



## Introduction

Congratulations on your purchase of the most advanced sealing technology available to day making your pumps and other rotating equipment safer, more reliable and longer running. Your new ZLR-1100 seal provides all the advantages of stationary design, double balance, easy cartridge mounting as well as “multiport injection” of an external flushing fluid providing “showerhead” cleaning, cooling, and lubrication to the seal.

## Safety

This manual is intended as an aid to supplement the experience and ability of qualified plant personnel in the installation, operation, and maintenance of the mechanical seal. These instructions do not purport to cover all details nor to provide for every contingency to be met in connection with installation, operation, and maintenance of the equipment. It is imperative that you follow your plant safety regulations before working on any piece of equipment. As a minimum, be sure to:

1. Lock out all motors and valves.
2. Wear proper safety equipment and protective clothing.
3. Be thoroughly familiar with the MSDS requirements for all materials that you may potentially become exposed to.
4. Relieve the pressure in all parts of the equipment and drain all fluids.
5. Follow the pump manufacturers recommended procedures in disassembling and reassembling of the equipment.

## Installation

1. Install the shaft sleeve if used.
2. Lubricate the shaft or sleeve with a suitable and compatible lubricant.
3. Install the seal (with its gasket in place) onto the shaft or sleeve. Note that the gasket is a compressed non-asbestos fiber material which provides the best assurance that the gland will seal reasonably square with the face of the seal chamber after the gland nuts are tightened. If a different material is required (such as a Teflon based material) use caution when tightening the gland nut to assure that the nuts are tightened very evenly so as not to put the gland out-of-square with the face of the seal chamber.
4. Install the seal chamber. Use caution as the seal housing passes over the body of the seal and be sure that the seal housing studs pass through the corresponding slots in the seal gland. Do not tighten the seal down at this time.
5. Assemble the rest of the pump including the impeller, casing, etc.
6. Perform any required impeller adjustments or any other operations that may require the axial position of the shaft to change before proceeding on to the next step.
7. Position the seal gland against the face of the seal chamber.
8. Tighten the gland nuts evenly, cross staggering as you tighten each nut. It is important that the gland remain square to the face of the seal chamber for best performance. The compressed fiber gasket material supplied with the seal was chosen with this in mind. If a different material was substituted (such as a Teflon based material) use caution when tightening the gland nut to assure that the nuts are tightened very evenly so as not to put the gland out-of-square with the face of the seal chamber.
9. Tighten the set screws on the seal collar. Again, it is important that these be tightened evenly, cross staggering as they are tightened so as not to force the seal and sleeve over to one side of the shaft causing it to rotate eccentric to the centerline of the shaft. Tighten each set screw finger tight only in a cross staggering order first. Then repeat this procedure several more times, each time tightening a little further until each set screw is fully tightened.
10. Remove the four centering lugs from O.D. of the collar.
11. Connect the external flush. If this feature is not used, be sure to plug this hole.
12. Perform an air test on the installed seal and leak test all connections.