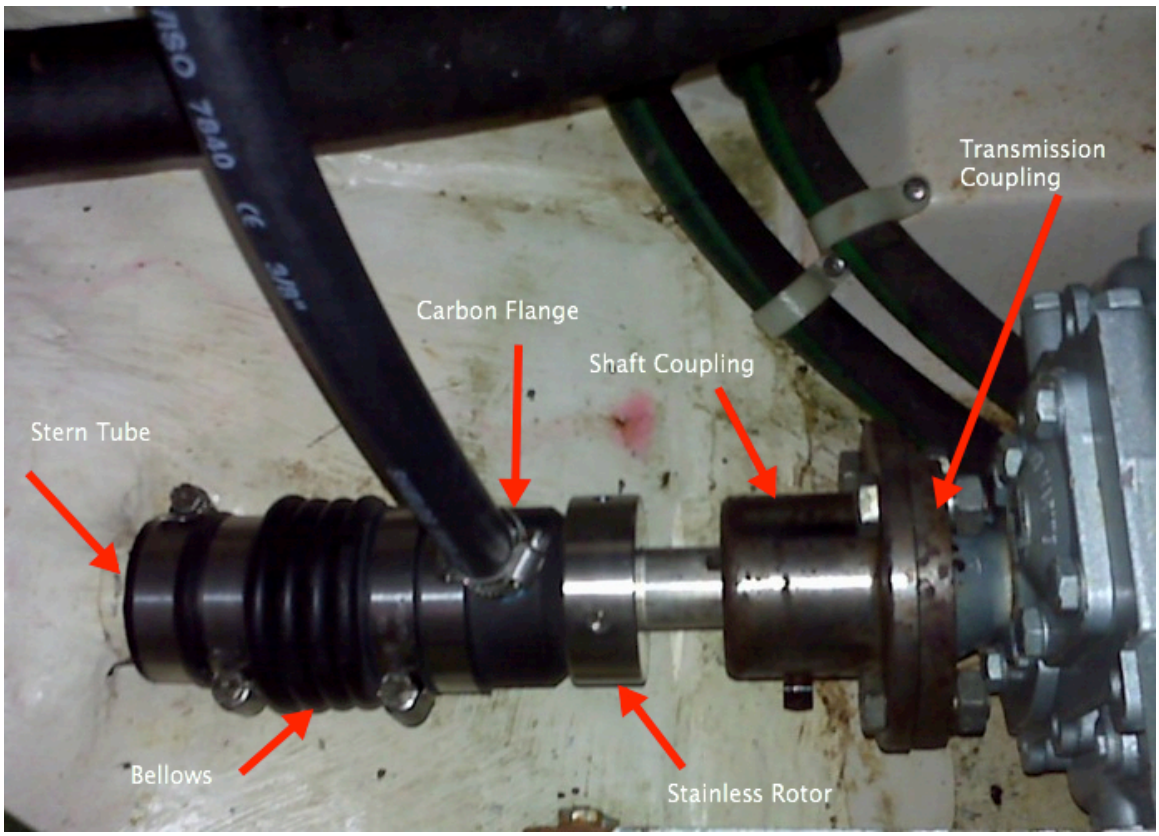
PSS Shaft Seal Bellows Replacement



PYI recommends replacing the rubber bellows on its PSS shaft seal every six years and mine was 9 years old. I'm sure you've heard the old adage "If it ain't broke, don't fix it". Those words kept resonating in my head during this project.

My boat had to be hauled because of a lightning strike so I decided to take advantage of the "free ride" and change out the bellows. The entire dripless packing seal is a pretty simple setup. It consists of a rubber bellows attached to the stern tube, a carbon flange that attaches to the forward part of the bellows and a stainless rotor that is just forward of the carbon flange and is attached to the shaft via a couple of set screws. The stainless rotor is used to compress the bellows and ensures a tight seal with the carbon component.

In order to attach the new bellows, it is necessary to unbolt the shaft coupling from the transmission coupling. So far so good. Once the shaft is free from the transmission, the shaft coupling must come off. Here is where this project quickly went down hill. The shaft coupling attaches to the shaft via a friction fit, a couple of set screws and a key. I'll spare you all the gory details but 4 days of effort failed to budge the coupling. Neither heat, cold, hammering, pulling or swearing caused the

coupling to move. A friend of mine is a machinist and felt confident that he could get it off. We used a wheel puller and 4 ½ hrs later the coupling was finally off.



Since the old shaft coupling was somewhat beaten up, I decided to order a new one. After installing the new bellows, it was time to put the new shaft coupling on. I wasn't able to get more than ¼" of the coupling on the shaft and there is no room to swing a hammer. I took it to a machine shop and discovered that it was .018" under sized. The machinist reamed it out and I was able to easily slide it on the shaft.

I think that if I had this project to do over, I would replace the dripless seal with a conventional stuffing box. Changing the packing material is so much easier, cheaper and can be done with the boat in the water. You also eliminate the possibility of the bellows rupturing and the sudden ingress of water that a bilge pump might not be able to handle. If you're in a cold climate, there is also the possibility of water freezing in the bellows and causing it to rupture. If you've already done this project, I'd love to hear your experience.

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