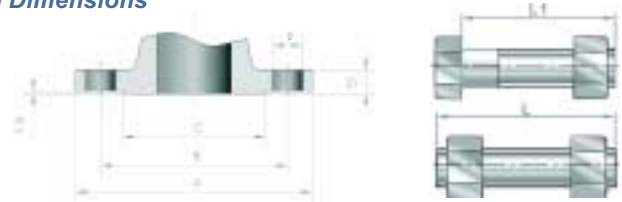




Technical Data

Steel Pipe Flange And Bolting Dimensions

ASME B16.5 (2" ~ 24")
 ASME B16.47 Series A(26" ~ 42")
 Class 150 RF & 300



Class 150

NPS		A	B	C	D	E	Bolt		L	L1
in	mm	mm	mm	mm	mm	mm	Num.	Diam.(in)	1.6mm raised face	mm
2	50	152	120.5	92	19.1	19	4	5/8	82.55	69.85
2 1/2	65	178	139.5	105	22.3	19	4	5/8	88.9	76.2
3	80	190	152.5	127	23.9	19	4	5/8	88.9	76.2
4	100	229	190.5	157	23.9	19	8	5/8	88.9	76.2
5	125	254	216	186	23.9	22	8	3/4	95.25	82.55
6	150	279	241.5	216	25.4	22	8	3/4	101.6	82.55
8	200	343	298.5	270	28.6	22	8	3/4	107.95	88.9
10	250	406	362	324	30.2	25	12	7/8	114.3	101.6
12	300	483	432	381	31.8	25	12	7/8	120.65	101.6
14	350	533	476.5	413	35	29	12	1	133.35	114.3
16	400	597	539.5	470	36.6	29	16	1	133.35	114.3
18	450	635	578	533	39.7	32	16	1 1/8	146.05	127
20	500	698	635	584	42.9	32	20	1 1/8	158.75	139.7
24	600	813	749.5	692	47.7	35	20	1 1/4	171.45	152.4
26	650	870	806.5	749	68.3	38	24	1 3/8	230.2	190.2
28	700	927	863.5	800	71.4	38	28	1 3/8	236.4	196.2
30	750	984	914.5	857	74.7	38	28	1 3/8	242.4	202.4
32	800	1060	978	914	80.8	45	28	1 5/8	267.2	221.2
34	850	1111	1028.5	965	82.5	45	32	1 5/8	270.6	224.6
36	900	1168	1085.5	1022	90.4	45	32	1 5/8	286.4	240.4
38	950	1238	1149.5	1073	87.4	45	32	1 5/8	279.6	233.6
40	1000	1289	1200	1124	90.4	45	36	1 5/8	286.4	246.4
42	1050	1346	1257.5	1194	96.8	45	36	1 5/8	299.2	253.2

Class 300

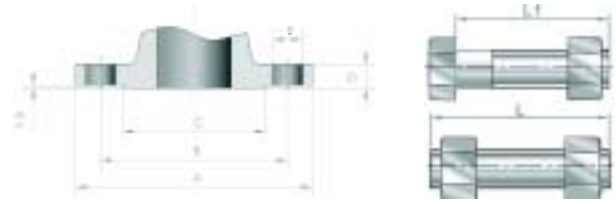
NPS		A	B	C	D	E	Bolt		L	L1
in	mm	mm	mm	mm	mm	mm	Num.	Diam. (in)	1.6mm raised face	mm
2	50	165	127	92	22.3	19	8	5/8	88.9	76.2
2 1/2	65	190	149	105	25.4	22	8	3/4	101.6	82.55
3	80	210	168	127	28.6	22	8	3/4	107.95	88.9
4	100	254	200	157	31.8	22	8	3/4	114.3	95.25
5	125	279	235	186	35.0	22	8	3/4	120.65	107.95
6	150	318	270	216	36.6	22	12	3/4	120.65	107.95
8	200	381	330	270	41.3	25	12	7/8	139.7	120.65
10	250	444	387.5	324	47.7	29	16	1	158.75	139.7
12	300	521	451	381	50.8	32	16	1 1/8	171.45	146.05
14	350	584	514.5	413	54.0	32	20	1 1/8	177.8	133.35
16	400	648	571.5	470	57.2	35	20	1 1/4	190.5	165.1
18	450	711	628.5	533	60.4	35	24	1 1/4	196.85	171.45
20	500	775	686	584	63.5	35	24	1 1/4	203.2	184.15
24	600	914	813	692	69.9	41	24	1 1/2	228.6	203.2
26	650	971	876.5	749	72.9	48	28	1 3/4	257.4	208.4
28	700	1035	940	800	85.5	48	28	1 3/4	282.6	233.6
30	750	1092	997	857	91.9	51	28	1 7/8	302.4	249.5
32	800	1149	1054	914	98.5	54	28	2	322.2	266.2
34	850	1206	1105	965	101.6	54	28	2	328.4	272.4
36	900	1270	1168.5	1022	104.6	57	32	2 1/8	340.8	281.8
38	950	1168	1092	1029	107.9	45	32	1 5/8	321.4	275.4
40	1000	1238	1156.5	1086	114.3	48	32	1 □	340.2	290.7



