



SUMINISTROS ARQUITECTURA
INGENIERIA Y CONSTRUCCION



INTRODUCCION

MYF Smart Solutions, una unidad estratégica de Grupo Medina, se especializa en la distribución integral de materiales para la construcción.

Este documento presenta nuestra línea de productos: tuberías, válvulas y conexiones, seleccionadas con los más altos estándares de calidad.

Somos una empresa innovadora, eficiente y comprometida, respaldada por un equipo de expertos que no teme a los retos. Nuestra misión es superar expectativas, brindando soluciones precisas para cada necesidad del cliente.

En MYF Smart Solutions, estamos comprometidos con ofrecer soluciones integrales y confiables en el suministro de materiales para la construcción.

Nuestra filosofía se basa en los principios de honestidad, lealtad, colaboración y puntualidad, que rigen cada aspecto de nuestro servicio. Con un enfoque proactivo y una visión orientada al cliente, trabajamos día a día para mantenernos a la vanguardia del sector, fortaleciendo la confianza de quienes eligen crecer con nosotros.



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SMART SOLUTIONS

ACERO INOXIDABLE ASTM A-312

Normas de fabricación	Tipo	Aplicación
ASTM A-312	Normal	Usos generales
A-358	Especial (5 clases)	Para alta temperatura
A-409	Grandes Diámetros	Para alta temperatura
A-778	Sin tratamiento Térmico	Para baja temperatura y corrosión
A-530 ANSI B-36, 19 B-36.10	Requerimientos generales y dimensionamiento	

*Aceros inoxidables: TP 304, 316 Grados L y Especiales



Diámetro nominal piper size		Diámetro exterior Outside diameter		Cédula / Schedules								
Pulg. inch.	mm. mm.	Pulg. inch.	mm. mm.	5 S	5 S	10 S	10	20	40 S	40	80 S EH	40
1/4"	6	0.54	13.7		0.049 0.38	0.065 0.88	0.065 0.88		0.088 0.62	0.088 0.62	0.119 0.79	0.119 0.79
3/8"	10	0.675	17.1		0.049 0.38	0.065 0.62	0.065 0.62		0.091 0.84	0.091 0.84	0.126 1.09	0.126 1.09
1/2"	13	0.840	21.3	0.065 0.79	0.065 0.79	0.083 0.99	0.083 0.99		0.109 1.25	0.109 1.25	0.147 1.61	0.147 1.61
3/4"	19	1.050	26.7	0.065 1.01	0.065 1.01	0.083 1.26	0.083 1.26		0.113 1.67	0.113 1.67	0.154 2.18	0.154 2.18
1"	25	1.315	33.4	0.065 1.28	0.065 1.28	0.109 2.07	0.109 2.07		0.133 2.48	0.133 2.48	0.179 3.21	0.179 3.21
1 1/4"	32	1.660	42.2	0.065 1.63	0.065 1.63	0.109 2.67	0.109 2.67		0.140 3.36	0.140 3.36	0.191 4.43	0.191 4.43
1 1/2"	38	1.900	48.3	0.065 1.88	0.065 1.88	0.109 3.08	0.109 3.08		0.145 4.02	0.145 4.02	0.200 5.37	0.200 5.37
2"	51	2.375	60.3	0.065 2.37	0.065 2.37	0.109 3.9	0.109 3.9		0.154 5.40	0.154 5.40	0.219 7.46	0.219 7.46
2 1/2"	64	2.875	73.0	0.083 3.66	0.083 3.66	0.120 5.22	0.120 5.22		0.203 8.57	0.203 8.57	0.276 11.33	0.276 11.33
3"	76	3.500	88.9	0.083 4.48	0.083 4.48	0.120 6.41	0.120 6.41		0.216 11.21	0.216 11.21	0.300 15.17	0.300 15.17
4"	102	4.500	114.3	0.083 5.79	0.083 5.79	0.120 8.30	0.120 8.30		0.237 15.96	0.237 15.96	0.337 22.17	0.337 22.17
5"	127	5.563	141	0.109 9.39	0.109 9.39	0.134 11.49	0.134 11.49	0.203 17.19	0.258 21.63	0.258 21.63	0.375 30.75	0.375 30.75
6"	152	6.625	168.3	0.109 11.22	0.109 11.22	0.134 13.74	0.134 13.74	0.203 20.60	0.280 28.07	0.280 28.07	0.432 42.28	0.432 42.28
8"	203	8.625	219.1	0.109 14.67	0.109 14.67	0.148 19.83	0.148 19.83	0.250 33.09	0.322 42.25	0.322 42.25	0.500 64.21	0.500 64.21
10"	254	10.750	273.1	0.134 22.48	0.134 22.48	0.165 27.60	0.165 27.60	0.250 41.49	0.365 59.91	0.365 59.91	0.500 81.01	0.594 95.35
12"	305	12.750	232.9	0.156 31.05	0.165 32.82	0.180 35.75	0.180 35.75	0.250 49.40	0.375 73.34	0.406 79.2	0.500 96.82	0.688 131.174
14"	356	14.000	355.6	0.156 34.14		0.188 41.04	0.250 54.33	0.313 67.71	0.375 80.76	0.438 39.84	0.500 106.69	0.750 157.07
16"	406	16.000	406	0.165 41.29		0.188 46.99	0.250 62.23	0.313 77.61	0.375 92.61	0.500 122.49	0.500 112.49	0.844 202.18
18"	457	18.000	457	0.165 46.51		0.188 52.92	0.250 70.13	0.313 87.49	0.375 104.47	0.563 155.17	0.500 138.30	0.938 252.96
20"	508	20.000	508	0.188 58.87		0.219 68.47	0.250 78.04	0.375 116.32	0.375 116.32	0.594 182.20	0.500 154.11	1.031 309.12
24"	610	24.000	610	0.219 82.31		0.250 93.84	0.250 93.84	0.375 140.03	0.375 140.03	0.688 253.50	0.500 185.72	1.219 438.93

ACERO INOXIDABLE ASTM A-312

Tabla de presión de diseño

Diámetro Nominal		Céd.	Diámetro Exterior		Pared Espesor		Presión de Ruptura		Presión interior de Trabajo		Presión de aplastamiento		Presión exterior de Trabajo		Preso aproximado	
Pulg.	mm.	mm.	Pulg.	mm.	Pulg.	mm.	(PSI)	Kg/cm.	(PSI)	Kg/cm.	(PSI)	Kg/cm.	(PSI)	Kg/cm.	Lb/pies	Kg/m.
1/4"	6.350	10	.540	13.716	.065	1.651	16980	1194	4240	298	720	506	1800	127	.3297	.490
		40			.088	2.235	23900	1680	5970	420	9800	689	2450	172	.4248	.632
3/8"	9.525	10	.675	17.145	.065	1.651	13300	935	3320	233	5640	396	1410	99	.4235	.630
		40	"	"	.091	2.311	19260	1354	4810	338	8160	574	2040	143	.5676	.844
1/2"	12.700	5	.840	21.336		1.651	10510	739	2630	185	4320	304	1080	76	.5383	.800
		10	"	"	.083	2.108	13670	961	3420	240	5800	408	1450	102	.6710	.998
		40	"	"	.109	2.768	18470	1298	4610	324	7800	548	1950	137	.8510	1.266
3/4"	19.050	5	1.050	26.670	.065	1.651	8300	583	2070	145	3250	228	813	57	.6838	1.062
		10	"	"	.083	2.108	10750	756	2690	189	4440	312	1110	78	.8572	1.275
		40	"	"	.113	2.870	15010	1055	3750	264	6360	447	1590	112	1.131	1.682
1"	25.400	5	1.315	33.401	.065	1.651	6550	460	1640	115	2380	167	595	42	.8678	1.291
		10	"	"	.109	2.768	11320	796	2830	199	4720	332	1180	83	1.404	2.088
		40	"	"	.133	3.378	14040	987	3510	247	6000	422	1500	105	1.679	2.498
1 1/4"	31.750	5	1.600	42.164	.065	1.651	5150	362	1290	91	1690	119	422	30	1.107	1.646
		10	"	"	.109	2.768	8830	621	2210	155	3520	247	881	62	1.806	2.686
		40	"	"	.140	3.556	11530	811	2880	202	4800	337	1200	84	2.273	3.382
1 1/2"	38.100	5	1.900	48.260	.065	1.651	4480	315	1120	79	1375	97	344	24	1.274	1.895
		10	"	"	.109	2.768	7660	538	1920	135	2960	208	741	52	2.085	3.102
		40	"	"	.145	3.683	10370	729	2590	182	4280	301	1070	75	2.718	4.044
2"	50.800	5	2.375	60.325	.065	1.651	3560	250	890	63	936	66	234	16	1.604	2.386
		10	"	"	.109	2.768	6060	426	1520	107	2150	151	537	38	2.638	3.924
		40	"	"	.154	3.911	8720	613	2180	153	3440	242	861	61	3.653	5.434
2 1/2"	63.500	5	2.875	73.025	.083	2.108	3760	264	940	66	1030	72	257	18	2.475	3.682
		10	"	"	.120	3.048	5500	387	1380	97	1870	131	468	33	3.531	5.253
		40	"	"	.203	5.156	9550	671	2390	168	3860	271	966	68	5.793	8.618
3"	76.200	5	3.500	88.900	.083	2.108	3080	217	770	54	712	50	178	13	3.029	4.506
		10	"	"	.120	3.048	4490	316	1120	79	1390	98	347	24	4.332	6.445
		40	"	"	.216	5.486	8270	581	2070	146	3250	228	813	57	7.576	11.271
4"	101.600	5	4.500	114.300	.083	2.108	2390	168	596	42	382	27	96	7	3.915	5.824
		10	"	"	.120	3.048	3470	244	867	61	394	63	224	16	5.613	8.351
		40	"	"	.237	6.019	7000	492	1750	123	2600	183	650	46	10.790	16.053
6"	152.400	5	6.625	168.275	.109	2.77	2130	150	531	37	270	19	68	5	7.585	11.290
		10	"	"	.134	3.40	2620	184	655	46	504	35	126	9	9.289	13.826
		40	"	"	.280	7.11	5580	392	1395	98	1915	135	479	34	18.97	28.234
8"	203.200	5	8.625	219.075	.109	2.77	1630	114	407	28	122	9	31	2	9.914	14.757
		10	"	"	.148	3.77	2220	156	555	39	130	22	78	5	13.40	19.946
10"	254.000	5	10.750	273.050	.134	3.40	1605	113	401	28	120	8	30	2	15.19	22.610
		10	"	"	.165	4.19	1980	139	495	35	220	15	55	4	18.70	27.835
12"	38.100	5	12.750	12.750	.156	3.96	1575	111	394	28	114	8	29	2	22.18	33.015
		10	"	"	.180	4.57	1820	128	455	32	173	12	43	3	24.20	36.022

ACERO AL CARBÓN A 53-B / A 106-B

Diámetro Nominal Pulg.	Céd. mm.	Diámetro Exterior		Diámetro Interior		Espesor		Preso Kg. x Mt.
		Pulg.	mm.	Pulg.	mm.	Pulg.	mm.	
1/8"	40	0.405"	10.29	0.269"	6.83	0.068"	1.73	0.357
	80	0.405"	10.29	0.215"	5.46	0.095"	2.41	0.461
1/4"	40	0.540"	13.72	0.364"	9.25	0.088"	2.24	0.625
	80	0.540"	13.72	0.302"	7.67	0.119"	3.02	0.804
3/8"	40	0.675"	17.15	0.493"	12.52	0.091"	2.31	0.846
	80	0.675"	17.15	0.423"	10.74	0.126"	3.20	1.101
1/2"	40	0.840"	21.34	0.622"	15.80	0.109"	2.77	1.265
	80	0.840"	21.34	0.546"	13.87	0.147"	3.73	1.622
1/2"	160	0.840"	21.34	0.466"	11.84	0.187"	4.75	1.935
	XXS	0.840"	21.34	0.252"	6.40	0.294"	7.47	2.544
3/4"	40	1.050"	26.67	0.824"	20.93	0.113"	2.87	1.682
	80	1.050"	26.67	0.742"	18.85	0.154"	3.91	2.188
3/4"	160	1.050"	26.67	0.614"	15.60	0.218"	5.54	2.887
	XXS	1.050"	26.67	0.434"	11.02	0.308"	7.82	3.631
1"	40	1.315"	33.40	1.049"	26.64	0.133"	3.38	2.500
	80	1.315"	33.40	0.957"	24.31	0.179"	4.55	3.229
1"	160	1.315"	33.40	0.815"	20.70	0.250"	6.35	4.226
	XXS	1.315"	33.40	0.599"	15.21	0.358"	9.09	5.446
1 1/4"	40	1.660"	42.16	1.380"	35.05	0.140"	3.56	3.378
	80	1.660"	42.16	1.278"	32.46	0.191"	4.85	4.464
1 1/4"	160	1.660"	42.16	1.160"	29.46	0.250"	6.35	5.595
	XXS	1.660"	42.16	0.896"	22.76	0.382"	9.70	7.752
1 1/2"	40	1.900"	48.26	1.610"	40.89	0.145"	3.68	4.048
	80	1.900"	48.26	1.500"	38.10	0.200"	5.08	5.402
1 1/2"	160	1.900"	48.26	1.338"	33.99	0.281"	7.14	7.232
	XXS	1.900"	48.26	1.100"	27.94	0.400"	10.16	9.538
2"	40	2.375"	60.33	2.067"	52.50	0.154"	3.91	5.432
	80	2.375"	60.33	1.939"	49.25	0.218"	5.54	7.471
2"	160	2.375"	60.33	1.689"	42.90	0.343"	8.71	11.072
	XXS	2.375"	60.33	1.503"	38.18	0.436"	11.07	13.437
2 1/2"	40	2.875"	73.03	2.469"	62.71	0.203"	5.16	8.616
	80	2.875"	73.03	2.323"	59.00	0.276"	7.01	11.399
2 1/2"	160	2.875"	73.03	2.125"	53.98	0.375"	9.53	14.896
	XXS	2.875"	73.03	1.771"	44.98	0.552"	14.02	20.386
3"	40	3.500"	88.90	3.068"	77.93	0.216"	5.49	11.280
	80	3.500"	88.90	2.900"	73.86	0.300"	7.62	16.254
3"	160	3.500"	88.90	2.625"	66.68	0.438"	11.13	21.310
	XXS	3.500"	88.90	2.300"	58.42	0.600"	15.24	27.647
3 1/2"	40	4.000"	101.60	3.548"	90.12	0.226"	5.74	13.557
	80	4.000"	101.60	3.364"	85.45	0.318"	8.08	18.617
3 1/2"	160	4.000"	101.60	-	-	-	-	-
	XXS	4.000"	101.60	2.728"	69.29	0.636"	16.15	32.906
4"	40	4.500"	114.30	4.026"	102.26	0.237"	6.02	16.052
	80	4.500"	114.30	3.826"	97.18	0.337"	8.56	22.293
4"	120	4.500"	114.30	3.625"	92.08	0.438"	11.12	28.290
	160	4.500"	114.30	3.428"	87.33	0.531"	13.19	33.498
4"	XXS	4.500"	114.30	3.152"	80.06	0.674"	17.12	40.980
5"	40	5.563"	141.30	5.047"	128.19	0.258"	6.55	21.757
	80	5.563"	141.30	4.813"	122.25	0.375"	9.53	30.924
5"	120	5.563"	141.30	4.563"	115.90	0.500"	12.70	40.240
	160	5.563"	141.30	4.313"	109.55	0.625"	15.88	49.050
5"	XXS	5.563"	141.30	4.063"	103.20	0.750"	19.05	57.362



