



Sealant Technologies

Torque Guidelines

ASME

Flange Type: Flat Face Steel Flange

Gasket Type: Ring Gasket

Product Names: GORE® Universal Pipe Gasket (Style 800)/GORE® GR Sheet Gasketing

To achieve a reliable seal, adequate gasket stress must be applied during installation. This table provides an estimation of torque for use during assembly of standard design steel pipe flanges.*

The user must verify these conditions, as outlined, are appropriate for the specific application. The user must confirm that torque values do not exceed pipe manufacturer's torque recommendation.

The intent of this torque table is to find the balance between bolt yield and allowable gasket stress to achieve a long-term reliable seal. This torque table is not intended to communicate the minimum possible torque value to seal GORE® Gaskets. Consult Gore when selecting a lower torque value.

Caution should be used when using this documentation as proof of flange design. It is the user's responsibility to meet all applicable local laws and requirements. This estimation does not account for the influence of flange rotation, flange strength, external forces, temperature expansion, pressure peaks and installation error.



Ring Gasket



Flat Face Steel Flange

TORQUE VALUES REQUIREMENTS

- Use of well lubricated ASTM A193 Grade B7 Bolts
- Use of any available gasket thickness
- Installation practices according to ASME PCC-1

TORQUE ESTIMATION CONDITIONS

- Gasket dimensions according to ASME B16.21
- Flange dimensions according to ASME B16.5
- Maximum working pressure according to ASME B16.5
Class 150: 20 bar (290 psi)
Class 300: 52 bar (750 psi)
- Friction factor $\mu = 0.12$; Nut factor $K = 0.15$
- Target torque calculation according to ASME PCC-1 Appendix J. Generally 70 % bolt yield is targeted.

GORE® Universal Pipe Gasket (Style 800)
GORE® GR Sheet Gasketing
Bolt Torque: Ring Gasket on Flat Face Steel Flange

| NPS (in) | Class 150 | | Class 300 | |
|-------------|-----------|--------|-----------|--------|
| | Nm | Ft-lbs | Nm | Ft-lbs |
| 1/2 | 60 | 45 | 80 | 60 |
| 3/4 | 80 | 60 | 150 | 110 |
| 1 | 80 | 60 | 160 | 120 |
| 1 1/4 | 80 | 60 | 160 | 120 |
| 1 1/2 | 80 | 60 | 280 | 210 |
| 2 | 160 | 120 | 160 | 120 |
| 2 1/2 | 160 | 120 | 280 | 210 |
| 3 | 160 | 120 | 280 | 210 |
| 3 1/2 | 160 | 120 | 280 | 210 |
| 4 | 160 | 120 | 280 | 210 |
| 5 | 280 | 210 | 280 | 210 |
| 6 | 280 | 210 | 280 | 210 |
| 8 | 280 | 210 | 470 | 350 |
| 10 | 470 | 350 | 710 | 520 |
| 12 | 470 | 350 | 1000 | 740 |
| 14 | 710 | 520 | 1000 | 740 |
| 16 | 710 | 520 | 1420 | 1050 |
| 18 | 1000 | 740 | 1420 | 1050 |
| 20 | 1000 | 740 | 1420 | 1050 |
| 24 | 1420 | 1050 | 2490 | 1840 |

* Flanges larger than DN600/NPS24 are usually considered equipment flanges, for which generic torque tables are not provided. Equipment flanges have an internal pressure that is highly application-dependent, which prevents the generation of a generic torque table. As the flange size increases, internal operating pressure plays an increasingly decisive role in determining a torque value.

All technical information and advice given here is based on our previous experiences and/or test results. We give this information to the best of our knowledge, but assume no legal responsibility. Customers are asked to check the suitability and usability in the specific application, since the performance of the product can only be judged when all necessary operating data are available. Specifications are subject to change without notice. Gore's terms and conditions of sale apply to the purchase and sale of the product.

For detailed selection criteria, technical information, installation guidelines and the complete listing of local sales offices, please visit gore.com/sealants.

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