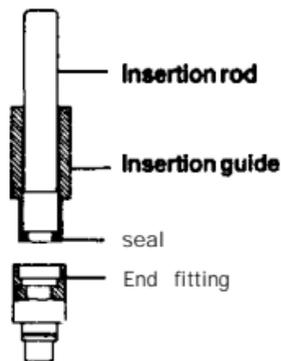


place) into the **endfitting**. Using the insertion rod (flat side toward the seal), push **the seal** into the end fitting.

3. Reassembly. Place the washer over the new seal so that the flat inner edge of the washer faces the seal. With the pliers in the internal **position** (#2), carefully replace the internal retaining ring. Slide the end fitting into the end nut. Using the pliers in the external position (#1), carefully replace the external retaining ring.



## Replacing the Union Seal in Micro-Guard Deashing Holder

Follow the above **instructions**, omitting the removal and replacement of **the** external retaining ring. Note that to replace **all** seals in the **deashing** holder two sets of replacement seals or one set of replacement seals and one seal replacement **kit** containing required tools is **necessary**.

## Seal Replacement Instructions for Micro-Guard® Holders

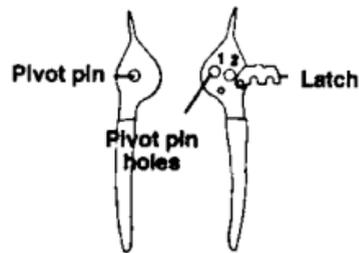
Catalog Numbers  
125-0131  
and 125-0139

**BIO-RAD**

## Introduction

The cartridge holders are designed with end fittings which will securely fix the cartridges in alignment, and eliminate dead volume. After extended use, the cartridge holder end fittings may develop leakage problems due to normal wear. A leak indicates that the sealing surface on the seal may be dirty, scratched, or otherwise deformed. The seal must be replaced with a new seal when this occurs. Do not attempt to stop the leak by tightening the holder using tools.

## Convertible Pliers



1

The pliers included in the seal replacement kit are designed to be converted and used in the external position or the internal position. When the pliers are connected through pivot pin hole #1 (external position), the tips will expand as the handles are compressed. Connecting the pliers through pivot pin hole #2 (internal position) will cause the tips to compress as the handles are compressed. To change the plier setting, simply rotate the latch counterclockwise, separate the handles, and reconnect by placing the pivot pin through the new hole and rotating the latch back into place.

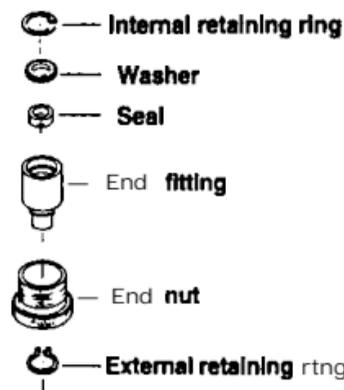
## Removing the Old Seal

1. Remove the outer retaining ring. Assemble the pliers in the external position so that they are connected through pivot pin #1. Insert the plier tips into the small holes in the outer retaining ring, Gently squeeze the pli-

2

em, expand the ring, and slip the ring off the end fitting. Be careful not to overextend and deform the ring.

2. Remove the inner retaining ring. Reassemble the pliers in the internal position so the handles are connected through pivot pin #2. Insert the plier tips into the small holes in the inner retaining ring, Gently squeeze the pliers, compress the ring, and slip the ring out of the end fitting.



3

3. Remove washer. (Note that flat side is toward the seal.)
4. Remove seal. Pry out the old seal using a cartridge or other tool. Care must be taken not to scratch the end fitting, which would permanently damage the end fitting, and prevent new seal from sealing.

## Installing the New Seal

1. Preparing the new seal. The insertion tools are provided to facilitate the correct positioning of the seal into the end fitting. Place the new seal on a firm flat surface with the spring side down. Position the larger opening of the insertion guide over the seal. Press down firmly on the insertion guide, until the seal is firmly seated in the guide.
2. Positioning the new seal. Place the seal insertion guide (with the seal in

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