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**FLANGE BOLT CHART - API 6A**

API Pressure Rating	Flange Size & Bore	Ring Gasket		Number of Studs	Stud Dimensions	
					Diameter	Length
2000 lb	2 1/16"	R-23	RX-23	8	5/8"	4 3/4"
	2 9/16"	R-26	RX-26	8	3/4"	5 1/4"
	3 1/8"	R-31	RX-31	8	3/4"	5 1/2"
	4 1/16"	R-37	RX-37	8	7/8"	6 1/4"
	5 1/8"	R-41	RX-41	8	1"	7 1/4"
	7 1/16"	R-45	RX-45	12	1"	7 1/2"
	9"	R-49	RX-49	12	1 1/8"	8 1/2"
	11"	R-53	RX-53	16	1 1/4"	9 1/4"
	13 5/8"	R-57	RX-57	20	1 1/4"	9 1/2"
	16 3/4"	R-65	RX-65	20	1 1/2"	10 3/4"
6BX	21 1/4"	R-73	RX-73	24	1 5/8"	12 1/2"
	26 3/4"	BX-167		20	1 3/4"	14 1/4"

API Pressure Rating	Flange Size & Bore	Ring Gasket		Number of Studs	Stud Dimensions	
					Diameter	Length
3000 lb	2 1/16"	R-24	RX-24	8	7/8"	6"
	2 9/16"	R-27	RX-27	8	1"	7"
	3 1/8"	R-31	RX-31	8	7/8"	6 1/4"
	4 1/16"	R-37	RX-37	8	1 1/8"	7 1/2"
	5 1/8"	R-41	RX-41	8	1 1/4"	8 1/4"
	7 1/16"	R-45	RX-45	12	1 1/8"	8 1/2"
	9"	R-49	RX-49	12	1 3/8"	9 1/2"
	11"	R-53	RX-53	16	1 3/8"	10"
	13 5/8"	R-57	RX-57	20	1 3/8"	10 3/4"
	16 3/4"	R-66	RX-66	20	1 5/8"	12 1/4"
6BX	20 3/4"	R-74	RX-74	20	2"	15"
	26 3/4"	BX-168		24	2"	17 1/2"

API Pressure Rating	Flange Size & Bore	Ring Gasket		Number of Studs	Stud Dimensions	
					Diameter	Length
5000 lb	2 1/16"	R-24	RX-24	8	7/8"	6 1/4"
	2 9/16"	R-27	RX-27	8	1"	7"
	3 1/8"	R-35	RX-35	8	1 1/8"	7 3/4"
	4 1/16"	R-39	RX-39	8	1 1/4"	8 1/2"
	5 1/8"	R-44	RX-44	8	1 1/2"	10 3/4"
	7 1/16"	R-46	RX-46	12	1 3/8"	11 1/4"
	9"	R-50	RX-50	12	1 5/8"	12 1/2"
	11"	R-54	RX-54	12	1 7/8"	14 1/2"
	13 5/8"	BX-160		16	1 5/8"	12 3/4"
	16 3/4"	BX-162		16	1 7/8"	14 3/4"
6BX	18 3/4"	BX-163		20	2"	17 1/2"
	21 1/4"	BX-165		24	2"	18 3/4"

API Pressure Rating	Flange Size & Bore	Ring Gasket		Number of Studs	Stud Dimensions	
					Diameter	Length
10000 lb	1 13/16"	BX-151		8	3/4"	5 1/4"
	2 1/16"	BX-152		8	3/4"	5 1/2"
	2 9/16"	BX-153		8	7/8"	6 1/4"
	3 1/16"	BX-154		8	1"	7 1/4"
	4 1/16"	BX-155		8	1 1/8"	8 1/4"
	5 1/8"	BX-169		12	1 1/8"	9"
	7 1/16"	BX-156		12	1 1/2"	11 3/4"
	9"	BX-157		16	1 1/2"	13 1/4"
	11"	BX-158		16	1 3/4"	15 1/2"
	13 5/8"	BX-159		20	1 7/8"	17 3/4"
	16 3/4"	BX-162		24	1 7/8"	17 3/4"
	18 3/4"	BX-164		24	2 1/4"	22 1/2"
	6BX	21 1/4"	BX-166		24	2 1/2"

