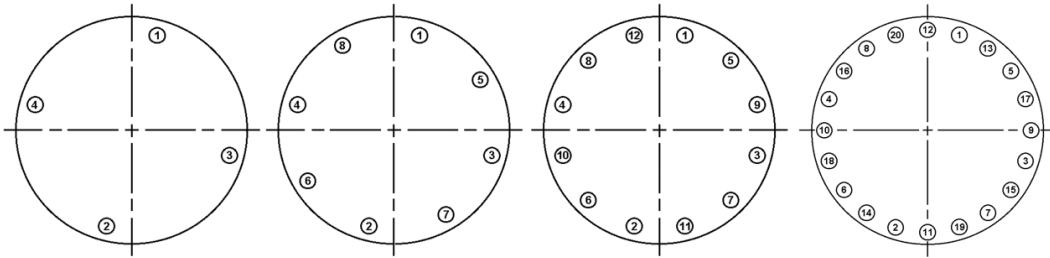


HOW TO PROPERLY INSTALL A GASKET

- Visually examine and clean flanges, bolts, nuts and washers. Replace components if necessary.
- LUBRICATE the bolts, nuts and nut bearing surfaces.
- Install the new gasket, bolts and nuts. Be sure gasket is properly centered. DO NOT REUSE old gasket, or use MULTIPLE gaskets.
- Number bolts in cross-pattern sequence according to the appropriate sketch below.
- **IMPORTANT!** HAND TIGHTEN; then SNUG BOLTS UP to 10/20 FT-LBS torque, but DO NOT EXCEED 20% of Target Torque.
- Check gap for uniformity.
- Starting at the #1 bolt, Use the appropriate cross-pattern tightening sequence in the sketch below for Rounds 1, 2, and 3 and/or Round 4 (each sequence constitutes a "Round").



- **Final Torque:** _____ ft-lbs
- **4-bolt and 8-bolt flanges:**
 - LUBRICATE, HAND TIGHTEN, then SNUG up bolts
 - **Round 1** - Tighten to 30% of- final torque
 - **Round 2** - Tighten to 60% of final torque
 - **Round 3** - Tighten to 100% of final torque A
- **12-bolt flanges and above:**
 - LUBRICATE, HAND TIGHTEN, then SNUG up bolts
 - **Round 1** - Tighten to 20% of final torque
 - **Round 2** - Tighten to 40% of final torque
 - **Round 3** - Tighten to 80% of final torque
 - **Round 4** - Tighten to 100% of final torque

Check gap around the circumference between each of these rounds, measured at every other bolt. If the gap is not reasonably uniform around the circumference, make the appropriate adjustments by selective bolt tightening before proceeding.

- **Rotational Round** - 100% of Final Torque (same as Round 3 or 4 above). Use ROTATIONAL, clockwise tightening sequence, starting with Bolt No. 1, for one complete round and continue until no further nut rotation occurs at 100% of the Final Torque value for any nut.
- **Final Round** - RETORQUE. After twenty-four hours repeat Round 3 or 4 (above) followed by a Rotational Round. Tests show that a large percentage of the short-term bolt preload loss occurs within twenty-four hours after initial tightening. This Round recovers this loss. This is especially IMPORTANT for PTFE gaskets.

TIGHTENING METHODS:

- Hand Wrench
- Manual Torque Wrench
- Hydraulic Torque Wrench
- Impact Wrench

Bolt torques located in installation guides.

