GARLOCK STYLE #9000 EVSP* SIMPLIFIED SETS
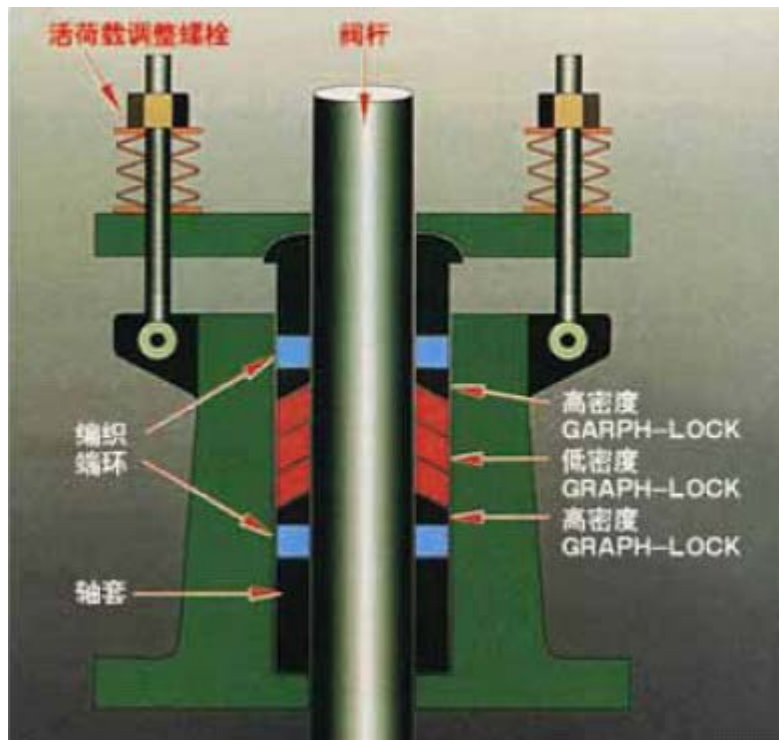
GARLOCK 9000 型 EVSP 密封组件

Installation Instructions

安装说明书

GARLOCK STYLE #9000 EVSP SIMPLIFIED SETS

This drawing gives the ring stack arrangement of a #9000 EVSP Simplified set. The table below can be consulted for the necessary measurements for pre-planning #9000 EVSP Simplified set installation.

$$\text{Cross-Section} = \frac{BoxBoreID - StemDiameter}{2}$$

7-Ring Set – Contains all 3 central GRAPH-LOCK® preform rings
6-Ring Set – Contains 2 GRAPH-LOCK® preform rings
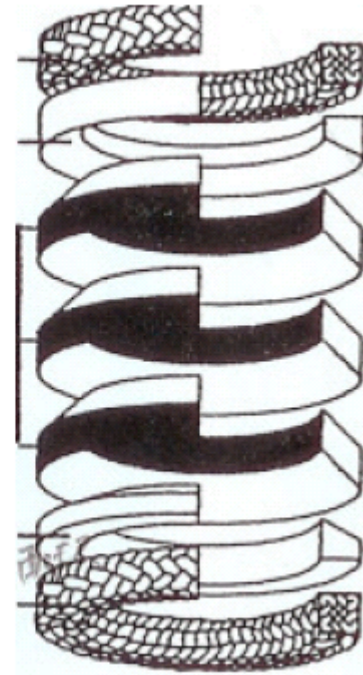5-Ring Set – Contains 1 GRAPH-LOCK® preform rings

Braided End-Ring

High-Density
GRAPH-LOCK
ID Adapter

Low-Density
GRAPH-LOCK
Preform

High-Density
GRAPH-LOCK
OD Adapter

Braided End-Ring

GARLOCK 9000 型 EVSP 简易密封组件

下图给出了 9000 型 EVSP 简易密封组件的密封环安放的指示。下表（要求的填料函深度表）可供对 9000 型 EVSP 简易密封组件的安装进行预先计划作必要测量时的参考。

$$横截面尺寸 = \frac{填料函孔的内径 - 阀杆的直径}{2}$$

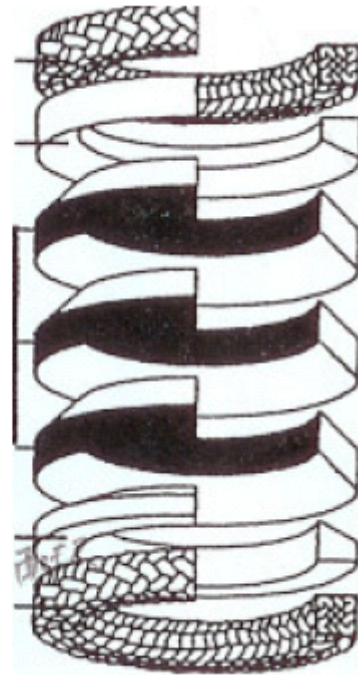7 环组件 – 包括 3 个位于中央的 GARPH-LOCK®预成型环
6 环组件 – 包括 2 个位于中央的 GARPH-LOCK®预成型环
5 环组件 – 包括 1 个位于中央的 GARPH-LOCK®预成型环

编织端环

高密度
GRAPH-LOCK
内径匹配环

低密度
GRAPH-LOCK
预成型环

高密度
GRAPH-LOCK
外径匹配环

编织端环

Note: Before installation of the #9000 EVSP Simplified set. Open the valve to full open (or as close as possible) position.

