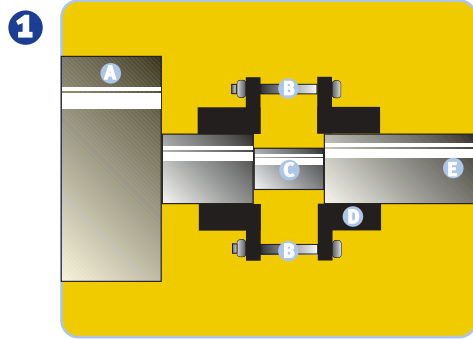
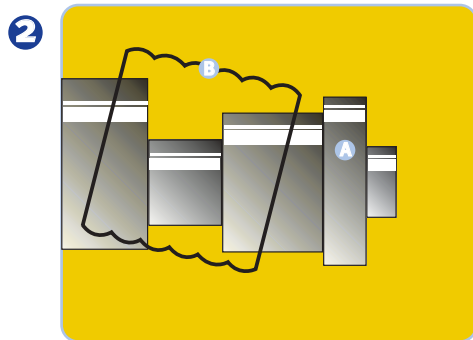




Read All Instructions thoroughly before installing the Lasdrop Gen. II. Be Sure not to damage the seal surfaces while unpacking and handling.



- A** Transmission
- B** Bolts
- C** Spacer
- D** Shaft Coupling
- E** Shaft



Drawing is exaggerated for demonstration purposes

- A** Friction Assembly
- B** Bellows

1 Unbolt the shaft coupling from the engine coupling. Remove the shaft coupling from the shaft (on most installations the coupling is held on the shaft by two set screws). Helpful hint: Removing the shaft coupling may be difficult. The drawing below shows the use of a spacer as a press between propeller shaft and the transmission (Fig.1)

2 Insert a spacer (smaller than the shaft diameter) between the shaft and transmission. Re-tighten the coupling back onto the transmission. You have now created a press to push the shaft away from the coupling.

3 Remove your old stuffing box. (*If your boat is equipped with a bolt on or rigid type stuffing box, please refer to heading: For bolt-on or rigid type stuffing boxes.)

4 Clean shaft as thoroughly as possible with very fine sandpaper (400 to 600 grit) and remove any sharp edges or burrs.

5 Check the fit of the bellows on the stern-tube, a spacer may be required. Slide the bellows onto the stern-tube, leaving the clamps loose (Fig 2). The friction ring is installed onto the bellows from the factory.

6 Slide the seal/clamp ring assembly down the shaft (Fig 3) and re-connect the shaft to the transmission.

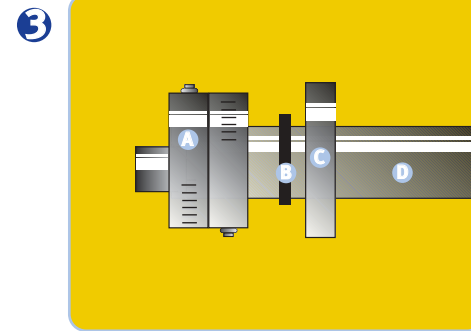
7 Because there is no shoulder on the stern-tube to square up the end of the bellows, pay careful attention to the following procedure: Compress the bellows approximately half way by pushing the clamp ring assembly towards the stern. Now tighten the clamp ring assembly (Fig.4)

8 Pull the stern end of the bellows towards the transmission approximately 1/4" and tighten the 2 clamps (Fig.5). This will make the bellows as square as possible on the stern-tube once the clamps are tightened. It is very important that the sealing surfaces are square to each other with uniform pressure. Pay careful attention that the hump part of the bellows is not riding against the stern tube .

