

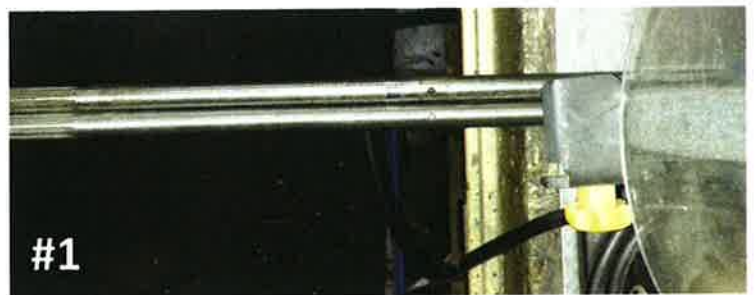
Drive Shaft Repair

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When the upper bushing in a gearcase gets damaged the driveshaft in the area of the bushing is usually also damaged. There is no point in replacing the bushing and re-installing a damaged shaft. It would wear out the bushing prematurely and if there is excessive play between the bushing and shaft the oil seal mounted above the bushing will not seal and the oil will leak out of the gearcase into the water pump, the oil level in the gearcase will get low and the bushing will wear out all over again relatively quickly.



Picture #1 shows a damaged shaft next to a NOS shaft, the last one I have. The best way to repair it is to cut out the damaged area. You could just weld over it but it probably has bits of bronze embedded in it and the weld would not turn out well, so it's best to start out with clean metal.



Picture #2 shows the shaft mounted in the lathe ready to cut out the damaged area.



Picture #3 shows the shaft with damaged area cut out, mounted in a vice on the welding table ready to weld.



Picture #4 shows the welded shaft next to the NOS shaft.



Drive Shaft Repair- cont'd

The heat of welding causes the shaft to warp, so it has to be straightened before putting it in the lathe to remove the excess material.

Picture #5 shows the shaft in a set of v-blocks with a dial indicator mounted at the far end. By rotating the shaft the dial indicator shows the high and low spots. I note the low spot and put a dot there with a marker. Then I transfer the shaft to a hydraulic press.



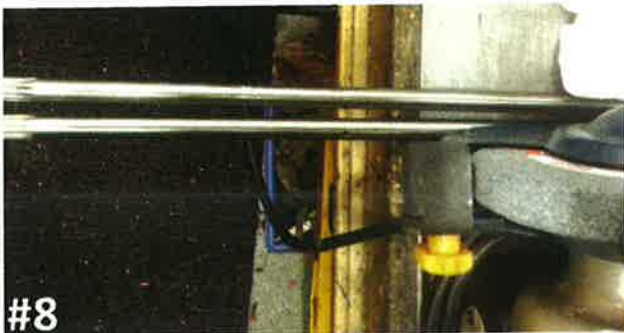
With the mark on top I apply pressure to the welded area. (see picture #6) Then I put it back in the v-blocks and re-check it. This process has to be repeated several times. I do it by feel, applying more pressure with a greater degree of bend and less as it gets closer to straight, otherwise you will over bend it and just end up going back and forth. Just out of curiosity I checked the NOS shaft and found it to be .008" out.



Once the shaft is straight it can be placed in the lathe and cut down to the original size. **Picture #7** shows a shaft that is partially done. After cutting some fine sandpaper put a nice polish on it.



Picture #8 shows the finished shaft next to the NOS shaft.



Picture #9 shows oil slinging threads on a more modern 2 piece shaft. This kind of thread could have been added to the 50's motors and would have reduced the number of damaged bushings and shafts.

