

**PACKING THE PUMP CORRECTLY.** *The importance of packing the pump correctly cannot be overemphasized.* Many packing failures are due to incorrect installation of the packing. The following steps have been devised to ensure effective installation of packings on pumps:

## INSTALLATION OF PACKING

**1. REMOVE ALL THE OLD PACKING FROM THE STUFFING BOX.** Clean box and shaft thoroughly and examine shaft or sleeve for wear and scoring. Replace shaft or sleeve if wear is excessive.

**2. CHOOSING THE CORRECT CROSS-SECTION OF PACKING.**

To determine the correct ring size:

- Measure the diameter of the shaft (inside the stuffing box area, if possible).
- Measure the diameter of the stuffing box (to give the O.D. of the ring).
- Subtract the I.D. measurement from the O.D. measure and divide by two. The result is the required cross section.

**3. CUTTING PACKING INTO RINGS.**

See Figure 1. Hold the packing tightly on the mandrel, but do not stretch excessively and cut the ring(s).

See Figure 2. Multiple rings can be Butt Cut / 90°(square).

See Figure 3. Individual rings can be Skive Cut 45°(diagonally).

The best way to cut packing rings is to cut them on a mandrel with the same diameter as the shaft in the stuffing box. If there is no shaft wear, rings can be cut on the shaft outside the stuffing box.

Insert one ring at a time into the stuffing box, making certain it fits the packing space properly. Each additional ring can be cut in the same manner, or the first ring can be used as a master from which the balance of the rings are cut.

If the butt cut rings are cut on flat surface, be certain that the side of the master rings, and not the O.D. or I.D. surface, is laid on the rings to be cut. This is necessary so that the end of the rings can be reproduced.

When cutting skive joints, use a miter board so that each successive ring can be cut at the correct angle.

It is necessary that the rings be cut to the correct size. Otherwise, service life is reduced.

**4. INSTALL ONE RING AT A TIME.** Make sure the packing ring is clean, and has not picked any dirt in handling. If needed, lubricate the shaft and inside of the stuffing box. Packing rings should be firmly seated in the stuffing box one at a time using a tamping tool.

See Figure 4. Joints of successive packing should be staggered at 90°. When enough rings have been installed so that the nose of the gland will reach them, individual tamping should be supplemented by using the gland.

**5. AFTER THE LAST RING IS INSTALLED.** Put the gland in place and take up bolts finger tight or very slightly snugged up. Do not jam packing into place with excessive gland loading. Start up the pump, and take up bolts until leakage is decreased to a tolerable minimum. Make sure gland bolts are adjusted evenly. **STOPPING LEAKAGE ENTIRELY AT THIS POINT WILL CAUSE THE PACKING TO BURN UP.**

**6. ALLOW PACKING TO LEAK FREELY WHEN STARTING UP A NEWLY PACKED PUMP.** Excessive leakage during the first hour of operation will result in a better packing job over a longer period of time. Take up gland bolts gradually as the packing seats to a tolerable level of 10 to 12 drops per minute per inch of shaft diameter. **NEVER TRY TO STOP LEAKAGE ENTIRELY, UNLESS PACKING MANUFACTURER INDICATES THAT IT IS SAFE TO DO SO.**

**7. WHEN SPECIFIED BY THE PUMP MANUFACTURER, PROVIDE MEANS OF LUBRICATING THE SHAFT AND PACKING THROUGH THE LANTERN RING BY SUPPLYING WATER, OIL, GREASE OR LIQUID HANDLED IN THE PUMP.** Fittings for this purpose are standard on many pumps.

**8. IF THE STUFFING BOX HAS A LANTERN RING,** make sure that the lantern ring, as installed, is slightly behind the fluid inlet so that it will move under the inlet as the follower pressure is applied. See Figure 5.

**9. ON BOTH CENTRIFUGAL AND RECIPROCATING PUMPS,** about 70% of wear is on the outer two packing rings nearest the gland. However, each additional ring does throttle some fluid pressure. On most equipment, there must be enough rings so if one fails, another does the sealing, and the machine need not be shut down.

### INSTALLATION OF SEPCO® SPIRAL PAK PACKING:

**CUT THE PACKING INTO SEPARATE RINGS BEFORE INSTALLATION. WARNING: NEVER WIND BULK OR COILED PACKING INTO THE STUFFING BOX.** Use the same procedure of installing rings outlined in Steps 1-9.

### INSTALLATION OF PTFE & GRAPHITE YARN PACKING:

**WARNING: SEAT RINGS GENTLY, THEN GRADUALLY TIGHTEN BOLTS AFTER THE PUMP IS ON STREAM.** Use the same procedure of installing rings outlined in Steps 1-9.

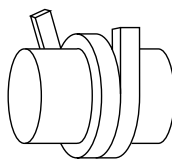


Figure 1

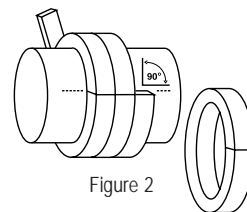


Figure 2

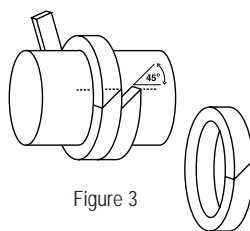


Figure 3

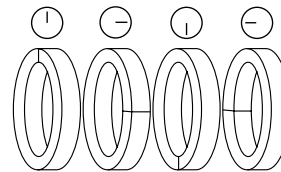


Figure 4

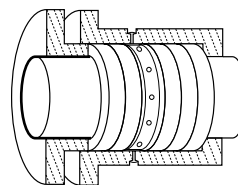


Figure 5