



QUALITY MARINE EQUIPMENT  
SINCE 1981

## SERVICE BULLETIN #01-51719

### PSS Shaft Seal: Shaft Targeting

Applies To: PSS Type A, PRO, Type B Shaft Seals

May 17, 2019

#### BACKGROUND

The PSS Shaft Seal is a mechanical face seal. The sealing surface is created between the flat surfaces of the rotating stainless-steel rotor and the stationary carbon flange. The carbon flange is over-bored to the shaft diameter allowing it to “float” around the shaft and thus compensate for most misalignment and vibration problems.

#### CUSTOMER NOTIFICATION

The carbon flange is over-bored to compensate for most misalignment issues, however, there are several boat models that have ‘shaft / stern tube targeting’ issues beyond what the carbon flange ‘standard bore’ can make up for. Shaft targeting (often confused with alignment) is a factor of shaft / stern tube orientation where the shaft is not centered in the stern tube where it enters / exits the boat and or the stern tube not running parallel to the shaft. The result (as depicted to the right) is a shaft that passes through the assembly at an angle and the outcome can be a leaking seal (notably at high rpm) due to the shaft contact inside the carbon flange disrupting the mechanical seal.

This common issue, of centering / parallelism, affects all type of shaft seals, not only the PSS. Lip seal types or even old style stuffing boxes are also negatively affected by this issue.

#### CORRECTIVE ACTION

Generally, we look at 3 countermeasures / considerations for solving the problems resulting from a targeting issue as described above.

**Step 1:** Adjust the bellow angle on the stern tube in a way that allows the shaft to pass through the center of the carbon component. On a boat with only slight off center shaft or small parallelism issue this fix is usually sufficient.

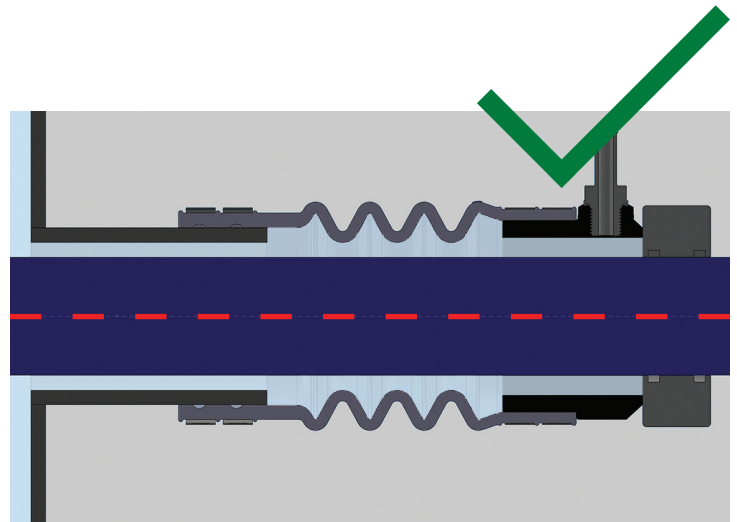
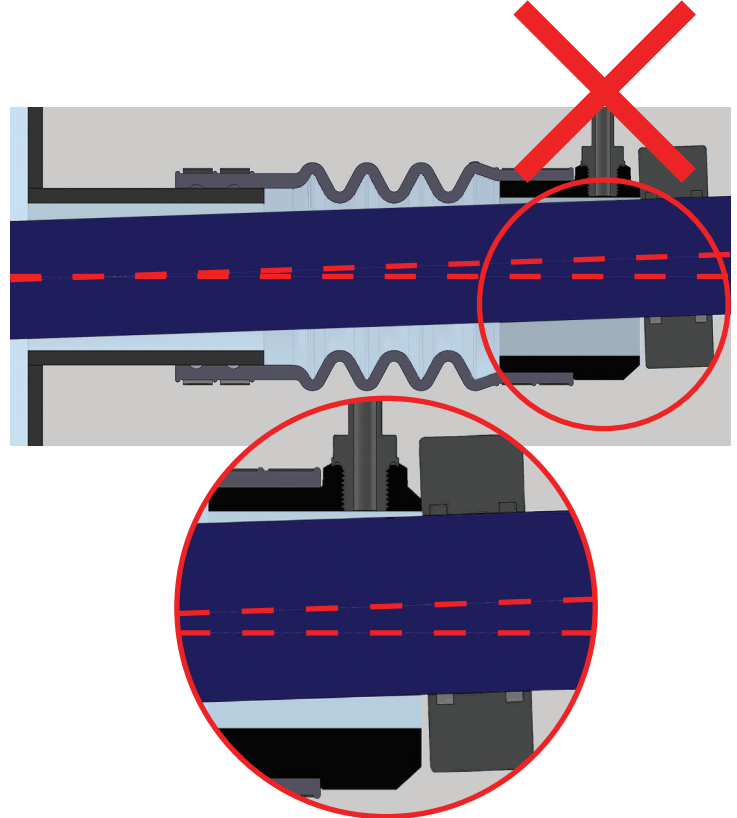
**Step 2:** Compress the bellow in ¼ inch increments further than the recommended compression (see installation booklet).

