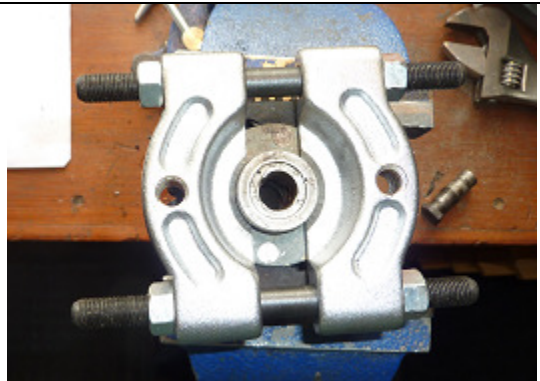


Fitting a new fibre wheel to the ATD unit



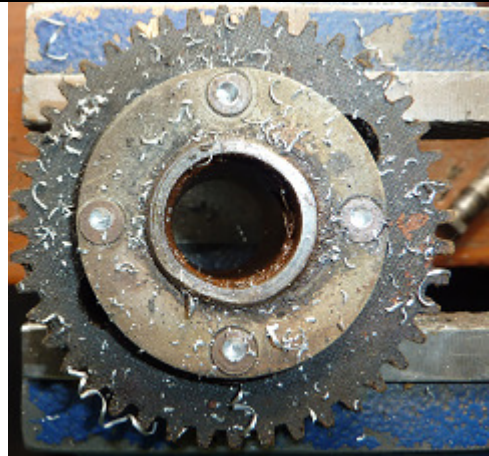
1. ATD unit as found.

Don't bother trying to get the centre bolt out; the left hand threads are more than likely mangled anyway!

2. Remove the collar with a bearing puller. Heat the collar first. Don't try using chisels or screwdrivers! With a bearing puller you can remove the collar about half way until the jaws of the puller hit the central tube, then remove the bearing puller and lever the collar off. Alternatively, use the bearing puller's saddle and extractor bolt with a suitable spacer between the bolt and the centre sleeve of the ATD unit.



3. After removing the collar the ATD unit comes apart.



4. Centre punch then drill the rivets using a 3mm drill as pilot then 6mm to take the tapered heads off. Be careful to drill in the centre of the rivets. Try not to drill into the metal of the backing plate.



5. Remove the backing plate then push the rivets through so that.....



6.all components are separated.



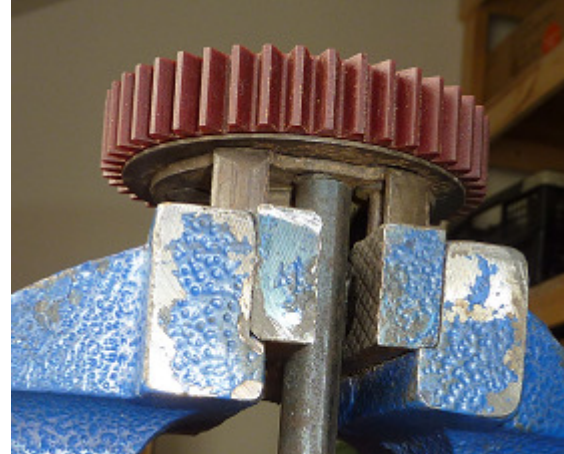
7. Degrease all the parts and check their condition

8. Fit the circular shim between the gear and the mechanism carrier plate. Make sure all the rivet holes align. The parts only fit one way; turn the gear over if the holes don't align!



9. Turn the unit over and fit the backplate. Make sure the chamfers face upwards to accommodate the swollen 'tails' of the rivets after they have been hammered.

10. Fit the rivets through the mechanism carrier



11. Support the rivet heads on a flat-faced bar in the vice and the centre of the mechanism on the top of the vice. Make sure that everything is sitting level and the vice is clamped very tightly.

12. Start by punching the rivets in their centres with a centre punch. Turn the unit over occasionally to make sure all the parts are sandwiched together tightly. You can use some pipe grips to squeeze the parts together if necessary.



13. Then finish off with the ball of the hammer or a rounded punch.

14. Make sure the rivets are flush on both sides of the unit. A final tap on both sides to be certain is a good idea.



15. Fit the bob weights and the spring levers; note that the spring levers are fitted with their protrusions uppermost; this is to prevent the springs scraping against the bob weights.

16. Pass the centre sleeve and claw through the mechanism so that the claw dowels locate with the holes in the spring levers.



17. Stand the whole unit, resting on the centre nut, on the vice whilst tapping the collar down, but make sure the centre nut is screwed in so that it is not engaged with the left-hand extractor threads (as picture 19 below). Heat the collar until it is nearly cherry red before fitting.

18. Don't tap the collar all the way home as this will prevent the mechanism turning freely on the centre sleeve. Leave a few thou endfloat (0.005" / 0.010") in the shaft.



19. Fit the ATD springs.



20. Fit the dished washer and 'C' washer



21. Make four punch marks at the join between the collar and sleeve for additional security.



22. Final check. Soak in oil before fitting. This job usually takes me about two hours so you can easily come home from work, have your tea, fit the new gear and.....



....go down to the pub to impress your friends with stories of your technical prowess.

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