

## SureSeal Repair and Maintenance



### Lip Seal Replacement FAQ

#### 1. How often do I need to replace the lip seal?

If the shaft seal is not leaking, don't change the lip seal. If the Tides Marine SureSeal has been in the boat for more than two years and the shaft is uncoupled for any reason during a regularly scheduled haul out, it would be prudent to replace the lip seal at that time.

#### 2. If the shaft seal begins to drip, what do I do?

**First Option** Loosen the hose clamps on the stern tube end of the Blue Hose and move the shaft seal assembly fore and aft until it feels like the seal housing is centered on the drive shaft. Re-tighten hose clamps. This process will make sure that the shaft seal assembly is centered on the shaft in case the drive shaft angle has changed.

**Second Option** Inspect the shaft area just ahead of the shaft seal assembly. Wipe with a clean cloth and inspect for any nicks or scratches which might affect the lip seal. Loosen the clamps on the stern tube and slide the articulating hose forward (if possible) an 1/8 – 1/4 of an inch & make certain that both hose clamps are "engaged" on the stern tube. This step will give the lip seal a new place to "seat" on the shaft. Run the vessel at "idle" rpm for 20 – 30 minutes. If the lip seal is in good condition, this option should eliminate any drips/leaks.

#### 3. Can I change the lip seal in my shaft seal without "hauling" the vessel?

Assuming you have basic mechanical skills (and a Spare Seal Carrier is in place), you can, indeed, change the lip seal without hauling the vessel. It also helps to have a sense of humor and patience.

##### A. Spare Seal Carrier On the Shaft & Spare Seals Available.

- i. Using a Phillips screwdriver, remove the assembly screws from the Spare Seal Carrier to make certain you have a spare lip seal(s) on the shaft.
- ii. Inspect the exposed shaft surface between the spare lip seal and the Tides SureSeal. Be certain that it is clean as well as free of any nicks or burrs which might damage the spare lip seals(s). If necessary, you may polish the shaft using 300-grit wet/dry sandpaper or emery cloth working "radially" around the shaft.

- iii. Remove the five cap screws from the front of the SureSeal housing.
- iv. Slide the cap of the housing and over the replacement seal. Rest the cap on the shaft.
- v. Twist the "split" retaining washer until you can pull it off the shaft. Put it someplace safe.
- vi. Using a flat blade screw driver, pry the old seal out of the housing working your way around the shoulder on alternate sides. Cut the old lip seal off the shaft with a diagonal pliers.
- vii. Water will begin flowing through the shaft seal and into the bilge at this point.
- viii. Carefully slide the replacement lip seal down the shaft and into the chamfered opening in the front of the SureSeal.
- ix. Water will slow to drips at this point.
- x. Twist the "split" retaining washer until you can put it back on the shaft. Snap this retaining ring back into the "cap". Slide this cap and washer assembly back against the SureSeal housing.
- xi. Align the holes in the cap with those in the SureSeal and start the cap screws.
- xii. Alternately tighten cap screws in a criss-cross pattern. This action pushes the replacement seal into the SureSeal. Seal is seated properly when cap and housing touch...cap screws are snug.
- xiii. If the Spare Seal Carrier contained two spare lip seals when you started, re-assemble the halves of the Carrier over the remaining seal and position on the shaft as before.
- xiv. *NOTE:* The Spare Seal Carrier should not touch the SureSeal. Leave at least 1" between the units.

#### **B. No Spare Seal Carrier on the Shaft & No spare Seals Available.**

**You will have to remove the coupling from the engine/transmission and drop the shaft back far enough to slide replacement seals onto the propeller shaft. Once the replacement seals are on the propeller shaft, fasten the coupling back on the shaft and re-attach the coupling to the engine/transmission. Follow the steps noted above to replace the lip seal.**

**4. Can I remove the entire shaft seal assembly and replace it with another assembly without "hauling" the vessel?**

- 1. You will have to remove the coupling from the engine/transmission and drop the Shaft back far enough to remove the old shaft seal assembly and install the new SureSeal assembly.**
- 2. The propeller will probably have to come off in order to slide the shaft back far enough to complete**

**Step 1). A diver will have to complete this task. Once the propeller is safely "on the dock", stuff towels or rags into a plastic bag(s) and stuff them around the propeller shaft and into the stern tube. This will reduce the amount of water that can enter the vessel during the procedure.**

**Make sure to remove these items from the stern tube before operating the vessel.**

**3. Make sure the bilge pump is on and working.**

**4. Make sure that you have the appropriate Spare Seal Carriers on hand to install with the replacement SureSeal.**

**5. Do Not Hurry.**

**6. Have the new SureSeal assembly "at hand" and ready to install. The articulating hose should be in place on the SureSeal and the clamps over the SureSeal should be snug. Position the clamps over the "stern-tube" end of the hose and snug.**

**7. Remove the old shaft seal assembly including hose and clamps. Water will enter the vessel at this time. Bilge pumps will be able to handle this "in-flow".**

**8. Slide the "stern tube" end of the hose over the stern tube until the inboard end of the stern tube abuts the inboard "convolution" of the articulating hose. The assembly is now in position. Just "snug" the clamps at this point to keep water from entering the vessel.**

**9. Remove the spare seals from the Spare Seal Carrier. Slide them onto the "cone-shaped" end of the red installation hat, making sure that the side of each lip seal with the part number stamped on it is facing the engine.**

**10. Carefully slide the shaft forward into the coupling. If present, attach the castle nut securing the shaft to the coupling. Make certain the SureSeal does not move out of the articulating hose.**

**11. Attach the coupling to the transmission.**

**12. Attach water injection hose to the SureSeal.**

**13. Remove the red installation hat from the spare lip seals and install Spare Seal Carrier over these lip seal(s). Make sure the Spare Seal Carrier is at least 1" from the front of the SureSeal.**

**14. Loosen all four hose clamps on the part. Move the articulating hose up and down & from side to side. Tighten all four hose clamps.**

**15. If a crossover fitting is in place, connect the crossover hose to the second water injection fitting.**

**16. Repeat steps, if necessary, for the other side of the vessel.**