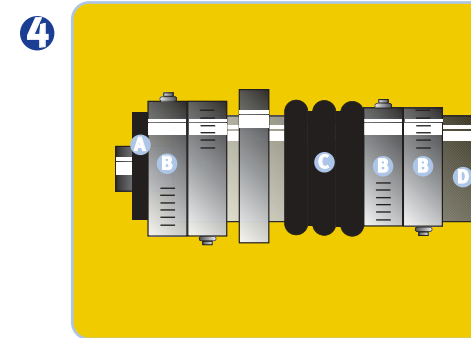
9 Release the clamp on the clamp ring assembly and slide it towards the transmission until it just makes contact with the face of the friction ring. This releases the compression in the bellows. Mark the location of the clamp ring on the driveshaft with a felt pen. Push the clamp ring towards the stern 1/2" and tighten the clamp closest to the transmission (Fig.6)

10 Next, evenly tighten the 3 Allen head bolts of the clamp ring to the seal ring. In order to achieve the best balance possible, tighten the second clamp on the clamp ring with the screw head 180 degrees from the clamp that has already been tightened (Fig. 6A)

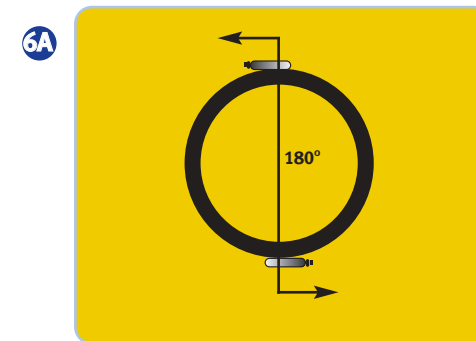
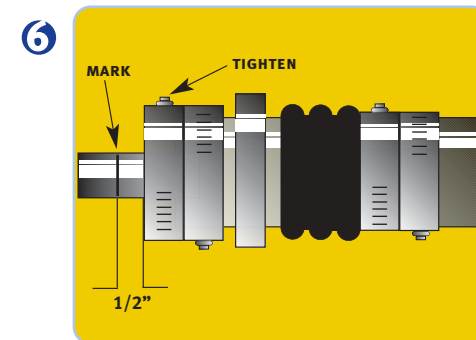
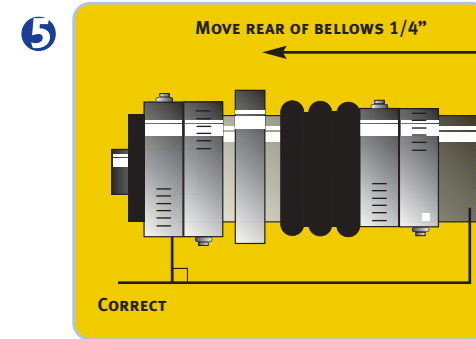
11 Since the main elements of the seal may not be perfectly concentric to each other, you may experience a slight leak at first. This is usually true if the shaft is not in the center of the stern-tube. However, this will dry up after the seal has run for about 2 hours giving the faces time to lap themselves to each other.



- A** Clamp Ring
- B** O Ring
- C** Seal Ring
- D** Shaft



- A** Clamp Ring Assembly
- B** Clamps
- C** Bellows
- D** Stern Tube



Lasdrop
SHAFT-SEALS

Hulls BELOW 12 Knots

The Lasdrop Shaft Seal requires water for cooling and lubrication. The system uses a "vent line" that lets air escape from the seal and stern tube to let water take its place. Simply route the included hose above the water line. A valve can also be spliced into the line and used as a safety shut off. Whenever launching your boat, open the valve and "burp" the system.

NOTE: For commercial applications, It is recommended that the seal is water injected.

Hulls ABOVE 12 Knots

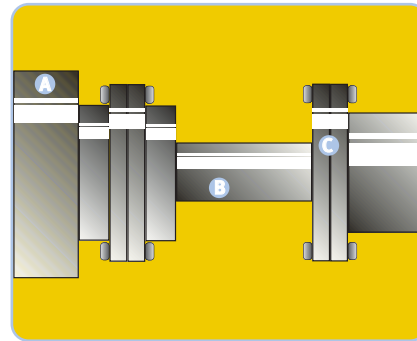
High speed hulls must inject water into the seal. The supply to the after-cooler, a bottom hull scoop or separate water pump are good sources for cool clean water. The need for water injection on high-speed boats is the vacuum that results inside the stern-tube as the boat moves forward. This deprives the seal of any cooling and lubrication.

