

# RYERSON P.V.F. CATALOG INDEX

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# STAINLESS STEEL WELDED PIPE

## ASTM A312 / ASME SA312



### DIMENSIONS

unit : inch / lb

SCHEDULE	5S	10S	40S	80S	10	20	30	40	60	80	100	120	140	160	STD	XS	XXS
SIZE O.D.	Wall/In gt/Ft																
1/4" 0.540			0.088 0.43	0.119 0.54				0.088 0.43		0.119 0.54					0.088 0.43	0.119 0.54	
3/8" 0.675			0.091 0.57	0.126 0.76				0.091 0.57		0.126 0.76					0.091 0.57	0.126 0.76	
1/2" 0.840	0.065 0.54	0.083 0.68	0.109 0.86	0.147 1.10			0.095 0.76	0.109 0.86		0.147 1.10				0.188 1.32	0.109 0.86	0.147 1.10	0.294 1.73
3/4" 1.050	0.065 0.69	0.083 0.87	0.113 1.14	0.154 1.49			0.095 0.98	0.113 1.14		0.154 1.49				0.219 1.96	0.113 1.14	0.154 1.49	0.308 2.46
1" 1.315	0.065 0.88	0.109 1.42	0.133 1.69	0.179 2.19			0.114 1.48	0.133 1.69		0.179 2.19				0.250 2.87	0.133 1.69	0.179 2.19	0.358 3.69
1 1/4" 1.660	0.065 1.12	0.109 1.82	0.140 2.29	0.191 3.02			0.117 1.95	0.140 2.29		0.191 3.02				0.250 3.80	0.140 2.29	0.191 3.02	0.382 5.26
1 1/2" 1.900	0.065 1.29	0.109 2.10	0.145 2.74	0.200 3.67			0.125 2.39	0.145 2.74		0.200 3.67				0.281 4.90	0.145 2.74	0.200 3.67	0.400 6.47
2" 0.840	0.065 1.62	0.109 2.66	0.154 3.69	0.218 5.07			0.125 3.03	0.154 3.69		0.218 5.07				0.344 7.53	0.154 3.69	0.218 5.07	0.436 9.11
2 1/2" 2.875	0.083 2.50	0.120 3.56	0.203 5.85	0.276 7.73			0.188 5.45	0.203 5.85		0.276 7.73				0.375 10.11	0.203 5.85	0.276 7.73	0.552 13.82
3" 3.500	0.083 3.06	0.120 4.37	0.216 7.65	0.300 10.35			0.188 6.71	0.216 7.65		0.300 10.35				0.438 14.46	0.216 7.65	0.300 10.35	0.600 18.76
3 1/2" 4.000	0.083 3.50	0.120 5.02	0.226 9.19	0.318 12.62			0.188 7.73	0.226 9.19		0.318 12.62					0.226 9.19	0.318 12.62	
4" 4.500	0.083 3.95	0.120 5.67	0.237 10.89	0.337 15.12			0.188 8.74	0.237 10.89		0.337 15.12		0.438 19.18		0.531 22.72	0.237 10.89	0.337 15.12	0.674 27.8
5" 5.563	0.109 6.41	0.134 7.84	0.258 14.75	0.375 20.97				0.258 14.75		0.375 20.97		0.500 27.29		0.625 33.27	0.258 14.75	0.375 20.97	0.750 38.91
6" 6.625	0.109 7.66	0.134 9.38	0.280 19.15	0.432 28.84				0.280 19.15		0.432 28.84		0.562 36.73		0.719 45.78	0.280 19.15	0.432 28.84	0.864 53.66
8" 8.625	0.109 10.01	0.148 13.52	0.322 28.82	0.500 43.79		0.250 22.57	0.277 24.93	0.322 28.82	0.405 35.97	0.500 43.79	0.594 51.43	0.719 61.28	0.812 68.39	0.906 75.39	0.322 28.82	0.500 43.79	0.875 73.1
10" 10.750	0.134 15.34	0.165 18.83	0.365 40.86	0.500 55.25		0.250 28.3	0.307 34.56	0.365 40.86	0.500 55.25	0.594 65.03	0.719 77.75	0.844 90.13	1.000 105.11	1.125 116.73	0.365 40.86	0.500 55.25	1.000 105.11
12" 12.750	0.156 21.18	0.180 24.39	0.375 50.03	0.500 66.03		0.250 33.69	0.330 44.18	0.406 54.03	0.562 73.84	0.688 89.46	0.844 108.32	1.000 126.67	1.125 140.98	1.312 161.77	0.375 50.03	0.500 66.03	1.000 126.67
14" 14.000	0.156 23.28	0.188 27.99	*	**	0.250 37.06	0.312 46.04	0.375 55.08	0.438 64.03	0.594 85.84	0.750 107.13	0.938 132.08	1.094 152.2	1.250 171.81	1.406 190.88	0.375 55.08	0.500 72.77	
16" 16.000	0.165 28.17	0.188 32.05	*	**	0.250 42.45	0.312 52.76	0.375 63.16	0.500 83.55	0.656 108.51	0.844 137.89	1.031 166.37	1.219 194.23	1.438 225.73	1.594 247.54	0.375 63.16	0.500 83.55	
18" 18.000	0.165 31.72	0.188 36.10	*	**	0.250 47.84	0.312 59.49	0.438 82.92	0.562 105.65	0.750 139.47	0.938 172.52	1.156 209.9	1.375 246.42	1.562 276.79	1.781 311.39	0.375 71.25	0.500 94.33	
20" 20.000	0.188 40.15	0.218 46.49	*	**	0.250 53.23	0.375 79.33	0.500 105.11	0.594 124.26	0.812 167.96	1.031 210.82	1.281 258.49	1.500 299.15	1.750 344.29	1.969 382.72	0.375 79.33	0.500 105.11	
24" 24.000	0.218 55.89	0.250 64.01	*	**	0.250 64.01	0.375 95.50	0.562 142.00	0.688 172.9	0.969 240.58	1.219 299.36	1.531 370.83	1.812 433.41	2.062 487.65	2.344 547.21	0.375 95.50	0.500 126.67	
30" 30.000	0.250 80.18	0.312 99.85	*	**	0.312 98.85	0.500 159.01	0.625 197.91								0.375 119.76	0.500 159.01	
36" 36.000					0.312 120.03	0.500 191.35	0.625 238.34	0.750 285.00							0.375 144.01	0.500 191.35	

\*SEE STD WALL \*\*SEE XS WALL

# SEAMLESS INSTRUMENTATION TUBING

ASTM A213 / ASTM A269 / ASME SA213 AVG WALL



## DIMENSIONS

unit : inch / lb

SIZE O.D.	Seamless Instrumentation Tubing A213/A269				
	Wall/In Wgt/Ft				
1/4" 0.250	0.035 0.0812	0.049 0.1062	0.065 0.1296	0.083 0.1494	
3/8" 0.375	0.035 0.1283	0.049 0.1722	0.065 0.2172	0.083 0.2613	0.120 0.3260
1/2" 0.500	0.035 0.1754	0.049 0.2382	0.065 0.3048	0.083 0.3731	0.120 0.4870
5/8" 0.625	0.035 0.2226	0.049 0.3043	0.065 0.3925	0.083 0.4850	0.120 0.6534
3/4" 0.750	0.035 0.2698	0.049 0.3703	0.065 0.480	0.083 0.5968	0.120 0.8151
1" 1.000	0.035 0.3643	0.049 0.5023	0.065 0.6552	0.083 0.8205	0.120 1.1386

# SANITARY TUBING

## ASTM A270

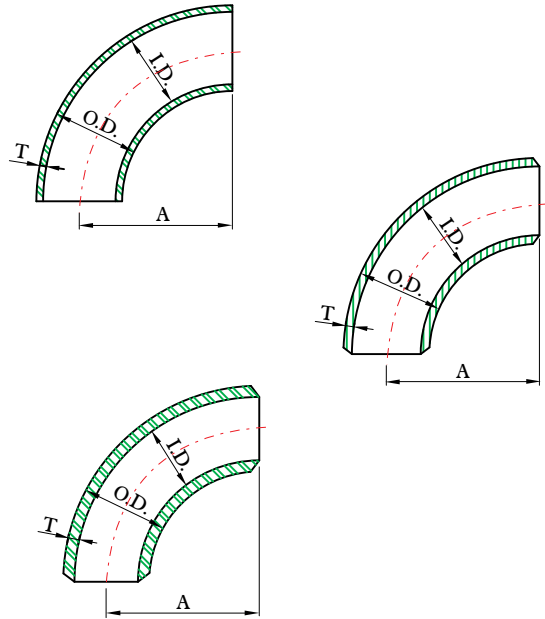


### DIMENSIONS unit : inch / lb

SIZE O.D.	Sanitary Tubing A270
	Wall/In Wgt/Ft
1" 1.000	.065 0.655
1 1/2" 1.500	.065 1.006
2" 2.000	.065 1.356
2 1/2" 2.500	.065 1.706
3" 3.000	.065 2.057
4" 4.000	.083 3.505
6" 6.000	.109 6.922

# ASTM A403 WELDED FITTINGS

## 90° LONG RADIUS ELBOWS



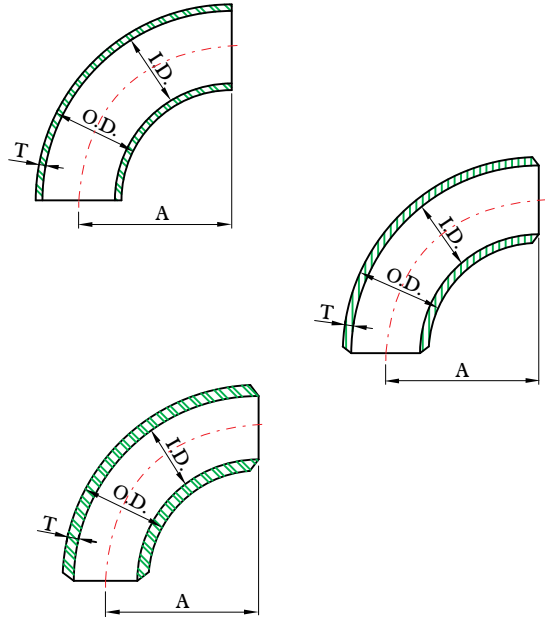
## DIMENSIONS

unit : inch

Nominal pipe size	Outside diameter (O.D.)	Center to face (A)	Schedule 5S			Schedule 10S			Schedule 40S		
			Inside diameter (I.D.)	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight * *
1/2	.840	1-1/2	.710	.065	.12	.674	.083	.14	.622	.109	.18
3/4	1.050	1-1/2	.920	.065	.13	.884	.083	.15	.824	.113	.19
1	1.315	1-1/2	1.185	.065	.19	1.097	.109	.30	1.049	.133	.35
1-1/4	1.660	1-7/8	1.530	.065	.31	1.442	.109	.50	1.380	.140	.56
1-1/2	1.900	2-1/4	1.770	.065	.38	1.682	.109	.69	1.610	.145	.88
2	2.375	3	2.245	.065	.64	2.157	.109	1.13	2.067	.154	1.56
2-1/2	2.875	3-3/4	2.709	.083	1.50	2.635	.120	1.88	2.469	.203	3.00
3	3.500	4-1/2	3.334	.083	2.00	3.260	.120	2.69	3.068	.216	4.81
3-1/2	4.000	5-1/4	3.834	.083	2.62	3.760	.120	3.75	3.548	.226	6.25
4	4.500	6	4.334	.083	3.31	4.260	.120	4.75	4.026	.237	9.19
5	5.563	7-1/2	5.345	.109	6.50	5.295	.134	8.00	5.047	.258	15.13
6	6.625	9	6.407	.109	10.00	6.357	.134	12.00	6.065	.280	24.00
8	8.625	12	8.407	.109	17.30	8.329	.148	23.50	7.981	.322	47.50
10	10.750	15	10.482	.134	32.00	10.420	.165	43.00	10.020	.365	85.00
12	12.750	18	12.438	.156	51.00	12.390	.180	60.00	12.000	.375	131.00
14	14.000	21	13.688	.156	68.00	13.624	.188	80.00	13.250	.375	155.00
16	16.000	24	15.670	.165	100.00	15.624	.188	105.00	15.250	.375	202.00
18	18.000	27	17.670	.165	125.00	17.624	.188	132.00	17.250	.375	269.00
20	20.000	30	19.624	.188	165.00	19.564	.218	220.00	19.250	.375	330.00
24	24.000	36	23.564	.218	280.00	23.500	.250	310.00	23.250	.375	464.00

# ASTM A403 WELDED FITTINGS

## 90° LONG RADIUS ELBOWS



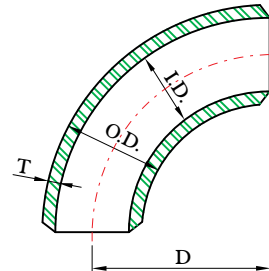
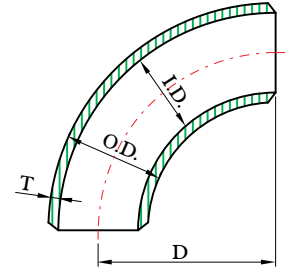
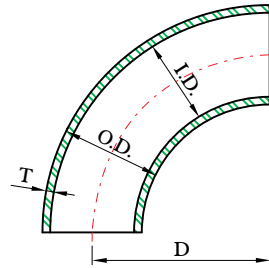
## DIMENSIONS

unit : inch / lb

Nominal pipe size	Outside diameter (O.D.)	Center to face (A)	Schedule 80S			Schedule 160			XX Strong Wall		
			Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *
1/2	.840	1-1/2	.546	.147	.23	.464	.188	.29	.252	.294	.46
3/4	1.050	1-1/2	.742	.154	.25	.612	.219	.35	.434	.308	.50
1	1.315	1-1/2	.957	.179	.48	.815	.250	.67	.599	.358	.96
1-1/4	1.660	1-7/8	1.278	.191	.88	1.160	.250	1.15	.896	.382	1.76
1-1/2	1.900	2-1/4	1.500	.200	1.13	1.338	.281	1.59	1.100	.400	2.26
2	2.375	3	1.939	.218	2.00	1.689	.343	3.14	1.503	.436	4.00
2-1/2	2.875	3-3/4	2.323	.276	4.00	2.125	.375	5.44	1.771	.552	8.00
3	3.500	4-1/2	2.900	.300	6.56	2.624	.438	9.58	2.300	.600	13.12
3-1/2	4.000	5-1/4	3.364	.318	8.80	-----	-----	-----	2.728	.636	17.60
4	4.500	6	3.826	.337	13.63	3.438	.531	21.53	3.152	.674	27.26
5	5.563	7-1/2	4.813	.375	21.13	4.313	.625	35.29	4.063	.750	42.26
6	6.625	9	5.761	.432	36.00	5.187	.719	59.76	4.897	.864	72.00
8	8.625	12	7.625	.500	73.00	6.813	.906	132.00	6.875	.875	127.00
10	10.750	15	9.750	.500	114.00	8.500	1.125	256.00	-----	-----	-----
12	12.750	18	11.750	.500	175.00	10.126	1.312	458.00	-----	-----	-----
14	14.000	21	13.000	.500	206.00	11.188	1.406	-----	-----	-----	-----
16	16.000	24	15.000	.500	269.00	12.812	1.594	-----	-----	-----	-----
18	18.000	27	17.000	.500	350.00	14.438	1.781	-----	-----	-----	-----
20	20.000	30	19.000	.500	439.00	16.062	1.969	-----	-----	-----	-----
24	24.000	36	23.000	.500	617.00	19.312	2.344	-----	-----	-----	-----

# ASTM A403 WELDED FITTINGS

## 90° SHORT RADIUS ELBOWS



### DIMENSIONS

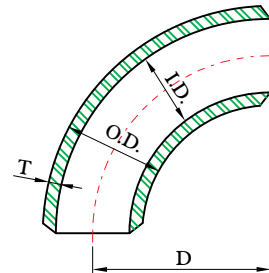
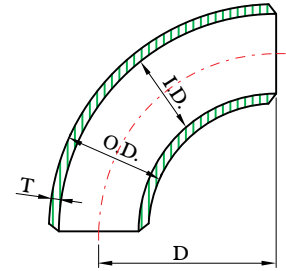
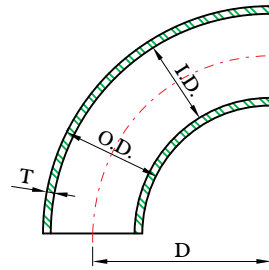
unit : inch / lb

Nominal pipe size	Outside diameter (O.D.)	Center to face (D)	Schedule 5S			Schedule 10S			Schedule 40S		
			Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *
1	1.315	1	1.185	.065	.17	1.097	.109	.23	1.049	.133	.26
1-1/4	1.660	1-1/4	1.530	.065	.31	1.442	.109	.38	1.380	.140	.45
1-1/2	1.900	1-1/2	1.770	.065	.43	1.682	.109	.49	1.610	.145	.63
2	2.375	2	2.245	.065	.63	2.157	.109	.81	2.067	.154	1.13
2-1/2	2.875	2-1/2	2.709	.083	1.25	2.635	.120	1.36	2.469	.203	2.25
3	3.500	3	3.334	.083	1.75	3.260	.120	2.17	3.068	.216	3.31
3-1/2	4.000	3-1/2	3.834	.083	2.35	3.760	.120	3.05	3.548	.226	4.54
4	4.500	4	4.334	.083	3.12	4.260	.120	3.79	4.026	.237	6.88
5	5.563	5	5.345	.109	4.94	5.295	.134	6.12	5.047	.258	11.63
6	6.625	6	6.407	.109	7.75	6.357	.134	9.15	6.065	.280	17.50
8	8.625	8	8.407	.109	15.44	8.329	.148	17.63	7.981	.322	37.60
10	10.750	10	10.482	.134	27.40	10.420	.165	35.00	10.020	.365	63.00
12	12.750	12	12.438	.156	35.00	12.390	.180	40.00	12.000	.375	80.00
14	14.000	14	13.688	.156	44.00	13.624	.188	52.00	13.250	.375	101.00
16	16.000	16	15.670	.165	65.00	15.624	.188	68.00	15.250	.375	131.00
18	18.000	18	17.670	.165	81.00	17.624	.188	86.00	17.250	.375	175.00
20	20.000	20	19.624	.188	107.00	19.564	.218	143.00	19.250	.375	215.00
24	24.000	24	23.564	.218	182.00	23.500	.250	202.00	23.250	.375	302.00



# ASTM A403 WELDED FITTINGS

## 90° SHORT RADIUS ELBOWS



### DIMENSIONS

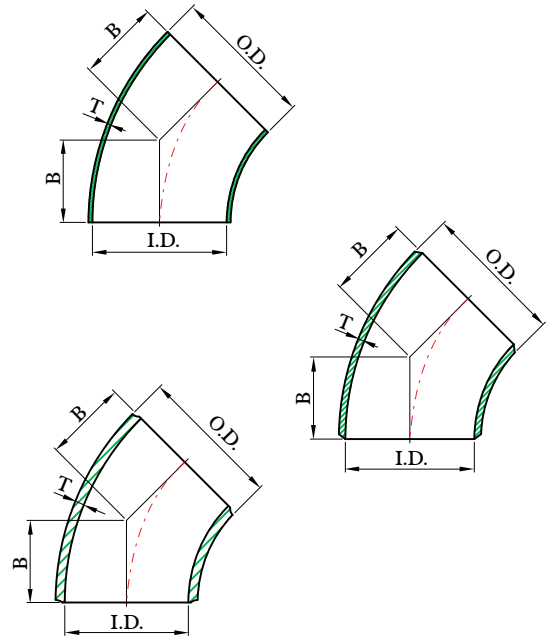
unit : inch / lb

Nominal pipe size	Outside diameter (O.D.)	Center to face (D)	Schedule 80S			Schedule 160			XX Strong Wall		
			Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *
1	1.315	1	.957	.179	.38	.815	.250	.53	.599	.358	.76
1-1/4	1.660	1-1/4	1.278	.191	.63	1.160	.250	.82	.896	.382	1.26
1-1/2	1.900	1-1/2	1.500	.200	.88	1.338	.281	1.23	1.100	.400	1.76
2	2.375	2	1.939	.218	1.55	1.689	.343	2.43	1.503	.436	3.10
2-1/2	2.875	2-1/2	2.323	.276	2.88	2.125	.375	3.88	1.771	.552	5.76
3	3.500	3	2.900	.300	4.20	2.624	.438	6.09	2.300	.600	8.40
3-1/2	4.000	3-1/2	3.364	.318	5.35	-----	-----	-----	2.728	.636	10.70
4	4.500	4	3.826	.337	9.06	3.438	.531	14.22	3.152	.674	18.12
5	5.563	5	4.813	.375	16.10	4.313	.625	26.72	4.063	.750	32.20
6	6.625	6	5.761	.432	26.00	5.187	.719	43.16	4.897	.864	52.00
8	8.625	8	7.625	.500	54.80	6.813	.906	99.18	6.875	.875	109.00
10	10.750	10	9.750	.500	99.80	8.500	1.125	224.00	-----	-----	-----
12	12.750	12	11.750	.500	125.00	10.126	1.312	327.00	-----	-----	-----
14	14.000	14	13.000	.500	135.00	11.188	1.406	-----	-----	-----	-----
16	16.000	16	15.000	.500	175.00	12.812	1.594	-----	-----	-----	-----
18	18.000	18	17.000	.500	228.00	14.438	1.781	-----	-----	-----	-----
20	20.000	20	19.000	.500	285.00	16.062	1.969	-----	-----	-----	-----
24	24.000	24	23.000	.500	401.00	19.312	2.344	-----	-----	-----	-----



# ASTM A403 WELDED FITTINGS

## 45° LONG RADIUS ELBOWS



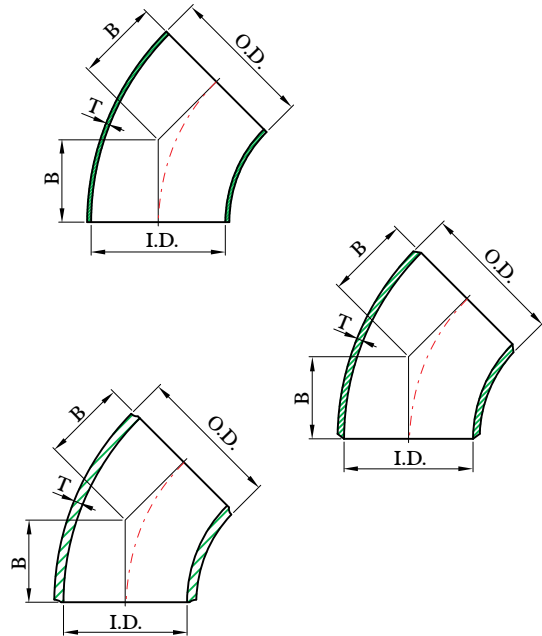
### DIMENSIONS

unit : inch / lb

Nominal pipe size	Outside diameter (O.D.)	Center to face (B)	Schedule 5S			Schedule 10S			Schedule 40S		
			Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *
1/2	.840	5/8	.710	.065	.06	.674	.083	.07	.622	.109	.09
3/4	1.050	7/16	.920	.065	.06	.884	.083	.07	.824	.113	.09
1	1.315	7/8	1.185	.065	.12	1.097	.109	.19	1.049	.133	.25
1-1/4	1.660	1	1.530	.065	.19	1.442	.109	.25	1.380	.140	.38
1-1/2	1.900	1-1/8	1.770	.065	.25	1.682	.109	.38	1.610	.145	.50
2	2.375	1-3/8	2.245	.065	.31	2.157	.109	.56	2.067	.154	.88
2-1/2	2.875	1-3/4	2.709	.083	.75	2.635	.120	1.06	2.469	.203	1.69
3	3.500	2	3.334	.083	1.06	3.260	.120	1.38	3.068	.216	2.38
3-1/2	4.000	2-1/4	3.834	.083	1.16	3.760	.120	1.66	3.548	.226	3.13
4	4.500	2-1/2	4.334	.083	1.66	4.260	.120	2.38	4.026	.237	4.60
5	5.563	3-1/8	5.345	.109	3.25	5.295	.134	4.00	5.047	.258	7.57
6	6.625	3-3/4	6.407	.109	5.00	6.357	.134	6.00	6.065	.280	12.00
8	8.625	5	8.407	.109	8.65	8.329	.148	11.75	7.981	.322	23.75
10	10.750	6-1/4	10.482	.134	16.00	10.420	.165	21.50	10.020	.365	42.50
12	12.750	7-1/2	12.438	.156	25.50	12.390	.180	30.00	12.000	.375	65.50
14	14.000	8-3/4	13.688	.156	34.00	13.624	.188	40.00	13.250	.375	77.50
16	16.000	10	15.670	.165	50.00	15.624	.188	52.50	15.250	.375	101.00
18	18.000	11-1/4	17.670	.165	62.50	17.624	.188	66.00	17.250	.375	131.00
20	20.000	12-1/2	19.624	.188	82.50	19.564	.218	110.00	19.250	.375	165.00
24	24.000	15	23.564	.218	140.00	23.500	.250	155.00	23.250	.375	232.00

# ASTM A403 WELDED FITTINGS

## 45° LONG RADIUS ELBOWS



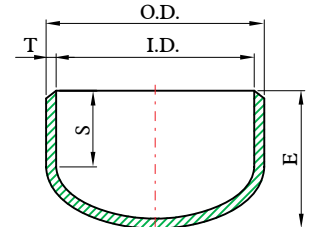
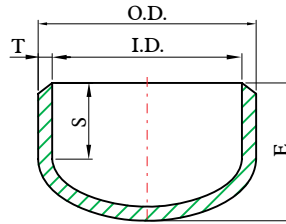
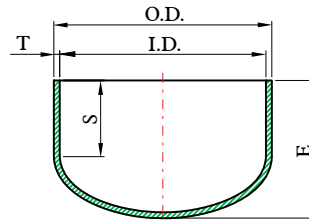
### DIMENSIONS

unit : inch / lb

Nominal pipe size	Outside diameter (O.D.)	Center to face (B)	Schedule 80S			Schedule 160			XX Strong Wall		
			Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D. )	Wall thickness (T)	Approx. weight * *
1/2	.840	5/8	.546	.147	.12	.464	.188	.16	.252	.294	.24
3/4	1.050	7/16	.742	.154	.12	.612	.219	.16	.434	.308	.24
1	1.315	7/8	.957	.179	.31	.815	.250	.43	.599	.358	.62
1-1/4	1.660	1	1.278	.191	.50	1.160	.250	.85	.896	.382	1.00
1-1/2	1.900	1-1/8	1.500	.200	.63	1.338	.281	.88	1.100	400	1.26
2	2.375	1-3/8	1.939	.218	1.13	1.689	.343	1.77	1.503	436	2.26
2-1/2	2.875	1-3/4	2.323	.276	2.19	2.125	.375	2.95	1.771	552	4.38
3	3.500	2	2.900	.300	3.31	2.624	.438	4.80	2.300	600	6.62
3-1/2	4.000	2-1/4	3.364	.318	4.40	-----	-----	-----	2.728	636	8.80
4	4.500	2-1/2	3.826	.337	6.82	3.438	.531	10.87	3.152	.674	13.64
5	5.563	3-1/8	4.813	.375	10.56	4.313	.625	17.52	4.063	.750	21.12
6	6.625	3-3/4	5.761	.432	18.00	5.187	.719	20.88	4.897	.864	36.00
8	8.625	5	7.625	.500	36.50	6.813	.906	64.24	6.875	.875	63.87
10	10.750	6-1/4	9.750	.500	57.00	8.500	1.125	127.00	-----	-----	-----
12	12.750	7-1/2	11.750	.500	87.50	10.126	1.312	229.00	-----	-----	-----
14	14.000	8-3/4	13.000	.500	103.00	11.188	1.406	-----	-----	-----	-----
16	16.000	10	15.000	.500	134.00	12.812	1.594	-----	-----	-----	-----
18	18.000	11-1/4	17.000	.500	175.00	14.438	1.781	-----	-----	-----	-----
20	20.000	12-1/2	19.000	.500	219.00	16.062	1.969	-----	-----	-----	-----
24	24.000	15	23.000	.500	308.00	19.312	2.344	-----	-----	-----	-----

# ASTM A403 WELDED FITTINGS

## CAPS



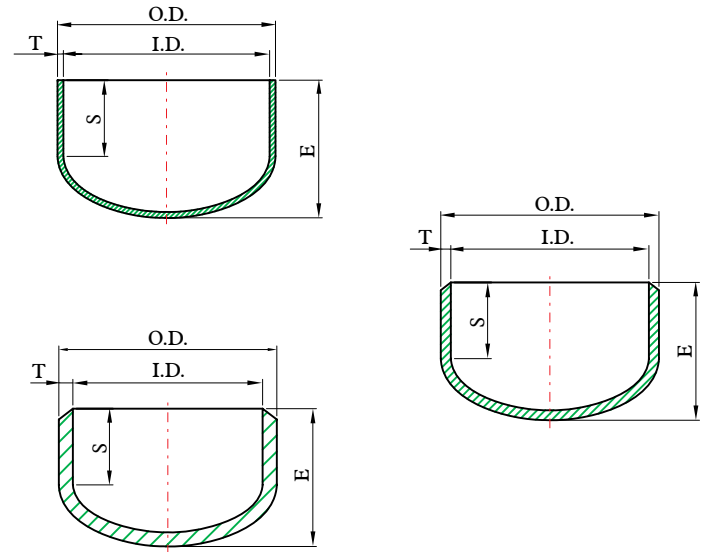
## DIMENSIONS

unit : inch / lb

Nominal pipe size	Outside diameter (O.D.)	Length (E)	Tangent Length (S)	Schedule 5S			Schedule 10S			Schedule 40S		
				Inside diameter (I.D.)	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight * *
1/2	.840	1	.74	.710	.065	.08	.674	.083	.09	.622	.109	.10
3/4	1.050	1	.68	.920	.065	.11	.884	.083	.12	.824	.113	.13
1	1.315	1-1/2	1.10	1.185	.065	.18	1.097	.109	.19	1.049	.133	.28
1-1/4	1.660	1-1/2	1.02	1.530	.065	.20	1.442	.109	.28	1.380	.140	.38
1-1/2	1.900	1-1/2	.95	1.770	.065	.22	1.682	.109	.31	1.610	.145	.50
2	2.375	1-1/2	.83	2.245	.065	.36	2.157	.109	.38	2.067	.154	.60
2-1/2	2.875	1-1/2	.68	2.709	.083	.50	2.635	.120	.56	2.469	.203	1.00
3	3.500	2	1.02	3.334	.083	.86	3.260	.120	.88	3.068	.216	1.56
3-1/2	4.000	2-1/2	1.40	3.834	.083	1.20	3.760	.120	1.25	3.548	.226	2.25
4	4.500	2-1/2	1.26	4.334	.083	1.25	4.260	.120	1.44	4.026	.237	2.69
5	5.563	3	1.48	5.345	.109	2.00	5.295	.134	2.25	5.047	.258	4.06
6	6.625	3-1/2	1.70	6.407	.109	2.75	6.357	.134	3.00	6.065	.280	7.12
8	8.625	4	1.68	8.407	.109	4.50	8.329	.148	5.50	7.981	.322	12.50
10	10.750	5	2.13	10.482	.134	9.50	10.420	.165	10.80	10.020	.365	20.30
12	12.750	6	2.63	12.438	.156	14.00	12.390	.180	14.40	12.000	.375	28.80
14	14.000	6-1/2	2.81	13.688	.156	17.00	13.624	.188	18.00	13.250	.375	35.70
16	16.000	7	2.81	15.670	.165	30.00	15.624	.188	32.00	15.250	.375	48.50
18	18.000	8	3.31	17.670	.165	38.00	17.624	.188	39.60	17.250	.375	59.40
20	20.000	9	3.81	19.624	.188	55.00	19.564	.218	60.00	19.250	.375	75.00
24	24.000	10-1/2	4.31	23.564	.218	75.00	23.500	.250	76.00	23.250	.375	98.00

# ASTM A403 WELDED FITTINGS

## CAPS



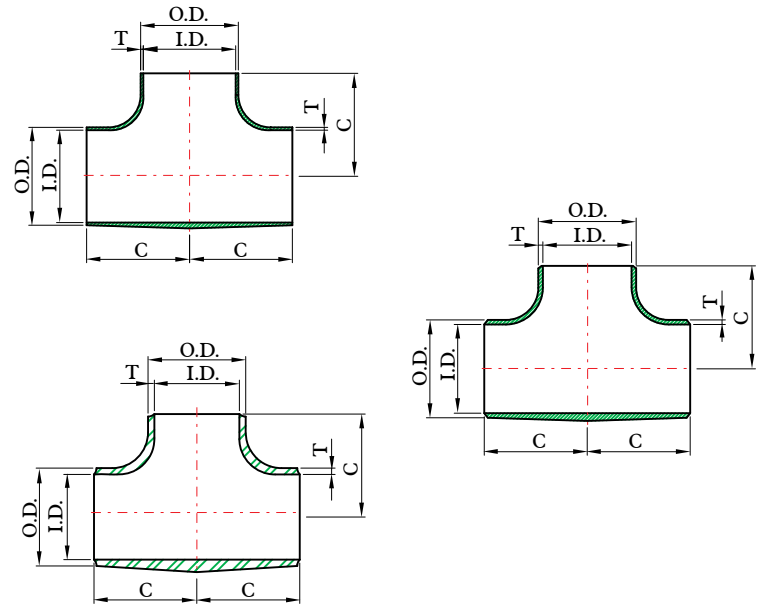
## DIMENSIONS

unit : inch / lb

Nominal pipe size	Outside diameter (O.D.)	Length (E) Tangent Length (S)	Length (E1) Tangent Length (S)	Schedule 80S			Schedule 160			XX Strong Wall		
				Inside diameter (I.D.)	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight * *	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight * *
1/2	.840	E 1 S .72	E1 1 S .64	.546	.147	.11	.464	.188	.14	.252	.294	.22
3/4	1.050	E 1 S .66	E1 1 S .58	.742	.154	.14	.612	.219	.20	.434	.308	.28
1	1.315	E 1-1/2 S 1.08	E1 1-1/2 S .99	.957	.179	.29	.815	.250	.40	.599	.358	.58
1-1/4	1.660	E 1-1/2 S .99	E1 1-1/2 S .89	1.278	.191	.39	1.160	.250	.50	.896	.382	.78
1-1/2	1.900	E 1-1/2 S .93	E1 1-1/2 S .83	1.500	.200	.54	1.338	.281	.75	1.100	.400	1.08
2	2.375	E 1-1/2 S .80	E1 1-3/4 S .95	1.939	.218	.75	1.689	.343	1.17	1.503	.436	1.50
2-1/2	2.875	E 1-1/2 S .64	E1 2 S 1.01	2.323	.276	1.12	2.125	.375	1.48	1.771	.552	2.24
3	3.500	E 2 S .98	E1 2-1/2 S 1.32	2.900	.300	1.87	2.624	.438	2.71	2.300	.600	3.74
3-1/2	4.000	E 2-1/2 S 1.34	E1 3 S 1.70	3.364	.318	2.50	-----	-----	-----	2.728	.636	5.00
4	4.500	E 2-1/2 S 1.21	E1 3 S 1.60	3.826	.337	3.54	3.438	.531	5.55	3.152	.674	7.08
5	5.563	E 3 S 1.42	E1 3-1/2 S 1.73	4.813	.375	5.63	4.313	.625	9.34	4.063	.750	11.26
6	6.625	E 3-1/2 S 1.63	E1 4 S 1.91	5.761	.432	10.00	5.187	.719	16.00	4.897	.864	20.00
8	8.625	E 4 S 1.59	E1 5 S 2.41	7.625	.500	16.38	6.813	.906	29.64	6.875	.875	22.76
10	10.750	E 5 S 2.06	E1 6 S 2.75	9.750	.500	27.30	8.500	1.125	61.42	-----	-----	-----
12	12.750	E 6 S 2.56	E1 7 S 3.16	11.750	.500	36.60	10.126	1.312	95.00	-----	-----	-----
14	14.000	E 6-1/2 S 2.75	-----	13.000	.500	48.00	11.188	1.406	-----	-----	-----	-----
16	16.000	E 7 S 2.75	-----	15.000	.500	65.00	12.812	1.594	-----	-----	-----	-----
18	18.000	E 8 S 3.25	-----	17.000	.500	79.20	14.438	1.781	-----	-----	-----	-----
20	20.000	E 9 S 3.75	-----	19.000	.500	88.00	16.062	1.969	-----	-----	-----	-----
24	24.000	E 10-1/2 S 4.25	-----	23.000	.500	135.00	19.312	2.344	-----	-----	-----	-----

# ASTM A403 WELDED FITTINGS

## STRAIGHT TEES



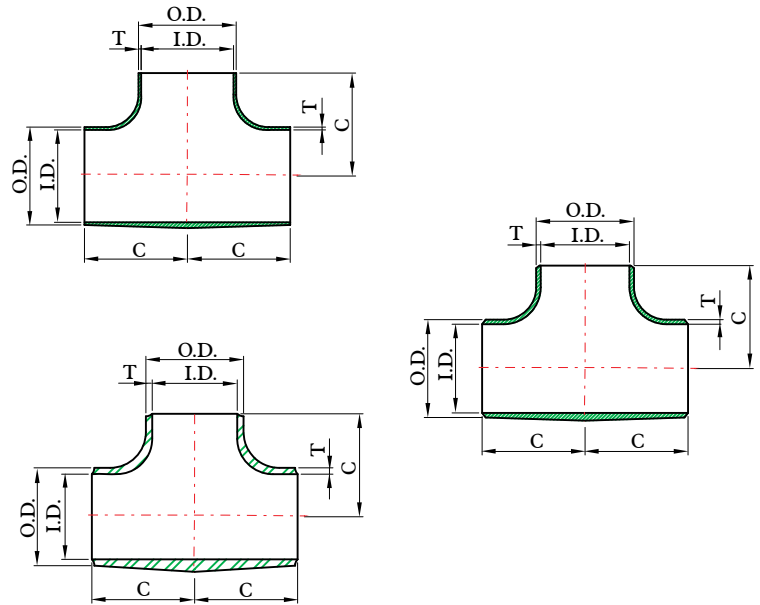
## DIMENSIONS

unit : inch / lb

Nominal pipe size	Outside diameter (O.D.)	Center to end (C)	Schedule 5S			Schedule 10S			Schedule 40S		
			Inside diameter (I.D.)	Wall thickness (T)	Approx. weight **	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight **	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight **
1/2	.840	1	.710	.065	.19	.674	.083	.21	.622	.109	.23
3/4	1.050	1-1/8	.920	.065	.22	.884	.083	.28	.824	.113	.38
1	1.315	1-1/2	1.185	.065	.40	1.097	.109	.63	1.049	.133	.65
1-1/4	1.660	1-7/8	1.530	.065	.75	1.442	.109	1.10	1.380	.140	1.31
1-1/2	1.900	2-1/4	1.770	.065	.95	1.682	.109	1.50	1.610	.145	1.90
2	2.375	2-1/2	2.245	.065	1.20	2.157	.109	1.87	2.067	.154	2.83
2-1/2	2.875	3	2.709	.083	2.15	2.635	.120	3.10	2.469	.203	4.85
3	3.500	3-3/8	3.334	.083	3.40	3.260	.120	3.90	3.068	.216	7.30
3-1/2	4.000	3-3/4	3.834	.083	5.50	3.760	.120	5.88	3.548	.226	9.00
4	4.500	4-1/8	4.334	.083	7.20	4.260	.120	7.63	4.026	.237	11.63
5	5.563	4-7/8	5.345	.109	13.00	5.295	.134	13.45	5.047	.258	20.75
6	6.625	5-5/8	6.407	.109	17.20	6.357	.134	17.80	6.065	.280	24.25
8	8.625	7	8.407	.109	31.00	8.329	.148	34.50	7.981	.322	46.10
10	10.750	8-1/2	10.482	.134	55.00	10.420	.165	59.00	10.020	.365	78.00
12	12.750	10	12.438	.156	83.00	12.390	.180	87.00	12.000	.375	137.00
14	14.000	11	13.688	.156	89.00	13.624	.188	107.00	13.250	.375	175.00
16	16.000	12	15.670	.165	115.00	15.624	.188	130.00	15.250	.375	220.00
18	18.000	13-1/2	17.670	.165	149.00	17.624	.188	169.00	17.250	.375	286.00
20	20.000	15	19.624	.188	171.00	19.564	.218	228.00	19.250	.375	358.00
24	24.000	17	23.564	.218	298.00	23.500	.250	343.00	23.250	.375	498.00

# ASTM A403 WELDED FITTINGS

## STRAIGHT TEES



## DIMENSIONS

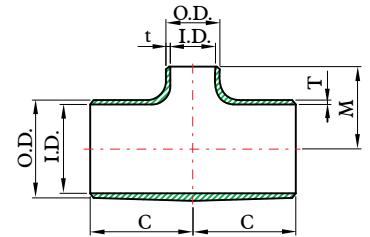
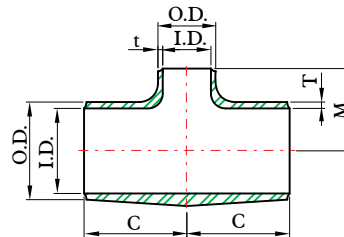
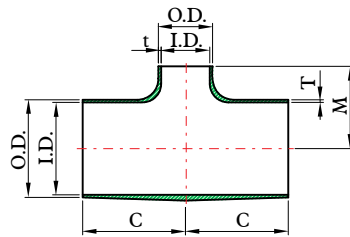
unit : inch / lb

Nominal pipe size	Outside diameter (O.D.)	Center to end (C)	Schedule 80S			Schedule 160S			XX Strong Wall		
			Inside diameter (I.D.)	Wall thickness (T)	Approx. weight **	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight **	Inside diameter (I.D.)	Wall thickness (T)	Approx. weight **
1/2	.840	1	.546	.147	.30	.464	.188	.38	.252	.294	.60
3/4	1.050	1-1/8	.742	.154	.45	.612	.219	.64	.434	.308	.90
1	1.315	1-1/2	.957	.179	.85	.815	.250	1.19	.599	.358	1.70
1-1/4	1.660	1-7/8	1.278	.191	1.50	1.160	.250	1.97	.896	.382	3.00
1-1/2	1.900	2-1/4	1.500	.200	2.25	1.338	.281	3.15	1.100	.400	4.50
2	2.375	2-1/2	1.939	.218	3.50	1.689	.343	5.50	1.503	.436	7.00
2-1/2	2.875	3	2.323	.276	6.90	2.125	.375	9.38	1.771	.552	13.80
3	3.500	3-3/8	2.900	.300	9.80	2.624	.438	14.31	2.300	.600	19.60
3-1/2	4.000	3-3/4	3.364	.318	12.00	-----	-----	-----	2.728	.636	24.00
4	4.500	4-1/8	3.826	.337	17.00	3.438	.531	26.86	3.152	.674	34.00
5	5.563	4-7/8	4.813	.375	25.00	4.313	.625	41.75	4.063	.750	50.00
6	6.625	5-5/8	5.761	.432	30.00	5.187	.719	49.80	4.897	.864	60.00
8	8.625	7	7.625	.500	62.00	6.813	.906	112.00	6.875	.875	108.00
10	10.750	8-1/2	9.750	.500	110.00	8.500	1.125	247.00	-----	-----	-----
12	12.750	10	11.750	.500	185.00	10.126	1.312	484.00	-----	-----	-----
14	14.000	11	13.000	.500	210.00	11.188	1.406	590.00	-----	-----	-----
16	16.000	12	15.000	.500	265.00	12.812	1.594	812.00	-----	-----	-----
18	18.000	13-1/2	17.000	.500	344.00	14.438	1.781	1097.00	-----	-----	-----
20	20.000	15	19.000	.500	430.00	16.062	1.969	1690.00	-----	-----	-----
24	24.000	17	23.000	.500	600.00	19.312	2.344	2950.00	-----	-----	-----



# ASTM A403 WELDED FITTINGS

## REDUCING OUTLET TEES



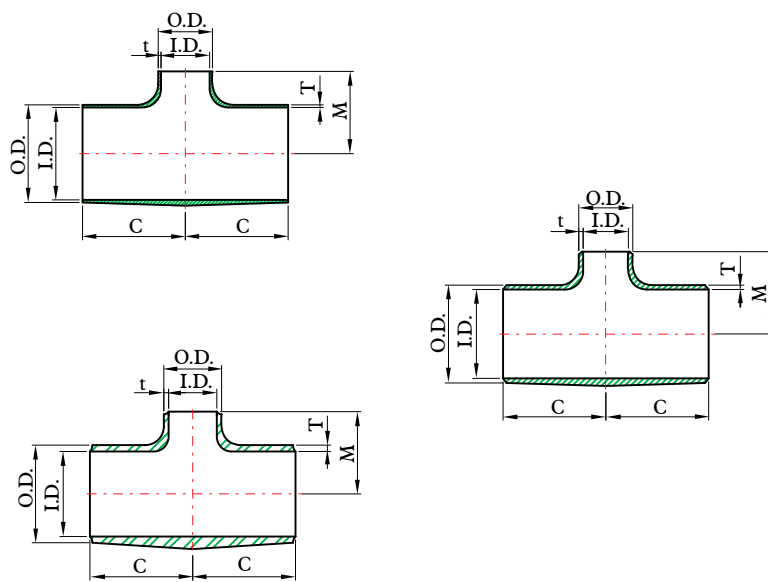
## DIMENSIONS

unit : inch / lb

Nominal Pipe Size Run X Outlet	Outside Diameter Run (O.D.)	Outside Diameter Outlet (O.D.)	Center to End Run (C)	Center to End Outlet (M)	Schedule 5S					Schedule 10S					Schedule 40S				
					Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness Run (T)	Wall Thickness Outlet (t)	Approx. Weight **	Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness Run (T)	Wall Thickness Outlet (t)	Approx. Weight **	Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness Run (T)	Wall Thickness Outlet (t)	Approx. Weight **
1/2 x 1/4	.840	.540	1	1	.710	.410	.065	.065	.16	.674	.410	.083	.065	.18	.622	.364	.109	.088	.20
1/2 x 3/8	.840	.675	1	1	.710	.545	.065	.065	.17	.674	.545	.083	.065	.19	.622	.493	.109	.091	.21
3/4 x 3/8	1.050	.675	1-1/8	1-1/8	.920	.545	.065	.065	.19	.884	.545	.083	.065	.24	.824	.493	.113	.091	.32
3/4 x 1/2	1.050	.840	1-1/8	1-1/8	.920	.710	.065	.065	.20	.884	.674	.083	.083	.25	.824	.622	.113	.109	.34
1 x 3/8	1.315	.675	1-1/2	1-1/2	1.185	.545	.065	.065	.34	1.097	.545	.109	.065	.54	1.049	.493	.133	.091	.56
1 x 1/2	1.315	.840	1-1/2	1-1/2	1.185	.710	.065	.065	.35	1.097	.674	.109	.083	.55	1.049	.622	.133	.109	.57
1 x 3/4	1.315	1.050	1-1/2	1-1/2	1.185	.920	.065	.065	.36	1.097	.884	.109	.083	.56	1.049	.824	.133	.113	.59
1-1/4 x 1/2	1.660	.840	1-7/8	1-7/8	1.530	.710	.065	.065	.64	1.442	.674	.109	.083	.95	1.380	.622	.140	.109	1.12
1-1/4 x 3/4	1.660	1.050	1-7/8	1-7/8	1.530	.920	.065	.065	.66	1.442	.884	.109	.083	.97	1.380	.824	.140	.113	1.15
1-1/4 x 1	1.660	1.315	1-7/8	1-7/8	1.530	1.185	.065	.065	.68	1.442	1.097	.109	.109	.99	1.380	1.049	.140	.133	1.17
1-1/2 x 1/2	1.900	.840	2-1/4	2-1/4	1.770	.710	.065	.065	.81	1.682	.674	.109	.083	1.27	1.610	.622	.145	.109	1.61
1-1/2 x 3/4	1.900	1.050	2-1/4	2-1/4	1.770	.920	.065	.065	.82	1.682	.884	.109	.083	1.29	1.610	.824	.145	.113	1.63
1-1/2 x 1	1.900	1.315	2-1/4	2-1/4	1.770	1.185	.065	.065	.83	1.682	1.097	.109	.109	1.32	1.610	1.049	.145	.133	1.67
1-1/2 x 1-1/4	1.900	1.660	2-1/4	2-1/4	1.770	1.530	.065	.065	.85	1.682	1.442	.109	.109	1.35	1.610	1.380	.145	.140	1.71
2 x 3/4	2.375	1.050	2-1/2	1-3/4	2.245	.920	.065	.065	1.02	2.157	.884	.109	.083	1.59	2.067	.824	.154	.113	2.40
2 x 1	2.375	1.315	2-1/2	2	2.245	1.185	.065	.065	1.03	2.157	1.097	.109	.109	1.60	2.067	1.049	.154	.133	2.43
2 x 1-1/4	2.375	1.660	2-1/2	2-1/4	2.245	1.530	.065	.065	1.05	2.157	1.442	.109	.109	1.64	2.067	1.380	.154	.140	2.49
2 x 1-1/2	2.375	1.900	2-1/2	2-3/8	2.245	1.770	.065	.065	1.08	2.157	1.682	.109	.109	1.68	2.067	1.610	.154	.145	2.54
2-1/2 x 1	2.875	1.315	3	2-1/4	2.709	1.185	.083	.065	1.83	2.635	1.097	.120	.109	2.63	2.469	1.049	.203	.133	4.12
2-1/2 x 1-1/4	2.875	1.660	3	2-1/2	2.709	1.530	.083	.065	1.85	2.635	1.442	.120	.109	2.66	2.469	1.380	.203	.140	4.17
2-1/2 x 1-1/2	2.875	1.900	3	2-5/8	2.709	1.770	.083	.065	1.89	2.635	1.682	.120	.109	2.73	2.469	1.610	.203	.145	4.27
2-1/2 x 2	2.875	2.375	3	2-3/4	2.709	2.245	.083	.065	1.93	2.635	2.157	.120	.109	2.79	2.469	2.067	.203	.154	4.36
3 x 1	3.500	1.315	3-3/8	2-5/8	3.334	1.185	.083	.065	2.85	3.260	1.097	.120	.109	3.27	3.068	1.049	.216	.133	6.13
3 x 1-1/4	3.500	1.660	3-3/8	2-3/4	3.334	1.530	.083	.065	2.89	3.260	1.442	.120	.109	3.31	3.068	1.380	.216	.140	6.20
3 x 1-1/2	3.500	1.900	3-3/8	2-7/8	3.334	1.770	.083	.065	2.93	3.260	1.682	.120	.109	3.35	3.068	1.610	.216	.145	6.28
3 x 2	3.500	2.375	3-3/8	3	3.334	2.245	.083	.065	2.99	3.260	2.157	.120	.109	3.43	3.068	2.067	.216	.154	6.42
3 x 2-1/2	3.500	2.875	3-3/8	3-1/4	3.334	2.709	.083	.083	3.06	3.260	2.635	.120	.120	3.51	3.068	2.469	.216	.203	6.57
3-1/2 x 1-1/2	4.000	1.900	3-3/4	3-1/8	3.834	1.770	.083	.065	4.67	3.760	1.682	.120	.109	4.99	3.548	1.610	.226	.145	7.65
3-1/2 x 2	4.000	2.375	3-3/4	3-1/4	3.834	2.245	.083	.065	4.73	3.760	2.157	.120	.109	5.05	3.548	2.067	.226	.154	7.74
3-1/2 x 2-1/2	4.000	2.875	3-3/4	3-1/2	3.834	2.709	.083	.083	4.84	3.760	2.635	.120	.120	5.17	3.548	2.469	.226	.203	8.97
3-1/2 x 3	4.000	3.500	3-3/4	3-5/8	3.834	3.334	.083	.083	4.95	3.760	3.260	.120	.120	5.29	3.548	3.068	.226	.216	9.10
4 x 1-1/2	4.500	1.900	4-1/8	3-3/8	4.334	1.770	.083	.065	6.05	4.260	1.682	.120	.109	6.40	4.026	1.610	.237	.145	9.76
4 x 2	4.500	2.375	4-1/8	3-1/2	4.334	2.245	.083	.065	6.12	4.260	2.157	.120	.109	6.48	4.026	2.067	.237	.154	9.88
4 x 2-1/2	4.500	2.875	4-1/8	3-3/4	4.334	2.709	.083	.083	6.19	4.260	2.635	.120	.120	6.56	4.026	2.469	.237	.203	10.00
4 x 3	4.500	3.500	4-1/8	3-7/8	4.334	3.334	.083	.083	6.33	4.260	3.260	.120	.120	6.71	4.026	3.068	.237	.216	10.23
4 x 3-1/2	4.500	4.000	4-1/8	4	4.334	3.834	.083	.083	6.48	4.260	3.760	.120	.120	6.86	4.026	3.548	.237	.226	10.40

# ASTM A403 WELDED FITTINGS

## REDUCING OUTLET TEES



## DIMENSIONS

unit : inch / lb

Nominal Pipe Size Run X Outlet	Outside Diameter Run (O.D.)	Outside Diameter Outlet (O.D.)	Center to End Run (C)	Center to End Outlet (M)	Schedule 80S					Schedule 160					XX Strong Wall					
					Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness Run (T)	Wall Thickness Outlet (t)	Approximate Weight **	Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness Run (T)	Wall Thickness Outlet (t)	Approximate Weight **	Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness Run (T)	Wall Thickness Outlet (t)	Approximate Weight **	
1/2 x 1/4	.840	.540	1	1	.546	.302	.147	.119	.25	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1/2 x 3/8	.840	.675	1	1	.546	.423	.147	.126	.27	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3/4 x 3/8	1.050	.675	1-1/8	1-1/8	.742	.423	.154	.126	.38	.612	.301	.219	.187	.55	-----	-----	-----	-----	-----	-----
3/4 x 1/2	1.050	.840	1-1/8	1-1/8	.742	.546	.154	.147	.40	.612	.466	.219	.187	.57	.434	.252	.308	.294	.81	-----
1 x 3/8	1.315	.675	1-1/2	1-1/2	.957	.423	.179	.126	.73	.815	.301	.250	.187	1.02	-----	-----	-----	-----	-----	-----
1 x 1/2	1.315	.840	1-1/2	1-1/2	.957	.546	.179	.147	.75	.815	.466	.250	.187	1.04	.599	.252	.358	.294	1.49	-----
1 x 3/4	1.315	1.050	1-1/2	1-1/2	.957	.742	.179	.154	.76	.815	.614	.250	.218	1.07	.599	.434	.358	.308	1.53	-----
1-1/4 x 1/2	1.660	.840	1-7/8	1-7/8	1.278	.546	.191	.147	1.29	1.160	.466	.250	.187	1.69	.896	.252	.382	.294	2.58	-----
1-1/4 x 3/4	1.660	1.050	1-7/8	1-7/8	1.278	.742	.191	.154	1.32	1.160	.614	.250	.218	1.73	.896	.434	.382	.308	2.64	-----
1-1/4 x 1	1.660	1.315	1-7/8	1-7/8	1.278	.957	.191	.179	1.35	1.160	.815	.250	.250	1.77	.896	.599	.382	.358	2.70	-----
1-1/2 x 1/2	1.900	.840	2-1/4	2-1/4	1.500	.546	.200	.147	1.91	1.338	.466	.281	.187	2.67	1.100	.252	.400	.294	3.82	-----
1-1/2 x 3/4	1.900	1.050	2-1/4	2-1/4	1.500	.742	.200	.154	1.93	1.338	.614	.281	.218	2.71	1.100	.434	.400	.308	3.87	-----
1-1/2 x 1	1.900	1.315	2-1/4	2-1/4	1.500	.957	.200	.179	1.98	1.338	.815	.281	.250	2.77	1.100	.599	.400	.358	3.96	-----
1-1/2 x 1-1/4	1.900	1.660	2-1/4	2-1/4	1.500	1.278	.200	.191	2.02	1.338	1.160	.281	.250	2.83	1.100	.896	.400	.382	4.05	-----
2 x 3/4	2.375	1.050	2-1/2	1-3/4	1.939	.742	.218	.154	2.97	1.689	.614	.343	.218	4.67	1.503	.434	.436	.308	5.95	-----
2 x 1	2.375	1.315	2-1/2	2	1.939	.957	.218	.179	3.01	1.689	.815	.343	.250	4.73	1.503	.599	.436	.358	6.02	-----
2 x 1-1/4	2.375	1.660	2-1/2	2-1/4	1.939	1.278	.218	.191	3.08	1.689	1.160	.343	.250	4.84	1.503	.896	.436	.382	6.16	-----
2 x 1-1/2	2.375	1.900	2-1/2	2-3/8	1.939	1.500	.218	.200	3.15	1.689	1.338	.343	.281	4.95	1.503	1.100	.436	.400	6.30	-----
2-1/2 x 1	2.875	1.315	3	2-1/4	2.323	.957	.276	.179	5.86	2.125	.815	.375	.250	7.97	1.771	.599	.552	.358	11.73	-----
2-1/2 x 1-1/4	2.875	1.660	3	2-1/2	2.323	1.278	.276	.191	5.93	2.125	1.160	.375	.250	8.06	1.771	.896	.552	.382	11.87	-----
2-1/2 x 1-1/2	2.875	1.900	3	2-5/8	2.323	1.500	.276	.200	6.07	2.125	1.338	.375	.281	8.25	1.771	1.100	.552	.400	12.14	-----
2-1/2 x 2	2.875	2.375	3	2-3/4	2.323	1.939	.276	.218	6.21	2.125	1.689	.375	.343	8.44	1.771	1.503	.552	.436	12.42	-----
3 x 1	3.500	1.315	3-3/8	2-5/8	2.900	.957	.300	.179	8.23	2.624	.815	.438	.250	12.02	2.300	.599	.600	.358	16.46	-----
3 x 1-1/4	3.500	1.660	3-3/8	2-3/4	2.900	1.278	.300	.191	8.33	2.624	1.160	.438	.250	12.16	2.300	.896	.600	.382	16.66	-----
3 x 1-1/2	3.500	1.900	3-3/8	2-7/8	2.900	1.500	.300	.200	8.43	2.624	1.338	.438	.281	12.30	2.300	1.100	.600	.400	16.85	-----
3 x 2	3.500	2.375	3-3/8	3	2.900	1.939	.300	.218	8.62	2.624	1.689	.438	.343	12.59	2.300	1.503	.600	.436	17.24	-----
3 x 2-1/2	3.500	2.875	3-3/8	3-1/4	2.900	2.323	.300	.276	8.82	2.624	2.125	.438	.375	12.88	2.300	1.771	.600	.552	17.64	-----
3-1/2 x 1-1/2	4.000	1.900	3-3/4	3-1/8	3.364	1.500	.318	.200	10.20	-----	-----	-----	-----	-----	2.728	1.100	.636	.400	20.40	-----
3-1/2 x 2	4.000	2.375	3-3/4	3-1/4	3.364	1.939	.318	.218	10.32	-----	-----	-----	-----	-----	2.728	1.503	.636	.436	20.64	-----
3-1/2 x 2-1/2	4.000	2.875	3-3/4	3-1/2	3.364	2.323	.318	.276	10.56	-----	-----	-----	-----	-----	2.728	1.771	.636	.552	21.12	-----
3-1/2 x 3	4.000	3.500	3-3/4	3-5/8	3.364	2.900	.318	.300	10.80	-----	-----	-----	-----	-----	2.728	2.300	.636	.600	21.60	-----
4 x 1-1/2	4.500	1.900	4-1/8	3-3/8	3.826	1.500	.337	.200	14.28	3.438	1.338	.531	.281	22.56	3.152	1.100	.674	.400	28.56	-----
4 x 2	4.500	2.375	4-1/8	3-1/2	3.826	1.939	.337	.218	14.45	3.438	1.689	.531	.343	22.83	3.152	1.503	.674	.436	28.90	-----
4 x 2-1/2	4.500	2.875	4-1/8	3-3/4	3.826	2.323	.337	.276	14.62	3.438	2.125	.531	.375	23.10	3.152	1.771	.674	.552	29.24	-----
4 x 3	4.500	3.500	4-1/8	3-7/8	3.826	2.900	.337	.300	14.96	3.438	2.624	.531	.438	23.63	3.152	2.300	.674	.600	29.92	-----
4 x 3-1/2	4.500	4.000	4-1/8	4	3.826	3.364	.337	.318	15.30	-----	-----	-----	-----	-----	3.152	2.728	.674	.636	30.60	-----