SMART SOLUTIONS

tubería

ACERO AL CARBÓN NORMA A 53-B / A 106-B

Diámetro Nominal Pulg.	Céd. mm.	Diámetro Exterior		Diámetro Interior		Espesor		Preso Kg. x Mt.
		Pulg.	mm.	Pulg.	mm.	Pulg.	mm.	
6"	40	6.625"	168.28	6.065"	154.05	0.280"	7.11	28.230
	80	6.625"	168.28	5.761"	146.33	0.432"	10.97	42.517
	120	6.625"	168.28	5.501"	139.73	0.562"	14.27	54.154
	160	6.625"	168.28	5.189"	131.80	0.718"	18.24	67.414
	XXS	6.625"	168.28	4.897"	124.38	0.864"	21.95	79.102
8"	20	8.625"	219.08	8.125"	206.38	0.250"	6.35	33.275
	30	8.625"	219.08	8.071"	205.00	0.277"	7.04	36.758
	40	8.625"	219.08	7.981"	202.72	0.322"	8.18	38.022
	60	8.625"	219.08	7.813"	198.45	0.406"	10.31	53.038
	80	8.625"	219.08	7.625"	193.68	0.500"	12.70	64.571
	100	8.625"	219.08	7.439"	188.95	0.593"	15.06	75.703
	120	8.625"	219.08	7.189"	182.60	0.718"	18.24	90.227
	140	8.625"	219.08	7.001"	177.83	0.812"	20.62	100.838
	160	8.625"	219.08	6.813"	173.05	0.906"	23.01	111.151
	XXS	8.625"	219.08	6.875"	174.63	0.875"	22.23	107.761
	20-	10.725"	273.05	10.250"	260.35	0.250"	6.35	41.728
	30	10.725"	273.05	10.136"	257.45	0.307"	7.80	50.955
10"	40	10.725"	273.05	10.020"	254.51	0.365"	9.27	60.241
	60	10.725"	273.05	9.750"	247.65	0.500"	12.70	81.462
	80	10.725"	273.05	9.564"	242.93	0.593"	15.06	95.733
	100	10.725"	273.05	9.314"	236.58	0.718"	18.24	114.484
	120	10.725"	273.05	9.064"	230.23	0.843"	21.41	132.744
	140	10.725"	273.05	8.750"	222.25	1.000"	25.40	154.962
	160	10.725"	273.05	8.500"	215.90	1.125"	28.58	172.106
	20	12.750"	323.85	12.250"	311.15	0.250"	6.35	49.675
12"	30	12.750"	323.85	12.090"	307.09	0.330"	8.38	65.137
	40	12.750"	323.85	11.938"	303.23	0.406"	10.31	79.661
	60	12.750"	323.85	11.626"	295.30	0.562"	14.27	108.874
	80	12.750"	323.85	11.376"	288.95	0.687"	17.45	131.717
	100	12.750"	323.85	11.064"	281.03	0.843"	21.41	159.531
	120	12.750"	323.85	10.750"	273.05	1.000"	25.40	186.749
	140	12.750"	323.85	10.500"	266.70	1.125"	28.58	207.866
	160	12.750"	323.85	10.126"	257.20	1.312"	33.32	238.507
	10	14.0"	355.60	13.500"	342.90	0.250"	6.35	54.630
	20	14.0"	355.60	13.376"	339.75	0.312"	7.92	37.979
14"	30	14.0"	355.60	13.250"	336.55	0.375"	9.53	81.209
	40	14.0"	355.60	13.126"	333.40	0.437"	11.10	94.305
	60	14.0"	355.60	12.814"	325.48	0.593"	15.06	126.360
	80	14.0"	355.60	12.500"	317.50	0.750"	19.05	157.938
	100	14.0"	355.60	12.126"	308.00	0.937"	23.80	194.547
	120	14.0"	355.60	11.814"	300.08	1.093"	27.76	224.221
	140	14.0"	355.60	11.500"	292.10	1.250"	35.75	253.315
	160	14.0"	355.60	11.188"	284.18	1.406"	35.71	281.441
	10	16.0"	406.40	15.500"	393.70	0.250"	6.35	62.577
	20	16.0"	406.40	15.376"	390.55	0.312"	7.92	77.920
16"	30	16.0"	406.40	15.250"	387.35	0.375"	9.35	93.129
	40	16.0"	406.40	15.000"	381.00	0.500"	12.70	123.175
	60	16.0"	406.40	14.688"	373.08	0.656"	16.66	159.977
	80	16.0"	406.40	14.314"	363.58	0.843"	21.41	203.074
	100	16.0"	406.40	13.938"	354.03	1.031"	26.19	245.293
	120	16.0"	406.40	13.564"	344.53	1.218"	30.94	286.158
	140	16.0"	406.40	13.125"	333.38	1.438"	36.53	332.604
	160	16.0"	406.40	12.814"	325.48	1.593"	40.46	364.763

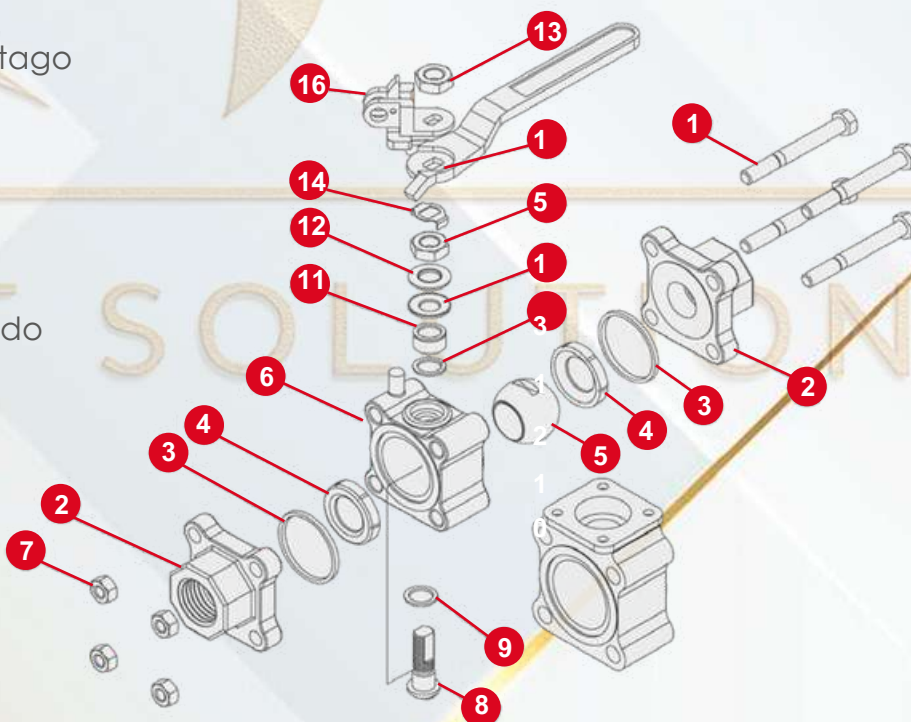
ACERO AL CARBÓN A 53-B / A 106-B

Diámetro Nominal Pulg.	Céd. mm.	Diámetro Exterior		Diámetro Interior		Espesor		Peso Kg. x Mt.
		Pulg.	mm.	Pulg.	mm.	Pulg.	mm.	
18"	10	18.0"	457.20	17.500"	444.50	0.250"	6.35	70.524
	20	18.0"	457.20	17.376"	441.35	0.312"	7.92	87.846
	30	18.0"	457.20	17.126"	435.00	0.437"	11.10	122.118
	40	18.0"	457.20	16.876"	428.65	0.562"	14.27	155.885
	60	18.0"	457.20	16.500"	419.10	0.750"	19.05	205.619
	80	18.0"	457.20	16.125"	409.58	0.937"	23.80	254.103
	100	18.0"	457.20	15.688"	398.48	1.156"	29.36	309.478
	120	18.0"	457.20	15.250"	387.35	1.375"	34.93	363.319
	140	18.0"	457.20	14.876"	377.85	1.562"	39.67	408.098
	160	18.0"	457.20	14.438"	366.73	1.781"	45.24	459.112
	10	20.0"	508.00	19.500"	495.30	0.250"	6.35	78.471
20"	20	20.0"	508.00	19.250"	488.95	0.375"	9.53	116.969
	30	20.0"	508.00	19.000"	482.60	0.500"	12.70	154.962
	40	20.0"	508.00	18.814"	477.88	0.593"	15.06	182.910
	60	20.0"	508.00	18.376"	466.75	0.812"	20.62	247.630
	80	20.0"	508.00	17.438"	442.93	1.281"	32.54	381.118
	120	20.0"	508.00	17.000"	431.80	1.500"	38.10	441.046
	140	20.0"	508.00	16.500"	419.10	1.750"	44.45	507.611
	160	20.0"	508.00	16.064"	408.03	1.968"	49.99	564.028
	10	24.0"	609.60	23.500"	596.90	0.250"	6.35	94.364
	20	24.0"	609.60	23.250"	590.55	0.375"	9.35	140.810
	30	24.0"	609.60	22.876"	581.05	0.562"	14.27	209.553
24"	40	24.0"	609.60	22.626"	574.70	0.687"	17.45	254.728
	60	24.0"	609.60	22.064"	560.43	0.968"	24.59	354.346
	80	24.0"	609.60	20.938"	531.83	1.531"	38.89	546.750
	120	24.0"	609.60	20.376"	517.55	1.812"	46.02	639.001
	140	24.0"	609.60	19.876"	504.85	2.062"	52.37	718.975
	160	24.0"	609.60	19.314"	490.58	2.343"	59.51	806.493
	10	30.0"	762.00	29.376"	746.15	0.312"	7.90	147.224
	20	30.0"	762.00	29.000"	736.60	0.500"	12.70	234.430
	30	30.0"	762.00	28.750"	730.25	0.625"	15.88	291.798
	30	30.0"	762.00	28.750"	730.25	0.625"	15.88	291.798

VÁLVULAS DE ESFERA WORCESTER SERIE 400

Válvula Valve	ANSI B 16.34 Clase/Class	Acero al Carbono Carbon Street		Acero Inoxidable Stainless Steel	
		ASTM A216 WCB		ASTM A351 CF8M	
Serie 400 Series 400	400	Presión de Trabajo Working Pressure	Presión Maxima Max. Test Pressure	Presión de Trabajo Working Pressure	Presión Max. de P. Max. Test Pressure
		990 psi	1500 psi	960 psi	1450 psi

- 1 Tornillo de cuerpo
- 2 Tapa
- 3 Sello de cuerpo
- 4 Asiento
- 5 Bola
- 6 Cuerpo
- 7 Tuerca del cuerpo
- 8 Vástago
- 9 Roldana inferior de vástago
- 10 Sello de vástago
- 11 Separador
- 12 Roldana cóncava
- 13 Tuerca de vástago
- 14 Seguro para tuerca
- 15 Maneral
- 16 Dispositivo para candado

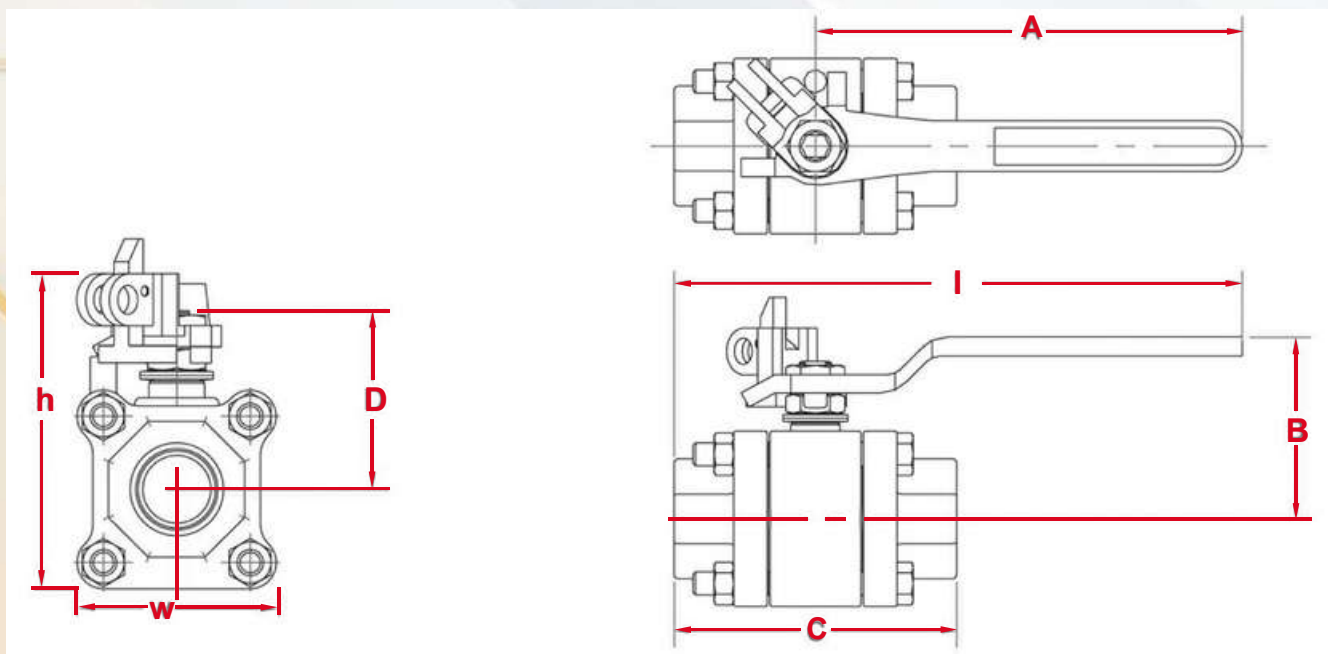


VÁLVULAS DE ESFERA WORCESTER SERIE 400 PASO REDUCIDO

Medida	A	B	C	D	Paso	Peso kg.	Weight lbs.	Largo (l)	Altura (h)	Ancho (w)
1/4	4.30	1.75	2.61	1.47	.440	0.660	1.400	5.63	2.64	1.77
3/8	4.30	1.71	2.61	1.49	.440	0.620	1.300	5.63	2.58	1.75
1/2	4.30	1.65	2.61	1.51	.440	0.590	1.300	5.63	2.58	1.75
3/4	4.30	1.73	2.83	1.55	.560	0.800	1.800	5.74	2.74	2.00
1	5.75	2.40	3.75	2.17	.810	1.490	3.300	7.57	3.59	2.38
1 1/4	5.86	2.49	4.22	2.35	1.000	2.010	4.400	7.98	3.82	2.63
1 1/2	7.13	3.02	4.62	2.89	1.250	3.330	7.300	9.45	4.62	3.19
2	7.14	3.15	5.01	3.07	1.500	4.400	9.700	9.65	5.00	3.57

VÁLVULAS DE ESFERA WORCESTER SERIE 400 PASO COMPLETO

Medida	A	B	C	D	Paso	Peso kg.	Weight lbs.	Largo (l)	Altura (h)	Ancho (w)
1/4	4.30	1.71	2.61	1.47	.440	0.620	1.400	5.63	2.58	1.75
3/8	4.30	1.65	2.61	1.51	.440	0.590	1.300	5.63	2.58	1.75
1/2	4.30	1.73	2.83	1.55	.560	0.800	1.800	5.74	2.74	2.00
3/4	5.75	2.40	3.75	2.17	.810	1.490	3.300	7.57	3.59	2.38
1	5.86	2.49	4.22	2.35	1.000	2.010	4.400	7.98	3.82	2.63
1 1/4	7.13	3.02	4.62	2.89	1.250	3.330	7.300	9.45	4.62	3.19
1 1/2	7.14	3.15	5.01	3.07	1.500	4.400	9.700	9.65	5.00	3.57
2	7.42	4.84	5.87	4.68	2.000	9.910	12.900	10.36	7.12	4.55

