

# PSS SHAFT SEAL PACKLESS SEALING SYSTEM

- **DRIPLESS OPERATION**

**Eliminates Needless Bilge Pumping**

- **LOW MAINTENANCE**

**No More Packing and Repacking**

- **REDUCED COST**

**Eliminates Shaft Wear and Minimizes Corrosion**



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U.S.C.G. install PSS as standard equipment on all 47' M.L.B.



# How does the PSS Shaft Seal work?

The PSS Shaft Seal is a mechanical face seal. The seal is created between the flat surfaces of the rotating stainless steel collar, the stationary carbon flange and a rubber bellows. The rubber bellows is attached to the vessels stern tube (note: **specify stern tube diameter when ordering**) with hose clamps and the carbon flange is attached to the front side of the rubber bellows with hose clamps. The stainless steel collar is fit on the shaft in front of the carbon flange. The stainless steel collar is then used to compress the rubber bellows before the collar is secured to the shaft with set screws. This compression (pre-load) maintains contact between the faces and allows the PSS to compensate for the thrust from the propeller. The carbon flange is bored larger than the shaft diameter, allowing it to "float" around the shaft and thus compensate for most misalignment and vibration problems. The stainless steel collar is sealed to the shaft by two o-rings that are recessed into the bore of the collar. These o-rings rotate with the shaft and stainless steel collar and do not experience wear during operation.

## Warning!

All mechanical seals look very similar. There is, however, a big difference in materials used in the components and subsequently in the way the seals will perform.

## What makes the PSS Shaft Seal different and why is it considered the best on the market?

### 1. HIGH DENSITY CARBON/GRAPHITE FLANGE

This space age composite is machined to shape. The face is then lapped to 4 light bands. Once installed and operational the carbon/graphite face will actually polish the stainless steel rotor face during the initial minutes of operation. This polishing process ensures a perfect seal and eliminates the necessity of a spray guard. The high density of this composite greatly increases its impact and wear resistance. At a maximum operating temperature of 500° F, the carbon guards against most overheating situations, unlike other designs. The carbon/graphite flange should never need replacing under normal operation conditions. Some Captains have recorded over 40,000 engine hours on their PSS Shaft Seals.

### 3. BELLOWS

The nitrile bellows is resistant to petroleum based products and set retention. It provides the best combination of durability, strength and elasticity. The stern tube end of the bellow is available in 1/4" increments. **Both shaft and stern tube diameters are necessary when ordering.**

### 4. DOUBLE HOSE CLAMPS

Two stainless steel hose clamps are used to secure the bellow at both the stern tube and flange ends.

### 2. STAINLESS STEEL ROTOR

The one-piece stainless steel (Type 316) rotor is slid down the shaft and is secured with double set screws, after compression is applied to the bellows. Precision tolerances are maintained by computer controlled lathes. The stainless steel rotor should never need replacing under normal operating conditions.

### 6. DOUBLE O-RINGS

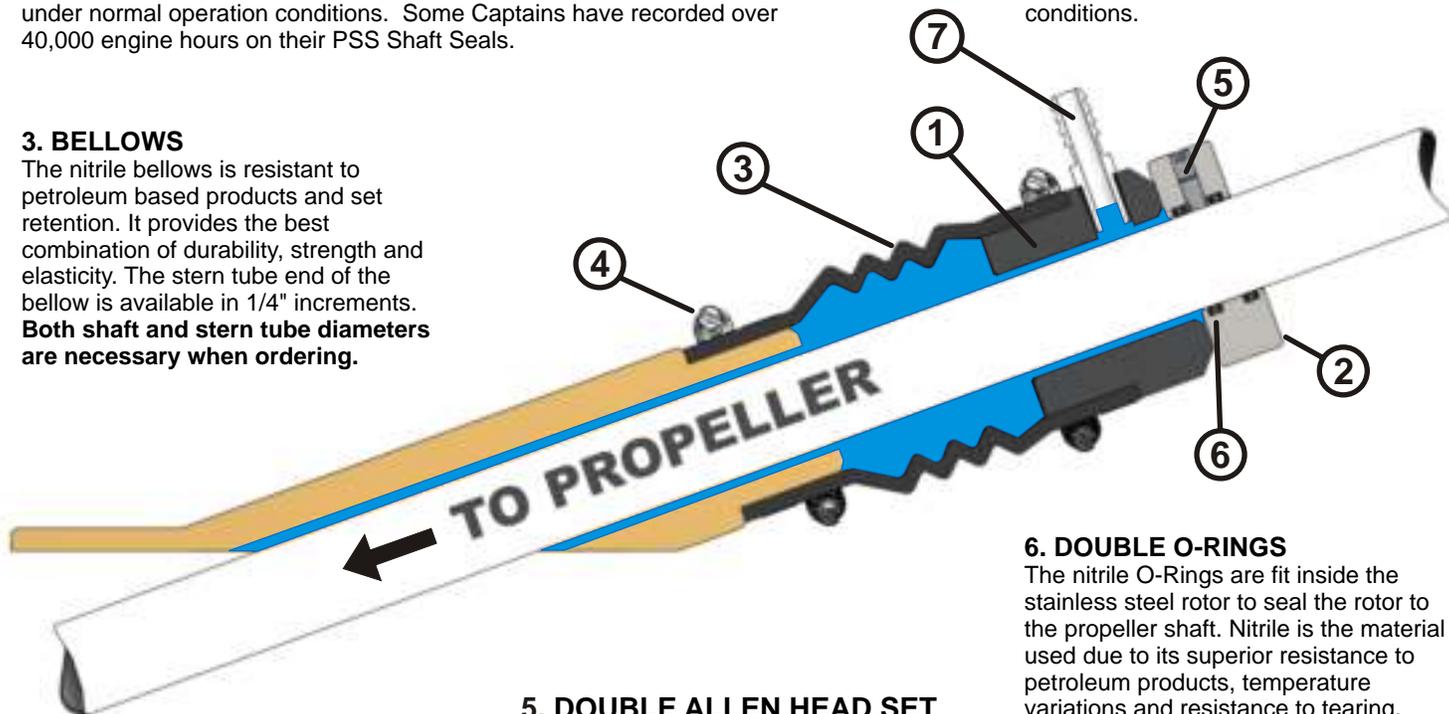
The nitrile O-Rings are fit inside the stainless steel rotor to seal the rotor to the propeller shaft. Nitrile is the material used due to its superior resistance to petroleum products, temperature variations and resistance to tearing. These O-rings are stationary and do not wear.