# ASTM A403 WELDED FITTINGS

## REDUCING OUTLET TEES

### DIMENSIONS

unit : inch / lb

Nominal Pipe Size Run X Outlet	Outside Diameter Run (O.D.)	Outside Diameter Outlet (O.D.)	Center to End Run (C)	Center to End Outlet (M)	Schedule 5S					Schedule 10S					Schedule 40S				
					Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness Run (T)	Wall Thickness Outlet (t)	Approx. Weight**	Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness Run (T)	Wall Thickness Outlet (t)	Approx. Weight**	Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness Run (T)	Wall Thickness Outlet (t)	Approx. Weight**
5 x 2	5.563	2.375	4-7/8	4-1/8	5.345	2.245	.109	.065	10.92	5.295	2.157	.134	.109	11.29	5.047	2.067	.258	.154	17.43
5 x 2-1/2	5.563	2.875	4-7/8	4-1/4	5.345	2.709	.109	.083	11.05	5.295	2.635	.134	.120	11.43	5.047	2.469	.258	.203	17.63
5 x 3	5.563	3.500	4-7/8	4-3/8	5.345	3.334	.109	.083	11.18	5.295	3.260	.134	.120	11.56	5.047	3.068	.258	.216	17.84
5 x 3-1/2	5.563	4.000	4-7/8	4-1/2	5.345	3.834	.109	.083	11.44	5.295	3.760	.134	.120	11.83	5.047	3.548	.258	.226	18.26
5 x 4	5.563	4.500	4-7/8	4-5/8	5.345	4.334	.109	.083	11.70	5.295	4.260	.134	.120	12.10	5.047	4.026	.258	.237	18.67
6 x 2-1/2	6.625	2.875	5-5/8	4-3/4	6.407	2.709	.109	.083	14.48	6.357	2.635	.134	.120	14.95	6.065	2.469	.280	.203	20.37
6 x 3	6.625	3.500	5-5/8	4-7/8	6.407	3.334	.109	.083	14.62	6.357	3.260	.134	.120	15.13	6.065	3.068	.280	.216	26.32
6 x 3-1/2	6.625	4.000	5-5/8	5	6.407	3.834	.109	.083	14.79	6.357	3.760	.134	.120	15.31	6.065	3.548	.280	.226	20.85
6 x 4	6.625	4.500	5-5/8	5-1/8	6.407	4.334	.109	.083	15.13	6.357	4.260	.134	.120	15.66	6.065	4.026	.280	.237	21.34
6 x 5	6.625	5.563	5-5/8	5-3/8	6.407	5.345	.109	.109	15.48	6.357	5.295	.134	.134	16.02	6.065	5.047	.280	.258	21.82
8 x 3	8.625	3.500	7	6	8.407	3.334	.109	.083	26.04	8.329	3.260	.148	.120	29.00	7.981	3.068	.322	.216	38.72
8 x 3-1/2	8.625	4.000	7	6	8.407	3.834	.109	.083	26.35	8.329	3.760	.148	.120	29.32	7.981	3.548	.322	.226	39.18
8 x 4	8.625	4.500	7	6-1/8	8.407	4.334	.109	.083	26.66	8.329	4.260	.148	.120	29.67	7.981	4.026	.322	.237	39.64
8 x 5	8.625	5.563	7	6-3/8	8.407	5.345	.109	.109	27.28	8.329	5.295	.148	.134	30.36	7.981	5.047	.322	.258	40.56
8 x 6	8.625	6.625	7	6-5/8	8.407	6.407	.109	.109	27.90	8.329	6.357	.148	.134	31.05	7.981	6.065	.322	.280	41.49
10 x 4	10.750	4.500	8-1/2	7-1/4	10.482	4.334	.134	.083	46.75	10.420	4.260	.165	.120	50.15	10.020	4.026	.365	.237	66.30
10 x 5	10.750	5.563	8-1/2	7-1/2	10.482	5.345	.134	.109	47.30	10.420	5.295	.165	.134	50.74	10.020	5.047	.365	.258	67.08
10 x 6	10.750	6.625	8-1/2	7-5/8	10.482	6.407	.134	.109	48.40	10.420	6.357	.165	.134	51.92	10.020	6.065	.365	.280	68.64
10 x 8	10.750	8.625	8-1/2	8	10.482	8.407	.134	.109	49.50	10.420	8.329	.165	.148	53.10	10.020	7.981	.365	.322	70.20
12 x 5	12.750	5.563	10	8-1/2	12.438	5.345	.156	.109	70.55	12.390	5.295	.180	.134	73.95	12.000	5.047	.375	.258	116.00
12 x 6	12.750	6.625	10	8-5/8	12.438	6.407	.156	.109	71.38	12.390	6.357	.180	.134	74.82	12.000	6.065	.375	.280	118.00
12 x 8	12.750	8.625	10	9	12.438	8.407	.156	.109	73.04	12.390	8.329	.180	.148	76.56	12.000	7.981	.375	.322	120.00
12 x 10	12.750	10.750	10	9-1/2	12.438	10.482	.156	.134	74.70	12.390	10.420	.180	.165	78.30	12.000	10.020	.375	.365	123.00
14 x 6	14.000	6.625	11	9-3/8	13.688	6.407	.156	.109	75.65	13.624	6.357	.188	.134	90.95	13.250	6.065	.375	.280	148.00
14 x 8	14.000	8.625	11	9-3/4	13.688	8.407	.156	.109	76.54	13.624	8.329	.188	.148	92.02	13.250	7.981	.375	.322	150.00
14 x 10	14.000	10.750	11	10-1/8	13.688	10.482	.156	.134	78.32	13.624	10.420	.188	.165	94.16	13.250	10.020	.375	.365	154.00
14 x 12	14.000	12.750	11	10-5/8	13.688	12.438	.156	.156	80.10	13.624	12.390	.188	.180	96.30	13.250	12.000	.375	.375	157.00
16 x 6	16.000	6.625	12	10-3/8	15.670	6.407	.165	.109	96.60	15.624	6.357	.188	.134	109.00	15.250	6.065	.375	.280	184.00
16 x 8	16.000	8.625	12	10-3/4	15.670	8.407	.165	.109	97.75	15.624	8.329	.188	.148	110.00	15.250	7.981	.375	.322	187.00
16 x 10	16.000	10.750	12	11-1/8	15.670	10.482	.165	.134	98.90	15.624	10.420	.188	.165	112.00	15.250	10.020	.375	.365	189.00
16 x 12	16.000	12.750	12	11-5/8	15.670	12.438	.165	.156	101.00	15.624	12.390	.188	.180	114.00	15.250	12.000	.375	.375	193.00
16 x 14	16.000	14.000	12	12	15.670	13.688	.165	.156	103.00	15.624	13.624	.188	.188	117.00	15.250	13.250	.375	.375	198.00
18 x 8	18.000	8.625	13-1/2	11-3/4	17.670	8.407	.165	.109	125.00	17.624	8.329	.188	.148	142.00	17.250	7.981	.375	.322	240.00
18 x 10	18.000	10.750	13-1/2	12-1/8	17.670	10.482	.165	.134	126.00	17.624	10.420	.188	.165	143.00	17.250	10.020	.375	.365	243.00
18 x 12	18.000	12.750	13-1/2	12-5/8	17.670	12.438	.165	.156	128.00	17.624	12.390	.188	.180	145.00	17.250	12.000	.375	.375	246.00
18 x 14	18.000	14.000	13-1/2	13	17.670	13.688	.165	.156	131.00	17.624	13.624	.188	.188	148.00	17.250	13.250	.375	.375	251.00
18 x 16	18.000	16.000	13-1/2	13	17.670	15.670	.165	.165	134.00	17.624	15.624	.188	.188	152.00	17.250	15.250	.375	.375	257.00
20 x 8	20.000	8.625	15	12-3/4	19.624	8.407	.188	.109	141.00	19.564	8.329	.218	.148	189.00	19.250	7.981	.375	.322	297.00
20 x 10	20.000	10.750	15	13-1/8	19.624	10.482	.188	.134	143.00	19.564	10.420	.218	.165	191.00	19.250	10.020	.375	.365	300.00
20 x 12	20.000	12.750	15	13-5/8	19.624	12.438	.188	.156	145.00	19.564	12.390	.218	.180	193.00	19.250	12.000	.375	.375	304.00
20 x 14	20.000	14.000	15	14	19.624	13.688	.188	.156	147.00	19.564	13.624	.218	.188	196.00	19.250	13.250	.375	.375	308.00
20 x 16	20.000	16.000	15	14	19.624	15.670	.188	.165	150.00	19.564	15.624	.218	.188	200.00	19.250	15.250	.375	.375	315.00
20 x 18	20.000	18.000	15	14-1/2	19.624	17.670	.188	.165	154.00	19.564	17.624	.218	.188	205.00	19.250	17.250	.375	.375	322.00
24 x 10	24.000	10.750	17	15-1/8	23.564	10.482	.218	.134	247.00	23.500	10.420	.250	.165	284.00	23.250	10.020	.375	.365	413.00
24 x 12	24.000	12.750	17	15-5/8	23.564	12.438	.218	.156	250.00	23.500	12.390	.250	.180	288.00	23.250	12.000	.375	.375	418.00
24 x 14	24.000	14.000	17	16	23.564	13.688	.218	.156	253.00	23.500	13.624	.250	.188	291.00	23.250	13.250	.375	.375	423.00
24 x 16	24.000	16.000	17	16	23.564	15.670	.218	.165	256.00	23.500	15.624	.250	.188	295.00	23.250	15.250	.375	.375	428.00
24 x 18	24.000	18.000	17	16-1/2	23.564	17.670	.218	.165	262.00	23.500	17.624	.250	.188	302.00	23.250	17.250	.375	.375	438.00
24 x 20	24.000	20.000	17	17	23.564	19.624	.218	.188	268.00	23.500	19.564	.250	.218	308.00	23.250	19.250	.375	.375	448.00

# ASTM A403 WELDED FITTINGS

## REDUCING OUTLET TEES

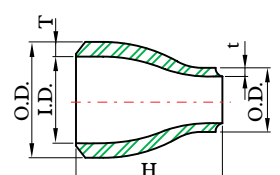
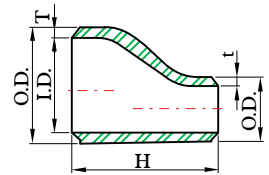
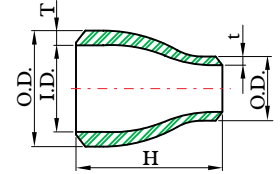
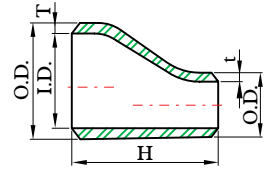
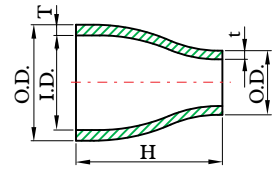
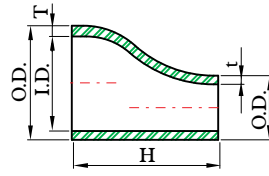
### DIMENSIONS

unit : inch / lb

Nominal Pipe Size Run X Outlet	Outside Diameter Run (O.D.)	Outside Diameter Outlet (O.D.)	Center to End Run (C)	Center to End Outlet (M)	Schedule 80S					Schedule 160					XX Strong Wall				
					Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness (T)	Wall Thickness (t)	Approx. Weight **	Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness (T)	Wall Thickness (t)	Approx. Weight **	Inside Diameter Run (I.D.)	Inside Diameter Outlet (I.D.)	Wall Thickness (T)	Wall Thickness (t)	Approx. Weight **
5 x 2	5.563	2.375	4-7/8	4-1/8	4.813	1.939	.375	.218	21.00	4.313	1.689	.625	.343	35.07	4.063	1.503	.750	.436	42.00
5 x 2-1/2	5.563	2.875	4-7/8	4-1/4	4.813	2.323	.375	.276	21.25	4.313	2.125	.625	.375	35.48	4.063	1.771	.750	.552	42.50
5 x 3	5.563	3.500	4-7/8	4-3/8	4.813	2.900	.375	.300	21.50	4.313	2.624	.625	.438	35.90	4.063	2.300	.750	.600	43.00
5 x 3-1/2	5.563	4.000	4-7/8	4-1/2	4.813	3.364	.375	.318	22.00	-----	-----	-----	-----	-----	4.063	2.728	.750	.636	44.00
5 x 4	5.563	4.500	4-7/8	4-5/8	4.813	3.826	.375	.337	22.50	4.313	3.438	.625	.531	37.57	4.063	3.152	.750	.674	45.00
6 x 2-1/2	6.625	2.875	5-5/8	4-3/4	5.761	2.323	.432	.276	25.20	5.187	2.125	.719	.375	41.83	4.897	1.771	.864	.552	50.40
6 x 3	6.625	3.500	5-5/8	4-7/8	5.761	2.900	.432	.300	25.50	5.187	2.624	.719	.438	42.33	4.897	2.300	.864	.600	51.00
6 x 3-1/2	6.625	4.000	5-5/8	5	5.761	3.364	.432	.318	25.80	-----	-----	-----	-----	-----	4.897	2.728	.864	.636	51.60
6 x 4	6.625	4.500	5-5/8	5-1/8	5.761	3.826	.432	.337	26.40	5.187	3.438	.719	.531	43.82	4.897	3.152	.864	.674	52.80
6 x 5	6.625	5.563	5-5/8	5-3/8	5.761	4.813	.432	.375	27.00	5.187	4.313	.719	.625	44.82	4.897	4.063	.864	.750	54.00
8 x 3	8.625	3.500	7	6	7.625	2.900	.500	.300	52.08	6.813	2.624	.906	.438	94.00	6.875	2.300	.875	.600	90.70
8 x 3-1/2	8.625	4.000	7	6	7.625	3.364	.500	.318	52.70	-----	-----	-----	-----	-----	6.875	2.728	.875	.636	91.80
8 x 4	8.625	4.500	7	6-1/8	7.625	3.826	.500	.337	53.32	6.813	3.438	.906	.531	96.30	6.875	3.152	.875	.674	92.90
8 x 5	8.625	5.563	7	6-3/8	7.625	4.813	.500	.375	54.56	6.813	4.313	.906	.625	98.50	6.875	4.063	.875	.750	95.00
8 x 6	8.625	6.625	7	6-5/8	7.625	5.761	.500	.432	55.80	6.813	5.187	.906	.719	101.00	6.875	4.897	.875	.864	97.20
10 x 4	10.750	4.500	8-1/2	7-1/4	9.750	3.826	.500	.337	93.50	8.500	3.438	1.125	.531	210.00	-----	-----	-----	-----	-----
10 x 5	10.750	5.563	8-1/2	7-1/2	9.750	4.813	.500	.375	94.60	8.500	4.313	1.125	.625	212.00	-----	-----	-----	-----	-----
10 x 6	10.750	6.625	8-1/2	7-5/8	9.750	5.761	.500	.432	96.80	8.500	5.187	1.125	.719	217.00	-----	-----	-----	-----	-----
10 x 8	10.750	8.625	8-1/2	8	9.750	7.625	.500	.500	99.00	8.500	6.813	1.125	.906	222.00	-----	-----	-----	-----	-----
12 x 5	12.750	5.563	10	8-1/2	11.750	4.813	.500	.375	157.00	10.126	4.313	1.312	.625	411.00	-----	-----	-----	-----	-----
12 x 6	12.750	6.625	10	8-5/8	11.750	5.761	.500	.432	159.00	10.126	5.187	1.312	.719	416.00	-----	-----	-----	-----	-----
12 x 8	12.750	8.625	10	9	11.750	7.625	.500	.500	163.00	10.126	6.813	1.312	.906	426.00	-----	-----	-----	-----	-----
12 x 10	12.750	10.750	10	9-1/2	11.750	9.750	.500	.500	166.00	10.126	8.500	1.312	1.125	435.00	-----	-----	-----	-----	-----
14 x 6	14.000	6.625	11	9-3/8	13.000	5.761	.500	.432	178.00	11.188	5.187	1.406	.719	-----	-----	-----	-----	-----	-----
14 x 8	14.000	8.625	11	9-3/4	13.000	7.625	.500	.500	180.00	11.188	6.813	1.406	.906	-----	-----	-----	-----	-----	-----
14 x 10	14.000	10.750	11	10-1/8	13.000	9.750	.500	.500	185.00	11.188	8.500	1.406	1.125	-----	-----	-----	-----	-----	-----
14 x 12	14.000	12.750	11	10-5/8	13.000	11.750	.500	.500	189.00	11.188	10.126	1.406	1.312	-----	-----	-----	-----	-----	-----
16 x 6	16.000	6.625	12	10-3/8	15.000	5.761	.500	.432	222.00	12.812	5.187	1.594	.719	-----	-----	-----	-----	-----	-----
16 x 8	16.000	8.625	12	10-3/4	15.000	7.625	.500	.500	225.00	12.812	6.813	1.594	.906	-----	-----	-----	-----	-----	-----
16 x 10	16.000	10.750	12	11-1/8	15.000	9.750	.500	.500	228.00	12.812	8.500	1.594	1.125	-----	-----	-----	-----	-----	-----
16 x 12	16.000	12.750	12	11-5/8	15.000	11.750	.500	.500	233.00	12.812	10.126	1.594	1.312	-----	-----	-----	-----	-----	-----
16 x 14	16.000	14.000	12	12	15.000	13.000	.500	.500	238.00	12.812	11.188	1.594	1.406	-----	-----	-----	-----	-----	-----
18 x 8	18.000	8.625	13-1/2	11-3/4	17.000	7.625	.500	.500	289.00	14.438	6.813	1.781	.906	-----	-----	-----	-----	-----	-----
18 x 10	18.000	10.750	13-1/2	12-1/8	17.000	9.750	.500	.500	292.00	14.438	8.500	1.781	1.125	-----	-----	-----	-----	-----	-----
18 x 12	18.000	12.750	13-1/2	12-5/8	17.000	11.750	.500	.500	296.00	14.438	10.126	1.781	1.312	-----	-----	-----	-----	-----	-----
18 x 14	18.000	14.000	13-1/2	13	17.000	13.000	.500	.500	303.00	14.438	11.188	1.781	1.406	-----	-----	-----	-----	-----	-----
18 x 16	18.000	16.000	13-1/2	13	17.000	15.000	.500	.500	309.00	14.438	12.812	1.781	1.594	-----	-----	-----	-----	-----	-----
20 x 8	20.000	8.625	15	12-3/4	19.000	7.625	.500	.500	357.00	16.062	6.813	1.969	.906	-----	-----	-----	-----	-----	-----
20 x 10	20.000	10.750	15	13-1/8	19.000	9.750	.500	.500	361.00	16.062	8.500	1.969	1.125	-----	-----	-----	-----	-----	-----
20 x 12	20.000	12.750	15	13-5/8	19.000	11.750	.500	.500	365.00	16.062	10.126	1.969	1.312	-----	-----	-----	-----	-----	-----
20 x 14	20.000	14.000	15	14	19.000	13.000	.500	.500	370.00	16.062	11.188	1.969	1.406	-----	-----	-----	-----	-----	-----
20 x 16	20.000	16.000	15	14	19.000	15.000	.500	.500	378.00	16.062	12.812	1.969	1.594	-----	-----	-----	-----	-----	-----
20 x 18	20.000	18.000	15	14-1/2	19.000	17.000	.500	.500	387.00	16.062	14.438	1.969	1.781	-----	-----	-----	-----	-----	-----
24 x 10	24.000	10.750	17	15-1/8	23.000	9.750	.500	.500	498.00	19.312	8.500	2.344	1.125	-----	-----	-----	-----	-----	-----
24 x 12	24.000	12.750	17	15-5/8	23.000	11.750	.500	.500	504.00	19.312	10.126	2.344	1.312	-----	-----	-----	-----	-----	-----
24 x 14	24.000	14.000	17	16	23.000	13.000	.500	.500	510.00	19.312	11.188	2.344	1.406	-----	-----	-----	-----	-----	-----
24 x 16	24.000	16.000	17	16	23.000	15.000	.500	.500	516.00	19.312	12.812	2.344	1.594	-----	-----	-----	-----	-----	-----
24 x 18	24.000	18.000	17	16-1/2	23.000	17.000	.500	.500	528.00	19.312	14.438	2.344	1.781	-----	-----	-----	-----	-----	-----
24 x 20	24.000	20.000	17	17	23.000	19.000	.500	.500	540.00	19.312	16.062	2.344	1.969	-----	-----	-----	-----	-----	-----

# ASTM A403 WELDED FITTINGS

## CON. / ECC. REDUCERS



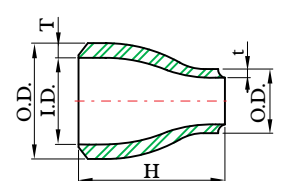
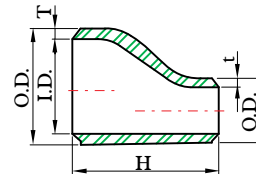
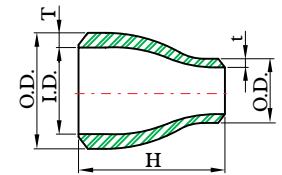
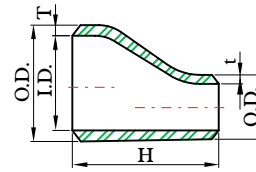
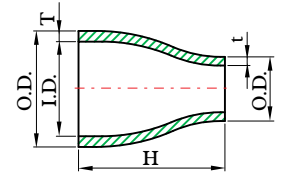
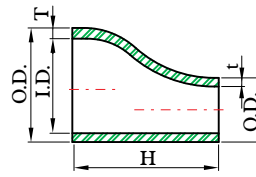
### DIMENSIONS

unit : inch / lb

Nominal Pipe Size <small>Large End X Small End</small>	Outside Diameter Large End (O.D.)	Outside Diameter Small End (O.D.)	Length (H)	Schedule 5S					Schedule 10S					Schedule 40S				
				Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight **	Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight **	Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight **
3/4 x 3/8	1.050	.675	1-1/2	.920	.545	.065	.065	.15	.884	.545	.083	.065	.20	.824	.493	.113	.091	.27
3/4 x 1/2	1.050	.840	1-1/2	.920	.710	.065	.065	.17	.884	.674	.083	.083	.22	.824	.622	.113	.109	.31
1 x 3/8	1.315	.675	2	1.185	.545	.065	.065	.16	1.097	.545	.109	.065	.21	1.049	.493	.133	.091	.33
1 x 1/2	1.315	.840	2	1.185	.710	.065	.065	.16	1.097	.674	.109	.083	.27	1.049	.622	.133	.109	.34
1 x 3/4	1.315	1.050	2	1.185	.920	.065	.065	.17	1.097	.884	.109	.083	.29	1.049	.824	.133	.113	.36
1-1/4 x 1/2	1.660	.840	2	1.530	.710	.065	.065	.21	1.442	.674	.109	.083	.35	1.380	.622	.140	.109	.46
1-1/4 x 3/4	1.660	1.050	2	1.530	.920	.065	.065	.22	1.442	.884	.109	.083	.39	1.380	.824	.140	.113	.49
1-1/4 x 1	1.660	1.315	2	1.530	1.185	.065	.065	.22	1.442	1.097	.109	.109	.39	1.380	1.049	.140	.133	.49
1-1/2 x 1/2	1.900	.840	2-1/2	1.770	.710	.065	.065	.23	1.682	.674	.109	.083	.37	1.610	.622	.145	.109	.50
1-1/2 x 3/4	1.900	1.050	2-1/2	1.770	.920	.065	.065	.24	1.682	.884	.109	.083	.39	1.610	.824	.145	.113	.52
1-1/2 x 1	1.900	1.315	2-1/2	1.770	1.185	.065	.065	.25	1.682	1.097	.109	.109	.43	1.610	1.049	.145	.133	.58
1-1/2 x 1-1/4	1.900	1.660	2-1/2	1.770	1.530	.065	.065	.27	1.682	1.442	.109	.109	.46	1.610	1.380	.145	.140	.62
2 x 3/4	2.375	1.050	3	2.245	.920	.065	.065	.33	2.157	.884	.109	.083	.56	2.067	.824	.154	.113	.80
2 x 1	2.375	1.315	3	2.245	1.185	.065	.065	.37	2.157	1.097	.109	.109	.62	2.067	1.049	.154	.133	.89
2 x 1-1/4	2.375	1.660	3	2.245	1.530	.065	.065	.40	2.157	1.442	.109	.109	.67	2.067	1.380	.154	.140	.96
2 x 1-1/2	2.375	1.900	3	2.245	1.770	.065	.065	.41	2.157	1.682	.109	.109	.69	2.067	1.610	.154	.145	.99
2-1/2 x 1	2.875	1.315	3-1/2	2.709	1.185	.083	.065	.56	2.635	1.097	.120	.109	.83	2.469	1.049	.203	.133	1.42
2-1/2 x 1-1/4	2.875	1.660	3-1/2	2.709	1.530	.083	.065	.64	2.635	1.442	.120	.109	.95	2.469	1.380	.203	.140	1.61
2-1/2 x 1-1/2	2.875	1.900	3-1/2	2.709	1.770	.083	.065	.67	2.635	1.682	.120	.109	.98	2.469	1.610	.203	.145	1.67
2-1/2 x 2	2.875	2.375	3-1/2	2.709	2.245	.083	.065	.70	2.635	2.157	.120	.109	1.03	2.469	2.067	.203	.154	1.76
3 x 1	3.500	1.315	3-1/2	3.334	1.185	.083	.065	.70	3.260	1.097	.120	.109	1.03	3.068	1.049	.216	.133	1.81
3 x 1-1/4	3.500	1.660	3-1/2	3.334	1.530	.083	.065	.70	3.260	1.442	.120	.109	1.03	3.068	1.380	.216	.140	1.86
3 x 1-1/2	3.500	1.900	3-1/2	3.334	1.770	.083	.065	.78	3.260	1.682	.120	.109	1.13	3.068	1.610	.216	.145	2.07
3 x 2	3.500	2.375	3-1/2	3.334	2.245	.083	.065	.83	3.260	2.157	.120	.109	1.21	3.068	2.067	.216	.154	2.20
3 x 2-1/2	3.500	2.875	3-1/2	3.334	2.709	.083	.083	.90	3.260	2.635	.120	.120	1.30	3.068	2.469	.216	.203	2.38
3-1/2 x 1-1/4	4.000	1.660	4	3.834	1.530	.083	.065	.93	3.760	1.442	.120	.109	1.37	3.548	1.380	.226	.140	2.60
3-1/2 x 1-1/2	4.000	1.900	4	3.834	1.770	.083	.065	.99	3.760	1.682	.120	.109	1.46	3.548	1.610	.226	.145	2.76
3-1/2 x 2	4.000	2.375	4	3.834	2.245	.083	.065	1.06	3.760	2.157	.120	.109	1.57	3.548	2.067	.226	.154	2.97
3-1/2 x 2-1/2	4.000	2.875	4	3.834	2.709	.083	.083	1.17	3.760	2.635	.120	.120	1.72	3.548	2.469	.226	.203	3.25
3-1/2 x 3	4.000	3.500	4	3.834	3.334	.083	.083	1.20	3.760	3.260	.120	.120	1.77	3.548	3.068	.226	.216	3.35
4 x 1-1/2	4.500	1.900	4	4.334	1.770	.083	.065	1.05	4.260	1.682	.120	.109	1.50	4.026	1.610	.237	.145	3.00
4 x 2	4.500	2.375	4	4.334	2.245	.083	.065	1.21	4.260	2.157	.120	.109	1.73	4.026	2.067	.237	.154	3.47
4 x 2-1/2	4.500	2.875	4	4.334	2.709	.083	.083	1.28	4.260	2.635	.120	.120	1.83	4.026	2.469	.237	.203	3.66
4 x 3	4.500	3.500	4	4.334	3.334	.083	.083	1.34	4.260	3.260	.120	.120	1.92	4.026	3.068	.237	.216	3.84
4 x 3-1/2	4.500	4.000	4	4.334	3.834	.083	.083	1.38	4.260	3.760	.120	.120	1.98	4.026	3.548	.237	.226	3.97

# ASTM A403 WELDED FITTINGS

## CON. / ECC. REDUCERS



### DIMENSIONS

unit : inch / lb

Nominal Pipe Size <small>Large End X Small End</small>	Outside Diameter Large End (O.D.)	Outside Diameter Small End (O.D.)	Length (H)	Schedule 80S					Schedule 160					XX Strong Wall					
				Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight **	Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight **	Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight **	
3/4x3/8	1.050	.675	1-1/2	.742	.423	.154	.126	.37	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3/4x1/2	1.050	.840	1-1/2	.742	.546	.154	.147	.40	.612	.466	.219	.187	.55	.434	.252	.308	.294	.80	-----
1x3/8	1.315	.675	2	.957	.423	.179	.126	.42	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1x1/2	1.315	.840	2	.957	.546	.179	.147	.44	.815	.466	.250	.187	.57	.599	.252	.358	.294	.88	-----
1x3/4	1.315	1.050	2	.957	.742	.179	.154	.49	.815	.612	.250	.219	.61	.599	.434	.358	.308	.98	-----
1-1/4 x 1/2	1.660	.840	2	1.278	.546	.191	.147	.52	1.160	.466	.250	.187	.67	.896	.252	.382	.294	1.04	-----
1-1/4 x 3/4	1.660	1.050	2	1.278	.742	.191	.154	.56	1.160	.612	.250	.219	.73	.896	.434	.382	.308	1.12	-----
1-1/4 x 1	1.660	1.315	2	1.278	.957	.191	.179	.59	1.160	.815	.250	.250	.82	.896	.599	.382	.358	1.18	-----
1-1/2 x 1/2	1.900	.840	2-1/2	1.500	.546	.200	.147	.68	1.338	.466	.281	.187	.95	1.100	.252	.400	.294	1.36	-----
1-1/2 x 3/4	1.900	1.050	2-1/2	1.500	.742	.200	.154	.71	1.338	.612	.281	.219	.99	1.100	.434	.400	.308	1.42	-----
1-1/2 x 1	1.900	1.315	2-1/2	1.500	.957	.200	.179	.74	1.338	.815	.281	.250	1.03	1.100	.599	.400	.358	1.48	-----
1-1/2 x 1-1/4	1.900	1.660	2-1/2	1.500	1.278	.200	.191	.80	1.338	1.160	.281	.250	1.12	1.100	.896	.400	.382	1.60	-----
2x 3/4	2.375	1.050	3	1.939	.742	.218	.154	1.11	1.689	.612	.343	.219	1.74	1.503	.434	.436	.308	2.22	-----
2x 1	2.375	1.315	3	1.939	.957	.218	.179	1.18	1.689	.815	.343	.250	1.85	1.503	.599	.436	.358	2.36	-----
2x 1-1/4	2.375	1.660	3	1.939	1.278	.218	.191	1.27	1.689	1.160	.343	.250	1.99	1.503	.896	.436	.382	2.54	-----
2x 1-1/2	2.375	1.900	3	1.939	1.500	.218	.200	1.30	1.689	1.338	.343	.281	2.04	1.503	1.100	.436	.400	2.60	-----
2-1/2 x 1	2.875	1.315	3-1/2	2.323	.957	.276	.179	1.92	2.125	.815	.375	.250	2.59	1.771	.599	.552	.358	3.84	-----
2-1/2 x 1-1/4	2.875	1.660	3-1/2	2.323	1.278	.276	.191	1.98	2.125	1.160	.375	.250	2.67	1.771	.896	.552	.382	3.96	-----
2-1/2 x 1-1/2	2.875	1.900	3-1/2	2.323	1.500	.276	.200	2.07	2.125	1.338	.375	.281	2.79	1.771	1.100	.552	.400	4.14	-----
2-1/2 x 2	2.875	2.375	3-1/2	2.323	1.939	.276	.218	2.26	2.125	1.689	.375	.343	3.05	1.771	1.503	.552	.436	4.52	-----
3x 1	3.500	1.315	3-1/2	2.900	.957	.300	.179	2.39	2.624	.815	.438	.250	3.32	2.300	.599	.600	.358	4.76	-----
3x 1-1/4	3.500	1.660	3-1/2	2.900	1.278	.300	.191	2.51	2.624	1.160	.438	.250	3.63	2.300	.896	.600	.382	5.02	-----
3x 1-1/2	3.500	1.900	3-1/2	2.900	1.500	.300	.200	2.66	2.624	1.338	.438	.281	3.85	2.300	1.100	.600	.400	5.32	-----
3x 2	3.500	2.375	3-1/2	2.900	1.939	.300	.218	2.85	2.624	1.689	.438	.343	4.13	2.300	1.503	.600	.436	5.70	-----
3x 2-1/2	3.500	2.875	3-1/2	2.900	2.323	.300	.276	3.28	2.624	2.125	.438	.375	4.75	2.300	1.771	.600	.552	6.56	-----
3-1/2 x 1-1/4	4.000	1.660	4	3.364	1.278	.318	.191	3.53	-----	-----	-----	-----	-----	2.728	.896	.636	.382	7.06	-----
3-1/2 x 1-1/2	4.000	1.900	4	3.364	1.500	.318	.200	3.69	-----	-----	-----	-----	-----	2.728	1.100	.636	.400	7.38	-----
3-1/2 x 2	4.000	2.375	4	3.364	1.939	.318	.218	3.87	-----	-----	-----	-----	-----	2.728	1.503	.636	.436	7.74	-----
3-1/2 x 2-1/2	4.000	2.875	4	3.364	2.323	.318	.276	4.21	-----	-----	-----	-----	-----	2.728	1.771	.636	.552	8.42	-----
3-1/2 x 3	4.000	3.500	4	3.364	2.900	.318	.300	4.46	-----	-----	-----	-----	-----	2.728	2.300	.636	.600	8.92	-----
4x 1-1/2	4.500	1.900	4	3.826	1.500	.337	.200	4.18	3.438	1.338	.531	.281	6.56	3.152	1.100	.674	.400	8.36	-----
4x 2	4.500	2.375	4	3.826	1.939	.337	.218	4.31	3.438	1.689	.531	.343	6.76	3.152	1.503	.674	.436	8.62	-----
4x 2-1/2	4.500	2.875	4	3.826	2.323	.337	.276	4.83	3.438	2.125	.531	.375	7.58	3.152	1.771	.674	.552	9.66	-----
4x 3	4.500	3.500	4	3.826	2.900	.337	.300	5.14	3.438	2.624	.531	.438	8.07	3.152	2.300	.674	.600	10.28	-----
4x 3-1/2	4.500	4.000	4	3.826	3.364	.337	.318	5.33	-----	-----	-----	-----	-----	3.152	2.728	.674	.636	10.66	-----

# ASTM A403 WELDED FITTINGS

## CON. / ECC. REDUCERS

### DIMENSIONS

unit : inch / lb

Nominal Pipe Size <small>Large End X Small End</small>	Outside Diameter Large End (O.D.)	Outside Diameter Small End (O.D.)	Length (H)	Schedule 5S					Schedule 10S					Schedule 40S				
				Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight**	Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight**	Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight**
5 x 2	5.563	2.375	5	5.345	2.245	.109	.065	2.33	5.295	2.157	.134	.109	2.83	5.047	2.067	.258	.154	5.55
5 x 2-1/2	5.563	2.875	5	5.345	2.709	.109	.083	2.55	5.295	2.635	.134	.120	3.09	5.047	2.469	.258	.203	6.07
5x3	5.563	3.500	5	5.345	3.334	.109	.083	2.64	5.295	3.260	.134	.120	3.20	5.047	3.068	.258	.216	6.29
5x3-1/2	5.563	4.000	5	5.345	3.834	.109	.083	2.71	5.295	3.760	.134	.120	3.28	5.047	3.548	.258	.226	6.45
5x 4	5.563	4.500	5	5.345	4.334	.109	.083	2.76	5.295	4.260	.134	.120	3.29	5.047	4.026	.258	.237	6.57
6x2-1/2	6.625	2.875	5-1/2	6.407	2.709	.109	.083	3.18	6.357	2.635	.134	.120	3.35	6.065	2.469	.280	.203	8.37
6x3	6.625	3.500	5-1/2	6.407	3.334	.109	.083	3.33	6.357	3.260	.134	.120	4.01	6.065	3.068	.280	.216	8.77
6x3-1/2	6.625	4.000	5-1/2	6.407	3.834	.109	.083	3.39	6.357	3.760	.134	.120	4.20	6.065	3.548	.280	.226	8.93
6x 4	6.625	4.500	5-1/2	6.407	4.334	.109	.083	3.41	6.357	4.260	.134	.120	4.31	6.065	4.026	.280	.237	8.99
6x 5	6.625	5.563	5-1/2	6.407	5.345	.109	.109	3.60	6.357	5.295	.134	.134	4.45	6.065	5.047	.280	.258	9.48
8 x3-1/2	8.625	4.000	6	8.407	3.834	.109	.083	4.65	8.329	3.760	.148	.120	6.48	7.981	3.548	.322	.226	14.10
8x 4	8.625	4.500	6	8.407	4.334	.109	.083	4.76	8.329	4.260	.148	.120	6.64	7.981	4.026	.322	.237	14.44
8x5	8.625	5.563	6	8.407	5.345	.109	.109	4.87	8.329	5.295	.148	.134	6.79	7.981	5.047	.322	.258	14.78
8x6	8.625	6.625	6	8.407	6.407	.109	.109	5.05	8.329	6.357	.148	.134	7.04	7.981	6.065	.322	.280	15.31
10x 4	10.750	4.500	7	10.482	4.334	.134	.083	8.34	10.420	4.260	.165	.120	10.43	10.020	4.026	.365	.237	23.19
10x5	10.750	5.563	7	10.482	5.345	.134	.109	8.62	10.420	5.295	.165	.134	10.78	10.020	5.047	.365	.258	23.96
10x6	10.750	6.625	7	10.482	6.407	.134	.109	8.82	10.420	6.357	.165	.134	11.03	10.020	6.065	.365	.280	24.52
10x8	10.750	8.625	7	10.482	8.407	.134	.109	9.17	10.420	8.329	.165	.148	11.46	10.020	7.981	.365	.322	25.48
12x5	12.750	5.563	8	12.438	5.345	.156	.109	13.72	12.390	5.295	.180	.134	16.07	12.000	5.047	.375	.258	33.48
12x6	12.750	6.625	8	12.438	6.407	.156	.109	14.01	12.390	6.357	.180	.134	16.38	12.000	6.065	.375	.280	34.13
12x8	12.750	8.625	8	12.438	8.407	.156	.109	14.45	12.390	8.329	.180	.148	16.91	12.000	7.981	.375	.322	35.24
12x10	12.750	10.750	8	12.438	10.482	.156	.134	15.03	12.390	10.420	.180	.165	17.60	12.000	10.020	.375	.365	36.67
14x6	14.000	6.625	13	13.688	6.407	.156	.109	23.78	13.624	6.357	.188	.134	29.00	13.250	6.065	.375	.280	58.00
14x8	14.000	8.625	13	13.688	8.407	.156	.109	25.10	13.624	8.329	.188	.148	30.61	13.250	7.981	.375	.322	61.22
14x10	14.000	10.750	13	13.688	10.482	.156	.134	26.05	13.624	10.420	.188	.165	31.77	13.250	10.020	.375	.365	63.55
14x12	14.000	12.750	13	13.688	12.438	.156	.156	27.64	13.624	12.390	.188	.180	33.71	13.250	12.000	.375	.375	67.42
16x8	16.000	8.625	14	15.670	8.407	.165	.109	32.39	15.624	8.329	.188	.148	36.81	15.250	7.981	.375	.322	73.62
16x10	16.000	10.750	14	15.670	10.482	.165	.134	34.37	15.624	10.420	.188	.165	39.06	15.250	10.020	.375	.365	78.12
16x12	16.000	12.750	14	15.670	12.438	.165	.156	35.60	15.624	12.390	.188	.180	40.45	15.250	12.000	.375	.375	80.91
16x14	16.000	14.000	14	15.670	13.688	.165	.156	36.48	15.624	13.624	.188	.188	41.46	15.250	13.250	.375	.375	82.92
18x10	18.000	10.750	15	17.670	10.482	.165	.134	40.78	17.624	10.420	.188	.165	46.34	17.250	10.020	.375	.365	92.69
18x12	18.000	12.750	15	17.670	12.438	.165	.156	41.66	17.624	12.390	.188	.180	47.35	17.250	12.000	.375	.375	94.70
18x14	18.000	14.000	15	17.670	13.688	.165	.156	42.48	17.624	13.624	.188	.188	48.28	17.250	13.250	.375	.375	96.56
18x16	18.000	16.000	15	17.670	15.670	.165	.165	43.64	17.624	15.624	.188	.188	49.60	17.250	15.250	.375	.375	99.20
20x12	20.000	12.750	20	19.624	12.438	.188	.156	71.50	19.564	12.390	.218	.180	71.50	19.250	12.000	.375	.375	143.00
20x14	20.000	14.000	20	19.624	13.688	.188	.156	72.50	19.564	13.624	.218	.188	84.10	19.250	13.250	.375	.375	145.00
20x16	20.000	16.000	20	19.624	15.670	.188	.165	73.00	19.564	15.624	.218	.188	84.68	19.250	15.250	.375	.375	146.00
20x18	20.000	18.000	20	19.624	17.670	.188	.165	75.50	19.564	17.624	.218	.188	87.58	19.250	17.250	.375	.375	151.00
24x16	24.000	16.000	20	23.564	15.670	.218	.165	98.02	23.500	15.624	.250	.188	98.02	23.250	15.250	.375	.375	169.00
24x18	24.000	18.000	20	23.564	17.670	.218	.165	100.00	23.500	17.624	.250	.188	100.00	23.250	17.250	.375	.375	173.00
24x20	24.000	20.000	20	23.564	19.624	.218	.188	103.00	23.500	19.564	.250	.218	103.00	23.250	19.250	.375	.375	179.00

# ASTM A403 WELDED FITTINGS

## CON. / ECC. REDUCERS

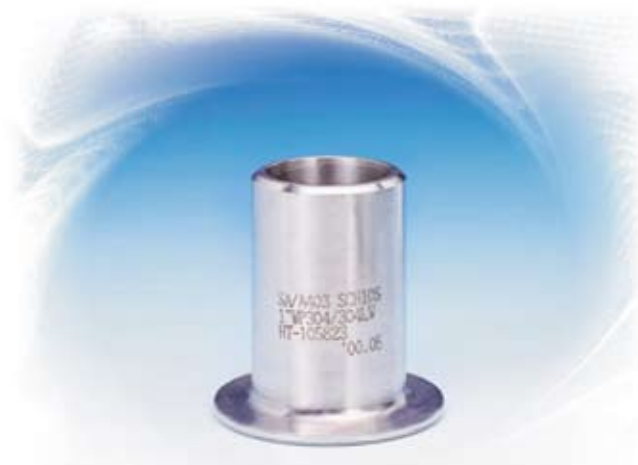
### DIMENSIONS

unit : inch / lb

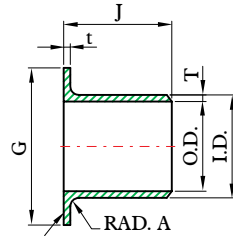
Nominal Pipe Size Large End X Small End	Outside Diameter Large End (O.D.)	Outside Diameter Small End (O.D.)	Length (H)	Schedule 80S					Schedule 160					XX Strong Wall				
				Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight **	Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight **	Inside Diameter Large End (I.D.)	Inside Diameter Small End (I.D.)	Wall Thickness Large End (T)	Wall Thickness Small End (t)	Approximate Weight **
5 x 2	5.563	2.375	5	4.813	1.939	.375	.218	7.25	4.313	1.689	.625	.343	12.03	4.063	1.503	.750	.436	14.50
5 x 2-1/2	5.563	2.875	5	4.813	2.323	.375	.276	7.93	4.313	2.125	.625	.375	13.16	4.063	1.771	.750	.552	15.86
5x3	5.563	3.500	5	4.813	2.900	.375	.300	8.55	4.313	2.624	.625	.438	14.19	4.063	2.300	.750	.600	17.10
5x3-1/2	5.563	4.000	5	4.813	3.364	.375	.318	8.80	-----	-----	-----	-----	-----	4.063	2.728	.750	.636	17.60
5x 4	5.563	4.500	5	4.813	3.826	.375	.337	9.11	4.313	3.438	.625	.531	15.12	4.063	3.152	.750	.674	18.22
6x2-1/2	6.625	2.875	5-1/2	5.761	2.323	.432	.276	10.88	5.187	2.125	.719	.375	18.06	4.897	1.771	.864	.552	21.76
6x3	6.625	3.500	5-1/2	5.761	2.900	.432	.300	12.15	5.187	2.624	.719	.438	20.17	4.897	2.300	.864	.600	24.30
6x3-1/2	6.625	4.000	5-1/2	5.761	3.364	.432	.318	12.67	-----	-----	-----	-----	-----	4.897	2.728	.864	.636	25.34
6x 4	6.625	4.500	5-1/2	5.761	3.826	.432	.337	13.14	5.187	3.438	.719	.531	21.81	4.897	3.152	.864	.674	26.28
6x 5	6.625	5.563	5-1/2	5.761	4.813	.432	.375	13.79	5.187	4.313	.719	.625	22.89	4.897	4.063	.864	.750	27.58
8 x3-1/2	8.625	4.000	6	7.625	3.364	.500	.318	17.61	-----	-----	-----	-----	-----	6.875	2.728	.875	.636	30.81
8x 4	8.625	4.500	6	7.625	3.826	.500	.337	20.36	6.813	3.438	.906	.531	36.85	6.875	3.152	.875	.674	35.63
8x5	8.625	5.563	6	7.625	4.813	.500	.375	21.32	6.813	4.313	.906	.625	38.50	6.875	4.063	.875	.750	37.31
8x6	8.625	6.625	6	7.625	5.761	.500	.432	22.32	6.813	5.187	.906	.719	40.30	6.875	4.897	.875	.864	39.06
10x 4	10.750	4.500	7	9.750	3.826	.500	.337	27.68	8.500	3.438	1.125	.531	62.30	-----	-----	-----	-----	-----
10x5	10.750	5.563	7	9.750	4.813	.500	.375	31.40	8.500	4.313	1.125	.625	70.60	-----	-----	-----	-----	-----
10x6	10.750	6.625	7	9.750	5.761	.500	.432	32.61	8.500	5.187	1.125	.719	73.30	-----	-----	-----	-----	-----
10x8	10.750	8.625	7	9.750	7.625	.500	.500	34.34	8.500	6.813	1.125	.906	77.10	-----	-----	-----	-----	-----
12x5	12.750	5.563	8	11.750	4.813	.500	.375	42.78	10.126	4.313	1.312	.625	112.00	-----	-----	-----	-----	-----
12x6	12.750	6.625	8	11.750	5.761	.500	.432	44.42	10.126	5.187	1.312	.719	116.00	-----	-----	-----	-----	-----
12x8	12.750	8.625	8	11.750	7.625	.500	.500	46.06	10.126	6.813	1.312	.906	120.00	-----	-----	-----	-----	-----
12x10	12.750	10.750	8	11.750	9.750	.500	.500	47.70	10.126	8.500	1.312	1.125	124.00	-----	-----	-----	-----	-----
14x6	14.000	6.625	13	13.000	5.761	.500	.432	77.81	11.188	5.187	1.406	.719	-----	-----	-----	-----	-----	-----
14x8	14.000	8.625	13	13.000	7.625	.500	.500	81.22	11.188	6.813	1.406	.906	-----	-----	-----	-----	-----	-----
14x10	14.000	10.750	13	13.000	9.750	.500	.500	85.40	11.188	8.500	1.406	1.125	-----	-----	-----	-----	-----	-----
14x12	14.000	12.750	13	13.000	11.750	.500	.500	88.97	11.188	10.126	1.406	1.312	-----	-----	-----	-----	-----	-----
16x8	16.000	8.625	14	15.000	7.625	.500	.500	97.49	12.812	6.813	1.594	.906	-----	-----	-----	-----	-----	-----
16x10	16.000	10.750	14	15.000	9.750	.500	.500	102.00	12.812	8.500	1.594	1.125	-----	-----	-----	-----	-----	-----
16x12	16.000	12.750	14	15.000	11.750	.500	.500	105.00	12.812	10.126	1.594	1.312	-----	-----	-----	-----	-----	-----
16x14	16.000	14.000	14	15.000	13.000	.500	.500	108.00	12.812	11.188	1.594	1.406	-----	-----	-----	-----	-----	-----
18x10	18.000	10.750	15	17.000	9.750	.500	.500	120.00	14.438	8.500	1.781	1.125	-----	-----	-----	-----	-----	-----
18x12	18.000	12.750	15	17.000	11.750	.500	.500	126.00	14.438	10.126	1.781	1.312	-----	-----	-----	-----	-----	-----
18x14	18.000	14.000	15	17.000	13.000	.500	.500	127.00	14.438	11.188	1.781	1.406	-----	-----	-----	-----	-----	-----
18x16	18.000	16.000	15	17.000	15.000	.500	.500	130.00	14.438	12.812	1.781	1.594	-----	-----	-----	-----	-----	-----
20x12	20.000	12.750	20	19.000	11.750	.500	.500	189.00	16.062	10.126	1.969	1.312	-----	-----	-----	-----	-----	-----
20x14	20.000	14.000	20	19.000	13.000	.500	.500	192.00	16.062	11.188	1.969	1.406	-----	-----	-----	-----	-----	-----
20x16	20.000	16.000	20	19.000	15.000	.500	.500	195.00	16.062	12.812	1.969	1.594	-----	-----	-----	-----	-----	-----
20x18	20.000	18.000	20	19.000	17.000	.500	.500	198.00	16.062	14.438	1.969	1.781	-----	-----	-----	-----	-----	-----
24x16	24.000	16.000	20	23.000	15.000	.500	.500	226.00	19.312	12.812	2.344	1.594	-----	-----	-----	-----	-----	-----
24x18	24.000	18.000	20	23.000	17.000	.500	.500	230.00	19.312	14.438	2.344	1.781	-----	-----	-----	-----	-----	-----
24x20	24.000	20.000	20	23.000	19.000	.500	.500	234.00	19.312	16.062	2.344	1.969	-----	-----	-----	-----	-----	-----

# ASTM A403 WELDED FITTINGS

## LAP- JOINT STUB END / SHORT TYPE "A" OR "B"

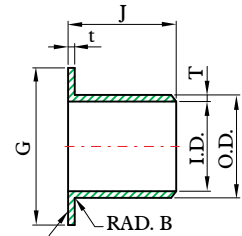


Stub Ends are supplied in Type A or Type B.  
Type A is more readily available.



SERRATED FACE IN ACCORDANCE WITH ASME B16.5

**TYPE A**



SERRATED FACE IN ACCORDANCE WITH ASME B16.5

**TYPE B**

Schedules 5S and 10S Stub Ends are usually supplied in Short Lengths; Long Lengths are available on special order.

Schedule 40S Stub Ends are supplied in either Short or Long Lengths.

## DIMENSIONS

unit : inch / lb

Nominal Pipe Size	Outside diameter (O.D. )	Diameter (G)	Length (J)		Radius (A)		Schedule 40S			
			Short	Long	A	B	Inside Diameter (I.D. )	Wall Thickness (T)	Lap Thickness (t)	Approx. weight **
1/2	.840	1.375	2	3	1/8	1/32	.622	.109	.109	.19
3/4	1.050	1.688	2	3	1/8	1/32	.824	.113	.113	.26
1	1.315	2.000	2	4	1/8	1/32	1.049	.133	.133	.38
1-1/4	1.660	2.500	2	4	3/16	1/32	1.380	.140	.140	.55
1-1/2	1.900	2.875	2	4	1/4	1/32	1.610	.145	.145	.69
2	2.375	3.625	2-1/2	6	5/16	1/32	2.067	.154	.154	1.35
2-1/2	2.875	4.125	2-1/2	6	5/16	1/32	2.469	.203	.203	1.77
3	3.500	5.000	2-1/2	6	3/8	1/32	3.068	.216	.216	2.50
3-1/2	4.000	5.500	3	6	3/8	1/32	3.548	.226	.226	3.58
4	4.500	6.188	3	6	7/16	1/32	4.026	.237	.237	4.13
5	5.563	7.313	3	8	7/16	1/16	5.047	.258	.258	6.15
6	6.625	8.500	3-1/2	8	1/2	1/16	6.065	.280	.280	7.88
8	8.625	10.625	4	8	1/2	1/16	7.981	.322	.322	13.38
10	10.750	12.750	5	10	1/2	1/16	10.020	.365	.365	22.20
12	12.750	15.000	6	10	1/2	1/16	12.000	.375	.375	31.50
14	14.000	16.250	6	12	1/2	1/16	13.250	.375	.375	37.80
16	16.000	18.500	6	12	1/2	1/16	15.250	.375	.375	45.00
18	18.000	21.000	6	12	1/2	1/16	17.250	.375	.375	60.00
20	20.000	23.000	6	12	1/2	1/16	19.250	.375	.375	66.00
24	24.000	27.250	6	12	1/2	1/16	23.250	.375	.375	85.00

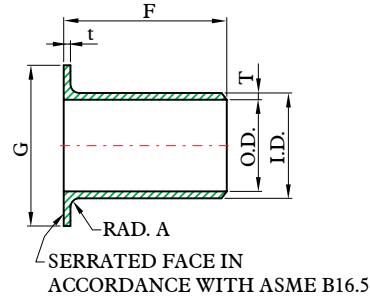


# ASTM A403 WELDED FITTINGS

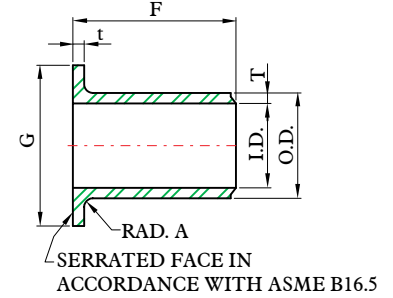
## LAP- JOINT STUB END / STUB ENDS LONG TYPE "A"



All schedules of Long (ANSI Length) Stub Ends are usually supplied in Type A.



**TYPE A**



**TYPE A**

Schedules 80S 160 and XX Strong Wall Stub Ends are supplied in Long Lengths. Short Lengths are available on special order.

## DIMENSIONS

unit : inch / lb

Nominal Pipe Size	Outside diameter (O.D. )	Diameter (G)	Length (J)	Radius (A)	Schedule 40S				Schedule 80S			
					Inside Diameter (I.D. )	Wall Thickness (T)	Lap Thickness (t)	Approx. weight**	Inside Diameter (I.D. )	Wall Thickness (T)	Lap Thickness (t)	Approx. weight**
1/2	.840	1.375	3	1/8	.622	.109	.109	.26	.546	.147	.147	.34
3/4	1.050	1.688	3	1/8	.824	.113	.113	.36	.742	.154	.154	.47
1	1.315	2.000	4	1/8	1.049	.133	.133	.68	.957	.179	.179	.88
1-1/4	1.660	2.500	4	3/16	1.380	.140	.140	.97	1.278	.191	.191	1.26
1-1/2	1.900	2.875	4	1/4	1.610	.145	.145	1.20	1.500	.200	.200	1.49
2	2.375	3.625	6	5/16	2.067	.154	.154	2.25	1.939	.218	.218	3.05
2-1/2	2.875	4.125	6	5/16	2.469	.203	.203	3.40	2.323	.276	.276	4.40
3	3.500	5.000	6	3/8	3.068	.216	.216	4.65	2.900	.300	.300	6.50
3-1/2	4.000	5.500	6	3/8	3.548	.226	.226	5.89	3.364	.318	.318	7.75
4	4.500	6.188	6	7/16	4.026	.237	.237	6.83	3.826	.337	.337	9.65
5	5.563	7.313	8	7/16	5.047	.258	.258	11.88	4.813	.375	.375	16.33
6	6.625	8.500	8	1/2	6.065	.280	.280	15.18	5.761	.432	.432	22.63
8	8.625	10.625	8	1/2	7.981	.322	.322	23.81	7.625	.500	.500	34.12
10	10.750	12.750	10	1/2	10.020	.365	.365	39.50	9.750	.500	.500	54.00
12	12.750	15.000	10	1/2	12.000	.375	.375	48.50	11.750	.500	.500	64.50
14	14.000	16.250	12	1/2	13.250	.375	.375	63.00	13.000	.500	.500	84.00
16	16.000	18.500	12	1/2	15.250	.375	.375	73.50	15.000	.500	.500	98.00
18	18.000	21.000	12	1/2	17.250	.375	.375	99.00	17.000	.500	.500	136.00
20	20.000	23.000	12	1/2	19.250	.375	.375	108.00	19.000	.500	.500	157.00
24	24.000	27.250	12	1/2	23.250	.375	.375	139.00	23.000	.500	.500	178.00

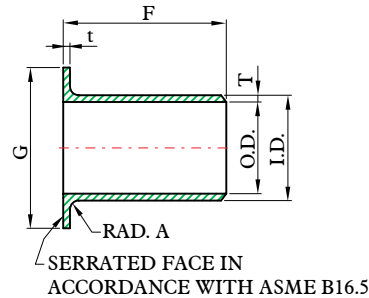


# ASTM A403 WELDED FITTINGS

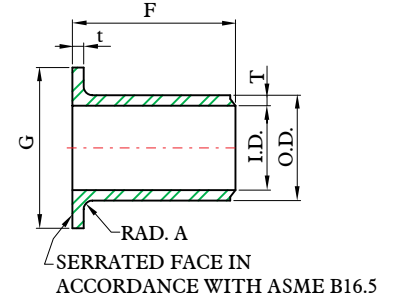
## LAP- JOINT STUB END / STUB ENDS LONG TYPE "A"



All schedules of Long (ANSI Length) Stub Ends are usually supplied in Type A.



**TYPE A**



**TYPE A**

Schedules 80S 160 and XX Strong Wall Stub Ends are supplied in Long Lengths. Short Lengths are available on special order.