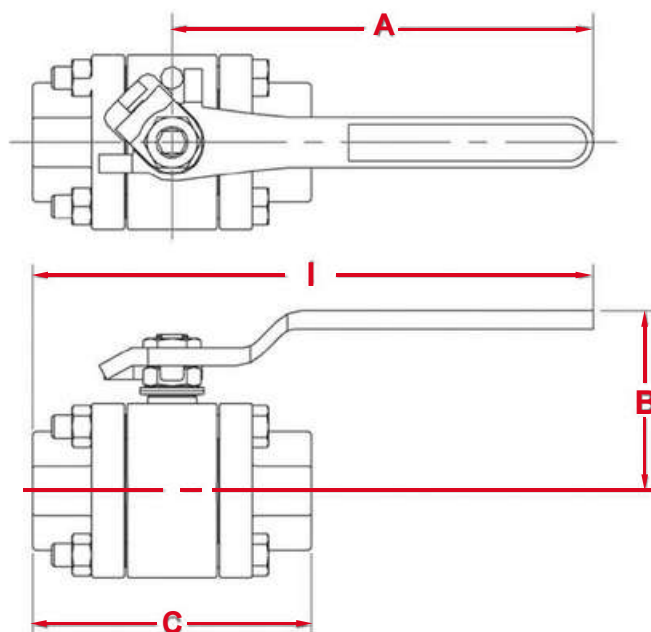
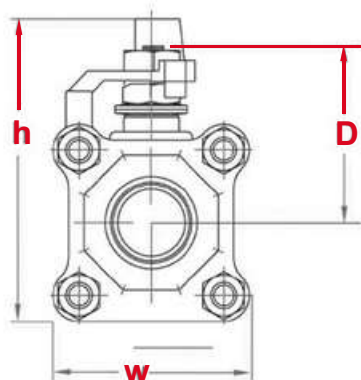


VÁLVULAS DE ESFERA WORCESTER SERIE 400 BRONCE PASO REDUCIDO

Medida	A	B	C	D	Paso	Peso kg.	Weight lbs.	Largo (l)	Altura (h)	Ancho (w)
1/4	4.30	1.69	2.61	1.50	.430	0.630	1.300	5.56	2.57	1.79
3/8	4.30	1.75	2.61	1.50	.450	0.620	1.300	5.56	2.65	1.79
1/2	4.30	1.58	2.61	1.50	.450	0.590	1.300	5.56	2.50	1.79
3/4	4.30	1.87	2.83	1.50	.560	0.750	1.600	5.74	2.72	2.00
1	5.84	2.21	3.69	2.19	.810	1.490	3.200	7.69	3.58	2.45
1 1/4	5.75	2.76	4.16	2.35	1.000	2.010	4.400	7.81	3.96	2.63
1 1/2	7.00	3.02	4.56	2.89	1.250	2.940	6.480	9.28	4.51	3.06
2	7.00	3.21	4.94	3.13	1.500	4.010	8.800	9.52	5.00	3.48

VÁLVULAS DE ESFERA WORCESTER SERIE 400 BRONCE PASO COMPLETO

Medida	A	B	C	D	Paso	Peso kg.	Weight lbs.	Largo (l)	Altura (h)	Ancho (w)
1/4	4.30	1.75	2.61	1.50	.450	0.620	1.300	5.56	2.56	1.79
3/8	4.30	1.58	2.61	1.50	.450	0.590	1.300	5.56	2.50	1.79
1/2	4.30	1.87	2.83	1.50	.560	0.750	1.600	5.74	2.72	2.00
3/4	5.84	2.21	3.69	2.19	.810	1.490	3.200	7.69	3.58	2.45
1	5.75	2.76	4.16	2.35	1.000	2.010	4.400	7.81	3.96	2.63
1 1/4	7.00	3.02	4.56	2.89	1.250	2.940	6.480	9.28	4.51	3.06
1 1/2	7.00	3.21	4.94	3.13	1.500	4.010	8.800	9.52	5.00	3.48
2	7.42	4.84	5.87	4.68	2000	9.910	21.900	10.36	7.12	4.55

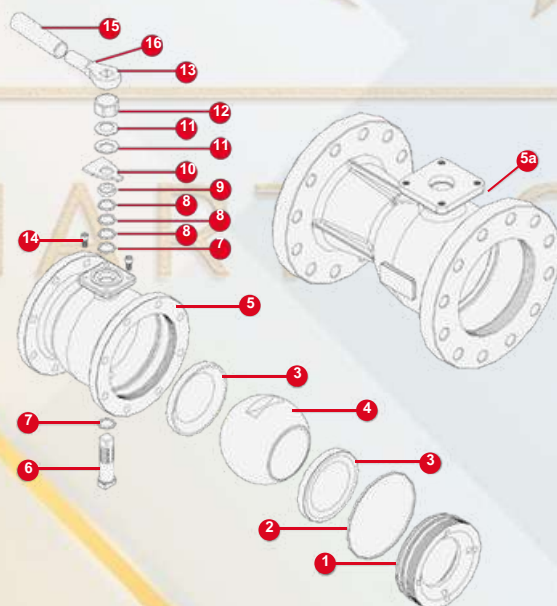
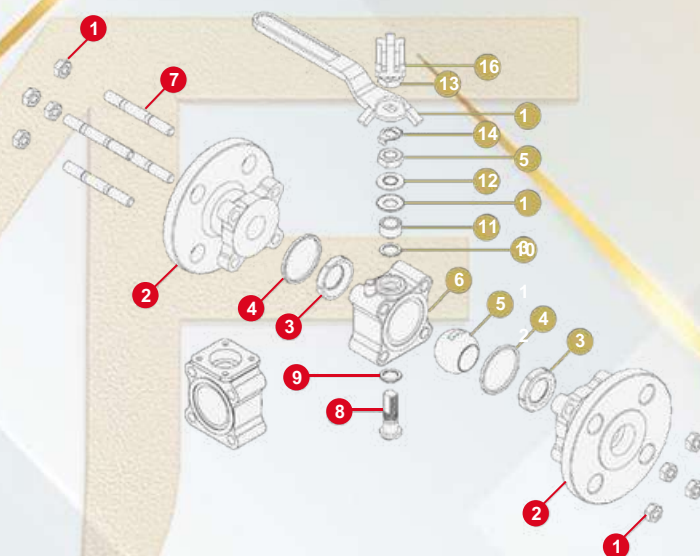


VÁLVULAS DE ESFERA BRIDADA WORCESTER

SERIE 150 Y 300

Válvula Valve	ANSI B 16.34 Clase • Class	Acero al Carbon • Carbon Street ASTM A216 WCB		Acero Inoxidable • Stainless Steel ASTM A351 CF8M	
		Presión de Trabajo Working Pressure	Presión Máxima Max. Test Pressure	Presión de Trabajo Working Pressure	Presión Máxima Max. Test Pressure
Serie 150 • Series 150	150	285 psi	450 psi	275 psi	425 psi
Serie 300 • Series 300	300	740 psi	1125 psi	720 psi	1100 psi

- 1 Tuerca del cuerpo
- 2 Tapa Brida
- 3 Asiento
- 4 Sello de cuerpo
- 5 Bola
- 6 Cuerpo
- 7 Birlo del cuerpo
- 8 Vástago
- 9 Roldana inferior de vástago
- 10 Roldana superior de vástago
- 11 Separador
- 12 Roldana cóncava
- 13 Tuerca de vástago
- 14 Seguro para tuerca vástago
- 15 Maneral
- 16 Dispositivo para candado

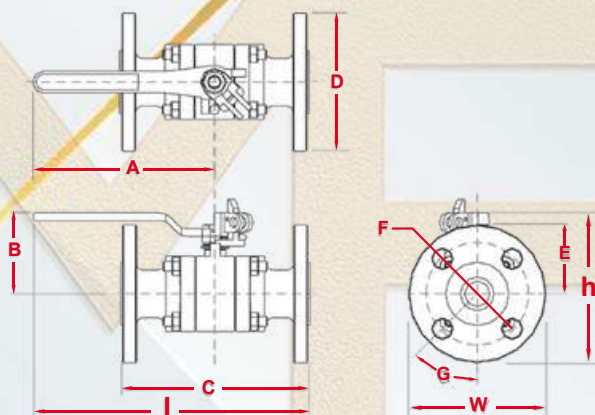


- 1 Tapón
- 2 Sello de cuerpo
- 3 Asiento
- 4 Bola
- 5 Cuerpo 150
- 5a Cuerpo 300
- 6 Vástago
- 7 Roldana de vástago
- 8 Sello de vástago
- 9 Separador
- 10 Placa tope
- 11 Roldana cóncava
- 12 Tuerca autotrabante
- 13 Maneral
- 14 Tornillo tope
- 15 Palanca
- 16 Opresor para maneral

VÁLVULAS DE ESFERA BRIDADA WORCESTER

SERIE 150 (1/2" A 2")

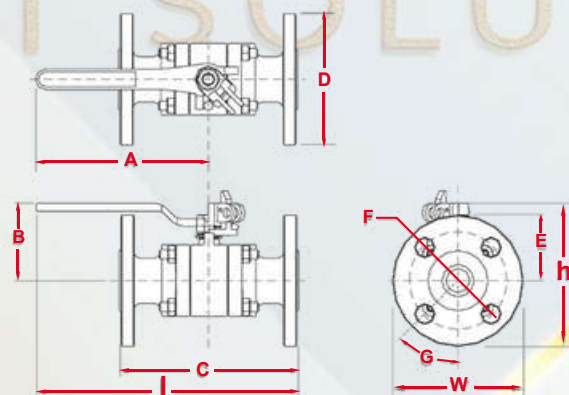
Medida	A	B	C	D	E	F	G	Paso Bore	Peso kg.	Weight lb.	Largo l	Altura h	Ancho w
1/2	4.35	2.70	4.37	3.60	1.46	2.38	45°	440	1.600	3.500	6.53	4.50	3.61
3/4	4.95	2.58	4.78	3.98	1.60	2.75	45°	.560	2.100	4.600	6.83	4.57	3.98
1	4.85	3.61	5.13	4.37	2.17	3.12	45°	.810	3.230	7.120	8.37	5.78	4.37
1 1/2	7.15	4.27	6.50	5.13	2.88	3.58	45°	1.250	6.710	14.790	10.43	6.77	5.13
2	7.20	4.40	7.00	6.13	3.07	4.75	45°	1.500	9.170	20.700	10.71	7.40	6.13



VÁLVULAS DE ESFERA BRIDADA WORCESTER

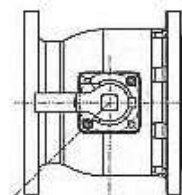
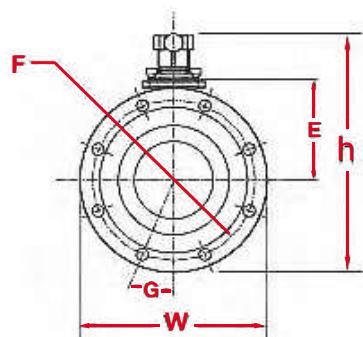
SERIE 300 (1/2" A 2")

Medida	A	B	C	D	E	F	G	Paso Bore	Peso kg.	Weight lb.	Largo l	Altura h	Ancho w
1/2	4.25	2.72	5.54	3.75	1.46	2.62	45°	.440	2.060	4.540	7.00	4.60	3.75
3/4	4.25	2.78	6.00	4.62	1.57	3.25	45°	.560	3.100	7.000	7.25	5.34	4.62
1	5.85	3.45	6.50	4.88	2.17	3.50	45°	.810	4.490	9.900	9.08	5.90	4.88
1 1/2	7.00	4.27	7.59	6.12	2.88	4.47	45°	1.250	9.600	21.160	10.81	7.35	6.12
2	7.12	4.39	8.50	6.50	3.07	5.00	45°	1.500	11.370	24.070	11.42	7.64	6.50



VÁLVULAS DE ESFERA BRIDADA WORCESTER SERIE 150 y 300

Dimensiones



Serie 150 (3" a 10")

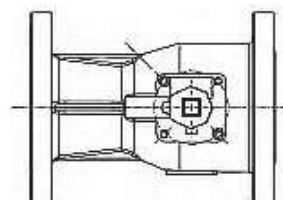
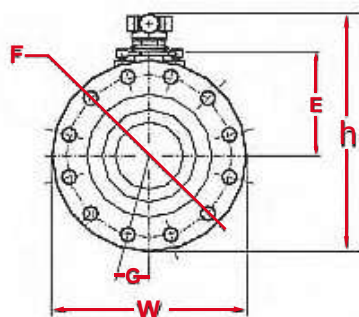
ISO 5211	
3	F10
4	F10
6	F12
8	F12
10	-

Serie 150

Medida	A	B	C	D	E	F	G	H	Paso Bore	Peso / Wight kg / lb	L	H	W
33	1/43.628.00		43	6.15	3.88	6.00	45"	7.50	2.500	19.000 43.600	8.00	9.80	7.50
1/43.999.00			64	6.74	4.48	7.50	22.5"	9.00	3.250	30.400 67.000	9.00	11.25	9.00
11/324.2110.50			84	9.192	6.19	9.50	22.5"	11.00	4.370	48.200 106.200	10.50	14.67	11.00
11/325.1111.50	10	4	7.12	10.20	7.28	11.75	22.5"	13.50	5.680	77.400 170.600	11.50	16.95	13.50
13.00				12.84	9.47	14.00	15"	16.00	7.370	122.000 268.900	13.00	20.85	16.00

Nota: Dimensiones en pulgadas +

Dimensiones



Serie 300 (3" a 8")

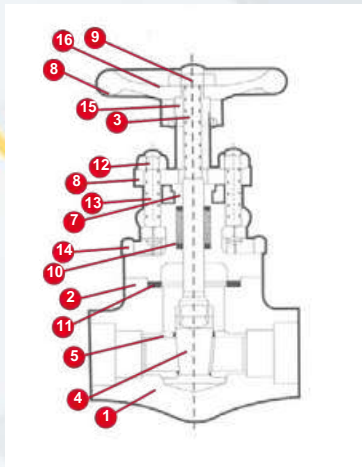
ISO 5211	
3	F10
4	F10
6	F12
8	F12

Serie 300

Medida	A	B	C	D	E	F	G	H	Paso Bore	Peso / Wight kg / lb	L	H	W
33	1/44.2711.12		43	6.14	3.88	6.62	22.5"	8.25	2.500	23.600 52.030	11.12	10.27	8.26
1/44.2712.00			64	6.75	4.48	7.88	22.5"	10.00	3.250	38.00 183.700	12.09	11.75	10.00
11/325.5015.88			84	9.26	6.19	10.62	15"	12.50	4.370	69.00 152.140	15.88	15.50	12.50
11/328.1916.50				10.33	7.43	13.00	15"	15.00	5.680	122.000 269.010	16.50	17.83	15.00

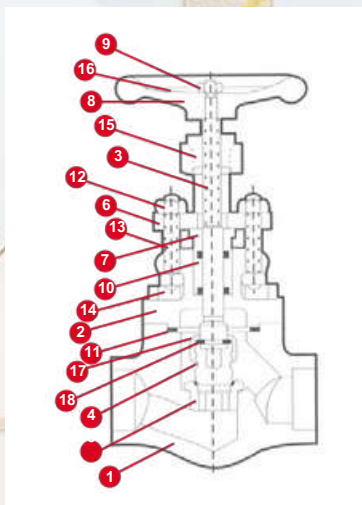
Nota: Dimensiones en pulgadas.

COMPUERTA 800 LBS.



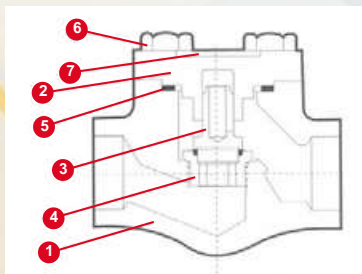
Descripción	Material estandar	Especificación
1 Cuerpo	Acero forjado	ASTM A-105 ASTM A-105
2 Bonete	Acero forjado	ASTM A-276 tipo 410
3 Vástago	Acero inoxidable	ASTM A-276 tipo 410
4 Cuña	Acero inoxidable	ASTM A-276 tipo 410 + Estellite No. 6
5 Asientos	Acero inoxidable + Estellite No. 6	ASTM A-36 ASTM A-108 Gr 1018
6 Brida prensa empaques	Acero al carbón	ASTM A-536 Gr 654512
7 Prensa empaque	Acero al carbón	ASTM A-108 Gr 1018
8 Volante	Hierro maleable	Comercial
9 Tuerca de volante	Acero al carbon	Comercial + ac inox
10 Empaque Vástago	Grafito	304 ASTM A-196 Gr 8
11 Junta	Grafito + ac inox	ASTM A-582 Gr 416
12 Tuerca del espárrago	Acero inoxidable	ASTM A-193 Gr B7
13 Espárrago	Acero inoxidable	ASTM A-582 Gr 416
14 Tornillo hexagonal	Acero Cr. Mo	Comercial
15 Tuerca de Vástago	Acero inoxidable	
16 Placa de Identificación	Lamina de aluminio	

GLOBO 800 LBS.



