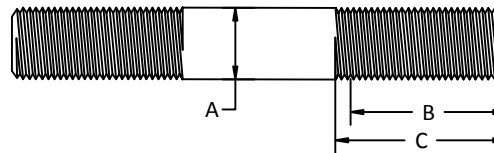


# STUDS

## Double End Stud

Nominal Size	Body Diameter				Nut Ends			
	A				B	C	B	C
	Type 2		Type 3		Thread Length For Studs <= 6" Length		Thread Length for Studs > 6" Length	
	Max	Min	Max	Min	Min Full Thread	Max Total Thread	Min Full Thread	Max Total Thread
1/4	0.250	0.213	0.250	0.241	0.750	0.875	1.000	1.125
5/16	0.313	0.271	0.313	0.303	0.875	1.031	1.125	1.281
3/8	0.375	0.328	0.375	0.365	1.000	1.188	1.250	1.438
7/16	0.438	0.385	0.438	0.426	1.125	1.344	1.375	1.594
1/2	0.500	0.444	0.500	0.488	1.250	1.500	1.500	1.750
9/16	0.563	0.502	0.563	0.550	1.375	1.656	1.625	1.906
5/8	0.625	0.559	0.625	0.611	1.500	1.812	1.750	2.062
3/4	0.750	0.677	0.750	0.735	1.750	2.125	2.000	2.375
7/8	0.875	0.795	0.875	0.859	2.000	2.438	2.250	2.688
1	1.000	0.910	1.000	0.983	2.250	2.750	2.500	3.000
1 1/8	1.125	1.023	1.125	1.106	2.500	3.062	2.750	3.312
1 1/4	1.250	1.148	1.250	1.231	2.750	3.375	3.000	3.625
1 3/8	1.375	1.256	1.375	1.354	3.000	3.688	3.250	3.928
1 1/2	1.500	1.381	1.500	1.479	3.250	4.000	3.500	4.250





Sealing Global - Servicing Local

## 150 Flange

NPS	Outside Diameter of Flange	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	Length of Stud Bolts [Note (1)]	
						Raised Face 0.06 in	Ring Joint
1/2	3 1/2	2 3/8	5/8	4	1/2	2 1/4	-
3/4	3 7/8	2 3/4	5/8	4	1/2	2 1/2	-
1	4 1/4	3 1/8	5/8	4	1/2	2 1/2	3
1 1/4	4 5/8	3 1/2	5/8	4	1/2	2 3/4	3 1/4
1 1/2	5	3 7/8	5/8	4	1/2	2 3/4	3 1/4
2	6	4 3/4	3/4	4	5/8	3 1/4	3 3/4
2 1/2	7	5 1/2	3/4	4	5/8	3 1/2	4
3	7 1/2	6	3/4	4	5/8	3 1/2	4
3 1/2	8 1/2	7	3/4	8	5/8	3 1/2	4
4	9	7 1/2	3/4	8	5/8	3 1/2	4
5	10	8 1/2	7/8	8	3/4	3 3/4	4 1/4
6	11	9 1/2	7/8	8	3/4	4	4 1/2
8	13 1/2	11 3/4	7/8	8	3/4	4 1/4	4 3/4
10	16	14 3/4	1	12	7/8	4 1/2	5
12	19	17	1	12	7/8	4 3/4	5 1/4
14	21	18 3/4	1 1/8	12	1	5 1/4	5 3/4
16	23 1/2	21 1/4	1 1/8	16	1	5 1/4	5 3/4
18	25	22 3/4	1 1/4	16	1 1/8	5 3/4	6 1/4
20	27 1/2	25	1 1/4	20	1 1/8	6 1/4	6 3/4
24	32	29 1/2	1 1/4	20	1 1/4	6 3/4	7 1/4