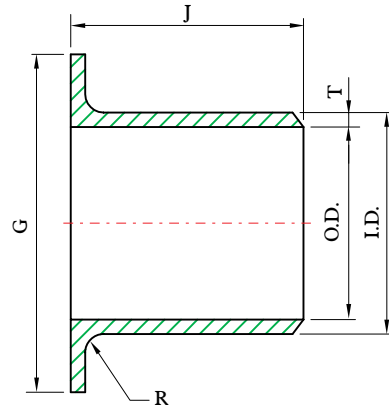
### DIMENSIONS

unit : inch / lb

Nominal Pipe Size	Outside diameter (O.D.)	Diameter (G)	Length (F)		Radius (A)	Schedule 160				XX Strong Wall			
			Short	Long		Inside Diameter (I.D.)	Wall Thickness (T)	Lap Thickness (t)	Approx. weight **	Inside Diameter (I.D.)	Wall Thickness (T)	Lap Thickness (t)	Approx. weight **
1/2	.840	1.375	2	3	1/8	.464	.188	.187	.43	.252	.294	.294	.68
3/4	1.050	1.688	2	3	1/8	.612	.219	.218	.66	.434	.308	.308	.94
1	1.315	2.000	2	4	1/8	.815	.250	.250	1.22	.599	.358	.358	1.76
1-1/4	1.660	2.500	2	4	3/16	1.160	.250	.250	1.64	.896	.382	.382	2.52
1-1/2	1.900	2.875	2	4	1/4	1.338	.281	.281	2.08	1.100	.400	.400	2.98
2	2.375	3.625	2-1/2	6	5/16	1.689	.343	.343	4.79	1.503	.436	.436	6.10
2-1/2	2.875	4.125	2-1/2	6	5/16	2.125	.375	.375	5.94	1.771	.552	.552	8.80
3	3.500	5.000	2-1/2	6	3/8	2.624	.438	.438	7.10	2.300	.600	.600	9.80
3-1/2	4.000	5.500	3	6	3/8	-----	-----	-----	-----	2.728	.636	.636	15.50
4	4.500	6.188	3	6	7/16	3.438	.531	.531	15.15	3.152	.674	.674	19.30
5	5.563	7.313	3	8	7/16	4.313	.625	.625	27.10	4.063	.750	.750	32.66
6	6.625	8.500	3-1/2	8	1/2	5.187	.719	.718	37.56	4.897	.864	.864	45.26
8	8.625	10.625	4	8	1/2	6.813	.906	.906	61.75	6.875	.875	.875	59.71
10	10.750	12.750	5	10	1/2	8.500	1.125	1.125	121.50	-----	-----	-----	-----
12	12.750	15.000	6	10	1/2	10.126	1.312	1.312	169.00	-----	-----	-----	-----

# ASTM A403 WELDED FITTINGS

## LAP- JOINT STUB END / STUB ENDS SHORT TYPE "C"



**TYPE C**

### DIMENSIONS

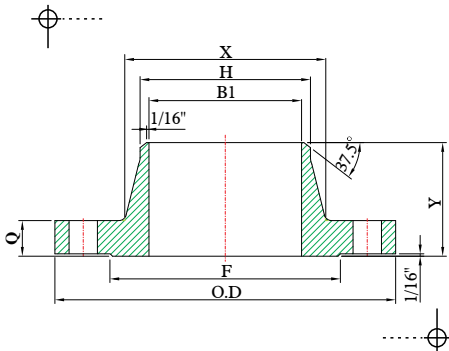
unit : inch / lb

Nominal Pipe Size	Outside diameter (O.D.)	Diameter (G)	Length (J)	Radius (R)	Schedule 5S			Schedule 10S		
					Inside Diameter (I.D.)	Wall Thickness (T)	Approx. weight **	Inside Diameter (I.D.)	Wall Thickness (T)	Approx. weight **
1/2	.840	1.375	2	1/32	.710	.065	.13	.674	.083	.14
3/4	1.050	1.688	2	1/32	.920	.065	.14	.884	.083	.18
1	1.315	2.000	2	1/32	1.185	.065	.19	1.097	.109	.31
1-1/4	1.660	2.500	2	1/32	1.530	.065	.21	1.442	.109	.42
1-1/2	1.900	2.875	2	1/32	1.770	.065	.29	1.682	.109	.44
2	2.375	3.625	2-1/2	1/32	2.245	.065	.44	2.157	.109	.81
2-1/2	2.875	4.125	2-1/2	1/32	2.709	.083	.75	2.635	.120	1.00
3	3.500	5.000	2-1/2	1/32	3.334	.083	.94	3.260	.120	1.25
4	4.500	6.188	3	1/32	4.334	.083	1.38	4.260	.120	1.88
5	5.563	7.313	3	1/16	5.345	.109	2.06	5.295	.134	2.63
6	6.625	8.500	3-1/2	1/16	6.407	.109	2.75	6.357	.134	3.56
8	8.625	10.625	4	1/16	8.407	.109	3.88	8.329	.148	6.19
10	10.750	12.750	5	1/16	10.482	.134	7.48	10.420	.165	9.46
12	12.750	15.000	6	1/16	12.438	.156	15.00	12.390	.180	16.07
14	14.000	16.250	6	1/16	13.688	.156	19.20	13.624	.188	23.10
16	16.000	18.500	6	1/16	15.670	.165	23.90	15.624	.188	27.20
18	18.000	21.000	6	1/16	17.670	.165	28.50	17.624	.188	32.40
20	20.000	23.000	6	1/16	19.624	.188	36.30	19.564	.218	47.70
24	24.000	27.250	6	1/16	23.564	.218	56.00	23.500	.250	58.27

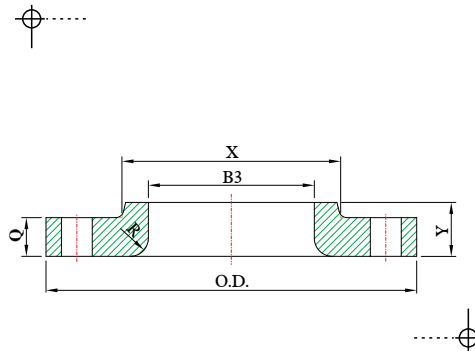
# ASTM A182 FLANGES ANSI B16.5

## CLASS 150 STAINLESS STEEL FLANGES

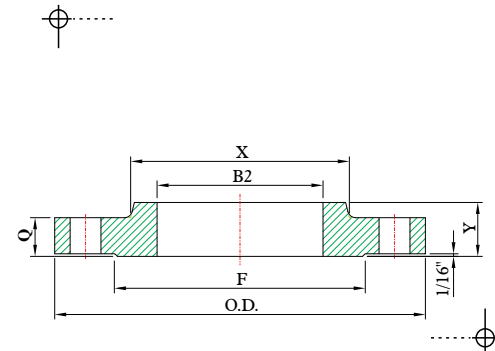
### WELDING NECK



### LAP JOINT



### SLIP-ON



## DIMENSIONS

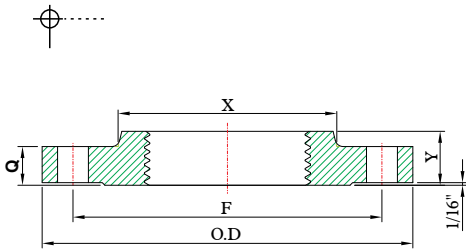
unit : inch

NOM. PIPE SIZE	FLANGE DIAMETER (O.D.)	FLANGE THICKNESS (Q) MIN. (1)	HUB DIA. AT BASE (X)	RAISED FACE DIA. (F)	HUB DIA. AT WELDING POINT (H)	BORE DIAMETER (B)			COUNTER BORE OF THREADED FLANGE (C)	DEPTH OF SOCKET (D)	LENGTH THROUGH HUB (Y)		
						(B1) WELDING NECK AND SOCKET WELD (2)	(B2) SLIP-ON AND SOCKET WELD MIN.	(B3) LAP JOINT MIN.			WELDING NECK	SLIP-ON SOCKET WELD AND THREADED	LAP JOINT
1/2	3.50	0.44	1.19	1.38	0.84	0.62	0.88	0.90	NO COUNTER BORE REQUIRED ON 150# THREADED FLANGES	0.38	1.88	0.62	0.62
3/4	3.88	0.50	1.50	1.69	1.05	0.82	1.09	1.11		0.44	2.06	0.62	0.62
1	4.25	0.56	1.94	2.00	1.32	1.05	1.36	1.38		0.50	2.19	0.69	0.69
1 1/4	4.62	0.62	2.31	2.50	1.66	1.38	1.70	1.72		0.56	2.25	0.81	0.81
1 1/2	5.00	0.69	2.56	2.88	1.90	1.61	1.95	1.97		0.62	2.44	0.88	0.88
2	6.00	0.75	3.06	3.62	2.38	2.07	2.44	2.46		0.69	2.50	1.00	1.00
2 1/2	7.00	0.88	3.56	4.12	2.88	2.47	2.94	2.97		0.75	2.75	1.12	1.12
3	7.50	0.94	4.25	5.00	3.50	3.07	3.57	3.60		0.81	2.75	1.19	1.19
3 1/2	8.50	0.94	4.81	5.50	4.00	3.55	4.07	4.10		0.88	2.81	1.25	1.25
4	9.00	0.94	5.31	6.19	4.50	4.03	4.57	4.60		0.94	3.00	1.31	1.31
5	10.00	0.94	6.44	7.31	5.56	5.05	5.66	5.69		0.94	3.50	1.44	1.44
6	11.00	1.00	7.56	8.50	6.63	6.07	6.72	6.75		1.06	3.50	1.56	1.56
8	13.50	1.12	9.69	10.62	8.63	7.98	8.72	8.75		1.25	4.00	1.75	1.75
10	16.00	1.19	12.00	12.75	10.75	10.02	10.88	10.92		1.31	4.00	1.94	1.94
12	19.00	1.25	14.38	15.00	12.75	12.00	12.88	12.92		1.56	4.50	2.19	2.19
14	21.00	1.38	15.75	16.25	14.00	13.25	14.14	14.18		1.63	5.00	2.25	3.12
16	23.50	1.14	18.00	18.50	16.00	15.25	16.16	16.19		1.75	5.00	2.50	3.44
18	25.00	1.56	19.88	21.00	18.00	17.25	18.18	18.20		1.94	5.50	2.69	3.81
20	27.50	1.69	22.00	23.00	20.00	19.25	20.20	20.25	2.12	5.69	2.88	4.06	
24	32.00	1.88	26.12	27.25	24.00	23.25	24.25	24.25	2.50	6.00	3.25	4.38	

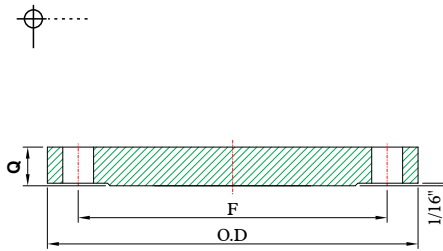
# ASTM A182 FLANGES ANSI B16.5

## CLASS 150 STAINLESS STEEL FLANGES

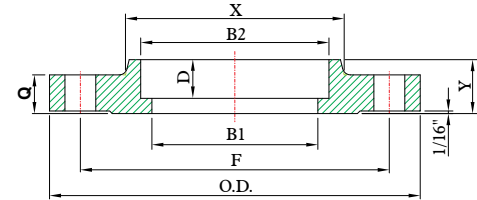
### THREADED



### BLIND



### SOCKET WELD



## DIMENSIONS

unit : inch

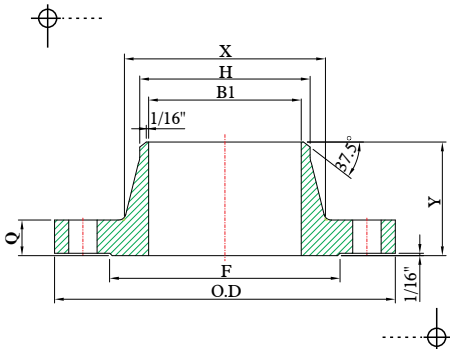
NOM. PIPE SIZE	MIN. THREAD LENGTH	RADIUS (R) LAP JOINT	DRILLING			BOLTING			
			DIAMETER OF BOLT CIRCLE	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLTS	MACHINE BOLT LENGTH	STUD BOLT LENGTH	
								Raised Face .06"	Ring Joint
1/2	0.62	0.12	2.38	4	0.62	1/2	2.00	2.50	-
3/4	0.62	0.12	2.75	4	0.62	1/2	2.25	2.50	-
1	0.69	0.12	3.12	4	0.62	1/2	2.25	2.75	3.25
1 1/4	0.81	0.19	3.50	4	0.62	1/2	2.50	2.75	3.25
1 1/2	0.88	0.25	3.88	4	0.62	1/2	2.50	3.00	3.50
2	1.00	0.31	4.75	4	0.75	5/8	2.75	3.25	3.75
2 1/2	1.12	0.31	5.50	4	0.75	5/8	3.00	3.50	4.00
3	1.19	0.38	6.00	4	0.75	5/8	3.25	3.75	4.25
3 1/2	1.25	0.38	7.00	8	0.75	5/8	3.25	3.75	4.25
4	1.31	0.44	7.50	8	0.75	5/8	3.25	3.75	4.25
5	1.44	0.50	8.50	8	0.88	3/4	3.25	4.00	4.50
6	1.56	0.50	9.50	8	0.88	3/4	3.50	4.00	4.50
8	1.75	0.50	11.75	8	0.88	3/4	3.75	4.25	4.75
10	1.94	0.50	14.25	12	1.00	7/8	4.00	4.75	5.25
12	2.19	0.50	17.00	12	1.00	7/8	4.25	4.75	5.25
14	2.25	0.50	18.75	12	1.12	1	4.50	5.25	5.75
16	2.50	0.50	21.25	16	1.12	1	4.75	5.50	6.00
18	2.69	0.50	22.75	16	1.25	1 1/8	5.00	6.00	6.50
20	2.88	0.50	25.00	20	1.25	1 1/8	5.50	6.25	6.75
24	3.25	0.50	29.50	20	1.38	1 1/4	6.00	7.00	7.50

NOM. PIPE SIZE	APPROXIMATE WEIGHT EACH POUNDS			
	WELDING NECK	SLIP-ON. SOCKET WELD AND THREADED	LAP JOINT	BLIND
1/2	1.25	1.00	1.00	1.25
3/4	2.00	1.50	1.50	1.50
1	2.50	2.00	2.00	2.00
1 1/4	3.00	3.00	3.00	3.00
1 1/2	4.50	3.00	3.50	4.00
2	6.00	5.25	5.00	6.50
2 1/2	10.00	8.00	7.00	9.50
3	12.00	9.00	9.25	12.50
3 1/2	12.00	11.00	11.00	13.00
4	16.50	12.50	12.50	17.00
5	19.00	15.00	15.00	20.00
6	25.00	19.00	19.00	26.50
8	39.00	30.00	30.00	45.00
10	52.00	43.00	43.00	70.00
12	80.00	64.00	64.00	110.00
14	110.00	90.00	105.00	140.00
16	140.00	98.00	140.00	180.00
18	150.00	130.00	160.00	220.00
20	180.00	165.00	195.00	285.00
24	260.00	220.00	275.00	430.00

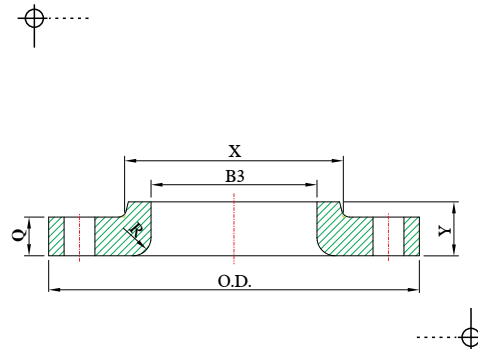
# ASTM A182 FLANGES ANSI B16.5

## CLASS 300 STAINLESS STEEL FLANGES

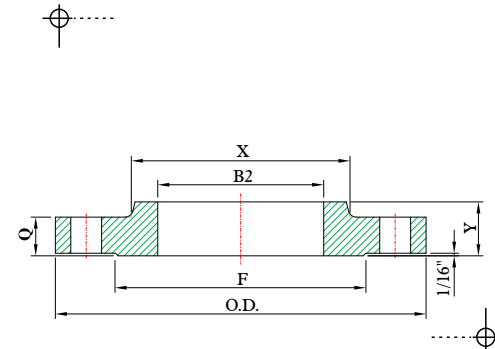
### WELDING NECK



### LAP JOINT



### SLIP-ON



## DIMENSIONS

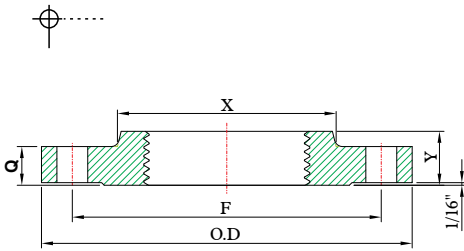
unit : inch

NOM. PIPE SIZE	FLANGE DIAMETER (O.D.)	FLANGE THICKNESS (Q) MIN. (1)	HUB DIA. AT BASE (X)	RAISED FACE DIA. (F)	HUB DIA. AT WELDING POINT (H)	BORE DIAMETER (B)			COUNTER BORE OF THREADED FLANGE (C) MIN.	DEPTH OF SOCKET (D)	LENGTH THROUGH HUB (Y)		
						(B1) WELDING NECK AND SOCKET WELD (2)	(B2) SLIP-ON AND SOCKET WELD MIN.	(B3) LAP JOINT MIN.			WELDING NECK	SLIP-ON SOCKET WELD AND THREADED	LAP JOINT
1/2	3.75	0.56	1.50	1.38	0.84	0.62	0.88	0.90	0.93	0.38	2.06	0.88	0.88
3/4	4.62	0.62	1.88	1.69	1.05	0.82	1.09	1.11	1.14	0.44	2.25	1.00	1.00
1	4.88	0.69	2.12	2.00	1.32	1.05	1.36	1.38	1.41	0.50	2.44	1.06	1.06
1 1/4	5.25	0.75	2.50	2.50	1.66	1.38	1.70	1.72	1.75	0.56	2.56	1.06	1.06
1 1/2	6.12	0.81	2.75	2.88	1.90	1.61	1.95	1.97	1.99	0.62	2.69	1.19	1.19
2	6.50	0.88	3.31	3.62	2.38	2.07	2.44	2.46	2.50	0.69	2.75	1.31	1.31
2 1/2	7.50	1.00	3.94	4.12	2.88	2.47	2.94	2.97	3.00	0.75	3.00	1.50	1.50
3	8.25	1.12	4.62	5.00	3.50	3.07	3.57	3.60	3.63	0.81	3.12	1.69	1.69
3 1/2	9.00	1.19	5.25	5.50	4.00	3.55	4.07	4.10	4.13	-	3.19	1.75	1.75
4	10.00	1.25	5.75	6.19	4.50	4.03	4.57	4.60	4.63	-	3.38	1.88	1.88
5	11.00	1.38	7.00	7.31	5.56	5.05	5.66	5.69	5.69	-	3.88	2.00	2.00
6	12.50	1.44	8.12	8.50	6.63	6.07	6.72	6.75	6.75	-	3.88	2.06	2.06
8	15.00	1.62	10.25	10.62	8.63	7.98	8.72	8.75	8.75	-	4.38	2.44	2.44
10	17.50	1.88	12.62	12.75	10.75	10.02	10.88	10.92	10.88	-	4.62	2.62	3.75
12	20.50	2.00	14.75	15.00	12.75	12.00	12.88	12.92	12.94	-	5.12	2.88	4.00
14	23.00	2.12	16.75	16.25	14.00	13.25	14.14	14.18	14.19	-	5.62	3.00	4.38
16	25.50	2.25	19.00	18.50	16.00	15.25	16.16	16.19	16.19	-	5.75	3.25	4.75
18	28.00	2.38	21.00	21.00	18.00	17.25	18.18	18.20	18.19	-	6.25	3.50	5.12
20	30.50	2.50	23.12	23.00	20.00	19.25	20.20	20.25	20.19	-	6.38	3.75	5.50
24	36.00	2.75	27.62	27.25	24.00	23.25	24.25	24.25	24.19	-	6.62	4.19	6.00

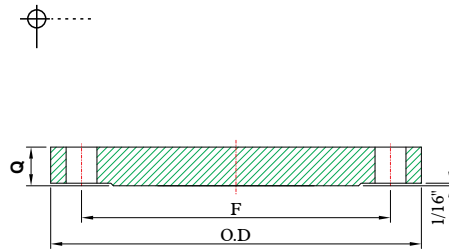
# ASTM A182 FLANGES ANSI B16.5

## CLASS 300 STAINLESS STEEL FLANGES

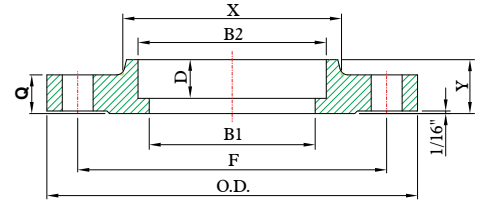
### THREADED



### BLIND



### SOCKET WELD



## DIMENSIONS

unit : inch

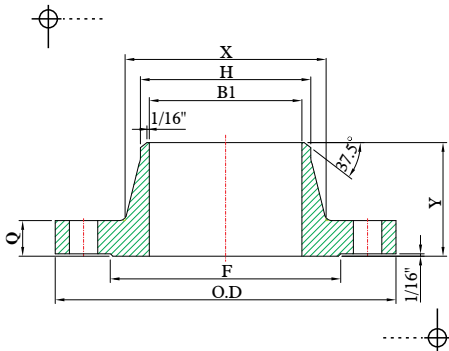
NOM. PIPE SIZE	MIN. THREAD LENGTH	RADIUS (R) LAP JOINT	DRILLING			BOLTING			
			DIAMETER OF BOIT CIRCLE	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLTS	STUD BOLT LENGTH		
							MACHINE BOLT LENGTH	Raised Face .06"	Ring Joint
1/2	0.62	0.12	2.62	4	0.62	1/2	2.25	2.75	3.00
3/4	0.62	0.12	3.25	4	0.75	5/8	2.50	3.00	3.50
1	0.69	0.12	3.50	4	0.75	5/8	2.75	3.25	3.75
1 1/4	0.81	0.19	3.88	4	0.75	5/8	2.75	3.25	3.75
1 1/2	0.88	0.25	4.50	4	0.88	3/4	3.00	3.75	4.25
2	1.00	0.31	5.00	8	0.75	5/8	3.00	3.50	4.25
2 1/2	1.12	0.31	5.88	8	0.88	3/4	3.50	4.00	4.75
3	1.19	0.38	6.62	8	0.88	3/4	3.75	4.25	5.00
3 1/2	1.25	0.38	7.25	8	0.88	3/4	3.75	4.50	5.25
4	1.31	0.44	7.88	8	0.88	5/8	4.00	4.50	5.25
5	1.44	0.50	9.25	8	0.88	3/4	4.25	4.75	5.50
6	1.56	0.50	10.62	12	0.75	3/4	4.25	5.00	5.75
8	1.75	0.50	13.00	12	0.88	7/8	4.75	5.50	6.25
10	1.94	0.50	15.25	16	1.00	1	5.50	6.25	7.00
12	2.19	0.50	17.25	16	1.00	1 1/8	6.00	6.75	7.50
14	2.25	0.50	20.25	20	1.12	1 1/8	6.25	7.00	7.75
16	2.50	0.50	22.50	20	1.12	1 1/4	6.50	7.50	8.25
18	2.69	0.50	24.75	24	1.25	1 1/4	6.75	7.75	8.50
20	2.88	0.50	27.00	24	1.25	1 1/4	7.25	8.25	9.00
24	3.25	0.50	32.00	24	1.38	1 1/2	8.00	9.25	10.25

NOM. PIPE SIZE	APPROXIMATE WEIGHT EACH POUNDS			
	WELDING NECK	SLIP-ON. SOCKET WELD AND THREADED	LAP JOINT	BLIND
1/2	2	2	2	2
3/4	3	3	3	3
1	4	3	3	3
1 1/4	5	4	4	4
1 1/2	7	6	6	6
2	9	7	7	8
2 1/2	12	10	10	12
3	15	13	13	16
3 1/2	18	17	17	21
4	25	22	22	27
5	32	28	28	35
6	42	39	39	50
8	67	58	58	81
10	91	81	91	125
12	140	115	140	185
14	180	165	190	250
16	250	190	250	295
18	320	250	295	395
20	400	315	370	505
24	580	475	550	790

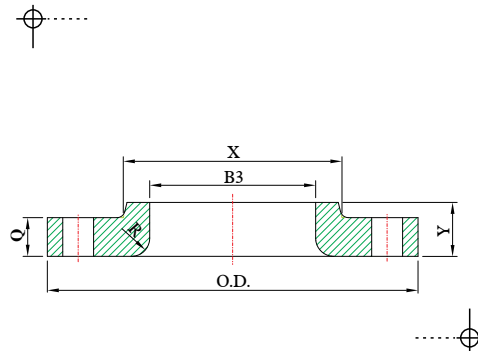
# ASTM A182 FLANGES ANSI B16.5

## CLASS 600 STAINLESS STEEL FLANGES

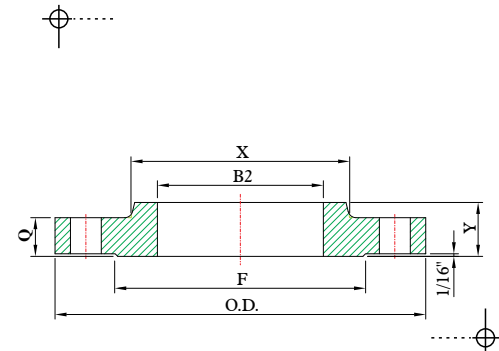
### WELDING NECK



### LAP JOINT



### SLIP-ON



## DIMENSIONS

unit : inch

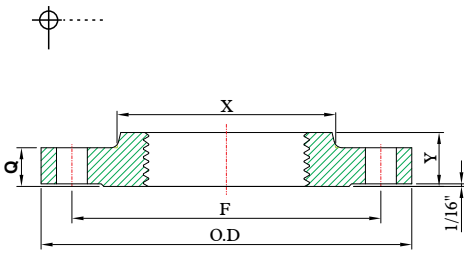
NOM. PIPE SIZE	FLANGE DIAMETER (O.D.)	FLANGE THICKNESS (Q) MIN. (1)	HUB DIA. AT BASE (X)	RAISED FACE DIA. (F)	HUB DIA. AT WELDING POINT (H)	BORE DIAMETER (B)			COUNTER BORE OF THREADED FLANGE (C) MIN.	DEPTH OF SOCKET (D)	LENGTH THROUGH HUB (Y)		
						(B1) WELDING NECK AND SOCKET WELD (2)	(B2) SLIP-ON AND SOCKET WELD MIN.	(B3) LAP JOINT MIN.			WELDING NECK	SLIP-ON SOCKET WELD AND THREADED	LAP JOINT
1/2	3.75	0.56	1.50	1.38	0.84		0.88	0.90	0.93	0.38	2.06	0.88	0.88
3/4	4.62	0.62	1.88	1.69	1.05		1.09	1.11	1.14	0.44	2.25	1.00	1.00
1	4.88	0.69	2.12	2.00	1.32		1.36	1.38	1.41	0.50	2.44	1.06	1.06
1 1/4	5.25	0.81	2.50	2.50	1.66		1.70	1.72	1.75	0.56	2.62	1.12	1.12
1 1/2	6.12	0.88	2.75	2.88	1.90		1.95	1.97	1.99	0.62	2.75	1.25	1.25
2	6.50	1.00	3.31	3.62	2.38		2.44	2.46	2.50	0.69	2.88	1.44	1.44
2 1/2	7.50	1.12	3.94	4.12	2.88		2.94	2.97	3.00	0.75	3.12	1.62	1.62
3	8.25	1.25	4.62	5.00	3.50		3.57	3.60	3.63	0.81	3.25	1.81	1.81
3 1/2	9.00	1.38	5.25	5.50	4.00		4.07	4.10	4.13	-	3.38	1.94	1.94
4	10.75	1.50	6.00	6.19	4.50		4.57	4.60	4.63	-	4.00	2.12	2.12
5	13.00	1.75	7.44	7.31	5.56		5.66	5.69	5.69	-	4.50	2.38	2.38
6	14.00	1.88	8.75	8.50	6.63		6.72	6.75	6.75	-	4.62	2.62	2.62
8	16.50	2.19	10.75	10.62	8.63		8.72	8.75	8.75	-	5.25	3.00	3.00
10	20.00	2.50	13.50	12.75	10.75		10.88	10.92	10.88	-	6.00	3.38	4.38
12	22.00	2.62	15.75	15.00	12.75		12.88	12.92	12.94	-	6.12	3.62	4.62
14	23.75	2.75	17.00	16.25	14.00		14.14	14.18	14.19	-	6.50	3.69	5.00
16	27.00	3.00	19.50	18.50	16.00		16.16	16.19	16.19	-	7.00	4.19	5.50
18	29.25	3.25	21.50	21.00	18.00		18.18	18.20	18.19	-	7.25	4.62	6.00
20	32.00	3.50	24.00	23.00	20.00		20.20	20.25	20.19	-	7.50	5.00	6.50
24	37.00	4.00	28.25	27.25	24.00		24.25	24.25	24.19	-	8.00	5.50	7.25

TO BE SPECIFIED BY PURCHASER

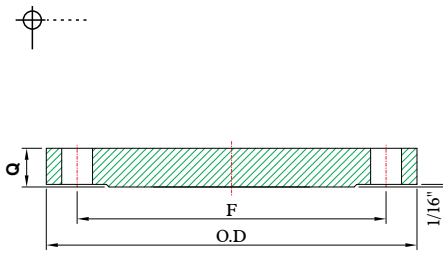
# ASTM A182 FLANGES ANSI B16.5

## CLASS 600 STAINLESS STEEL FLANGES

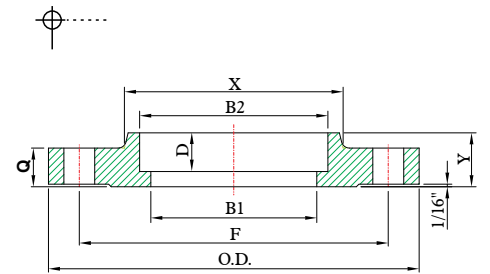
### THREADED



### BLIND



### SOCKET WELD



## DIMENSIONS

unit : inch

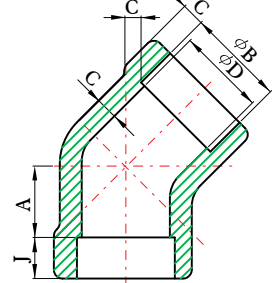
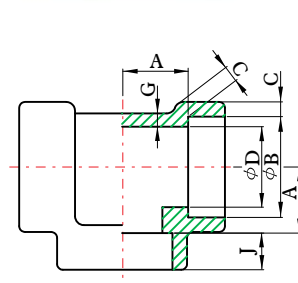
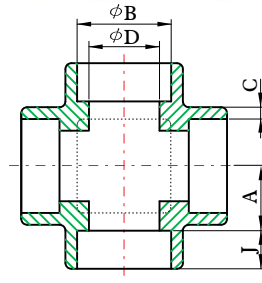
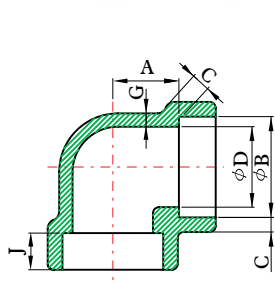
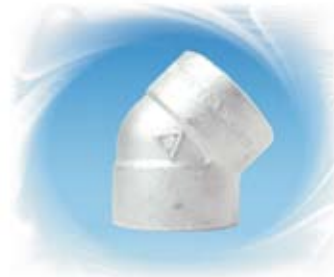
NOM. PIPE SIZE	MIN. THREAD LENGTH	RADIUS (R) LAP JOINT	DRILLING			BOLTING			
			DIAMETER OF BOLT CIRCLE	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLTS	MACHINE BOLT LENGTH	STUD BOLT LENGTH	
								Raised Face .06"	Ring Joint
1/2	0.62	0.12	2.62	4	0.62	1/2	3.25	3.00	3.00
3/4	0.62	0.12	3.25	4	0.75	5/8	3.50	3.25	3.50
1	0.69	0.12	3.50	4	0.75	5/8	3.75	3.50	3.75
1 1/4	0.81	0.19	3.88	4	0.75	5/8	4.00	3.75	4.00
1 1/2	0.88	0.25	4.50	4	0.88	3/4	4.25	4.00	4.25
2	1.12	0.31	5.00	8	0.75	5/8	4.25	4.00	4.50
2 1/2	1.25	0.31	5.88	8	0.88	3/4	4.75	4.50	5.00
3	1.38	0.38	6.62	8	0.88	3/4	5.00	4.75	5.25
3 1/2	1.56	0.38	7.25	8	1.00	7/8	5.50	5.25	5.75
4	1.62	0.44	8.50	8	1.00	7/8	5.75	5.50	6.00
5	1.88	0.44	10.50	8	1.12	1	6.50	6.25	6.75
6	2.00	0.50	11.50	12	1.12	1	6.75	6.50	7.00
8	2.25	0.50	13.75	12	1.25	1 1/8	7.75	7.50	7.75
10	2.56	0.50	17.00	16	1.38	1 1/4	8.50	8.25	8.75
12	2.75	0.50	19.25	20	1.38	1 1/4	8.75	8.50	9.00
14	2.88	0.50	20.75	20	1.50	1 3/8	9.25	9.00	9.50
16	3.06	0.50	23.75	20	1.62	1 1/2	10.00	9.75	10.25
18	3.12	0.50	25.75	20	1.75	1 5/8	10.75	10.50	11.00
20	3.25	0.50	28.50	24	1.75	1 5/8	11.50	11.25	11.75
24	3.62	0.50	33.00	24	2.00	1 7/8	13.00	12.75	13.25

NOM. PIPE SIZE	APPROXIMATE WEIGHT EACH POUNDS			
	WELDING NECK	SLIP-ON, SOCKET WELD AND THREADED	LAP JOINT	BLIND
1/2	2	2	2	2
3/4	4	3	3	3
1	4	4	4	4
1 1/4	6	5	5	5
1 1/2	8	7	7	8
2	12	9	9	10
2 1/2	18	13	12	15
3	23	16	15	20
3 1/2	26	21	20	29
4	42	37	36	41
5	68	63	61	68
6	81	80	78	86
8	120	115	110	140
10	190	170	170	230
12	225	200	200	295
14	280	230	250	355
16	390	330	365	495
18	475	400	435	630
20	590	510	570	810
24	830	730	810	1250



# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

## 90° ELBOW / CROSS / TEE / 45° ELBOW - SOCKET



90° ELBOW

CROSS

TEE

45° ELBOW

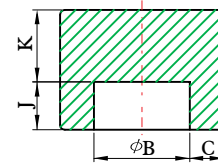
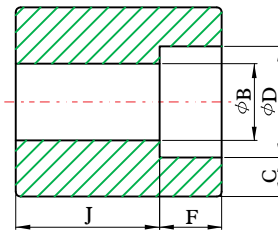
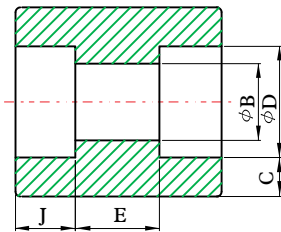
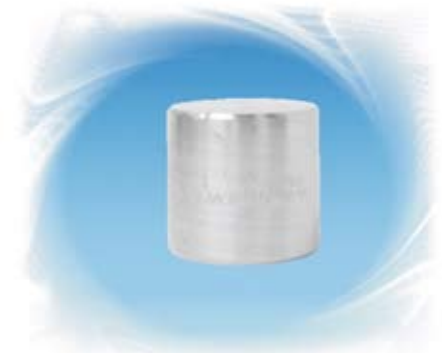
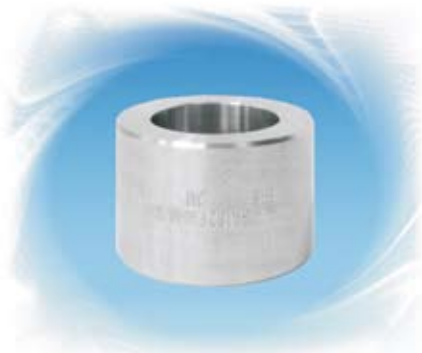
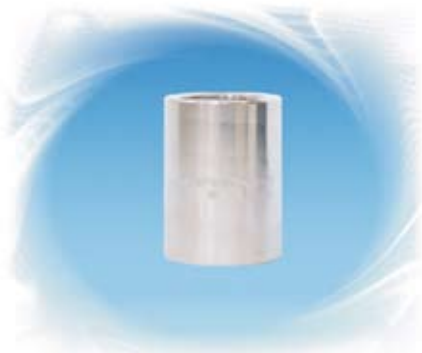
### DIMENSIONS

unit : inch

DN	Nom. Pipe Size	Socket Bore Dia. (2) B	Bore Diameter of Fitting (2) D		Socket Wall Thickness (1) C				Body Wall Thickness G		Depth of Socket Min. J
					Class Designation				Class Designation		
			Class Designation		3000		6000		3000	6000	
			3000	6000	Ave.	Min.	Ave.	Min.	Min.	Min.	
6	1/8	0.441	0.299	0.189	0.125	0.125	0.156	0.135	0.095	0.124	0.374
		0.425	0.240	0.126							
8	1/4	0.575	0.394	0.280	0.149	0.130	0.181	0.158	0.119	0.145	0.374
		0.559	0.335	0.220							
10	3/8	0.709	0.524	0.390	0.158	0.138	0.198	0.172	0.126	0.158	0.374
		0.693	0.465	0.331							
15	1/2	0.874	0.654	0.492	0.184	0.161	0.235	0.204	0.147	0.188	0.374
		0.858	0.591	0.433							
20	3/4	1.087	0.854	0.642	0.193	0.168	0.274	0.238	0.154	0.219	0.492
		1.071	0.795	0.583							
25	1	1.350	1.079	0.846	0.224	0.196	0.312	0.273	0.179	0.250	0.492
		1.335	1.020	0.783							
32	1-1/4	1.697	1.409	1.189	0.239	0.208	0.312	0.273	0.191	0.250	0.492
		1.681	1.350	1.130							
40	1-1/2	1.937	1.638	1.366	0.250	0.218	0.351	0.307	0.200	0.281	0.492
		1.921	1.579	1.307							
50	2	2.429	2.098	1.717	0.273	0.238	0.430	0.374	0.218	0.344	0.630
		2.409	2.035	1.657							
65	2-1/2	2.929	2.528		0.345	0.302			0.276		0.630
		2.909	2.409								
80	3	3.555	3.126		0.375	0.327			0.300		0.630
		3.535	3.008								
100	4	4.555	4.087		0.421	0.368			0.337		0.748
		4.535	3.965								

# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

## COUPLING / HALF COUPLING / CAP - SOCKET



COUPLING

HALF COUPLING

CAP

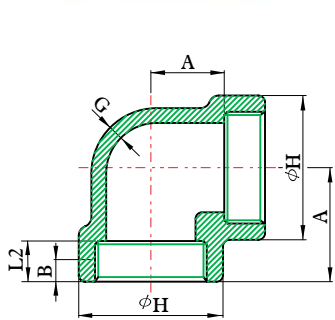
### DIMENSIONS

unit : inch

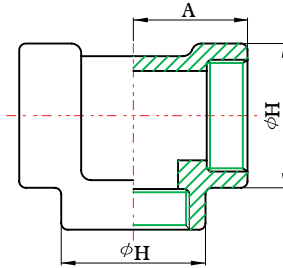
Center to Bottom of Socket-A				Laying Lengths		Tolerances ±			End Wall Thickness K Min.		Nom. Pipe Size	DN
90° Elbows Tees, Crosses		45° Elbows		Couplings E	Half Couplings F	A	E	F	Class Designation			
Class Designation		Class Designation							3000	6000		
3000	6000	3000	6000						3000	6000		
0.433	0.433	0.315	0.315	0.256	0.630	0.039	0.059	0.039	0.189	0.252	1/8	6
0.433	0.531	0.315	0.315	0.256	0.630	0.039	0.059	0.039	0.189	0.252	1/4	8
0.531	0.610	0.315	0.433	0.256	0.689	0.059	0.118	0.059	0.189	0.252	3/8	10
0.610	0.748	0.433	0.492	0.374	0.886	0.059	0.118	0.059	0.252	0.311	1/2	15
0.748	0.886	0.512	0.551	0.374	0.945	0.059	0.118	0.059	0.252	0.311	3/4	20
0.886	1.063	0.551	0.689	0.492	1.122	0.079	0.157	0.079	0.378	0.441	1	25
1.063	1.260	0.689	0.807	0.492	1.181	0.079	0.157	0.079	0.378	0.441	1-1/4	32
1.260	1.496	0.807	1.004	0.492	1.260	0.079	0.157	0.079	0.441	0.500	1-1/2	40
1.496	1.614	1.004	1.122	0.748	1.614	0.079	0.157	0.079	0.500	0.618	2	50
1.614		1.122		0.748	1.693	0.098	0.197	0.098	0.618	0.748	2-1/2	65
2.244		1.260		0.748	1.752	0.098	0.197	0.098	0.748	0.882	3	80
2.618		1.614		0.748	1.890	0.098	0.197	0.098	0.882	1.118	4	100

# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

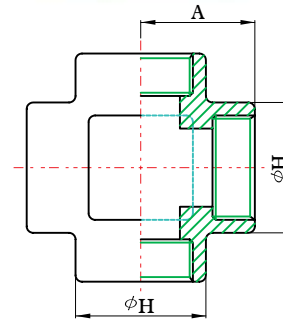
## 90° ELBOW / CROSS / TEE / 45° ELBOW - THREADED



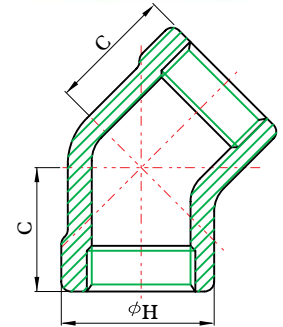
90° ELBOW



CROSS



TEE



45° ELBOW

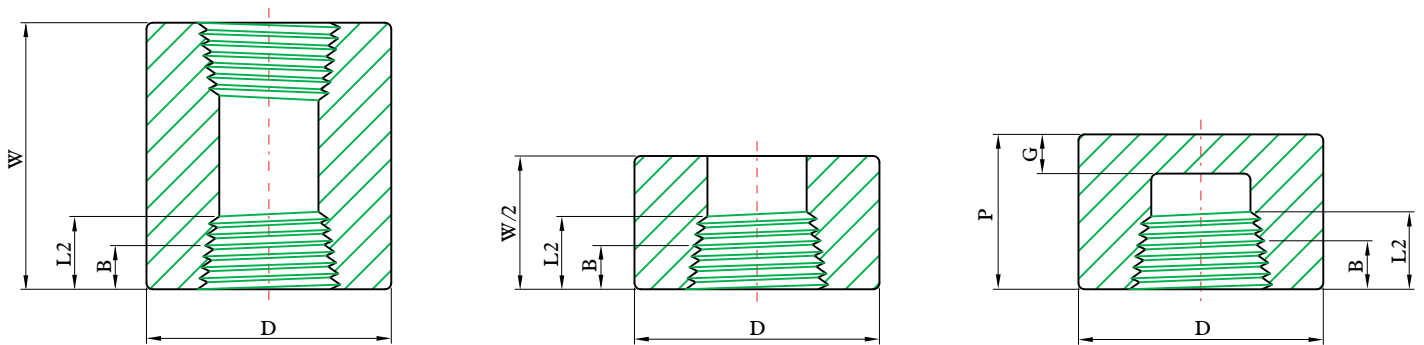
### DIMENSIONS

unit : inch

DN	Nom. Pipe Size	Center to End Elbows, Tees, Cross A		Center to End 45° Elbow C		Outside Diameter of Band H		Minimum Wall Thickness G		Length of Thread. Min. (1)	
		3000	6000	3000	6000	3000	6000	3000	6000	B	L2
6	1/8	0.827	0.984	0.669	0.748	0.866	0.984	0.125	0.250	0.252	0.264
8	1/4	0.984	1.102	0.748	0.866	0.984	1.299	0.130	0.260	0.319	0.402
10	3/8	1.102	1.299	0.866	0.984	1.299	1.496	0.138	0.275	0.358	0.409
15	1/2	1.299	1.496	0.984	1.102	1.496	1.811	0.161	0.321	0.429	0.535
20	3/4	1.496	1.732	1.102	1.299	1.811	2.205	0.170	0.336	0.500	0.547
25	1	1.732	2.008	1.299	1.378	2.205	2.441	0.196	0.391	0.579	0.681
32	1-1/4	2.008	2.362	1.378	1.693	2.441	2.953	0.208	0.417	0.669	0.709
40	1-1/2	2.362	2.520	1.693	1.732	2.953	3.307	0.219	0.436	0.701	0.724
50	2	2.520	3.268	1.732	2.047	3.307	4.016	0.281	0.476	0.748	0.756
65	2-1/2	3.268	3.740	2.047	2.520	4.016	4.764	0.301	0.602	0.929	1.138
80	3	3.740	4.173	2.520	3.110	4.764	5.748	0.348	0.655	1.020	1.201
100	4	4.488	4.488	3.110	3.110	5.984	5.984	0.440	0.735	1.091	1.299

# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

## COUPLING / HALF COUPLING / CAP - THREADED



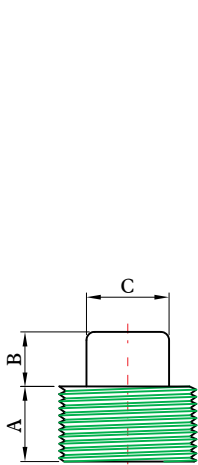
### DIMENSIONS

unit : inch

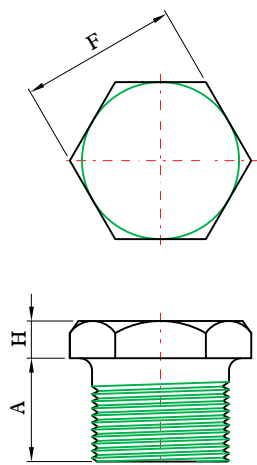
DN	Nom. Pipe Size	End to End Couplings W	End to End Caps P		Outside Diameter D		End Wall Thickness G Min.		Length of Thread. M in (1)	
		3000 / 6000	3000	6000	3000	6000	3000	6000	B	L2
6	1/8	1.260	0.748	-----	0.630	0.866	0.189	-----	0.252	0.264
8	1/4	1.378	0.984	1.063	0.748	0.984	0.189	0.252	0.319	0.402
10	3/8	1.496	0.984	1.063	0.866	1.260	0.189	0.252	0.358	0.409
15	1/2	1.890	1.260	1.299	1.102	1.496	0.252	0.311	0.429	0.535
20	3/4	2.008	1.457	1.496	1.378	1.732	0.252	0.311	0.500	0.547
25	1	2.362	1.614	1.693	1.732	2.244	0.382	0.441	0.579	0.681
32	1-1/4	2.638	1.732	1.811	2.244	2.520	0.382	0.441	0.669	0.709
40	1-1/2	3.110	1.732	1.890	2.520	2.992	0.441	0.500	0.701	0.724
50	2	3.386	1.890	2.008	2.992	3.622	0.500	0.618	0.748	0.756
65	2-1/2	3.622	2.362	2.520	3.622	4.252	0.618	0.748	0.929	1.138
80	3	4.252	2.559	2.677	4.252	5.000	0.748	0.882	1.020	1.201
100	4	4.764	2.677	2.953	5.512	6.260	0.882	1.118	1.091	1.299

# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

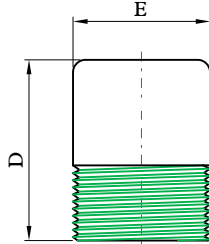
SQUARE HEAD PLUG / HEX HEAD PLUG / ROUND HEAD PLUG / HEX HEAD BUSHING / FLUSH BUSHING



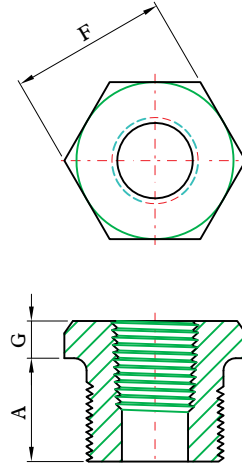
SQUARE HEAD PLUG



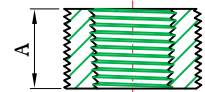
HEX HEAD PLUG



ROUND HEAD PLUG



HEX HEAD(1) BUSHING



FLUSH BUSHING

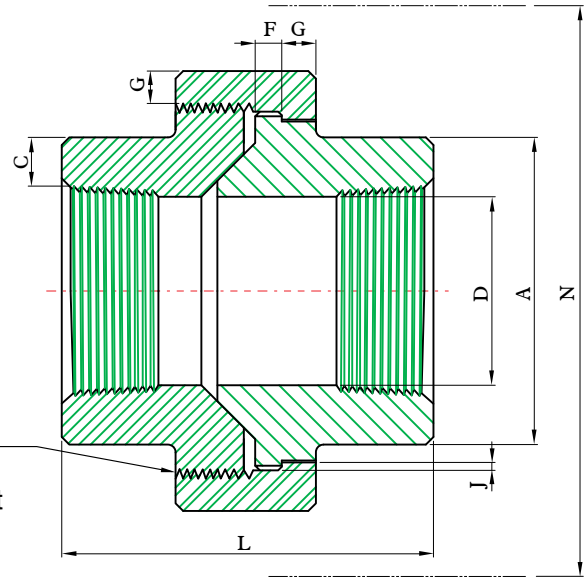
## DIMENSIONS

unit : inch

DN	Nom. Pipe Size	Length (Min.) A	Plugs Square Head		Plugs Round Head		Hex Plugs & Bushings		
			Height of Square (Min.) B	Width Flats (Min.) C	Nominal Diameter of Head E	Length (Min.) D	Width Flats (Nom.) F	Hex Height (Min.)	
								Bushing G	Plug H
6	1/8	0.394	0.236	0.276	0.394	1.378	0.433	----	0.236
8	1/4	0.433	0.236	0.394	0.551	1.614	0.630	0.118	0.236
10	3/8	0.512	0.315	0.433	0.709	1.614	0.709	0.157	0.315
15	1/2	0.551	0.394	0.551	0.827	1.732	0.866	0.197	0.315
20	3/4	0.630	0.433	0.630	1.063	1.732	1.063	0.236	0.394
25	1	0.748	0.512	0.827	1.299	2.008	1.417	0.236	0.394
32	1-1/4	0.827	0.551	0.945	1.693	2.008	1.811	0.276	0.551
40	1-1/2	0.827	0.630	1.102	1.890	2.008	1.969	0.315	0.630
50	2	0.866	0.709	1.260	2.362	2.520	2.559	0.354	0.709
65	2-1/2	1.063	0.748	1.417	2.874	2.756	2.953	0.394	0.748
80	3	1.102	0.827	1.614	3.504	2.756	3.543	0.394	0.827
100	4	1.260	0.984	2.559	4.488	2.992	4.528	0.512	0.984

# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

## UNION - THREADED



H-Thrd's  
Minimum 4 Full Thrd's  
Engagement Class 2A/2B Fit

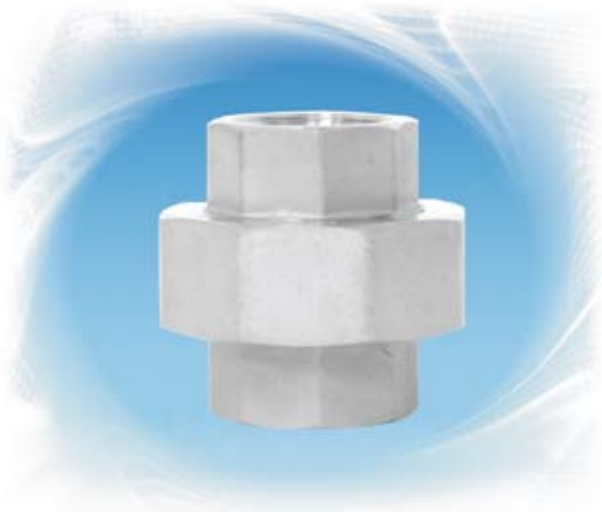
## DIMENSIONS

unit : inch

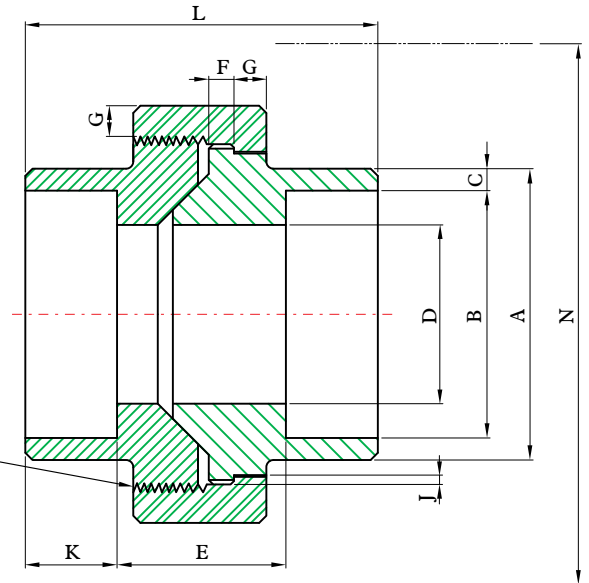
Nom. Pipe Size	Pipe End	Wall	Water Way Bore	Male Flange	Nut	Thrds. Per 25.4mm	Bearing	Length Assem.	Clear Assem. Nut
	Min. A	Min. C	D	Min. F	Min. G	Max. H	Min. J	L	N
1/8	0.579	0.095	0.269 0.253	0.125	0.126	0.630	0.049	1.630	1.929
1/4	0.748	0.119	0.388 0.372	0.125	0.126	0.630	0.049	1.630	1.929
3/8	0.902	0.126	0.548 0.532	0.135	0.134	0.551	0.054	1.811	2.165
1/2	1.091	0.147	0.688 0.672	0.145	0.146	0.551	0.059	1.929	2.244
3/4	1.319	0.154	0.858 0.842	0.160	0.161	0.433	0.066	2.240	2.638
1	1.630	0.179	1.108 1.092	0.180	0.173	0.433	0.073	2.441	3.110
1-1/4	1.988	0.191	1.408 1.392	0.210	0.205	0.433	0.084	2.799	3.701
1-1/2	2.252	0.200	1.638 1.622	0.230	0.220	0.394	0.091	3.008	4.370
2	2.760	0.218	2.068 2.052	0.260	0.252	0.394	0.106	3.390	5.197
2-1/2	3.358	0.276	2.548 2.532	0.295	0.280	0.315	0.121	4.031	5.827
3	4.031	0.300	3.058 3.042	0.325	0.315	0.315	0.139	4.291	6.890

# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

## UNION - SOCKET



H-Thrd's  
Minimum 4 Full Thrd's  
Engagement Class 2A/2B Fit



## DIMENSIONS

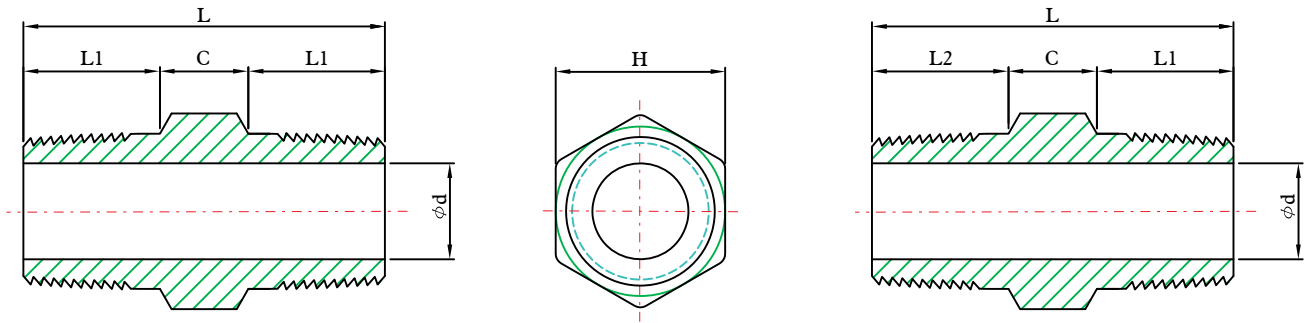
unit : inch

Nom. Pipe Size	Pipe End	Socket Bore Dia.	Socket Wall	Water Way Bore	Laying Length	Male Flange	Nut	Thrds. Per 25.4mm Max. H	Bearing Min. J	Depth of Socket Min. K	Length Assem. Nom. L	Clear Assem. Nut N
	Min. A	B	Min. C	D	E	Min. F	Min. G					
1/8	0.858	0.430 0.420	0.125	0.269 0.253	0.882 0.748	0.125	0.125	0.630	0.049	0.378	1.630	1.929
1/4	0.858	0.560 0.550	0.130	0.388 0.372	0.882 0.748	0.125	0.125	0.630	0.049	0.378	1.630	1.929
3/8	1.020	0.700 0.690	0.137	0.548 0.532	1.059 0.811	0.135	0.135	0.551	0.054	0.378	1.811	2.165
1/2	1.228	0.860 0.850	0.160	0.688 0.672	1.059 0.811	0.145	0.145	0.551	0.059	0.378	1.929	2.244
3/4	1.461	1.070 1.060	0.168	0.858 0.842	1.252 1.000	0.160	0.160	0.433	0.066	0.500	2.240	2.638
1	1.791	1.340 1.330	0.195	1.108 1.092	1.350 1.031	0.180	0.175	0.433	0.073	0.500	2.441	3.110
1-1/4	2.161	1.680 1.670	0.208	1.408 1.392	1.598 1.280	0.210	0.205	0.433	0.084	0.500	2.799	3.701
1-1/2	2.421	1.920 1.910	0.218	1.638 1.622	1.661 1.339	0.230	0.220	0.394	0.091	0.500	3.012	4.370
2	2.961	2.420 2.410	0.238	2.068 2.052	1.791 1.469	0.260	0.250	0.394	0.106	0.622	3.390	5.197
2-1/2	3.610	2.920 2.900	0.301	2.548 2.532	2.429 2.051	0.295	0.280	0.315	0.121	0.622	4.031	5.827
3	4.299	3.550 3.530	0.327	3.058 3.042	2.512 2.110	0.325	0.315	0.315	0.139	0.622	4.291	6.890



# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

## HEX - NIPPLE



unit : inch / lb

Size NPS	C	L1	L	d	H	Unit Weight in Kgs
1/8	0.236	0.394	1.024	0.157	0.472	0.03
1/4	0.315	0.551	1.417	0.264	0.669	0.04
3/8	0.315	0.551	1.417	0.350	0.748	0.05
1/2	0.354	0.748	1.850	0.469	0.945	0.09
3/4	0.394	0.748	1.890	0.630	1.181	0.15
1	0.433	0.945	2.323	0.791	1.378	0.27
1-1/4	0.472	0.945	2.362	1.098	1.811	0.45
1-1/2	0.551	0.945	2.441	1.260	1.969	0.62
2	0.630	1.024	2.677	1.571	2.559	1.03
2-1/2	0.709	1.496	3.701	2.169	3.150	1.51
3	0.787	1.575	3.937	2.559	3.740	2.22
4	0.965	1.575	4.134	3.346	4.941	4.00

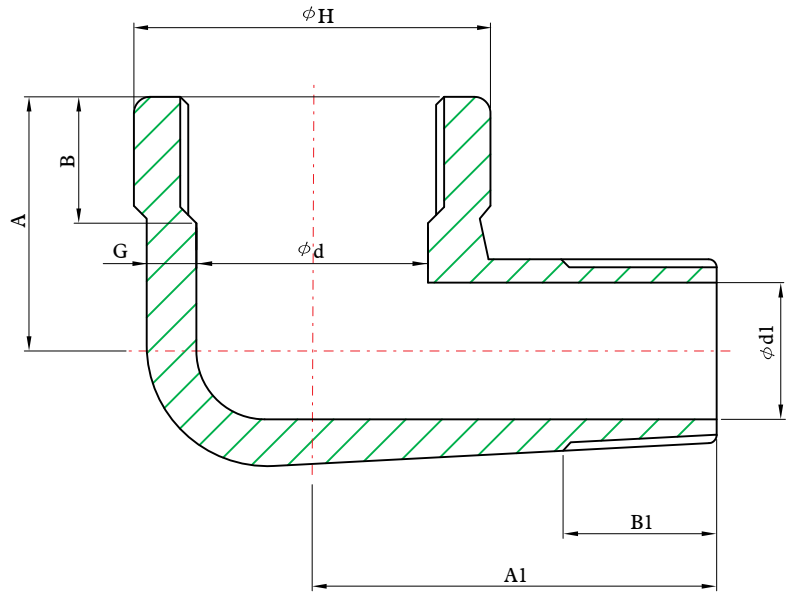
## DIMENSIONS

unit : inch / lb

Size NPS	C	L1	L2	L	d	H	Unit Weight in Kgs
3/8 X 1/4	0.315	0.551	0.551	1.417	0.264	0.748	0.05
1/2 X 1/4	0.354	0.748	0.551	1.654	0.264	0.945	0.09
1/2 X 3/8	0.354	0.748	0.551	1.654	0.350	0.945	0.09
3/4 X 1/4	0.394	0.748	0.551	1.693	0.264	1.181	0.15
3/4 X 3/8	0.394	0.748	0.551	1.693	0.350	1.181	0.15
3/4 X 1/2	0.394	0.748	0.748	1.890	0.469	1.181	0.15
1 X 3/8	0.433	0.945	0.551	1.929	0.350	1.339	0.27
1 X 1/2	0.433	0.945	0.748	2.126	0.469	1.339	0.27
1 X 3/4	0.433	0.945	0.748	2.126	0.630	1.339	0.27
1-1/4 X 1/2	0.472	0.945	0.748	2.165	0.469	1.811	0.45
1-1/4 X 3/4	0.472	0.945	0.748	2.165	0.630	1.811	0.45
1-1/4 X 1	0.472	0.945	0.945	2.362	0.791	1.811	0.45
1-1/2 X 3/4	0.551	0.945	0.748	2.244	0.630	1.969	0.62
1-1/2 X 1	0.551	0.945	0.945	2.441	0.791	1.969	0.62
1-1/2 X 1-1/4	0.551	0.945	0.945	2.441	1.098	1.969	0.62
2 X 1	0.630	1.024	0.945	2.598	0.791	2.559	1.03
2 X 1-1/4	0.630	1.024	0.945	2.598	1.098	2.559	1.03
2 X 1-1/2	0.630	1.024	0.945	2.598	1.260	2.559	1.03
2-1/2 X 1-1/4	0.709	1.496	0.945	3.150	1.098	3.150	1.51
2-1/2 X 1-1/2	0.709	1.496	0.945	3.150	1.260	3.150	1.51
2-1/2 X 2	0.709	1.496	1.024	3.228	1.571	3.150	1.51
3 X 1-1/2	0.787	1.575	0.945	3.307	1.260	3.740	2.22
3 X 2	0.787	1.575	1.024	3.386	1.571	3.740	2.22
3 X 2-1/2	0.787	1.575	1.496	3.858	2.169	3.740	2.22

# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

## STREET ELBOW



### DIMENSIONS

**3000Lbs**

unit : inch

Dim Nom. Pipe Size	H	A	A1	d	d1	G (Min)	B (Min)	B1 (Min)
1/4	0.984	0.874	1.248	0.441	0.276	0.130	0.315	0.406
3/8	1.299	1.000	1.500	0.571	0.354	0.138	0.354	0.409
1/2	1.496	1.126	1.622	0.618	0.512	0.161	0.433	0.535
3/4	1.811	1.374	1.874	0.823	0.630	0.170	0.492	0.543
1	2.205	1.752	2.268	1.047	0.787	0.196	0.571	0.681
1-1/4	2.441	2.000	2.626	1.378	1.102	0.208	0.669	0.709
1-1/2	2.953	2.126	2.811	1.610	1.181	0.219	0.709	0.724
2	3.307	2.500	3.307	2.067	1.575	0.281	0.748	0.760

**6000Lbs**

unit : inch

Dim Nom. Pipe Size	H	A	A1	d	d1	G (Min)	B (Min)	B1 (Min)
1/4	1.299	1.000	1.500	0.441	0.118	0.260	0.315	0.406
3/8	1.496	1.126	1.622	0.571	0.185	0.275	0.354	0.409
1/2	1.811	1.374	1.874	0.618	0.248	0.321	0.433	0.535
3/4	2.205	1.752	2.252	0.823	0.437	0.336	0.492	0.543
1	2.441	2.000	2.626	1.047	0.598	0.391	0.571	0.681
1-1/4	2.441	2.000	2.626	1.378	1.102	0.208	0.669	0.709
1-1/2	3.307	2.500	3.307	1.610	1.098	0.436	0.709	0.724

# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

## STANDARD PACKAGING QUANTITY FOR EACH CARTON

unit: pcs

SIZE NPS	90D ELB		45D ELB		TEE		CPLG		UNION		H.CPLG		CAP		BUSH		NIPPLE		HEX PLUG	
	3000# SW	3000#NPT SW	3000# SW	3000#NPT SW	3000# SW	3000#NPT SW	3000# SW	3000#NPT SW	3000# SW	3000#NPT SW	3000# SW	3000#NPT SW	3000# SW	3000#NPT SW	3000# SW	3000#NPT SW	3000# SW	3000#NPT SW	3000# SW	3000#NPT SW
1/4"	150	100	150	100	100	80	350	250	70	350	300	350	300	600	500	800				
3/8"	100	80	100	80	80	50	250	200	70	300	250	300	250	500	400	600				
1/2"	80	50	80	50	50	35	120	100	50	150	130	150	130	400	200	250				
3/4"	50	30	50	30	35	20	80	70	35	120	80	120	80	200	120	200				
1"	30	20	30	20	20	15	50	35	20	80	50	80	50	100	80	100				
1-1/4"	20	15	20	15	15	10	30	20	14	50	30	50	30	70	35	35				
1-1/2"	15	6	15	8	10	5	20	15	10	40	20	40	20	50	30	25				
2"	8	5	10	6	6	4	15	10	6	20	15	20	15	25	15	17				
2-1/2"	4	2	6	4	4	3	10	5	2	6	10	6	10	15	5	8				
3"	2	1	3	2	2	1	6	3	1	5	4	5	4	10	3	6				

SIZE OF CARTON: 1.10in x 0.79in x 0.71in



# ASTM A182 STAINLESS HIGH PRESSURE FITTINGS

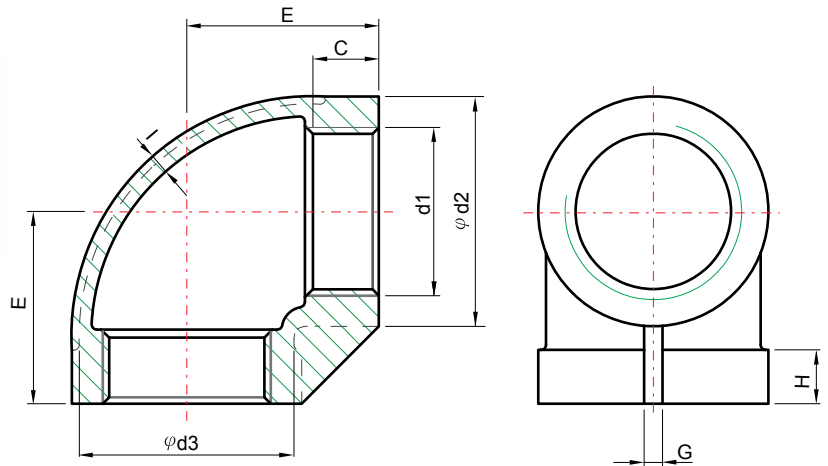
## WEIGHT LIST

unit: lb / pc

SIZE	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
<b>3000 LBS SCREWED</b>												
90° ELBOW	0.22	0.31	0.59	0.90	1.59	2.27	2.89	4.87	5.44	9.98	17.11	29.23
45° ELBOW	0.18	0.26	0.53	0.75	1.19	2.03	2.14	4.05	4.25	7.62	11.98	19.74
TEE	0.29	0.29	0.84	1.23	1.85	3.74	4.30	7.00	8.00	13.74	20.99	37.97
COUPLING	0.11	0.11	0.13	0.29	0.42	0.86	1.50	2.18	3.02	4.56	6.78	11.98
HALF COUPLING	0.07	0.07	0.07	0.13	0.22	0.44	0.75	1.10	1.50	2.27	3.39	5.99
CAP	0.09	0.09	0.11	0.24	0.40	0.77	1.32	1.54	2.33	4.05	5.84	10.07
STREET ELBOW	0.22	0.31	0.59	0.90	1.45	2.14	2.89	4.87	5.44			
UNION	0.62	0.62	0.62	0.68	1.01	1.48	2.27	3.33	5.35	7.67	11.56	26.43
<b>6000 LBS SCREWED</b>												
90° ELBOW	0.37	0.66	0.99	1.59	2.53	3.55	5.88	7.05	13.00	21.76	36.19	
45° ELBOW	0.24	0.59	0.86	1.34	2.25	2.58	5.88	5.75	9.63	15.44	31.19	
TEE	0.44	0.93	1.39	2.16	3.63	4.82	7.75	9.74	17.36	28.88	49.56	
COUPLING	0.18	0.13	0.40	0.68	0.90	1.87	2.31	4.12	7.49	9.25	13.44	22.11
HALF COUPLING	0.09	0.09	0.20	0.35	0.44	0.95	1.17	2.00	3.74	4.63	6.72	11.06
CAP	0.13	0.13	0.20	0.31	0.44	0.75	1.30	1.70	3.24			
<b>PLUG &amp; BUSHING</b>												
<b>3000 / 6000 LBS</b>												
SQUARE HEAD	0.02	0.02	0.07	0.11	0.20	0.35	0.59	0.84	1.39	2.11	3.37	8.44
HEX HEAD	0.02	0.07	0.11	0.15	0.31	0.55	1.04	1.37	2.42	3.81	4.74	13.00
ROUND HEAD	0.04	0.11	0.15	0.26	0.44	0.75	1.21	1.59	3.11	4.87	7.18	13.24
BUSHING		0.02	0.02	0.07	0.11	0.20	0.55	0.75	0.99	1.32	2.56	7.05
<b>3000 LBS SCREWED WELD</b>												
90° ELBOW	0.20	0.22	0.22	0.48	0.68	1.17	1.59	2.14	3.77	8.37	12.11	24.12
45° ELBOW	0.15	0.13	0.20	0.44	0.57	0.88	1.41	1.70	2.69	7.86	11.23	20.73
TEE	0.24	0.20	0.33	0.70	0.93	1.43	2.18	2.97	4.56	8.59	13.00	31.28
COUPLING	0.09	0.11	0.15	0.29	0.42	0.59	1.08	1.30	2.14	3.13	4.14	7.29
HALF COUPLING	0.09	0.11	0.15	0.29	0.42	0.59	1.08	1.30	2.14	3.13	4.14	7.29
CAP	0.07	0.09	0.11	0.22	0.35	0.48	2.89	1.12	1.87	2.73	4.27	7.29
UNION	0.62	0.62	0.62	0.68	1.01	1.48	2.27	3.33	5.35	7.67	11.56	26.43
<b>6000 LBS SCREWED WELD</b>												
90° ELBOW				0.88	1.39	2.62	3.00	5.31	5.99	10.46	18.83	31.52
45° ELBOW				0.66	1.26	1.94	2.44	4.43	4.74	8.92	13.26	24.60
TEE				1.19	1.94	3.17	4.07	7.20	7.93	15.29	23.37	37.27
COUPLING				0.53	0.73	1.43	1.65	2.64	4.67	6.30	8.83	13.99
HALF COUPLING				0.53	0.73	1.43	1.65	2.64	4.67	6.30	8.83	13.99
CAP				0.42	0.57	1.17	1.41	2.14	3.61	4.89	7.60	13.28

# 150LB SCREWED FITTINGS

## 90° ELBOWS BANDED EQUAL



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)

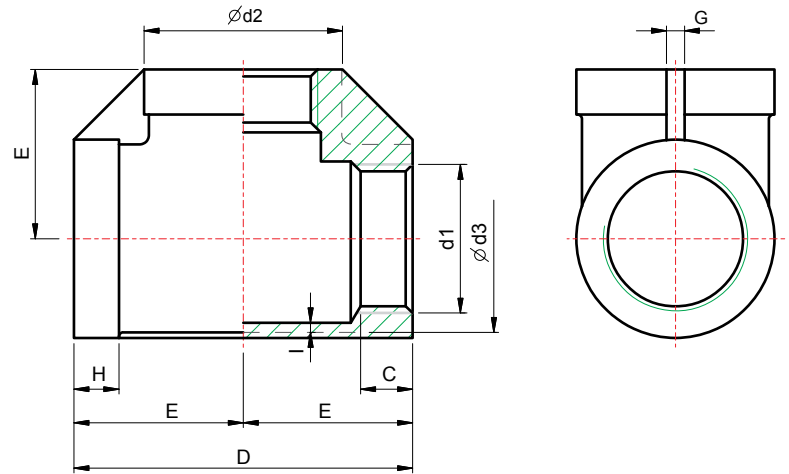
### DIMENSIONS

unit : inch

SIZE	d1	d2	d3	C	E	G	H	I
1/8"	1/8"	0.63	0.53	0.24	0.67	0.14	0.24	0.08
1/4"	1/4"	0.75	0.61	0.37	0.77	0.16	0.24	0.08
3/8"	3/8"	0.89	0.77	0.38	0.94	0.16	0.31	0.10
1/2"	1/2"	1.10	1.02	0.39	1.14	0.12	0.30	0.08
3/4"	3/4"	1.34	1.24	0.41	1.26	0.12	0.35	0.08
1"	1"	1.69	1.61	0.55	1.46	0.16	0.39	0.10
1 1/4"	1 1/4"	2.01	1.89	0.63	1.71	0.20	0.43	0.10
1 1/2"	1 1/2"	2.32	2.22	0.61	1.89	0.20	0.47	0.10
2"	2"	2.83	2.68	0.71	2.19	0.22	0.51	0.10
2 1/2"	2 1/2"	3.54	3.39	0.87	2.64	0.35	0.55	0.12
3"	3"	4.17	4.02	0.94	3.03	0.39	0.59	0.14
4"	4"	5.20	5.00	1.02	3.78	0.33	0.65	0.14

# 150LB SCREWED FITTINGS

## TEES BANDED EQUAL



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)

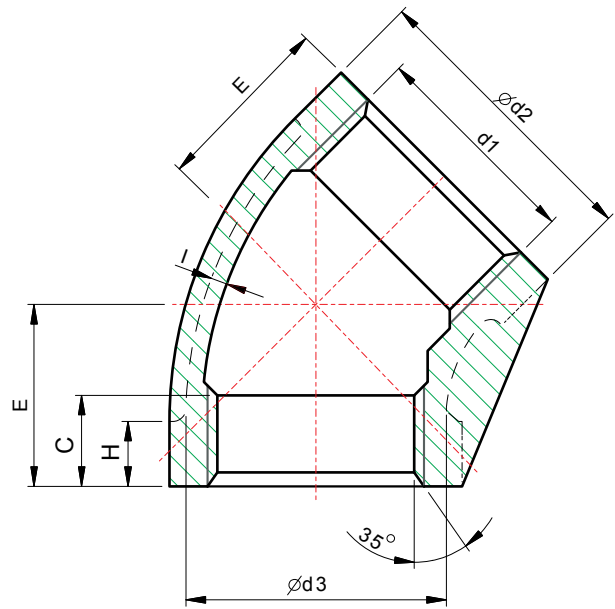
### DIMENSIONS

unit : inch

SIZE	d1	d2	d3	C	D	E	G	H	I
1/8"	1/8"	0.63	0.53	0.24	1.42	0.71	0.12	0.24	0.10
1/4"	1/4"	0.75	0.61	0.37	1.04	0.77	0.12	0.24	0.08
3/8"	3/8"	0.89	0.77	0.38	1.85	0.93	0.12	0.26	0.10
1/2"	1/2"	1.10	1.02	0.39	2.28	1.14	0.12	0.30	0.08
3/4"	3/4"	1.34	1.24	0.39	2.56	1.28	0.12	0.33	0.08
1"	1"	1.69	1.57	0.51	2.91	1.46	0.16	0.37	0.08
1 1/4"	1 1/4"	2.01	1.89	0.65	3.50	1.75	0.20	0.41	0.08
1 1/2"	1 1/2"	2.32	2.22	0.63	3.82	1.91	0.20	0.45	0.10
2"	2"	2.83	2.68	0.71	4.45	2.22	0.24	0.47	0.10
2 1/2"	2 1/2"	3.54	3.39	0.91	5.35	2.68	0.35	0.57	0.16
3"	3"	4.17	4.00	0.96	6.18	3.09	0.39	0.59	0.16
4"	4"	5.20	5.00	1.02	7.68	3.84	0.35	0.61	0.16

# 150LB SCREWED FITTINGS

## 45° ELBOWS BANDED EQUAL



### DESIGN FEATURES:

- THREAD: NPT
- CF8 (304) & CF8M (316)

### DIMENSIONS

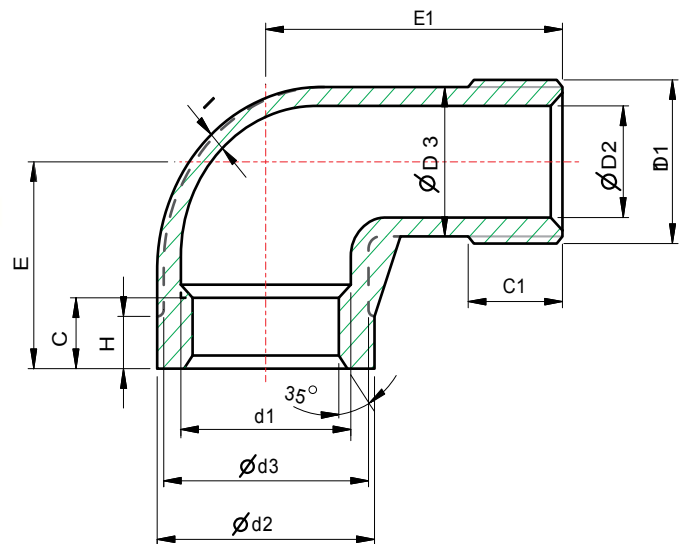
unit : inch

SIZE	d 1	d 2	d 3	C	E	H	I
1/8"	1/8"	0.63	0.53	0.28	0.63	0.24	0.08
1/4"	1/4"	0.75	0.61	0.37	0.67	0.26	0.08
3/8"	3/8"	0.89	0.77	0.38	0.75	0.24	0.08
1/2"	1/2"	1.18	1.10	0.39	0.83	0.31	0.10
3/4"	3/4"	1.42	1.34	0.43	0.94	0.39	0.10
1"	1"	1.77	1.57	0.55	1.10	0.39	0.10
1 1/4"	1 1/4"	2.22	1.91	0.61	1.30	0.43	0.10
1 1/2"	1 1/2"	2.30	2.20	0.61	1.42	0.49	0.10
2"	2"	2.83	2.68	0.65	1.65	0.51	0.10
2 1/2"	2 1/2"	3.54	3.43	0.87	1.93	0.55	0.16
3"	3"	4.17	4.00	0.98	2.13	0.59	0.16
4"	4"	6.24	4.25	0.98	2.56	0.59	0.16



# 150LB SCREWED FITTINGS

## STREET ELBOWS 90° BANDED



### DESIGN FEATURES:

- THREAD: NPT
- CF8 (304) & CF8M (316)

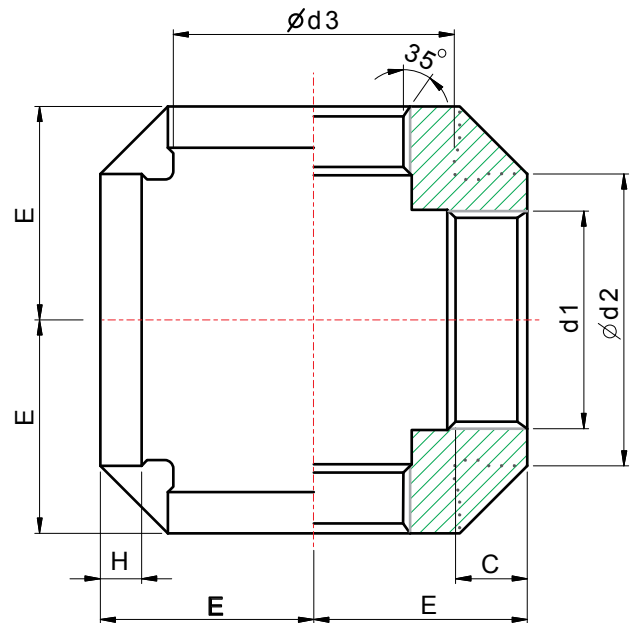
### DIMENSIONS

unit : inch

SIZE	d1	d2	d3	C	E	H	D1	D2	D3	C1	E1	I
1/8"	1/8"	0.59	0.47	0.28	0.71	0.20	1/8"	0.20	0.35	0.31	1.02	0.08
1/4"	1/4"	0.71	0.59	0.41	0.87	0.20	1/4"	0.24	0.47	0.43	1.22	0.08
3/8"	3/8"	0.89	0.79	0.41	0.87	0.24	3/8"	0.35	0.55	0.43	1.54	0.08
1/2"	1/2"	1.10	1.02	0.39	1.06	0.31	1/2"	0.55	0.75	0.51	1.61	0.08
3/4"	3/4"	1.42	1.30	0.47	1.30	0.35	3/4"	0.79	0.98	0.51	1.85	0.08
1"	1"	1.77	1.65	0.55	1.46	0.35	1"	0.98	1.22	0.73	2.09	0.08
1 1/4"	1 1/4"	2.05	1.97	0.67	1.73	0.43	1 1/4"	1.30	1.56	0.75	2.48	0.10
1 1/2"	1 1/2"	2.36	2.24	0.67	1.85	0.43	1 1/2"	1.57	1.83	0.75	2.72	0.10
2"	2"	2.87	2.72	0.71	2.32	0.51	2"	1.97	2.24	0.85	3.15	0.10
2 1/2"	2 1/2"	3.54	3.39	0.91	2.60	0.59	2 1/2"	2.24	2.60	0.94	4.13	0.16
3"	3"	4.17	3.98	0.94	3.09	0.65	3"	2.91	3.19	1.14	4.45	0.16
4"	4"	5.14	5.04	1.02	3.86	0.77	4"	3.82	4.17	1.34	5.12	0.16

# 150LB SCREWED FITTINGS

## CROSSES BANDED EQUAL



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)

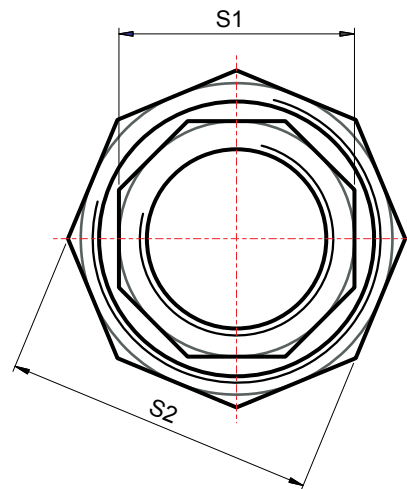
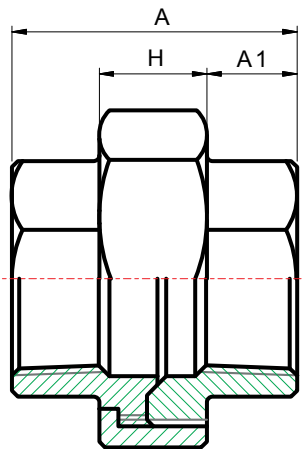
### DIMENSIONS

unit : inch

SIZE	d1	d2	d3	C	E	H
1/8"	1/8"	0.63	0.55	0.24	0.69	0.24
1/4"	1/4"	0.79	0.71	0.37	0.75	0.28
3/8"	3/8"	0.98	0.91	0.38	0.91	0.28
1/2"	1/2"	1.18	1.10	0.39	1.14	0.28
3/4"	3/4"	1.42	1.34	0.43	1.28	0.35
1"	1"	1.77	1.65	0.55	1.48	0.39
1 1/4"	1 1/4"	2.09	1.97	0.71	1.73	0.43
1 1/2"	1 1/2"	2.36	2.20	0.71	1.89	0.47
2"	2"	2.87	2.76	0.71	2.32	0.51
2 1/2"	2 1/2"	3.54	3.39	0.87	2.68	0.55
3"	3"	4.17	4.02	0.98	3.07	0.59
4"	4"	5.20	5.04	1.02	3.82	0.63

# 150LB SCREWED FITTINGS

## UNIONS F/F



### DESIGN FEATURES:

- THREAD: NPT
- CF8 (304) & CF8M (316)

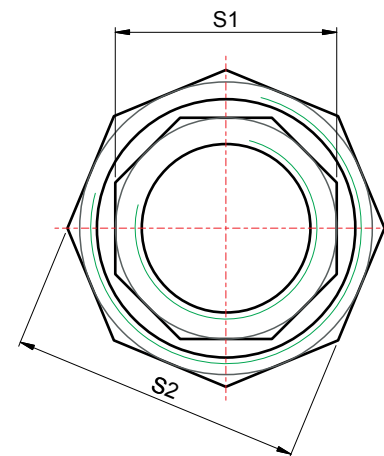
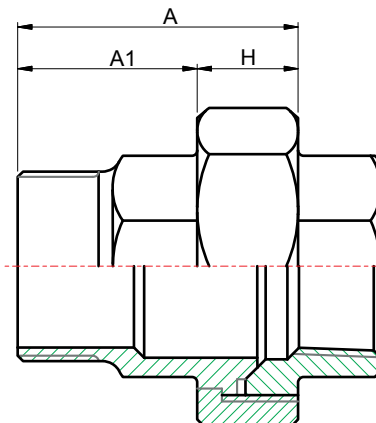
### DIMENSIONS

unit : inch

SIZE	A	A1	H	S1	S2
1/8"	1.46	0.47	0.59	0.71	1.14
1/4"	1.46	0.47	0.59	0.71	1.14
3/8"	1.54	0.47	0.63	0.91	1.42
1/2"	1.61	0.51	0.59	1.06	1.61
3/4"	1.65	0.63	0.63	1.26	1.93
1"	2.01	0.67	0.71	1.01	2.28
1 1/4"	2.05	0.63	0.83	1.97	2.68
1 1/2"	2.20	0.71	0.87	2.20	3.03
2"	2.36	0.71	0.98	2.72	3.62
2 1/2"	2.95	1.02	0.98	3.35	4.29
3"	3.50	1.18	1.14	3.90	4.92
4"	3.90	1.26	1.34	4.92	6.14

# 150LB SCREWED FITTINGS

## UNIONS M/F



### DESIGN FEATURES:

- THREAD: NPT
- CF8 (304) & CF8M (316)

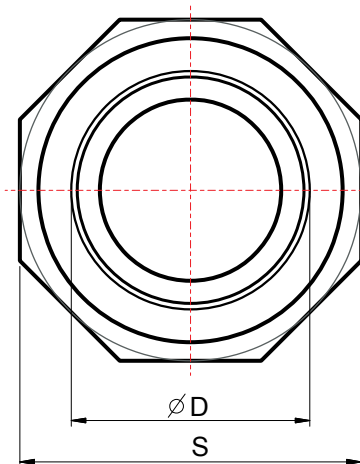
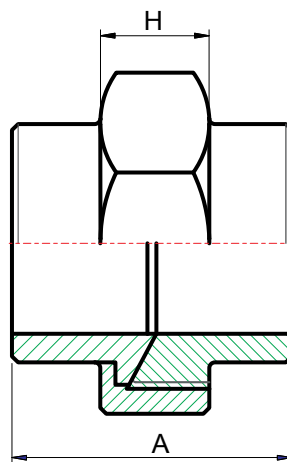
### DIMENSIONS

unit : inch

SIZE	A	A1	H	S1	S2
1/8"	2.05	1.06	0.59	0.71	1.14
1/4"	2.09	1.06	0.59	0.71	1.14
3/8"	2.24	1.22	0.59	0.91	1.42
1/2"	2.44	1.34	0.59	1.06	1.61
3/4"	2.60	1.34	0.63	1.26	1.93
1"	2.83	1.54	0.71	1.61	2.28
1 1/4"	3.07	1.65	0.83	1.97	2.68
1 1/2"	3.19	1.69	0.87	2.20	3.03
2"	3.46	1.85	0.98	2.72	3.62
2 1/2"	3.94	2.01	0.98	3.35	4.29
3"	4.69	2.44	1.14	3.90	4.92
4"	5.20	2.64	1.34	4.92	6.14

# 150LB SCREWED FITTINGS

## UNIONS B/W



### DESIGN FEATURES:

- THREAD: NPT
- CF8 (304) & CF8M (316)

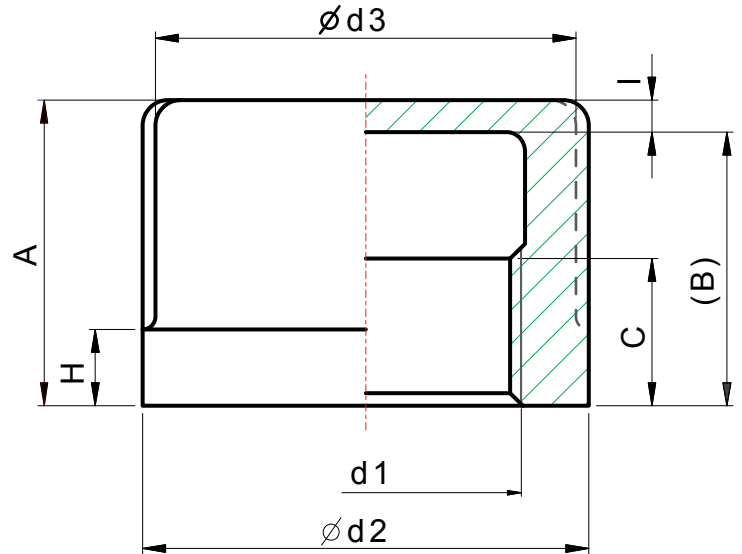
### DIMENSIONS

unit : inch

SIZE	A	D	S	H
1/4"	1.26	0.54	1.14	0.55
3/8"	1.50	0.68	1.42	0.55
1/2"	1.57	0.85	1.61	0.55
3/4"	1.85	1.07	1.93	0.55
1"	1.95	1.34	2.58	0.71
1 1/4"	2.13	1.69	2.67	0.75
1 1/2"	2.24	1.91	3.02	0.83
2"	2.36	2.39	3.60	0.94
2 1/2"	2.76	3.00	4.29	0.94
3"	3.19	3.51	4.92	1.10

# 150LB SCREWED FITTINGS

## ROUND CAPS



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)

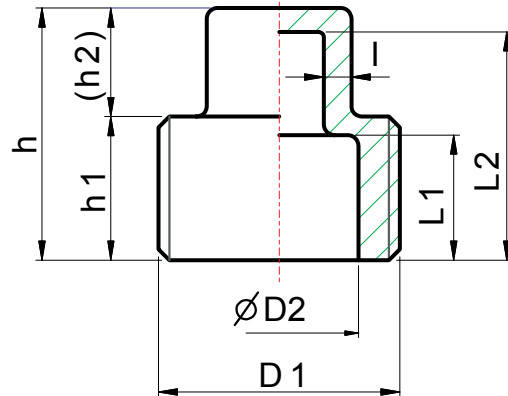
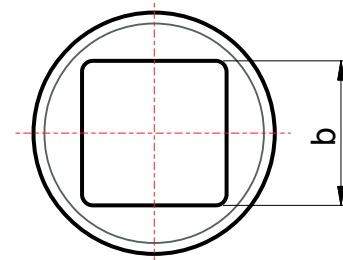
### DIMENSIONS

unit : inch

SIZE	d1	d2	d3	A	(B)	C	H	I
1/8"	1/8"	0.63	0.53	0.59	0.47	0.24	0.26	0.12
1/4"	1/4"	0.79	0.71	0.87	0.75	0.37	0.26	0.12
3/8"	3/8"	1.00	0.93	0.96	0.87	0.38	0.30	0.10
1/2"	1/2"	1.18	1.10	1.10	0.98	0.39	0.30	0.12
3/4"	3/4"	1.42	1.30	1.10	0.98	0.39	0.33	0.12
1"	1"	1.75	1.63	1.26	1.14	0.55	0.35	0.12
1 1/4"	1 1/4"	2.09	1.97	1.28	1.12	0.65	0.43	0.16
1 1/2"	1 1/2"	2.36	2.24	1.42	1.22	0.65	0.43	0.20
2"	2"	2.91	2.76	1.54	1.34	0.71	0.47	0.20
2 1/2"	2 1/2"	3.58	3.39	1.69	1.54	0.87	0.55	0.24
3"	3"	4.33	4.09	1.87	1.63	0.91	0.55	0.24
4"	4"	5.47	5.24	2.05	1.77	1.02	0.59	0.24

# 150LB SCREWED FITTINGS

## SQUARE HEAD PLUGS



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)

### DIMENSIONS

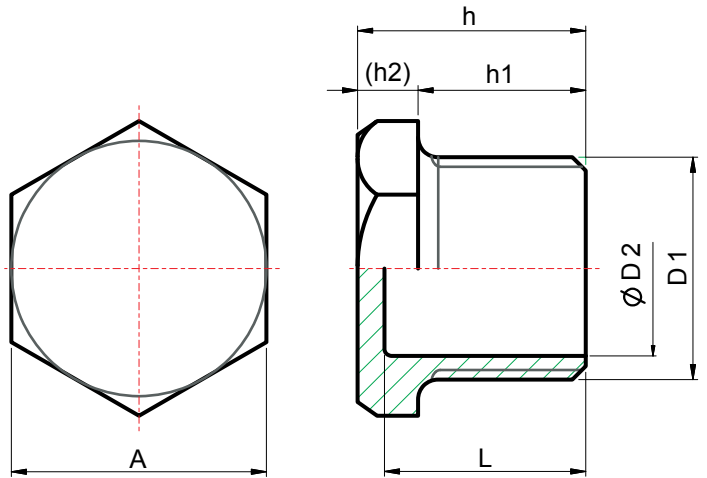
unit : inch

SIZE	b	D 1	D 2	L 1	L 2	h	h 1	(h 2)	l
1/8"	0.28	1/8"	-	-	-	0.71	0.39	0.31	-
1/4"	0.35	1/4"	-	-	-	0.75	0.39	0.35	-
3/8"	0.39	3/8"	-	-	-	0.79	0.43	0.35	-
1/2"	0.51	1/2"	0.57	0.47	0.83	0.91	0.51	0.39	0.10
3/4"	0.71	3/4"	0.71	0.57	1.02	1.18	0.71	0.47	0.10
1"	0.75	1"	0.98	0.71	1.22	1.30	0.83	0.47	0.10
1 1/4"	0.91	1 1/4"	1.34	0.75	1.42	1.54	0.91	0.63	0.10
1 1/2"	1.02	1 1/2"	1.54	0.83	1.42	1.57	0.91	0.67	0.10
2"	1.14	2"	1.97	0.91	1.65	1.77	1.02	0.75	0.10
2 1/2"	1.57	2 1/2"	2.36	0.94	1.61	1.89	1.10	0.79	0.12
3"	1.73	3"	2.95	1.06	1.97	2.13	1.26	0.87	0.12
4"	2.32	4"	3.98	1.22	2.17	2.32	1.46	0.87	0.12



# 150LB SCREWED FITTINGS

## HEX HEAD PLUGS



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)

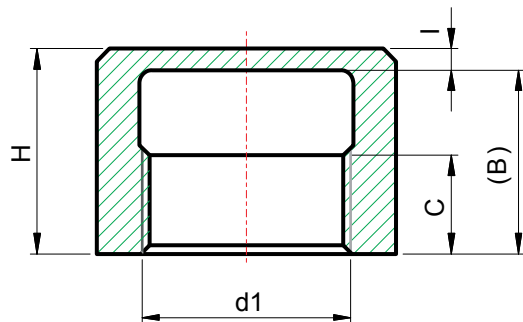
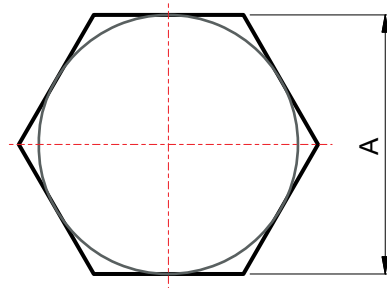
### DIMENSIONS

unit : inch

SIZE	D 1	D 2	L	A	h	h 1	(h 2)
1/8"	1/8"	—	—	0.55	0.71	0.43	0.24
1/4"	1/4"	—	—	0.67	0.91	0.67	0.24
3/8"	3/8"	0.35	0.81	0.83	0.93	0.67	0.26
1/2"	1/2"	0.57	0.98	1.02	1.10	0.79	0.31
3/4"	3/4"	0.71	0.98	1.26	1.10	0.79	0.31
1"	1"	1.02	1.18	1.50	1.34	0.98	0.35
1 1/4"	1 1/4"	1.34	1.22	1.81	1.38	0.98	0.39
1 1/2"	1 1/2"	1.52	1.30	2.05	1.42	0.98	0.43
2"	2"	1.97	1.34	2.56	1.48	1.02	0.45
2 1/2"	2 1/2"	2.36	1.38	3.15	1.57	1.10	0.47
3"	3"	2.95	1.54	3.74	1.77	1.26	0.51
4"	4"	3.94	1.77	4.72	2.01	1.46	0.55

# 150LB SCREWED FITTINGS

## HEX CAPS



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)

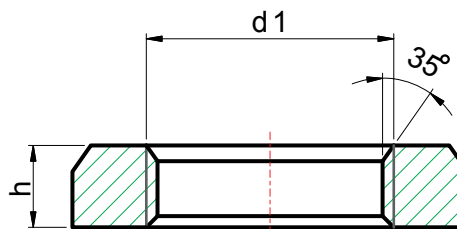
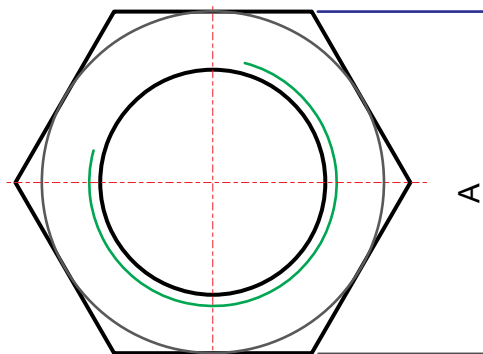
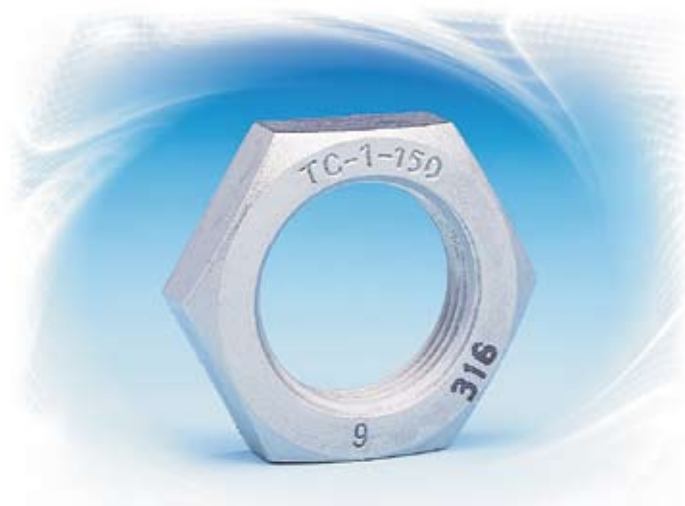
### DIMENSIONS

unit : inch

SIZE	d1	A	(B)	C	H	I
1/8"	1/8"	0.63	0.51	0.24	0.63	0.12
1/4"	1/4"	0.71	0.67	0.37	0.79	0.12
3/8"	3/8"	0.79	0.71	0.38	0.83	0.12
1/2"	1/2"	1.02	0.77	0.39	0.89	0.12
3/4"	3/4"	1.26	0.79	0.39	0.91	0.12
1"	1"	1.54	0.91	0.53	1.02	0.12
1 1/4"	1 1/4"	1.93	0.96	0.63	1.12	0.16
1 1/2"	1 1/2"	2.17	1.10	0.67	1.26	0.16
2"	2"	2.60	1.26	0.91	1.38	0.12
2 1/2"	2 1/2"	3.35	1.42	0.91	1.65	0.24
3"	3"	3.94	1.61	0.98	1.79	0.24
4"	4"	4.92	1.93	1.02	2.17	0.24

# 150LB SCREWED FITTINGS

## HEX NUTS



### DESIGN FEATURES:

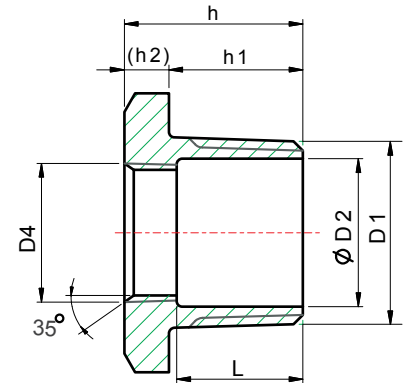
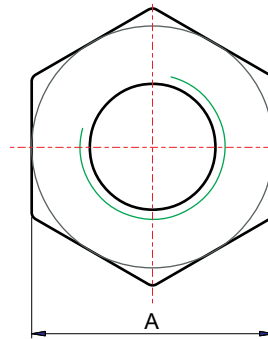
- THREAD: NPT
- CF8 (304) & CF8M (316)

### DIMENSIONS unit : inch

SIZE	d1	A	h
1/8"	1/8"	0.75	0.33
1/4"	1/4"	0.87	0.33
3/8"	3/8"	1.06	0.35
1/2"	1/2"	1.26	0.35
3/4"	3/4"	1.42	0.39
1"	1"	1.81	0.43
1 1/4"	1 1/4"	2.17	0.47
1 1/2"	1 1/2"	2.36	0.51
2"	2"	2.95	0.53
2 1/2"	2 1/2"	3.54	0.69
3"	3"	3.94	0.83
4"	4"	5.12	0.87

# 150LB SCREWED FITTINGS

## HEX BUSHINGS



### DESIGN FEATURES:

- THREAD: NPT
- CF8 (304) & CF8M (316)

### DIMENSIONS

unit : inch

SIZE	A	L	D1	D2	D4	h	h1	(h2)
1/4"x1/8"	0.67	0.59	1/4"	0.33	1/8"	0.89	0.67	0.22
3/8"x1/8"	0.87	0.59	3/8"	0.43	1/8"	0.91	0.67	0.24
3/8"x1/4"	0.87	-	3/8"	0.43	1/4"	0.91	0.67	0.24
1/2"x1/8"	1.02	0.67	1/2"	0.57	1/8"	1.00	0.79	0.22
1/2"x1/4"	1.02	0.67	1/2"	0.57	1/4"	1.00	0.79	0.22
1/2"x3/8"	1.02	-	1/2"	0.57	3/8"	1.00	0.79	0.22
3/4"x1/8"	1.26	0.69	3/4"	0.71	1/8"	1.04	0.79	0.26
3/4"x1/4"	1.26	0.69	3/4"	0.71	1/4"	1.04	0.79	0.26
3/4"x3/8"	1.26	0.69	3/4"	0.71	3/8"	1.04	0.79	0.26
3/4"x1/2"	1.26	-	3/4"	0.71	1/2"	1.04	0.79	0.26
1"x1/8"	1.50	0.96	1"	1.02	1/8"	1.32	1.00	0.31
1"x1/4"	1.50	0.96	1"	1.02	1/4"	1.32	1.00	0.31
1"x3/8"	1.50	0.96	1"	1.02	3/8"	1.32	1.00	0.31
1"x1/2"	1.50	0.87	1"	1.02	1/2"	1.32	1.00	0.31
1"x3/4"	1.50	0.81	1"	1.02	3/4"	1.32	1.00	0.31
1 1/4"x1/8"	1.81	1.02	1 1/4"	13.8	1/8"	1.34	1.02	0.31
1 1/4"x1/4"	1.81	0.96	1 1/4"	13.8	1/4"	1.34	1.02	0.31
1 1/4"x3/8"	1.81	0.96	1 1/4"	13.8	3/8"	1.34	1.02	0.31
1 1/4"x1/2"	1.81	0.91	1 1/4"	13.8	1/2"	1.34	1.02	0.31
1 1/4"x3/4"	1.81	0.83	1 1/4"	13.8	3/4"	1.34	1.02	0.31
1 1/4"x1"	1.81	0.77	1 1/4"	13.8	1"	1.34	1.02	0.31

# 150LB SCREWED FITTINGS

## HEX BUSHINGS

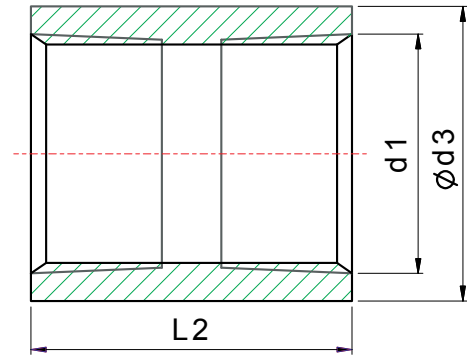
### DIMENSIONS

unit : inch

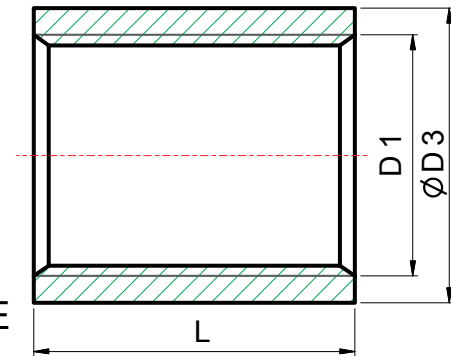
SIZE	A	L	D1	D2	D4	h	h1	(h2)
1 1/2"x1/8"	2.05	1.06	1 1/2"	1.57	1/8"	1.42	1.02	0.39
1 1/2"x1/4"	2.05	1.06	1 1/2"	1.57	1/4"	1.42	1.02	0.39
1 1/2"x3/8"	2.05	1.02	1 1/2"	1.57	3/8"	1.42	1.02	0.39
1 1/2"x1/2"	2.05	0.94	1 1/2"	1.57	1/2"	1.42	1.02	0.39
1 1/2"x3/4"	2.05	0.91	1 1/2"	1.57	3/4"	1.42	1.02	0.39
1 1/2"x1"	2.05	0.83	1 1/2"	1.57	1"	1.42	1.02	0.39
1 1/2"x1 1/4"	2.05	0.73	1 1/2"	1.57	1 1/4"	1.42	1.02	0.39
2"x1/8"	2.48	1.10	2"	2.01	1/8"	1.42	1.00	0.41
2"x1/4"	2.48	1.06	2"	2.01	1/4"	1.42	1.00	0.41
2"x3/8"	2.48	1.06	2"	2.01	3/8"	1.42	1.00	0.41
2"x1/2"	2.48	0.98	2"	2.01	1/2"	1.42	1.00	0.41
2"x3/4"	2.48	0.91	2"	2.01	3/4"	1.42	1.00	0.41
2"x1"	2.48	0.87	2"	2.01	1"	1.42	1.00	0.41
2"x1 1/4"	2.48	0.79	2"	2.01	1 1/4"	1.42	1.00	0.41
2"x1 1/2"	2.48	0.79	2"	2.01	1 1/2"	1.42	1.00	0.41
2 1/2"x1/2"	3.15	1.52	2 1/2"	2.48	1/2"	1.93	1.46	0.47
2 1/2"x3/4"	3.15	1.44	2 1/2"	2.48	3/4"	1.93	1.46	0.47
2 1/2"x1"	3.15	1.36	2 1/2"	2.48	1"	1.93	1.46	0.47
2 1/2"x1 1/4"	3.15	1.24	2 1/2"	2.48	1 1/4"	1.93	1.46	0.47
2 1/2"x1 1/2"	3.15	1.18	2 1/2"	2.48	1 1/2"	1.93	1.46	0.47
2 1/2"x2"	3.15	1.14	2 1/2"	2.48	2"	1.93	1.46	0.47
3"x1/2"	3.74	1.54	3"	3.03	1/2"	1.97	1.46	0.51
3"x3/4"	3.74	1.46	3"	3.03	3/4"	1.97	1.46	0.51
3"x1"	3.74	1.38	3"	3.03	1"	1.97	1.46	0.51
3"x1 1/4"	3.74	1.26	3"	3.03	1 1/4"	1.97	1.46	0.51
3"x1 1/2"	3.74	1.22	3"	3.03	1 1/2"	1.97	1.46	0.51
3"x2"	3.74	1.18	3"	3.03	2"	1.97	1.46	0.51
3"x2 1/2"	3.74	1.02	3"	3.03	2 1/2"	1.97	1.46	0.51
4"x1/2"	4.72	1.57	4"	3.98	1/2"	2.01	1.46	0.55
4"x3/4"	4.72	1.52	4"	3.98	3/4"	2.01	1.46	0.55
4"x1"	4.72	1.42	4"	3.98	1"	2.01	1.46	0.55
4"x1 1/4"	4.72	1.32	4"	3.98	1 1/4"	2.01	1.46	0.55
4"x1 1/2"	4.72	1.26	4"	3.98	1 1/2"	2.01	1.46	0.55
4"x2"	4.72	1.22	4"	3.98	2"	2.01	1.46	0.55
4"x2 1/2"	4.72	1.10	4"	3.98	2 1/2"	2.01	1.46	0.55
4"x3"	4.72	1.02	4"	3.98	3"	2.01	1.46	0.55

# 150LB SCREWED FITTINGS

## COUPLINGS / SOCKETS



BSPT, NPT



BSP, DIN 2999

### DESIGN FEATURES:

- ☛ THREAD: NPT
- ☛ CF8 (304) & CF8M (316)
- ☛ MADE FROM STAINLESS STEEL WELDED PIPE

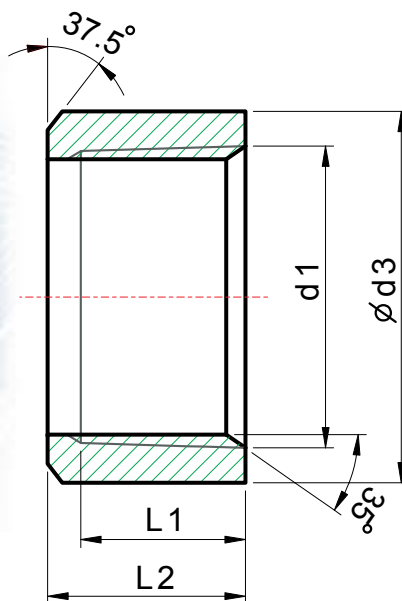
### DIMENSIONS

unit : inch

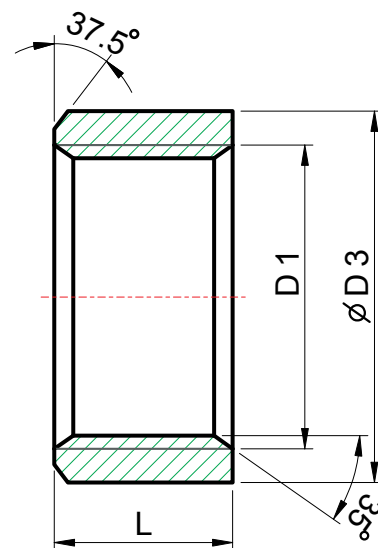
SIZE	d1	BSPT, NPT		D1	BSP, DIN 2999	
		d3	L2		D3	L
1/8"	1/8"	0.55	0.79	1/8"	0.55	0.79
1/4"	1/4"	0.73	1.06	1/4"	0.73	0.98
3/8"	3/8"	0.85	1.10	3/8"	0.85	1.02
1/2"	1/2"	1.04	1.42	1/2"	1.04	1.34
3/4"	3/4"	1.26	1.54	3/4"	1.26	1.42
1"	1"	1.56	1.69	1"	1.56	1.69
1 1/4"	1 1/4"	1.91	1.89	1 1/4"	1.91	1.89
1 1/2"	1 1/2"	2.15	1.89	1 1/2"	2.15	1.89
2"	2"	2.62	2.20	2"	2.62	2.20
2 1/2"	2 1/2"	3.31	2.56	2 1/2"	3.31	2.56
3"	3"	3.94	2.80	3"	3.74	2.80
4"	4"	5.08	3.27	4"	4.80	3.27
5"	5"	6.36	3.54	—	—	—
6"	6"	7.28	3.96	—	—	—

# 150LB SCREWED FITTINGS

## HALF COUPLINGS / HALF SOCKETS



BSPT, NPT



BSP, DIN 2999

### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)
- 🔴 MADE FROM STAINLESS STEEL WELDED PIPE

### DIMENSIONS

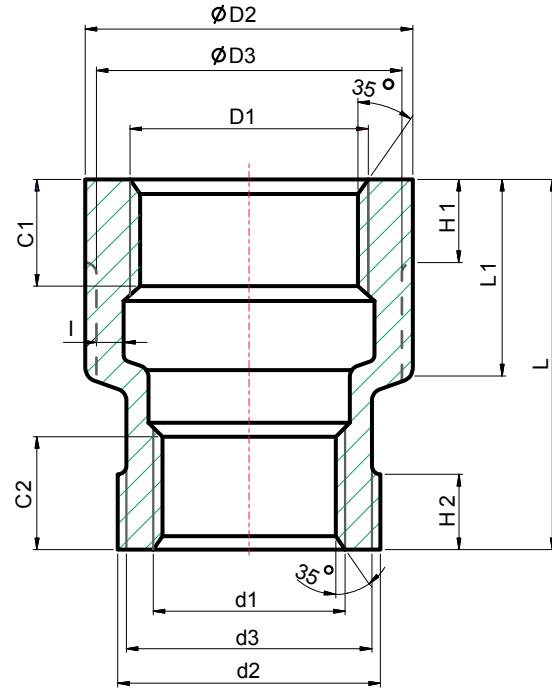
unit : inch

SIZE	d1	BSPT, NPT		D1	BSP, DIN 2999	
		d3	L2		D3	L
1/8"	1/8"	0.56	0.43	1/8"	0.55	0.43
1/4"	1/4"	0.73	0.51	1/4"	0.73	0.43
3/8"	3/8"	0.85	0.55	3/8"	0.85	0.47
1/2"	1/2"	1.04	0.71	1/2"	1.04	0.59
3/4"	3/4"	1.26	0.79	3/4"	1.26	0.67
1"	1"	1.56	0.83	1"	1.56	0.75
1 1/4"	1 1/4"	1.91	0.94	1 1/4"	1.91	0.87
1 1/2"	1 1/2"	2.15	0.94	1 1/2"	2.15	0.87
2"	2"	2.62	1.10	2"	2.62	1.02
2 1/2"	2 1/2"	3.31	1.30	2 1/2"	3.23	1.18
3"	3"	3.94	1.42	3"	3.74	1.30
4"	4"	5.08	1.65	4"	4.80	1.57



# 150LB SCREWED FITTINGS

## REDUCING COUPLINGS



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316).

### DIMENSIONS

unit : inch

SIZE	D1	D2	D3	C1	H1	d1	d2	d3	C2	H2	L1	L	I
1/4"x1/8"	1/4"	0.79	0.71	0.31	0.24	1/8"	0.63	0.55	0.43	0.28	0.63	1.12	0.12
3/8"x1/8"	3/8"	1.00	0.91	0.37	0.28	1/8"	0.63	0.55	0.47	0.24	0.91	1.61	0.12
3/8"x1/4"	3/8"	1.00	0.91	0.38	0.28	1/4"	0.79	0.71	0.51	0.24	0.91	1.61	0.12
1/2"x1/8"	1/2"	1.18	1.10	0.39	0.31	1/8"	0.63	0.55	0.35	0.28	0.94	1.77	0.10
1/2"x1/4"	1/2"	1.18	1.10	0.39	0.31	1/4"	0.79	0.71	0.49	0.28	0.94	1.77	0.10
1/2"x3/8"	1/2"	1.18	1.10	0.39	0.31	3/8"	1.00	0.91	0.39	0.31	0.94	1.77	0.10
3/4"x1/8"	3/4"	1.42	1.30	0.39	0.35	1/8"	0.63	0.55	0.43	0.31	0.87	1.77	0.12
3/4"x1/4"	3/4"	1.42	1.30	0.39	0.35	1/4"	0.79	0.71	0.43	0.31	1.02	1.77	0.12
3/4"x3/8"	3/4"	1.42	1.30	0.39	0.35	3/8"	1.00	0.91	0.59	0.31	0.98	1.77	0.12
3/4"x1/2"	3/4"	1.42	1.30	0.39	0.35	1/2"	1.18	1.10	0.59	0.31	0.98	1.77	0.12
1"x1/8"	1"	1.77	1.65	0.55	0.35	1/8"	0.63	0.55	0.47	0.31	1.02	1.97	0.12
1"x1/4"	1"	1.77	1.65	0.55	0.43	1/4"	0.79	0.71	0.47	0.31	1.10	1.97	0.12
1"x3/8"	1"	1.77	1.65	0.55	0.43	3/8"	1.00	0.91	0.51	0.31	1.10	1.97	0.12
1"x1/2"	1"	1.77	1.65	0.55	0.43	1/2"	1.18	1.10	0.51	0.35	1.14	1.97	0.12
1"x3/4"	1"	1.77	1.65	0.55	0.43	3/4"	1.42	1.30	0.55	0.43	1.10	1.97	0.12
1 1/4"x1/4"	1 1/4"	2.09	1.97	0.71	0.43	1/4"	0.79	0.71	0.59	0.24	1.14	1.97	0.14
1 1/4"x3/8"	1 1/4"	2.09	1.97	0.71	0.43	3/8"	1.00	0.91	0.47	0.31	1.14	1.97	0.14
1 1/4"x1/2"	1 1/4"	2.09	1.97	0.63	0.43	1/2"	1.18	1.10	0.51	0.39	1.18	1.97	0.14
1 1/4"x3/4"	1 1/4"	2.09	1.97	0.63	0.47	3/4"	1.42	1.30	0.51	0.39	1.18	1.97	0.14
1 1/4"x1"	1 1/4"	2.09	1.97	0.63	0.47	1"	1.77	1.61	0.71	0.43	1.18	1.97	0.14

# 150LB SCREWED FITTINGS

## REDUCING COUPLINGS

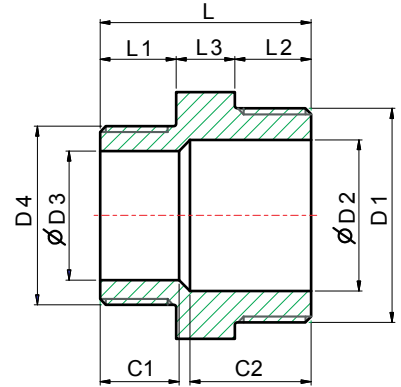
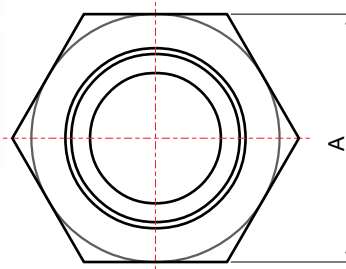
### DIMENSIONS

unit : inch

SIZE	D1	D2	D3	C1	H1	d1	d2	d3	C2	H2	L1	L	I
1 1/2"x1/4"	1 1/2"	2.36	2.22	0.71	0.47	1/4"	0.79	0.71	0.71	0.24	1.22	2.24	0.14
1 1/2"x3/8"	1 1/2"	2.36	2.22	0.71	0.47	3/8"	1.00	0.91	0.71	0.31	1.22	2.24	0.14
1 1/2"x1/2"	1 1/2"	2.36	2.22	0.63	0.47	1/2"	1.18	1.10	0.57	0.35	1.22	2.24	0.14
1 1/2"x3/4"	1 1/2"	2.36	2.22	0.63	0.47	3/4"	1.42	1.30	0.61	0.39	1.22	2.24	0.14
1 1/2"x1"	1 1/2"	2.36	2.22	0.63	0.47	1"	1.77	1.61	0.67	0.43	1.22	2.24	0.14
1 1/2"x1 1/4"	1 1/2"	2.36	2.22	0.71	0.47	1 1/4"	2.09	1.97	0.67	0.47	1.22	2.24	0.14
2"x1/4"	2"	2.91	2.76	0.71	0.51	1/4"	0.79	0.71	0.63	0.20	1.50	2.64	0.16
2"x3/8"	2"	2.91	2.76	0.71	0.51	3/8"	1.00	0.91	0.51	0.31	1.50	2.64	0.16
2"x1/2"	2"	2.91	2.76	0.71	0.51	1/2"	1.18	1.10	0.59	0.35	1.50	2.64	0.16
2"x3/4"	2"	2.91	2.76	0.71	0.51	3/4"	1.42	1.30	0.69	0.39	1.50	2.64	0.16
2"x1"	2"	2.91	2.76	0.63	0.51	1"	1.77	1.61	0.67	0.43	1.50	2.64	0.16
2"x1 1/4"	2"	2.91	2.76	0.71	0.51	1 1/4"	2.09	1.97	0.67	0.47	1.50	2.64	0.16
2"x1 1/2"	2"	2.91	2.76	0.71	0.55	1 1/2"	2.36	2.22	0.59	0.47	1.57	2.64	0.16
2 1/2"x3/4"	2 1/2"	3.54	3.39	0.91	0.55	3/4"	1.42	1.30	0.75	0.35	1.69	2.99	0.26
2 1/2"x1"	2 1/2"	3.54	3.39	0.91	0.55	1"	1.77	1.61	0.75	0.43	1.69	2.99	0.26
2 1/2"x1 1/4"	2 1/2"	3.54	3.39	0.91	0.55	1 1/4"	2.09	1.97	0.87	0.47	1.69	2.99	0.26
2 1/2"x1 1/2"	2 1/2"	3.54	3.39	0.91	0.59	1 1/2"	2.36	2.22	0.91	0.47	1.69	2.99	0.26
2 1/2"x2"	2 1/2"	3.54	3.39	0.91	0.55	2"	2.91	2.76	0.87	0.55	1.69	2.99	0.26
3"x1/2"	-	-	-	-	-	-	-	-	-	-	-	-	-
3"x3/4"	3"	4.29	4.09	0.94	0.59	3/4"	1.42	1.30	0.55	0.39	1.93	3.35	0.26
3"x1"	3"	4.29	4.09	0.94	0.59	1"	1.77	1.61	0.63	0.43	1.93	3.31	0.26
3"x1 1/4"	3"	4.29	4.09	0.94	0.59	1 1/4"	2.09	1.97	0.75	0.47	1.93	3.31	0.26
3"x1 1/2"	3"	4.29	4.09	0.94	0.63	1 1/2"	2.36	2.22	0.79	0.51	1.93	3.35	0.26
3"x2"	3"	4.29	4.09	0.94	0.59	2"	2.91	2.76	0.79	0.51	1.69	3.31	0.26
3"x2 1/2"	3"	4.29	4.09	0.94	0.59	2 1/2"	3.54	3.39	1.02	0.65	1.93	3.27	0.26
4"x1"	4"	5.43	5.20	0.98	0.63	1"	1.77	1.61	0.94	0.43	2.17	3.82	0.26
4"x1 1/4"	4"	5.43	5.20	0.98	0.63	1 1/4"	2.09	1.97	0.87	0.47	2.09	3.74	0.26
4"x1 1/2"	4"	5.43	5.20	0.98	0.63	1 1/2"	2.36	2.22	0.94	0.51	2.09	3.74	0.26
4"x2"	4"	5.43	5.20	0.98	0.63	2"	2.91	2.76	0.94	0.55	2.09	3.82	0.26
4"x2 1/2"	4"	5.43	5.20	0.98	0.63	2 1/2"	3.54	3.39	1.14	0.59	2.09	3.78	0.26
4"x3"	4"	5.43	5.20	0.98	0.67	3"	4.29	4.09	0.98	0.63	2.17	3.86	0.26

# 150LB SCREWED FITTINGS

## REDUCING HEX NIPPLE



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316).