API Pressure Rating	Flange Size & Bore	Ring Gasket		Number of Studs	Stud Dimensions	
					Diameter	Length
15000 lb	1 13/16"	BX-151		8	7/8"	5 3/4"
	2 1/16"	BX-152		8	7/8"	6 1/4"
	2 9/16"	BX-153		8	1"	7"
	3 1/16"	BX-154		8	1 1/8"	8"
	4 1/16"	BX-155		8	1 3/8"	9 1/2"
	5 1/8"	BX-169		12	1 1/2"	11 1/2"
	7 1/16"	BX-156		16	1 1/2"	13"
	9"	BX-157		16	1 7/8"	15 3/4"
	11"	BX-158		20	2"	19 1/2"
	13 5/8"	BX-159		20	2 1/4"	21"
6BX	18 3/4"	BX-164		20	3"	26 3/4"

API Pressure Rating	Flange Size & Bore	Ring Gasket		Number of Studs	Stud Dimensions	
					Diameter	Length
20000 lb	1 13/16"	BX-151		8	1"	7 3/4"
	2 1/16"	BX-152		8	1 1/8"	8 1/2"
	2 9/16"	BX-153		8	1 1/4"	9 1/2"
	3 1/16"	BX-154		8	1 3/8"	10 1/4"
	4 1/16"	BX-155		8	1 3/4"	12 1/4"
	7 1/16"	BX-156		16	2"	17 3/4"
	9"	BX-157		16	2 1/2"	21 3/4"
	11"	BX-158		16	2 3/4"	23 3/4"
	13 5/8"	BX-159		20	3"	30"
	6BX	13 5/8"	BX-159		20	3"

