

INSTALLATION INSTRUCTIONS - STRONG SEAL

PRIOR TO INSTALLATION

To ensure proper fit it is necessary to measure the shaft size and the hose ID (or shaft log OD). If there is a hose sleeve make sure you do not measure the outer hose. Measure only the inside diameter of the hose that is to fit around the Strong Seal.

DO NOT MACHINE OR ALTER THE STRONG SEAL UNIT IN ANY WAY. CHANGING THE STRONG SEAL VOIDS THE WARRANTY AND COULD CAUSE SERIOUS DAMAGE TO THE VESSEL.

The Strong Seal is recommended for use on stainless steel shafting that meets ABYC standards. It should be used only on top quality monel or bronze shafting. All shafting should have proper cathodic protection against corrosion. Navy grade zinc anodes, properly installed, should provide satisfactory protection against crevice corrosion.

DO NOT ATTEMPT TO INSTALL THE STRONG SEAL UNTIL THE SHAFT IS SMOOTH, CLEAN, AND FREE OF ANY MATERIAL WHICH MIGHT CUT OR SCRATCH THE STRONG SEAL UNIT DURING INSTALLATION OR DURING OPERATION.

Strong nitrile lip seals are proprietary and are not interchangeable with any other seals. Use of any other lip seal voids Tides Marine warranty. Strong Seals are designed, engineered, and manufactured to precise tolerances and must not be changed in any manner.

INSTALLATION INSTRUCTIONS

1. Remove shaft from transmission coupling.
2. Disassemble and remove the old stuffing box.
3. Remove the hose clamps and the old hose from the shaft log (stern tube). Discard them. Do not use accessories that are worn, used or may not function correctly with the Strong Seal.

MAKE CERTAIN THAT THE SHAFT LOG IS CLEAN AND READY TO ACCEPT NEW HOSE. USE ONLY HOSE SUPPLIED BY TIDES MARINE OR APPROVED SOFTWALL WET MARINE EXHAUST HOSE.

4. Draw the shaft all the way back up against the shaft coupling. This should completely expose the portion of the shaft that was located under the old hose and stuffing box assembly.

CLEAN THIS AREA THOROUGHLY. REMOVE ALL SALT WATER RESIDUE AND CORROSION.

This cleaning process is very important because once the shaft is re-connected to the transmission coupling, a portion of the bearing surface of the Strong Seal will be located over this area of the shaft. 300 grit wet or dry sandpaper or emery cloth is very effective for restoring your shafting to "like new" condition.

Make sure that the shaft is centered in the shaft log. Examine the shaft carefully to be certain that there is no wear or corrosion in the area where the Strong Seal will be seated. In order to move the seal to an area of the shaft that can be easily smoothed and is not worn from the old stuffing box simply lengthen the hose section attaching the Strong Seal to the shaft log.

5. Install new hose. Tides Marine offers blue silicone hose that is fully flexible, durable, and maximizes the self-aligning characteristics of the Strong Seal. If a substitute is used, it must not be wire re-inforced or heavy ply. This would void the warranty and could cause premature failure.

The Strong Seal should be installed in such a manner as to allow "breathing room" between it and any other part. Center-loaded C/L model Strong Seals, with a three-tiered body and the stainless steel bands in the middle section, need only 1/2" spacing between the aft end of the Strong Seal housing and the inboard end of the shaft log. Two-tiered rear-loaded R/L model Strong Seals require a minimum of 2" of space between the Strong Seal housing and the shaft log. Do not allow the C/L model Strong Seal to butt up against or push into the shaft log.

Use four hose clamps - two over the hose on the shaft log and two off-centered over the stainless bands on the Strong Seal. Tides Marine offers 316 stainless steel clamps with a longer inside tongue to decrease the possibility of damage to the hose from concentrated pressures.

DO NOT TIGHTEN THE HOSE CLAMPS AT THIS TIME - SIMPLY DANGLE THEM IN PLACE.

Tightening the hose clamps before the shaft and coupling are joined may cause the seal to seat at an unnatural angle and could shorten the seal's life span.

6. Insert the seal protector (supplied with each unit) into the front of the Strong Seal. Pushing it down into the unit to cover the lip seal. This will protect the lip seal during installation.

Slide the Strong Seal onto the shaft and into the new hose until the hose is over the shoulder of the Strong Seal and covering the s/s bands.

Do not use undue force or hammer. Remember to leave the proper spacing between the Strong Seal and the shaft log (see above).

7. Install the shaft into the transmission coupling making sure that the coupling is firmly secured to the transmission.

8. Now tighten the hose clamps. Do not over tighten or ratchet.

9. Remove the seal protector from the Strong Seal. Tear at the perforation to remove it from the shaft. **DO NOT OPERATE THE ENGINE WITHOUT REMOVING THE SEAL PROTECTOR.**

10. The Strong Seal is equipped with an s/s hose fitting to be used for water lubrication of the nitrile lip seal. The preferred method is to take water from the engine raw water-cooling system. Tides Marine offers Water Pick-up Kits for splicing into a hose on most small diesel engines. If a pipe fitting on the engine or transmission cooler needs to be used it should be 1/4 NPT or larger. When the installation involves larger engines please refer to the engine manual for water pick-up points. Please discuss these requirements when placing your order.

11. **AS SOON AS THE VESSEL IS IN THE WATER TURN ON THE ENGINE TO CHECK THAT WATER IS LUBRICATING THE LIP SEAL.** Run the engine at idle speed and remove the water lubrication hose from the Strong Seal fitting. Elevate this end of the hose above the exhaust elbow. There should still be a positive flow. Re-attach the hose to the Strong Seal and tighten the hose clamps. **INSPECT ALL HOSE CONNECTION AND THE STRONG SEAL PERFORMANCE.** The Strong Seal must have positive water feed at any time that the propeller shaft is rotating. For twin-engine boats, that fish with only one engine operating, locking the shaft or having a crossover line installed is recommended. Please call Tides Marine Engineering Department if you have any questions concerning the crossover system.

12. Vented loops: Engines installed below the waterline and equipped with vented loops require that the water pick-up for the Strong Seal be fitted with a “T” in the engine side of the loop above the waterline. Lift mufflers must have a check valve installed.

13. Annual flushing of the raw water-cooling system should be followed as specified by your engine manual. This includes removing the drains from the oil cooler, etc., and being sure that all sediment build-up is removed. Flush the Strong Seal lubrication line at the same time.

14. If the propeller shaft is to be removed after the Strong Seal has been installed, a seal protector should be used. Call Tides Marine for a seal protector.

15. Winterization of the Strong Seal itself is not necessary, but winterization fluids will not harm the Strong Seal. .

FAILURE TO FOLLOW THE ABOVE INSTRUCTIONS WILL VOID TIDES
MARINE WARRANTY.

IF YOU HAVE ANY QUESTIONS PLEASE CALL 800-420-0949