### DIMENSIONS

unit : inch

SIZE	A	D1	D2	D3	D4	C1	C2	L	L1	L2	L3
1/4"x1/8"	0.67	1/4"	0.33	0.20	1/8"	0.47	0.71	1.24	0.43	0.47	0.33
3/8"x1/8"	0.83	3/8"	0.41	0.20	1/8"	0.43	0.83	1.38	0.43	0.51	0.39
3/8"x1/4"	0.83	3/8"	0.41	0.33	1/4"	0.55	0.79	1.38	0.47	0.51	0.39
1/2"x1/8"	1.02	1/2"	0.57	0.20	1/8"	0.47	0.83	1.54	0.47	0.67	0.39
1/2"x1/4"	1.02	1/2"	0.57	0.33	1/4"	0.47	0.87	1.54	0.47	0.67	0.39
1/2"x3/8"	1.02	1/2"	0.57	0.41	3/8"	0.59	0.87	1.54	0.51	0.63	0.39
3/4"x1/8"	1.26	3/4"	0.79	0.20	1/8"	0.47	1.06	1.61	0.41	0.75	0.45
3/4"x1/4"	1.26	3/4"	0.79	0.33	1/4"	0.59	1.02	1.65	0.47	0.75	0.45
3/4"x3/8"	1.26	3/4"	0.79	0.41	3/8"	0.47	0.98	1.65	0.47	0.75	0.45
3/4"x1/2"	1.26	3/4"	0.79	0.57	1/2"	0.67	0.98	1.77	0.59	0.75	0.45
1"x1/4"	1.50	1"	1.00	0.33	1/4"	0.59	1.10	1.79	0.53	0.79	0.47
1"x3/8"	1.50	1"	1.00	0.41	3/8"	0.59	1.10	1.77	0.51	0.79	0.47
1"x1/2"	1.50	1"	1.00	0.57	1/2"	0.71	1.10	1.89	0.63	0.79	0.47
1"x3/4"	1.50	1"	1.00	0.79	3/4"	0.79	1.14	2.01	0.75	0.79	0.47
1 1/4"x1/4"	1.81	1 1/4"	1.34	0.33	1/4"	0.59	1.14	1.85	0.55	0.83	0.47
1 1/4"x3/8"	1.81	1 1/4"	1.34	0.41	3/8"	0.71	1.18	1.93	0.55	0.91	0.47
1 1/4"x1/2"	1.81	1 1/4"	1.34	0.57	1/2"	0.71	1.18	2.01	0.55	0.87	0.47
1 1/4"x3/4"	1.81	1 1/4"	1.34	0.79	3/4"	0.75	1.26	2.17	0.75	0.94	0.47
1 1/4"x1"	1.81	1 1/4"	1.34	1.00	1"	0.87	1.14	2.13	0.79	0.87	0.47

# 150LB SCREWED FITTINGS

## REDUCING HEX NIPPLE

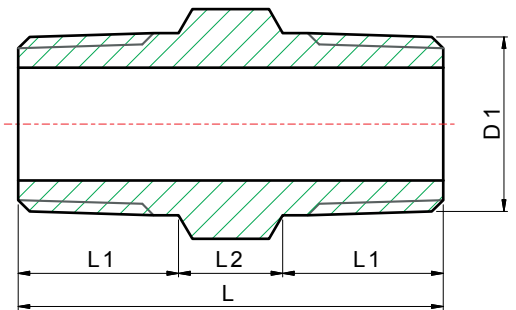
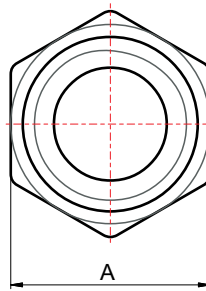
### DIMENSIONS

unit : inch

SIZE	A	D1	D2	D3	D4	C1	C2	L	L1	L2	L3
1 1/2"x1/4"	2.13	1 1/2"	1.54	0.33	1/4"	0.59	1.22	1.89	0.49	0.89	0.51
1 1/2"x3/8"	2.13	1 1/2"	1.54	0.41	3/8"	0.59	1.22	1.89	0.49	0.89	0.51
1 1/2"x1/2"	2.13	1 1/2"	1.54	0.57	1/2"	0.67	1.26	1.97	0.57	0.89	0.51
1 1/2"x3/4"	2.13	1 1/2"	1.54	0.79	3/4"	0.83	1.22	2.09	0.69	0.89	0.51
1 1/2"x1"	2.13	1 1/2"	1.54	1.00	1"	0.94	1.14	2.13	0.77	0.85	0.51
1 1/2"x1 1/4"	2.13	1 1/2"	1.54	1.34	1 1/4"	0.98	1.14	2.28	0.89	0.89	0.51
2"x1/4"	2.48	2"	2.01	0.33	1/4"	0.63	1.46	2.17	0.51	1.02	0.63
2"x3/8"	2.48	2"	2.01	0.41	3/8"	0.67	1.46	2.24	0.59	1.02	0.63
2"x1/2"	2.48	2"	2.01	0.57	1/2"	0.71	1.46	2.28	0.67	0.98	0.63
2"x3/4"	2.48	2"	2.01	0.79	3/4"	0.71	1.42	2.36	0.71	1.02	0.63
2"x1"	2.48	2"	2.01	1.00	1"	0.87	1.42	2.44	0.79	1.02	0.63
2"x1 1/4"	2.48	2"	2.01	1.34	1 1/4"	0.91	1.46	2.48	0.83	1.02	0.63
2"x1 1/2"	2.48	2"	2.01	1.54	1 1/2"	0.98	1.46	2.56	0.91	1.02	0.63
2 1/2"x1/2"	3.15	2 1/2"	2.52	0.57	1/2"	0.79	1.54	2.44	0.63	1.18	0.63
2 1/2"x3/4"	3.15	2 1/2"	2.52	0.79	3/4"	0.87	1.50	2.48	0.71	1.14	0.63
2 1/2"x1"	3.15	2 1/2"	2.52	1.00	1"	0.94	1.50	2.56	0.79	1.14	0.63
2 1/2"x1 1/4"	3.15	2 1/2"	2.52	1.34	1 1/4"	1.02	1.46	2.64	0.87	1.14	0.63
2 1/2"x1 1/2"	3.15	2 1/2"	2.52	1.54	1 1/2"	1.06	1.50	2.68	0.91	1.14	0.63
2 1/2"x2"	3.15	2 1/2"	2.52	2.01	2"	1.10	1.46	2.72	0.98	1.10	0.63
3"x1/2"	3.74	3"	2.99	0.57	1/2"	1.04	1.65	2.60	0.63	1.30	0.67
3"x3/4"	3.74	3"	2.99	0.79	3/4"	0.87	1.69	2.83	0.91	1.26	0.67
3"x1"	3.74	3"	2.99	1.00	1"	0.94	1.69	2.76	0.79	1.30	0.67
3"x1 1/4"	3.74	3"	2.99	1.34	1 1/4"	1.02	1.69	2.83	0.87	1.30	0.67
3"x1 1/2"	3.74	3"	2.99	1.54	1 1/2"	1.06	1.69	2.87	0.91	1.30	0.67
3"x2"	3.74	3"	2.99	2.01	2"	1.14	1.69	2.95	0.98	1.30	0.67
3"x2 1/2"	3.74	3"	2.99	2.52	2 1/2"	1.22	1.69	3.03	1.06	1.30	0.67
4"x3/4"	4.72	4"	4.02	0.79	3/4"	0.87	1.89	2.87	0.71	1.50	0.67
4"x1"	4.72	4"	4.02	1.00	1"	0.98	1.89	2.95	0.79	1.50	0.67
4"x1 1/4"	4.72	4"	4.02	1.34	1 1/4"	0.98	1.89	2.99	0.83	1.50	0.67
4"x1 1/2"	4.72	4"	4.02	1.54	1 1/2"	1.18	1.89	3.19	1.02	1.50	0.67
4"x2"	4.72	4"	4.02	2.01	2"	1.14	1.89	3.15	0.98	1.50	0.67
4"x2 1/2"	4.72	4"	4.02	2.52	2 1/2"	1.26	1.89	3.27	1.10	1.50	0.67
4"x3"	4.72	4"	4.02	3.03	3"	1.42	1.89	3.43	1.26	1.50	0.67

# 150LB SCREWED FITTINGS

## HEX NIPPLE



### DESIGN FEATURES:

- THREAD: NPT
- CF8 (304) & CF8M (316).

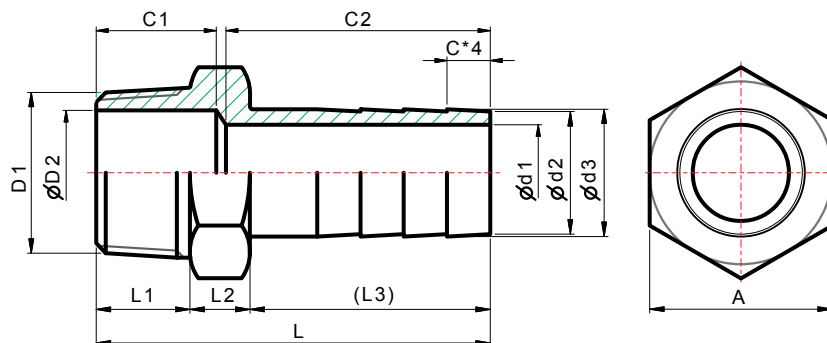
### DIMENSIONS

unit : inch

SIZE	D 1	A	L	L 1	L 2
1/8"	1/8"	0.51	1.22	0.47	0.28
1/4"	1/4"	0.59	1.30	0.51	0.28
3/8"	3/8"	0.79	1.65	0.67	0.31
1/2"	1/2"	0.91	1.97	0.79	0.39
3/4"	3/4"	1.14	2.01	0.79	0.43
1"	1"	1.42	2.48	1.00	0.47
1 1/4"	1 1/4"	1.81	2.32	0.93	0.47
1 1/2"	1 1/2"	2.01	2.52	0.98	0.55
2"	2"	2.48	2.68	1.06	0.55
2 1/2"	2 1/2"	3.15	2.87	1.10	0.67
3"	3"	3.74	3.39	1.34	0.71
4"	4"	4.72	3.54	1.42	0.71

# 150LB SCREWED FITTINGS

## HOSE NIPPLE



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)
- 🔴 2 1/2" NPT THREADED IS NOT AVAILABLE
- 🔴 INCLUDING CF8 (304) ALL THREADS & CF8M (316) NPT THREAD

### DIMENSIONS

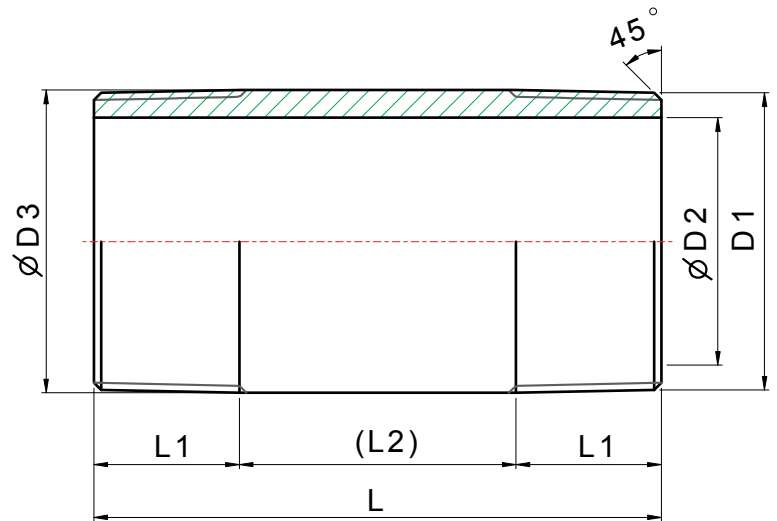
unit : inch

SIZE	A	D1	D2	C	C1	C2	L	L1	L2	(L3)	d1	d2	d3
1/4"	0.63	1/4"	0.26	0.16	0.67	1.10	1.83	0.51	0.39	0.93	0.20	0.31	0.35
3/8"	0.75	3/8"	0.37	0.22	0.71	1.30	2.24	0.51	0.39	1.12	0.26	0.39	0.43
1/2"	0.98	1/2"	0.57	0.26	0.75	1.61	2.46	0.61	0.39	1.46	0.57	0.53	0.57
3/4"	1.22	3/4"	0.71	0.33	0.91	1.89	2.85	0.71	0.45	1.69	0.57	0.77	0.81
1"	1.50	1"	1.02	0.35	0.98	2.17	3.23	0.77	0.49	1.97	0.79	1.00	1.05
1 1/4"	1.81	1 1/4"	1.38	0.37	1.10	1.89	3.15	0.89	0.49	2.09	1.06	1.28	1.34
1 1/2"	2.05	1 1/2"	1.57	0.41	1.22	2.28	3.64	0.91	0.53	2.20	1.30	1.52	1.59
2"	2.56	2"	2.03	0.51	1.30	2.91	4.31	0.96	0.59	2.76	1.77	1.99	2.07
2 1/2"	3.15	2 1/2"	2.64	0.63	1.46	3.74	5.35	1.06	0.63	3.66	2.08	2.44	2.52
3"	3.78	3"	3.07	0.67	1.69	3.94	5.79	1.30	0.67	3.82	2.76	2.95	3.07
4"	4.72	4"	4.02	0.83	1.89	4.13	6.22	1.42	0.71	4.09	3.54	3.98	4.09



# NIPPLES

## BARREL NIPPLE



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)
- 🔴 MADE FROM STAINLESS STEEL WELDED PIPE

### DIMENSIONS

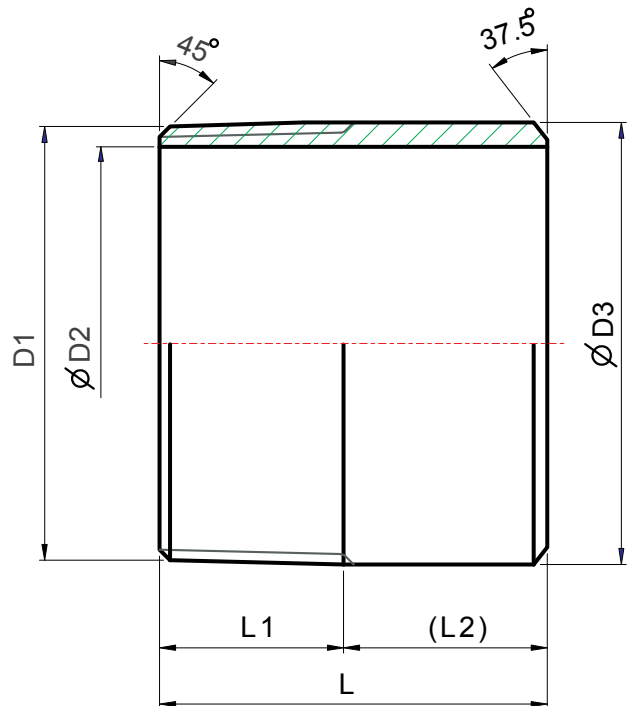
unit : inch

SIZE	D 1	D 2	D 3	L	L 1	(L 2)
1/8"	1/8"	0.24	0.39	1.57	0.41	0.75
1/4"	1/4"	0.35	0.53	1.57	0.47	0.63
3/8"	3/8"	0.47	0.67	1.57	0.47	0.63
1/2"	1/2"	0.63	0.83	2.36	0.67	1.02
3/4"	3/4"	0.83	1.06	2.36	0.67	1.02
1"	1"	1.06	1.32	2.36	0.75	0.87
1 1/4"	1 1/4"	1.38	1.65	3.15	0.87	1.42
1 1/2"	1 1/2"	1.61	1.89	3.15	0.87	1.42
2"	2"	2.09	2.38	3.94	1.02	1.89
2 1/2"	2 1/2"	2.60	2.99	3.94	1.02	1.89
3"	3"	3.11	3.50	4.72	1.18	2.36
4"	4"	4.06	4.49	4.72	1.38	1.97



# NIPPLES

## WELDING NIPPLE



### DESIGN FEATURES:

- 🔴 THREAD: NPT
- 🔴 CF8 (304) & CF8M (316)
- 🔴 MADE FROM STAINLESS STEEL WELDED PIPE

### DIMENSIONS

unit : inch

SIZE	D 1	D 2	D 3	L	L 1	(L 2)
1/8"	1/8"	0.24	0.39	1.18	0.39	0.79
1/4"	1/4"	0.35	0.53	1.18	0.47	0.71
3/8"	3/8"	0.47	0.67	1.18	0.47	0.71
1/2"	1/2"	0.63	0.83	1.38	0.67	0.71
3/4"	3/4"	0.83	1.06	1.57	0.75	0.83
1"	1"	1.06	1.32	1.57	0.75	0.83
1 1/4"	1 1/4"	1.38	1.65	1.97	0.87	1.10
1 1/2"	1 1/2"	1.61	1.89	1.97	0.87	1.10
2"	2"	2.09	2.38	1.97	0.98	0.98
2 1/2"	2 1/2"	2.06	2.99	2.36	0.98	1.38
3"	3"	3.11	3.50	2.76	1.18	1.57
4"	4"	4.06	4.49	3.15	1.38	1.77

# 150LB SCREWED FITTINGS

## STANDARD PACKING QUALITY FOR EACH CARTON WEIGHT LIST

unit:pcs

ITEM	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
90 ELBOWS BANDED EQUAL (9LB)	400	400	250	125	75	40	25	18	10	5	3	1
TEES BANDED EQUAL (TEB)	* 200	250	125	75	50	30	16	14	8	4	2	1
45 ELBOWS BANDED EQUAL (4LB)	550	350	250	125	75	50	30	20	12	6	4	2
STREET ELBOWS 90 BANDED (5LB)	600	400	250	150	75	40	25	18	10	6	4	1
CROSSES BANDED EQUAL (+LB)	250	150	100	50	40	20	14	12	6	3	2	1
UNIONS F/F (UCF)	200	175	125	75	50	30	25	18	10	6	4	2
UNIONS M/F (UCM)	200	150	100	80	50	30	18	15	8	4	2	1
UNIONS B/W (UCB)	-	175	125	75	50	30	25	18	10	6	4	-
ROUND CAPS (RCB)	1,000	600	400	250	150	100	60	50	30	18	12	6
SQUARE HEAD PLUGS (SPG)	* 900	* 800	600	600	250	175	100	60	60	24	20	8
HEX HEAD PLUGS (HPG)	1,000	750	600	350	200	130	70	60	30	18	12	5
HEX CAPS (HCB)	1,000	600	400	250	150	100	60	50	30	18	12	6
HEX NUTS (HNT)	1,000	1,000	600	500	300	200	150	120	50	40	25	15
HEX BUSHINGS (HBU)	-	900	650	350	225	125	90	64	36	24	12	6
REDUCING HEX NIPPLE (RNP)	-	500	350	250	150	80	60	36	18	12	6	4
HEX NIPPLE (HNP)	* 600	500	350	200	125	70	60	36	18	12	6	4
HOSE NIPPLE (ONP)	-	500	350	200	100	60	50	30	16	9	5	2
COUPLINGS/SOCKETS (FCP)	800	500	400	200	125	80	60	48	24	12	8	4
COUPLINGS/SOCKETS (HCP)	1,200	1,000	800	400	250	150	120	90	48	24	16	8
REDUCING COUPLINGS (RSE)	-	500	250	150	100	50	36	30	18	10	8	3
BARREL NIPPLE (BNP)	* 500	600	400	175	125	80	50	30	18	12	5	3
WELDING NIPPLE (WNP)	* 600	600	500	300	175	120	80	60	36	18	10	6

SIZE OF CARTON: 1).1in x 0.67in x 0.87in

\*2).1in x 0.67in x 0.47in



# 150LB SCREWED FITTINGS

## WEIGHT LIST

unit: lb / pc

ITEM	SIZE	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
90 ELBOWS BANDED EQUAL (9LB)		0.059	0.081	0.130	0.216	0.286	0.544	0.749	1.044	1.502	3.220	4.465	6.938
TEES BANDED EQUAL (TEB)		0.097	0.117	0.181	0.295	0.407	0.711	1.013	1.410	2.026	4.659	6.396	8.903
45 ELBOWS BANDED EQUAL (4LB)		0.075	0.079	0.106	0.242	0.348	0.509	0.617	0.938	1.295	2.934	3.877	5.626
STREET ELBOWS 90 BANDED (SLB)		0.046	0.077	0.126	0.203	0.335	0.524	0.837	1.018	1.681	3.099	4.026	6.696
CROSSES BANDED EQUAL (+LB)		0.123	0.174	0.335	0.463	0.661	1.073	1.542	2.007	3.198	5.764	7.291	11.573
UNIONS FF (UCF)		0.233	0.194	0.304	0.374	0.555	0.881	1.225	1.555	2.427	3.888	5.077	8.189
UNIONS MF (UCM)		0.242	0.236	0.328	0.421	0.615	0.919	1.295	1.685	2.639	4.405	6.068	9.471
UNIONS BW (UCB)		-	0.194	0.304	0.374	0.555	0.881	1.225	1.555	2.427	3.888	5.077	8.189
ROUND CAPS (RCB)		0.033	0.064	0.121	0.161	0.209	0.352	0.476	0.599	1.011	1.579	2.630	4.427
SQUARE HEAD PLUGS (SPG)		0.018	0.033	0.055	0.055	0.132	0.163	0.278	0.363	0.599	0.874	1.280	1.980
HEX HEAD PLUGS (HPG)		0.033	0.059	0.077	0.115	0.187	0.267	0.383	0.537	0.815	1.467	2.117	3.084
HEX CAPS (HCB)		0.040	0.062	0.066	0.117	0.176	0.256	0.445	0.546	0.808	1.800	2.595	4.167
HEX NUTS (HNT)		0.033	0.042	0.064	0.088	0.101	0.189	0.269	0.313	0.507	0.819	0.967	1.709
HEX BUSHINGS (HBU)		-	0.035	0.064	0.101	0.167	0.275	0.388	0.537	0.883	1.463	2.286	4.126
REDUCING HEX NIPPLE (RNP)		-	0.048	0.086	0.137	0.211	0.311	0.445	0.630	0.872	1.566	2.207	3.326
HEX NIPPLE (HNP)		0.033	0.055	0.097	0.148	0.211	0.374	0.511	0.665	0.894	1.683	2.128	2.916
HOSE NIPPLE (ONP)		-	0.068	0.106	0.170	0.302	0.465	0.588	0.808	1.335	2.233	3.194	5.496
COUPLINGS/SOCKETS (FCP)		0.029	0.070	0.077	0.156	0.211	0.359	0.498	0.588	0.835	2.059	2.747	5.280
COUPLINGS/SOCKETS (HCP)		0.018	0.033	0.040	0.077	0.110	0.172	0.244	0.291	0.403	1.020	1.401	2.590
REDUCING COUPLINGS (RSB)		-	0.073	0.156	0.218	0.302	0.471	0.678	0.844	1.289	2.401	3.736	5.910
BARREL NIPPLE (BNP)		0.017	0.029	0.038	0.083	0.111	0.164	0.292	0.347	0.579	0.921	1.454	2.071
WELDING NIPPLE (WNP)		0.013	0.023	0.030	0.051	0.076	0.112	0.189	0.225	0.303	0.568	0.862	1.381

# TC-01TK VALVE

## 1PC REDUCED PORT 1000 WOG BALL VALVE, THREADED

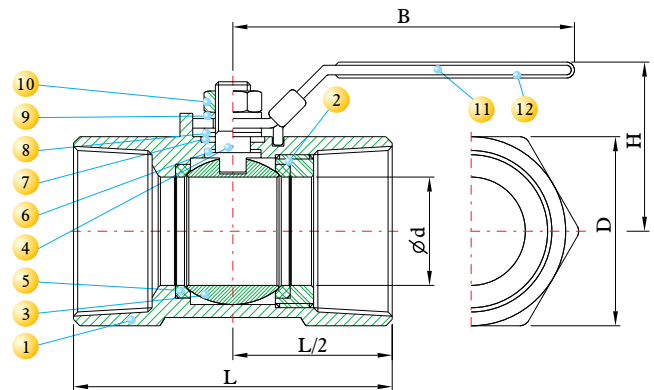
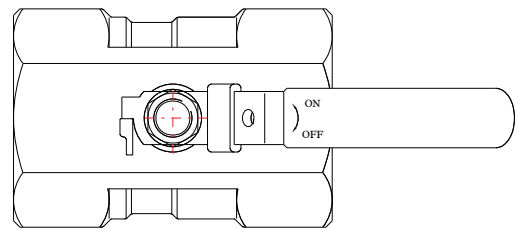


### DESIGN FEATURES:

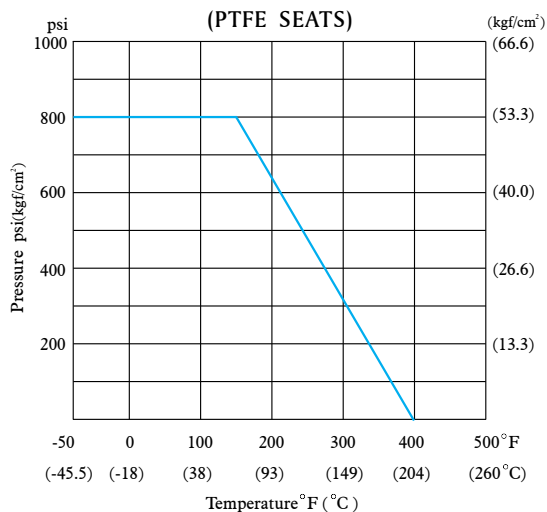
- Steam rating: 125 psi WSP
- Blow-out-proof stem design
- Padlocking device
- Body: ASTM A351 Gr.CF8M
- Stem: SS316
- Seat: PTFE
- End Connections: Threaded End
- Working Pressure: 1000 psi
- Temperature Range: -50° to 400° F
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg
- Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999  
ISO 228

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	PTFE	2
6	THRUST WASHER	PTFE	1
7	PACKING	PTFE	1
8	WASHER	SS304	2
9	SPRING WASHER	SS304	1
10	HANDLE NUT	SS304	1
11	HANDLE	SS304	1
12	HANDLE SLEEVE	VINYL GRIP	1
13	LOCKING PLATE	SS304	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	d		B		D		L		H		Cv Factor	Weight	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		Kg	Lb
1/4"	0.20	5.0	2.36	60	0.67	17.0	1.54	39.0	1.22	31	1	0.08	0.18
3/8"	0.28	7.0	2.76	70	0.83	21.0	1.73	44.0	1.38	35	2	0.11	0.24
1/2"	0.36	9.2	3.39	86	0.98	25.0	2.22	56.0	1.69	43	4	0.17	0.38
3/4"	0.49	12.5	3.39	86	1.26	32.0	2.32	59.0	1.81	46	7	0.25	0.55
1"	0.63	16.0	4.09	104	1.50	38.0	2.80	71.0	1.97	50	10	0.45	0.99
1 1/4"	0.79	20.0	4.09	104	1.93	49.0	3.11	79.0	2.13	54	17	0.74	1.63
1 1/2"	0.96	24.5	4.96	126	2.09	53.0	3.27	83.0	2.56	65	26	0.83	1.83
2"	1.26	32.0	4.96	126	2.56	65.0	3.94	100.0	2.83	72	45	1.25	2.75

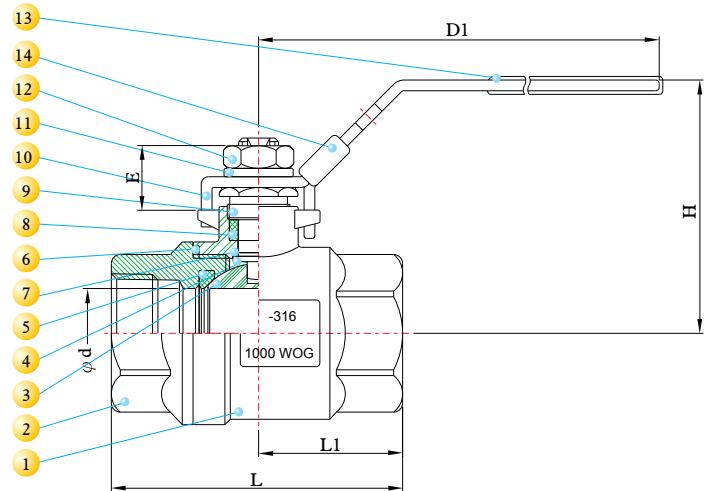
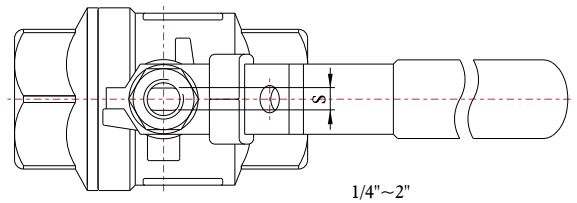
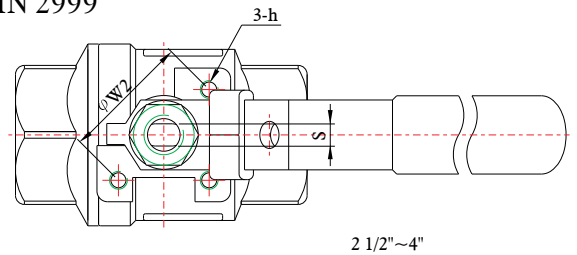
# TC-02X VALVE

## 2PC FULL PORT 1000 WOG BALL VALVE, THREADED



### DESIGN FEATURES:

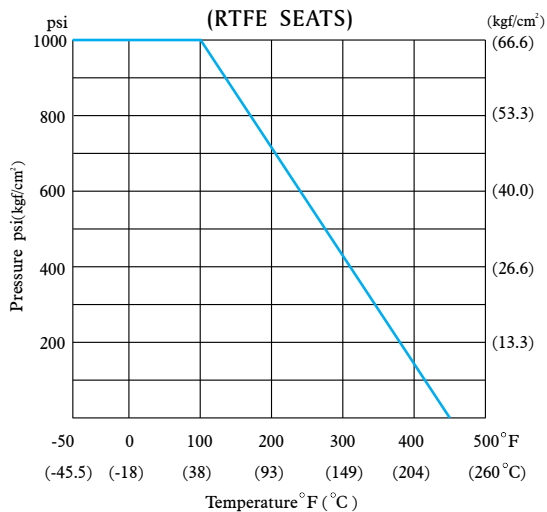
- Blow-out-proof stem design
- Temperature Range: -50°F to 450°F
- Options: locking device
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg
- Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999  
ISO 228  
BSP  
PT



### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	PTFE+15% G/F	2
6	GASKET	PTFE	1
7	THRUST WASHER	PTFE	1
8	PACKING	PTFE	1
9	GLAND	SS304	1
10	HANDLE	SS304	1
11	SPRING WASHER	SS304	1
12	HANDLE NUT	SS304	1
13	HANDLE SLEEVE	VINYL GRIP	1
14	LOCKING PLATE	SS304	1

### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	d		E		L		L1		H		S		D1		W2		h	Cv	Weight		
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	mm	(Option)	Factor	Kg	Lb	
1/4"	8	0.43	11.0	0.61	15.5	2.28	57.8	1.13	28.8	2.25	57.2	0.21	5.45	4.06	103			16	0.26	0.57	
3/8"	10	0.49	12.5	0.61	15.5	2.28	57.8	1.13	28.8	2.25	57.2	0.21	5.45	4.06	103			16	0.24	0.53	
1/2"	15	0.59	15.0	0.57	14.5	2.43	61.7	1.21	30.7	2.33	59.1	0.21	5.45	4.06	103			26	0.30	0.66	
3/4"	20	0.79	20.0	0.83	21.0	2.76	70.1	1.38	35.0	2.46	62.6	0.21	5.45	4.06	103			55	0.42	0.93	
1"	25	0.98	25.0	0.77	19.5	3.20	81.3	1.58	40.2	2.78	70.7	0.24	6.20	5.00	127			110	0.70	1.54	
1 1/4"	32	1.26	32.0	1.09	27.9	3.78	96.0	1.86	47.2	3.00	76.2	0.24	6.20	5.00	127			180	1.10	2.42	
1 1/2"	40	1.50	38.0	1.50	27.5	4.43	112.5	2.19	55.6	3.51	89.1	0.37	9.40	6.02	153			270	1.86	4.10	
2"	50	2.00	50.8	1.08	26.7	4.96	126.0	2.46	62.4	3.87	98.2	0.37	9.40	7.60	193			500	2.85	6.28	
2 1/2"	65	2.56	65.0	1.02	26.0	6.63	168.5	3.35	85.0	4.35	110.6	0.37	9.40	7.60	193	2.76	70	M8*P1.25	800	6.25	13.77
3"	80	3.15	80.0	1.50	38.0	7.54	191.4	3.78	95.9	4.88	124.0	0.47	12.00	10.98	279	4.02	102	M10*P1.5	1150	10.42	22.95
4"	100	3.94	100.0	1.89	48.0	8.52	216.5	4.26	108.3	6.63	168.5	0.47	16.00	13.19	335	4.02	102	M10*P1.5	2120	17.20	37.89

# TC-02T VALVE

## 2PC FULL PORT 1000 WOG BALL VALVE, THREADED

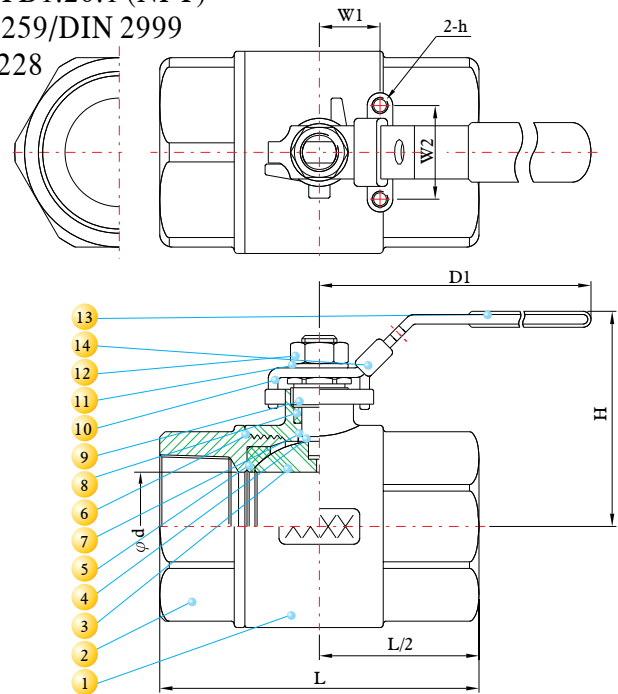


### DESIGN FEATURES:

- Steam rating: 150 psi WSP
- Blow-out-proof stem design
- Body: ASTM A351 Gr.CF8M
- Ball: SS316
- Stem: SS316
- Seat: Reinforced Teflon
- End Connections: Threaded End
- Working Pressure: 1000 psi
- Temperature Range: -50° to 450° F
- Options: Padlocking device  
Tapping for Actuator
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg

Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999

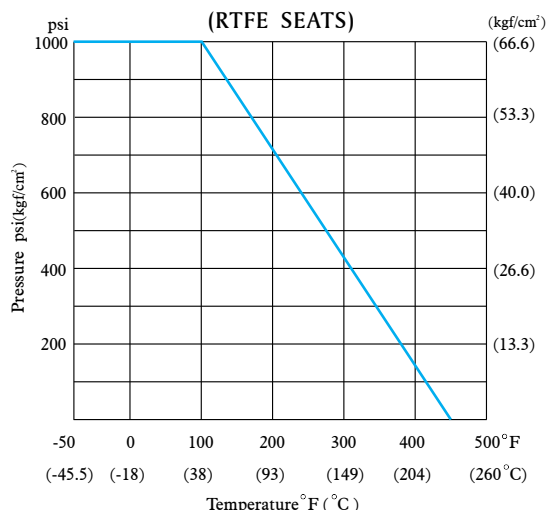
ISO 228  
BSP  
PT



### MATERIALS LIST

NO.	PART NAME	MATERIAL	Q'TY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	PTFE+15% G/F	2
6	GASKET	PTFE	1
7	THRUST WASHER	PTFE	1
8	PACKING	PTFE	1
9	GLAND	SS304	1
10	HANDLE	SS304	1
11	SPRING WASHER	SS304	1
12	HANDLE NUT	SS304	1
13	HANDLE SLEEVE	VINYL GRIP	1
14	LOCKING PLATE	SS304	1

### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	d		L		H		D1		W1		W2		h (Option)	Cv Factor	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb	
1/4"	8	0.43	11.0	2.34	59.5	2.11	53.5	4.06	103	0.50	12.7	1.12	28.5	M5*p0.8	16	0.35	0.77
3/8"	10	0.49	12.5	2.34	59.5	2.22	56.4	4.06	103	0.50	12.7	1.12	28.5	M5*p0.8	16	0.34	0.75
1/2"	15	0.59	15.0	2.50	63.5	2.17	55.0	4.06	103	0.50	12.7	1.12	28.5	M5*p0.8	26	0.36	0.79
3/4"	20	0.79	20.0	3.02	76.7	2.60	66.0	5.00	127	0.88	22.4	1.38	35.0	M6*p1.0	55	0.65	1.43
1"	25	0.98	25.0	3.56	90.5	2.80	71.0	5.00	127	0.88	22.4	1.38	35.0	M6*p1.0	110	0.93	2.05



# TC-02TM VALVE

## 2PC FULL PORT 1000 WOG BALL VALVE, THREADED

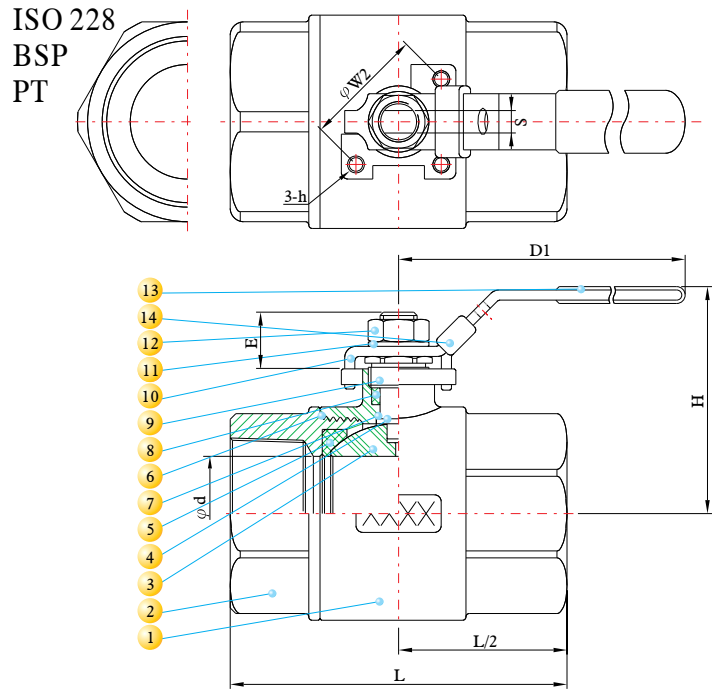


### DESIGN FEATURES:

- Steam rating: 150 psi WSP
- Blow-out-proof stem design
- ISO 5211 Mounting Pad
- Body: ASTM A351 Gr.CF8M
- Ball: SS316
- Stem: SS316
- Seat: Reinforced Teflon
- End Connections: Threaded End
- Working Pressure: 1000 psi
- Temperature Range: -50° to 450° F
- Options: Padlocking device
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg
- Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999

### MATERIALS LIST

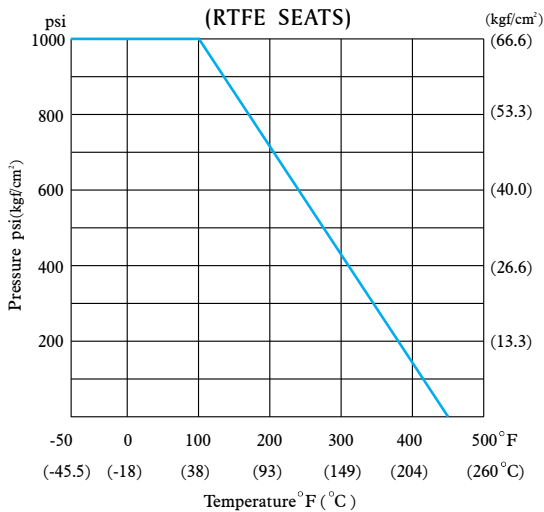
NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	PTFE+15% G/F	2
6	GASKET	PTFE	1
7	THRUST WASHER	PTFE	1
8	PACKING	PTFE	1
9	GLAND	SS304	1
10	HANDLE	SS304	1
11	SPRING WASHER	SS304	1
12	HANDLE NUT	SS304	1
13	HANDLE SLEEVE	VINYL GRIP	1
14	LOCKING PLATE	SS304	1



### DIMENSIONS

SIZE		d	E	L	H	S	D1	W2	h	Cv	Weight								
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Factor	Kg	Lb							
1/4"	8	0.43	11.0	0.61	15.5	2.34	59.5	2.11	53.5	0.21	5.45	4.06	103	1.42	36	M5*p0.8	16	0.35	0.77
3/8"	10	0.49	12.5	0.61	15.5	2.34	59.5	2.22	56.4	0.21	5.45	4.06	103	1.42	36	M5*p0.8	16	0.34	0.75
1/2"	15	0.59	15.0	0.57	14.5	2.50	63.5	2.17	55.0	0.21	5.45	4.06	103	1.42	36	M5*p0.8	26	0.36	0.79
3/4"	20	0.79	20.0	0.83	21.0	3.02	76.7	2.60	66.0	0.24	6.20	5.00	127	1.42	36	M5*p0.8	55	0.65	1.43
1"	25	0.98	25.0	0.77	19.5	3.56	90.5	2.80	71.0	0.24	6.20	5.00	127	1.42	36	M5*p0.8	110	0.93	2.05
1 1/4"	32	1.26	32.0	1.09	27.9	3.88	98.5	3.50	89.0	0.37	9.40	6.02	153	1.97	50	M6*p1.0	180	1.65	3.64
1 1/2"	40	1.50	38.0	1.50	27.5	4.65	118.0	3.62	92.0	0.37	9.40	6.02	153	1.97	50	M6*p1.0	270	2.26	4.98
2"	50	2.00	50.8	1.08	26.7	5.35	136.0	4.21	107.0	0.37	9.40	7.60	193	1.97	50	M6*p1.0	500	3.62	7.97
2 1/2"	65	2.56	65.0	1.02	26.0	6.48	164.5	4.69	119.0	0.37	9.40	7.60	193	2.76	70	M8*p1.25	800	6.14	13.53
3"	80	3.15	80.0	1.50	38.0	7.62	193.5	5.16	131.0	0.47	12.00	10.98	279	4.02	102	M10*p1.5	1150	11.15	24.56
4"	100	3.94	100.0	1.89	48.0	8.50	216.0	6.73	171.0	0.47	16.00	13.19	335	4.02	102	M10*p1.5	2120	19.00	41.89

### PRESSURE TEMPERATURE RATINGS





# TC-0612, TC-0612C VALVE

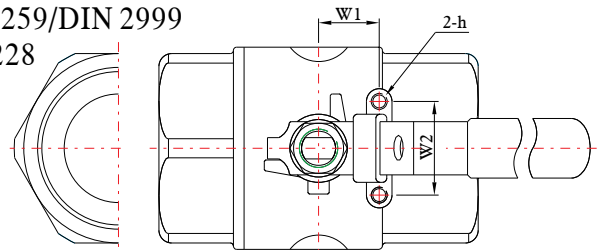
## 2PC STANDARD PORT 2000 WOG BALL VALVE, THREADED



### DESIGN FEATURES:

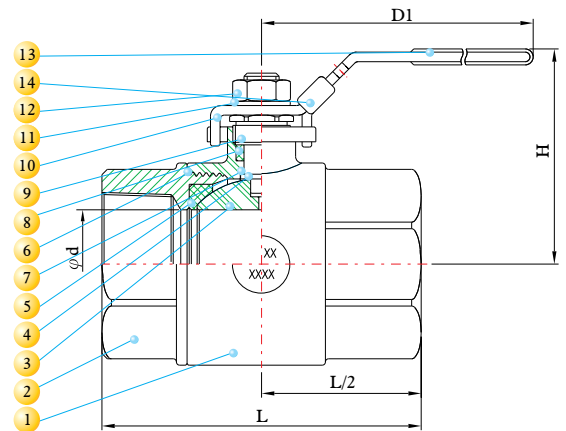
- Steam rating: 150 psi WSP
- Blow-out-proof stem design
- Body: ASTM A351 Gr.CF8M / ASTM A216 Gr. WCB
- Ball: SS316
- Stem: SS316
- Seat: Reinforced Teflon
- End Connections: Threaded End
- Working Pressure: 2000 psi
- Temperature Range: -50° to 450° F
- Padlocking device
- Tapping for Actuator
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg

Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999  
ISO 228  
BSP  
PT

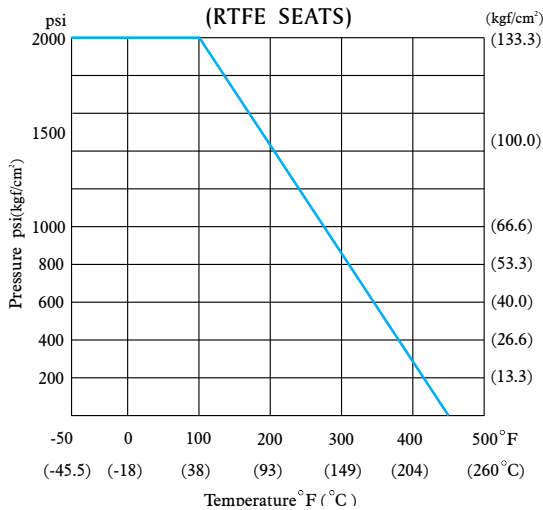


### MATERIALS LIST

NO.	PART NAME	MATERIAL		QTY
		STAINLESS STEEL	CARBON STEEL	
1	BODY	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
2	CAP	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
3	BALL	ASTM A351 Gr.CF8M	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	ASTM A276 Gr.316	1
5	SEAT	PTFE+15% G/F	PTFE+15% G/F	2
6	GASKET	PTFE	PTFE	1
7	THRUST WASHER	PTFE	PTFE	1
8	PACKING	PTFE	PTFE	1
9	GLAND	SS304	SS304	1
10	HANDLE	SS304	SS304	1
11	SPRING WASHER	SS304	SS304	1
12	HANDLE SLEEVE	VINYL GRIP	VINYL GRIP	1
13	LOCKING PLATE	SS304	SS304	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	d		L		H	D1		W1		W2		h (Option)	Cv Factor	Weight			
	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm			Kg	Lb		
1/4"	8	0.44	11.3	2.23	56.75	1.64	41.73	4.06	103	0.50	12.7	1.12	28.5	M5*p0.8	6	0.35	0.77
3/8"	10	0.49	12.5	2.23	56.75	1.64	41.73	4.06	103	0.50	12.7	1.12	28.5	M5*p0.8	9	0.35	0.77
1/2"	15	0.49	12.5	2.35	59.75	1.64	41.73	4.06	103	0.50	12.7	1.12	28.5	M5*p0.8	9	0.32	0.70
3/4"	20	0.69	17.5	3.18	80.70	1.93	48.95	5.00	127	0.88	22.4	1.38	35.0	M6*p1.0	27	0.65	1.43
1"	25	0.89	22.5	3.44	87.50	2.06	52.25	5.00	127	0.88	22.4	1.38	35.0	M6*p1.0	35	0.75	1.65

# TC-0612M, TC-0612MC VALVE

## 2PC STANDARD PORT 2000/1500 WOG BALL VALVE

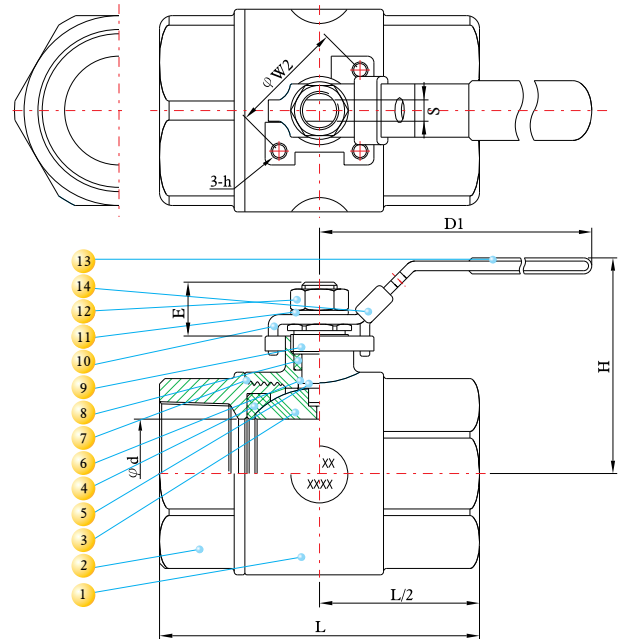


### DESIGN FEATURES:

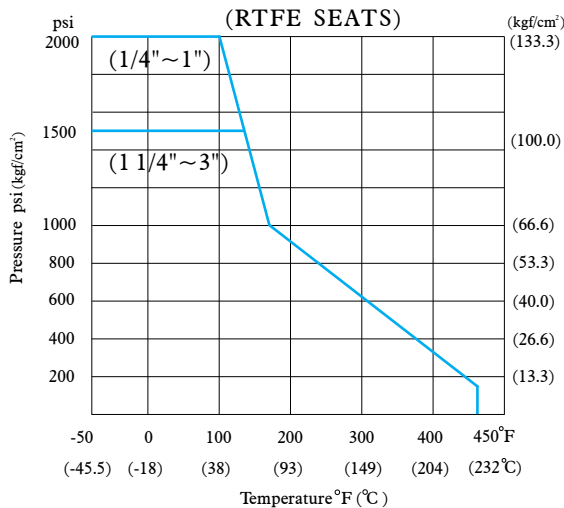
- Steam rating: 150 psi WSP
- Blow-out-proof stem design
- ISO 5211 Mounting Pad
- Body: ASTM A351 Gr.CF8M / ASTM A216 Gr. WCB
- Ball: SS316
- Stem: SS316
- Seat: Reinforced Teflon
- End Connections: Threaded End
- Working Pressure: 1/4"~1" 2000 psi  
1 1/4"~3" 1500 psi
- Temperature Range: -50° to 450° F
- Padlocking device
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg
- Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999  
ISO 228  
BSP  
PT

### MATERIALS LIST

NO.	PART NAME	MATERIAL		Q'TY
		STAINLESS STEEL	CARBON STEEL	
1	BODY	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
2	CAP	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
3	BALL	ASTM A351 Gr.CF8M	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	ASTM A276 Gr.316	1
5	SEAT	PTFE+15% G/F	PTFE+15% G/F	2
6	GASKET	PTFE	PTFE	1
7	THRUST WASHER	PTFE	PTFE	1
8	PACKING	PTFE	PTFE	1
9	GLAND	SS304	SS304	1
10	HANDLE	SS304	SS304	1
11	SPRING WASHER	SS304	SS304	1
12	HANDLE SLEEVE	VINYL GRIP	VINYL GRIP	1
13	LOCKING PLATE	SS304	SS304	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	d		E		L		H		S		D1		W2		h (Option)	Cv Factor	Weight		
	inch	Mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb	
1/4"	8	0.44	11.3	0.59	15.0	2.23	56.75	1.64	41.73	0.21	5.45	4.06	103	1.42	36	M5*p0.8	6	0.35	0.77
3/8"	10	0.49	12.5	0.59	15.0	2.23	56.75	1.64	41.73	0.21	5.45	4.06	103	1.42	36	M5*p0.8	9	0.35	0.77
1/2"	15	0.49	12.5	0.59	15.0	2.35	59.75	1.64	41.73	0.21	5.45	4.06	103	1.42	36	M5*p0.8	9	0.32	0.71
3/4"	20	0.69	17.5	0.80	20.3	3.18	80.70	1.93	48.95	0.24	6.20	5.00	127	1.42	36	M5*p0.8	27	0.65	1.43
1"	25	0.89	22.5	0.73	18.5	3.44	87.50	2.06	52.25	0.24	6.20	5.00	127	1.42	36	M5*p0.8	35	0.75	1.65
1 1/4"	32	1.00	25.4	1.15	29.3	4.09	103.80	2.45	62.34	0.37	9.40	6.02	153	1.97	50	M6*p1.0	41	1.50	3.31
1 1/2"	40	1.26	32.0	1.09	27.7	4.45	113.00	2.67	67.74	0.37	9.40	6.02	153	1.97	50	M6*p1.0	75	1.80	3.96
2"	50	1.50	38.0	1.11	28.1	5.38	136.62	2.79	70.98	0.37	9.40	7.60	193	1.97	50	M6*p1.0	115	2.80	6.17
2 1/2"	65	2.00	51.0	1.17	29.7	5.91	150.00	3.16	80.28	0.37	9.40	7.60	193	1.97	50	M6*p1.0	200	4.34	9.56
3"	80	2.56	65.0	1.02	25.8	6.85	174.00	3.71	94.28	0.37	9.40	10.98	279	1.97	50	M6*p1.0	352	6.85	15.09

# TC-0712M VALVE

## 2PC STANDARD PORT 2000/1500 WOG 250 PSI WSP BALL VALVE

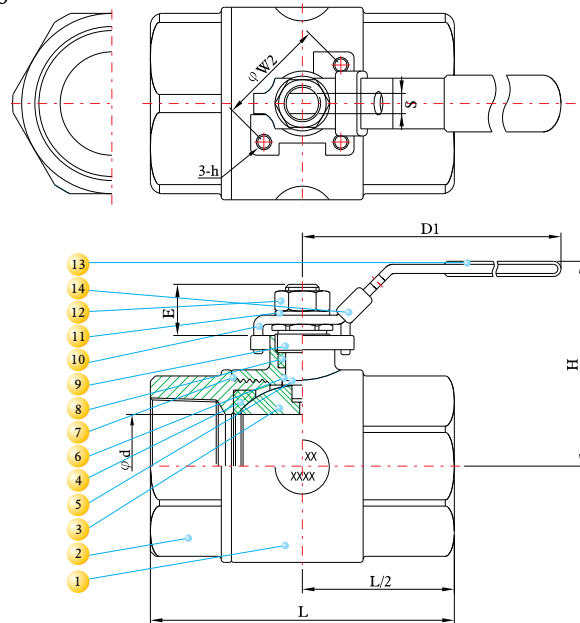


### DESIGN FEATURES:

- Steam rating: 250 psi WSP
- Blow-out-proof stem design
- ISO 5211 Mounting Pad
- Body: ASTM A351 Gr.CF8M
- Ball: SS316
- Stem: SS316
- Seals: CGT (CARBON and GRAPHITE Reinforced PTFE)
- Seats, seals and Packings
- End Connections: Threaded End
- Working Pressure: 1/4"~1" 2000 psi  
1 1/4"~3" 1500 psi
- Temperature Range: -50° to 500°F
- Padlocking device
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg
- Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999  
ISO 228  
BSP  
PT

### MATERIALS LIST

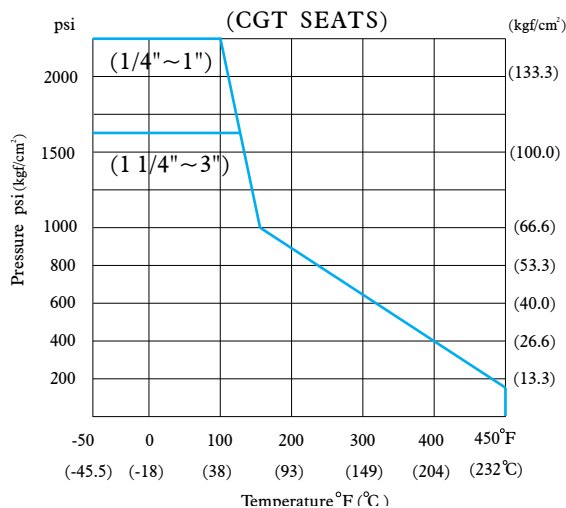
NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	CGT	2
6	GASKET	CGT	1
7	THRUST WASHER	CGT	1
8	PACKING	CGT	1
9	GLAND	SS304	1
10	HANDLE	SS304	1
11	SPRING WASHER	SS304	1
12	HANDLE SLEEVE	VINYL GRIP	1
13	LOCKING PLATE	SS304	1



### DIMENSIONS

SIZE	d		E		L		H		S		D1		W2		h (Option)	Cv Factor	Weight		
	inch	Mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb	
1/4"	8	0.44	11.3	0.59	15.0	2.23	56.75	1.64	41.73	0.21	5.45	4.06	103	1.42	36	M5*p0.8	6	0.35	0.77
3/8"	10	0.49	12.5	0.59	15.0	2.23	56.75	1.64	41.73	0.21	5.45	4.06	103	1.42	36	M5*p0.8	9	0.35	0.77
1/2"	15	0.49	12.5	0.59	15.0	2.35	59.75	1.64	41.73	0.21	5.45	4.06	103	1.42	36	M5*p0.8	9	0.32	0.71
3/4"	20	0.69	17.5	0.80	20.3	3.18	80.70	1.93	48.95	0.24	6.20	5.00	127	1.42	36	M5*p0.8	27	0.65	1.43
1"	25	0.89	22.5	0.73	18.5	3.44	87.50	2.06	52.25	0.24	6.20	5.00	127	1.42	36	M5*p0.8	35	0.75	1.65
1 1/4"	32	1.00	25.4	1.15	29.3	4.09	103.80	2.45	62.34	0.37	9.40	6.02	153	1.97	50	M6*p1.0	41	1.50	3.31
1 1/2"	40	1.26	32.0	1.09	27.7	4.45	113.00	2.67	67.74	0.37	9.40	6.02	153	1.97	50	M6*p1.0	75	1.80	3.96
2"	50	1.50	38.0	1.11	28.1	5.38	136.62	2.79	70.98	0.37	9.40	7.60	193	1.97	50	M6*p1.0	115	2.80	6.17
2 1/2"	65	2.00	51.0	1.17	29.7	5.91	150.00	3.16	80.28	0.37	9.40	7.60	193	1.97	50	M6*p1.0	200	4.34	9.56
3"	80	2.56	65.0	1.02	25.8	6.85	174.00	3.71	94.28	0.37	9.40	10.98	279	1.97	50	M6*p1.0	352	6.85	15.09

