

### TIGHTENING SEQUENCE

The first pass, lightly tighten the first bolt then move directly across or 180 degrees for the second bolt, then move 1/4 turn around the circle or 90 degrees for the third bolt and directly across for the fourth. Continue this sequence until all bolts are tightened. When tightening a four-bolt flange, use a criss-cross pattern.

### FLANGE BOLT-UP PREPARATION

In a flanged connection, all components must be correct to achieve a seal. The most common cause of leaky gasketed joints is improper installation procedures. Before beginning a bolting process, the following preliminary steps will avoid future problems:

- Clean the flange faces and check for scars; the faces must be clean and free of defects (burrs, pits, dents, et cetera).
- Visually inspect all bolts and nuts for damaged or corroded threads. Replace or repair bolts or nuts as necessary.
- Remove burrs from all threads. •
- Lubricate the threads of the bolt or stud, and the surface of the nut face adjacent to the flange or washer. Hardened washers are recommended in most applications.
- Install the new gasket and be sure gasket is properly centred. DO NOT reuse old gasket, or use multiple gaskets.
- Adjust the position of the nuts to insure that 2-3 threads is visible above the top of the nut.

