SUCCESSFUL POOL AND SPA SEAL INSTALLATION

Successful Seal Installation Requires:

• Choosing the correct mechanical seal for your application.

• Insuring your Pump and Motor meet original factory specifications.

• Following proper installation procedures.

Application • Operational • Installation
Addressing these issues will reduce the seal failure rate, while increasing the performance and life of the seal, pump, and motor.

APPLICATION ISSUES
Choose the Correct Seal for your Water Chemistry

Pool / Spa seals typically contain Buna elastomers, a phenolic (plastic) carbon, and ceramic mating ring. This combination of materials works well in applications where small amounts of chlorine are scattered over the surface of a pool or spa and are diluted long before they reached the pump and seal.

Our Premium line of seals is ideal for these applications, and depending on pump, the PS-100, 200, 201, or 1000 have been the industry standard for years.

However, rather than just a sprinkling of chlorine, many applications today use ozonators, salt generators and hydrogen peroxide based chemicals. For these applications, our Premium line of seals is not your best choice.

Here is an example of a Premium seal incorrectly used in a salt / ozone application. Note the dull gray finish and the rounded corners of the primary ring.

This resulted from either the salt, ozone, or hydrogen peroxide attacking the primary ring. The harsh elements destroyed both the Buna elastomer and primary ring.

How can this be prevented? Today’s applications using ozonators, salt chorine generators and hydrogen peroxide based chemicals require our line of seals designed to withstand these severe conditions.

Seals in our Ozone / Salt Service line are constructed using Viton® elastomers, a resin filled carbon ring and a superior grade of ceramic. This combination of materials withstands the chemical attack, increasing the life of the seal, while reducing pump and motor warrantee issues.
Addressing these issues will reduce the seal failure rate, while increasing the performance and life of the seal, pump, and motor.

**OPERATIONAL ISSUES**

*Be Sure Your Pump and Motor Meets Original Factory Specifications*

Before installing the new seal, be sure that your equipment is in like new condition, meeting the manufacturer’s original specifications.

Note the irregular tracking of the primary ring (the black ring) over the mating ring (white ceramic). This is caused by a worn or damaged impeller or from the backplate not being concentric with the centerline of the shaft. The result is seal failure.

**Prevent Seal Failure**

*Be Sure To…*

- Check for, and replace, all worn or damaged components.
- Wobbling or noisy bearings must be replaced.
- Never re-use an impeller or seal housing if it appears worn or out of round.

View an actual seal installation. Watch the video on our website www.ussealmfg.com

**DEMAND QUALITY…**

**DEMAND U.S. SEAL MFG.**
Addressing these issues will reduce the seal failure rate, while increasing the performance and life of the seal, pump, and motor.

**INSTALLATION ISSUES**
Follow Proper Installation Procedures, which include:

**The Necessity for Cleanliness**
- It is imperative that the equipment, work area, and seal are clean.
- Be sure you are putting a clean seal onto a clean shaft or into a clean housing.
- Ideally, wear latex gloves.

**The Necessity for Using the Correct Seal Installation Lubricant**
- Use the wrong lubricant... Destroy your seal
- Be sure to use the proper installation lubricant.
- U.S. Sealube, a water based lubricant, is our recommendation.

**Never use a silicon or PTFE based product.**
Why?

Here are the results of using such products,

On sample A, note the black ring on the ceramic. Silicon and PTFE based lubricants draw the carbon from the primary ring and smear this material on the face of the mating ring, causing a build up which eventually destroys the seal.

On sample B, there was an additional overuse of the wrong lubricant. Apply lubricant only to the cup, and to the ID of the rubber ring if this is a feature of the seal design. **Never** apply any lubricant to the mating ring face.

**Never use an adhesive as a lubricant.**
This picture shows the result of using an adhesive. The seal face stuck together, the drive tabs locked and prevented the seal from rotation freely. Seal failure was swift.
SUCCESSFUL SEAL INSTALLATION

Seal installation is a relatively simple process.

**STEP ONE – REMOVAL OF EXISTING SEAL**
- Remove the existing seal, noting how it was installed.
- You will need to install the new seal in the same way.

**STEP TWO – INSPECT**
- Inspect the overall condition of the pump / motor.
- Inspect the back plate. Is the bore clean and in good shape?
- Inspect the impeller.
- Inspect the shaft. Be sure it is not bent.
- Inspect the bearings. Are they secure and running true?
- Inspect the replacement seal. Check for cracks or damage occurred from shipping.

**STEP THREE – CLEAN**
- Clean all parts to prepare them for the installation of the new seal.
- Clean your work area.

**STEP FOUR – PREPARE**
- Prepare your work area.
- Assemble together tools needed for the installation process.
- Don’t forget the U.S. Sealube!
- Finally, wash your hands, or ideally, use latex gloves. Any residual Silicone or PTFE lubricant remaining on your hands will DESTROY the seal.

**STEP FIVE – INSTALLATION**

1. Apply a generous amount of U.S. Sealube to the rubber parts of the seal.
2. Install the rotating portion (the part with the black carbon) and the mating ring.
3. Clean both sealing surfaces BEFORE you re-assemble the pump. Use isopropyl alcohol and a clean cloth, or alcohol prep pads and clean the faces. It can’t be stressed enough that the extra moments spent doing this could save you a warranty repair in the next few months.
4. Re-assemble the pump.
5. Turn the shaft by hand a few rotations, or bump the motor to check the seal for squeals or other unwanted noises.
6. Connect the pump and motor to the system.
7. Flood the strainer with water and start the pump. **NEVER RUN THE PUMP DRY.** This damages or even destroys the seal.
View an actual seal installation.
Watch the video on our website www.ussealmfg.com

Any questions?
Please, contact our office.
We are here to help!