### PRESSURE TEMPERATURE RATINGS



# TC-2000 VALVE

## 2PC FULL PORT 2000/1500 WOG BALL VALVE, THREADED



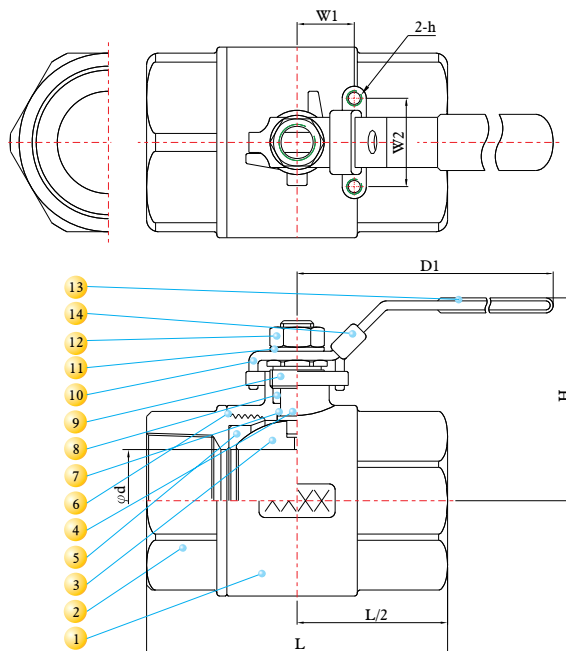
### DESIGN FEATURES:

- Steam rating: 150 psi WSP
- WORKING PRESSURE : 1/4"~1" 2000 PSI  
1 1/4"~2" 1500 PSI
- INVESTMENT CASTING BODY & CAP
- ME-PTFE SEAL KITS : REPLACES PTFE ,RPTFE AND FPA  
LOW DEFORMATION UNDER LOAD  
LOW PERMEATION
- TEMPERATURE RATING : -45.5°C (-50°F) to 246°C (475°F)
- LONG CYCLE LIFE
- ADJUSTABLE STEM PACKING
- BLOW-OUT PROOF STEM
- LOCKING DEVICE
- DESIGN SPECIFICATION : ANSI B16.34 CLASS 900
- TEST STANDARD:API 598
- Vacuum Service to 29" Hg

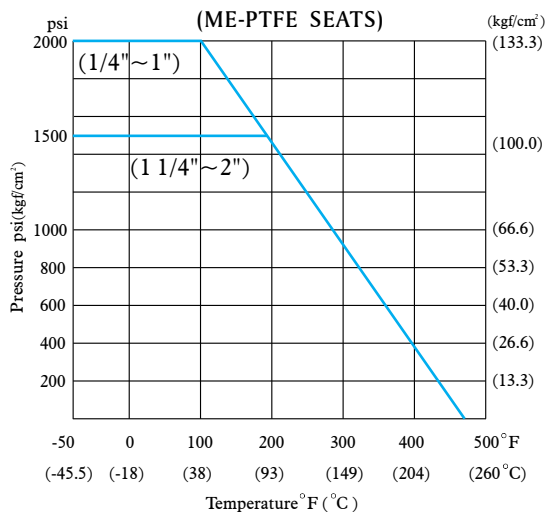
### MATERIALS LIST

NO.	PART NAME	MATERIAL	Q'TY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	ME-PTFE *	2
6	GASKET	ME-PTFE *	1
7	THRUST WASHER	ME-PTFE *	1
8	PACKING	ME-PTFE *	1
9	GLAND	SS304	1
10	HANDLE	SS304	1
11	SPRING WASHER	SS304	1
12	HANDLE NUT	SS304	1
13	HANDLE SLEEVE	VINYL GRIP	1
14	LOCKING PLATE	SS304	1

\* ME-PTFE IS Molecularly Enhanced PTFE



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE		d		L		H		D1		W1		W2		h	Cv	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	( Option )	Factor	Kg	Lb
1/4"	8	0.43	11.0	2.34	59.5	2.24	57.0	4.06	103	0.50	12.7	1.12	28.5	M5*p0.8	16	0.37	0.81
3/8"	10	0.49	12.5	2.34	59.5	2.24	57.0	4.06	103	0.50	12.7	1.12	28.5	M5*p0.8	16	0.36	0.79
1/2"	15	0.59	15.0	2.52	64.5	2.27	57.6	4.06	103	0.50	12.7	1.12	28.5	M5*p0.8	26	0.42	0.93
3/4"	20	0.79	20.0	3.03	77.0	2.70	68.5	5.00	127	0.88	22.4	1.38	35.0	M6*p1.0	55	0.80	1.76
1"	25	0.98	25.0	3.56	90.5	2.86	72.7	5.00	127	0.88	22.4	1.38	35.0	M6*p1.0	110	1.24	2.73
1 1/4"	32	1.26	32.0	3.92	99.5	3.45	87.7	6.14	156	1.00	25.4	1.50	38.1	M6*p1.0	180	2.05	4.52
1 1/2"	40	1.50	38.0	4.65	118.0	3.66	93.0	7.60	193	1.00	25.4	1.50	38.1	M6*p1.0	270	2.58	5.68
2"	50	2.00	50.8	5.37	136.5	4.11	104.3	7.60	193	1.00	25.4	1.50	38.1	M6*p1.0	500	4.43	9.76

# TC-9000 VALVE

## 2PC FULL PORT 1000 WOG BALL VALVE, THREADED (WITH ISO 5211 DIRECT MOUNT PAD)

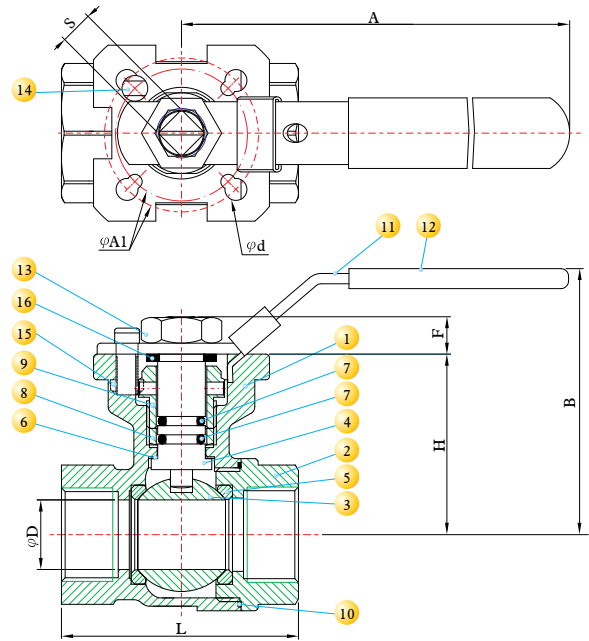


### DESIGN FEATURES:

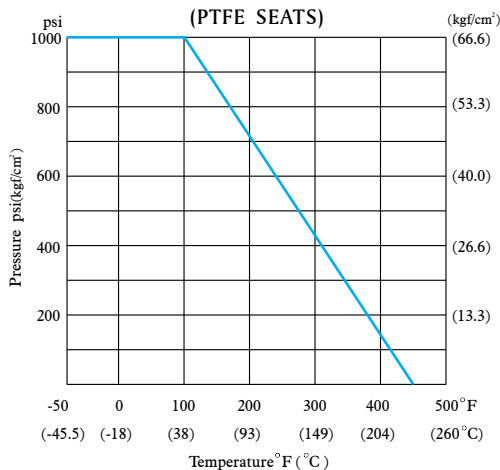
- Steam rating: 150 psi WSP
- WORKING PRESSURE : 1000 PSI
- INVESTMENT CASTING BODY & CAP
- BLOW - OUT - PROOF STEM
- ADJUSTABLE STEM PACKING
- HANDLE WITH LOCKING DEVICE
- FULL ISO-5211 PAD FOR DIRECT MOUNT AUTOMATION
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg
- TEMPERATURE RATING : -45.5°C (-50°F) to 232°C (450°F)

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	PTFE	2
6	THRUST WASHER	PTFE	1
7	O-RING	VITON	2
8	GLAND PACKING	PTFE	1
9	GLAND	ASTM A351 Gr.CF8M	1
10	GASKET	PTFE	1
11	HANDLE	SS304	1
12	HANDLE SLEEVE	VINYL GRIP	1
13	HANDLE NUT	SS304	1
14	PIN	SS304	1
15	LOCK NUT	SS304	1
16	WASHER	SS304	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	A		B		D		L		F		H		S		d		A1		ISO 5211	Cv Factor	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Kg	Lb					
1/2"	15	4.37	111	2.98	75.75	0.59	15.0	2.70	68.5	0.37	9.5	1.59	40.5	0.35	9	0.24	6.0	1.42 / 1.65	36 / 42	F03 / F04	21	0.50	1.10
3/4"	20	4.37	111	3.07	78.00	0.75	19.0	2.85	72.5	0.41	10.5	1.84	46.8	0.35	9	0.24	6.0	1.42 / 1.65	36 / 42	F03 / F04	33	0.65	1.43
1"	25	5.00	127	3.32	84.25	0.98	25.0	3.44	87.5	0.42	10.7	2.03	51.5	0.43	11	0.240/0.26	6/6.5	1.65 / 1.97	42 / 50	F04 / F05	55	0.93	2.05
1 1/4"	32	5.00	127	3.51	89.25	1.26	32.0	3.88	98.5	0.41	10.5	2.22	56.3	0.43	11	0.240/0.26	6/6.5	1.65 / 1.97	42 / 50	F04 / F05	90	1.50	3.30
1 1/2"	40	5.87	149	4.47	113.5	1.50	38.0	4.23	107.5	0.58	14.7	2.80	71.0	0.55	14	0.260/0.33	6.5/8.5	1.97 / 2.76	50 / 70	F05 / F07	150	2.20	4.85
2"	50	5.87	149	5.01	127.25	1.97	50.0	4.78	121.4	0.59	15.0	3.17	80.5	0.55	14	0.260/0.33	6.5/8.5	1.97 / 2.76	50 / 70	F05 / F07	215	3.40	7.49



# TC-03T/B/S VALVE

## 3PC FULL PORT 1000 WOG BALL VALVE

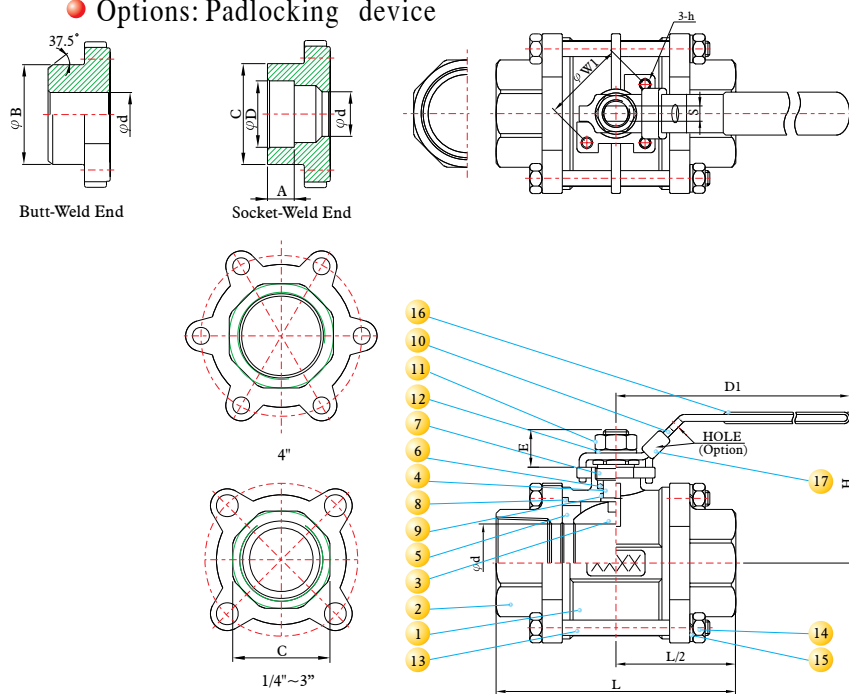


### DESIGN FEATURES:

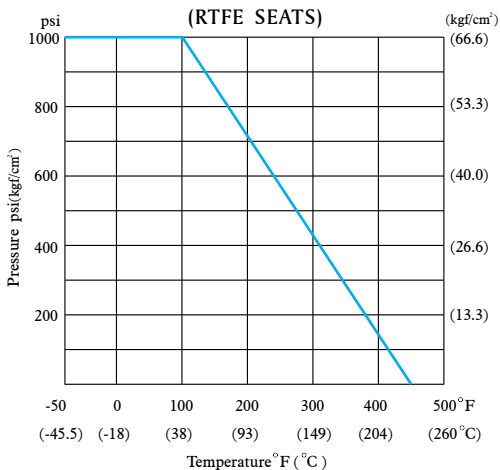
- Steam rating: 150 psi WSP
- Blow-out-proof stem design
- ISO 5211 Mounting pad
- Body: ASTM A351 Gr.CF8M
- Ball: SS316
- Stem: SS 316
- Seat: Reinforced Teflon
- End Connections: Threaded End  
Socket Weld End  
Butt Weld End
- Working Pressure: 1000 psi
- Temperature Range: -50° to 450°F
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg
- Options: Padlocking device

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	2
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	PTFE+15% G/F	2
6	PACKING	PTFE	1
7	GLAND	SS304	1
8	END SEALS	PTFE	2
9	THRUST WASHER	PTFE	1
10	HANDLE	SS304	1
11	HANDLE NUT	SS304	1
12	SPRING WASHER	SS304	1
13	BOLTS	ASTM A193 Gr.B8	4~6
14	BOLT NUTS	ASTM A194 Gr.8	4~6
15	BOLT WASHERS	SS304	4~6
16	HANDLE SLEEVE	VINYL GRIP	1
17	LOCKING PLATE	SS304	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	A		B		C		D		E		d		L		D1		H		S		W1		h	Cv	Weight		
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Factor	Kg	Lb	
1/4"	8	0.39	10	0.71	18.1	0.90	22.8	0.56	14.1	0.61	15.5	0.43	11.0	2.56	65	4.06	103	2.13	54	0.21	5.45	1.42	36	M5*P0.8	16	0.48	1.06
3/8"	10	0.39	10	0.71	18.1	0.90	22.8	0.69	17.6	0.61	15.5	0.49	12.5	2.56	65	4.06	103	2.13	54	0.21	5.45	1.42	36	M5*P0.8	16	0.46	1.01
1/2"	15	0.39	10	0.89	22.5	1.06	26.8	0.85	21.7	0.61	15.5	0.59	15.0	2.80	71	4.06	103	2.24	57	0.21	5.45	1.42	36	M5*P0.8	26	0.58	1.28
3/4"	20	0.51	13	1.11	28.3	1.36	34.6	1.07	27.1	0.77	19.5	0.79	20.0	3.35	85	5.00	127	2.64	67.1	0.24	6.2	1.42	36	M5*P0.8	55	0.92	2.02
1"	25	0.51	13	1.38	35.0	1.56	39.5	1.33	33.8	0.77	19.5	1.00	25.4	3.74	95	5.00	127	2.76	70.0	0.24	6.2	1.42	36	M5*P0.8	110	1.19	2.62
1 1/4"	32	0.51	13	1.74	44.1	1.93	49.0	1.68	42.6	1.00	25.5	1.26	32.0	4.37	111	6.02	153	3.59	91.1	0.37	9.4	1.97	50	M6*P1.0	180	2.07	4.56
1 1/2"	40	0.51	13	1.97	50.0	2.20	55.8	1.92	48.7	1.04	26.5	1.57	40.0	4.76	121	6.02	153	3.74	95.1	0.37	9.4	1.97	50	M6*P1.0	270	2.75	6.06
2"	50	0.63	16	2.38	60.5	2.68	68.0	2.41	61.1	1.00	25.5	2.00	50.8	5.51	140	7.60	193	4.02	102.0	0.37	9.4	1.97	50	M6*P1.0	500	4.07	8.96
2 1/2"	65	0.63	16	3.06	77.8	3.46	88.0	2.91	73.8	1.56	39.5	2.56	65.0	6.81	173	10.98	279	4.76	120.8	0.47	12.0	2.76	70	M8*P1.25	800	8.12	17.89
3"	80	0.63	16	3.51	89.1	4.13	105.0	3.54	89.8	1.48	37.5	3.15	80.0	7.56	192	10.98	279	5.08	129.0	0.47	12.0	4.02	102	M10*P1.5	1150	12.71	28.03
4"	100	0.75	19	4.50	114.3	5.10	129.5	4.35	115.5	1.95	49.5	3.94	100.0	8.86	225	13.19	335	6.84	173.7	0.63	16.0	4.02	102	M10*P1.5	2120	21.12	46.52

# TC-03K, TC-03KC VALVE

## 3PC FULL PORT 1000 WOG BALL VALVE, T/B/S

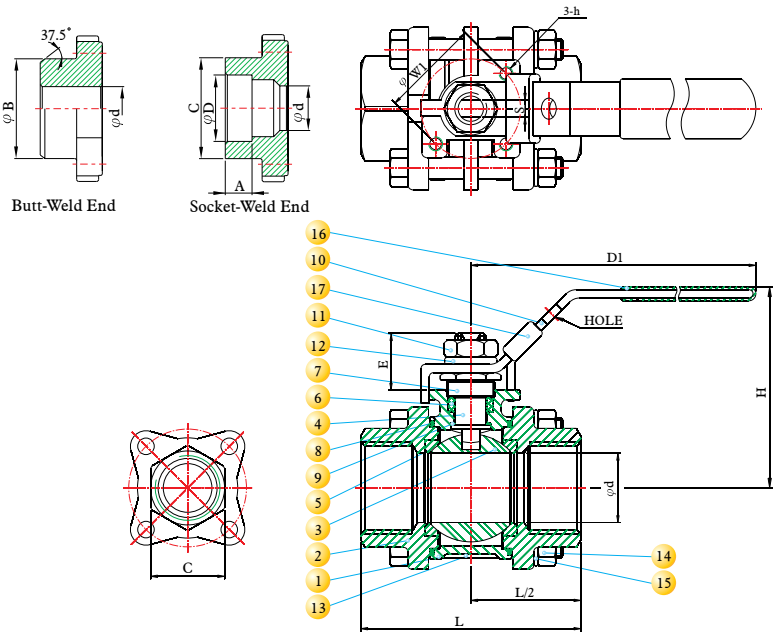


### DESIGN FEATURES:

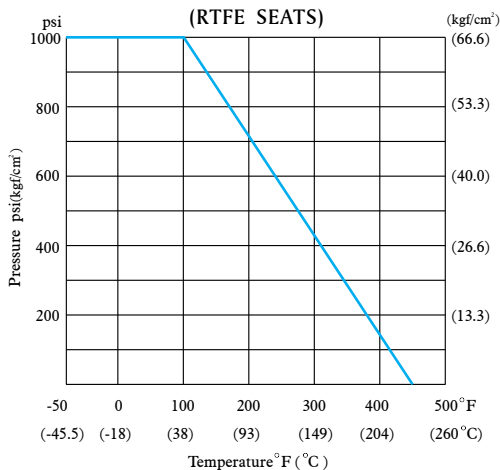
- Steam rating: 150 psi WSP
- Blow-out-proof stem design
- ISO 5211 Mounting pad
- Body: ASTM A351 Gr.CF8M / A216 WCB
- Ball: SS316
- Stem: SS 316
- Seat: Reinforced Teflon
- End Connections: Threaded End  
Socket Weld End  
Butt Weld End
- Working Pressure: 1000 psi
- Temperature Range: -50° to 450°F
- Padlocking device
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg

### MATERIALS LIST

NO.	PART NAME	MATERIAL		QTY
		STAINLESS STEEL	CARBON STEEL	
1	BODY	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
2	CAP	ASTM A351 Gr.CF8M	ASTM A216 WCB	2
3	BALL	ASTM A351 Gr.CF8M	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	ASTM A276 Gr.316	1
5	SEAT	PTFE+15% G/F	PTFE+15% G/F	2
6	PACKING	PTFE	PTFE	1
7	GLAND	SS304	SS304	1
8	END SEALS	PTFE	PTFE	2
9	THRUST WASHER	PTFE	PTFE	1
10	HANDLE	SS304	SS304	1
11	HANDLE NUT	SS304	SS304	1
12	SPRING WASHER	SS304	SS304	1
13	BOLTS	ASTM A193 Gr.B8	ASTM A193 Gr.B8	4
14	BOLT NUTS	ASTM A194 Gr.8	ASTM A194 Gr.8	4
15	BOLT WASHERS	SS304	SS304	4
16	HANDLE SLEEVE	VINYL GRIP	VINYL GRIP	1
17	LOCKING PLATE	SS304	SS304	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	A		B		C		D		E		d		L		D1		H		S		W1		h	Cv Factor	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			kg	lb	
1/2"	15	0.39	10	0.89	22.5	0.98	25.0	0.85	21.7	0.61	15.5	0.59	15.0	2.21	56.2	4.06	103	2.31	58.7	0.22	5.5	1.42	36	M5*P0.8	26	0.40	0.88
3/4"	20	0.51	13	1.11	28.3	1.26	32.0	1.07	27.1	0.77	19.5	0.79	20.0	2.73	69.4	5.00	127	2.56	64.9	0.24	6.2	1.42	36	M5*P0.8	55	0.63	1.39
1"	25	0.51	13	1.38	35.0	1.50	38.0	1.33	33.8	0.77	19.5	1.00	25.4	3.13	79.6	5.00	127	2.82	71.7	0.24	6.2	1.42	36	M5*P0.8	110	0.90	1.98
1 1/4"	32	0.51	13	1.74	44.1	1.85	47.0	1.68	42.6	1.00	25.5	1.26	32.0	3.50	88.8	6.02	153	2.90	73.7	0.37	9.4	1.97	50	M6*P1.0	180	1.40	3.08
1 1/2"	40	0.51	13	1.97	50.0	2.09	53.0	1.92	48.7	1.04	26.5	1.57	40.0	4.00	101.6	6.02	153	3.47	88.2	0.37	9.4	1.97	50	M6*P1.0	270	2.04	4.49
2"	50	0.63	16	2.38	60.5	2.56	65.0	2.41	61.1	1.00	25.5	2.00	50.8	4.66	118.4	7.60	193	3.82	97.1	0.37	9.4	1.97	50	M6*P1.0	500	3.37	7.42



# TC-3000T/B/S VALVE

## 3PC FULL PORT 1000 WOG BALL VALVE (WITH ISO 5211 DIRECT MOUNT PAD)



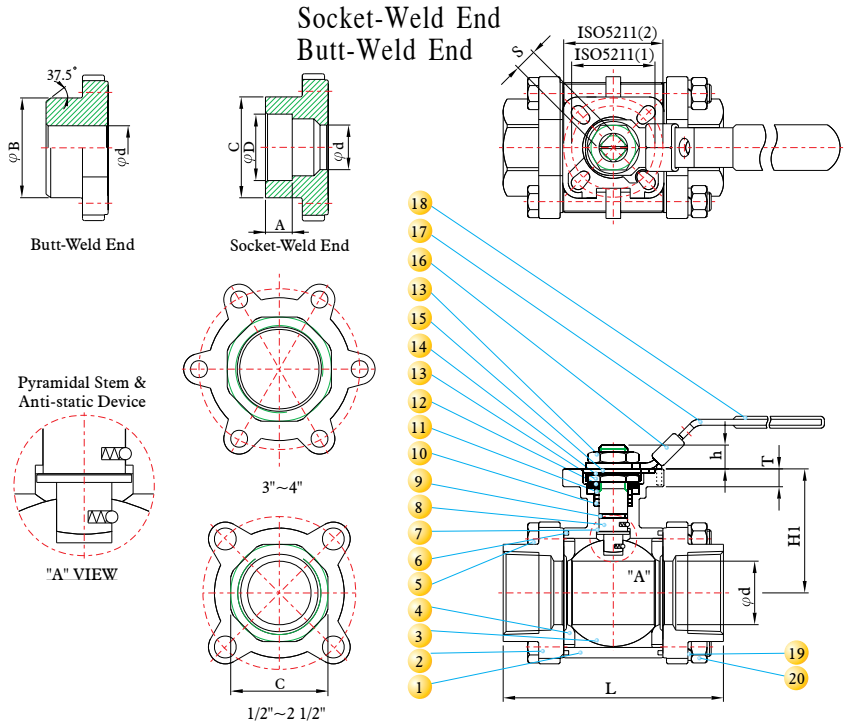
### DESIGN FEATURES:

- Steam rating: 150 psi WSP
- WORKING PRESSURE : 1000 PSI
- INVESTMENT CASTING BODY & CAP
- ME-PTFE SEAL KITS : REPLACES PTFE ,RPTFE AND FPA  
LOW DEFORMATION UNDER LOAD  
LOW PERMEATION
- TEMPERATURE RATING : -45.5° C (-50° F) to 246° C (475° F)
- LONG CYCLE LIFE
- BLOW - OUT-PROOF STEM
- ANTI - STATIC DEVICE
- ADJUSTABLE STEM PACKING
- HANDLE WITH LOCKING DEVICE
- FULL ISO-5211 PAD FOR DIRECT MOUNT AUTOMATION
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg
- End Connections: Threaded End

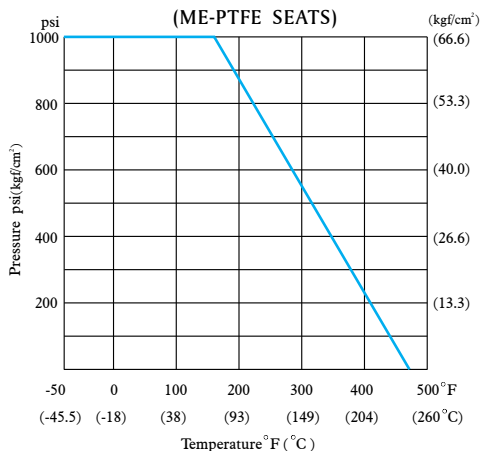
### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	2
3	BALL	ASTM A351 Gr.CF8M	1
4	SEAT	*ME-PTFE	2
5	BOLT	ASTM A193 Gr.B8	4~6
6	GASKET	*ME-PTFE	2
7	THRUST WASHER	*ME-PTFE	1
8	STEM	ASTM A276 Gr.316	1
9	O-RING	VITON	1
10	PACKING	*ME-PTFE	1
11	RING	SS304	1
12	BELLEVEILLE WASHER	SS410	2
13	HANDLE NUT	SS304	2
14	LOCKING WASHER	SS304	1
15	STOPPER	SS304	1
16	LOCKING PLATE	SS304	1
17	HANDLE	SS304	1
18	HANDLE SLEEVE	VINYL GRIP	1
19	BOLT WASHER	SS304	4~6
20	BOLT NUT	ASTM A194 Gr.8	4~6

\*ME-PTFE IS Molecularly Enhanced PTFE



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	A		B		C		D		d		L		H1		h		S		T		ISO 5211	Cv Factor	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb	
1/2"	15	0.39	10	0.89	22.5	1.06	26.8	0.85	21.7	0.59	15.0	2.80	71	1.67	42.5	0.35	9	0.35	9	0.35	9	F03 / F04	26	0.78	1.72
3/4"	20	0.51	13	1.11	28.3	1.36	34.6	1.07	27.1	0.79	20.0	3.35	85	1.83	46.5	0.35	9	0.35	9	0.35	9	F03 / F04	55	1.01	2.22
1"	25	0.51	13	1.38	35.0	1.56	39.5	1.33	33.8	1.00	25.4	3.74	95	2.34	59.5	0.47	12.0	0.43	11	0.35	9	F04 / F05	110	1.46	3.22
1 1/4"	32	0.51	13	1.74	44.1	1.93	49.0	1.68	42.6	1.26	32.0	4.37	111	2.48	63.0	0.47	12.0	0.43	11	0.35	9	F04 / F05	180	2.18	4.80
1 1/2"	40	0.51	13	1.97	50.0	2.20	55.8	1.92	48.7	1.57	40.0	4.76	121	3.11	79.0	0.63	16	0.55	14	0.51	13	F05 / F07	270	3.50	7.71
2"	50	0.63	16	2.38	60.5	2.68	68.0	2.41	61.1	2.00	50.8	5.51	140	3.42	86.9	0.63	16	0.55	14	0.51	13	F05 / F07	500	4.71	10.37
2 1/2"	65	0.63	16	3.06	77.8	3.46	88.0	2.91	73.8	2.56	65.0	6.81	173	4.41	112.0	0.75	19	0.67	17	0.51	13	F07 / F10	800	9.85	21.70
3"	80	0.63	16	3.51	89.1	4.13	105.0	3.54	89.8	3.15	80.0	7.56	192	4.88	124.0	0.75	19	0.67	17	0.51	13	F07 / F10	1150	15.60	34.36
4"	100	0.75	19	4.50	114.3	5.12	130.0	4.55	115.5	3.94	100.0	8.86	225	6.22	158.0	0.94	24	0.67	17	0.79	20	F07 / F10	2120	23.70	52.20

# TC-3000TC T-CLAMP END VALVE

3PC 1000 WOG TRUE PORT T-CLAMP SANITARY BALL VALVE (WITH ISO 5211 DIRECT MOUNT PAD)



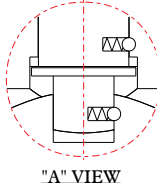
## DESIGN FEATURES:

- WORKING PRESSURE : 1000 PSI
- INVESTMENT CASTING BODY & CAP
- TEMPERATURE RATING : -10°C (-50°F) to 230°C (400°F)
- BLOW - OUT- PROOF STEM
- ANTI - STATIC DEVICE
- ADJUSTABLE STEM PACKING
- HANDLE WITH LOCKING DEVICE
- FULL ISO-5211 PAD FOR DIRECT MOUNT AUTOMATION
- End Connections: T-Clamp END
- PTFE CAVITY FILLERS
- FOR FOOD AND GENERAL CHEMICAL SERVICE APPLICATION
- TEST STANDARD: API 598
- ME PTFE SEATS & SEALS AVAILABLE UPON REQUEST
- INTERNAL FINISH 10Ra, OTHER FINISH AVAILABLE ON REQUEST
- Vacuum Service to 29" Hg

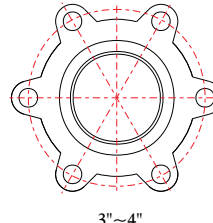
## MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	2
3	BALL	ASTM A351 Gr.CF8M	1
4	SEAT	PTFE	2
5	BOLT	ASTM A193 Gr.B8	4~6
6	GASKET	PTFE	2
7	THRUST WASHER	PTFE	1
8	STEM	ASTM A276 Gr.316	1
9	O-RING	VITON	1
10	PACKING	PTFE	1
11	RING	SS304	1
12	BELLEVEILLE WASHER	SS410	2
13	HANDLE NUT	SS304	2
14	STOPPER	SS304	1
15	LOCKING PLATE	SS304	1
16	HANDLE	SS304	1
17	HANDLE SLEEVE	VINYL GRIP	1
18	BOLT WASHER	SS304	4~6
19	BOLT NUT	ASTM A194 Gr.8	4~6
20	STOP WASHER	SS304	1

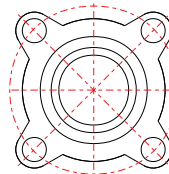
Pyramidal Stem & Anti-static Device



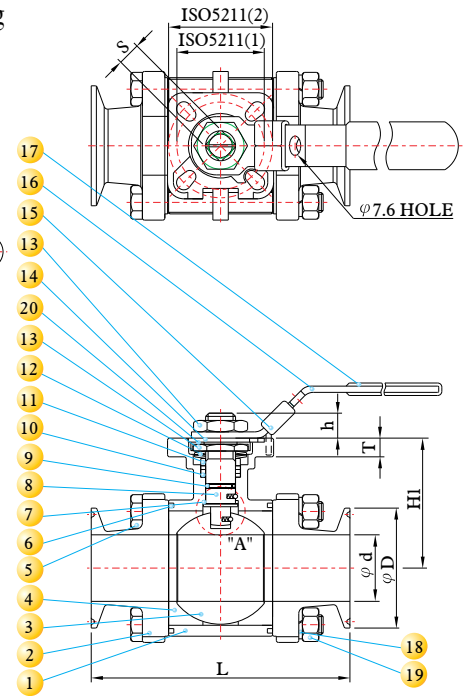
"A" VIEW



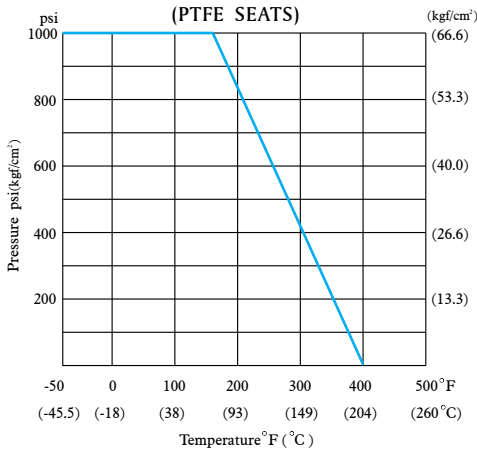
3"~4"



1/2"~2 1/2"



## PRESSURE TEMPERATURE RATINGS



## DIMENSIONS

SIZE	d		D		L		H1		h		S		T		ISO 5211	Cv Factor	Weight	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb
1/2"	15	0.37	9.5	1.00	25.4	3.51	89.2	1.67	42.5	0.31	8.0	0.35	9	0.35	F03 / F04	10	0.80	1.76
3/4"	20	0.63	15.9	1.00	25.4	4.00	101.6	1.83	46.5	0.39	10.0	0.35	9	0.35	F03 / F04	28	1.05	2.31
1"	25	0.87	22.2	1.98	50.4	4.51	114.6	2.34	59.5	0.45	11.5	0.43	11	0.35	F04 / F05	60	1.55	3.41
1 1/2"	40	1.38	35.0	1.98	50.4	5.52	140.2	3.11	79.0	0.78	20.0	0.55	14	0.51	F05 / F07	200	3.29	7.25
2"	50	1.87	47.6	2.50	63.6	6.26	159.0	3.42	86.9	0.78	20.0	0.55	14	0.51	F05 / F07	450	4.70	10.35
2 1/2"	65	2.37	60.2	3.05	77.5	6.85	174.0	4.41	112.0	1.08	27.5	0.67	17	0.51	F07 / F10	700	9.37	20.64
3"	80	2.87	73.0	3.57	90.8	8.00	203.3	4.88	124.0	1.08	27.5	0.67	17	0.51	F07 / F10	1000	15.50	34.14
4"	100	3.83	97.4	4.67	118.5	8.90	226.1	6.22	158.0	0.94	24.0	0.67	17	0.79	F07 / F10	2000	23.50	51.76

# TC-3000TE TUBE END VALVE

3PC 1000 WOG TRUE PORT TUBE END SANITARY BALL VALVE (WITH ISO 5211 DIRECT MOUNT PAD)

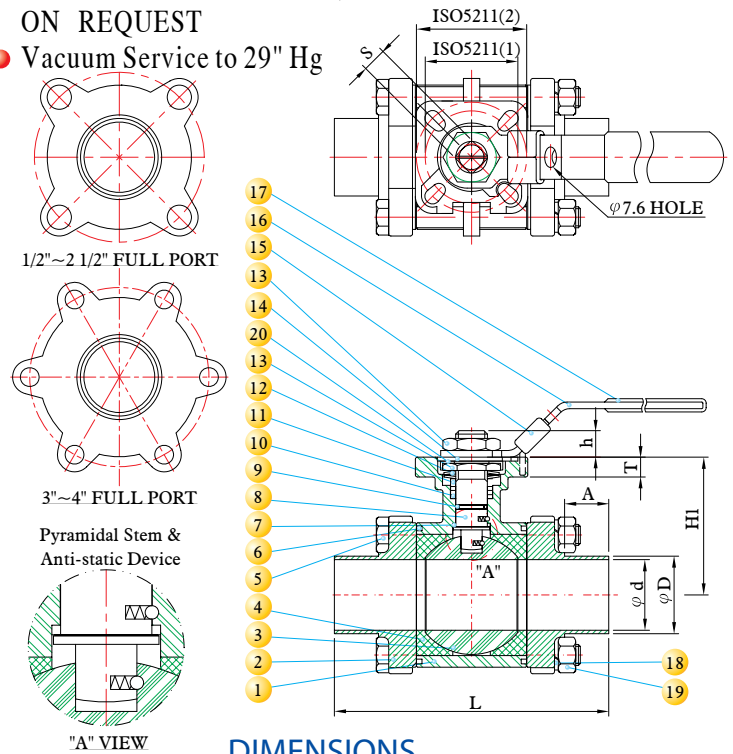


## DESIGN FEATURES:

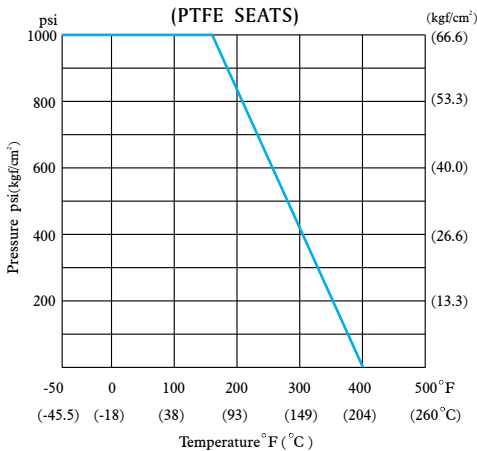
- WORKING PRESSURE : 1000 PSI
- INVESTMENT CASTING BODY & CAP
- TEMPERATURE RATING : -45.5°C (-50°F) to 204.4°C (400°F)
- BLOW - OUT- PROOF STEM
- ANTI- STATIC DEVICE
- ADJUSTABLE STEM PACKING
- HANDLE WITH LOCKING DEVICE
- FULL ISO-5211 PAD FOR DIRECT MOUNT AUTOMATION
- End Connections: TUBE END
- PTFE CAVITY FILLERS
- FOR FOOD AND GENERAL CHEMICAL SERVICE APPLICATION
- TEST STANDARD: API 598
- VALVES MARKED WITH HEAT NUMBERS FOR FULL IDENTIFICATION AND TRACEABILITY.
- INTERNAL FINISH 10Ra, OTHER FINISH AVAILABLE ON REQUEST
- Vacuum Service to 29" Hg

## MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	2
3	BALL	ASTM A351 Gr.CF8M	1
4	SEAT	PTFE	2
5	BOLT	ASTM A193 Gr.B8	4~6
6	GASKET	PTFE	2
7	THRUST WASHER	PTFE	1
8	STEM	ASTM A276 Gr.316	1
9	O-RING	VITON	1
10	PACKING	PTFE	1
11	RING	SS304	1
12	BELLEVILLE WASHER	SS410	2
13	HANDLE NUT	SS304	2
14	STOPPER	SS304	1
15	LOCKING PLATE	SS304	1
16	HANDLE	SS304	1
17	HANDLE SLEEVE	VINYL GRIP	1
18	BOLT WASHER	SS304	4~6
19	BOLT NUT	ASTM A194 Gr.8	4~6
20	STOP WASHER	SS304	1



## PRESSURE TEMPERATURE RATINGS



## DIMENSIONS

SIZE	d		D		L		H1		h		S		T		ISO 5211	Cv Factor	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb	
1/2"	15	0.37	9.5	0.5	12.7	3.51	89.2	1.67	42.5	0.31	8.0	0.35	9	0.35	9	F03 / F04	10	0.80	1.76
3/4"	20	0.63	15.9	0.75	19.1	4.00	101.6	1.83	46.5	0.39	10.0	0.35	9	0.35	9	F03 / F04	28	1.05	2.31
1"	25	0.87	22.2	1.00	25.4	4.51	114.6	2.34	59.5	0.45	11.5	0.43	11	0.35	9	F04 / F05	60	1.55	3.41
1 1/2"	40	1.38	35.0	1.50	38.1	5.52	140.2	3.11	79.0	0.78	20.0	0.55	14	0.51	13	F05 / F07	200	3.29	7.25
2"	50	1.87	47.6	2.00	50.8	6.26	159.0	3.42	86.9	0.78	20.0	0.55	14	0.51	13	F05 / F07	450	4.70	10.35
2 1/2"	65	2.37	60.2	2.50	63.4	6.85	174.0	4.41	112.0	1.08	27.5	0.67	17	0.51	13	F07 / F10	700	9.37	20.64
3"	80	2.87	73.0	3.00	76.2	8.00	203.3	4.88	124.0	1.08	27.5	0.67	17	0.51	13	F07 / F10	1000	15.50	34.14
4"	100	3.83	97.4	3.00	101.6	8.90	226.1	6.22	158.0	0.94	24.0	0.67	17	0.79	20	F07 / F10	2000	23.50	51.76

# TC-4000 (FS), TC-4100 (FS) VALVE

## 3PC FULL PORT 1500/2000 WOG BALL VALVE, T/S (WITH ISO 5211 DIRECT MOUNT PAD)



### DESIGN FEATURES:

- Steam rating: 150 psi WSP
- Working Pressure: 1/2"~1" 2000 psi  
1 1/4"~2" 1500 psi
- Body: ASTM A351 Gr. CF8M For TC-4000  
ASTM A216 Gr. WCB For TC-4100
- ME-PTFE SEAL KITS : REPLACES PTFE ,RPTFE AND FPA  
LOW DEFORMATION UNDER LOAD  
LOW PERMEATION
- TEMPERATURE RATING : -45.5°C (-50°F) to 246°C (475°F)
- LONG CYCLE LIFE
- BLOW - OUT - PROOF STEM
- ANTI - STATIC DEVICE
- ADJUSTABLE STEM PACKING
- HANDLE WITH LOCKING DEVICE
- FULL ISO 5211 PAD FOR DIRECT MOUNT AUTOMATION
- End Connections: Threaded End  
Socket-Weld End
- TEST STANDARD: API 598
- API 607 5<sup>th</sup> Edition FIRE SAFE APPROVAL
- Vacuum Service to 29" Hg

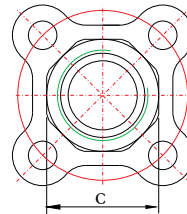
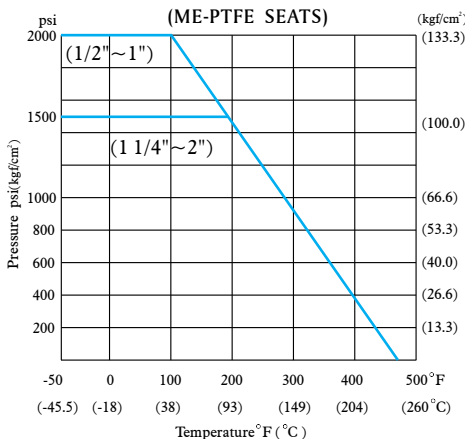
### MATERIALS LIST

NO.	PART NAME	MATERIAL		QTY
		STAINLESS STEEL	CARBON STEEL	
1	BODY	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
2	CAP	ASTM A351 Gr.CF8M	ASTM A216 WCB	2
3	BALL	ASTM A351 Gr.CF8M	ASTM A351 Gr.CF8M	1
4	SEAT	*ME-PTFE	*ME-PTFE	2
5	BOLT	ASTM A193 Gr.B8	ASTM A193 Gr.B7	8
6	GASKET	*ME-PTFE or GRAFOIL	*ME-PTFE or GRAFOIL	2
7	THRUST WASHER	*ME-PTFE or PTFE+50%S.S.	*ME-PTFE or PTFE+50%S.S.	1
8	STEM	ASTM A276 Gr.316	ASTM A276 Gr.316	1
9	O-RING	VITON	VITON	1
10	PACKING	*ME-PTFE or GRAFOIL	*ME-PTFE or GRAFOIL	1
11	RING	SS304	SS304	1
12	BELLEVEILLE WASHER	SS410	SS410	2
13	HANDLE NUT	SS304	SS304	2
14	STOP WASHER	SS304	SS304	2
15	STOPPER	SS304	SS304	1
16	LOCKING PLATE	SS304	SS304	1
17	HANDLE	SS304	SS304	1
18	HANDLE SLEEVE	VINYL GRIP	VINYL GRIP	1

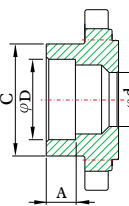
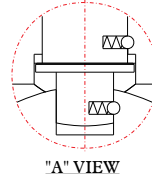
\*ME-PTFE IS Molecularly Enhanced PTFE

\*For Fire-Safe only

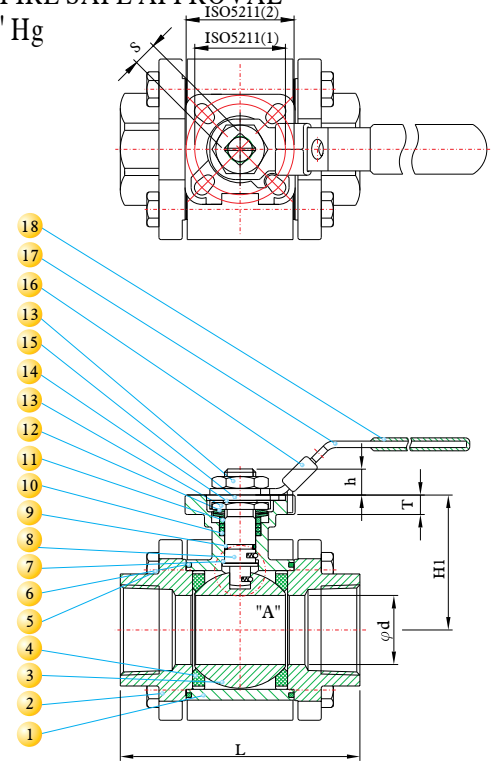
### PRESSURE TEMPERATURE RATINGS



Pyramidal Stem & Anti-static Device



Socket-Weld End



### DIMENSIONS

SIZE	A		C		D		d		L		H1		h		S		T		ISO 5211	Cv Factor	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			kg	Lb	
1/2"	15	0.39	10	1.15	29.1	0.85	21.7	0.59	15.0	2.89	73.5	1.67	42.50	0.35	9.0	0.35	9	0.35	9	F03 / F04	26	0.93	2.05
3/4"	20	0.51	13	1.44	36.7	1.07	27.1	0.79	20.0	3.26	83.0	1.83	46.5	0.35	9.0	0.35	9	0.35	9	F03 / F04	55	1.34	2.95
1"	25	0.51	13	1.81	46.0	1.33	33.8	1.00	25.4	3.90	99.0	2.34	59.5	0.45	11.5	0.43	11	0.35	9	F04 / F05	110	2.18	4.80
1 1/4"	32	0.51	13	2.04	51.9	1.68	42.6	1.26	32.0	4.48	114.0	2.46	62.5	0.49	12.5	0.43	11	0.35	9	F04 / F05	180	3.47	7.64
1 1/2"	40	0.51	13	2.33	59.3	1.92	48.7	1.57	40.0	5.03	128.0	3.11	79.0	0.63	16.0	0.55	14	0.51	13	F05 / F07	270	4.73	10.42
2"	50	0.63	16	2.86	72.6	2.41	61.2	2.00	50.8	5.98	152.0	3.42	86.9	0.63	16.0	0.55	14	0.51	13	F05 / F07	500	7.54	16.61



# TC-6000 (FS), TC-6100 (FS) VALVE

## 1PC 150# REGULAR PORT BALL VALVE, FLANGED

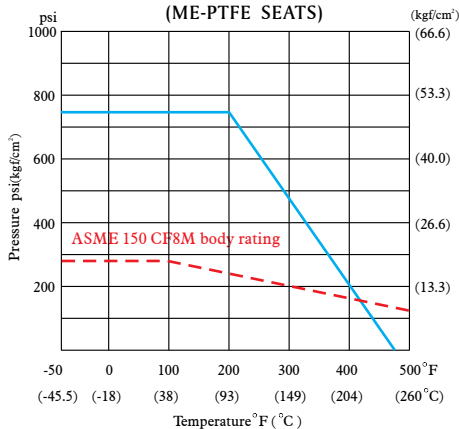


### MATERIALS LIST

NO.	PART NAME	MATERIAL		QTY
		STAINLESS STEEL	CARBON STEEL	
1	BODY	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
2	CAP	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
3	BALL	ASTM A351 Gr.CF8M	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	ASTM A276 Gr.316	1
5	SEAT	* ME-PTFE	* ME-PTFE	2
6	GASKET	* ME-PTFE or * GRAFOIL	* ME-PTFE or * GRAFOIL	1
7	THRUST WASHER	* ME-PTFE	* ME-PTFE	1
8	PACKING	* ME-PTFE or * GRAFOIL	* ME-PTFE or * GRAFOIL	1
9	GLAND	ASTM A351 Gr.CF8	ASTM A351 Gr.CF8	1
10	STOPPER	SS304	SS304	1
11	SNAP RING	SS304	SS304	2
12	GLAND BOLT	ASTM A193 Gr.B8	ASTM A193 Gr.B8	2
13	HANDLE	ASTM A536 Gr.65-45-12	ASTM A536 Gr.65-45-12	1

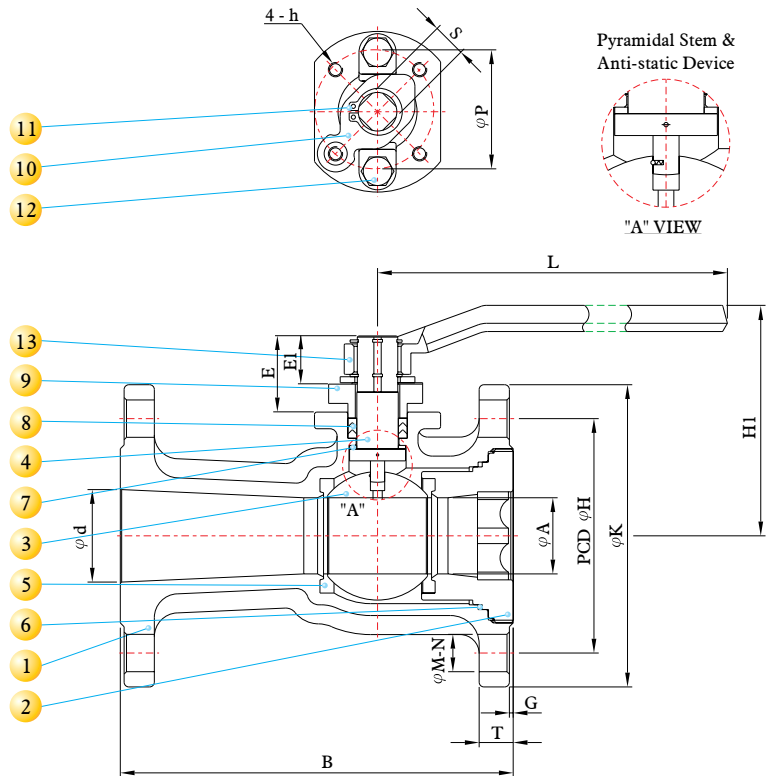
\*ME-PTFE IS Molecularly Enhanced PTFE \*For Fire-Safe only

### PRESSURE TEMPERATURE RATINGS (ME-PTFE SEATS)



### DESIGN FEATURES:

- Steam rating: 150 psi WSP
- ISO 5211 Actuator Mounting Pad
- Blow-out - proof stem design
- Anti - Static device
- Adjustable Stem Packing
- Locking Device
- Body: ASTM A351 Gr. CF8M For TC-6000  
ASTM A216 Gr. WCB For TC-6100
- ME-PTFE SEAL KITS: REPLACES PTFE, RPTFE AND FPA  
LOW DEFORMATION UNDER LOAD  
LOW PERMEATION
- Temperature Rating: -45.5 °C (-50 °F) to 246 °C (475 °F)
- Long Cycle Life
- ANSI B16.5 B16.10 and B16.34 full Compliance
- TEST STANDARD: API 598
- API 607 4<sup>th</sup> Edition FIRE SAFE APPROVAL
- Vacuum Service to 29" Hg



### DIMENSIONS

SIZE	A		B		E		E1		d		G		H		K		T		M		N	P		S		L		H1		h	Cv Factor	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb	
1"	25	0.79	20	5.0	127.0	0.98	25.0	0.69	17.4	0.98	25	0.06	1.6	3.12	79.2	4.25	108.0	0.44	11.2	0.62	15.7	4	1.65	42	0.43	11	5.18	131.5	2.95	74.90	M5*P0.8	52	2.30	5.07
1 1/2"	40	1.26	32	6.5	165.1	1.24	31.5	0.83	21.0	1.57	40	0.06	1.6	3.88	98.5	5.00	127.0	0.56	14.2	0.62	15.7	4	1.97	50	0.55	14	6.42	163.0	3.81	96.85	M6*P1.0	120	4.50	9.92
2"	50	1.50	38	7.0	177.8	1.65	42.0	1.02	26.0	1.97	50	0.06	1.6	4.75	120.6	6.00	152.4	0.62	15.7	0.75	19.0	4	2.76	70	0.67	17	9.13	232.0	4.96	125.90	M8*P1.25	170	7.10	15.66
2 1/2"	65	1.97	50	7.5	190.5	1.65	42.0	1.02	26.0	2.64	67	0.06	1.6	5.50	139.7	7.00	177.8	0.69	17.6	0.75	19.0	4	2.76	70	0.67	17	9.13	232.0	5.32	135.20	M8*P1.25	255	10.80	23.79
3"	80	2.56	65	8.0	203.2	2.20	56.0	1.44	36.7	3.15	80	0.06	1.6	6.00	152.4	7.50	190.5	0.75	19.0	0.75	19.0	4	4.02	102	0.87	22	12.87	327.0	5.98	152.00	M10*P1.5	430	14.20	31.31
4"	100	3.15	80	9.0	228.6	2.20	56.0	1.44	36.7	3.94	100	0.06	1.6	7.50	190.5	9.00	228.6	0.94	23.8	0.75	19.0	8	4.02	102	0.87	22	12.87	327.0	6.30	160.10	M10*P1.5	565	23.58	56.34
6"	150	3.94	100	10.5	266.7	2.20	56.0	1.44	36.7	5.91	150	0.06	1.6	9.50	241.3	11.00	279.4	1.00	25.4	0.88	22.3	8	4.02	102	0.87	22	12.87	327.0	7.01	178.00	M10*P1.5	600	36.95	81.39

# TC-0802A VALVE

## 2PC 150# FULL PORT BALL VALVE, FLANGED



### DESIGN FEATURES:

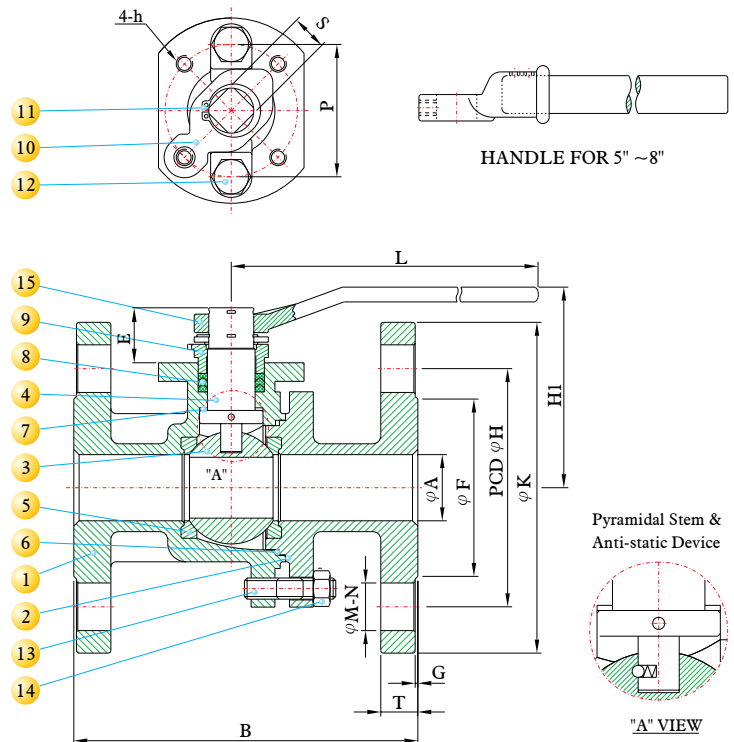
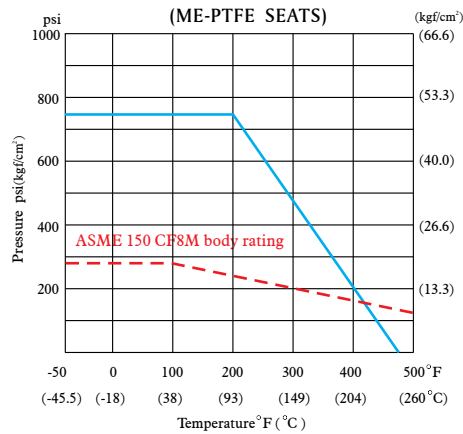
- Steam rating: 150 psi WSP
- ISO 5211 Actuator Mounting Pad
- Blow-out-proof stem design
- Anti - Static Device
- Body: ASTM A351 Gr.CF8M
- Ball: SS316
- Stem: SS316
- ME-PTFE SEAL KITS : REPLACES PTFE ,RPTFE AND FPA LOW DEFORMATION UNDER LOAD LOW PERMEATION
- Temperature Rating : -45.5 °C (-50 °F) to 246 °C (475 °F)
- Face to Face: ANSI B16.10
- Flange Dimensions: ANSI B16.5 150 #
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg

### MATERIALS LIST

NO.	PART NAME	MATERIAL	Q'TY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	ME-PTFE	2
6	GASKET	ME-PTFE	1
7	THRUST WASHER	ME-PTFE	1
8	PACKING	ME-PTFE	1
9	GLAND	ASTM A351 Gr.CF8	1
10	STOPPER	SS304	1
11	SNAP RING	SS304	2
12	GLAND BOLT	ASTM A193 Gr.B8	2
13	STUD BOLT	ASTM A193 Gr.B8	4~12
14	SET NUT	ASTM A194 Gr.8M	4~12
15	HANDLE	ASTM A536 Gr.B 65-45-12	1

ME-PTFE IS Molecularly Enhanced PTFE

### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE		A		B		E		F		G		H		K		T		M		N	P		S		L		HI		h	Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb
1/2"	15	0.59	15.0	4.25	107.9	0.98	25.0	1.38	35.0	0.06	1.6	2.38	60.4	3.50	88.9	0.44	11.2	0.62	15.7	4	1.65	42	0.43	11	5.18	131.5	2.91	73.8	M5*P0.8	26	2.00	4.41
3/4"	20	0.79	20.0	4.62	117.3	1.02	26.0	1.69	42.9	0.06	1.6	2.75	69.8	3.88	98.5	0.44	11.2	0.62	15.7	4	1.65	42	0.43	11	5.18	131.5	2.94	74.8	M5*P0.8	55	2.50	5.51
1"	25	0.98	25.0	5.00	127.0	1.24	31.5	2.00	50.8	0.06	1.6	3.12	79.2	4.25	107.9	0.44	11.2	0.62	15.7	4	1.97	50	0.55	14	6.42	163.0	3.44	87.4	M6*P1.0	110	3.00	6.61
1 1/4"	32	1.26	32.0	5.50	139.7	1.24	31.5	2.50	63.5	0.06	1.6	3.50	88.9	4.62	117.3	0.50	12.7	0.62	15.7	4	1.97	50	0.55	14	6.42	163.0	3.63	92.2	M6*P1.0	180	4.50	9.91
1 1/2"	40	1.50	38.0	6.50	165.1	1.65	42.0	2.88	73.1	0.06	1.6	3.88	98.5	5.00	127.0	0.56	14.2	0.62	15.7	4	2.76	70	0.67	17	9.13	232.0	4.76	121.0	M8*P1.25	270	6.00	13.22
2"	50	1.97	50.0	7.00	177.8	1.65	42.0	3.62	91.9	0.06	1.6	4.75	120.6	6.00	152.4	0.62	15.7	0.75	19.0	4	2.76	70	0.67	17	9.13	232.0	5.08	129.0	M8*P1.25	500	8.50	18.72
2 1/2"	65	2.56	65.0	7.50	190.5	1.65	42.0	4.12	104.6	0.06	1.6	5.50	139.7	7.00	177.8	0.69	17.5	0.75	19.0	4	2.76	70	0.67	17	9.13	232.0	5.55	141.0	M8*P1.25	800	13.00	28.63
3"	80	3.15	80.0	8.00	203.2	2.20	56.0	5.00	127.0	0.06	1.6	6.00	152.4	7.50	190.5	0.75	19.0	0.75	19.0	4	4.02	102	0.87	22	12.87	327.0	6.52	165.7	M10*P1.5	1150	18.00	39.65
4"	100	3.94	100.0	9.00	228.6	2.20	56.0	6.19	157.2	0.06	1.6	7.50	190.5	9.00	228.6	0.94	23.8	0.75	19.0	8	4.02	102	0.87	22	12.87	327.0	7.11	180.7	M10*P1.5	2120	28.00	61.67
6"	150	5.91	150.0	15.50	393.7	2.64	67.0	8.50	215.9	0.06	1.6	9.50	241.3	11.00	279.4	1.00	25.4	0.88	22.3	8	4.92	125	1.06	27	42.20	1072.0	9.95	252.8	M12*P1.75	5100	75.00	165.20
8"	200	7.87	200.0	18.00	457.2	2.62	66.5	10.62	269.7	0.06	1.6	11.75	298.4	13.50	342.9	1.12	28.4	0.88	22.3	8	5.51	140	1.30	33	42.52	1080.0	11.73	297.9	M16*P2.0	9400	110.00	242.29