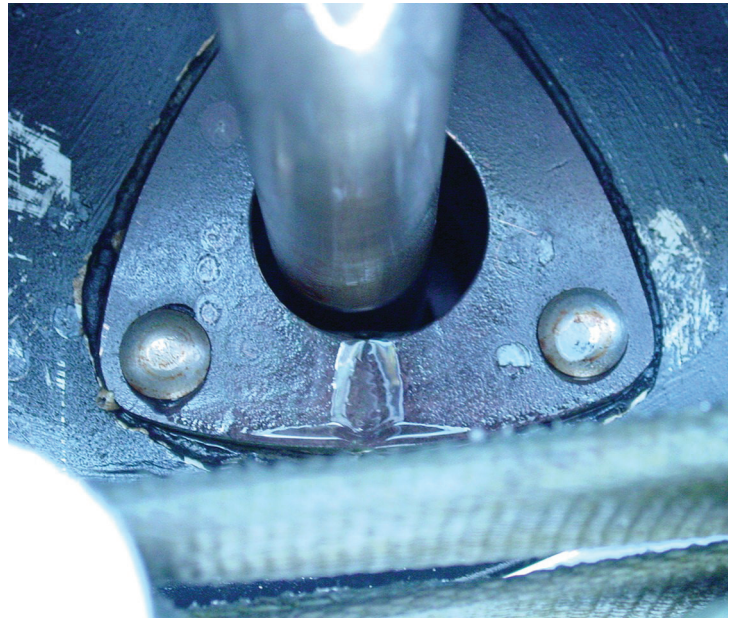
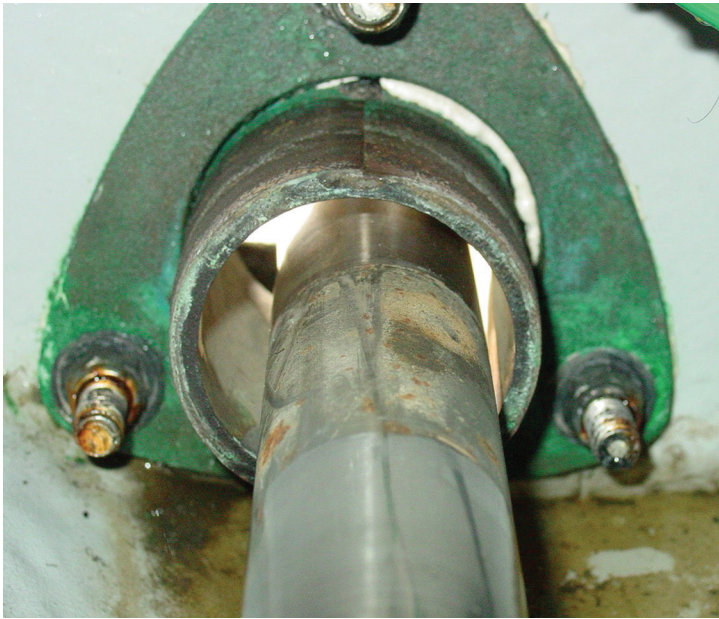
**Step 3:** If step 1 or 2 did not fix the problem or if you have a boat know that have a centering/parallelism issue, get from PYI an over-bored carbon component. The extra room in the carbon increases the margin of error and tolerance of the seal for misalignment.

#### PART NUMBERS

To signify an oversized carbon, we put a US at the end of our standard part numbers. A standard part number for a 2” shaft and a 3” stern tube would be 02-200-300. An oversized carbon for the same size seal would be 02-200-300US.

#### REPAIR PROCEDURE





Examples of improper shaft centering.