Technical Data

Steel Pipe Flange and Bolting Dimensions

ASME B16.47 Series B
Class 150 RF & 300



Class 150

NPS		A	B	C	D	E	Bolt		L	L1
in	mm	mm	mm	mm	mm	mm	Num.	Diam.(in)	1.6mm raised face	mm
26	650	786	745	711	41.5	22	36	3/4	140	235
28	700	837	795	762	44.5	22	40	3/4	146	235
30	750	887	846	813	44.5	22	44	3/4	146	235
32	800	941	900	864	46.5	22	48	3/4	146	273
34	850	1005	957	921	49	26	40	7/8	159	273
36	900	1057	1010	972	52.5	26	44	7/8	165	273
38	950	1124	1070	1022	54	29.5	40	1	178	292
40	1000	1175	1121	1080	56	29.5	44	1	178	298
42	1050	1226	1172	1130	59	29.5	48	1	184	165
48	1200	1392	1335	1289	65	32.5	44	1 1/8	203	184

Class 300

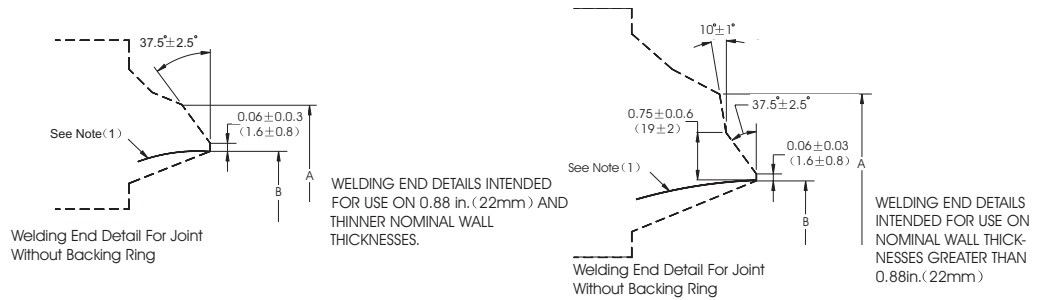
NPS		A	B	C	D	E	Bolt		L	L1
in	mm	mm	mm	mm	mm	mm	Num.	Diam.(in)	1.6mm raised face	mm
26	650	867	803	711	89	35.5	32	1 1/4	260	121
28	700	921	857	762	89	35.5	36	1 1/4	260	127
30	750	991	921	813	94	39	36	1 3/8	273	127
32	800	1045	978	864	103	42	32	1 1/2	298	134
34	850	1180	1032	921	103	42	36	1 1/2	298	146
36	900	1172	1089	972	103	45	32	1 5/8	305	152
38	950	1222	1140	1022	111	45	36	1 5/8	324	159
40	1000	1273	1191	1080	116	45	40	1 5/8	330	165
42	1050	1334	1245	1130	119	48	36	1 3/4	343	165
48	1200	1511	1416	1289	128.5	51	40	1 7/8	368	184



Technical Data

Butt Welding End Details

ASME B 16.25



Notes: (1) internal surface may be as-formed or machined or dimension B at root face. Contour within the envelope shall be in accordance with section.

		Pipe Schedule No	Nominal Pipe Size									
			2 1/2	3	4	5	6	8	10	12	14	16
A	in	All	2.96	3.59	4.62	5.69	6.78	8.78	10.94	12.97	14.25	16.25
	mm		75	91	117	144	172	223	278	329	362	413
B	in	STD							12.0000	13.250	15.250	
	mm								304.80	336.55	387.35	
	in	40	2.469	3.068	4.026	5.047	6.065	7.981	10.020	11.938	13.124	15.000
	mm		62.5	78	102	128	154	202	254.5	303	333	381
	in	XS								11.750	13.000	
	mm									298.45	330.20	
	in	60						7.813	9.750	11.626	12.812	14.688
	mm							198.45	247.65	295.30	325.42	373.08
	in	80	2.323	2.900	3.826	4.813	5.761	7.625	9.562	11.374	12.500	14.312
	mm		59	73.5	97	122	146	193.5	243	289.00	317.5	363.5
	in	100						7.437	9.312	11.062	12.124	13.938
	mm							189	236.5	281	308	354
	in	120			3.624	4.563	5.501	7.187	9.062	10.750	11.812	13.562
	mm				92	116	140	182	230	273	300	344.5
	in	140						7.001	8.750	10.500	11.500	13.124
	mm							178	222	267	292	333
in	160	2.125	2.624	3.438	4.313	5.187	6.875	8.500	10.126	11.188	12.812	
mm		54	66.5	87	109.5	132	174.5	216	257	284	325.5	
in	XXS	1.771	2.300	3.152	4.063	4.897	6.813					
mm		45	58.5	80	103	124	173					
		Pipe Schedule No	Nominal Pipe Size									
			18	20	22	24	26	28	30	32	34	36
A	in	All	18.28	20.31	22.34	24.38	26.38	28.38	30.38	32.50	34.50	36.50
	mm		464	516	567.5	619	670	721	712	825.5	876	927
B	in	10					25.376	27.376	29.376	31.376	33.376	35.376
	mm						644.5	695	746	797	848	898.5
	in	20					25.000	27.000	29.000	31.000	33.000	35.000
	mm						635	686	736.5	787.5	838	889
	in	STD	17.250	19.250	21.250	23.250						
	mm		438	489	540	590.5						
	in	XS	17.000	19.000	21.000	23.000						
	mm		432	482.5	533.5	584						
	in	30				22.876		26.750	28.750	30.750	32.750	34.750
	mm					581		679.5	730	781	832	883
	in	40	16.876	18.812		22.624				30.624	32.624	34.500
	mm		428.5	478		574.5				777.85	828.65	876.30
	in	60	16.500	18.376	20.250	22.062						
	mm		419	467	514	560						
	in	80	16.124	17.938	19.750	21.562						
	mm		409.5	455.5	501.5	548						
in	100	15.688	17.438	19.250	20.938							
mm		398.5	443	489	532							
in	120	15.250	17.000	18.750	20.376							
mm		387	432	476	517.5							
in	140	14.876	16.500	18.250	19.876							
mm		378	419	463.50	505							
in	160	14.438	16.062	17.750	19.312							
mm		367	408	451	490.5							