# TC-0802A VALVE

## 2PC 300# FULL PORT BALL VALVE, FLANGED



### DESIGN FEATURES:

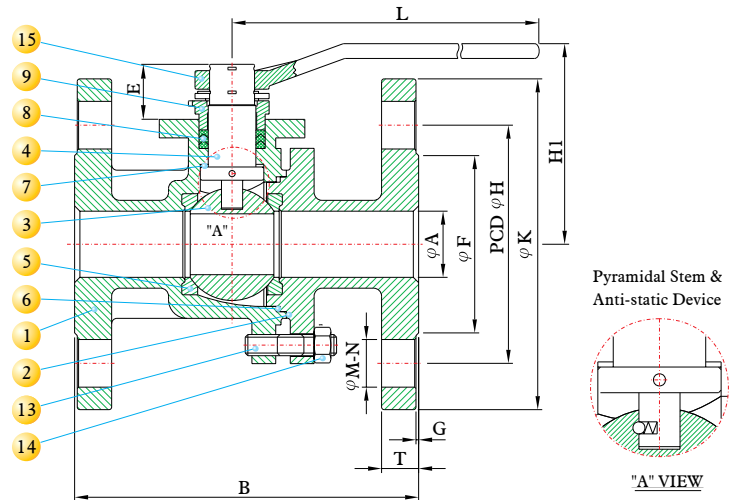
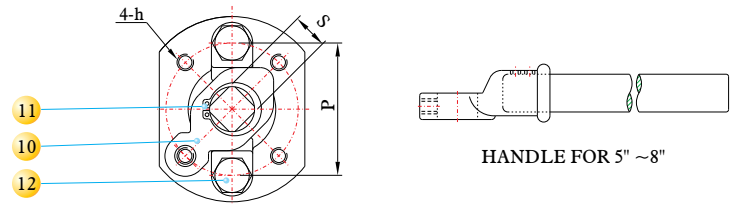
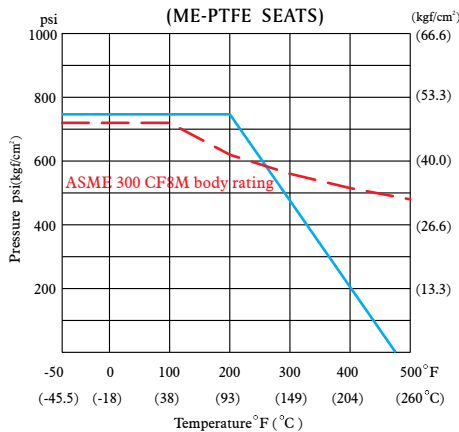
- Steam rating: 150 psi WSP
- ISO 5211 Actuator Mounting Pad
- Blow-out-proof stem design
- Anti - Static Device
- Body: ASTM A351 Gr.CF8M
- Ball: SS316
- Stem: SS316
- ME-PTFE SEAL KITS : REPLACES PTFE ,RPTFE AND FPA  
LOW DEFORMATION UNDER LOAD  
LOW PERMEATION
- Temperature Rating : -45.5 °C (-50 °F) to 246 °C (475 °F)
- Face to Face: ANSI B16.10
- Flange Dimensions: ANSI B16.5 300 #
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg

### MATERIALS LIST

NO.	PART NAME	MATERIAL	Q'TY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	1
5	SEAT	ME-PTFE	2
6	GASKET	ME-PTFE	1
7	THRUST WASHER	ME-PTFE	1
8	PACKING	ME-PTFE	1
9	GLAND	ASTM A351 Gr.CF8	1
10	STOPPER	SS304	1
11	SNAP RING	SS304	2
12	GLAND BOLT	ASTM A193 Gr.B8	2
13	STUD BOLT	ASTM A193 Gr.B8	4~12
14	SET NUT	ASTM A194 Gr.8M	4~12
15	HANDLE	ASTM A536 Gr.B 65-45-12	1

ME-PTFE IS Molecularly Enhanced PTFE

### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE		A		B		E		F		G		H		K		T		M		N	P		S		L		H1		h	Cv	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm	inch	mm			Factor	Kg
1/2"	15	0.59	15.0	5.50	139.7	1.00	25.5	1.38	35.0	0.06	1.6	2.62	66.5	3.75	95.2	0.56	14.2	0.62	15.7	4	1.65	42	0.43	11	5.18	131.5	2.91	73.8	M5*P0.8	26	2.53	5.58
3/4"	20	0.79	20.0	6.00	152.4	0.98	25.0	1.69	42.9	0.06	1.6	3.25	82.5	4.62	117.3	0.62	15.7	0.75	19.0	4	1.65	42	0.43	11	5.18	131.5	2.94	74.8	M5*P0.8	55	3.50	7.72
1"	25	0.98	25.0	6.50	165.1	1.26	32.0	2.00	50.8	0.06	1.6	3.50	88.9	4.88	123.9	0.69	17.5	0.75	19.0	4	1.97	50	0.55	14	6.42	163.0	3.44	87.4	M6*P1.0	110	4.54	10.01
1 1/4"	32	1.26	32.0	7.00	177.8	1.28	32.5	2.50	63.5	0.06	1.6	3.88	98.5	5.25	133.3	0.75	19.0	0.75	19.0	4	1.97	50	0.55	14	6.42	163.0	3.63	92.2	M6*P1.0	180	5.75	12.67
1 1/2"	40	1.50	38.0	7.50	190.5	1.65	42.0	2.88	73.1	0.06	1.6	4.50	114.3	6.12	155.4	0.81	20.5	0.88	22.3	4	2.76	70	0.67	17	9.13	232.0	4.76	121.0	M8*P1.25	270	9.50	20.95
2"	50	1.97	50.0	8.50	215.9	1.65	42.0	3.62	91.9	0.06	1.6	5.00	127.0	6.50	165.1	0.88	22.3	0.75	19.0	8	2.76	70	0.67	17	9.13	232.0	5.08	129.0	M8*P1.25	500	11.30	24.92
2 1/2"	65	2.56	65.0	9.50	241.3	1.65	42.0	4.12	104.6	0.06	1.6	5.88	149.3	7.50	190.5	1.00	25.4	0.88	22.3	8	2.76	70	0.67	17	9.13	232.0	5.55	141.0	M8*P1.25	800	18.80	41.45
3"	80	3.15	80.0	11.12	282.4	2.20	56.0	5.00	127.0	0.06	1.6	6.62	168.1	8.25	209.5	1.12	28.4	0.88	22.3	8	4.02	102	0.87	22	12.87	327.0	6.52	165.7	M10*P1.5	1150	26.60	58.65
4"	100	3.94	100.0	12.00	304.8	2.20	56.0	6.19	157.2	0.06	1.6	7.88	200.1	10.00	254.0	1.25	31.7	0.88	22.3	8	4.02	102	0.87	22	12.87	327.0	7.11	180.7	M10*P1.5	2120	41.40	91.29
6"	150	5.91	150.0	15.88	403.3	2.24	57.0	8.50	215.9	0.06	1.6	10.62	269.7	12.50	317.5	1.44	36.5	0.88	22.3	12	4.92	125	1.06	27	42.26	1073.4	9.95	252.8	M12*P1.75	5100	92.00	202.86
8"	200	7.87	200.0	19.75	501.6	2.26	57.5	10.62	269.7	0.06	1.6	13.00	330.2	15.00	381.0	1.62	41.1	1.00	25.4	12	5.51	140	1.30	33	42.52	1080.0	11.73	297.9	M16*P2.0	9400	124.00	273.13



# TC-0802A VALVE

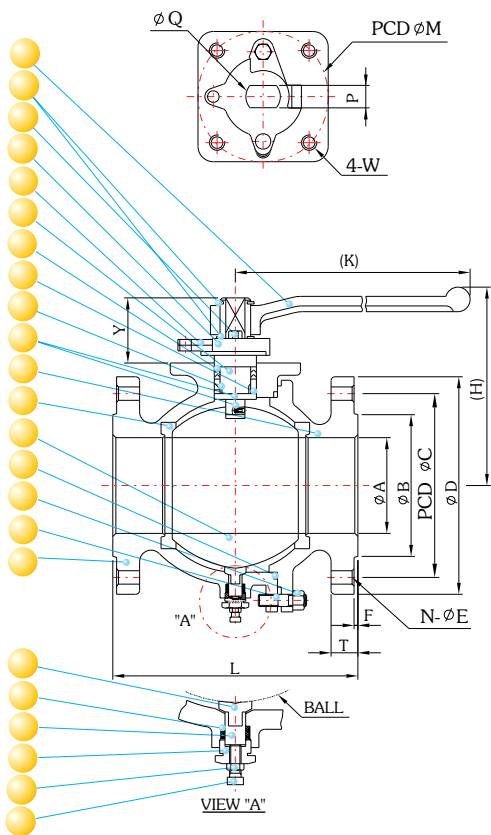
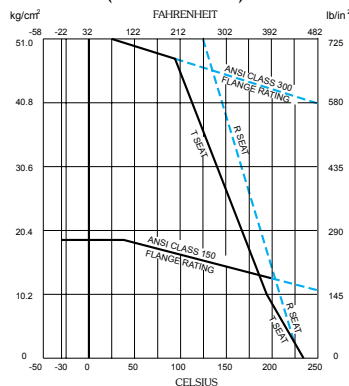
## 2PC 150#/300# FULL PORT BALL VALVE, FLANGED



### DESIGN FEATURES:

- FACE TO FACE: ANSI B16.10
- FLANGE DIMENSION: ANSI B16.5
- WALL THICKNESS: ANSI B16.34
- TEST STANDARD: API 598
- GEAR OPERATION

### PRESSURE TEMPERATURE RATINGS (RTFE SEAT)



### MATERIALS LIST

NO.	PART NAME	MATERIAL		QTY
		STAINLESS STEEL	CARBON STEEL	
1	BODY	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
2	CAP	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
3	STEM	ASTM A276 Gr.316	ASTM A276 Gr.304	1
4	GLAND	SS304	STEEL	1
5	BALL	ASTM A351 Gr.CF8M	ASTM A351 Gr.CF8	1
6	SEAT	REINFORCED PTFE		2
7	PACKING	GRAFOIL		1
8	THRUST WASHER	RPTFE		2
9	GASKET	RPTFE		1
10	STEM BEARING	RPTFE		1
11	ANTI-STATIC	SS304	SS304	2
12	TRAVEL STOPPER	SS304	STEEL PLATED	1
13	SNAP RING	STEEL	STEEL	2
14	HANDLE	ASTM A536 Gr.65-45-12		1
15	STUD BOLT	ASTM A193 Gr.B8	STEEL	4~16
16	SET NUT	ASTM A194 Gr.8M	STEEL	4~16
17	GLAND BOLT	SS304	STEEL	2
18	PIN SEAT	RPTFE	RPTFE	1
19	PIN PACKING	RPTFE	RPTFE	1
20	SUPPORT PIN	SS304	SS304	1
21	SUPPORT NUT	SS304	SS304	1
22	SET NUT	SS304	SS304	1
23	TUNING SCREW	SS304	SS304	1

### DIMENSIONS

#### ANSI-150 2-PC F/P FLANGE BALL VALVE

SIZE	A		B		C		D		E		F		H		K		L		M	N	T		P	Q	Y	W	Cv Factor	Weight	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			inch	mm						Kg	Lb
10"	250	10	250	12.76	324	14.25	362	16	406	0.98	25	0.06	1.6	GEAR OPERATION		21	533	140	12	1.19	30.2	35	50	98	M16	16000	204.5	450.44	
12"	300	12	300	15.00	381	17.00	432	19	483	0.98	25	0.06	1.6	GEAR OPERATION		24	610	140	12	1.25	31.8	35	50	98	M16	24000	286.0	629.96	

#### ANSI-300 2-PC F/P FLANGE BALL VALVE

SIZE	A		B		C		D		E		F		H		K		L		M	N	T		P	Q	Y	W	Cv Factor	Weight	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			inch	mm						Kg	Lb
10"	250	10	250	12.76	324	15.26	387.5	17.48	444	1.14	29	0.06	1.6	GEAR OPERATION		22.36	568	140	16	1.88	47.7	35	50	98	M16	16000	295.0	649.78	
12"	300	12	300	15.00	381	17.76	451.0	20.51	521	1.26	32	0.06	1.6	GEAR OPERATION		25.51	648	140	16	2.00	50.8	35	50	98	M16	24000	402.0	885.46	

# TC-5000 (FS), TC-5100 (FS) VALVE

## 2PC 150# FULL PORT BALL VALVE, FLANGED

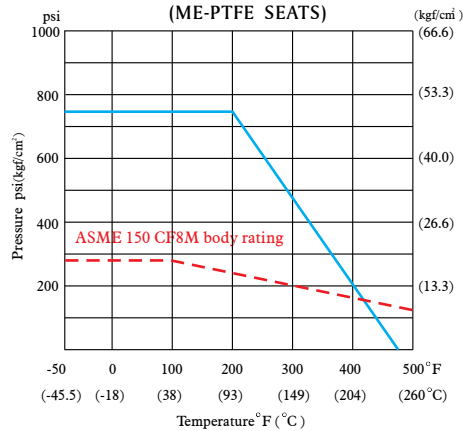


### MATERIALS LIST

NO.	PART NAME	MATERIAL		QTY
		STAINLESS STEEL	CARBON STEEL	
1	BODY	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
2	CAP	ASTM A351 Gr.CF8M	ASTM A216 WCB	1
3	BALL	ASTM A351 Gr.CF8M	ASTM A351 Gr.CF8M	1
4	STEM	ASTM A276 Gr.316	ASTM A276 Gr.316	1
5	SEAT	*ME-PTFE	*ME-PTFE	2
6	GASKET	GRAFOIL	GRAFOIL	1
7	THRUST WASHER	*ME-PTFE	*ME-PTFE	1
8	PACKING	GRAFOIL	GRAFOIL	1
9	GLAND	ASTM A351 Gr.CF8	ASTM A351 Gr.CF8	1
10	STOPPER	SS304	SS304	1
11	HANDLE NUT	SS304	SS304	2
12	GLAND BOLT	ASTM A193 Gr.B8	ASTM A193 Gr.B8	2
13	STUD BOLT	ASTM A193 Gr.B8	ASTM A193 Gr.B7M	4~10
14	SET NUT	ASTM A194 Gr.8	ASTM A194 Gr.2HM	4~10
15	HANDLE	SS304	SS304	1
16	LOCKING PLATE	SS304	SS304	1

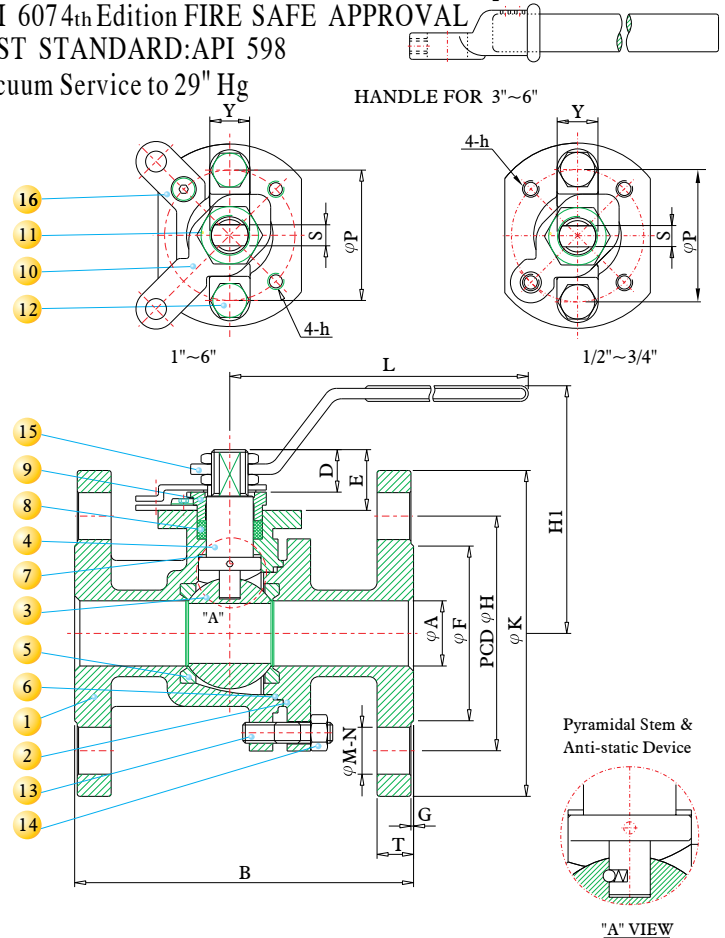
\* ME-PTFE IS Molecularly Enhanced PTFE

### PRESSURE TEMPERATURE RATINGS



### DESIGN FEATURES:

- Steam rating: 150 psi WSP
- ISO 5211 Actuator Mounting Pad
- Blow-out-proof stem design
- Anti - Static Device
- Adjustable Stem Packing
- Locking Device
- Body: ASTM A351 Gr. CF8M For TC-5000  
ASTM A216 Gr. WCB For TC-5100
- ME-PTFE SEAL KITS: REPLACES PTFE, RPTFE AND FPA  
LOW DEFORMATION UNDER LOAD  
LOW PERMEATION
- Temperature Rating: -45.5°C (-50°F) to 246°C (475°F)
- Long Cycle Life
- ANSI B16.5 B16.10 and B16.34 Full Compliance
- API 607 4th Edition FIRE SAFE APPROVAL
- TEST STANDARD: API 598
- Vacuum Service to 29" Hg



### DIMENSIONS

SIZE	A		B		D		E		F		G		H		K		M		N	P		S		L		H1		h	Y	Cv	Weight				
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm	inch	mm				Kg	Lb			
1/2"	15	0.59	15.0	4.25	107.9	0.56	14.1	0.98	25.0	1.38	35.0	0.06	1.6	2.38	60.4	3.50	88.9	0.44	11.1	0.62	15.7	4	1.65	42	0.32	8	5.18	131.5	2.91	73.8	M5*P0.8	M14*P2.0	26	1.81	3.99
3/4"	20	0.79	20.0	4.62	117.3	0.59	15.1	0.98	25.0	1.69	42.9	0.06	1.6	2.75	69.8	3.88	98.5	0.44	11.1	0.62	15.7	4	1.65	42	0.32	8	5.18	131.5	2.94	74.8	M5*P0.8	M14*P2.0	55	2.10	4.63
1"	25	0.98	25.0	5.00	127.0	0.62	15.8	1.24	31.5	2.00	50.8	0.06	1.6	3.12	79.2	4.25	107.9	0.44	11.1	0.62	15.7	4	1.97	50	0.39	10	6.42	163.0	3.44	87.4	M6*P1.0	M16*P2.0	110	3.00	6.61
1 1/4"	32	1.26	32.0	5.50	139.7	0.62	15.8	1.24	31.5	2.50	63.5	0.06	1.6	3.50	88.9	4.62	117.3	0.50	12.7	0.62	15.7	4	1.97	50	0.39	10	6.42	163.0	3.63	92.2	M6*P1.0	M16*P2.0	180	4.50	9.91
1 1/2"	40	1.50	38.0	6.50	165.1	0.86	21.8	1.67	42.3	2.88	73.1	0.06	1.6	3.88	98.5	5.00	127.0	0.56	14.2	0.62	15.7	4	2.76	70	0.39	10	9.13	232.0	4.76	121.0	M8*P1.25	M16*P2.0	270	6.20	13.66
2"	50	1.97	50.0	7.00	177.8	0.86	21.8	1.67	42.3	3.62	91.9	0.06	1.6	4.75	120.6	6.00	152.4	0.62	15.7	0.75	19.0	4	2.76	70	0.39	10	9.13	232.0	5.08	129.0	M8*P1.25	M16*P2.0	500	9.00	19.82
2 1/2"	65	2.56	65.0	7.50	190.5	0.86	21.8	1.67	42.3	4.12	104.6	0.06	1.6	5.50	139.7	7.00	177.8	0.69	17.5	0.75	19.0	4	2.76	70	0.55	14	9.13	232.0	5.55	141.0	M8*P1.25	M22*P2.5	800	13.00	28.63
3"	80	3.15	80.0	8.00	203.2	1.10	28.0	2.21	56.3	5.00	127.0	0.06	1.6	21.49	546.0	7.50	190.5	0.75	19.0	0.75	19.0	4	4.02	102	0.55	14	12.87	327.0	6.52	165.7	M10*P1.5	M22*P2.5	1150	21.00	46.26
4"	100	3.94	100.0	9.00	228.6	1.10	28.0	2.21	56.3	6.19	157.2	0.06	1.6	21.49	546.0	9.00	228.6	0.94	23.8	0.75	19.0	8	4.02	102	0.55	14	12.87	327.0	7.11	180.7	M10*P1.5	M22*P2.5	2120	32.00	70.48
6"	150	5.91	150.0	15.50	393.7	1.48	37.7	2.65	67.3	8.50	215.9	0.06	1.6	40.62	1032.0	11.00	279.4	1.00	25.4	0.88	22.3	8	4.92	125	0.79	20	42.20	1072.0	9.95	252.8	M12*P1.75	M30*P3.5	5100	75.00	165.20

# TC-7000 (FS) VALVE

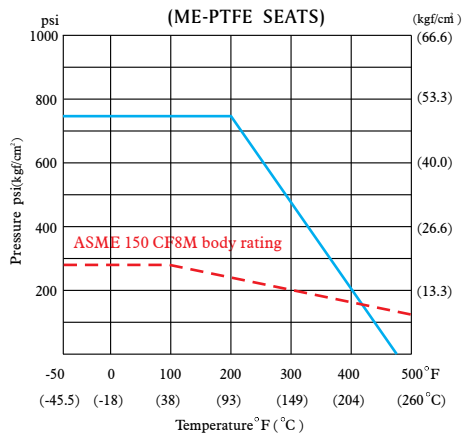
## 2PC 150# FULL PORT BALL VALVE, FLANGED (WITH ISO 5211 DIRECT MOUNT PAD)



### MATERIALS LIST

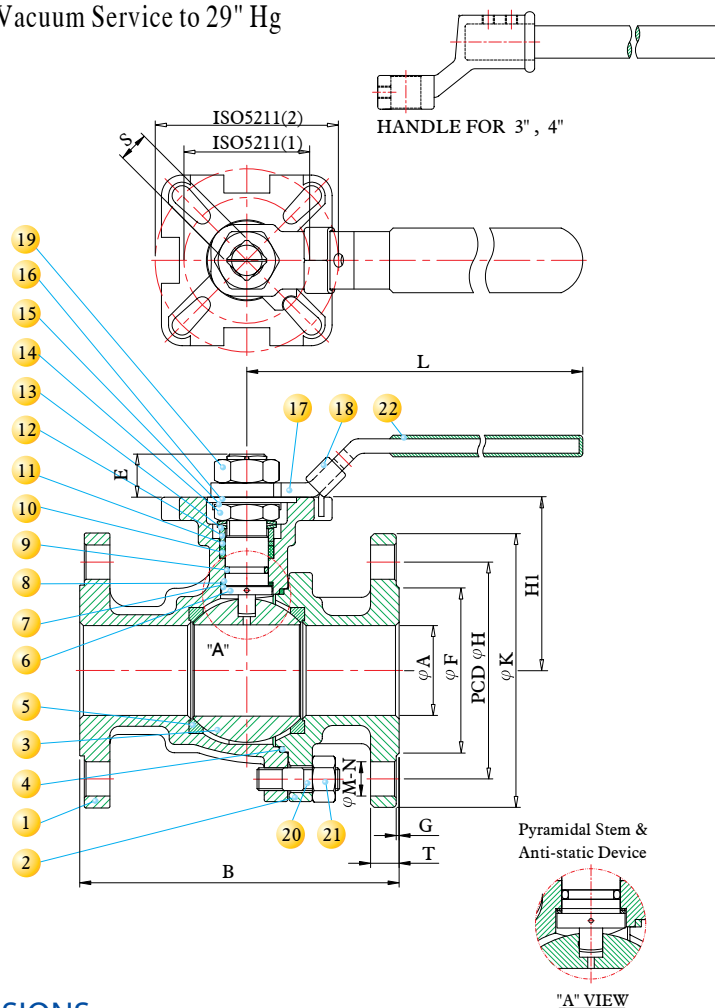
NO.	PART NAME	MATERIAL	Q'TY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	BALL	ASTM A351 Gr.CF8M	1
4	GASKET	GRAFOIL	1
5	SEAT	ME-PTFE	2
6	STEM	ASTM A276 Gr.316	1
7	THRUST WASHER	ME-PTFE	1
8	STEM BUSHING	50%SS.+50%PTFE	1
9	O-RING	VITON	1
10	PACKING	GRAFOIL	1
11	STEM BEARING	50%SS.+50%PTFE	1
12	RING	SS304	1
13	BELLEVILLE WASHER	SS410	2
14	STEM NUT	SS304	1
15	STOP WASHER	SS304	1
16	STOPPER	SS304	1
17	HANDLE	SS304	1
18	LOCKING PLATE	SS304	1
19	HANDLE NUT	SS304	1
20	STUD BOLT	SS304	4~12
21	SET NUT	SS304	4~12
22	HANDLE SLEEVE	VINYL GRIP	1

### PRESSURE TEMPERATURE RATINGS



### DESIGN FEATURES:

- Steam rating:150 psi WSP
- Blow-out-proof stem design
- Anti-Static Device
- Adjustable Stem Packing
- Locking Device
- ME-PTFE SEAT KITS: REPLACES PTFE, RPTFE AND FPA  
LOW DEFORMATION UNDER LOAD  
LOW PERMEATION
- Temperature Rating: -45.5°C (-50°F) to 246°C (475°F)
- FULL ISO-5211 PAD FOR DIRECT MOUNT AUTOMATION
- ANSI B16.5 B16.10 and B16.34 Full Compliance
- TEST STANDARD: API 598
- API 607 5<sup>th</sup> Edition FIRE SAFE APPROVAL
- Vacuum Service to 29" Hg



### DIMENSIONS

SIZE		A		B		E		F		G		H		K		L		M		N	S		T		H1		ISO 5211	Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm			Kg	Lb
1"	25	0.98	25.0	5.00	127.0	0.45	11.5	2.00	50.8	0.06	1.6	3.12	79.2	4.25	107.9	6.42	163.0	0.62	15.7	4	0.43	11	0.44	11.1	2.31	58.8	F04/F05	110	2.90	6.39
1 1/2"	40	1.50	38.0	6.50	165.1	0.63	16.0	2.88	73.1	0.06	1.6	3.88	98.5	5.00	127.0	9.13	232.0	0.62	15.7	4	0.67	17	0.56	14.2	3.50	89.1	F07/F10	270	6.70	14.76
2"	50	1.97	50.0	7.00	177.8	0.74	19.0	3.62	91.9	0.06	1.6	4.75	120.6	6.00	152.4	9.13	232.0	0.75	19.0	4	0.67	17	0.62	15.7	3.80	96.5	F07/F10	500	9.50	20.93
3"	80	3.15	80.0	8.00	203.2	0.74	19.0	5.00	127.0	0.06	1.6	6.00	152.4	7.50	190.5	12.87	327.0	0.75	19.0	4	0.87	22	0.75	19.0	5.22	132.5	F10/F12	1150	20.90	46.04
4"	100	3.94	100.0	9.00	228.6	0.94	24.0	6.19	157.2	0.06	1.6	7.50	190.5	9.00	228.6	12.87	327.0	0.75	19.0	8	0.87	22	0.94	23.8	6.18	157.0	F10/F12	2120	33.00	72.69

# TC-WL, TC-WT VALVE

## 3 WAY REDUCED PORT 1000 WOG BALL VALVE, THREADED "L" PORT, "T" PORT



### MATERIALS LIST

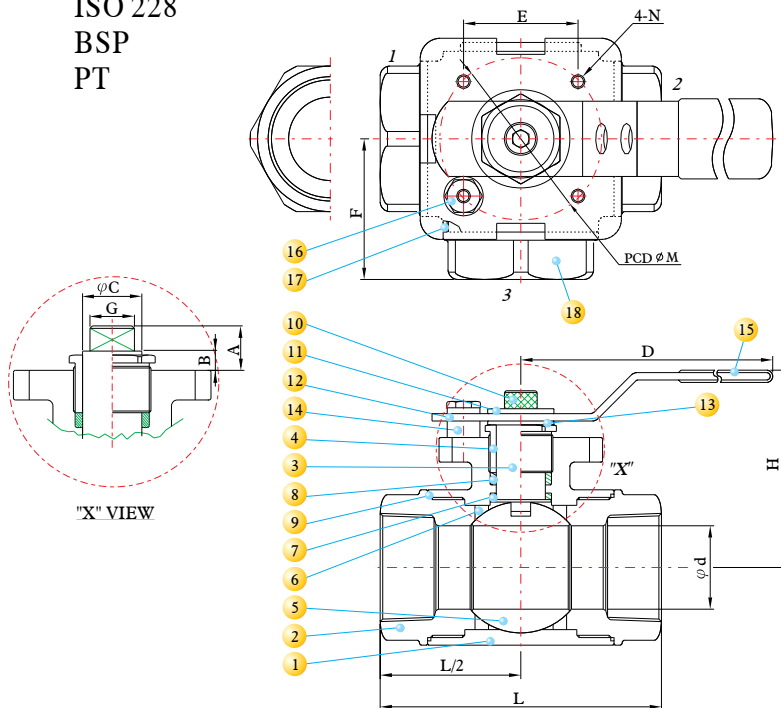
NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP2	ASTM A351 Gr.CF8M	2
3	STEM	ASTM A276 Gr.316	1
4	GLAND NUT	SS304	1
5	BALL	ASTM A351 Gr.CF8M	1
6	SEAT	PTFE+15% G/F	4
7	THRUST WASHER	PTFE	1
8	PACKING	PTFE	1
9	JOINT GASKET1	PTFE	2
10	STEM BOLT	SS304	1
11	WASHER	SS304	1
12	HANDLE	SS304	1
13	STEM WASHER	SS304	1
14	SET SCREW	SS304	1
15	HANDLE SLEEVE	VINYL GRIP	1
16	SET BOLT	SS304	1
17	JOINT GASKET	PTFE	1
18	CAP1	ASTM A351 Gr. CF8M	1

### DESIGN FEATURES:

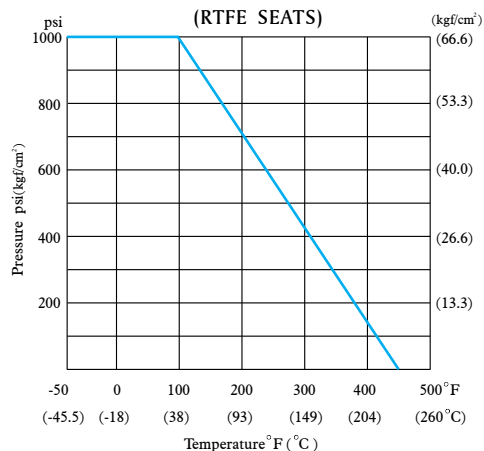
- Steam rating: 150 psi WSP
- Blow-out-proof stem design
- ISO 5211 Actuator Mounting Pad
- Body: ASTM A351 Gr.CF8M
- Ball: SS316
- Stem: SS316
- Seat: Reinforced Teflon
- End Connections: Threaded End
- Working Pressure: 1000 psi
- Temperature Range: -50° to 450° F
- TEST STANDARD: API 598
- Options: Padlocking device
- Threaded Type:

ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999  
ISO 228  
BSP  
PT

POSITION	A	B	C	D
L PORT				
T PORT				



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	A		B		C		G		d		L		H		D		E		F		M		N	Cv Factor	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb	
1/4"	8	0.42	10.7	0.22	5.7	0.47	12.0	0.35	9.0	0.43	11.0	2.73	69.4	2.46	62.5	5.25	133.4	1.18	30.0	1.40	35.5	1.65	42	M5*P0.8	6	0.82	1.81
3/8"	10	0.42	10.7	0.22	5.7	0.47	12.0	0.35	9.0	0.43	11.0	2.73	69.4	2.46	62.5	5.25	133.4	1.18	30.0	1.40	35.5	1.65	42	M5*P0.8	6	0.78	1.72
1/2"	15	0.42	10.7	0.22	5.7	0.47	12.0	0.35	9.0	0.50	12.7	2.98	75.7	2.59	65.9	5.25	133.4	1.38	35.0	1.57	40.0	1.65	42	M5*P0.8	12	0.74	1.63
3/4"	20	0.43	10.9	0.15	3.9	0.59	15.0	0.43	11.0	0.63	16.0	3.40	86.6	3.34	84.9	7.03	178.5	1.38	35.0	1.65	42.0	1.97	50	M6*P1.0	16	1.18	2.60
1"	25	0.79	20.0	0.33	8.5	0.59	15.0	0.43	11.0	0.79	20.0	4.03	102.4	3.49	88.7	7.03	178.5	1.38	35.0	1.73	44.0	1.97	50	M6*P1.0	20	1.70	3.74
1 1/4"	32	0.92	23.4	0.31	7.9	0.59	15.0	0.43	11.0	0.98	25.0	4.65	118.2	3.30	83.9	8.26	209.9	1.38	35.0	1.81	46.0	1.97	50	M6*P1.0	37	2.82	6.21
1 1/2"	40	1.01	25.8	0.41	10.3	0.59	15.0	0.43	11.0	1.26	32.0	4.95	125.8	4.07	103.3	8.19	208.0	1.95	49.5	2.24	57.0	2.76	70	M8*P1.25	103	3.96	8.72
2"	50	1.00	25.3	0.39	9.8	0.73	18.5	0.55	14.0	1.50	38.1	5.87	149.0	4.39	111.5	9.05	229.9	1.97	50.0	2.52	64.0	2.76	70	M8*P1.25	143	6.78	14.93





# TC-WLF, TC-WTF VALVE

## 150# MULTI-PORT FLANGED 3 WAY BALL VALVE "L" PORT, "T" PORT

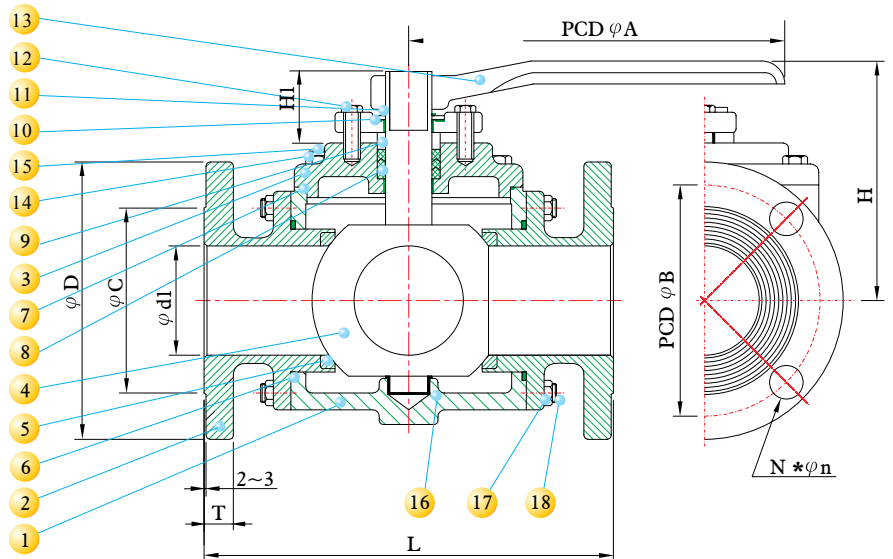
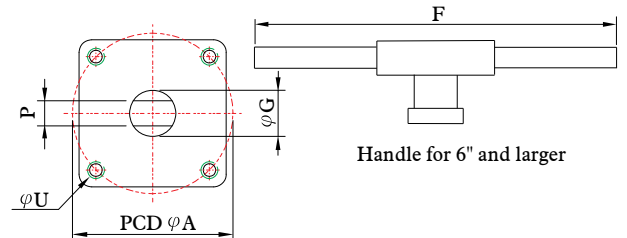


### DESIGN FEATURES:

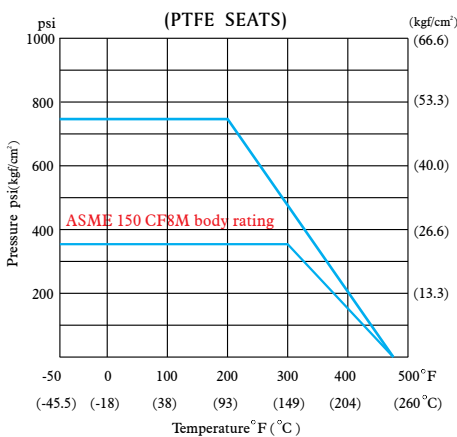
- Steam rating: 150 psi WSP
- Blow-out-proof stem design
- ISO 5211 Actuator Mounting Pad
- Body: ASTM A351 Gr.CF8M
- Ball: SS316
- Stem: SS316
- Seat: PTFE
- Temperature Range: -50° to 450° F
- Multiport design
- Flange Dimensions: ANSI B16.5 150 #
- TEST STANDARD: API 598

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	FLANGED CAP	ASTM A351 Gr.CF8M	3
3	COVER	ASTM A351 Gr.CF8M	1
4	BALL & STEM	SS316	1
5	BALL SEAT	PTFE	3
6	JOINT GASKET	PTFE	3
7	GASKET	PTFE	1
8	STEM PACKING	PTFE	1
9	GLAND	ASTM A351 Gr.CF8	1
10	STOPPER	SS304	1
11	C RETAINER RING	SK7	1
12	BOLT	ASTM A193 B8	2
13	HANDLE	FCD45	1
14	BOLT	ASTM A193 B8	4~12
15	NUT	ASTM A194 8	4~12
16	SLEEVE	PTFE	1
17	STUD BOLT	ASTM A193 B8	12~24
18	NUT	ASTM A194 8	12~24



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	A		B		C		D		d1		G		H		H1		
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		
2"	50	2.76	70	4.74	120.5	3.62	92	5.98	152	1.97	50	0.87	22.0	4.80	122	1.73	44
2 1/2"	50	2.76	70	5.49	139.5	4.13	105	7.00	178	2.60	66	1.16	29.5	6.42	163	2.56	65
3"	80	4.02	102	6.00	152.5	5.00	127	7.48	190	2.99	76	1.16	29.5	6.34	161	2.40	61
4"	100	4.92	125	7.50	190.5	6.18	157	9.01	229	3.98	101	1.34	34.0	8.46	215	2.20	56
6"	150	4.92	125	9.51	241.5	8.50	216	10.98	279	5.94	151	1.77	45.0	10.08	256	3.03	77

SIZE	L		T		N	n		P		F		U	ISO5211	Cv Factor	Weight		
	inch	mm	inch	mm		inch	mm	inch	mm	inch	mm				Kg	Lb	
2"	50	8.67	220	0.63	15.9	4	0.75	19	0.67	17	11.81	300	3/8" -16	F07	500	16	35.2
2 1/2"	50	11.10	282	0.69	17.5	4	0.75	19	0.67	17	11.81	300	7/16" -14	F10	850	17	37.4
3"	80	11.10	283	0.75	19.1	4	0.75	19	0.67	17	15.35	390	7/16" -14	F10	1150	34	74.9
4"	100	13.70	348	0.94	23.9	8	0.75	19	0.91	23	15.35	390	1/2" -12	F12	2120	55	121.2
6"	150	16.77	426	1.00	25.4	8	0.87	22	1.38	35	39.37	1000	1/2" -12	F12	5100	136	299.6



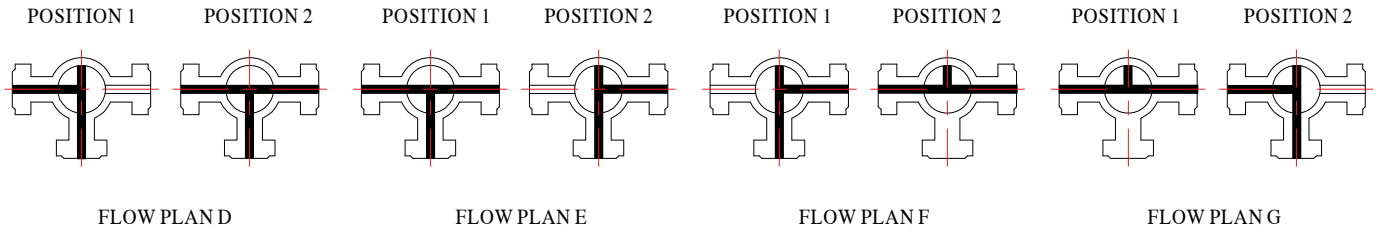
# FLOW PATTERNS MULTIPORT

## 3 WAY BALL VALVE "L" PORT, "T" PORT

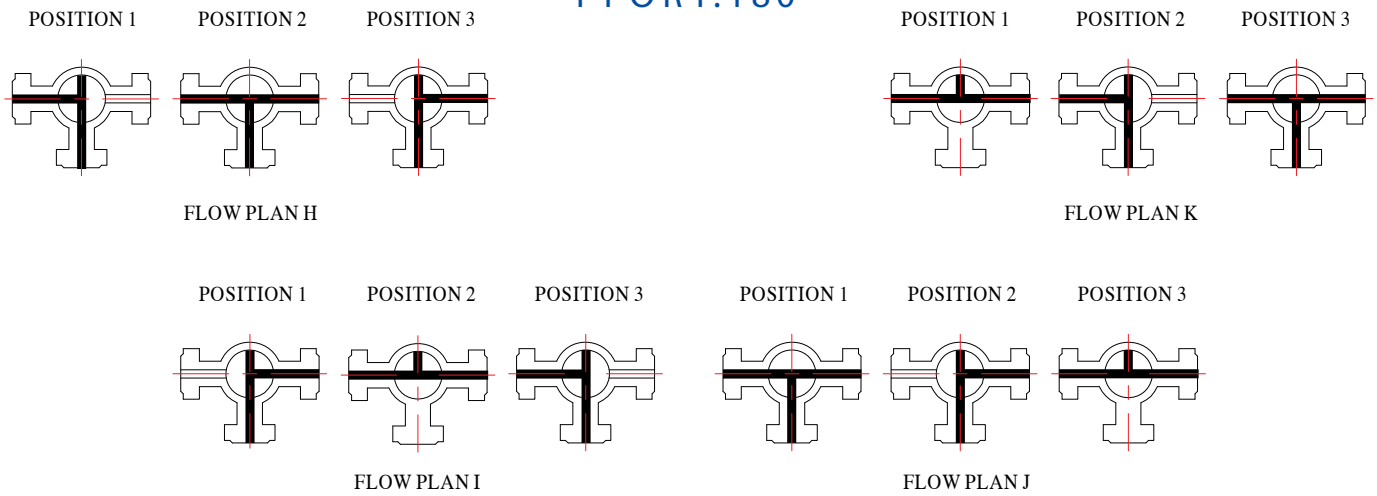
### FLOW PATTERNS

All T-Port Flow Patterns can be changed in the field without disassembling valve

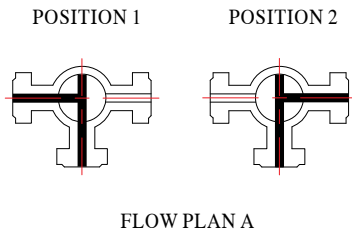
#### T-PORT:90°



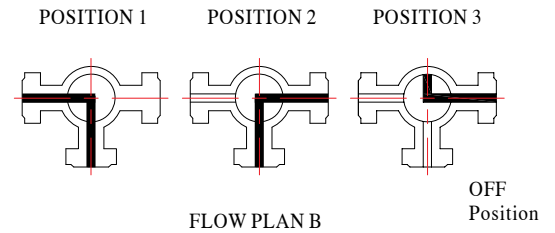
#### T-PORT:180°



#### L-PORT:90°



#### L-PORT:180°



# TC-8000 VALVE

## 2PC FULL PORT BRONZE 600/400 WOG BALL VALVE, THREADED (with ISO 5211 direct mount pad)

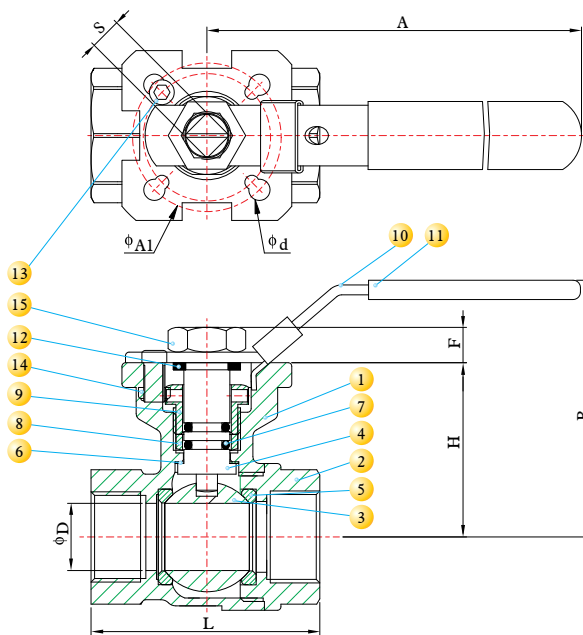


### DESIGN FEATURES:

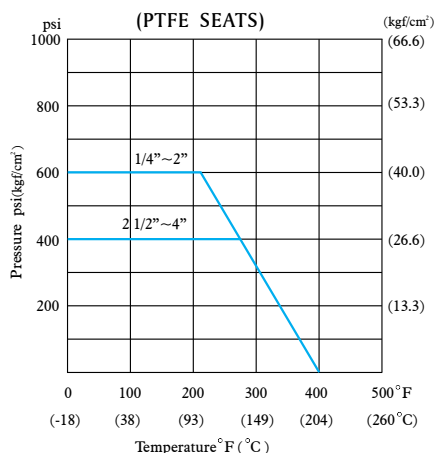
- Steam rating: 150 psi WSP
- WORKING PRESSURE: 1/4"~2" : 600 PSI  
2 1/2"~4" : 400 PSI
- STEM & BALL: 1/4"~2": Brass  
2 1/4"~ 4": Stainless Steel
- FULL ISO-5211 PAD FOR DIRECT MOUNT AUTOMATION
- TFE® SEATS AND SEALS
- VITON® BODY O-RINGS
- TRIPLE STEM SEAL DESIGN
- BLOW-OUT PROOF STEM
- ADJUSTABLE STEAM PACKING
- TEMPERATURE RATING: -18°C (0°F) TO 204°C (400°F)
- Vacuum Service to 29" Hg

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	BRONZE C84400	1
2	CAP	BRONZE C84400	1
3	BALL	BRASS(1/4"~2")-CHROME PLATED C36000 CF8(2-1/2"~4")	1
4	STEM	BRASS C36000 (1/4"~2") SS304(2-1/2"~4")	1
5	SEAT	PTFE	2
6	THRUST WASHER	PTFE	1
7	O-RING	VITON	2
8	GLAND PACKING	PTFE	1
9	GLAND	BRASS C36000	1
10	HANDLE	STEEL	1
11	HANDLE COVER	PVC	1
12	HANDLE NUT	STEEL	1
13	PIN	BRASS C36000	1
14	LOCK NUT	BRASS C36000	1
15	WASHER	SS304	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	A		B		D		L		F		H		S		d		A1		ISO 5211	Cv Factor	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	kg	lb					
1/4"	8	4.37	111	2.98	75.8	0.39	10.0	2.50	63.5	0.37	9.5	1.60	40.5	0.35	9	0.24	6.0	1.42 / 1.65	36 / 42	F03 / F04	7	0.53	1.17
3/8"	10	4.37	111	2.98	75.8	0.39	10.0	2.50	63.5	0.37	9.5	1.60	40.5	0.35	9	0.24	6.0	1.42 / 1.65	36 / 42	F03 / F04	7	0.51	1.12
1/2"	15	4.37	111	2.98	75.8	0.59	15.0	2.50	63.5	0.37	9.5	1.60	40.5	0.35	9	0.24	6.0	1.42 / 1.65	36 / 42	F03 / F04	21	0.50	1.10
3/4"	20	4.37	111	3.08	78.3	0.75	19.0	2.70	68.6	0.43	11.0	1.88	47.7	0.35	9	0.24	6.0	1.42 / 1.65	36 / 42	F03 / F04	33	0.61	1.34
1"	25	5.00	127	3.38	85.8	0.98	25.0	3.23	82.0	0.39	10.0	2.03	51.5	0.43	11	0.240.26	6/6.5	1.65 / 1.97	42 / 50	F04 / F05	55	0.92	2.03
1 1/4"	32	5.00	127	3.54	90.0	1.26	32.0	3.68	93.5	0.39	10.0	2.24	57.0	0.43	11	0.240.26	6/6.5	1.65 / 1.97	42 / 50	F04 / F05	90	1.20	2.64
1 1/2"	40	5.87	149	4.15	105.3	1.50	38.0	3.96	100.5	0.57	14.5	2.83	72.0	0.55	14	0.260.33	6.5/8.5	1.97 / 2.76	50 / 70	F05 / F07	150	2.02	4.45
2"	50	5.87	149	4.88	124.0	1.97	50.0	4.53	115.0	0.57	14.5	3.23	82.0	0.55	14	0.260.33	6.5/8.5	1.97 / 2.76	50 / 70	F05 / F07	215	3.00	6.61
2 1/2"	65	7.09	180	5.51	140.0	2.52	64.0	6.10	155.0	0.67	17.0	3.94	100.0	0.67	17	0.35	9.0	2.76	70	F07	800	6.60	14.54
3"	80	7.09	180	5.87	149.0	3.00	76.0	6.89	175.0	0.67	17.0	4.30	109.0	0.67	17	0.35	9.0	2.76	70	F07	1150	9.00	19.82
4"	100	7.09	180	6.52	165.5	3.74	95.0	8.07	205.0	0.67	17.0	4.94	125.5	0.67	17	0.35	9.0	2.76	70	F07	2120	16.50	36.34



# TC-WL-BR, TC-WT-BR VALVE

## 3 WAY FULL PORT BRONZE 600/400 WOG BALL VALVE, THREADED "L" PORT, "T" PORT (with ISO 5211 direct mount pad)



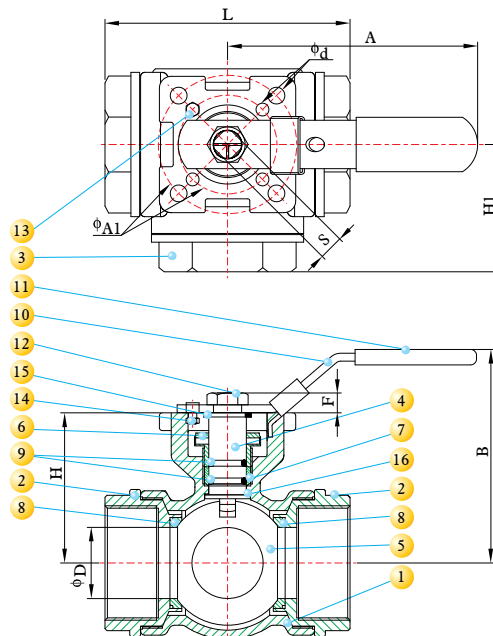
### DESIGN FEATURES:

- Steam rating: 150 psi WSP
- WORKING PRESSURE: 1/2"~1 1/2" : 600 PSI  
1 1/2"~2" : 400 PSI
- 1/2"~1 1/2": FULL PORT  
2" : STANDARD PORT
- STEM & BALL: BRASS
- WITH ISO-5211 DIRECT MOUNTING OF ACTUATORS
- TFE® SEATS AND SEALS
- VITON® BODY O-RINGS
- TRIPLE STEM SEAL DESIGN
- BLOW-OUT PROOF STEM
- ADJUSTABLE STEAM PACKING
- TEMPERATURE RATING: -18 C (0°F) TO 204°C (400°F)
- Vacuum Service to 29" Hg

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	BRONZE C84400	1
2	CAP1	BRONZE C84400	2
3	CAP2	BRONZE C84400	1
4	STEM	BRASS C36000	1
5	BALL	BRASS-CHROME PLATED	1
6	PACKING NUT	BRASS C36000	1
7	GLAND PACKING	PTFE	1
8	SEAT	PTFE	4
9	O-RING	VITON	2
10	HANDLE	SUS304	1
11	HANDLE COVER	PVC	1
12	HANDLE NUT	STEEL	1
13	LOCK PIN	BRASS C36000	1
14	NUT	BRASS C36000	1
15	WASHER	SS304	1
16	THRUST WASHER	PTFE	1

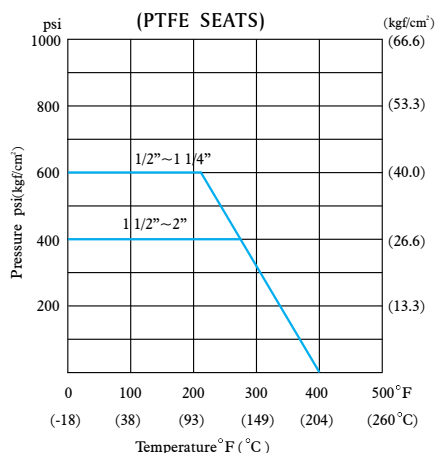
POSITION	A	B	C	D
L PORT				
T PORT				



### DIMENSIONS

SIZE	A		B		D		L		F		H		S		d		A1		ISO 5211 Factor	Cv	Weight		
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Kg	Lb					
1/2"	15	4.37	111	2.83	72.0	0.59	15.0	2.92	74.2	0.37	9.5	1.59	40.3	0.35	9	0.240/0.26	6/6.5	1.42 / 1.65	36 / 42	F03 / F04	21	0.69	1.52
3/4"	20	4.37	111	3.13	79.5	0.75	19.0	3.32	84.4	0.43	11.0	1.91	48.5	0.35	9	0.240/0.26	6/6.5	1.42 / 1.65	36 / 42	F03 / F04	33	0.94	2.07
1"	25	5.00	127	3.46	88.0	0.94	24.0	3.83	97.4	0.39	10.0	2.07	52.5	0.43	11	0.240/0.26	6/6.5	1.65 / 1.65	42 / 50	F04 / F05	53	1.50	3.30
1 1/4"	32	5.00	127	3.71	94.3	1.22	31.0	4.44	112.8	0.39	10.0	2.26	57.6	0.43	11	0.240/0.26	6/6.5	1.65 / 1.65	42 / 50	F04 / F05	90	2.14	4.71
1 1/2"	40	5.87	149	4.57	116.0	1.42	36.0	4.86	123.5	0.57	14.5	2.95	75.0	0.55	14	0.260/0.33	6.5/8.5	1.97 / 2.76	50 / 70	F05 / F07	148	3.50	7.71
2"	50	5.87	149	4.57	116.0	1.42	36.0	5.02	127.6	0.57	14.5	2.95	75.0	0.55	14	0.260/0.33	6.5/8.5	1.97 / 2.76	50 / 70	F05 / F07	215	3.35	7.38

### PRESSURE TEMPERATURE RATINGS



# TC-YS VALVE

## 800 WOG Y STRAINER, THREADED, SOCKET-WELD

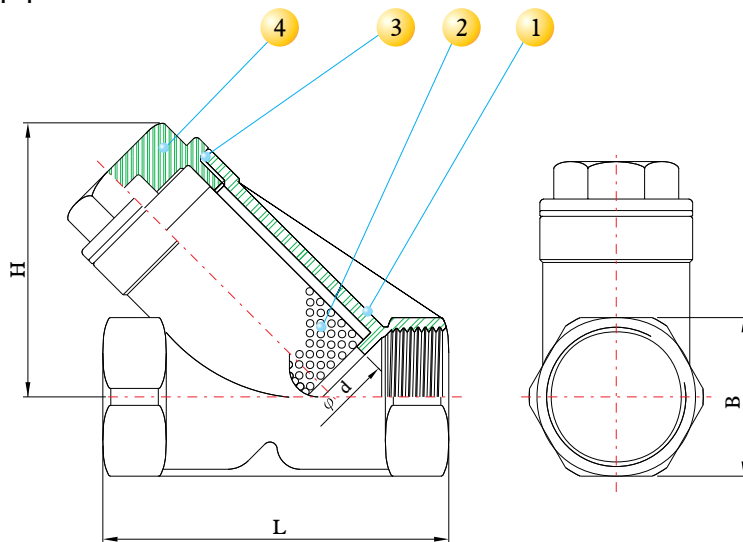


### DESIGN FEATURES:

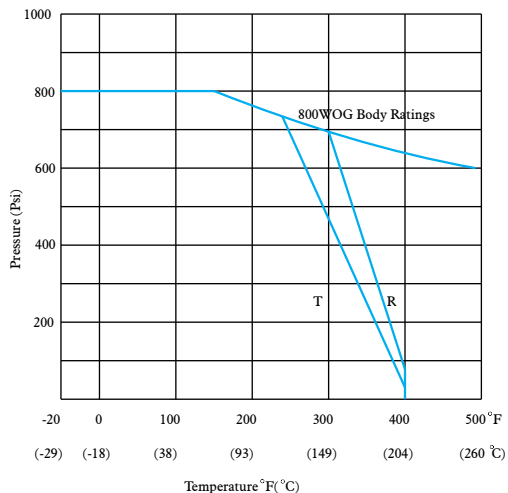
- Body: ASTM A351 Gr.CF8M
- Screen: SS316
- Packing: PTFE.
- Working Pressure: 800 psi
- TEST STANDARD: API 598
- End Connections: Threaded End  
Socket-Weld End
- Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259 / DIN 2999  
ISO 228  
BSP  
PT

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	SCREEN	SS316	1
3	GASKET	TEFLON	1
4	CAP	ASTM A351 Gr.CF8M	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE		d		B		H		L		Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	Kg	Lb
1/4"	8	0.31	8	1.02	26	2.01	51	2.56	65	0.24	0.53
3/8"	10	0.39	10	1.02	26	2.01	51	2.56	65	0.23	0.50
1/2"	15	0.59	15	1.02	26	2.01	51	2.56	65	0.23	0.50
3/4"	20	0.79	20	1.30	33	2.36	60	3.15	80	0.36	0.79
1"	25	0.98	25	1.61	41	2.83	72	3.54	90	0.70	1.54
1 1/4"	32	1.26	32	1.93	49	3.03	77	4.13	105	0.90	1.98
1 1/2"	40	1.57	40	2.20	56	3.43	87	4.72	120	1.20	2.64
2"	50	1.97	50	2.72	69	4.06	103	5.51	140	1.90	4.19
2 1/2"	65	2.56	65	3.43	87	4.72	120	6.69	170	4.30	9.47
3"	80	3.15	80	4.02	102	5.51	140	7.87	200	6.30	13.88

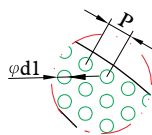
# TC-YSF VALVE

## 150# R.F. FLANGED Y STRAINERS STAINLESS STEEL



### DESIGN FEATURES:

- Body: ASTM A351 Gr.CF8M
- Screen: SS304
- Gasket: PTFE
- Flange Dimensions: ANSI B16.5 150 #
- TEST STANDARD: API 598



