Camshaft pulley removal

Nearly all Austin Seven owners at some time find it necessary to remove the camshaft fan pulley, usually to change a leaky felt seal between the pulley and the nosecone.

It sounds a simple ten-minute job but can be quite difficult, because the pulley has an internal taper that fits onto an equivalent spigot at the front of the camshaft and the two can become very firmly united. The total internal angle of the taper is around six or seven degrees which is the ideal angle to provide a very tight fit. Exactly why Austin adopted this design is a mystery because in my engineering experience taper fits are normally employed to transmit high levels of torque and this does not exactly apply to the load required to turn the cooling fan.

Anyway, to proceed to remove the pulley …..

1. If the engine is in-situ, it is a good idea to protect the radiator honeycomb core by taping a piece of stout cardboard to the inside of the radiator to protect it
2. Remove the pulley securing nut and take off the lock washer, then replace the nut leaving a gap between the nut and pulley
3. Do not attempt to remove the pulley axially by the use of a puller or extractor, this will probably result in removing just the rim, leaving the boss behind
4. Observe that the pulley effectively consists of three wide 'spokes' connecting the rim to the boss. Then using a drift made of alloy, hardwood or hard nylon, apply blows (in a direction that is parallel to the face of the pulley) to the area where the 'spokes' meet the rim – downwards is easiest, as if you were trying to rotate the pulley on the camshaft

This should free the pulley but if difficulties continue, try turning the engine to rotate the camshaft through 120° in order to attack the next spoke etc. It is also permitted to apply gentle heat to the central area of the pulley

Finally, why should a simple pulley be so difficult to remove?

Primarily the problem is a feature of the taper angle – a wider angle taper would make removal much easier. Also, perhaps excessive torque may have been applied to the securing nut or possibly the mating of dissimilar metals; the camshaft is hard steel and the pulley a soft alloy. Some combinations of dissimilar metals can have a tendency to bind, sometimes made worse by electrolytic action.

……. Eddie Loader