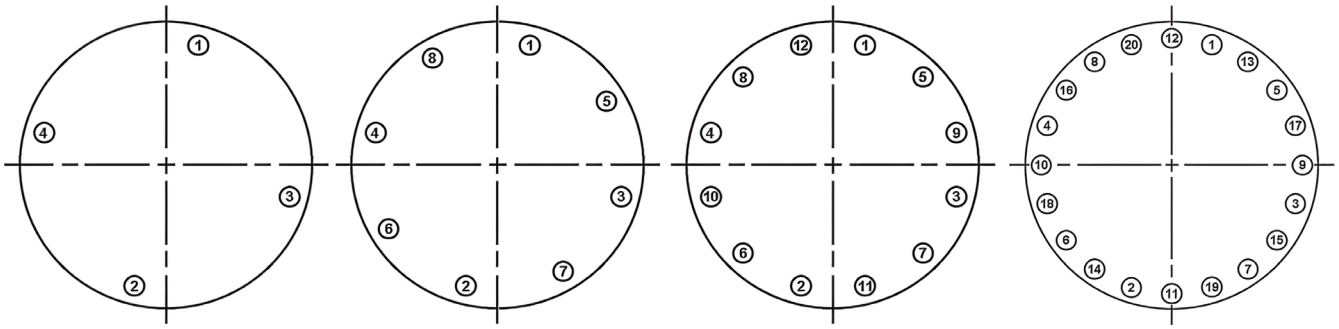
# How to Properly Install a Gasket

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

Bolt torques located in installation guides.