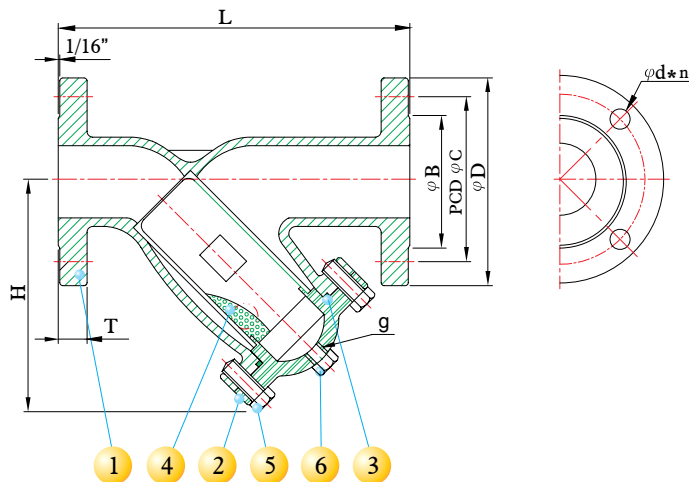
Screen Detail

SIZE		d1		P	
inch	mm	inch	mm	inch	mm
2"	50	0.04	1	0.08	2
3"	80	0.04	1	0.08	2
4"	100	0.04	1	0.08	2
6"	150	0.12	3	0.20	5

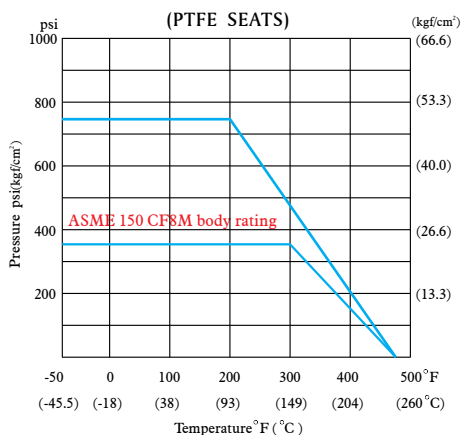
### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	GASKET	PTFE	1
4	SCREEN	* SS304	1
5	BOLT	ASTM A193 B8	4~8
6	PLUG	SS316	1

\* 316 SCREENS AVAILABLE UPON REQUEST



### PRESSURE TEMPERATURE RATINGS

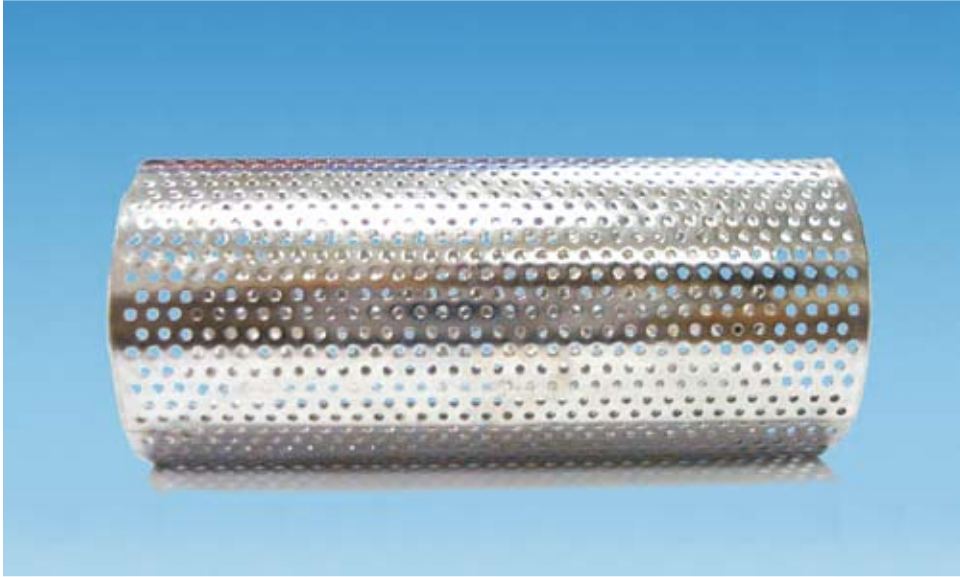


### DIMENSIONS

SIZE		B		C		D		d		H		L		n	T		g	Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		inch	mm			Kg	Lb
2"	50	3.62	92	4.74	120.5	5.98	152	0.75	19	5.75	146	8.58	218	4	0.63	15.9	1/2"	500	13	28.6
2 1/2"	80	4.13	105	5.49	139.5	7.00	178	0.75	19	7.09	180	10.28	261	4	0.69	17.5	3/4"	850	23	50.6
3"	80	5.00	127	6.00	152.5	7.48	190	0.75	19	7.87	200	11.61	295	4	0.75	19.1	1"	1150	25	55.1
4"	100	6.18	157	7.50	190.5	9.02	229	0.75	19	9.45	240	14.21	361	8	0.94	23.9	1 1/2"	2120	33	72.7
6"	150	8.50	216	9.51	241.5	10.98	279	0.87	22	13.39	340	18.46	469	8	1.00	25.4	2"	5100	76	167.4

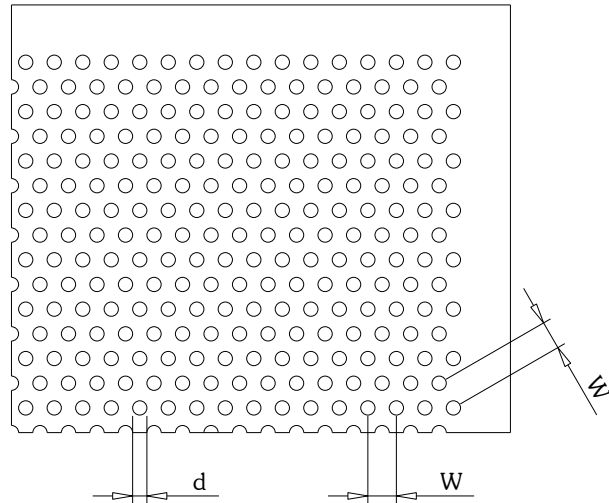
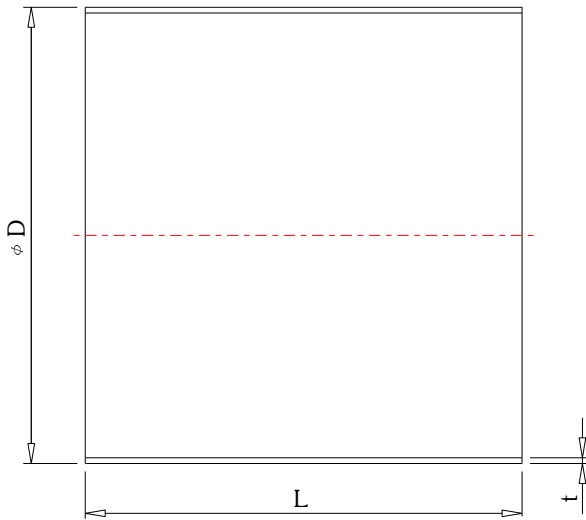
# Y STRAINER

## SCREEN FOR TC-YS / TC-YSF (Y STRAINER)



● Material: SS316

● Material: SS304



TC-YS 800 WOG THREADED, SOCKET-WELD Y STRAINER

TC-YSF 150# R.F. FLANGED Y STRAINERS

### DIMENSIONS

SIZE	D	L	W	d	t
1/4", 3/8", 1/2"	20	28.0	2	1	0.4
3/4"	25	39.0	2	1	0.4
1"	32	48.0	2	1	0.4
1 1/4"	38	53.0	2	1	0.4
1 1/2"	44	62.5	2	1	0.4
2"	56	75.0	2	1	0.4
2 1/2"	73	90.0	2	1	0.4
3"	88	99.5	2	1	0.4

### DIMENSIONS

SIZE	D	L	W	d	t
2"	48	112	2	1	0.5
2 1/2"	63	150	2	1	0.5
3"	81	164	2	1	0.5
4"	92	196	2	1	0.8
6"	150	290	5	3	1.0



200 WOG GATE VALVE, THREADED

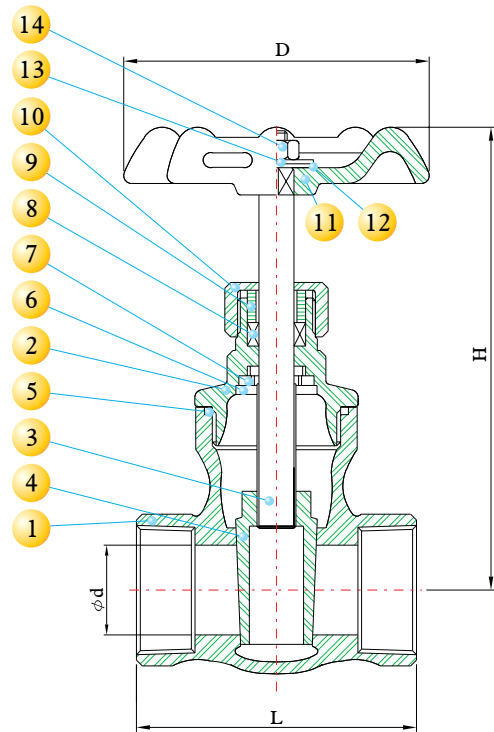


DESIGN FEATURES:

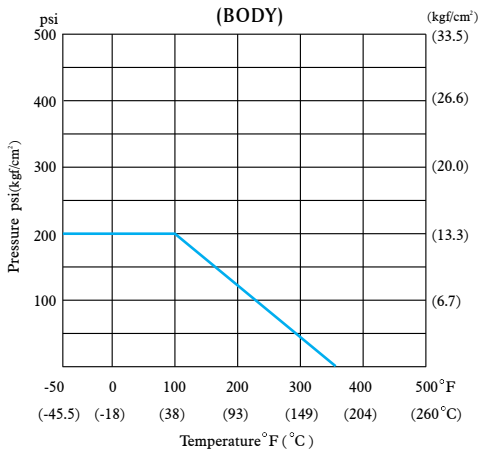
- Non-Rising Stem
- Solid Wedge Disc
- Body: ASTM A351 Gr.CF8M
- DISC: ASTM A351 Gr.CF8M
- Seat: SS316
- Packing: PTFE
- Working Pressure: 200 psi
- TEST STANDARD: API 598
- End Connections: Threaded End
- Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999  
ISO 228  
BSP  
PT

MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	BONNET	ASTM A351 Gr.CF8M	1
3	STEM	ASTM A276 Gr.316	1
4	DISC	ASTM A351 Gr.CF8M	1
5	GASKET	PTFE	1
6	STOP RING	SS304	1
7	STEM HOLDER	SS316	1
8	STEM PACKING	PTFE	1
9	GLAND	SS304	1
10	GLAND NUT	SS316	1
11	HANDLE WHEEL	SS400	1
12	NAME PLATE	ALUMINUM	1
13	HANDLEWHEEL WASHER	SS304	1
14	HANDLEWHEEL NUT	SS304	1



PRESSURE TEMPERATURE RATINGS



DIMENSIONS

SIZE		d		D		H		L		Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		Kg	Lb
1/2"	15	0.63	16.1	2.76	70.0	3.88	98.6	2.24	57.0	15	0.52	1.15
3/4"	20	0.80	20.3	2.76	70.0	4.06	103.0	2.38	60.5	37	0.63	1.39
1"	25	1.02	26.0	3.01	76.5	4.53	115.0	2.64	67.0	72	0.81	1.78
1 1/4"	32	1.25	31.8	3.01	76.5	5.04	128.0	2.99	76.0	110	1.18	2.60
1 1/2"	40	1.57	31.8	4.07	103.5	6.81	173.0	3.43	87.0	165	2.00	4.41
2"	50	1.98	50.3	4.76	121.0	7.44	189.0	3.74	95.0	320	2.82	6.21

# TC-GB VALVE

## 200 WOG GLOBE VALVE, THREADED

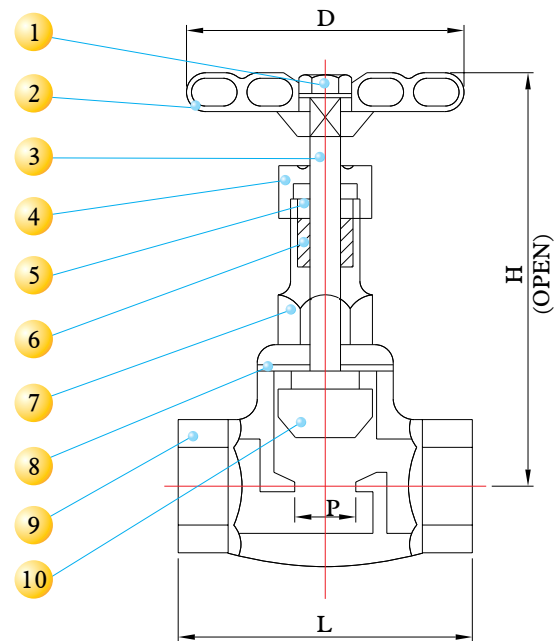


### DESIGN FEATURES:

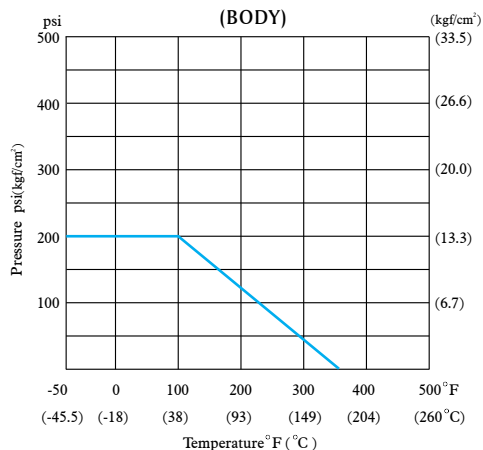
- Rising Stem And Wheel
- Body: ASTM A351 Gr.CF8M
- Disc: ASTM A351 Gr.CF8M
- Seat: SS 316
- Packing: PTFE
- Working Pressure: 200 psi
- TEST STANDARD: API 598
- End Connections: Threaded End
- Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999  
ISO 228  
BSP  
PT

### MATERIALS LIST

NO.	PART NAME	MATERIAL	Q'TY
1	NUT	SS304	1
2	HANDWHEEL	SS400	1
3	STEM	ASTM A276 Gr.316	1
4	GLAND NUT	ASTM A351 Gr.CF8M	1
5	GLAND	ASTM A351 Gr.CF8M	1
6	GLAND PACKING	PTFE	1
7	BONNET	ASTM A351 Gr.CF8M	1
8	GASKET	PTFE	1
9	BODY	ASTM A351 Gr.CF8M	1
10	DISC	ASTM A351 Gr.CF8M	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE		D		L		H		P		Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		Kg	Lb
1/4"	8	2.36	60.0	2.05	52.0	4.02	102	0.39	10	1.0	0.33	0.73
3/8"	10	2.36	60.0	2.05	52.0	4.02	102	0.47	12	1.5	0.31	0.68
1/2"	15	2.76	70.0	2.60	66.0	3.74	95	0.47	12	2.5	0.42	0.93
3/4"	20	2.76	70.0	2.70	68.5	3.90	99	0.59	15	5.6	0.46	1.01
1"	25	3.01	76.5	3.08	78.3	4.02	102	0.79	20	10.5	0.62	1.37
1 1/4"	32	4.07	103.5	3.39	86.0	4.96	126	0.98	25	17.0	1.05	2.31
1 1/2"	40	4.07	103.5	3.86	98.0	5.35	136	1.30	33	25.0	1.40	3.08
2"	50	4.76	121.0	4.35	110.5	6.14	156	1.57	40	46.0	2.10	4.63

# TC-CK, TC-CKS VALVE

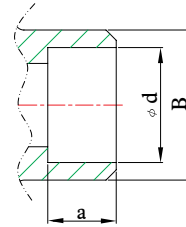
## 200 WOG SWING CHECK VALVE, THREADED



### DESIGN FEATURES:

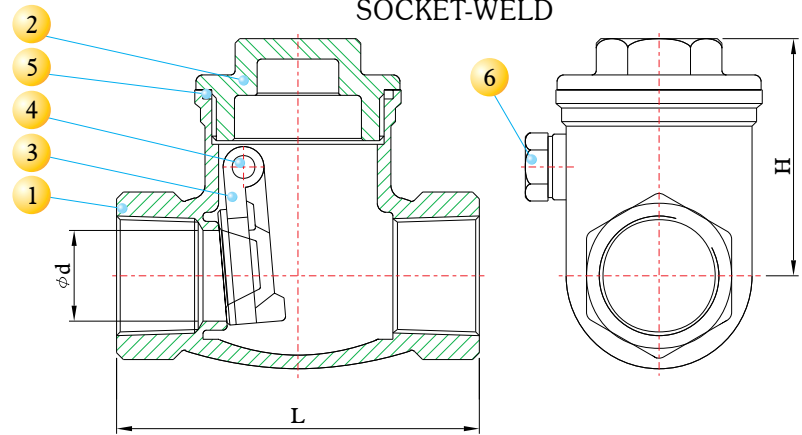
- Swing Type
- Body: ASTM A351 Gr.CF8M
- Disc: ASTM A351 Gr.CF8M
- Packing: PTFE.
- Working Pressure: 200 psi
- End Connections: Threaded End
- TEST STANDARD: API 598

Threaded Type:  
ANSI B1.20.1 (NPT)  
DIN 259/DIN 2999  
ISO 228  
BSP  
PT

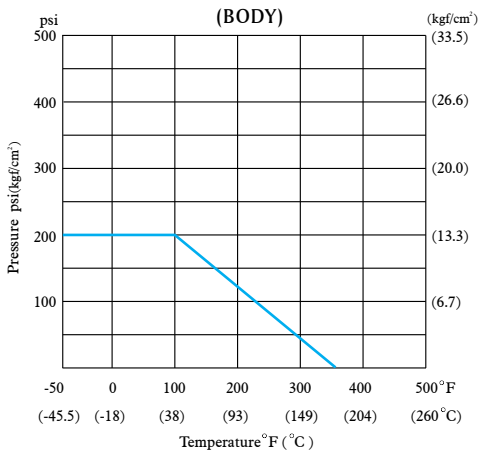


### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	CAP	ASTM A351 Gr.CF8M	1
3	DISC	ASTM A351 Gr.CF8M	1
4	HINGE PIN	SS316	1
5	GASKET	PTFE	1
6	PLUG	SS316	1



### PRESSURE TEMPERATURE RATINGS



### DIMENSIONS

SIZE	d		L		H		a		d		B		Cv Factor	Weight	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		Kg	Lb
1/4"	0.39	10	2.56	65.0	1.77	45	0.39	10	0.55	14.1	0.9	22.8	3.0	0.33	0.73
3/8"	0.47	12	2.56	65.0	1.77	45	0.39	10	0.69	17.6	0.9	22.8	4.0	0.35	0.77
1/2"	0.59	15	2.60	66.0	1.81	46	0.39	10	0.85	21.7	1.06	26.8	6.5	0.30	0.66
3/4"	0.79	20	3.19	81.0	2.13	54	0.51	13	1.07	27.1	1.36	34.6	15.0	0.48	1.06
1"	0.98	25	3.58	91.0	2.36	60	0.51	13	1.33	33.8	1.56	39.5	28.0	0.75	1.65
1 1/4"	1.26	32	4.19	106.5	2.83	72	0.51	13	1.68	42.6	1.93	49.0	45.0	1.15	2.53
1 1/2"	1.57	40	4.76	121.0	2.95	75	0.51	13	1.92	48.7	2.20	55.8	65.0	1.54	3.39
2"	1.97	50	5.59	142.0	3.23	82	0.63	16	2.41	61.1	2.68	68.0	120.0	2.54	5.59
2 1/2"	2.56	65	6.26	159.0	3.54	90	0.63	16	2.91	73.8	3.46	88.0	190.0	3.80	8.37
3"	3.15	80	7.48	190.0	4.09	104	0.63	16	3.54	89.8	4.13	105.0	280.0	5.90	13.00

# TC-GTF-ANSI VALVE

## 150 LB FLANGE END GATE VALVE

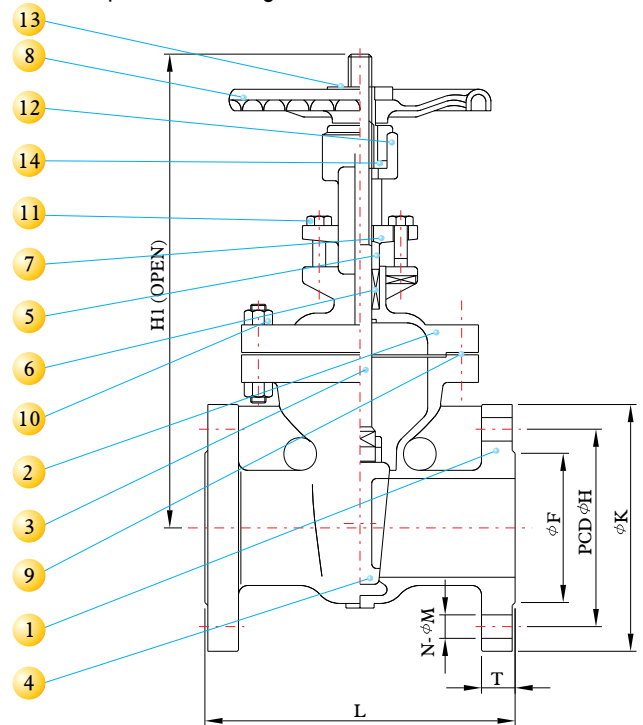


### DESIGN FEATURES:

- Rising Stem
- O.S. & Yoke, Flexible Wedge
- Body: ASTM A351 Gr.CF8M
- Disc: ASTM A351 Gr.CF8M
- Stem: SS316
- Packing: PTFE
- End Type: Flange End
- Face to Face: ANSI B16.10
- Flange Dimensions: ANSI B16.5 150
- Wall Thickness: ANSI B16.34
- TEST STANDARD: API 598
- Pressure/ Temperature ratings in accordance with ASME/ASTM B16.34

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	BONNET	ASTM A351 Gr.CF8M	1
3	STEM	ASTM A276 Gr.316	1
4	DISC	ASTM A351 Gr.CF8M	1
5	GLAND	ASTM A351 Gr.CF8	1
6	GLAND PACKING	PTFE	1
7	GLAND FLANGE	ASTM A351 Gr.CF8	1
8	HAND WHEEL	ASTM A536 Gr.B65-45-12	1
9	GASKET	PTFE (OR NON ASBESTOS)	1
10	BONNET BOLT/NUT	ASTM A193 Gr.B8/ASTM A194 Gr.8	4-16
11	GLAND BOLT/NUT	ASTM A193 Gr.B8/ASTM A194 Gr.8	2
12	YOKE SLEEVE	BRONZE (OR DUCTILENI-RESIST)	1
13	HAND WHEEL NUT	STEEL	1
14	YOKE SLEEVE NUT	SS304	1

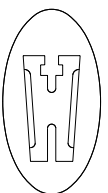


### DIMENSIONS

SIZE		L		H1		K		H		F		T		M		N	Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb
1/2"	15	4.25	108	8.03	204	3.94	100	2.38	60.5	1.38	35	0.44	11.2	0.62	15.7	4	19	3.40	7.49
3/4"	20	4.63	117	8.23	209	3.94	100	2.76	70.0	1.69	43	0.44	11.2	0.62	15.7	4	36	4.50	9.91
1"	25	5.00	127	9.02	229	3.94	100	3.13	79.5	2.01	51	0.44	11.2	0.62	15.7	4	57	5.50	12.11
1 1/4"	32	5.51	140	10.63	270	4.61	117	3.50	89.0	2.52	64	0.56	14.3	0.62	15.7	4	100	6.50	14.32
1 1/2"	40	6.50	165	11.14	283	5.51	140	3.88	98.5	2.87	73	0.56	14.3	0.62	15.7	4	120	9.00	19.82
2"	50	7.00	178	13.07	332	6.30	160	4.74	120.5	3.62	92	0.63	15.9	0.75	19.0	4	140	11.50	25.33
2 1/2"	65	7.50	190	15.63	397	7.09	180	5.49	139.5	4.13	105	0.69	17.5	0.75	19.0	4	240	18.00	39.65
3"	80	8.00	203	17.28	439	7.87	200	6.00	152.5	5.00	127	0.75	19.1	0.75	19.0	4	360	20.00	44.05
4"	100	9.00	229	20.39	518	8.82	224	7.50	190.5	6.18	157	0.94	23.9	0.75	19.0	8	580	30.00	66.08
5"	125	10.00	254	24.45	621	9.84	250	8.52	216.5	7.32	186	0.94	23.9	0.88	22.3	8	950	44.00	96.92
6"	150	10.50	267	28.11	714	11.02	280	9.51	241.5	8.50	216	1.00	25.4	0.88	22.3	8	2400	56.00	123.35
8"	200	11.50	292	35.98	914	11.81	300	11.75	298.5	10.63	270	1.13	28.6	0.88	22.3	8	4200	82.00	180.62
10"	250	13.00	330	43.62	1108	13.98	355	14.25	362.0	12.76	324	1.19	30.2	1.00	25.4	12	6800	132.00	290.75
12"	300	14.00	356	61.14	1553	23.62	600	17.01	432.0	15.00	381	1.25	31.8	1.00	25.4	12	9900	196.50	432.82



UNDER-3"



4"-UP

# TC-GTF-ANSI VALVE

## 300 LB FLANGE END GATE VALVE

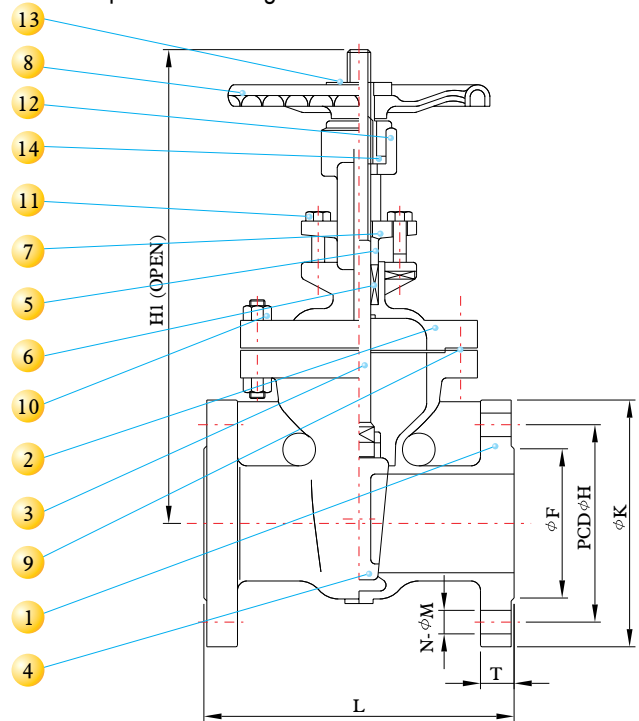


### DESIGN FEATURES:

- Rising Stem
- O.S. & Yoke, Flexible Wedge
- Body: ASTM A351 Gr.CF8M
- Disc: ASTM A351 Gr.CF8M
- Stem: SS316
- Packing: PTFE.
- End Type: Flange End
- Face to Face: ANSI B16.10
- Flange Dimensions: ANSI B16.5 300
- Wall Thickness: ANSI B16.34
- TEST STANDARD: API 598
- Pressure/ Temperature ratings in accordance with ASME/ASTM B16.34

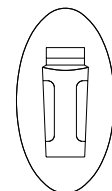
### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	BONNET	ASTM A351 Gr.CF8M	1
3	STEM	ASTM A276 Gr.316	1
4	DISC	ASTM A351 Gr.CF8M	1
5	GLAND	ASTM A351 Gr.CF8	1
6	GLAND PACKING	PTFE	1
7	GLAND FLANGE	ASTM A351 Gr.CF8	1
8	HAND WHEEL	ASTM A536 Gr.B65-45-12	1
9	GASKET	PTFE (OR NON ASBESTOS)	1
10	BONNET BOLT/NUT	ASTM A193 Gr.B8/ASTM A194 Gr.8	4-16
11	GLAND BOLT/NUT	ASTM A193 Gr.B8/ASTM A194 Gr.8	2
12	YOKE SLEEVE	BRONZE (OR DUCTILENI-RESIST)	1
13	HAND WHEEL NUT	STEEL	1
14	YOKE SLEEVE NUT	SS304	1

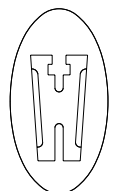


### DIMENSIONS

SIZE		L		H1		K		H		F		T		M		N	Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb
1/2"	15	5.50	140	8.23	209	3.94	100	2.62	66.5	1.38	35	0.56	14.3	0.62	15.70	4	19	5.00	11.01
3/4"	20	6.00	152	8.27	210	3.94	100	3.25	82.5	1.69	43	0.63	15.9	0.75	19.00	4	36	4.50	9.91
1"	25	6.50	165	8.90	226	3.94	100	3.50	89.0	2.01	51	0.69	17.5	0.75	19.00	4	57	10.00	22.03
1 1/2"	40	7.50	190	11.54	293	6.30	160	4.51	114.5	2.87	73	0.81	20.7	0.88	22.30	4	120	15.00	33.04
2"	50	8.50	216	13.78	350	7.09	180	5.00	127.0	3.62	92	0.88	22.3	0.75	19.00	8	140	18.40	40.53
2 1/2"	65	9.50	241	15.94	405	7.87	200	5.87	149.0	4.13	105	1.00	25.4	0.88	22.30	8	240	22.00	48.46
3"	80	11.12	283	17.87	454	8.82	224	6.61	168.0	5.00	127	1.13	28.6	0.88	22.30	8	360	36.50	80.40
4"	100	12.00	305	20.67	525	9.84	250	7.87	200.0	6.18	157	1.25	31.8	0.88	22.30	8	580	56.00	123.35
5"	125	15.00	381	25.16	639	11.81	300	9.25	235.0	7.32	186	1.38	35.0	0.88	22.30	8	950	72.00	158.59
6"	150	15.87	403	29.09	739	13.98	355	10.63	270.0	8.50	216	1.44	36.6	0.88	22.30	12	2400	99.00	218.06
8"	200	16.50	419	36.73	933	15.75	400	12.99	330.0	10.63	270	1.63	41.3	1.00	25.40	12	4200	158.00	348.02
10"	250	18.00	457	44.80	1138	19.69	500	15.25	387.5	12.76	324	1.88	47.7	1.12	28.40	16	6800	280.00	616.74
12"	300	19.75	502	52.68	1338	23.62	600	17.76	451.0	15.00	381	2.00	50.8	1.25	31.75	16	9900	373.50	822.69



UNDER-3"



4"-UP



# TC-CKF-ANSI VALVE

## 150 LB FLANGE END SWING CHECK VALVE

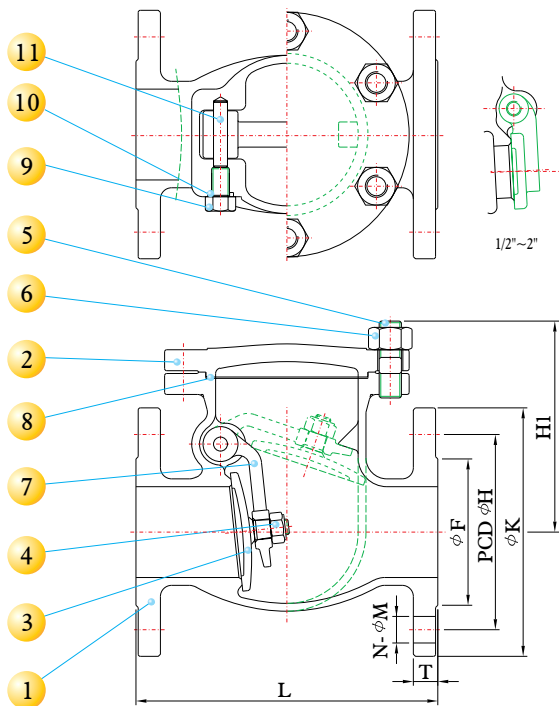


### DESIGN FEATURES:

- Swing Type
- Body: ASTM A 351 Gr.CF8M
- Disc: ASTM A 351 Gr.CF8M
- End Type: Flange End
- Face to Face: ANSI B16.10
- Flange Dimensions: ANSI B16.5 150
- Wall Thickness: ANSI B16.34
- TEST STANDARD: API 598
- Pressure/ Temperature ratings in accordance with ASME/ASTM B16.34

### MATERIALS LIST

NO.	PART NAME	MATERIAL	Q'TY
1	BODY	ASTM A351 Gr.CF8M	1
2	COVER	ASTM A351 Gr.CF8M	1
3	DISC	ASTM A351 Gr.CF8M	1
4	DISC NUT	ASTM A194 Gr.8	1
5	COVER BOLT	ASTM A193 Gr.B8	4 - 12
6	COVER NUT	ASTM A194 Gr.8	4 - 12
7	ARM	ASTM A351 Gr.CF8M	1
8	GASKET	PTFE	1
9	PLUG	SS316	1
10	PLUG GASKET	SS304	1
11	HINGE PIN	SS316	1



### DIMENSIONS

SIZE		L		H1		K		H		F		T		M		N	Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb
1/2"	15	4.25	108	2.87	73	3.50	89	2.38	60.5	1.38	35	0.44	11.2	0.62	15.7	4	9.5	2.30	5.07
3/4"	20	4.63	117	2.95	75	3.86	98	2.76	70.0	1.69	43	0.44	11.2	0.62	15.7	4	16	2.80	6.17
1"	25	5.00	127	3.15	80	4.25	108	3.13	79.5	2.01	51	0.44	11.2	0.62	15.7	4	27	4.30	9.47
1 1/2"	40	6.50	165	4.37	111	5.00	127	3.88	98.5	2.87	73	0.56	14.3	0.62	15.7	4	51	6.50	14.32
2"	50	8.00	203	4.84	123	5.98	152	4.74	120.5	3.62	92	0.63	15.9	0.75	19.0	4	70	9.30	20.48
2 1/2"	65	8.50	216	5.28	134	7.01	178	5.49	139.5	4.13	105	0.69	17.5	0.75	19.0	4	120	15.00	33.04
3"	80	9.50	241	5.83	148	7.48	190	6.00	152.5	5.00	127	0.75	19.1	0.75	19.0	4	170	18.00	39.65
4"	100	11.50	292	6.22	158	9.02	229	7.50	190.5	6.18	157	0.94	23.9	0.75	19.0	8	250	26.80	59.03
5"	125	13.00	330	7.56	192	10.00	254	8.50	216.0	7.32	186	0.94	23.9	0.88	22.3	8	470	35.00	77.09
6"	150	14.00	356	8.78	223	10.98	279	9.51	241.5	8.50	216	1.00	25.4	0.88	22.3	8	1100	49.30	108.59
8"	200	19.50	495	11.14	283	13.50	343	11.75	298.5	10.63	270	1.13	28.6	0.88	22.3	8	2000	78.00	171.81
10"	250	24.50	622	12.52	318	15.98	406	14.25	362.0	12.76	324	1.19	30.2	1.00	25.4	12	3300	138.00	303.96
12"	300	27.50	698	14.06	357	19.02	483	17.01	432.0	15.00	381	1.25	31.8	1.00	25.4	12	4900	205.00	451.54



# TC-CKF-ANSI VALVE

## 300 LB FLANGE END SWING CHECK VALVE

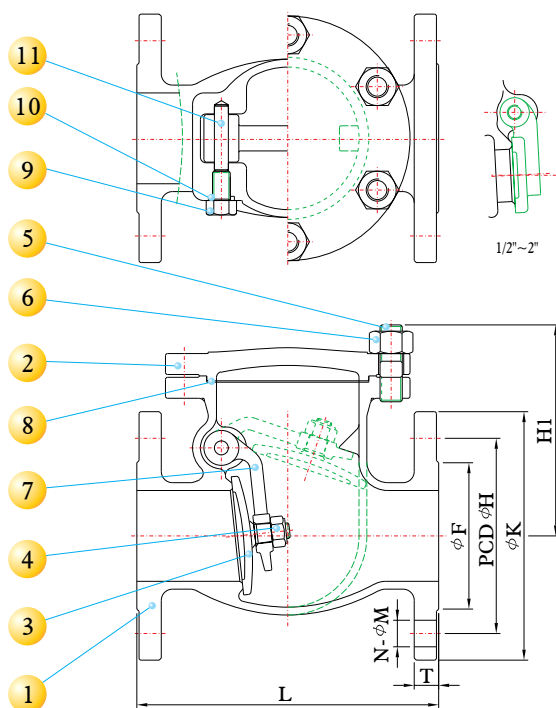


### DESIGN FEATURES:

- Swing Type
- Body: ASTM A351 Gr.CF8M
- Disc: ASTM A351 Gr.CF8M
- End Type: Flange End
- Face to Face: ANSI B16.10
- Flange Dimensions: ANSI B16.5 300
- Wall Thickness: ANSI B16.34
- TEST STANDARD: API 598
- Pressure/ Temperature ratings in accordance with ASME/ASTM B16.34

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	COVER	ASTM A351 Gr.CF8M	1
3	DISC	ASTM A351 Gr.CF8M	1
4	DISC NUT	ASTM A194 Gr.8	1
5	COVER BOLT	ASTM A193 Gr.B8	4 - 12
6	COVER NUT	ASTM A194 Gr.8	4 - 12
7	ARM	ASTM A351 Gr.CF8M	1
8	GASKET	PTFE	1
9	PLUG	SS316	1
10	PLUG GASKET	SS304	1
11	HINGE PIN	SS316	1



### DIMENSIONS

SIZE		L		H1		K		H		F		T		M		N	Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb
1/2"	15	6.00	152	2.99	76	3.74	95	2.62	66.5	1.38	35	0.56	14.3	0.62	15.70	4	9.5	3.90	8.59
3/4"	20	7.00	178	3.07	78	4.61	117	3.25	82.5	1.69	43	0.63	15.9	0.75	19.00	4	16	5.00	11.01
1"	25	8.50	216	3.27	83	4.88	124	3.50	89.0	2.01	51	0.69	17.5	0.75	19.00	4	27	6.80	14.98
1 1/2"	40	9.50	241	4.57	116	6.14	156	4.51	114.5	2.87	73	0.81	20.7	0.88	22.30	4	51	11.50	25.33
2"	50	10.50	267	5.08	129	6.50	165	5.00	127.0	3.62	92	0.88	22.3	0.75	19.00	8	70	16.50	36.34
2 1/2"	65	11.50	292	5.63	143	7.48	190	5.87	149.0	4.13	105	1.00	25.4	0.88	22.30	8	120	23.00	50.66
3"	80	12.50	318	6.46	164	8.27	210	6.61	168.0	5.00	127	1.13	28.6	0.88	22.30	8	170	30.00	66.08
4"	100	14.00	356	6.97	177	10.00	254	7.87	200.0	6.18	157	1.25	31.8	0.88	22.30	8	250	45.50	100.22
5"	125	15.75	400	8.54	217	10.98	297	9.25	235.0	7.32	186	1.38	35.0	0.88	22.30	8	470	58.00	127.75
6"	150	17.50	444	9.80	249	12.52	318	10.63	270.0	8.50	216	1.44	36.6	0.88	22.30	12	1100	81.00	178.41
8"	200	21.00	533	12.28	312	15.00	381	12.99	330.0	10.63	270	1.63	41.3	1.00	25.40	12	2000	125.00	275.33
10"	250	24.50	622	14.13	359	17.48	444	15.26	387.5	12.76	324	1.88	47.7	1.12	28.40	16	3300	172.00	378.85
12"	300	28.00	711	15.71	399	20.51	521	17.76	451.0	15.00	381	2.00	50.8	1.25	31.75	16	4900	430.00	948.14

# TC-GBF-ANSI VALVE

## 150 LB FLANGE END GLOBE VALVE

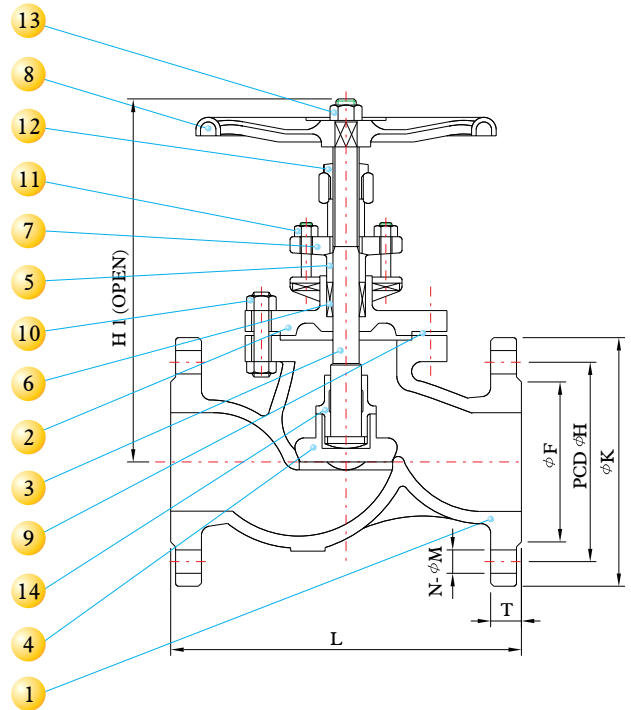


### DESIGN FEATURES:

- Rising Stem
- Body: ASTM A 351 Gr.CF8M
- Disc: ASTM A 351 Gr.CF8M
- Stem: SS316
- End Type: Flange End
- Face to Face: ANSI B16.10
- Flange Dimensions: ANSI B16.5 150
- Wall Thickness: ANSI B16.34
- TEST STANDARD: API 598
- Pressure/ Temperature ratings in accordance with ASME/ASTM B16.34

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	BONNET	ASTM A351 Gr.CF8M	1
3	STEM	ASTM A276 Gr.316	1
4	DISC	ASTM A351 Gr.CF8M	1
5	GLAND	ASTM A351 Gr.CF8	1
6	GLAND PACKING	PTFE	1
7	GLAND FLANGE	ASTM A351 Gr.CF8	1
8	HAND WHEEL	ASTM A536 Gr.B65-45-12	1
9	GASKET	PTFE (OR NON ASBESTOS)	1
10	BONNET BOLT/NUT	ASTM A193 Gr.B8/ASTM A194 Gr.8	4-16
11	GLAND BOLT/NUT	ASTM A193 Gr.B8/ASTM A194 Gr.8	2
12	YOKE SLEEVE	BRONZE (OR DUCTILENI-RESIST)	1
13	HAND WHEEL NUT	STEEL	1
14	DISC GLAND	SS316	1



### DIMENSIONS

SIZE		L		H1		K		H		F		T		M		N	Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb
1/2"	15	4.25	108	6.77	172	3.94	100	2.38	60.5	1.38	35	0.44	11.2	0.62	15.7	4	5.0	3.00	6.61
3/4"	20	4.63	117	6.77	172	3.94	100	2.76	70.0	1.69	43	0.44	11.2	0.62	15.7	4	8.5	3.50	7.71
1"	25	5.00	127	6.89	175	3.94	100	3.13	79.5	2.01	51	0.44	11.2	0.62	15.7	4	11.0	4.40	9.69
1 1/4"	32	5.50	140	8.78	223	4.62	117	3.50	88.9	2.50	64	0.50	12.7	0.62	15.7	4	16.0	6.75	14.87
1 1/2"	40	6.50	165	8.15	207	5.51	140	3.88	98.5	2.87	73	0.56	14.3	0.62	15.7	4	19.0	7.90	17.40
2"	50	8.00	203	9.13	232	6.30	160	4.74	120.5	3.62	92	0.63	15.9	0.75	19.0	4	32.0	11.40	25.11
2 1/2"	65	8.50	216	10.75	273	7.09	180	5.49	139.5	4.13	105	0.69	17.5	0.75	19.0	4	48.0	17.00	37.44
3"	80	9.50	241	11.93	303	7.87	200	6.00	152.5	5.00	127	0.75	19.1	0.75	19.0	4	80.0	20.50	45.15
4"	100	11.50	292	13.39	340	8.82	224	7.50	190.5	6.18	157	0.94	23.9	0.75	19.0	8	110.0	31.00	68.28
5"	125	14.00	356	15.16	385	9.84	250	8.50	216.0	7.32	186	0.94	23.9	0.88	22.3	8	190.0	45.00	99.12
6"	150	16.00	406	17.64	448	11.81	300	9.51	241.5	8.50	216	1.00	25.4	0.88	22.3	8	450.0	60.00	132.16
8"	200	19.50	495	21.46	545	13.98	355	11.75	298.5	10.63	270	1.13	28.6	0.88	22.3	8	800.0	100.00	220.26
10"	250	24.50	622	26.22	666	17.72	450	14.25	362.0	12.76	324	1.19	30.2	1.00	25.4	12	1200.0	173.00	381.06

# TC-GBF-ANSI VALVE

## 300 LB FLANGE END GLOBE VALVE

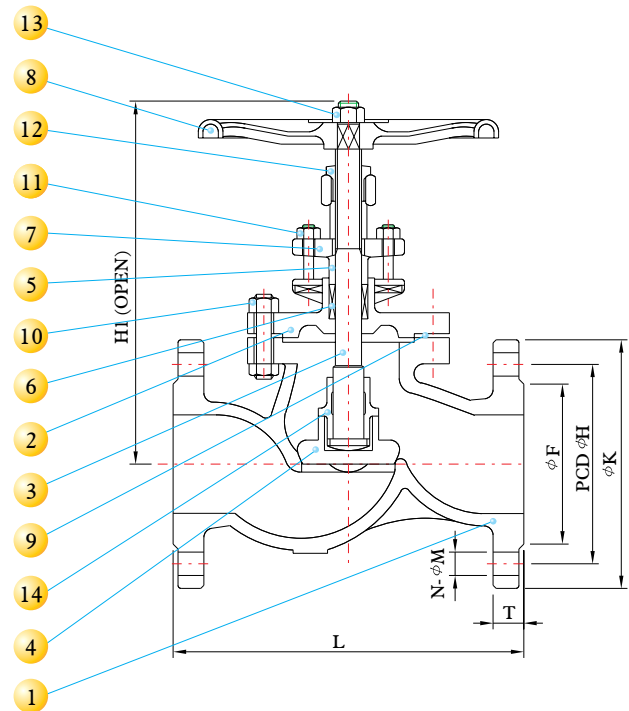


### DESIGN FEATURES:

- Rising Stem
- Body: ASTM A 351 Gr.CF8M
- Disc: ASTM A 351 Gr.CF8M
- Stem: SS316
- End Type: Flange End
- Face to Face: ANSI B16.10
- Flange Dimensions: ANSI B16.5 300
- Wall Thickness: ANSI B16.34
- TEST STANDARD: API 598
- Pressure/ Temperature ratings in accordance with ASME/ASTM B16.34

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	BODY	ASTM A351 Gr.CF8M	1
2	BONNET	ASTM A351 Gr.CF8M	1
3	STEM	ASTM A276 Gr.316	1
4	DISC	ASTM A351 Gr.CF8M	1
5	GLAND	ASTM A351 Gr.CF8	1
6	GLAND PACKING	PTFE	1
7	GLAND FLANGE	ASTM A351 Gr.CF8	1
8	HAND WHEEL	ASTM A536 Gr.B65-45-12	1
9	GASKET	PTFE (OR NON ASBESTOS)	1
10	BONNET BOLT/NUT	ASTM A193 Gr.B8/ASTM A194 Gr.8	4-16
11	GLAND BOLT/NUT	ASTM A193 Gr.B8/ASTM A194 Gr.8	2
12	YOKE SLEEVE	BRONZE (OR DUCTILENI-RESIST)	1
13	HAND WHEEL NUT	STEEL	1
14	DISC GLAND	SS316	1



### DIMENSIONS

SIZE		L		H1		K		H		F		T		M		N	Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm			Kg	Lb
1/2"	15	6.00	152	6.77	172	3.94	100	2.62	66.5	1.38	35	0.56	14.3	0.62	15.7	4	5	4.00	8.81
3/4"	20	7.00	178	6.77	172	3.94	100	3.25	82.5	1.69	43	0.63	15.9	0.75	19.0	4	8.5	5.00	11.01
1"	25	8.00	203	6.89	175	3.94	100	3.50	89.0	2.01	51	0.69	17.5	0.75	19.0	4	11	9.00	19.82
1 1/2"	40	9.00	229	8.86	225	6.30	160	4.51	114.5	2.87	73	0.81	20.7	0.88	22.3	4	190	13.50	29.74
2"	50	10.50	267	10.55	268	7.09	180	5.00	127.0	3.62	92	0.88	22.3	0.75	19.0	8	32	16.50	36.34
2 1/2"	65	11.50	292	11.85	301	7.87	200	5.87	149.0	4.13	105	1.00	25.4	0.88	22.3	8	48	31.00	68.28
3"	80	12.50	318	13.82	351	9.84	250	6.61	168.0	5.00	127	1.13	28.6	0.88	22.3	8	80	36.00	79.30
4"	100	14.00	356	16.14	410	11.81	300	7.87	200.0	6.18	157	1.25	31.8	0.88	22.3	8	110	52.50	115.64
5"	125	15.75	400	18.27	464	13.98	355	9.25	235.0	7.32	186	1.38	35.0	0.88	22.3	8	190	79.00	174.01
6"	150	17.50	444	20.83	529	15.75	400	10.63	270.0	8.50	216	1.44	36.6	0.88	22.3	12	450	98.50	216.96
8"	200	22.00	559	26.38	670	17.72	450	12.99	330.0	10.63	270	1.63	41.3	1.00	25.4	12	800	146.00	321.59

# TC-NDL VALVE

## 6000 PSI STAINLESS STEEL NEEDLE VALVES

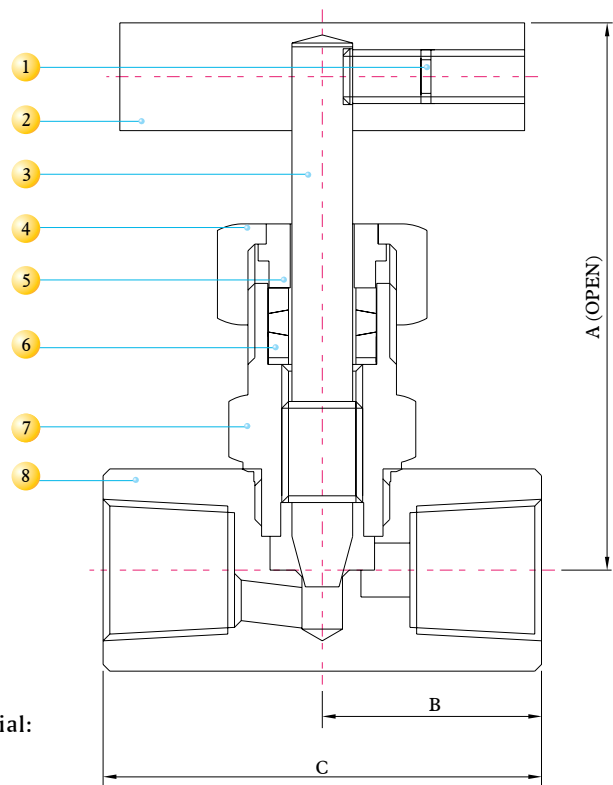


### DESIGN FEATURES:

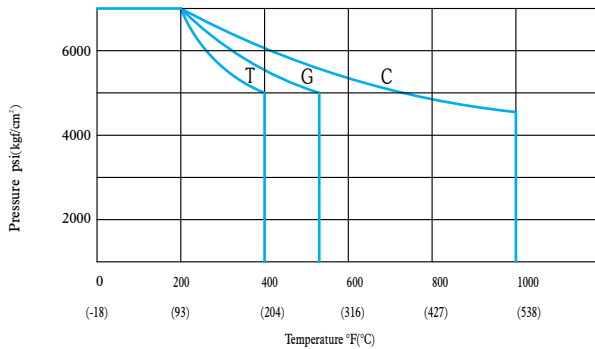
- INVESTMENT CASTING
- SCREWED-IN BONNET
- RISING STEM
- HANDLE OPERATION
- WORKING PRESSURE: 6000 PSI
- TEST STANDARD: API 598

### MATERIALS LIST

NO.	PART NAME	MATERIAL	QTY
1	SET SCREW	SS304	1
2	HANDLE	SS410	1
3	STEM	SS316	1
4	GLAND NUT	SS304	1
5	GLAND	SS304	1
6	PACKING	PTFE	1
7	BONNET	ASTM A351 Gr.CF8M	1
8	BODY	ASTM A351 Gr.CF8M	1



### PRESSURE TEMPERATURE RATINGS



Packing Material:

T: PTFE

G: PTFE + 25%C

C: CARBON FIBER

### DIMENSIONS

SIZE		A		B		C		Cv Factor	Weight	
inch	mm	inch	mm	inch	mm	inch	mm		Kg	Lb
1/8"	15	29.5	75.0	11.5	29.0	1.00	25.5	0.7	0.35	0.77
1/4"	20	29.5	75.0	11.5	29.0	0.98	25.0	0.8	0.35	0.77
3/8"	25	29.5	75.0	11.5	29.0	1.26	32.0	0.9	0.35	0.77
1/2"	32	34.5	87.0	12.8	32.5	1.28	32.5	1.2	0.56	1.23
3/4"	40	35.5	90.0	13.8	35.0	1.65	42.0	1.3	0.70	1.54
1"	50	40.5	103.0	15.8	40.0	1.65	42.0	1.8	1.30	2.86

# TECHNICAL DATA

NOTE: WE RECOMMEND TO ADD 20%~25% SAFETY FACTORS FOR VALVE SERVICE CONDITION OR APPLICATION IF CUSTOMER WISH TO MOUNT AN ACTULATOR.

**FIGURE:TC-01TK**  
OPERATING TORQUE

VALVE SIZE	1000/800WOG	
	N-m	Lbf-in
1/4"	2.94	26.04
3/8"	2.94	26.04
1/2"	3.92	34.72
3/4"	4.90	43.40
1"	7.36	65.10
1 1/4"	9.81	86.80
1 1/2"	17.65	156.24
2"	24.52	217.00

**FIGURE:TC-2000**  
OPERATING TORQUE

VALVE SIZE	1500/2000WOG	
	N-m	Lbf-in
1/4"	4.9	43.40
3/8"	4.9	43.40
1/2"	5.9	52.08
3/4"	8.8	78.12
1"	14.7	130.20
1 1/4"	19.6	173.60
1 1/2"	34.3	303.80
2"	39.2	347.20

**FIGURE:TC-6000/6100 (FS)**  
OPERATING TORQUE

VALVE SIZE	150#	
	N-m	Lbf-in
1"	8.0	70.80
1 1/2"	12.5	110.60
2"	24.0	212.40
2 1/2"	34.0	300.90
3"	59.0	522.20
4"	79.0	699.15
6"	137.0	1212.45

**FIGURE:TC-7000 (FS)**  
OPERATING TORQUE

VALVE SIZE	150#	
	N-m	Lbf-in
1"	11.00	97.35
1 1/2"	26.40	233.64
2"	33.00	292.05
3"	66.00	584.10
4"	112.20	992.97

**FIGURE:TC-02T、TC-02TM、TC-02X、TC-03T/B/S、TC-03K/03KC**  
OPERATING TORQUE

VALVE SIZE	1000WOG	
	N-m	Lbf-in
1/4"	3.0	26.55
3/8"	3.0	26.55
1/2"	4.5	39.83
3/4"	8.5	75.23
1"	11.0	97.35
1 1/4"	15.0	132.75
1 1/2"	24.0	212.40
2"	32.0	283.20
2 1/2"	45.0	398.25
3"	65.0	575.25
4"	100.0	885.00

**FIGURE:TC-3000T/B/S**  
OPERATING TORQUE

VALVE SIZE	1000WOG	
	N-m	Lbf-in
1/2"	4.50	39.83
3/4"	8.30	73.46
1"	10.70	94.70
1 1/4"	15.00	132.75
1 1/2"	24.00	212.40
2"	31.80	283.20
2 1/2"	45.00	398.25
3"	65.00	575.25
4"	100.00	885.00

**FIGURE:TC-0802A-150# TC-5000/5100 (FS)**  
OPERATING TORQUE

VALVE SIZE	150#	
	N-m	Lbf-in
1/2"	6.0	53.10
3/4"	8.0	70.80
1"	10.0	88.50
1 1/4"	12.5	110.60
1 1/2"	24.0	212.40
2"	30.0	265.50
2 1/2"	35.0	309.75
3"	60.0	531.00
4"	102.0	902.70
5"	150.0	1327.50
6"	210.0	1858.50
8"	400.0	3540.00
10"	843.4	7464.80
12"	1529.9	13540.80

**FIGURE:TC-WLT-DM TC-WTT-DM**  
OPERATING TORQUE

VALVE SIZE	1000 WOG	
	N-m	Lbf-in
1/4"	4.4	39.06
3/8"	4.4	39.06
1/2"	5.9	52.08
3/4"	8.3	73.78
1"	9.8	86.80
1 1/4"	13.7	121.52
1 1/2"	29.4	260.4
2"	47.1	416.6

**FIGURE:TC-0612/0612C、TC-0612M/0612MC**  
OPERATING TORQUE

VALVE SIZE	1500/2000WOG	
	N-m	Lbf-in
1/4"	4.90	43.40
3/8"	4.90	43.40
1/2"	4.90	43.40
3/4"	5.90	52.08
1"	8.80	78.12
1 1/4"	14.70	130.20
1 1/2"	19.60	173.60
2"	34.30	303.80
2 1/2"	49.00	434.00
3"	58.80	520.80

**FIGURE:TC-4000/4100 (FS)**  
OPERATING TORQUE

VALVE SIZE	1500/2000 WOG	
	N-m	Lbf-in
1/2"	5.88	52.08
3/4"	8.80	78.12
1"	14.70	130.20
1 1/4"	19.60	173.60
1 1/2"	39.23	347.20
2"	49.04	434.00

**FIGURE:TC-0802A-300#**  
OPERATING TORQUE

VALVE SIZE	300#	
	N-m	Lbf-in
1/2"	6.0	53.10
3/4"	8.0	70.80
1"	10.0	88.50
1 1/4"	12.0	110.63
1 1/2"	24.0	212.40
2"	30.0	265.50
2 1/2"	45.0	398.25
3"	79.0	699.15
4"	110.0	973.50
5"	150.0	1327.50
6"	220.0	1947.00
8"	500.0	4425.00

**FIGURE:TC-8000 TC-WL-BR TC-WT-BR**  
OPERATING TORQUE

VALVE SIZE	400/600WOG	
	N-m	Lbf-in
1/4"	6.78	60
3/8"	6.78	60
1/2"	6.78	60
3/4"	13.56	120
1"	18.08	160
1 1/4"	20.34	180
1 1/2"	29.38	260
2"	39.55	350
2 1/2"	45.20	400
3"	65.54	580
4"	71.19	630

**FIGURE:TC-3000TC、TC-3000TE**  
OPERATING TORQUE

VALVE SIZE	1000WOG	
	N-m	Lbf-in
1/2"	4.5	39.83
3/4"	10.70	94.70
1"	23.50	208.30
1 1/2"	31.80	281.30
2"	53.90	477.40
2 1/2"	78.50	694.40
3"	112.80	998.20
4"	148.00	1309.8

**FIGURE:TC-0712M**  
OPERATING TORQUE

VALVE SIZE	1500/2000WOG	
	N-m	Lbf-in
1/4"	3.09	27.34
3/8"	3.09	27.34
1/2"	4.12	36.46
3/4"	4.90	45.57
1"	7.72	68.36
1 1/4"	10.3	91.14
1 1/2"	18.54	164.05
2"	25.74	227.85
2 1/2"	30.89	273.42
3"	36.04	318.99

**FIGURE:TC-WLF、TC-WTF**  
OPERATING TORQUE

VALVE SIZE	150#	
	N-m	Lbf-in
2"	90.4	800
3"	237.3	2100
4"	316.4	2800
6"	904.0	8000

**FIGURE:TC-WL、TC-WT**  
OPERATING TORQUE

VALVE SIZE	1000 WOG	
	N-m	Lbf-in
1/4"	3.92	34.72
3/8"	3.92	34.72
1/2"	7.91	70.00
3/4"	11.87	105.00
1"	15.48	137.00
1 1/4"	26.00	230.00
1 1/2"	35.60	315.00
2"	68.93	608.00

**FIGURE:TC-9000**  
OPERATING TORQUE

VALVE SIZE	1000 WOG	
	N-m	Lbf-in
1/2"	3.96	35.00
3/4"	4.52	40.00
1"	9.04	80.00
1 1/4"	14.13	125.00
1 1/2"	20.34	180.00
2"	24.86	220.00