



DESCRIPTION

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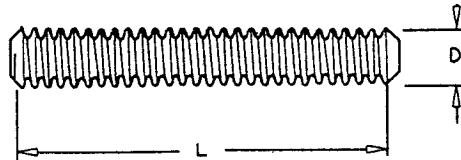
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SUGGESTED LENGTHS AND TORQUE FOR COMMON FLANGE APPLICATIONS

Calculating Stud Bolt Lengths (from first thread to first thread)



Stud Bolts for Pressure-Temperature Piping

The length of stud bolt, measured parallel to the axis, is the distance from first thread to first thread. **First thread is defined as the intersection of the major diameter of the thread with the base of the point.**

Recommended Flange Bolt Torque

40,000 PSI Stress

52,500 PSI Stress

Bolt Size	Bolt Tension lbf	Make-up Torque ft-lbs		Bolt Tension lbf	Make-up Torque-ft-lbs
1/2 – 13	5674	45		7448	59
5/8 – 11	9026	86		11846	113
3/4 – 10	13355	150		17528	196
7/8 – 9	18482	239		24258	313
1 – 8	24229	361		31800	474
1-1/8 – 8	31617	522		41497	686
1-1/4 – 8	39987	726		52483	953
1-3/8 – 8	49339	976		64757	1281
1-1/2 – 8	59672	1277		78320	1676
1-5/8 – 8	70988	1635		93171	2146
1-3/4 - 8	83284	2054		109311	2695
1-7/8 – 8	96563	2538		126739	3331
2 – 8	110824	3093		145456	4060
2-1/4 – 8	142290	4435		186755	5821
2-1/2 – 8	177683	6116		233209	8028
2-5/8 – 8	196852	7097		258368	9314
2-3/4 - 8	217003	8176		284817	10731
3 – 8	260250	10653		341578	13982
3-1/4 – 8	307424	13585		403495	17830
3-3/4 – 8	413554	20967		542790	27519
3-7/8 - 8	442541	23157		580834	30393
4 – 8	472509	25494		620168	33461
4-1/2 – 8	602200	36412		790388	47790
4-3/4-8	672936	42879		883229	56289



BOLTING AND RING GASKET REQUIREMENTS for API AND ANSI FLANGES

Primary Source Pressure Rating	Bolting	Nominal Pipe Size																				
		Flange Facing	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4	5	6	8	10	12	14	16	18	20	24
150 Pound	Number Diameter		4	4	4	4	4	4	4	4	8	8	8	8	8	12	12	12	16	16	20	20
	Length of Stud Bolts	1/16 1RF	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	3/4	3/4	3/4	7/8	7/8	1	1	1	1	1
	Ring Size	RTJ	2-1/2	2-1/2	2-3/4	2-3/4	2-3/4	3	3-1/4	3-1/4	3-1/2	3-3/4	3-3/4	3-3/4	3-3/4	4	4	4	4-1/4	4-3/4	5-1/4	5-1/2
300 Pound	Number Diameter		4	4	4	4	4	8	8	8	8	8	8	8	12	12	16	16	20	20	24	24
	Length of Stud Bolts	1/16 1RF	1/2	5/8	5/8	5/8	3/4	5/8	3/4	3/4	3/4	3/4	3/4	3/4	7/8	1	1-1/8	1-1/8	1-1/4	1-1/4	1-1/4	1-1/2
	Ring Size	R	2-3/4	3	3-1/4	3-1/4	3-3/4	3-1/2	4	4-1/4	4-1/2	4-1/2	4-1/2	4-3/4	5	5-1/2	6-1/4	6-3/4	7	7-1/2	7-3/4	8-1/4
400 Pound	Number Diameter		4	4	4	4	8	8	8	8	8	8	8	12	12	16	16	20	20	24	24	24
	Length of Stud Bolts	1/4 1RF	1/2	5/8	5/8	5/8	3/4	5/8	3/4	7/8	7/8	7/8	7/8	1	1-1/8	1-1/4	1-1/4	1-1/4	1-3/8	1-3/8	1-1/2	1-3/4
	Ring Size	RTJ	3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/4	4-3/4	5	5-1/2	5-1/2	5-3/4	5-3/4	6	6-1/4	7	7-3/4	8-1/4	8-1/4	9	9-3/4
600 Pound	Number Diameter		4	4	4	4	8	8	8	8	8	8	12	12	16	20	20	20	20	24	24	24
	Length of Stud Bolts	1/4 1RF	1/2	5/8	5/8	5/8	3/4	5/8	3/4	7/8	7/8	7/8	1	1	1-1/8	1-1/4	1-1/4	1-3/8	1-1/2	1-5/8	1-5/8	1-7/8
	Ring Size	R	3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/4	4-3/4	5	5-1/2	5-3/7	6-1/2	6-3/4	7	8	8-3/4	9	9-1/2	10-1/4	11	11-3/4
900 Pound	Number Diameter		4	4	4	4	8	8	8	8	8	12	12	16	20	20	20	20	20	24	24	24
	Length of Stud Bolts	1/4 1RF	3/4	3/4	7/8	7/8	1	7/8	1	7/8	1	1-1/8	1-1/4	1-1/8	1-3/8	1-3/8	1-3/8	1-3/8	1-1/2	1-5/8	1-7/8	2
	Ring Size	RTJ	4-1/4	4-1/2	5	5	5-1/2	5-3/4	6-1/4	6-1/4	6-3/4	7	7-3/4	7-3/4	8-3/4	9-1/4	10	10-3/4	11-1/4	11-3/4	13	13-3/4
1500 Pound	Number Diameter		4	4	4	4	8	8	8	8	8	12	12	16	20	20	20	20	20	24	24	24
	Length of Stud Bolts	1/4 1RF	3/4	3/4	7/8	-	1	7/8	1	1-1/8	1-1/4	1-1/2	1-1/4	1-1/2	1-3/8	1-5/8	1-7/8	2	2-1/4	2-1/2	2-3/4	3
	Ring Size	RTJ	4-1/4	4-1/2	5	5	5-1/2	5-3/4	6-1/4	6-1/4	7	7-3/4	7-3/4	8	10	10-1/2	12	13-3/4	15-1/2	17	18-3/4	20-1/2
2500 Pound	Number Diameter		4	4	4	4	8	8	8	8	8	12	12	16	20	20	20	20	20	24	24	24
	Length of Stud Bolts	1/4 1RF	3/4	3/4	7/8	1	1-1/8	1	1-1/8	1-1/4	1-1/2	1-1/2	1-3/4	2	2	2-1/2	2-3/4	-	-	-	-	-
	Ring Size	RTJ	5	5	5-1/2	6	6-3/4	7	7-3/4	8-3/4	9	10-1/2	12-1/2	14-1/4	15-1/4	17	18-3/4	20-1/4	21-1/4	22-1/4	25-1/4	25-1/2