

Installation Techniques and Guidelines for Gaskets and Isolation Kits

3-Flow, Inc. Effective 3/12/2012 - www.3-Flow.com - e-mail: support@3-Flow.com
For POINTGUARD™, COREGUARD™, FLOWGUARD™, FLATMATE™ Sealing Gaskets.



Effective: 3/12/12

Pre-Installation

- ✓ Wear appropriate safety equipment (Eye wear, steel toe boots, gloves.)
- ✓ Have appropriate tools. (Torque wrenches, drift pins, & **non-conductive** lubricant.)
- ✓ Confirm 3-Flow, Inc. Product Label matches flange type and size for installation.
- ✓ Inspect Flanges:
 - Flange faces shall be free of oil, grease, pits, gouges, rust & debris. Surface finish shall be no greater than 250 RMS. Refinish flange faces if corrective measures do not meet above requirements.
 - Flange bolt hole spot facings shall be clean and free of burrs.
- ✓ Bolts/Suds & Nuts: Make sure they are clean and you have the proper quantity.

Installation

1. Open boxed gasket kit and confirm that component parts are as specified: this includes gasket/flange size, pressure class, and bore.
2. Apply **non-conductive** lubricant to all threads and flange side of nuts.
3. Isolation Components: (if Gasket ONLY application skip to step 4)
 - Slide isolation sleeve over all bolts.
 - Complete one side of each assembly by attaching a nut (if needed) and ONE STEEL washer against the nut followed by ONE ISOLATION washer.
 - Check each assembly to ensure that ISOLATION washer is set to land against the flange and STEEL washer is against the nut.
4. Align flanges & flanged bolt holes so they are concentric and parallel.
 - For horizontal installations, install into the bottom half of bolt holes the assemblies made in step 3.
 - If vertical installation pick either half of the flange to install the first set of assemblies from Step 3.
 - Do NOT force or cram sleeved bolt assemblies. If force is needed, re-check alignment & ensure sleeve damage has not occurred.

5. Gasket Installation:
 - TYPE F GASKET:** Carefully install the gasket and let it rest against the sleeves (or bolts if gasket only) that you installed in Step 4. The gasket is designed to be centered when resting on the bolt assemblies. Take every precaution to *guard against damaging sealing element.*
 - TYPE E GASKET:** Carefully install gasket bolt holes over bolt assemblies; this will automatically center gasket.
- Complete gasket installation by installing remaining bolts/sleeve assemblies as well as the opposing side of isolation and steel washers (if a double washer set was ordered).

Other Considerations:

1. **Galling:** If serious galling or damage to isolating washers exists replace with high strength washers. (Minimum 50K psi or greater).
2. Some end users specify ¼" larger bolt holes than bolt diameters on one flange only to allow for easier alignment in the field. In worst cases, the isolating washer can be as much as ¼" off-center of the oversize bolt hole, resulting in a substantially reduced flange bearing area for the isolating washer. With flange assemblies of this type, **each** isolating washers should be sandwiched between two steel back-up washers for additional support.
3. If isolating both sides of a flanged assembly, isolating bolt sleeve lengths must be sized to compensate for additional washers.

**USE NO LUBRICANT,
GREASE OR ADHESIVES ON
EITHER THE GASKET OR
FLANGE FACES.**

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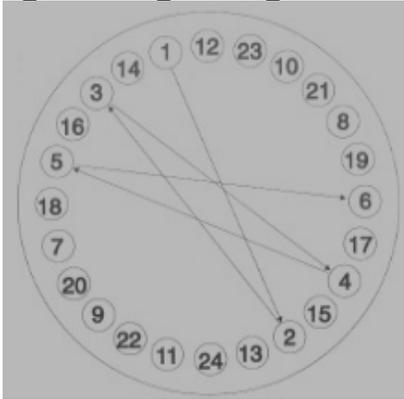
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Cross-Tightening = Even Pressure

Tightening Flange



1. All tightening steps should be done with a torque wrench or with a stud tension measuring device.
2. Pull flanges together by initially cross-tightening bolts (pattern above) ONLY until flange to gasket contact has been made.
3. Check for a flange segment that may show separation between gasket and flange by using a laser, flashlight, or feeler gauge. If one exists, the flanges are not parallel.
- Unparallel flanges can cause numerous problems including:
 - a. Uneven loading of gasket which can cause leaking and/or damage to gasket retainer
 - b. Mis-torqued flanged joint because torque is used to align flanges rather than clamp flanges.
4. Directly 180° degrees opposite widest part of indicated separation/gap, loosen nuts, even if only finger tight. Return to segment with gap and tighten until both flanges are in contact with gasket retainer.
4. Re-tighten loosened nuts and proceed with torquing of the bolts according to above diagram to 10-15% of specified torque. (**Note:** Diagram shows 24 bolt holes, the same basic procedure should be used with flanges having more or less bolts)
5. Repeat torque sequence increasing to 50% of torque.
6. Repeat tightening to final torque value.
- 6A. Optional – it is good practice to make a final check of each bolt for proper torque, especially on large diameter piping systems.

FLANGEMATE Note:

FLANGEMATE gaskets are made of compressible dielectric material and if tightened cold “hot flow” of the gasket material may occur under operating conditions resulting in loss of bolt load. It is advisable 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 after the initial cycling to ambient temperature without checking and re-tightening bolts where needed.

Sleeve/Washer Codes

Standard Packaged Sleeve/Washer Sets:

*Indicated after Set: **S** = Single **D** = Double

Example: SXD (Indicates Standard Heavy Duty – Double Washers)

E: Economy (Mylar Sleeves, Steel ZP and Phenolic Washers)

V: Value (Mylar Sleeves, Steel ZP and G10 Washers)

S: Standard (G10 Sleeves, Steel ZP and G10 Washers)

SX: Standard Heavy Duty (G10 Sleeves, Steel ZP and Steel HC Washers)

T: High Temperature (Nomex Sleeves, ZPS and G3 Washers)

XX: Customer Specified - Users can select own sleeve/washer material to complete kit, if Standard Packaged Sets fall outside specification.