Technical Data

Materials

ASTM Code	Chemical Compositions %										Mechanical				Hardness
	C	Mn	P	S	Si	Cr	Mo	Ni	Cu	V	Tensile MPa	Yield MPa	Elon- Gation %	Reduce Area %	Brinell
	max.	max.	max.	max.	max.	max.	max.	max.	max.	max.	min.	min.	min.	min.	max.
A105	0.35	1.05	0.035	0.040	0.35	0.30	0.12	0.40	0.40	0.05	485	250	30	30	187
A216 WCB	0.30	1.00	0.040	0.045	0.60	0.50	0.20	0.50	0.30	0.03	485	250	22	35	
A216 WCC	0.25	1.20	0.040	0.045	0.60	0.50	0.20	0.50	0.30	0.03	485	275	22	35	
A217 WC1	0.25	0.5-0.8	0.040	0.045	0.60		0.45-0.65		0.50		450	240	24	35	
A217 WC6	0.20	0.80	0.040	0.045	0.60	1.50	0.65		0.50		485	275	20	35	
A217 WC9	0.18	0.70	0.040	0.045	0.60	2.75	1.20		0.50		485	275	20	35	
A217 C5	0.20	0.70	0.040	0.045	0.75	6.50	0.65		0.50		620	415	18	35	
A217 CA15	0.15	1.00	0.040	0.040	1.50	14.00	0.50	1.00			620	450	18	30	
A351 CF8	0.08	1.50	0.040	0.040	2.00	21.00	0.50	11.00			485	205	35		
A351 CF8M	0.08	1.50	0.040	0.040	1.50	21.00	3.00	12.00			485	205	30		
A351 CF3	0.03	1.50	0.040	0.040	2.00	21.00	0.50	12.00			485	205	35		
A351 CF3M	0.03	1.50	0.040	0.040	1.50	21.00	3.00	13.00			485	205	30		
A351 CN7M	0.07	1.50	0.040	0.040	1.50	22.00	3.00	30.50	4.00		425	170	35		
A352 LCB	0.30	1.00	0.040	0.045	0.60	0.50	0.20	0.50	0.30	0.30	450	240	24	35	
A352 LCC	0.25	1.20	0.040	0.045	0.60	0.50	0.20	0.50	0.30	0.30	485	275	22	35	
A182 F6a	0.15	1.00	0.040	0.030	1.00	13.50		0.50			585	380	18	35	229
A182 F304	0.08	2.00	0.045	0.030	1.00	20.00		11.00			515	205	30	50	
A182 F316	0.08	2.00	0.045	0.030	1.00	18.00	3.00	14.00			515	205	30	50	
A182 F304L	0.035	2.00	0.045	0.030	1.00	20.00		13.00			485	170	30	50	
A182 F316L	0.035	2.00	0.045	0.030	1.00	18.00	3.00	15.00			485	170	30	50	
A276 410	0.15	1.00	0.040	0.030	1.00	13.50					690	550	15	45	
A276 420	≥ 0.15	1.00	0.040	0.030	1.00	14.00									241
A193 B7	0.49	1.10	0.035	0.040	0.35	1.20	0.25				860	720	16	50	321
A193 B7M	0.49	1.10	0.035	0.040	0.35	1.20	0.25				690	550	18	50	235
A193 B8	0.08	2.00	0.045	0.030	1.00	20.00		10.50			515	205	30	50	223
A193 B8M	0.08	2.00	0.045	0.030	1.00	18.00	3.00	14.00			515	205	30	50	223
A194 2H	0.40	1.00	0.040	0.050	0.40										352
A194 2HM	0.40	1.00	0.040	0.050	0.40										237
A320 L7	0.48	1.00	0.035	0.040	0.35	1.10	0.25				860	725	16	50	
A320 L7M	0.48	1.00	0.035	0.040	0.35	1.10	0.25				690	550	18	50	235
A194 8	0.08	2.00	0.045	0.03	1.00	20		10.50							300