## 300 Flange

NPS	Outside Diameter of Flange	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	Length of Stud Bolts [Note (1)]	
						Raised Face 0.06 in	Ring Joint
1/2	3 3/4	2 5/8	5/8	4	1/2	2 1/2	3
3/4	4 5/8	3 1/4	3/4	4	5/8	3	3 1/2
1	4 7/8	3 1/2	3/4	4	5/8	3	3 1/2
1 1/4	5 1/4	3 7/8	3/4	4	5/8	3 1/4	3 3/4
1 1/2	6 1/8	4 1/2	7/8	4	3/4	3 1/2	4
2	6 1/2	5	3/4	8	5/8	3 1/2	4
2 1/2	7 1/2	5 7/8	7/8	8	3/4	4	4 1/2
3	8 1/4	6 5/8	7/8	8	3/4	4 1/4	4 3/4
3 1/2	9	7 1/4	7/8	8	3/4	4 1/4	5
4	10	7 7/8	7/8	8	3/4	4 1/2	5
5	11	9 1/4	7/8	8	3/4	4 3/4	5 1/4
6	12 1/2	10 5/8	7/8	12	3/4	4 3/4	5 1/2
8	15	13	1	12	7/8	5 1/2	6
10	17 1/2	15 1/4	1 1/8	16	1	6 1/4	6 3/4
12	20 1/2	17 3/4	1 1/4	16	1 1/8	6 3/4	7 1/4
14	23	20 1/4	1 1/4	20	1 1/8	7	7 1/2
16	25 1/2	22 1/2	1 3/8	20	1 1/4	7 1/2	8
18	28	24 3/4	1 3/8	24	1 1/4	7 3/4	8 1/4
20	30 1/2	27	1 3/8	24	1 1/4	8	8 3/4
24	36	32	1 5/8	24	1 1/2	9	10

## 600 Flange

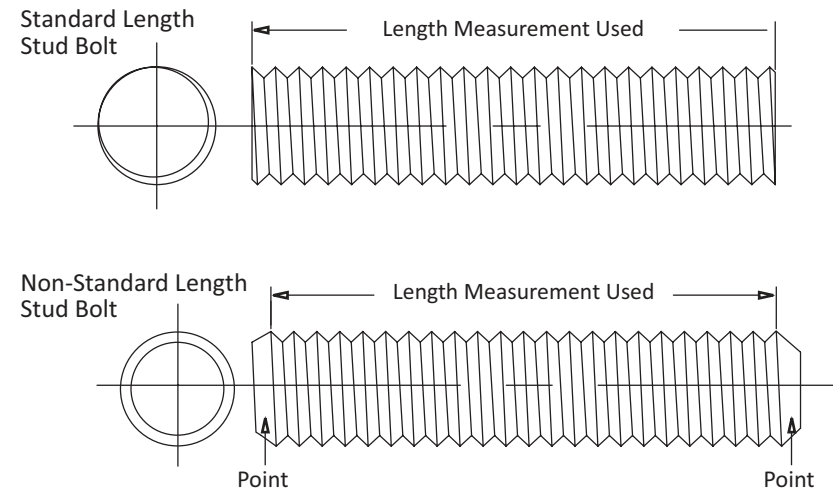
NPS	Outside Diameter of Flange	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	Length of Stud Bolts [Note (1)]	
						Raised Face 0.06 in	Ring Joint
1/2	3 3/4	2 5/8	5/8	4	1/2	3	3
3/4	4 5/8	3 1/4	3/4	4	5/8	3 1/2	3 1/2
1	4 7/8	3 1/2	3/4	4	5/8	3 1/2	3 1/2
1 1/4	5 1/4	3 7/8	3/4	4	5/8	3 3/4	3 3/4
1 1/2	6 1/8	4 1/2	7/8	4	3/4	4 1/4	4 1/4
2	6 1/2	5	3/4	8	5/8	4 1/4	4 1/4
2 1/2	7 1/2	5 7/8	7/8	8	3/4	4 3/4	4 3/4
3	8 1/4	6 5/8	7/8	8	3/4	5	5
3 1/2	9	7 1/4	1	8	7/8	5 1/2	5 1/2
4	10 3/4	8 1/2	1	8	7/8	5 3/4	5 3/4
5	13	10 1/2	1 1/8	8	1	6 1/2	6 1/2
6	14	11 1/2	1 1/8	12	1	6 3/4	6 3/4
8	16 1/2	13 3/4	1 1/4	12	1 1/8	7 1/2	7 3/4
10	20	17	1 3/8	16	1 1/4	8 1/2	8 1/2
12	22	19 1/4	1 3/8	20	1 1/4	8 3/4	8 3/4
14	23 3/4	20 3/4	1 1/2	20	1 3/8	9 1/4	9 1/4
16	27	23 3/4	1 5/8	20	1 1/2	10	10
18	29 1/4	25 3/4	1 3/4	20	1 5/8	10 3/4	10 3/4
20	32	28 1/2	1 3/4	24	1 5/8	11 1/4	11 1/2
24	37	33	2	24	1 7/8	13	13 1/4

