

1622

EMISSIONS VALVE PACKING

EQUIPMENT PREPARATION

PRECAUTION:

Observe all plant and equipment manufacturer's depressurizing and cooling procedures before installation. Review all instructions before proceeding with installation.

Preparation

1. Clean the stuffing box and stem to ensure that they are completely free of wear, solids or corrosion.
2. Determine the packing Cross-section: $C = [A - B] \div 2$ (Figure 1).
3. Measure the following equipment dimensions: **D** = Stuffing Box Depth; **G** = Gland Nose Length (Figure 1).
4. Determine the Number of Packing Rings: $N = (D - \text{Stuffing Box Chamfer}) \div C$. Round down to the nearest whole number.
5. If less than 4 rings of packing are required, contact Mechanical Packing Engineering. If 4 or 5 rings are required, calculate the required Compression Value as $CV = C \times N \times 0.3$ and proceed to step 7. If 6 or more rings are required, Calculate the Compression Value as $CV = C \times 5 \times 0.3$ and continue to step 6.
6. To determine bushing requirements, perform the following:
 - a. Calculate Required Gland Nose Penetration: $GNP = D - (C \times 5)$.
 - b. If $(CV + GNP) \times 1.5 < G$, then no bushing is required. If $(CV + GNP) \times 1.5 > G$, then a bushing is required.
 - c. The bushing height should be set by the following rule:
 $1.5 \times C \leq \text{Bushing Height} < GNP - \text{Stuffing Box Chamfer}$.
 - d. If the **Calculated Bushing Height** $< 1.5 \times C$, **do not use a bushing**. Install a 6th packing ring and recalculate the **Compression Value** (Step 5) as $CV = C \times 6 \times 0.3$, or contact Mechanical Packing Engineering.
7. Skive cut individual packing rings:
 - a. Wrap packing around a mandrel (of same diameter, B, from Figure 1); mark one ring; remove packing from mandrel and cut at 45° (Figure 2).
 - b. Check first ring for fit on the mandrel.
 - c. Use the first cut ring as a template and cut remaining required rings; check each ring for fit on the mandrel.

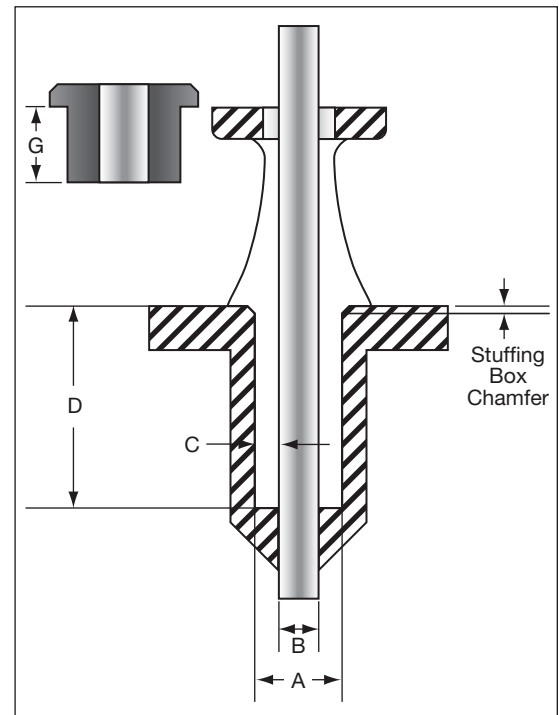


Figure 1

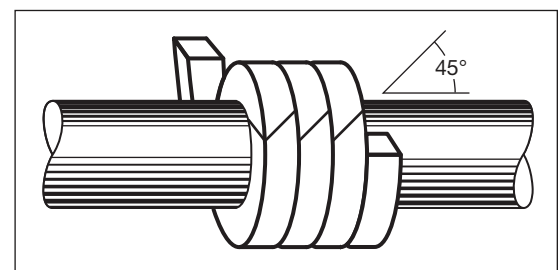


Figure 2

CAUTIONS

These instructions are general in nature. It is assumed that the installer is familiar with mechanical packing and with the plant requirements for the successful use of mechanical packing. If in doubt, get assistance from someone in the plant that is familiar with the product, or delay the installation until a packing representative is available. All necessary auxiliary arrangements for successful operation (heating, cooling, flushing) as well as safety devices must be employed. These decisions are to be made by the user. The decision to use this or any other Chesterton product in a particular service is the customer's responsibility.