Descripción	Material estandar	Especificación
1 Cuerpo	Acero forjado	ASTM A-105
2 Bonete	Acero forjado	ASTM A-105
3 Vástago	Acero inoxidable	ASTM A-276 tipo 410
4 Disco	Acero inoxidable	ASTM A-276 tipo 410
5 Asientos	Acero inoxidable + Estellite No. 6	ASTM A-276 tipo 410+ + Estellite No. 6
6 Brida prensa empaques	Acero al carbón	ASTM A-36
7 Prensa empaque	Acero al carbón	ASTM A-108 Gr 1018
8 Volante	Hierro maleable	ASTM A-536 Gr 654512
9 Tuerca de volante	Acero al inoxidable	ASTM A-194 Gr 8
10 Empaque vástago	Grafito	Comercial
11 Junta	Grafito + ac inox	Comercial + ac inox 304
12 Tuerca del esparrago	Acero inoxidable	ASTM A-194 Gr 8
13 Esparrago	Acero inoxidable	ASTM A-582 Gr 416
14 Tornillo hexagonal	Acero inoxidable	ASTM A-193 Gr B7
15 Tuerca de vástago	Cr. Mo Acero inoxidable	ASTM A-582 Gr 416
16 Placa de identificación	Acero inoxidable	Comercial
17 Tuerca del disco	Lamina de aluminio	ASTM A-108 Gr 1018
18 Seguro	Acero al carbón Acero inoxidable	ASTM A-276 Tipo 304

RETENCIÓN 800 LBS.



Descripción	Material estandar	Especificación
1 Cuerpo	Acero forjado	ASTM A-105 ASTM A-105
2 Tapa	Acero forjado	ASTM A-276 tipo 410
3 Pistón	Acero inoxidable	ASTM A-276 tipo 410
4 Asiento	Acero inoxidable	ASTM A-276 tipo 410 + Estellite No. 6
5 Junta	+ Estellite No. 6	Comercial + ac inox
6 Tornillo hexagonal	Grafito + ac inox	304 ASTM A-193 Gr. B7
7 Placa de Identificación	Acero Cr. Mo	Comercial
	Lamina de aluminio	

Compuerta 800 Lbs.

Tamaño Paso Estándar	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	
Tamaño Paso Completo		1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
A (mm.)	84	84	84	91	113	121	121	130	165
B (abierta) (mm.)	146	146	146	149	181	241	241	262	275
C (mm.)	102	102	102	102	102	165	165	165	203
D (Paso Estándar) (mm.)	7.9	9.5	9.5	12.7	19.1	28.6	28.6	36.5	42.8
Peso Aprox. Kg. (Lbs.)	1.8 (4.0)	1.8 (4.0)	1.7 (3.7)	1.9 (4.2)	3.4 (7.5)	7.1 (15.7)	7.1 (15.7)	8.3 (18.3)	9.5 (21)

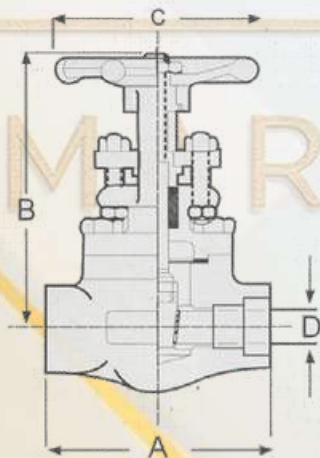
Globo 800 Lbs.

Tamaño Paso Estándar	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	
Tamaño Paso Completo		1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	
A (mm.)	84	84	84	91	111	165	165	178	
B (abierta) (mm.)	151	151	1151	164	194	248	248	276	
C (mm.)	102	102	102	102	102	165	165	165	
D (Paso Estándar) (mm.)	7.9	7.9	7.9	12.7	17.5	28.6	28.6	34.9	
Peso Aprox. Kg. (Lbs.)	1.9 (4.2)	1.9 (4.2)	1.8 (4.0)	2.1 (4.6)	3.3 (7.3)	7.5 (16.5)	7.4 (16.3)	10.9(24.0)	

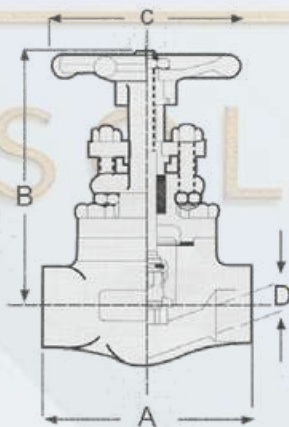
Retención 800 Lbs.

Tamaño Paso Estándar	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	
Tamaño Paso Completo		1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	
A (mm.)	84	84	84	91	111	165	165	178	
B (abierta) (mm.)	47	47	47	55	69	103	103	119	
D (Paso Estándar) (mm.)	7.9	7.9	7.9	12.7	17.5	28.6	28.6	34.9	
Peso Aprox. Kg. (Lbs.) (mm.)	13(2.9)	1.3 (2.9)	1.2 (2.6)	1.4 (3.1)	2.6 (7.3)	5.9 (13.0)	5.9 (13.0)	8.8(19.4)	

Compuerta



Globo



Retención

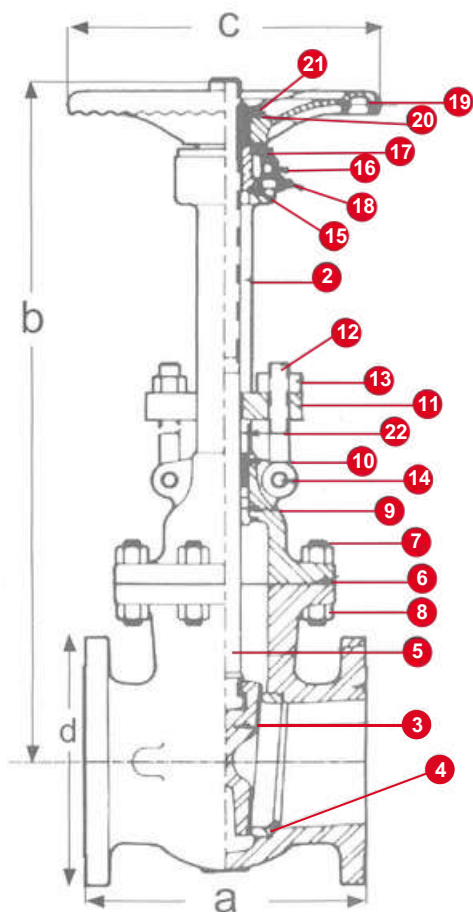




SMART SOLUTIONS

VALVULAS DE ACERO FUNDIDO

COMPUERTA 150 LBS. (2" - 6") ASTM A-216 GR WCB



Descripción	Material estándar	Especificación ASMT
1 Cuerpo	Fund. de acero al carbón	A216 GR WCB
2 Bonete	Fund. de acero al carbón	A216 GR WCB
3 Disco	-	-
4 Anillos	-	-
5 Vástago	-	-
6 Junta	Acero	AISI 1010
7 Birlo	Acero aleado	A193 GRB7
8 Tuerca del birlo	Acero al carbón	A194 GR2H
9 Casquillo	-	-
10 Empaque	Grafito	Comercial
11 Brida prensa-empaque	Acero	A36
12 Tornillo del ojo	Acero	AISI C 1045
13 Tuerca del tornillo del ojo	Acero	A307 GR B
14 Perno del tornillo del ojo	Acero	Comercial
15 Tuerca del vástago	Bronce, aluminio, silicio	B148 UNS C95600
16 Opresor	Acero	Comercial
17 Tuerca Reten	Acero	A108 GR 1018
18 Grasera	Acero	Comercial
19 Volante	Hierro maleable	A197
20 Opresor	Acero	Comercial
21 Tuerca del volante	Acero cadminizado	A108 GR 1018
22 Buje prensa-empaque	Acero	A108 GR 1018

Dimensiones y pesos (2" - 6")

ø N	mm pulg.	50 2	65 2 1/2	80 3	100 4	127 5	150 6
a(F)	mm pulg.	177.8 7	190.5 7 1/2	203.2 8	228.6 9	254.0 10	266.7 10 1/2
a(WE)	mm pulg.	215.9 8 1/2	241.3 9 1/2	282.5 11 1/8	304.8 12	381.0 15	403.2 15 7/8
b	mm pulg.	477.8 18 13/16	482.6 19	552.5 21 3/4	674.7 26 9/16	812.8 32	830.3 32 11/16
c	mm pulg.	203.2 8	177.8 7	254 10	254 10	304.8 12	304.8 12
d	mm pulg.	152.4 6	177.8 7	190.5 7 1/2	228.6 9	254.0 10	279.4 11
PESO	mm	19	30.8	32	47	70.0	73
5202F	pulg.	42	68	71	104	154	161
PESO	mm	22	27.2	27	44	60.0	67.1
5202WE	pulg.	48	60	60	97	132	148



COMPUERTA 150 LBS. (8" - 48") ASTM A-216 GR WCB

* Compuerta Flexible

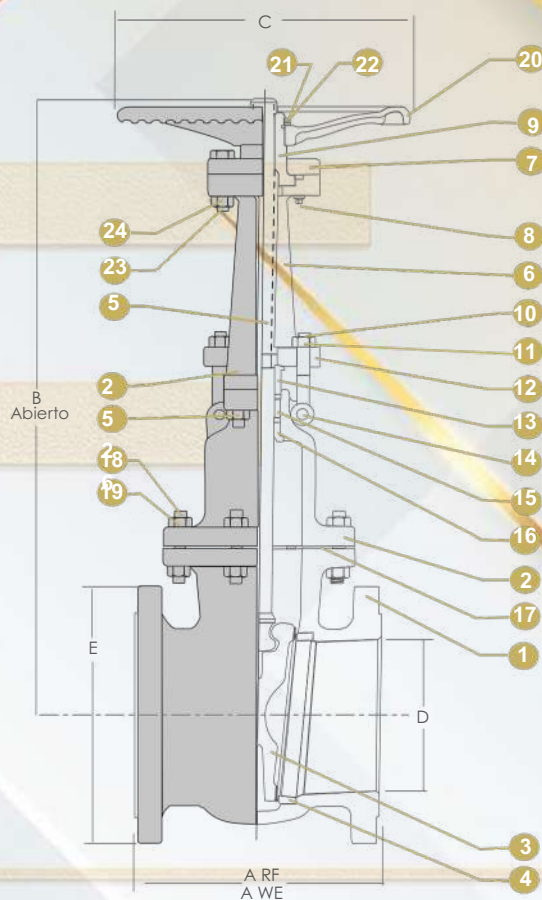
* 36" y 48", normalmente suministradas con cajas de engranes

* 36" suministrada con bridas de acuerdo a MSS SP 44
espesor a ANSI B16.1 clase 125

No.	Descripción	Material Estándar
1	Cuerpo	ASTM A 216 GR WCB
2	Bonete	ASTM A 216 GR WCB
3	Compuerta	ASTM A 216 GR WCB+ 13% Cr
4	Asiento	ASTM A 515 GR 70+ ST 6
5	Vástago	ASTM A 276 Tipo 410
6	Yugo	ASTM A 216 GR WCB
7	Contrabrida	ASTM A 36
8	Grasera	Acero Comercial
9	Tuerca Vástago	ASTM B 148 UNS C95600
10	Tornillo de Ojo	Acero Aleado
11	Tuerca Tornillo de Ojo	ASTM A 307
12	Brida Prensa Empaques	ASTM A 515 GR 70
13	Buje Prensa Empaques	ASTM A 108 GR 1020
14	Perno Tornillo de Ojo	Acero Aleado
15	Empaque de Vástago	Grafito
16	Casquillo	ASTM A 276 Tipo 410
17	Junta	Grafito/Inoxidable 316
18	Espárrago	ASTM A 193 GR B7
19	Tuerca Espárrago	ASTM A 194 GR 2H
20	Volante	ASTM A 197
21	Tuerca Volante	ASTM A 108 GR 1020
22	Opresor Tuerca Volante	Acero Aleado
23	Tornillo Tapa	Acero Aleado
24	Tuerca Tornillo Tapa	ASTM A 307
25	Tornillo Yugo	Acero Aleado
26	Tuerca Tornillo Yugo	ASTM A 307
27*	Placa de identificación	Acero Inoxidable

* No indicado

Figura No.	Tipo de Extremo
5202RF	Bridados cara realizada
5202RTJ	Bridados junta tipo anillo
5202WE	Soldables a tope



Dimensiones y pesos

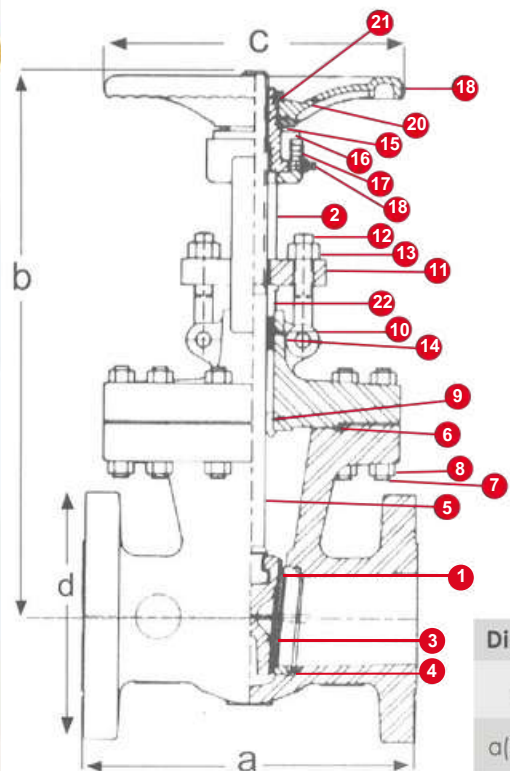
D Diámetro Nominal	mm pulgadas	203 8	254 10	305 12	356 14	406 16	457 18	508 20	610 24	762 30	914 36	1219 48
A (RF)	mm pulgadas	292 11 1/2	330 13	356 14	381 15	406 16	432 17	457 18	508 20	610 24	711 28	927 36 1/2
A (WE)	mm pulgadas	419 16 1/2	457 18	502 19 3/4	572 22 1/2	610 24	660 26	711 28	813 32	762 30	864 34	-
B	mm pulgadas	1062 41 13/16	1253 49 5/16	1461 57 1/2	1638 64 1/2	1791 70 1/2	2013 79 1/4	2235 88	2680 105 1/2	3219 126 1/3	3969 156 1/4	6350 250
C	mm pulgadas	355.6 14	406.4 16	508 20	559 22	660 26	711 28	762 30	864 34	965 38	965 38	1168 46
E	mm pulgadas	343 13 1/2	406 16	483 19	533 21	597 23 1/2	635 25	699 27 1/2	813 32	984 38 3/4	1168 46	1511 59 1/2
PESO 5202 RF	kg lb	133 293	200 441	270 595	402 885	535 1178	670 1476	860 1894	942 2075	2145 4725	3890 8568	7050 15529
PESO 5202 WE	kg lb	128 282	183 403	264 581	421 927	555 1222	751 1654	885 1949	1345 2963	1910 4207	3198 7044	-



