

Shrimper 19 Cutless Bearing Replacement

By Jonathan Davies, Shrimper 847 *Merriwinds* (March 2018)

This bronze tube with a grooved rubber insert supports the end of the prop shaft and absorbs the lateral thrust from the propeller. Out of the water it is easy to examine, and if there is more than about 1mm of play allowing the shaft to noticeably 'clonk' sideways then it probably needs replacing. Photo 1 shows a comparison between a new bearing and a well-worn example with the grooves in the old, hardened rubber almost completely worn away. Left for much longer this old bearing would have allowed metal to metal contact and damaged the prop shaft. On our boat with this bearing there was always a rattle from the propeller under load.

Replacement of the bearing is not particularly difficult. The propeller must be removed by first taking out the split pin then, with a block of wood under a blade, undo the big castellated nut. On my boat built in 2001 this is 33mm, I found an old 1"5/16 AF spanner fitted perfectly. With the nut removed the propeller can be pulled off the shaft using an appropriate puller. The bronze and stainless components should have no corrosion, so the parts should separate without too much difficulty. Next comes the apparently obvious job of removing the bronze key from its slot in the shaft. It looks as if it should simply drop out (see photo 2). One frustrating hour later, after attempting removal with a mole grip, chiselling the end and attempting to gain a purchase to lever it out, and various other desperate remedies including heating, I finally drilled into the end at an angle, put in a small drift and levered it out. There was no sign of corrosion, it was simply a very tight fit. Apparently, this is not uncommon. The key is made from 1/4" (or 6mm) bronze bar and not expensive to replace if, as mine was, it gets butchered on removal.

The bearing itself is held in place by one or two grub screws which screw through the GRP collar and into dimples drilled in the bronze. See photo 3 for an example of these. Once the area has been carefully cleaned of anti-fouling, the grub screws can easily be unscrewed. The bearing is a snug fit in the GRP skeg but there should be no problem with corrosion and, gripped with a suitable mole-grip or pipe pliers, it can be twisted and pulled out.

The new bearing can then be lubricated with soap and pushed over the shaft and into its housing. It needs to stick out enough to be able to grip it for subsequent removal. Use a punch through the grub screw holes to mark the centres of where the dimples need to be drilled. The bearing is then removed for drilling before being slid back into place. The drilling has to be quite accurate. Replacement of all the other parts is now straightforward.

I ordered the replacement bearing through a local marine specialist and Yanmar dealer. Although the shaft on my boat was 1" diameter the replacement bearing was stamped '25mm.' I suppose they no longer supply the old size as the two are so similar. The other dimensions are 34mm x 60mm. It all fitted perfectly and there is no discernible play in the shaft. The bearing is water lubricated and probably lasts quite a long time, but the engineers said that while the load from a standard two bladed prop isn't too great, anything bigger will wear the bearing much quicker.

Photo 1



Photo 2



Photo 3

