**1978 Design vs Earlier Model**

Flanged openings on glassed-steel process vessels are constructed differently than the openings supplied on lined, clad and all-metal vessels. Due to glassing requirements, glassed-steel flanges are smaller in outside diameter and thinner in cross section than bolted flanges. They are not usually drilled for bolt holes. A split-ring flange or specially designed, J-bolt clamp is used instead to join glassed-steel flanges.

**Split-Ring Flanges on Smaller Openings**

The lap-joint type nozzle used on Pfaudler Glasteel equipment openings no larger than 12-inches nominal diameter is a forged stub-end flange fitted with a drilled, split-ring flange. The split flange is installed after the vessel has been glassed. Refer to Data Sheet DS65-300 for specifications on Pfaudler Split Flanges.

**J-Bolt Clamps on Larger Openings**

On manways, agitator access openings and the main flanges used on clamp-top vessels and columns, a contoured flange is used in conjunction with a specified number of forged J-bolt clamps. Pfaudler J-bolt clamps are supplied in 3/4 inch and 7/8 inch diameters. The 3/4 inch Pfaudler clamp has sufficient reach to grip at 5/8" from the clamping ring to the OD of a rolled flange. Both the 7/8-inch and 3/4-inch Pfaudler J-bolt clamps have sufficient reach to grip at 3/8" from the centerline of the clamping point to the OD of a forged flange. See Fig. 1.

**Common Usage**

The use of J-bolt clamps is common on all makes of glassed-steel process equipment. However, each supplier has his own clamp design that may or may not be interchangeable with other brands of glassed-steel equipment.

**WARNING:** The use of any J-bolt clamp on Pfaudler-brand equipment that does not bear the “Pfaudler” name on the clamp should be considered hazardous. Failure to use “Pfaudler” clamps on Pfaudler-brand equipment could result in costly equipment damage and serious personal injury.
The 1978 Design
In 1978, Pfaudler introduced a new style J-bolt clamp. It differs from the previous Pfaudler design by having a loop at the base of the clamp in place of the lugs used formerly. See Fig. 2. The loop provides the means for attaching the J-bolt to a retainer ring when swing-away clamps are required for frequently opened and closed openings. The 1978 design clamp obsoletes the previous Pfaudler clamp and can be used to replace the older style. A retaining ring is required to replace the yoke used with the obsolete clamps. See Figs. 3 and 4.

Another feature of the 1978 J-bolt design is the availability of either a zinc chromate-plated dome nut or a polypropylene cap for the steel nut to protect the exposed threads from ambient corrosion. Further details are given in Fig. 4.

Specification
Materials:
J-Bolt and Clamp – ASME SA-449 Forged Steel
Hex Nut and Dome Nut – ASME SA-194, Gr2H Steel

Load Rating:
3/4-Inch – 4761 lbs.
7/8-Inch – 8646 lbs.

A Pfaudler part number is forged into each J-bolt corresponding to the numbers listed in Fig. 4 to designate the grip range.

How To Order
When ordering J-bolt clamps as replacement for the obsolete Pfaudler design, it will help us to fill your order when the following information can be supplied.

1. Part number.
2. Diameter of the J-bolt.
3. Grip range of the clamp.
   (Refer to Fig. 4)

If the above information is not available, we will need the serial number of your Pfaudler vessel along with a description of each opening to be sealed with clamps (manway, agitator access or main flange).

When ordering J-bolt clamps for a manway opening, identify the style of protection ring (with or without spring assistance) or the extension collar used on the vessel, if at all.

Footnote #1 Replacement Swing-Away Clamps require a retaining ring to replace the yoke. See Figure 3.
Footnote #2 Zinc Chromate-plated dome nut supplied separately: Part #1100666 (3/4-inch dia.), #1100667 (7/8-inch dia.).
Footnote #3 Polypropylene protection cap supplied separately: Part #1100663 (3/4-inch dia.), #1100664 (7/8-inch dia.).