Warning!

If engine is located below water line, DO NOT connect water coolant line into exhaust manifold. This may flood the engine.

FOR BOLT-ON OR RIGID STUFFING BOXES:

If your stuffing box is a bolt-on or rigid type you will need to reverse the plate and tube that are used to compress the packing. Once reversed, the connection hose can be fitted over the tube. When re-attaching your reversed plate and tube, seal the two surfaces so that no water can leak through. Products such as "Form-a-Gasket" or a marine or automotive type of gasket will work for this application. If your old stuffing box was threaded on you will need to cover the threads with a liquid gasket material like "Form-a-gasket" to prevent the threads from cutting into the connection hose. If stern tube has a flange on the transmission end that cannot be removed or reversed, a complete line of flange adapters are available.



- A** Transmission
- B** Shaft
- C** Bolt-on Stuffing box



LASDROP 3-YEAR LIMITED WARRANTY

Nautical Specialties, Inc. hereinafter referred to as NSI, warrants to the first retail purchase of this product, or a NSI product, properly incorporated in another vendors products that, for a period of three (3) years from the date of original purchase, NSI products will be free from defects in materials and workmanship. NSI makes no warranty as to merchantability or to fitness of its products for a particular purpose.

The above warranty does not apply to a product that has not been installed or maintained in accordance with NSI instructions, been subject to damage in an accident or abused during operation, or repaired or modified by persons other than NSI. This warranty is also void when NSI products are installed at any location which is judged by NSI to be an inappropriate application which is in NSI judgement are compatible with the NSI product or adversely affect its performance or durability.

If any NSI product is used commercially, for such purposes as rental or other income-producing activities, than this warranty is limited to one (1) year from the date of original purchase.

NSI's responsibility in respect to warranty claims is limited solely to repair or replacement of product found by NSI to be defective. NSI does not pay for labor charges connected with removal of a product deemed to be defective or with installation or replacement of repaired product, or for any other incidental or consequential damages resulting from product failure.

To make claim under this warranty, return the product believed to be defective to Nautical Specialties, Inc. 14081 Timberview Shelby Twp. MI. 48315 along with proof of purchase. If found to be defective, and if within the warranty period, NSI will repair or replace the product and return it freight prepaid.

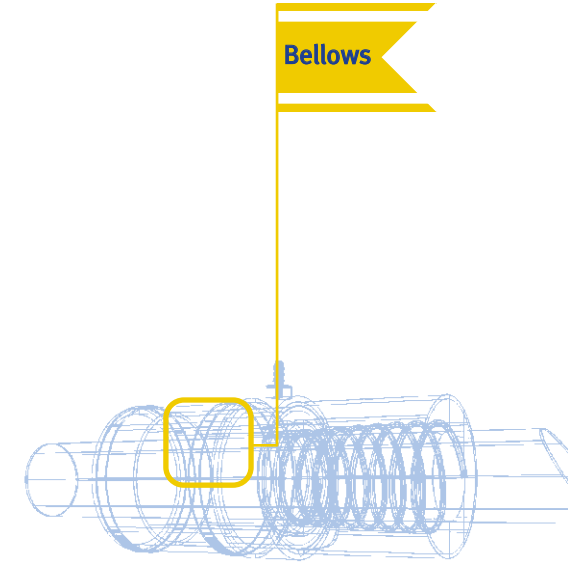
This warranty is and shall be in lieu of all other warranties, whether expressed or implied by NSI, its agents, employees, representatives or otherwise with respect to any sale, service or other transaction on or subsequent July 20, 1999.



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Bellows



lasdrop
SHAFT-SEALS

Installation Instructions

