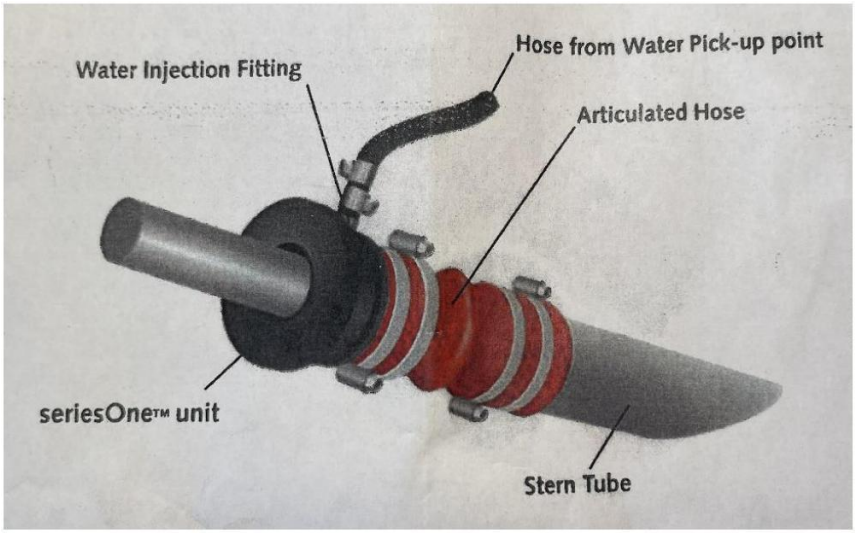
Replacing the Tides Marine Shaft Seal

Jon Davies – S21-36 *Merriwinds*



Later Shrimper 19s and all Shrimper 21s are fitted with a more sophisticated 'Tides-Marine' propeller shaft seal. There is no more screwing down on the grease cap to force waterproof grease into the earlier system. Now the boats are equipped with a 'fit and forget' rubber collar which is lubricated by a constant stream of water from the engine cooling system, and is not affected by minor misalignment of the shaft so should provide a very good seal for longer.

Experience has shown that, far from 'fit and forget,' the new seals appear to have a life of about six years before they begin to leak. This is possibly because Shrimpers often motor in shallow areas where the lubricating water is contaminated with sand and mud which can accelerate seal wear. The leaking isn't always obvious; an owner of a 21 told me he always had to pump a couple of litres of water from the bilge, even in dry weather. He could not see any leaking but eventually left his phone inside the engine compartment filming the shaft seal for twenty minutes and was dismayed to see a regular slow drip from the seal when he watched the video.

Access to the seal is not easy and the cockpit floor will need to come out. The photo shows the view looking back at the seal on a 21 with the floor removed. Note the lubricating water pipe from the engine. (The black corrugated tube is for the bilge pump).

Once access is gained, seal replacement is not difficult. Shrimpers are fitted with a Tides-Marine 'Series one' shaft seal. It is very important to measure the diameter of the propeller shaft as this will decide which model to buy. It could be one inch or 25mm.

The propeller shaft will need to be uncoupled from the gearbox by undoing the clamp bolts and sliding it backwards. If it will not move check that there isn't a grub screw holding it in place. The shaft has a key in a slot like the propeller end, and the key will need to be removed. It should just lift out. The shaft can then be slid completely out of the stern tube.

The next photo shows the shaft slid back to a partially dismantled seal. Note the keyway. The other photo shows the shaft partially pulled out. It will be dirty as a lot of it is exposed to sea water.

The important next step is to clean the complete propeller shaft. I used wire wool to get off all tiny barnacles and marine growth.

Now might also be a good time to examine the cutless bearing as access to it is easy and if it has been pushed up too far into the stern tube (as mine had), it can be drifted back out.

The seal assembly is held in place on the stern tube with jubilee clips, and once the rear two are slackened, the flexible red tube with the seal can be pulled off and examined. The black seal assembly is similarly held in place on the other end of the flexible red tube with jubilee clips. I was told you do not have to replace the tube if it is in perfect condition, but of course a split tube could cause the boat to sink! The parts are not cheap, the seal alone is about £170.

Once the shaft is clean it can be slid back through the stern tube and seal assembly. The seal comes with a red disposable thin plastic 'top hat' which is placed inside the rubber to protect it while being slid along the shaft. To help with this, the whole thing can be lubricated with soapy water (but I was warned, nothing oily) The stainless shaft will inevitably have a wear mark from the previous seal position, so it is important to locate the new one about 10mm away from it. The seal can be slid into a slightly different position in the red tube. There is plenty of overlap to allow this.

Once the shaft is securely bolted back into the gearbox clamp and everything is in place, the clips are finally tightened on opposite sides as in the first picture and the water inlet is securely attached. The 'top hat' can then be pulled out and snapped off to remove it.

Before putting the floor back, it is a good idea to start the motor in neutral and ensure that there is a plentiful flow of water outside the boat from the propeller shaft, as well as the normal exhaust.