INSTALLATION

- 8 Install bushing in bottom of stuffing box. If no bushing is required proceed with packing installation (Figure 3).
- 9 Insert the first ring of packing into the stuffing box and use a tamping tool to firmly seat the packing against the bottom of the box (or bushing).
- 10 Insert the next ring of packing into the stuffing box and use a tamping tool to firmly seat this ring of packing against the previously inserted ring, staggering ring joints 90°. Repeat this procedure for all the packing rings that are to be installed.
- 11 Install the gland nose, gland and gland bolts; finger tighten bolts.
- 12 Mark the gland nose with the compression value calculation from Step 5 (from the stuffing box face toward outboard) (Figure 4a).
- 13 Use a wrench to alternately tighten the gland bolts/nuts until the nose has traveled the marked distance (from Step 5) (see Figure 4b) into the stuffing box.
- 14 Use a torque wrench to measure and record the torque value applied to the packing gland bolts in Step 13.
- 15 Fully stroke the valve 10 times. Re-apply the measured torque.
- 16 Repeat Step 9 until the gland nuts rotate less than 1 flat when original torque measurement is applied.
- 17 Ready for Start-up (Figure 5).

START-UP AND MAINTENANCE

- 18 Observe all plant and equipment manufacturer's safety procedures to return valve to service.
- 19 Check equipment after a few hours of service and make gland adjustments as necessary.

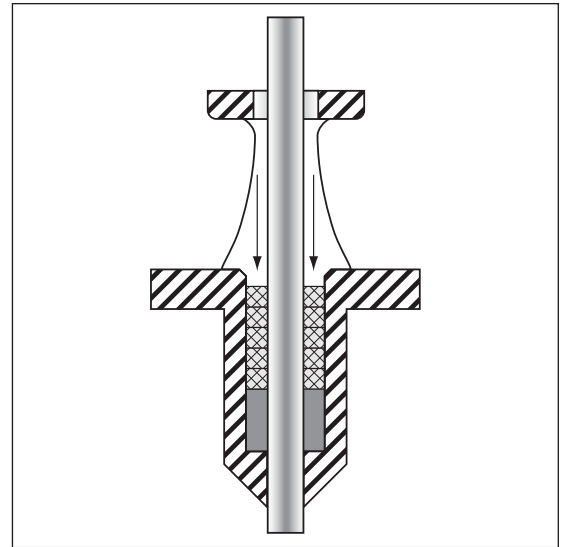


Figure 3

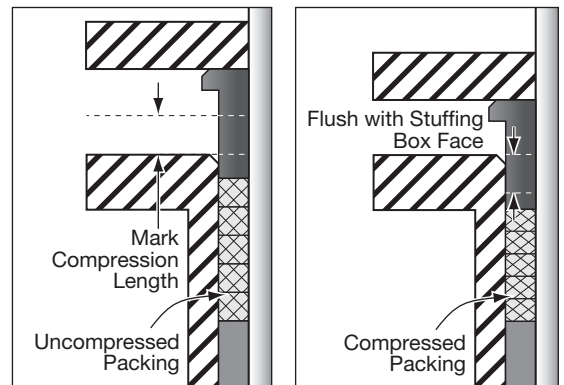


Figure 4a

Figure 4b

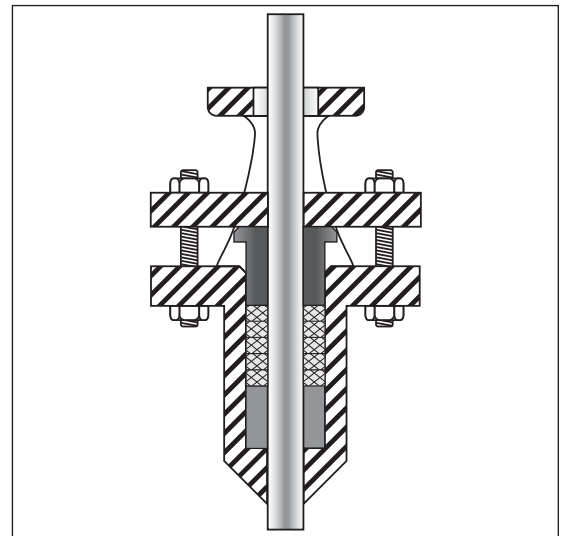


Figure 5



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