### 7. NYLON HOSE BARB FITTING

The nylon hose barb fitting is threaded into the carbon flange. The barb fitting is used to plumb water to the seal or to run a vent line.

### 5. DOUBLE ALLEN HEAD SET SCREWS

Allen head set screws with cupped ends are threaded into the rotor and secured to the propeller shaft. A second set screw is then threaded into each hole to secure the first screw and to prevent it from possibly backing out. The set screws also have an anti-vibration treatment applied.



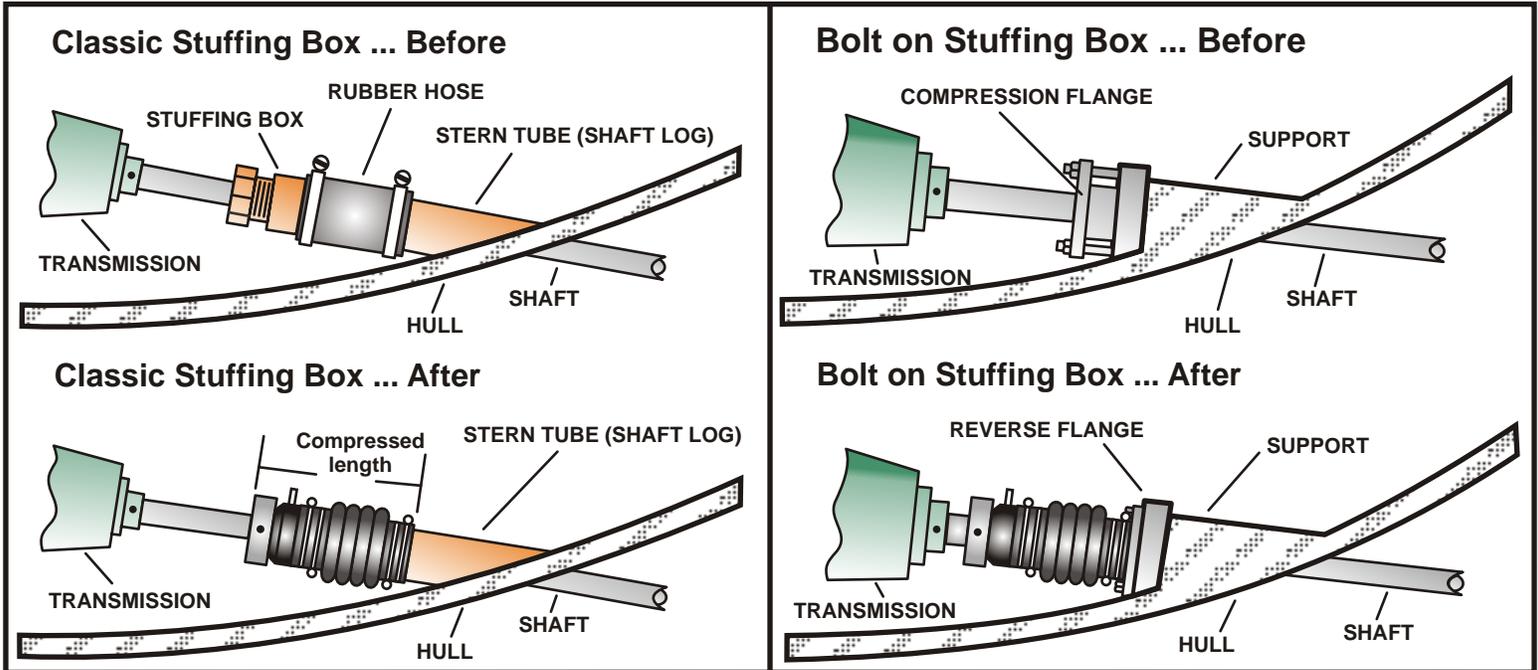
# Ordering Information

## STEP .1 SHAFT SELECTION

Carefully measure your shaft diameter. We have PSS Shaft Seals to fit both metric shafts and S.A.E shafts.