## 900 Flange

NPS	Outside Diameter of Flange	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	Length of Stud Bolts [Note (1)]	
						Raised Face 0.06 in	Ring Joint
1/2	4 3/4	3 1/4	7/8	4	3/4	4 1/4	4 1/4
3/4	5 1/8	3 1/2	7/8	4	3/4	4 1/2	4 1/2
1	5 7/8	4	1	4	7/8	5	5
1 1/4	6 1/4	4 3/8	1	4	7/8	5	5
1 1/2	7	4 7/8	1 1/8	4	1	5 1/2	5 1/2
2	8 1/2	6 1/2	1	8	7/8	5 3/4	5 3/4
2 1/2	9 5/8	7 1/2	1 1/8	8	1	6 1/4	6 1/4
3	9 1/2	7 1/2	1	8	7/8	5 3/4	5 3/4
4	11 1/2	9 1/4	1 1/4	8	1 1/8	6 3/4	6 3/4
5	13 3/4	11	1 3/8	8	1 1/4	7 1/2	7 1/2
6	15	12 1/2	1 1/4	12	1 1/8	7 1/2	7 3/4
8	18 1/2	15 1/2	1 1/2	12	1 3/8	8 3/8	8 3/4
10	21 1/2	18 1/2	1 1/2	16	1 3/8	9 1/4	9 1/4
12	24	21	1 1/2	20	1 3/8	10	10
14	25 1/4	22	1 5/8	20	1 1/2	10 3/4	11
16	27 3/4	24 1/4	1 3/4	20	1 5/8	11 1/4	11 1/2
18	31	27	2	20	1 7/8	12 3/4	13 1/4
20	33 3/4	29 1/2	2 1/8	20	2	13 3/4	14 1/4
24	41	35 1/2	2 5/8	20	2 1/2	17 1/4	18

## 1500 Flange

NPS	Outside Diameter of Flange	Diameter of Bolt Circle	Diameter of Bolt Holes	Number of Bolts	Diameter of Bolts	Length of Stud Bolts [Note (1)]	
						Raised Face 0.06 in	Ring Joint
1/2	4 3/4	3 1/4	7/8	4	3/4	4 1/4	4 1/4
3/4	5 1/8	3 1/2	7/8	4	3/4	4 1/2	4 1/2
1	5 7/8	4	1	4	7/8	5	5
1 1/4	6 1/4	4 3/8	1	4	7/8	5	5
1 1/2	7	4 7/8	1 1/8	4	1	5 1/2	5 1/2
2	8 1/2	6 1/2	1	8	7/8	5 3/4	5 3/4
2 1/2	9 5/8	7 1/2	1 1/8	8	1	6 1/4	6 1/4
3	10 1/2	8	1 1/4	8	1 1/8	7	7
4	12 1/4	9 1/2	1 3/8	8	1 1/4	7 3/4	7 3/4
5	14 3/4	11 1/2	1 5/8	8	1 1/2	9 3/4	9 3/4
6	15 1/2	12 1/2	1 1/2	12	1 3/8	10 1/4	10 1/2
8	19	15 1/2	1 3/4	12	1 5/8	11 1/2	12 3/4
10	23	19	2	12	1 7/8	13 1/4	13 1/2
12	26 1/2	22 1/2	2 1/8	16	2	14 3/4	15 1/4
14	29 1/2	25	2 3/8	16	2 1/4	16	16 3/4
16	32 1/2	27 3/4	2 5/8	16	2 1/2	17 1/2	18 1/2
18	36	30 1/2	2 7/8	16	2 3/4	19 1/2	20 3/4
20	38 3/4	32 3/4	3 1/8	16	3	21 1/4	22 1/4
24	46	39	3 5/8	16	3 1/2	24 1/4	25 1/2



**Note:** (1) All studs are measured using effective thread length which is first thread to first thread. See diagrams to the right. Dimensions are in inches. Measurements based on ASME B 16.5 flange specifications.

**Note:** (2) Length of point on studs and stud bolts shall be not less than one nor more than two complete threads as measured from the extreme end parallel to the axis. (Typically 1/8")