SMART SOLUTIONS

VALVULAS DE ACERO FUNDIDO

COMPUERTA 300 LBS. (2" - 6") ASTM A-216 GR WCB



Descripción	Material estandar	Especificación ASMT
1 Cuerpo	Fund. de acero al carbón	A216 GR WCB
2 Bonete	Fund. de acero al carbón	A216 GR WCB
3 Disco	-	-
4 Anillos	-	-
5 Vástago	-	-
6 Junta	Acero	AISI 1010
7 Birlo	Acero aleado	A193 GRB7
8 Tuerca del birlo	Acero al carbón	A194 GR2H
9 Casquillo	-	-
10 Empaque	Grafito	Comercial
11 Brida prensa-empaque	Acero	A36
12 Tornillo del ojo	Acero	AISI C 1045
13 Tuerca del tornillo del ojo	Acero	A307 GR B
14 Perno del tornillo del ojo	Acero	Comercial
15 Tuerca del vástago	Bronce, aluminio, silicio	B148 UNS C95600
16 Opresor	Acero	Comercial
17 Tuerca Reten	Acero	A108 GR 1018
18 Grasera	Acero	Comercial
19 Volante	Hierro maleable	A197
20 Opresor	Acero	Comercial
21 Tuerca del volante	Acero cadminizado	A108 GR 1018
22 Buje prensa-empaque	Acero	A108 GR 1018

Dimensiones y pesos (2" - 6")

ø N	mm pulg.	50 2	65 2 1/2	80 3	100 4	127 5	150 6
a(F y WE)	mm pulg.	215.9 8 1/2	241.3 9 1/2	282.5 11 1/8	304.8 12	381.0 15	403.2 15 7/8
b	mm pulg.	473 18 5/8	568 22 3/8	546 21 1/2	673 26 1/2	1549 61	935 36 13/16
c	mm pulg.	203.2 8	203.2 8	254 10	254 10	355.6 14	355.6 14
d	mm pulg.	165.1 6 1/2	190.5 7 1/2	210 8 1/4	254 10	179.4 11	317.5 12 1/2
PESO 5206F	Kg. Lb.	26 57	47 104	43 95	68 189	149.5 329	136 300
PESO 5206WE	Kg. Lb.	20 44	38 84	32 70	59 70	113.2 249	124 273



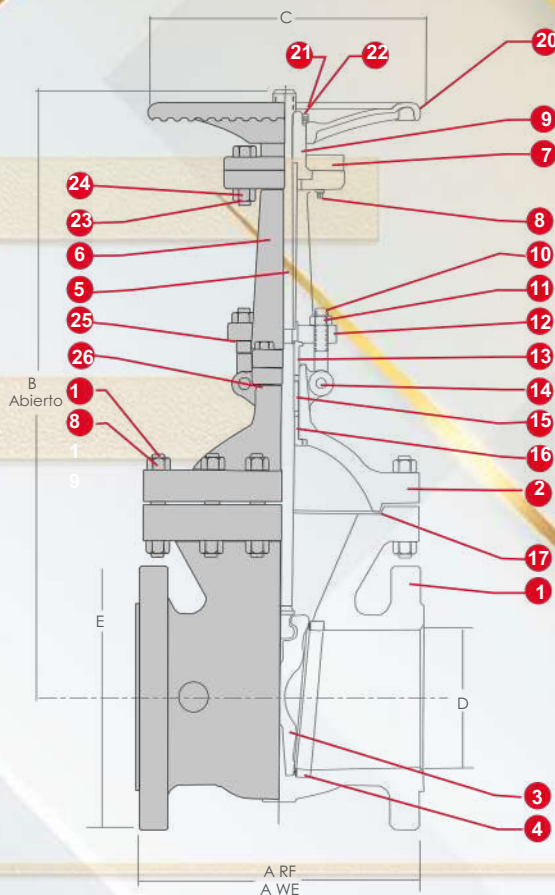
COMPUERTA 300 LBS. (8" - 42") ASTM A-216 GR WCB

* Compuerta Flexible

* 36" y 42", normalmente suministradas con cajas de engranes

No.	Descripción	Material Estándar
1	Cuerpo	ASTM A 216 GR WCB
2	Bonete	ASTM A 216 GR WCB
3	Compuerta	ASTM A 216 GR WCB+ 13% Cr
4	Asiento	ASTM A 515 GR 70+ ST 6
5	Vástago	ASTM A 276 Tipo 410
6	Yugo	ASTM A 216 GR WCB
7	Contrabrida	ASTM A 36
8	Grasera	Acero Comercial
9	Tuerca Vástago	ASTM B 148 UNS C95600
10	Tornillo de O jo	Acero Aleado
11	Tuerca Tornillo de O jo	ASTM A 307
12	Brida Prensa Empaques	ASTM A 515 GR 70
13	Buje Prensa Empaques	ASTM A 108 GR 1020
14	Perno Tornillo de O jo	Acero Aleado
15	Empaque de Vástago	Grafito
16	Casquillo	ASTM A 276 Tipo 410
17	Junta	Espiral/Inoxidable 304/Grafito
18	Espárrago	ASTM A 193 GR B7
19	Tuerca Espárrago	ASTM A 194 GR 2H
20	Volante	ASTM A 197
21	Tuerca Volante	ASTM A 108 GR 1020
22	Opresor Tuerca Volante	Acero Aleado
23	Tornillo Contrabrida	Acero Aleado
24	Tuerca Tornillo Tapa	ASTM A 307
25	Tornillo Yugo	Acero Aleado
26	Tuerca Tornillo Yugo	ASTM A 307
27*	Placa de identificación	Acero Inoxidable

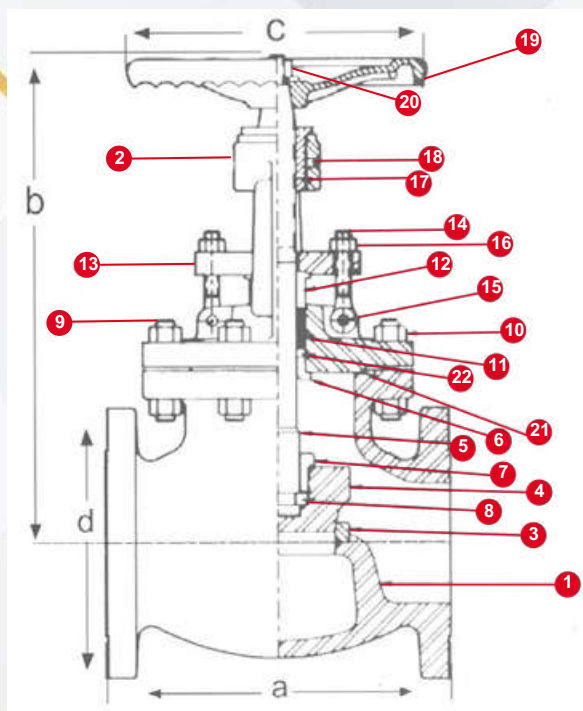
Figura No.	Tipo de Extremo
5206RF	Bridados cara realizada
5206RTJ	Bridados junta tipo anillo
5206WE	Soldables a tope



* No indicado

Dimensiones y pesos

D Diámetro Nominal	mm pulgadas	203 8	254 10	305 12	356 14	406 16	457 18	508 20	610 24	762 30	914 36	1067 42
A (RF) y (WE)	mm pulgadas	419 16 1/2	457 18	502 19 3/4	762 22.5	838 24	914 26	991 28	1143 32	1397 55	1727 68	2045 80 1/2
B	mm pulgadas	1083 42 5/8	1314 51 3/4	1594 62 3/4	1695 66 3/4	1873 73 3/4	2076 81 3/4	2318 91 1/4	2762 108 3/4	3664 136 3/8	4048 159 3/8	4636 182 1/2
C	mm pulgadas	406.4 16	508 20	508 20	660 26	711 28	864 34	864 34	864 34	965 38	914 36	914 36
E	mm pulgadas	381 15	445 17 1/2	521 20 1/2	584 23	648 25 1/2	711 28	775 30 1/2	914 36	1092 43	1270 50	1289 50 3/4
PESO 5206 RF	kg lb	212 467	343 756	492 1083	706 2000	989 2650	1260 3600	1756 4550	2600 5000	4900 5790	8805 19394	11045 24328
PESO 5206 WE	kg lb	195 430	300 661	407 896	669 1474	982 2164	1383 3046	1605 3535	1950 4295	4500 9912	7943 17496	10436 22987

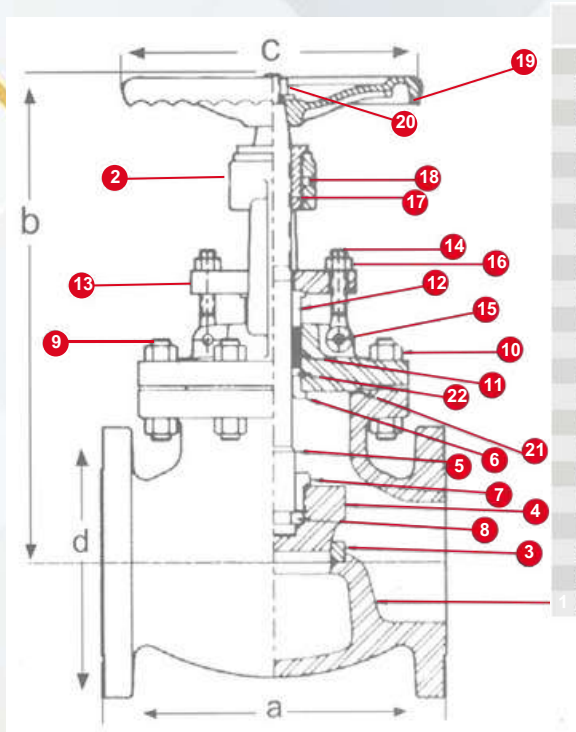
Globo 150 Lbs. (2" - 20") ASTM A-216 GR WCB


Descripción	Material estandar	Especificación ASMT
1 Cuerpo	Fund. de acero al carbón	A216 GR WCB
2 Bonete	Fund. de acero al carbón	A216 GR WCB
3 Anillo	-	-
4 Disco	-	-
5 Vástago	-	-
6 Casquillo	-	-
7 Tuerca de disco	-	-
8 Seguro	Acero inoxidable	216 Tipo 410
9 Birlo	Acero aleado	A193 GR B7
10 Tuerca del birlo	Acero al carbón	A194 GR 2H
11 Empaque	Grafito	Comercial
12 Buje prensa empaques	Acero	A108 GR 1020
13 Brida prensa empaque	Acero	A151 GR 70
14 Tornillo del ojo	Acero	AISI C 1045
15 Perno del tornillo del ojo	Acero	Comercial
16 Tuerca del tornillo del ojo	Acero	Comercial
17 Tuerca del vástago	Bronce, aluminio, silicio	B148 UNS C95600
18 Opresor	Acero	Comercial
19 Volante	Hierro maleable	A197
20 Tuerca del volante	Acero	Comercial
21 Junta	Acero	AISI 1010
22 Separador	Acero	A108 GR 1020

Dimensiones y pesos (2" - 16", 20") (2" - 12")

ø N	mm pulg.	50 2	65 2 1/2	80 3	100 4	150 6	200 8	250 10	300 12	350 14	400 16	500 20
a(F y WE)	mm pulg.	203.2 8	215.9 8 1/2	241.3 9 1/2	292.1 11 1/2	406.4 16	495.3 19 1/2	622.3 24 1/2	698.5 27 1/2	787.4 31	914.4 36	977.9 38 1/2
á(F y WE)	mm pulg.	101.6 4	114.3 4 1/2	120.6 4 3/4	146 5 3/4	203.2 8	247.6 9 3/4	311 12 1/4	349 13 3/4	-	-	-
b	mm pulg.	329 12 15/16	386 15 3/16	354 13 15/16	432 17	513 20 3/16	643 25 5/16	669 26 5/16	830 32 11/16	1292 50 7/8	1378 54 1/4	1502 59 1/8
c	mm pulg.	203.2 8	177.8 7	203.2 8	254 10	355.6 14	406.4 16	457 18	609.6 24	965 38	965 38	965 38
d	mm pulg.	152.4 6	177.8 7	190.2 7 1/2	228.6 9	279.4 11	342.9 13 1/2	406.4 16	482.6 19	533.4 21	596.9 23 1/2	698.5 27 1/2
PESO 5275F 5278F	Kg. Lb.	20 45	28 62	28 62	59 130	85 187	194 427	275 606	445 981	490 1080	900 1984	1500 3307
PESO 5275WE 5278WE	Kg. Lb.	15 33	25 55	21 46	41 90	63 138	155 341	233 513	394 868	425 937	780 1720	1300 2866

GLOBO300 LBS. (2" - 14") ASTM A216 GR WCB



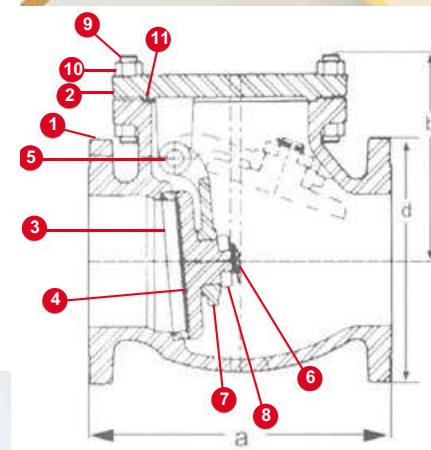
Descripción	Material estandar	Especificación ASMT
1 Cuerpo	Fund. de acero al carbón	A216 GR WCB
2 Bonete	Fund. de acero al carbón	A216 GR WCB
3 Anillo	-	-
4 Disco	-	-
5 Vástago	-	-
6 Casquillo	-	-
7 Tuerca de disco	-	-
8 Seguro	Acero inoxidable	216 Tipo 410
9 Birlo	Acero aleado	A193 GR B7
10 Tuerca del birlo	Acero al carbón	A194 GR 2H
11 Empaque	Grafito	Comercial
12 Buje prensa empaques	Acero	A108 GR 1020
13 Brida prensa empaque	Acero	A151S GR 70
14 Tornillo del ojo	Acero	AISI C 1045
15 Perno del tornillo del ojo	Acero	Comercial
16 Tuerca del tornillo del ojo	Acero	Comercial
17 Tuerca del vástago	Bronce, aluminio, silicio	B148 UNS C95600
18 Opresor	Acero	Comercial
19 Volante	Hierro maleable	A197
20 Tuerca del volante	Acero	Comercial
21 Junta	Acero	AISI 1010
22 Separador	Acero	A108 GR 1020

Dimensiones y pesos (2" - 14") (2" - 12")

ø N	mm pulg.	50 2	65 1 1/2	80 3	100 4	150 6	200 8	250 10	300 12	350 14
a(F y WE)	mm pulg.	266.7 10 1/2	292.1 11 1/2	317.5 12 1/2	355.6 14	444.5 17 1/2	558.8 22	622.3 24 1/2	711.2 28	838.2 33
á(F y WE)	mm pulg.	133.3 5 1/4	146 5 3/4	158.7 6 1/4	177.8 7	222.2 8 3/4	279.4 11	311 12 1/4	355.6 14	- -
b	mm pulg.	360 14 3/16	505 19 7/8	418 16 7/16	511 20 1/8	621 24 7/16	854 33 5/8	1000 39 3/8	1180 46 7/16	1583 62 5/16
c	mm pulg.	254 8	254 10	254 10	355.6 14	457 18	660 24	762 30	965 38	965 38
d	mm pulg.	165.1 6 1/2	190.5 7 1/2	209.5 8 1/4	254 10	317.5 12 1/2	381 15	444.5 17 1/2	520.7 20 1/2	647.7 23 1/2
PESO 5281F 5283F	Kg. Lb.	27 60	50 110	51 112	78 172	168 370	305 672	446 983	860 1896	1100 2425
PESO 5281WE 5283WE	Kg. Lb.	22 48	46 101	40 88	60 132	148 325	254 558	381 838	745 1639	955 2101

RETENCIÓN 150 LBS. / 300 LBS. (2" – 24") ASTM A216 GR

Descripción	Material estandar	Especificación ASMT
1 Cuerpo	Fund. de acero al carbón	A216 GR WCB
2 Tapa	Fund. de acero al carbón	A216 GR WCB
3 Anillo	-	-
4 Disco	-	-
5 Flecha	-	-
6 Seguro de disco	Acero inoxidable 18-8	Comercial
7 Horquilla	Fund. de acero al carbón	A216 GR WCB
8 Tuerca de disco	-	-
9 Birlo	Acero aleado	A193 GR B7
10 Tuerca del birlo	Acero al carbón	A194 GR 2H
11 Junta	Acero	ANSI 1010
12 Tapón de cuerpo (14" y mayores)	Acero al carbón	A105

