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Nom Size NPS	Flange O.D.	Flange Thick.	RF O.D.	Barrel O.D.			Bore		Neck Thickness			Bolting			Nut			Stud Bolt			Weights				Length Base L		
				LWN	HB	F	LWN/F	HB	LWN	HB	F	No. of Holes	Hole Size	Bolt Circle	Stop Dia.	Relief Dia.	Relief Length	Size	RF Length	RTJ Length	LWN		HB			E	
				D	D	D	B	B	N	N	N	C	NS	NR	NL	Base	Per 1"	Base	Per 1"	Base	Per 1"	Base	Per 1"				
1/2	4.75	0.88	1.38	1.56	2.00	4.75	0.50	0.55	0.53	0.73	2.13	4	0.88	3.25	2.00	1.56	1.00	.75	4.25	4.25	8	0.5	10	0.8	37	5.0	9
3/4	5.12	1.00	1.69	1.81	2.25	5.12	0.75	0.74	0.53	0.76	2.19	4	0.88	3.50	2.25	1.81	1.00	.75	4.50	4.50	10	0.6	13	1.0	42	5.7	9
1	5.88	1.12	2.00	2.12	2.56	5.88	1.00	0.96	0.56	0.80	2.44	4	1.00	4.00	2.56	2.12	1.12	.88	5	5	13	0.8	17	1.3	54	7.5	9
1 1/4	6.25	1.12	2.50	2.50	2.94	6.25	1.25	1.28	0.63	0.83	2.50	4	1.00	4.38	2.94	2.50	1.12	.88	5	5	17	1.0	20	1.6	61	8.3	9
1 1/2	7.00	1.25	2.88	2.75	3.25	7.00	1.50	1.50	0.63	0.88	2.75	4	1.12	4.88	3.25	2.75	1.25	1	5.50	5.50	21	1.2	26	1.9	77	10	9
2	8.50	1.50	3.62	4.12	5.06	8.50	2.00	1.94	1.06	1.56	3.25	8	1.00	6.50	5.06	4.12	1.12	.88	5.75	5.75	42	2.9	56	4.9	115	15	9
2 1/2	9.62	1.62	4.12	4.88	5.88	9.62	2.50	2.32	1.19	1.78	3.56	8	1.12	7.50	5.88	4.88	1.25	1	6.25	6.25	56	3.9	75	6.5	144	19	9
3	9.50	1.50	5.00	5.00	6.06	9.50	3.00	2.90	1.00	1.58	3.25	8	1.00	7.50	6.06	5.00	1.12	.88	5.75	5.75	51	3.6	71	6.3	139	18	9
4	11.50	1.75	6.19	6.25	7.44	11.50	4.00	3.83	1.13	1.81	3.75	8	1.25	9.25	7.44	6.25	1.38	1.13	6.75	6.75	93	5.1	133	9.1	270	26	12
5	13.75	2.00	7.31	7.50	9.00	13.75	5.00	4.81	1.25	2.10	4.38	8	1.38	11.00	9.00	7.50	1.50	1.25	7.50	7.50	135	7	194	13	376	37	12
6	15.00	2.19	8.50	9.25	10.69	15.00	6.00	5.76	1.63	2.47	4.50	12	1.25	12.50	10.69	9.25	1.38	1.13	7.50	7.75	191	11	259	18	436	42	12
8	18.50	2.50	10.62	11.75	13.31	18.50	8.00	7.62	1.88	2.85	5.25	12	1.50	15.50	13.31	11.75	1.62	1.38	8.75	8.75	297	16	389	27	626	62	12
10	21.50	2.75	12.75	14.50	16.31	21.50	10.00	9.56	2.25	3.38	5.75	16	1.50	18.50	16.31	14.50	1.62	1.38	9.25	9.25	422	25	558	39	824	81	12
12	24.00	3.12	15.00	16.50	18.81	24.00	12.00	11.38	2.25	3.72	6.00	20	1.50	21.00	18.81	16.50	1.62	1.38	10	10	518	29	715	50	984	96	12
14	25.25	3.38	16.25	17.75	19.62	25.25	14.00	14.00	1.88	2.81	5.63	20	1.62	22.00	19.62	17.75	1.75	1.50	10.75	11	624	26	817	42	1368	98	16
16	27.75	3.50	18.50	20.00	21.69	27.75	16.00	16.00	2.00	2.85	5.88	20	1.75	24.25	21.69	20.00	1.88	1.63	11.25	11.25	750	32	942	48	1573	114	116
18	31.00	4.00	21.00	22.25	24.06	31.00	18.00	18.00	2.13	3.03	6.50	20	2.00	27.00	24.06	22.25	2.12	1.88	12.75	13.25	950	38	1169	57	1898	142	16
20	33.75	4.25	23.00	24.50	26.38	33.75	20.00	20.00	2.25	3.19	6.88	20	2.12	29.50	26.38	24.50	2.25	2	13.75	14.25	1121	43	1378	66	2182	164	16
24	41.00	5.50	27.25	29.50	31.62	41.00	24.00	24.00	2.75	3.81	8.50	20	2.62	35.50	31.62	29.50	2.75	2.50	17.25	18	1865	65	2160	94	3084	246	16

**Codes:** All connections are manufactured in compliance with ASME Section II, Section VIII, Div. 1, and ASME B16.5. Products may be ordered to special requirements or other standard codes such as ASME Section I, III and Section VIII, Div. 2, ASME B31.1 and B16.47 Series A&B, API and ASTM.

**Materials:** SA 105 in accordance with ASME Section II. Other material grades and compositions available upon request. See technical section.

**Bores:** Bore sizes listed are standard, smaller or larger bores are available upon request.

**Facing:** The flange thickness "T" excludes 0.25 inch raised face per ASME B16.5. This differs on Class 150 and 300. Special facing can be supplied as needed upon request.

**Nut Relief:** All connections except standard LWN's will be supplied with a "nut stop O.D." unless a "nut relief O.D." is specified.

**Lengths:** Listed lengths are standards used for base weight calculations. Other lengths are available upon request.

Φ 30° Sect VIII DIV 1 • 45° Sect VIII DIV 2