



### Installation Preparation

1. Inspect Gasket Kit to ensure Gasket Kit matches the flange size and type for installation.
  - a. Do **NOT** remove gasket from protective pouch until ready to install between flanges.
  - b. Care shall be taken when handling the coated washers and removing them from its packaging.
  - c. Do **NOT** remove or tamper with the gold mineral seal material from the gasket face.
2. Gasket and kit components must be free from debris or damage.
3. Inspect flange mating faces. Sealing surfaces shall be free from oil, debris, scratches, pitting, rust, and/or gouges greater than the regular machining marks in a circular pattern. Surface finish shall be no greater than 250 RMS.
4. Inspect alignment of flanges to be sure they are concentric and parallel to each other. The isolation sleeves included in the Gasket Kit can be used. The isolation sleeves should slide completely through bolt holes freely.
5. Inspect the flange gap to ensure that it's adequate for the gasket installation. A minimum gap of 7/16" between the flange mating faces is recommended.
6. The appropriate tools are needed for this installation, such as safety equipment, a calibrated torque wrench, and non-conductive thread lubricant.
7. Inspect studs and nuts. Threads shall be clean, free of rust and/or damage. Studs shall be the necessary length to accommodate double washers.

### Insulation Kit Preparation

1. Apply a non-conductive lubricant liberally to stud threads and flange side of nuts. (Not necessary when using PTFE coated studs and nuts.)
2. Slide isolation sleeves over each stud.
3. Thread a nut to one end only of each stud.
4. Carefully slide two (2) coated hardened-steel isolation washers onto each stud. The washers shall slide over the sleeves and rest against the lubricated side of the nut.



## Gasket Installation

1. For F-type gaskets: Install stud and nut assemblies with sleeves, nuts, and washers into bottom half of flange of the bolt pattern. If sleeves do not slide freely, recheck flange alignment.
2. Carefully remove the gasket from its packaging and insert it between the flange faces and allow to rest against sleeves for F-type gaskets.  
TAKE EXTRA CARE NOT TO DAMAGE SEALS WHILE POSITIONING GASKET BETWEEN FLANGES.
3. For E-Type gaskets: Support gasket in position between flanges and install at least two (2) stud assemblies with sleeves, nuts, and washers into bottom portion of bolt pattern.
4. Install remaining bolt assemblies into flange bolt pattern.
5. Apply additional non-conductive thread lubricant to bolt threads, if needed, and install remaining coated hardened isolation washers and nuts in the same manner as done previously.

## Flange Tightening

1. A properly calibrated torque wrench should be used for the flange tightening process.
2. See the bolt torque chart included for suggested installation torque values.  
**NOTE: If the size and pressure class of your gasket is not listed, please contact APS for the correct torque value.**
3. To assist bolt torque sequencing throughout the process, number each stud according to the order of the tightening sequence. See graphic below as an example.
4. Flanges may be pulled together by cross tightening studs, but care must be taken to keep the flanges parallel, and proceed ONLY until flanges make contact with the gasket. Monitor gap between gasket and flanges. If gap is inconsistent, flanges are no longer parallel. Nuts need to be loosened and restart tightening sequence.
5. Once flanges are in full contact with gasket, hand tighten each stud and then proceed with the tightening process in a consistent manner, using the suggested bolt sequencing diagram below:
  - a. Tighten each stud to 10 – 15% of suggested final torque value.
  - b. Tighten each stud to 25-30% of suggested final torque value.
  - c. Tighten each stud to 50-60% of suggested final torque value.
  - d. Tighten each stud to 100% of suggested final torque value, and continue at the torque setting until there is no further rotating of nuts.
6. “Hot Flow” of the gasket material may occur under operating condition resulting in loss of bolt pressure. It is advisable, therefore, to re-tighten bolts after operating temperature has been reached – preferably at zero line pressure and ambient temperature. Under no circumstances should the system be allowed to return to operating temperature WITHOUT rechecking and re-tightening bolts where needed.