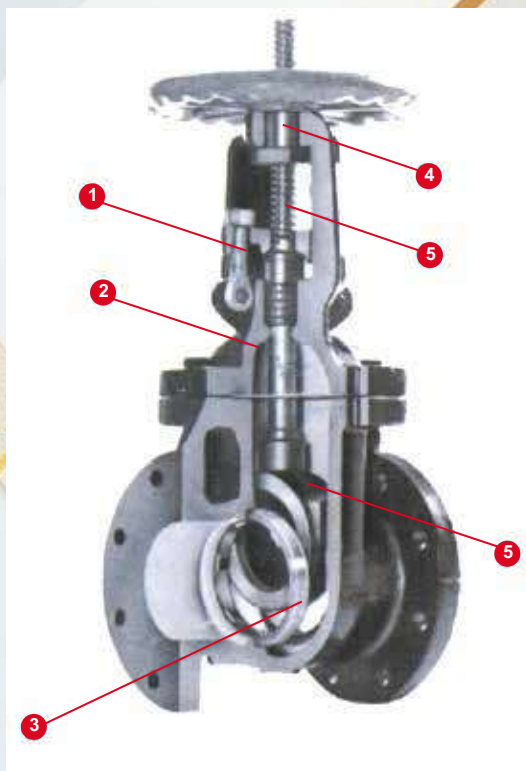

Dimensiones y pesos 150 (2" - 24")

ø N	mm pulg.	50 2	65 1 1/2	80 3	100 4	150 6	200 8	250 10	300 12	350 14	400 16	450 18	500 20	600 24
a(F, WE)	mm pulg.	203.2 8	215.9 8 1/2	241.3 9 1/2	292.1 11 1/2	355.6 14	495.3 19 1/2	622.3 24 1/2	698.5 27 1/2	787.4 31	762 30	838.2 33	914.4 36	1066.8 42
b	mm pulg.	134 5 9/32	164 6 7/16	162 6 3/8	205 8 1/16	238 9 3/8	290 11 7/16	349 13 3/4	381 15	457 18	502 19 3/4	573 22 9/16	606 23 7/8	702 27 5/8
c	mm pulg.	152.4 6	177.8 7	190.5 7 1/2	228.6 9	279.4 11	342.9 13 1/2	406.4 16	482.6 19	533.4 21	596.9 23 1/2	635 25	698.5 27 1/2	812.8 32
PESO 5341F	Kg. Lb.	15 33	23 50	26 57	36 79	77 170	152 335	242 533	350 772	527 1162	650 1433	950 2094	1150 2535	1596 3518
PESO 5341WE	Kg. Lb.	13 29	19 41	17 37	30 66	55 121	132 291	210 463	305 672	458 1010	565 1245	825 1819	1000 3748	1388 3060

Dimensiones y pesos 300 (2" - 24")

ø N	mm pulg.	50 2	65 1 1/2	80 3	100 4	150 6	200 8	250 10	300 12	350 14	400 16	450 18	500 20	600 24
a(F, WE)	mm pulg.	267 10 1/2	292 11 1/2	318 12 1/2	357 14	445 17 1/2	533 21	622 24 1/2	711 28	838 33	864 34	978 38 1/2	1016 40	1346 53
b	mm pulg.	144 5 11/16	179 7 1/16	184 7 1/4	221 8 11/16	260 10 1/4	348 13 11/16	395 15 9/16	456 17 15/16	524 20 5/8	567 22 5/16	597 23 1/2	648 25 1/2	797 31 3/8
c	mm pulg.	165 6 1/2	191 7 1/2	219 8 1/4	254 10	318 12 1/2	381 15	445 17 1/2	521 20 1/2	584 23	648 25 1/2	711 28	775 30 1/2	914 36
PESO 5344F	Kg. Lb.	24 53	38 84	38 84	52 115	118 260	209 460	352 776	542 1195	770 1697	862 1900	1200 2645	1650 3637	2260 4982
PESO 5344WE	Kg. Lb.	19 42	32 70	31 68	40 88	95 209	159 350	305 672	470 1036	670 1477	750 1653	1040 2293	1435 3164	1965 4332

COMPUERTA HIERRO 125 LBS. VÁSTAGO SALIENTE



1.- Mayor espacio para reempacar las válvulas se obtiene mediante el sistema de tornillos de ojo. Esta operación se realiza fácilmente estando la válvula de servicio.

2.- La forma y continuidad de los espesores del cuerpo y bonete evitan concentración de esfuerzos en condiciones críticas de servicio.

3.- Mayor presión del sello sin aumentar el par de cierre, se logra mediante la resistencia unidireccional de los asientos del cuerpo. Esta es otra ventaja de las válvulas.

4.- Suavidad y bajo par de operación gracias a las prioridades de baja fricción del bronce utilizando en el mecanismo operador de las válvulas.

5.- Mayor resistencia a la corrosión y mejores mecánicas caracterizan a la aleación de bronce a silicio utilizada en todos los vástagos de las válvulas.

6.- Disco sólido tipo cuña, provisto de guías cuya longitud es de dos terceras partes del diámetro nominal. Estas guías mantienen alineado el disco todo el tiempo.

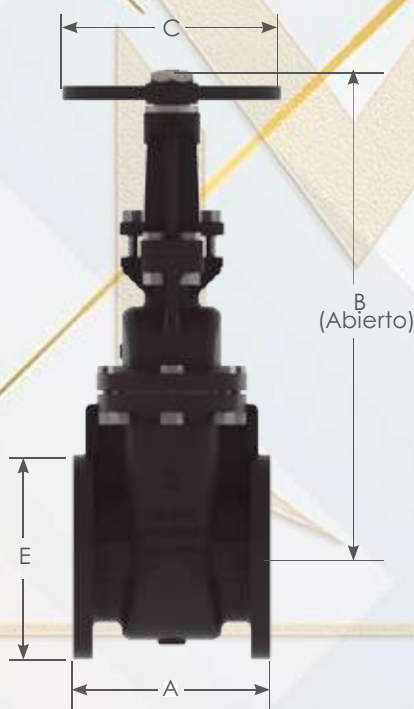
COMPUERTA HIERRO 125 LBS. VÁSTAGO SALIENTE

VÁLVULAS COMPUERTA DE HIERRO FUNDIDO TIPO OS&Y, CLASE 125

CARACTERÍSTICAS DE DISEÑO

- Diseño de acuerdo a MSS SP-70
- Clase 125
- Válvula tipo OS&Y
- Construcción de Hierro Fundido
- Diseño Atornillado
- Operación por Volante
- Dimensiones de Cara a Cara de acuerdo con ANSI B16.10
- Barrenado de Bridas de acuerdo a ANSI B16.1

Número de Figura	Tipo de extremos
W726F	Extremos de Cara Plana



Dimensiones y Pesos

D	mm	51	64	76	102	127	152	203	254	305	356	406	457	508	610	762	914
Diámetro Nominal	pulg	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	30	36
A	mm	177.8	190.0	203.2	228.6	254.0	266.7	292.1	330.2	355.6	381.0	406.4	432.0	457.0	508.0	PCR	PCR
	pulg	7.00	7.48	8.00	9.00	10.00	10.50	11.50	13.00	14.00	15.00	16.00	17.01	17.99	20.00	PCR	PCR
B (Abierto)	mm	311	347	384	490	541	656	778	933	1102	1259	1395	1560	1708	1990	PCR	PCR
	pulg	12.24	13.66	15.12	19.29	21.30	25.83	30.63	36.73	43.39	49.57	54.92	61.42	67.24	78.35	PCR	PCR
C	mm	178	178	200	254	300	300	348	400	457	560	560	610	610	765	PCR	PCR
	pulg	7.01	7.01	7.87	10.00	11.81	11.81	13.70	15.75	17.99	22.05	22.05	24.02	24.02	30.12	PCR	PCR
E	mm	152.0	178.0	190.0	228.6	254.0	279.4	343.0	406.0	483.0	533.4	597.0	635.0	699.0	813.0	PCR	PCR
	pulg	5.98	7.01	7.48	9.00	10.00	11.00	13.50	15.98	19.02	21.00	23.50	25.00	27.52	32.01	PCR	PCR
Peso	kg	17	23	28	50	70	92	129	208	289	380	460	673	859	1225	2492	3682
W726F	lb	37.49	50.72	61.74	110.25	154.36	202.87	284.45	458.65	637.27	837.93	1014.33	1484.01	1894.16	2701.21	5495.04	8119.07
Cv	Coefficiente de flujo	241.0	386.0	556.0	1018.0	1639.0	2438.0	4486.0	7009.0	10473.0	14256.0	18619.0	24528.0	30281.0	43605.0	83444	120160

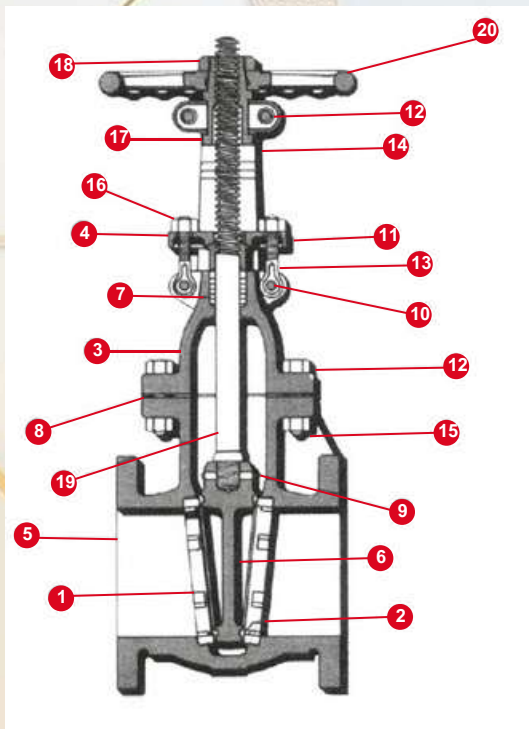
COMPUERTA HIERRO 125 LBS. VÁSTAGO SALIENTE

Características del diseño

- Bonete bridado
- Cuña sólida
- Interiores de bronce
- Interiores de hierro
- Extremos roscados
- Extremos bridados
- Discos totalmente guiados, minimizan desgaste y prolongan la vida de la válvula

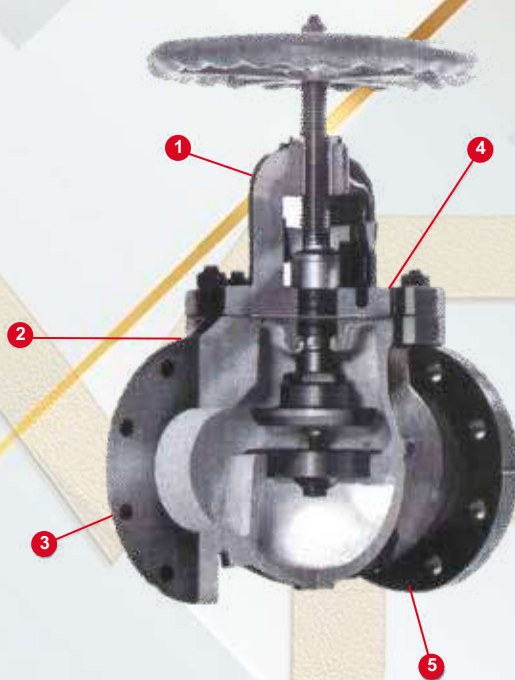
Servicios recomendados

- interiores de hierro para fluidos que ataquen al bronce
- Vástagos saliente para servicios de altas temperaturas
- Para límites de presión - temperatura



No.	Descripción	Material	ASTM.
1	Asiento del cuerpo	Broce/Hierro	B62, A 126B
2	Asiento del disco	Bronce	B62
3	Bonete	Hierro	A 126-B
4	Brida prensa empaques	Hierro	A 126-B
5	Cuerpo	Hierro	A 126-B
6	Disco	Broce/Hierro	B62, A 126-B
7	Empaques	Asbesto grafitado	-
8	Junta	Asbesto grafitado	-
9	Perno del disco	Latón, acero	B16, A108-1018
10	Perno del Tornillo de ojo	Acero	A 108 - 1018
11	Presempaques	Bronce, acero	B16, A108-1018
12	Tornillo	Acero	A 307-B
13	Tornillo de ojo	Acero	A 307-B
14	Torre	Hierro	A 126-B
15	Tuerca	Acero	A 30/-B
16	Tuerca brida prensaempaques	Latón, acero	B16, A307-B
17	Tuerca del vástago	Broce, hierro dúctil	B62, A395
18	Tuerca del volante	Hierro	A 126-B
19	vástago	Bronce, acero	B584-875, A108-1018
20	volante	Acero, hierro	A126-B

VÁLVULA DE GLOBO HIERRO 125 LBS.



1.- Regulación precisa de flujo se obtiene con las válvulas debido a la rosca de una entrada, que ha sido maquinada con precisión en el vástago.

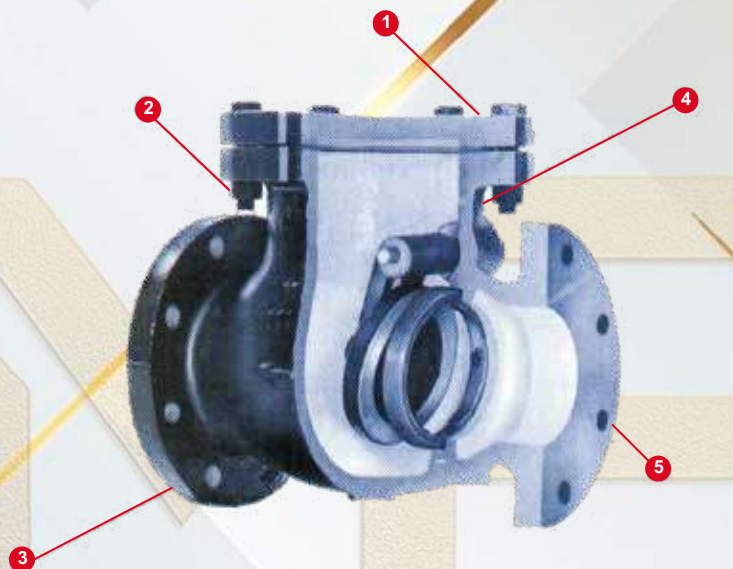
2.- Sello hermético que permite reempacar la válvula estando en servicio y totalmente abierta. El diseño y maquinado preciso del vástago y el asiento interior del bonete permite realizar esta operación con seguridad.

3.- Ajuste exacto entre los asientos debidos a que la guía del disco está alineada con el asiento del cuerpo, evitando deflexiones al vástago por causa de alta velocidad o presión de fluido.

4.- Disco de un solo material bronce o hierro se surten en las válvulas de globo cualquiera que sea su tamaño.

5.- Cierre positivo y hermético de flujo se logran mediante el disco sólido de asiento esférico de las válvulas. El diseño provee un sello durable y evitar la inscristación de sólidos en la superficie de asiento.

VÁLVULA RETENCIÓN HIERRO 125 LBS.



1.- Tapa bridada cuyos espesores y dimensiones están de acuerdo a normas internacionales aceptadas por la industria. La tortillería utilizada en las válvulas posee una alta resistencia a la tensión.

2.- Diseño robusto del disco y columpio que les da mayor resistencia a los esfuerzos causados por cambios súbitos en sentido, presión o velocidad del fluido. Las válvulas de retención son de tipo columpio y de paso completo, por lo que ocasionan una mínima caída de presión.

3.- Roscados o bridados son extremos con que se construyen las válvulas. Un amplio rango de diámetros nominales, que van desde 51 mm (2") hasta 914 mm (36") cubren una gran variedad de servicios.