## STEP 2. STERN TUBE OUTSIDE DIAMETER

The stern tube is also known as the shaft log. Select the type of stuffing box currently installed on your boat from the drawing below, and measure the stern tube outside diameter.



# 2006 Retail Price List

SHAFT DIAMETER	Stern Tube Diameters (specify one)	2006 SUGGESTED RETAIL PRICE	COMPRESSED LENGTH 
	O.S. (OVER SIZED) Requires larger bellow and carbon cuff reducer.		
3/4", 7/8" 20mm, 22mm	1 1/4", 1 1/2", 1 3/4", 2", 2 1/4" O.S. (2 1/2")	\$ 220.00 (\$ 240.00)	6 1/4" (6 3/4")
1", 1 1/8" 25mm, 28mm, 30mm	1 1/4", 1 1/2", 1 3/4", 2", 2 1/4" O.S. (2 1/2")	\$ 230.00 (\$ 255.00)	6 1/4" (6 3/4")
1 1/4", 1 3/8" 32mm, 35mm	1 3/4", 2", 2 1/4", 2 1/2" O.S. (2 3/4", 3", 3 1/4", 3 1/2")	\$ 265.00 (\$ 290.00)	6 1/2" (7 3/4")
1 1/2" 38mm, 40mm	2", 2 1/4", 2 1/2", 2 3/4", 3", 3 1/4", 3 1/2" O.S. (3 3/4", 4")	\$ 350.00 (\$ 415.00)	8 1/8" (8 1/4")
1 3/4" 45mm	2 1/4", 2 1/2", 2 3/4", 3", 3 1/4", 3 1/2" O.S. (3 3/4", 4")	\$ 385.00 (\$ 460.00)	8 1/8" (8 1/4")
2" 50mm, 55mm	2 1/2", 2 3/4", 3", 3 1/4", 3 1/2" O.S. (3 3/4", 4")	\$ 460.00 (\$ 520.00)	8 1/8" (8 1/4")
2 1/4", 2 1/2" 60mm, 65mm	3 1/4", 3 1/2", 3 3/4", 4" O.S. (4 1/4", 4 1/2", 4 3/4", 5")	\$ 515.00 (\$ 590.00)	8 1/2" (9 1/8")
2 3/4" 70mm	4", 4 1/4", 4 1/2", 4 3/4", 5" O.S. (5 1/4", 5 1/2", 5 3/4", 6")	\$ 650.00 (\$ 840.00)	9 1/4" (9 5/8")
3" 75mm, 80mm	4", 4 1/4", 4 1/2", 4 3/4", 5" O.S. (5 1/4", 5 1/2", 5 3/4", 6")	\$ 745.00 (\$ 945.00)	9 1/4" (9 5/8")
3 1/4", 3 1/2" 85mm, 90mm	4 1/2", 4 3/4", 5", 5 1/4" 5 1/2", 5 3/4", 6"	\$ 1,335.00	9 3/4"
3 5/8", 3 3/4" 95mm	4 1/2", 4 3/4", 5", 5 1/4" 5 1/2", 5 3/4", 6"	\$ 1,485.00	9 3/4"

**PSS Shaft Seals are available up to 6" (150mm) shaft diameters. Call for quote.**

**When ordering please supply shaft and stern tube Diameter.**

**Toll free phone orders: (800) 523-7558**

# Additional Products by PYI



Power Mounts



Mast Platforms

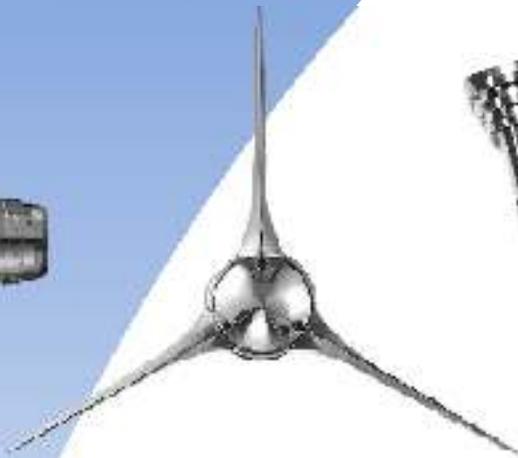


Pole Mounts



Custom Mounts

## Max-Prop



## Python-Drive



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## R&D Products



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Isolate vibrations

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