

Available Gasket Stress vs. Bolt Stress

150# Flat Face Flanges

This table is for information purposes only; see notes below.

Nom. Pipe Size (inches)	Number of Bolts	Size of Bolts (inches)	Bolt Stress						Minimum Recommended Assembly Stress		
			30,000 psi		60,000 psi		75,000 psi		1/32" Thick (psi)	1/16" Thick (psi)	1/8" Thick (psi)
			Bolt Torque (ft. lbs.)	Gasket Stress (psi)	Bolt Torque (ft. lbs.)	Gasket Stress (psi)	Bolt Torque (ft. lbs.)	Gasket Stress (psi)			
0.5	4	0.50	30	1,929	60	3,857	75	4,821	2,500	3,600	4,800
0.75	4	0.50	30	1,557	60	3,114	75	3,893	2,500	3,600	4,800
1	4	0.50	30	1,302	60	2,605	75	3,256	2,500	3,600	4,800
1.25	4	0.50	30	1,125	60	2,250	75	2,813	2,500	3,600	4,800
1.5	4	0.50	30	973	60	1,946	75	2,432	2,500	3,600	4,800
2	4	0.63	60	1,100	120	2,201	150	2,751	2,500	3,600	4,800
2.5	4	0.63	60	803	120	1,606	150	2,008	2,500	3,600	4,800
3	4	0.63	60	740	120	1,479	150	1,849	2,500	3,600	4,800
3.5	8	0.63	60	1,194	120	2,388	150	2,985	2,500	3,600	4,800
4	8	0.63	60	1,099	120	2,197	150	2,746	2,500	3,600	4,800
5	8	0.75	100	1,466	200	2,931	250	3,664	2,500	3,600	4,800
6	8	0.75	100	1,299	200	2,598	250	3,247	2,500	3,600	4,800
8	8	0.75	100	906	200	1,813	250	2,266	2,500	3,600	4,800
10	12	0.88	160	1,497	320	2,993	400	3,742	2,500	3,600	4,800
12	12	0.88	160	1,031	320	2,062	400	2,577	2,500	3,600	4,800
14	12	1.00	245	1,099	490	2,198	613	2,748	2,500	3,600	4,800
16	16	1.00	245	1,220	490	2,440	613	3,050	2,500	3,600	4,800
18	16	1.13	355	1,613	710	3,226	888	4,033	2,500	3,600	4,800
20	20	1.13	355	1,713	710	3,425	888	4,282	2,500	3,600	4,800
24	20	1.25	500	1,730	1,000	3,460	1,250	4,326	2,500	3,600	4,800
26	24	1.25	500	1,886	1,000	3,771	1,250	4,714	—	4,049	5,249
28	28	1.25	500	2,006	1,000	4,012	1,250	5,015	—	4,075	5,275
30	28	1.25	500	1,811	1,000	3,622	1,250	4,528	—	4,092	5,292
32	28	1.50	800	2,329	1,600	4,659	2,000	5,823	—	4,076	5,276
34	32	1.50	800	2,550	1,600	5,099	2,000	6,374	—	4,115	5,315
36	32	1.50	800	2,335	1,600	4,670	2,000	5,838	—	4,129	5,329
38	32	1.50	800	2,025	1,600	4,050	2,000	5,063	—	4,111	5,311
40	36	1.50	800	2,194	1,600	4,389	2,000	5,486	—	4,145	5,345
42	36	1.50	800	2,034	1,600	4,068	2,000	5,085	—	4,157	5,357
44	40	1.50	800	2,124	1,600	4,247	2,000	5,309	—	4,175	5,375
46	40	1.50	800	2,033	1,600	4,066	2,000	5,083	—	4,201	5,401
48	44	1.50	800	2,108	1,600	4,217	2,000	5,271	—	4,217	5,417
50	44	1.75	1,500	2,873	3,000	5,746	3,750	7,182	—	4,247	5,447
52	44	1.75	1,500	2,690	3,000	5,379	3,750	6,724	—	4,256	5,456
54	44	1.75	1,500	2,525	3,000	5,050	3,750	6,313	—	4,264	5,464
56	48	1.75	1,500	2,553	3,000	5,105	3,750	6,381	—	4,262	5,462
58	48	1.75	1,500	2,406	3,000	4,812	3,750	6,015	—	4,269	5,469
60	52	1.75	1,500	2,544	3,000	5,089	3,750	6,361	—	4,299	5,499

Notes:

- 1 The values shown are not recommended values. The intent of this table is to illustrate the relationship between bolt torque, bolt stress, gasket stress, and how these three factors relate to the contact area of ASME B16.5 & B16.47 Series A flat face flanges.
- 2 Full face gaskets will typically seal at stresses well below the minimum recommended values shown. See also "Flanges" on page C-50.
- 3 Contact Garlock Applications Engineering at 1-800-448-6688 for further discussions regarding the use of compressed non-asbestos, GYLON® or GRAPH-LOCK® products in flat face flanges.

WARNING:

Properties/applications shown throughout this brochure are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. For specific application recommendations consult Garlock. Failure to select the proper sealing products could result in property damage and/or serious personal injury.

Performance data published in this brochure has been developed from field testing, customer field reports and/or in-house testing.

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