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## PACKING GLAND ADJUSTMENT AND REPLACEMENT

FIRST AND FOREMOST, DRIPPAGE AT THE PACKING GLANDS IS **NORMAL AND NECESSARY!**

IT IS IMPORTANT TO NOTE THAT THE PACKING DRIPPAGE RATE NEEDS TO BE ADJUSTED WHILE THE PUMP IS RUNNING, WHILE IT IS EXPERIENCING THE GREATEST AMOUNT OF FRICTION AND IN THE CONDITION WHEN THE PROPER DRIPPAGE RATE IS MOST CRITICAL.

**ADJUSTMENT:** When a pump with fiber packing is first started it is advisable to have the packing loose without causing an air leak. As the pump runs, gradually tighten the gland bolts evenly. **The gland should never be drawn to the point where packing is compressed too tightly and no leakage occurs.** This will cause the packing to burn, score the shaft sleeve and prevent liquid from circulating through the stuffing box cooling the packing. The stuffing box is improperly packed or adjusted if friction in the box prevents turning the rotating element by hand. A properly operated stuffing box should run lukewarm with a slow drip of sealing liquid. **After the pump has been in operation for some time, and the packing has been completely run-in (approximately 4 hours of total run time,)** drippage from the stuffing box should be at least 60 to 90 drops per minute but often more water is required to ENSURE THE GLANDS ARE NOT SO TIGHT THAT STEAM IS PRESENT during pump operation. This will indicate proper packing and shaft sleeve lubrication and cooling. Properly adjusted packing takes several hours to achieve. Use the weekly run maintenance schedule, as required per code, to evenly tighten-loosen-tighten-loosen the packing gland bolts; this will help the packing to become malleable, causing a better seal. If during the adjustment period steam appears, turn off the pump and allow the packing to cool.

**REPLACEMENT:** Packing should be replaced as service indicates. Six months might be a reasonable expected life, depending on operating conditions. It is impossible to give any exact predictions. A packing tool should be used to remove all old packing from the stuffing box. Never reuse old and lifeless packing. Make sure the stuffing box is thoroughly cleaned before new packing is installed. Also check the condition of the shaft or sleeve for possible scoring or eccentricity, make replacements where necessary. New packing should be placed carefully into the stuffing box. If molded rings are used, the rings should be opened sideways and the joints pushed into the stuffing box first. The rings are installed one at a time, each ring seated firmly and the joints staggered at about a 90° rotation from each preceding joint. If coil packing is used, cut one ring to accurate size with either a butt or mitered joint. An accurately cut butt joint is superior to a poor fitting mitered joint. Fit the ring over the shaft to assure proper length. Then remove and cut all other rings to the first sample. When the rings are placed around the shaft a tight joint should be formed. Place the first ring in the bottom of the stuffing box. Then install each succeeding ring, staggering the joints as described above, making sure each ring is firmly seated.

**PUMPS WITH FLUSH TUBING:** Make sure the seal cage is properly located in the stuffing box under the sealing water (flush tubing) inlet. The function of the seal cage is to establish a liquid seal around the shaft, prevent leakage of air through the stuffing box and lubricate the packing. If it is not properly located it serves no

purpose. Close down the flush tubing throttle valves when adjusting the packing. If, even after considerable loosening of the packing gland bolts, water does not drip from the stuffing box, slightly open the corresponding stuffing box's flush tubing line to allow higher pressure water to be injected into the outer rings of packing.