

**FLANGED CONNECTIONS:** Properly installed flanged connections provide a transition fitting to join alternate piping materials, a mechanical means to connect to valves and other equipment, and when joining piping systems where frequent dismantling may be required. The grooved face of the flange provides a liquid tight seal on the gasket when flanges are properly assembled, supported, and proper torque is applied to the bolts.

**GASKETS:** Full face 1/8" thick elastomeric material with a Shore A Durometer hardness of 50-70; gasket material selected must be compatible with application and fluids conveyed. Variations in gasket material and shore hardness may affect sealing torque required.

**FLANGE DIMENSIONS:** Flange ring bolt hole dimensions conform to ANSI B 16.5 Class 150 bolt pattern. Threaded flange hubs are tapered iron pipe size threads per ANSI B2.1. Socket flange hubs conform to ASTM D2467 tapered socket dimensions.

**PRESSURE RATING:** Maximum pressure rating for molded flanges ½" thru 12" diameter 150psi non-shock at 73°F. Appropriate temperature de-rating factors must be applied when working at elevated temperatures greater than 73°F.

**BOLTS AND BOLT TORQUE:** Select proper bolt size, quantity, length, and washers for the specific sizes of flanges and equipment being assembled. Always use two (2) wide flat washers per bolt (one under the head and one under the nut). Threads should be clean and well lubricated.

**⚠ WARNING: USE ONLY LUBRICANTS COMPATIBLE WITH PVC OR CPVC MATERIAL.**

### FLANGE ASSEMBLY:

Once the flange hub is correctly joined to the pipe and allowed to cure properly, and the piping system is supported properly, the method for joining two flanges is as follows:

1. Make sure the system is properly supported and aligned, and that mating surfaces of flanges being joined are not separated. Do not use bolts to align system or to pull flanges together.

**⚠ WARNING: STRESS INDUCED FROM MISALIGNMENT OR IMPROPER SUPPORT WILL DAMAGE THE FLANGE.**

2. With gasket in place align all bolt holes of mating flanges by rotating the flange ring into position.

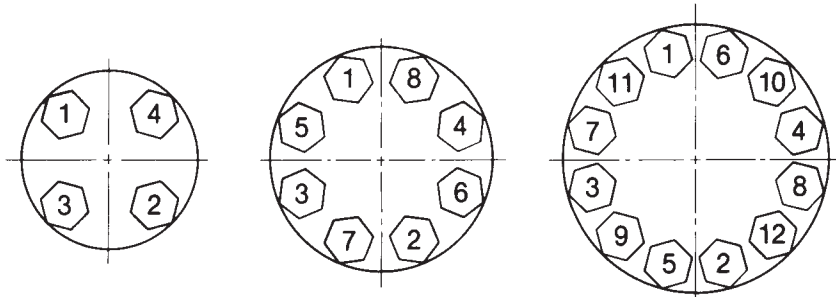
3. Insert all bolts, flat washers (two standard flat washers per bolt), and nuts.

4. Be certain the faces of the mating surfaces are flush against the gasket prior to bolting down the flanges.

5. Using the illustrated bolt-tightening sequence shown below, tighten all the nuts by hand until snug. Once snug by hand, tighten the bolts diametrically opposite each other (180°) using the sequence shown with a torque wrench. Apply uniform pressure across the flange by tightening in stages of 5 ft-lb increments until final torque values shown in the following table are obtained. Do not over tighten.

**⚠ WARNING!: OVER TORQUING WILL DAMAGE THE FLANGE.**

6. Care must be taken to avoid bending stresses to the flange when mating to raised faced flange, metallic flange, stationary flanged objects or wafer-style valves. The plastic flange, attached pipe, fitting, and or valve must be supported properly to eliminate stress on the plastic flange.



**! NOTE:** Bolt length based on connecting two (2) LASCO flanges, two (2) flat washers, and nut. Actual Bolt lengths required and torque values necessary to seal will vary based on type of equipment being joined. Adjustments will need to be made to when assembling flanges to accommodate valves and other equipment.

Reference ASME B16.5 and ASME NM-1 as applicable. Contact LASCO Technical Services for additional information.

**! NOTE:** certain applications may require flange bolts to be re-torqued at least 24 hours after gasket installation depending on flange materials being joined (i.e. transition from PVC to HDPE), and gasket material selected. Work with gasket manufacturer for proper material selection and other gasket design recommendations prior to installation. When evaluating gasket material, be certain to include any surge pressure that could be caused by opening valves and starting pumps.

Flange Size	No. of Bolt Holes	Bolt Dia. (in.)	Min. Bolt Length (in.)	Recommended Torque (Ft./Lbs.)
1/2	4	1/2	2	15-20
3/4	4	1/2	2	15-20
1	4	1/2	2 1/4	15-20
1 1/4	4	1/2	2 1/4	15-20
1 1/2	4	1/2	2 1/2	15-20
2	4	5/8	3	20-30
2 1/2	4	5/8	3 1/4	20-30
3	4	5/8	3 1/4	20-30
4	8	5/8	3 1/2	20-30
5	8	3/4	3 3/4	25-35
6	8	3/4	4	33-50
8	8	3/4	4 1/2	33-50
10	12	7/8	5	53-75
12	12	7/8	5	53-75

Use primer and appropriate heavy bodied solvent cement for materials being joined and allow to cure properly prior to flange assembly - follow LASCO solvent welding instructions and/or contact LASCO Technical Services for additional information.

Contact LASCO Technical Services for additional information.  
Customer Service: 800-776-2756 • www.lascofittings.com