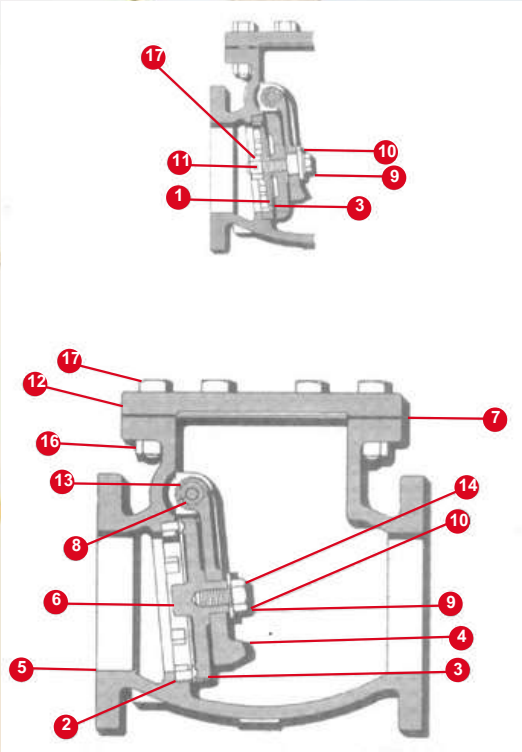
4.- Ensamble preciso entre el perno y el columpio, que proporciona un funcionamiento suave de flujo. Mediante la utilización de un contrapeso se pueden variar las condiciones de operación de la válvula.

5.- Paso completo el área de flujo es siempre mayor o igual al de la tubería correspondiente ya que, en posición totalmente abierta, el disco no obstruye el paso del fluido.

RETENCIÓN HIERRO 125 LBS.

Características del diseño
Tapa bridada Tipo columpio
Interiores de bronce
Asiento del disco sintético
interiores de hierro
Extremos roscados
Válvulas con asiento de cuerpo en bronce y asiento de disco en buna N

Servicios recomendados
Prevenir el contraflujo con mínima caída de presión
Interiores de bronce para servicios vapor, aire, aceite o gas
Disco de Buna N proporciona cierre hermético
Puede equiparse con un contrapeso para acelerar o desacelerar el disco
Instalación en líneas horizontales o verticales



No.	Descripción	Material	ASTM.
1	Araña	Broce	B62
2	Asiento del cuerpo	Bronce / hierro	B62, A126-B
3	Asiento del disco	Bronce, buna	B62
4	Columpio	Bronce, hierro	B62, A126-B
5	Cuerpo	Hierro	A 126-B
6	Disco	Bronce, hierro	A 126-B
7	Junta	Asbesto grafitado	–
8	Perno del columpio	Latón, ac. inoxidable	B16, A276-410
9	Roldana presión	Acero	–
10	Roldana plana	Acero	–
11	Seguro	Latón	
12	Tapa	hierro	A 126-B
13	Tapón lateral	Bronce, hierro	B62, A 126-B
14	Tornillo del disco	Latón, acero	B16, A307-B
15	Tornillo de la tapa	Acero	A307-B
16	Tuerca de la tapa	Acero	A307-B
17	Tuerca del disco	Acero	B16

RETENCIÓN HIERRO 125 LBS.

VÁLVULAS RETENCIÓN DE HIERRO FUNDIDO, CLASE 125

CARACTERÍSTICAS DE DISEÑO

- Diseño de acuerdo a MSS SP-71
- Clase 125
- Construcción de Hierro Fundido
- Diseño atornillado.
- Dimensiones de Cara a Cara de acuerdo con ANSI B16.10
- Barrenado de Bridas de acuerdo a ANSI B16.1

Número de Figura	Tipo de extremos
W928F	Extremos de Cara Plana

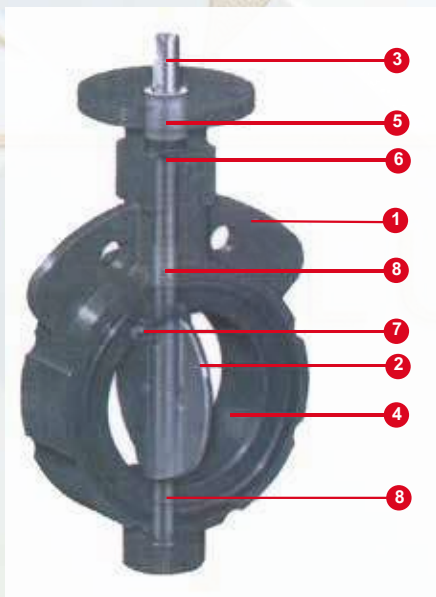


Dimensiones y Pesos

D	mm	51	64	76	102	127	152	203	254	305	356	406	457	508	610
Diámetro Nominal	pulg	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
A	mm	203.2	215.2	241.3	292.1	416.0	355.6	465.3	622.3	698.5	787.4	914.0	914.0	1016.0	1219.0
	pulg	8.00	8.47	9.50	11.50	16.38	14.00	18.32	24.50	27.50	31.00	35.98	35.98	79.37	47.99
B	mm	112	132	141	162	292	211	270	316	357	560	589	645	702	812
	pulg	4.41	5.20	5.55	6.38	11.50	8.31	10.63	12.44	14.06	22.05	23.19	25.39	27.64	31.97
C	mm	152	178	190	229	254	279	343	406	483	533	597	635	699	813
	pulg	5.98	7.01	7.48	9.00	10.00	11.00	13.50	15.98	19.02	21.00	23.50	25.00	27.52	32.01
Peso W928F	kg	12	18	21	37	56	72	123	201	291	419	542	656	902	1260
	lb	26.46	39.69	46.31	81.59	123.48	158.77	271.22	443.22	641.68	923.93	1195.15	1446.53	1988.97	2778.39
Cv	Coefficiente de flujo	75.0	120.0	173.0	316.0	509.0	756.0	1392.0	2175.0	3250.0	4424.0	5778.0	7611.0	9397.0	13521.0

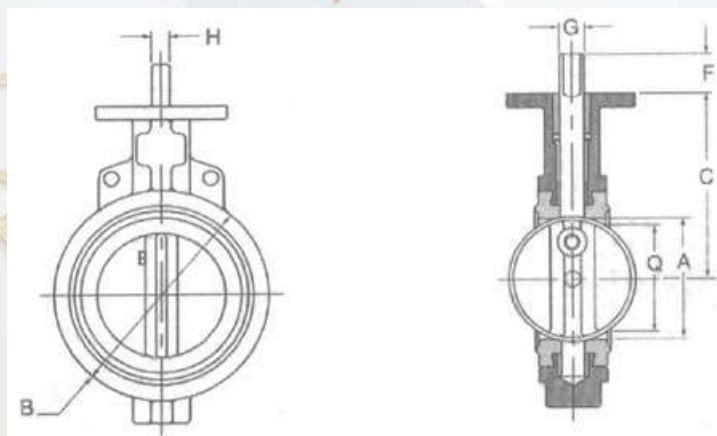
VÁLVULAS MARIPOSA (2" A 24")

Pieza	Material estándar	Especificación del material	Materiales opcionales
1. Cuerpo	Fundición de hierro Hierro dúctil	ASTM a 126 clases B ASTM A395 grado 60/40/18	Acero al carbono Acero Inoxidable
2. Disco	Hierro dúctil Bronce Aluminio Acero inoxidable 316	ASTM A536 grado 65/45/12 ASTM B148 UNS C95200 grado A ASTM A743 CF8M	
3. Vástagos	Aceros inoxidables 316 (2" a 12") Aceros inoxidables 18-8 (14" a 20") Aceros inoxidables 17-4 PH (24" a 36") (2" a 20")	ASTM A276 UNS S31600 ASTM A276 UNS S30400 ASTM A564 UNS S17400 ASTM A108 UNS G10450	Acero fosfatado
4. Asiento	NBR grado alimenticio (0° F a 212° F) EPDM grado alimenticio (-40° F a 250° F)		Fluorocelastómero (FKM) NBR blanco
5. Cojines de vástago superior	Poliéster (2" a 20") Bronce (24" a 36")		
6. Empaques del vástago	NBR		
7. Tapón del par de torque (2" a 12")	Acero Inoxidable 316	ASTM A-276 UNS S31600 condición A	
7. Perno de disco (14" a 20")	Acero Inoxidable 316	ASTM F-593 Group 2 condición CW1	
7. Pasadores cónicos (24" a 36")	Acero Inoxidable 17-4 PH	ASTM A564 UNS S17400 H1075	
8. Cojinetes (2" a 12")	Metal Sinterizado		



VÁLVULAS MARIPOSA (2" A 24") AR 1

tamaño	A	B	C	D	E	F	G	H	Q	Llave	Perforación de la placa superior			Peso (libras)	Código adapt.
											Cir. pernos	No. de orif.	Diam. orif.		
2"	2	4 1/8	5 1/2	1 5/8	4	1 1/4	9/16	3/8	1 3/8	—	3 1/4	4	7/16	6.3	BAB
2" 1/2	2 1/2	4 5/8	6	1 3/4	4	1 1/4	9/16	3/8	2 1/16	—	3 1/4	4	7/16	8.5	BAB
3"	3	5 1/8	6 1/4	1 3/4	4	1 1/4	9/16	3/8	2 9/16	—	3 1/4	4	7/16	10.0	BAB
4"	4	6 3/8	7	2	4	1 1/4	5/8	7/16	3 5/8	—	3 1/4	4	7/16	14.0	BAC
5"	5	7 3/8	7 1/2	2 1/8	4	1 1/4	3/4	1/2	4 3/4	—	3 1/4	4	7/16	18.0	BAD
6"	5 3/4	8 1/2	8	2 1/8	4	1 1/4	3/4	1/2	5 1/2	—	3 1/4	4	7/16	22.0	BAD
8"	7 3/4	10 11/16	9 1/2	2 1/2	6	1 1/4	7/8	5/8	7 1/2	—	5	4	9/16	38.0	CAE
10"	9 3/4	13	10 3/4	2 1/2	6	2	1 1/8	—	9 19/32	1/4 x 1/4	5	4	9/16	51.0	CAF
12"	11 3/4	14 13/16	12 1/4	3	6	2	1 1/8	—	11 9/16	1/4 x 1/4	5	4	9/16	71.0	CAF
14"	13 1/4	16 3/4	12	3	6	3	1 3/8	—	13 1/8	5/16 x 5/16	5	4	9/16	114.0	CAG
16"	15 1/4	19 1/4	12 61/64	4	6	3	1 5/8	—	15	3/8 x 3/8	5	4	9/16	193.0	CAH
18"	17 1/4	21 1/2	14 1/2	4 1/4	8	4 1/4	1 7/8	—	16 7/8	1/2 x 3/8	6 1/2	4	13/16	222.0	DAJ
20"	19 1/4	23 3/4	15 7/8	5	8	4 1/4	1 7/8	—	18 3/4	1/2 x 3/8	6 1/2	4	13/16	315.0	DAJ
24"	23 1/4	28 1/4	19 1/2	5 15/16	8	4 1/4	1 7/8	—	22 5/8	1/2 x 3/8	6 1/2	4	13/16	506.0	DAJ
30"	29 1/4	34 5/8	23	6 9/16	8	4 1/4	2 1/4	—	28 11/16	1/2 x 3/8	6 1/2	4	13/16	610.0	DAK
30"	29 1/4	34 5/8	23	6 9/16	8	4 1/4	2 1/4	—	28 11/16	1/2 x 3/8	6 1/2	4	13/16	610.0	DAK
36"	35 1/4	41 1/4	27 3/4	7 7/8	8	5 1/4	2 7/8	—	34 1/2	3/4 x 1/2	6 1/2	4	13/16	1,185.0	DAV



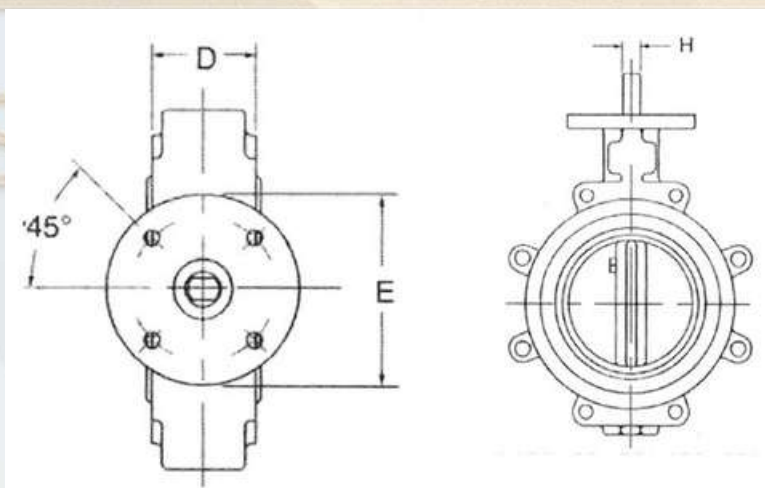
VÁLVULAS MARIPOSA (2" A 24") AR 1

tamaño	A	B	C	D	E	F	G	H	Q	Llave	Perforación de la placa superior				Código adapt.
											Cir. pernos	No. de orif.	Diam. orif.	Peso (libras)	
2"	2	4 1/8	5 1/2	1 5/8	4	1 1/4	9/16	3/8	1 3/8	—	3 1/4	4	7/16	7	BAB
2" 1/2	2 1/2	4 5/8	6	1 3/4	4	1 1/4	9/16	3/8	2 1/16	—	3 1/4	4	7/16	10.0	BAB
3"	3	5 3/16	6 1/4	1 3/4	4	1 1/4	9/16	3/8	2 9/16	—	3 1/4	4	7/16	11.5	BAB
4"	4	6 3/8	7	2	4	1 1/4	5/8	7/16	3 5/8	—	3 1/4	4	7/16	18.0	BAC
5"	5	7 3/8	7 1/2	2 1/8	4	1 1/4	3/4	1/2	4 3/4	—	3 1/4	4	7/16	22.5	BAD
6"	5 3/4	8 1/2	8	2 1/8	4	1 1/4	3/4	1/2	5 1/2	—	3 1/4	4	7/16	28.50	BAD
8"	7 3/4	10 11/16	9 1/2	2 1/2	6	1 1/4	7/8	5/8	7 1/2	—	5	4	9/16	49.0	CAE
10"	9 3/4	13	10 3/4	2 1/2	6	2	1 1/8	—	9 19/32	1/4 x 1/4	5	4	9/16	69.0	CAF
12"	11 3/4	14 13/16	12 1/4	3	6	2	1 1/8	—	11 9/16	1/4 x 1/4	5	4	9/16	107.0	CAF
14"	13 1/4	16 3/4	12	3	6	3	1 3/8	—	13 1/8	5/16 x 5/16	5	4	9/16	143.0	CAG
16"	15 1/4	19	12 61/64	4	6	3	1 5/8	—	15	3/8 x 3/8	5	4	9/16	238.0	CAH
18"	17 1/4	21 3/8	14 1/2	4 1/4	8	4 1/4	1 7/8	—	16 7/8	1/2 x 3/8	6 1/2	4	13/16	261.0	DAJ
20"	19 1/4	23 1/2	15 7/8	5	8	4 1/4	1 7/8	—	18 3/4	1/2 x 3/8	6 1/2	4	13/16	366.0	DAJ
24"	23 1/4	28 1/4	19 1/2	5 15/16	8	4 1/4	1 7/8	—	22 5/8	1/2 x 3/8	6 1/2	4	13/16	576.0	DAJ

Datos de las orejas

Circ. Pernos No. de Orif. Macho de rosca

4 3/4	4	5/8 - 11 UNC
5 1/2	4	5/8 - 11 UNC
6	4	5/8 - 11 UNC
7 1/2	8	5/8 - 11 UNC
8 1/2	8	3/4 - 10 UNC
9 1/2	8	3/4 - 10 UNC
11 3/4	8	3/4 - 10 UNC
14 1/4	12	7/8 - 9 UNC
17	12	7/8 - 9 UNC
18 3/4	12	1 - 8 UNC
21 1/4	16	1 - 8 UNC
22 3/4	16	1 1/8 - 7 UNC
25	20	1 1/8 - 7 UNC
29 1/2	20	1 1/4 - 7 UNC



VÁLVULAS MARIPOSA (1" A 12" / 2" A 20") TABLA DE TORQUES (LBS-PULG.)

