Detroit (Trunnion) bearing boot installation/removal tool

The half shaft boots, if they have not been replaced, are very old now on the Silver Shadow type motorcars and should be inspected. Even if the boots have been replaced, but the fuel lines have not, the right side boot is directly under the fuel tank feed to the fuel filter and that could be allowing gas to be deposited on the rubber boot shortening the boots life. If the half shaft has been replaced with the upgrade kit without the Detroit bearing this is not an issue.

The importance of this boot is that it keeps the more or less 150ml/cc of 90EP oil in and around the bearings, its only lubrication. If the boot is damaged or with age hardens and cracks it will allow the oil to escape and not allow proper lubrication of the bearing.

The RR/B workshop manual indicates that in order to replace the Half Shaft (drive shaft) Detroit pot bearing boot first one needs to remove the half shaft then the rollers, needle bearings, spacers and button on each side of the trunnion shaft and then the trunnion shaft needs to be pressed out of the half shaft followed by sliding the boot over the trunnion bearing knuckle and reassembly. Sounds simple, but unless you have an extremely large shop press, a 20 ton press will not cut it.

I have discovered that a number of the RR/B shops don't follow the RR/B workshop procedure, but have developed tools (screwdrivers, long shafts, etc.) and a lot of non-oil lubricant to accomplish the boot replacement task over the trunnion shaft.

I have been looking for a tool that does not require so much labor, is less stressful on the rubber boot and does not require a massive shop press. The boot can stretch a lot without harm so that is not a major issue; it is the use of tools that may produce an excessive amount of stress in a small area or that may have sharp edges that can cut or scratch the rubber shortening the boot long life. The "Dorman 614-030 Universal Fit CV Boot Air Tool" made by UNI-FIT division of R&B, inc. (a USA company) with modifications is almost a perfect tool for this job, and it's easily obtained (for example it's sold on Amazon) for about $130. The tool cost about the same as one of the UG11121 Detroit pot sealing boots and well worth the cost if it saves the life of a single boot. The modifications are simple; just remove every other arm on the unit making the unit a 4 arm instead of 8 arm device. The removal and reinstallation (reinstallation of the arms is only needed if the unit will be used for a CV boots also) of the arms is easy, just loosen the frame screws no need to disassemble the unit. For commercial use the air driven expansion cone inside the unit will need a steel reinforcement cover to increase its durability. Using air pressure the boot can be safely and easily be expanded so it

will slide over the trunnion pin. No real need for lubrication and only a small round guide bar to assist the boot over the pin may be needed.

The purpose of removing 4 of the arms has two purposes first it minimize the amount of expansion needed and second is so the unit after the boot is expanded can be placed around one side of the trunnion pin and pushed over the other side without the arms getting in the way. Simple, it uses 95 to 98 psi of compressed air. The expansion rate is controlled and has proven to be a safer process than using long screwdrivers etc. and one can do it by hand without the use of a large vice.

Dorman 614-030 Universal Fit CV Boot Air