# FLANGE BOLT CHART - API 6D

	Nominal Pipe Size (Inches)	RF Height	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
<b>Class 150</b>	Number of Bolts		4	4	4	4	4	4	4	4	8	8	8	8	8	12	12	12	16	16	20	20
	Diameter of Bolt		1/2	1/2	1/2	1/2	1/2	5/8	5/8	5/8	5/8	5/8	3/4	3/4	7/8	7/8	7/8	1	1	1 1/8	1 1/8	1 1/4
	Stud Bolt Length	0.06	2 1/4	2 1/2	2 1/2	2 3/4	2 3/4	3 1/4	3 1/2	3 1/2	3 1/2	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5 1/4	5 1/4	5 3/4	6 1/4	6 3/4
	Machine Bolt Length	0.06	2	2	2 1/4	2 1/4	2 1/2	2 3/4	3	3	3	3	3 1/4	3 1/4	3 1/2	4	4	4 1/2	4 1/2	5	5 1/2	6
<b>Class 300</b>	Number of Bolts		4	4	4	4	4	8	8	8	8	8	8	12	12	16	16	20	20	24	24	24
	Diameter of Bolt		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
	Stud Bolt Length	0.06	2 1/2	3	3	3 1/4	3 1/2	3 1/2	4	4 1/4	4 1/4	4 1/2	4 3/4	4 3/4	5 1/2	6 1/4	6 3/4	7	7 1/2	7 3/4	8	9
	Machine Bolt Length	0.06	2 1/4	2 1/2	2 1/2	2 3/4	3	3	3 1/4	3 1/2	3 3/4	3 3/4	4 1/4	4 1/4	4 3/4	5 1/2	5 3/4	6 1/4	6 1/2	6 3/4	7 1/4	8
<b>Class 400</b>	Number of Bolts		4	4	4	4	4	8	8	8	8	8	8	12	12	16	16	20	20	24	24	24
	Diameter of Bolt		1/2	5/8	5/8	5/8	3/4	5/8	3/4	3/4	7/8	7/8	7/8	7/8	1	1 1/8	1 1/4	1 1/4	1 3/8	1 3/8	1 1/2	1 3/4
	Stud Bolt Length	1/4	3	3 1/2	3 1/2	3 3/4	4 1/4	4 1/4	4 3/4	5	5 1/2	5 1/2	5 3/4	6	6 3/4	7 1/2	8	8 1/4	8 3/4	9	9 1/2	10 1/2
	Machine Bolt Length	1/4	3	3 1/2	3 1/2	3 3/4	4 1/4	4 1/4	4 3/4	5	5 1/2	5 1/2	5 3/4	6	6 3/4	7 1/2	8	8 1/4	8 3/4	9	9 1/2	10 1/2
<b>Class 600</b>	Number of Bolts		4	4	4	4	4	8	8	8	8	8	8	12	12	16	20	20	20	20	24	24
	Diameter of Bolt		1/2	5/8	5/8	5/8	3/4	5/8	3/4	3/4	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
	Stud Bolt Length	1/4	3	3 1/2	3 1/2	3 3/4	4 1/4	4 1/4	4 3/4	5	5 1/2	5 3/4	6 1/2	6 3/4	7 1/2	8 1/2	8 3/4	9 1/4	10	10 3/4	11 1/4	13
	Machine Bolt Length	1/4	3	3 1/2	3 1/2	3 3/4	4 1/4	4 1/4	4 3/4	5	5 1/2	5 3/4	6 1/2	6 3/4	7 1/2	8 1/2	8 3/4	9 1/4	10	10 3/4	11 1/4	13
<b>Class 900</b>	Number of Bolts		4	4	4	4	4	8	8	8		8	8	12	12	16	20	20	20	20	20	20
	Diameter of Bolts		1/2	5/8	5/8	5/8	3/4	7/8	3/4	7/8		1 1/8	1 1/4	1 1/8	1 3/8	1 3/8	1 3/8	1 1/2	1 5/8	1 7/8	2	2 1/2
	Raised Face 0.25 in.	1/4	3	3 1/2	3 1/2	3 3/4	4 1/4	5.75	4 3/4	5.75		6.75	7.50	7.50	8.75	9.25	10.00	10.75	11.25	12.75	13.75	17.25
	Machine Bolt Length	1/4	3	3 1/2	3 1/2	3 3/4	4 1/4	5.75	4 3/4	5.75		6.75	7.50	7.50	8.75	9.25	10.00	10.75	11.25	12.75	13.75	17.25
<b>Class 1500</b>	Number of Bolts		4	4	4	4	4	8	8	8		8	8	12	12	12	16	16	16	16	16	16
	Diameter of Bolts		3/4	3/4	7/8	7/8	1	7/8	1	1 1/8		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	3 1/2
	Raised Face 0.25 in.	1/4	4.25	4.50	5.00	5.00	5.50	5.75	6.25	7.00		7.75	9.75	10.25	11.50	13.25	14.75	16.00	17.50	19.50	21.25	24.25
	Machine Bolt Length	1/4	4.25	4.50	5.00	5.00	5.50	5.75	6.25	7.00		7.75	9.75	10.25	11.50	13.25	14.75	16.00	17.50	19.50	21.25	24.25
<b>Class 2500</b>	Number of Bolts		4	4	4	4	4	8	8	8		8	8	8	12	12	12					
	Diameter of Bolts		3/4	3/4	7/8	1	1 1/8	1	1 1/8	1 1/4		1 1/2	1 3/4	2	2	2 1/2	2 3/4					
	Raised Face 0.25 in.	1/4	4.75	5.00	5.50	6.00	6.75	7.00	7.75	8.75		10.00	11.75	13.50	15.00	19.25	21.25					
	Machine Bolt Length	1/4	4.75	5.00	5.50	6.00	6.75	7.00	7.75	8.75		10.00	11.75	13.50	15.00	19.25	21.25					

## Temperature and Pressure Ratings for ASTM 105 Carbon Steel Flange

Pressure Class	150	300	400	600	900	1500	2500
Service Temperature (F)	Maximum Non-Shock Pressure (PSIG)						
100	285	740	990	1480	2200	3705	6170
200	260	675	900	1350	2025	3375	5625
300	230	655	875	1315	1970	3280	5470
400	200	635	845	1270	1900	3170	5280
500	170	600	800	1200	1795	2995	4990
600	140	550	730	1095	1640	2735	4560
650	125	535	715	1075	1610	2685	4475
700	110	535	710	1065	1600	2665	4440
750	95	505	670	1010	1510	2520	4200
800	Not recommended above 800						



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