool to achieve a both smooth bore and a good 90° corner at the top.

So, how about performance? Well, an often quoted benchmark for satisfactory oil pressure in a 'splash feed' A7 engine is around 1.5 psi per 10 mph in top gear with the engine fully warmed-up. In my experience, standard pumps often achieve this but both of my higher capacity pumps manage only a modest increase to around 2.0 psi per 10mph. Interestingly, there appears to be precious little difference between the two bored-out pumps in terms of pressure, despite their difference in

bore diameter. Nevertheless, the A7 oil pump (being a positive displacement configuration) must shift a greater volume of oil at any given rpm when over-bored. So, even if the gallery pressure is not much higher than standard, the greater flow can only be a good thing - sloshing more oil towards the crankshaft and perhaps even helping to keep the big-ends a little cooler?

Maybe, the more important issues for effective lubrication of your bottom-end (pardon the expression!) are proper jet alignment and adequate end-float of the big ends on their journals? Woodrow suggests up to 1/16" i.e. over 60 thou' which sounds rather a lot, especially when many white-metal outfits leave only 2 or 3 thou'. In any event I would be very interested to hear reader's thoughts on these issues. Please respond to our new Editor [roly@mothy.co.uk](mailto:roly@mothy.co.uk).

..... Spanner