FOR PLEASURE BOATS & COMMERCIAL BOATS



APPLICATIONS



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Military

PSS

Packless Sealing System SHAFT SEAL



Available for these shaft diameters:

¾" - 6"

(20mm - 150mm)

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The Packless Sealing System (PSS) Shaft Seal is a mechanical face seal that is created between a rotating stainless steel rotor and a stationary carbon stator. The carbon stator is attached to a convoluted rubber bellow and the back of the bellow is attached to the shaft log (stern-tube) of the boat with hose clamps.

During installation, the stainless steel rotor is used to compress the convoluted bellow. The rotor is then secured to the shaft. The compression of the bellow allows the seal faces to remain in constant contact and compensate for the fore-and-aft movement of the shaft caused by the propellers thrust pushing on the engine mounts. The carbon stator is bored larger than the shaft diameter, allowing it to "float" around the shaft and compensate for most misalignment and vibration problems. The stainless steel rotor is sealed to the shaft with o-rings. These o-rings rotate with the shaft and rotor and do not experience any wear during operation. This static o-ring seal enables the PSS Shaft Seal to be fit on shafts that have some wear or pitting, unlike lip seal designs which require a clean area for the lip seal to ride on. This type of carbon face seal is not as sensative to interuption of water flow or operation in silty water, when compared to other sealing options.

STAINLESS STEEL ROTOR

The stainless steel rotor (316L) is slid down the shaft and is secured to the shaft with set screws at 90 degrees for maximum holding power. Precision tolerances are maintained by computer controlled lathes. The faces have a number 9 micro finish and are perpendicular to the bore to prevent run-out as the collar rotates. The carbon will polish the face of the rotor during the first few minutes of operation. The rotor should not need to be replaced under normal operating conditions.

CARBON STATOR

The high density, resin impregnated carbon/graphite stator is a space age composite that is first mixed, molded and then formed under pressure. The blanks are then baked, machined and lapped. The face of our carbon is finished to a flatness of 4 helium light bands (measured .000044" of variation over entire lapped surface). The grade of carbon used in the PSS has an operating temperature over 500 degrees Fahrenheit (+260 Celsius), and can not melt if the seal runs dry, unlike a rubber lip seal or plastic face seal. The high density of the carbon greatly increases the longevity and wear resistance. Several commercial vessels have recorded over 40,000 (over 4 ½ years of continuous operation) engine hours on the same, original components. The carbon should not need to be replaced under normal operating conditions.

BELLOW

The bellow is made from rubber, and has a temperature rating of -65 degrees to 300 degrees Fahrenheit (-50 to +145 Celsius). The rubber used is known for its good resistance to weathering. This bellow has a continuous operating temperature range of -90 to +425 degrees Fahrenheit (-70 to +220 Celsius). The bellow provides the best combination of durability, strength and elasticity.