注意：安装 9000 型 EVSP 简易密封组件前，把阀门开至全开位置（或者尽可能开启阀门）。

1. Measure the depth of the stuffing box.
   测量填料函的深度。

2. From the Required Box Depth Chart, determine the number of rings to be used in the set (5,6, or 7), depending on available stuffing box depth. 7-ring sets should be used whenever possible.
   从要求的填料函深度表中，根据可以利用的填料函深度，确定在密封组件中使用的环数（5 个，6 个或者 7 个），在可能使用 7 个环的情况下应采用 7 环密封组件。

3. To determine bushing height, subtract the Required Box Depth from the box depth (Step 1). If bushing length is calculated to be less than two cross-sections, extra rings of packing should be used to fill the excess space.
   NOTE: If the stuffing box bottom is beveled, install a braided ring first, and then install the bushing.
   决定衬套的高度是通过：从填料函的深度（由步骤 1 测出）减去要求的填料函的深度。假如衬套的长度计算下来少于两个横截面尺寸，应该使用额外的填料环来填充剩余的空间。
   注意：假如填料函的底面为倾斜的锥面，应该首先安装编织环，然后再安装衬套。

4. Install the bushing, and then install the bottom braided ring and all GRAPH-LOCK rings(flat GRAPH-LOCK adapter should be approximately flush to the top of the stuffing box if calculations were done properly). Do not install the top braided ring at this time.

安装衬套，然后依次安装底部编织环和所有的 GRAPH-LOCK 环（如果进行了正确的计算，则 GRAPH-LOCK 匹配环的上平面应该大致与填料函的顶部齐平）。不要在此时安装顶部的编织环。

5. Without measurement, compress the packing with the follower enough to enable the top braided ring to be installed.
在没有测量的情况下，使用密封压盖随动件压缩填料直至足够能使编织环被装入。

6. Install the top braided ring and compress to a penetration distance of:
1 cross-section for a 7-ring set   3/4 cross-section for a 6-ring set, or 1/2 cross-section for a 5-ring set.
安装顶部编织环并且把它压缩至以下深度尺寸：
7 环组件：1 个横截面尺寸； 6 环组件：3/4 个横截面尺寸； 5 环组件：1/2 个横截面尺寸

7. Check the torque on the gland stud nuts to establish the referenced torque(or tightness) value.
检查在压盖上的螺栓螺母的扭矩来创建参考扭矩（或紧度）值。

8. Actuate the stem through two or three closing stem revolutions (or through a closing stem travel of 1 to 1-1/2 cross-sections).
转动阀杆做关闭阀杆的动作 2 到 3 个圈（或者关闭阀杆动作的位移 1 到 1-1/2 横截面的尺寸）。

9. Check the stud nut torque (or tightness) and restore to referenced torque value.
检查螺栓螺母扭矩（或者紧度）然后重新上紧到参考扭矩值。

10. Repeat Steps 8 and 9 at least 5 times, or until no significant amount of stud nut torque decay is noted after the stem actuation.
重复步骤 8 和 9 至少 5 次以上，或者直到在阀杆转动后没有指示出明显的螺栓螺母的扭矩的衰减。

The above guidelines will yield a 30% compression factor.
Additional compression may be required if excessive packing ring to stem/ box bore surface clearances exist.
上述导则将会产生一个 30%压缩系数。
如果填料环对阀杆和填料函孔表面存在过大的间隙则可以需要额外的压缩。
NOTE: An alternate, more accurate method of achieving an appropriate gland load is to use bolt torque measurements. In order to use this method, follow Steps 1-4 above. Install the last ring. Clean the gland studs with a wire brush, and then lubricate them with a suitable grease. For a valve with gland studs, the following equations can be used to determine the appropriate bolt torque to arrive at a gland load of 3800 psi, or 1.5 times the system pressure, whichever is greater. Perform Steps 8- 10 after applying torque compression.
注意：一个可供选择的，更精确的来获得适当的压盖压紧载荷的方法是使用螺栓扭矩测量。为了使用上述方法，按照以上步骤 **1-4**。安装最后一个环。使用一个金属刷来清洁压盖的螺栓，然后使用合适的润滑油肢来润滑它们。对于一个带有二个压盖螺栓的阀来说，下式能被用来确定合适的螺栓扭矩从而使压盖

压紧载荷达到 **3800psi**，或者 **1.5** 倍的系统压力两者中较高值。在应用合适的螺栓扭矩压缩后，再执行步骤 **8-10**。

$$\frac{\text{For System Pressures} < 2533 \text{ psi}}{\text{Torque (ft lbs)} = (24.87) \times (\text{OD}^2 - \text{ID}^2) \times (\text{d})(\text{ft lbs})}$$

$$\frac{\text{For System Pressures} > 2533 \text{ psi}}{\text{Torque (ft lbs)} = \frac{(\text{S.P.})}{101.8} \times (OD^2 - ID^2) \times (\text{d})(\text{ft lbs})}$$

Where: OD = Stufffing Box Bore (in)

ID = Stem Diameter (in)

d = Gland Stud Diameter (in)

S.P.= System Pressure (psi)

$$\frac{系统压力 < 2533\text{psi}}{扭矩(磅力英尺) = (24.87) \times (外径^2 - 内径^2) \times (\text{d})(磅力英尺)}$$

$$\frac{系统压力 > 2533\text{psi}}{扭矩（磅力英尺）= \frac{(\text{S.P.})}{101.8} \times (外径^2 - 内径^2) \times （\text{d}）(磅力英尺)}$$

外径=填料函孔径（英寸）

内径=阀杆直径（英寸）

d = 压盖螺栓直径（英寸）

S.P.= 系统压力（psi）

This "torque method" may result in slightly more or less than 30% compression.
"扭矩方法"可能导致略微的多于或者少于 30%的压缩。

* **Patent # 4,328,974**
* **专利号：# 4,328,974**