Condiciones normales					Condiciones severas			
tamaño	0	50	100	150	0	50	100	150
2"	220"	220"	240"	250"	330"	240"	250"	260"
2 1/2"	270"	280"	290"	300"	405"	410"	420"	430"
3"	320"	340"	360"	380"	480"	500"	520"	540"
4"	480"	510"	540"	570"	720"	750"	780"	810"
5"	650"	700"	750"	800"	975"	1025"	1075"	1125"
6"	900"	1000"	1100"	1200"	1350"	1450"	1550"	1650"
8"	1500"	1700"	1900"	2100"	2250"	2450"	2650"	2850"
10"	2300"	2600"	2900"	3200"	3450"	3750"	4050"	4350"
12"	3100"	3600"	4100"	4600"	4650"	5150"	5650"	6150"

Coeficiente de Flujo (Cv)

Condiciones normales									
tamaño Pulg.	10°	20°	40°	50°	60°	70°	80°	90°	
1"	0.07	0.7	4.8	8.3	13	24	42	69	
1 1/2"	0.16	1.6	11.4	20.0	31	55	98	162	
2"	0.30	2.7	18.7	32.0	51	91	161	267	
2 1/2"	0.45	4.5	32.0	54.0	86	153	273	451	
3"	0.70	6.9	49.0	83.0	132	235	419	693	
4"	1.30	13.1	92.0	158.0	250	447	795	1,314	
5"	2.10	21.1	148.0	253.0	400	717	1,275	2,108	
6"	2.80	27.9	195.0	335.0	530	848	1,690	2,790	
8"	5.20	52.1	365.0	625.0	990	1,770	3,150	5,208	
10"	8.30	83.1	582.0	997.0	1,580	2,825	5,025	3,308	
12"	12.00	120.0	842.0	1,444	2,286	4,090	7,275	12,030	

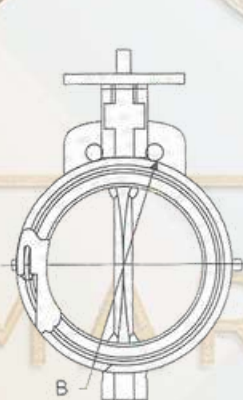


Dimensiones (Pulgadas)

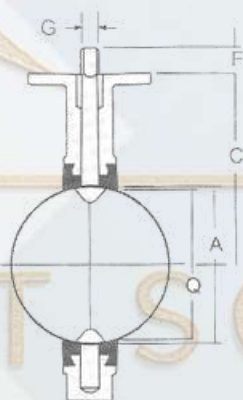
Tamaño	A	B	C	D	E	F	G	H*	Q*	Cuña	Plato Superior			Peso (kgs.)	Código Adapt.
											Círculo Barre n.	No. de hoyos	Diam. hoyo		
1"	1 3/16	2 7/16	3 1/8	1 1/8	2 1/4	3/4	3/8	1/4	5/8	N/A	3/4	4	9/32	0.6	AAA
1" 1/2	1 3/4	3 7/32	3 11/16	1 3/16	2 1/4	3/4	3/8	1/4	1 7/16	N/A	1 3/4	4	9/32	1.0	AAA
2"	2	4 1/8	3 15/16	1 5/8	2 1/4	1 1/4	9/16	3/8	1 3/8	N/A	3 1/4	4	7/16	2.3	BAB
2" 1/2	2 1/2	4 7/8	4 1/2	1 3/4	4	1 1/4	9/16	3/8	2 1/16	N/A	3 1/4	4	7/16	3.2	BAB
3"	3	5 3/8	4 7/8	1 3/4	4	1 1/4	9/16	3/8	2 9/16	N/A	3 1/4	4	7/16	3.4	BAB
4"	4	6 7/8	6	2	4	1 1/4	5/8	7/16	3 5/8	N/A	3 1/4	4	7/16	5.2	BAC
5"	5	7 3/4	6	2 1/8	4	1 1/4	3/4	1/2	4 3/4	N/A	3 1/4	4	7/16	6.5	BAD
6"	5 3/4	8 3/4	6 1/2	2 1/8	4	1 1/4	3/4	1/2	5 1/2	N/A	3 1/4	4	7/16	8.2	BAD
8"	7 3/4	11	8 5/16	2 1/2	6	1 1/4	7/8	5/8	7 1/2	N/A	5	4	9/16	13.2	CAE
10"	9 3/4	13 1/4	9	2 1/2	6	2	1 1/8	N/A	9 19/32	1/4X1/4	5	4	9/16	20.0	CAF
12"	11 3/4	16 1/8	12 1/4	3	6	2	1 1/8	N/A	11 5/8	1/4X1/4	5	4	9/16	38.6	CAF

CUERPOS EN HIERRO Y HIERRO NODULAR (PULGADA)

Tamaño	A	B	C	D	E	F	G	H*	Q*	Plato Superior				Plato Orejado			Peso (kgs.)	Peso (kgs.)	Código Adapt.
										Llave	Círculo Barren.	No. de orif.	Diám. orif.	Círculo barren.	No. de orif.	Tamaño del Tornillo	990	920	
1"	1 3/16	2 7/16	3 1/8	1 1/8	2 1/4	3/4	3/8	1/4	5/8	N/A	1 3/4	4	9/32	N/A	N/A	N/A	0.7	N/A	AAA
1 1/2"	1 3/4	3 7/32	3 1/16	1 3/16	2 1/4	3/4	3/8	1/4	1 7/16	N/A	1 3/4	4	9/32	N/A	N/A	N/A	0.1	N/A	AAA
2"	2	4 1/8	5 1/2	1 5/8	4	1 1/4	9/16	3/8	1 3/8	N/A	3 1/4	4	7/16	4 3/4	4	5/8-11 UNC	2.7	3.2	BAB
2 1/2"	2 1/2	4 5/8	6	1 3/4	4	1 1/4	9/16	3/8	2 1/16	N/A	3 1/4	4	7/16	5 1/2	4	5/8-11 UNC	3.6	4.4	BAB
3"	3	5 1/8	6 1/4	1 3/4	4	1 1/4	5/8	3/8	2 9/16	N/A	3 1/4	4	7/16	6	4	5/8-11 UNC	4.1	4.5	BAB
4"	4	6 3/8	7	2	4	1 1/4	3/4	7/16	3 5/8	N/A	3 1/4	4	7/16	7 1/2	8	5/8-11 UNC	5	7.6	BAC
5"	5	7 3/8	7 1/2	2 1/8	4	1 1/4	3/4	1/2	4 3/4	N/A	3 1/4	4	7/16	8 1/2	8	3/4-10 UNC	7.0	10.0	BAD
6"	5 3/4	8 1/2	8	2 1/8	4	1 1/4	7/8	1/2	5 1/2	N/A	3 1/4	4	7/16	9 1/2	8	3/4-10 UNC	7.9	11.0	BAD
8"	7 3/4	10 11/16	9 1/2	2 1/2	6	1 1/4	1 1/8	5/8	7 1/2	N/A	5	4	9/16	11 3/4	8	3/4-10 UNC	13.6	19.1	CAE
10"	9 3/4	13	10 3/4	2 1/2	6	2	1 1/8	N/A	9 19/32	1 4/16	5	4	9/16	14 1/4	12	7/8-9 UNC	20.4	29.5	CAF
12"	11 3/4	14 13/16	12 1/4	3	6	2	1 1/8	N/A	11 9/16	1 4/16	5	4	9/16	17	12	7/8-9 UNC	35.4	49.0	CAF
14"	13 1/4	16 7/8	12	3	6	3	1 3/8	N/A	13 1/8	5 1/16	5	4	9/16	18 3/4	12	1 1/8-8 UNC	47.6	64.9	CAG
16"	15 1/4	19 1/4	12 61/64	4	6	3	1 5/8	N/A	15	3 8/32	5	4	9/16	21 1/4	1	1/8 UNC	81.6	108.0	CAH
18"	17 3/8	21 1/2	14 1/2	4 1/4	8	4 1/4	1 7/8	N/A	17	1 2/32	6 1/2	4	13/16	22 3/4	16	1 1/8-7 UNC	100.7	118.4	DAJ
20"	19 3/8	23 3/4	15 7/8	5	8	4 1/4	1 7/8	N/A	18 7/8	1 2/32	6 1/2	4	13/16	25	20	1 1/8-7 UNC	142.9	166.0	DAJ



Tipo Oblea 990



Tipo Orejada 920

Compuerta Roscable

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/2	13	3/4	19	1	25	1 1/2	38	2	51
1 21/32	42	1 15/16	49	2 7/32	56	2 13/32	62	3 5/16	84
3 11/16	94	4 3/8	111	5 1/2	140	6 7/8	173	8 1/2	216
2 1/2	64	2 1/2	64	3 1/4	83	4 5/8	118	4 5/8	118
0.411		0.745		1.080		1.975		3.197	

Fig. 82



*Servicios S.W.P.
125 lbs/pulg2 -8.8 kgs/cm2
400° F - 204° C
*Servicios W.O.G.
200 lbs/pulg2-14 kgs/cm2
*Cabeza roscada
*Vástago ascendente
*Cuña sólida
*Cierre de bronce a bronce
*Extremos roscables
*Medidas de 1/2" a 2"

Compuerta Roscable

pulg.		mm		pulg.		mm		pulg.		mm		pulg.		mm	
1/2	2	13	3/4	19	1	25	1 1/2	38	2	51	2 1/2	64	3	75	
1/2	63	2 3/4	70	3 1/8	79	3 11/16	93	4 9/16	116	4 11/16	119	5 1/4	133	5 7/8	149
5 13/16	148	7 1/6	179	8 1/8	206	10 3/4	273	13 1/16	332	15 3/8	390	17 3/16	452	19 1/4	508
3 1/4	82	3 1/4	82	3 1/4	82	4 5/8	117	5 1/4	133	6 7/8	175	6 7/8	175	6 7/8	175
0.854		1.328		1.813		3.386		6.362		8.315		11.012			

Fig. 29



*Servicios S.W.P.
200 lbs/pulg2 -14 kgs/cm2
550° F - 288° C
*Servicios W.O.G.
400 lbs/pulg2 -28 kgs/cm2
*Tuerca unión
*Vástago ascendente
*Cuña sólida
*Cierre de cupro-níquel a bronce
*Extremos roscables
*Medidas de 1/2" a 3"

Compuerta Roscable

pulg.mm		pulg.mm		pulg.mmp	
---------	--	---------	--	--	--

Fig. 48



*Servicios S.W.P. 350
lbs/pulg2 -24 kgs/cm2
550° F - 288° C
*Servicios W.O.G. 1000
lbs/pulg2 -70 kgs/cm2
*Tuerca unión
*Vástago ascendente
*Cuña sólida
*Cierre de cupro-níquel a bronce
*Extremos roscables
*Medidas de 1/4" a 2"

Globo Roscable

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/4	6	3/8	10	1/2	13	3/4	19	1	25	1 1/4	32	1 1/2	38	2	51
1/4	44	13/16	46	2/8	54	13/16	71	3/16	81	3/8	92	4	102	4 1/16	119
13/32	87	13/32	87	25/32	96	4 7/8	124	5 3/4	146	6 1/2	165	7	178	8 1/4	205
2 1/2	64	2 1/2	64	2 1/2	64	3 1/4	83	3 1/4	83	4 5/8	118	4 5/8	118	5 1/4	133
0.272		0.321		0.403		0.749		1.054		1.468		1.900		3.386	

Fig. 58



*Servicios S.W.P. 125
lbs/pulg2 -8.8 kgs/cm2
400° F - 204° C
*Servicios W.O.G. 200
lbs/pulg2 -14 kgs/cm2
*Cabeza roscada
*Vástago ascendente
*Cierre de bronce a bronce *de 1/4" a 1/2"
disco integral *de 3/4" a 4" disco giratorio
*Extremos roscables
*Medidas de 1/4" a 4"

Compuerta soldable

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/2	13	3/4	19	1	25	1 1/4	32	1 1/2	38	2	51	2 1/2	64	3	75	4	99
2 1/4	57	2 1/2	64	2 5/8	71	3	75	3 3/8	86	3 1/2	94	4 1/2	114	5	127	6 1/8	156
5 5/16	135	6 5/8	168	7 7/8	200	9 1/8	232	10 7/16	265	12 3/4	324	15 1/16	383	17 5/16	440	22 15/16	583
2 1/2	64	3 1/4	82	3 1/4	82	3 1/4	82	4 5/8	117	4 5/8	117	5 1/4	133	6 7/8	175	8 3/8	213
0.586		0.871		1.253		1.603		2.433		3.640		5.879		8.357		21.082	

Fig. 02



*Servicios S.W.P.
125 lbs/pulg2 -8.8 kgs/cm2
400° F - 204° C
*Servicios W.O.G.
200 lbs/pulg2 -14 kgs/cm2
*Cabeza roscada
*Vástago ascendente
*Cuña sólida
*Cierre de bronce a bronce
*Extremos roscables
*Medidas de 1/2" a 4"

Compuerta soldable

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/4	6	1/2	13	3/4	32	1	25	1 1/4	32	1 1/2	38	2	51	2 1/2	64	3	75
5 1/16	49	5 5/16	59	2 1/2	64	13 1/16	71	3	76	3 3/8	86	3 7/8	98	5 1/16	109	11 1/16	119
4 9/16	116	5 5/16	135	6 5/8	168	7 7/8	200	9 1/8	232	10 7/16	265	12 3/4	324	15	381	17 1/2	445
2 1/2	64	2 1/2	64	3 1/4	83	3 1/4	83	3 1/4	83	4 5/8	118	4 5/8	118	6 7/8	133	6 7/8	175
0.453		0.621		0.939		1.424		1.884		2.758		4.440		6.493		9.590	

Fig. 11



*Servicios S.W.P.
150 lbs/pulg2 -10.5 kgs/cm2
400° F - 204° C
*Servicios W.O.G.
300 lbs/pulg2 -21 kgs/cm2
*Tuerca unión
*Vástago ascendente
*Cuña sólida
*Cierre de bronce a bronce
*Extremos roscables
*Medidas de 1/4" a 3"

Compuerta roscable



Fig. 83

*Servicios W.O.G.
200 lbs/pulg2 -14 kgs/cm2 180° F -82° C *Cabeza roscada
*Vástago no ascendente
*Cuña sólida
*Medidas de 1/4" a 4"

Compuerta roscable



Fig. 22

*Servicios W.O.G.
125 lbs/pulg2 -8.8 kgs/cm2
200 lbs/pulg2 -14 kgs/cm2 gas
180° F -82° C
*Aprobada para el manejo de gas L.P. o natural
*Medidas de 1/2" a 2"

Esfera roscable de latón Esfera roscable de latón



Fig. 555

*Servicios S.W.P.
125 lbs/pulg2 -8.8 kgs/cm2
302° F -150° C
1/2" a 2" : 350 lbs/pulg.2 24 kgs/cm2
1 1/2" a 4" : 200 lbs/pulg.2 14 kgs/cm2
*Cierre de latón a teflón *Medidas de 1/2" a 4"

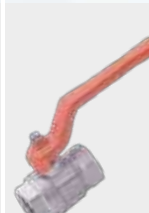


Fig. 550

*Servicios S.W.P.
125 lbs/pulg2 -8.8 kgs/cm2
344° F -173° C
*Servicios W.O.G. 200 lbs/pulg2 -14 kgs/cm2
*Aprobada para el manejo de gas L.P. o natural
*Medidas de 1/2" a 2"

Válvula de Retención Vertical



Fig. 44N

*Servicios W.O.G. 200 lbs/pulg2 -14 kgs/cm2 180° F -82° C
*Extremos roscables
*Medidas de 1/2" a 1"

Válvula de Retención Vertical u Horizontal



Fig. 45N

*Servicios W.O.G. 170 lbs/pulg2 -12 kgs/cm2 180° F -82° C *Con resorte de acero inoxidable
*Medidas de 1/2" a 2"

Válvula de Retención Tipo Columpio



Fig. 85N

*Servicios W.O.G. 200 lbs/pulg2 -14 kgs/cm2 180° F -82° C *Cierre de buna-n a bronce
*Medidas de 1/2" a 2"

Retención Vertical

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/2	13	3/4	19	1	25	1 1/4	32	1 1/2	38	2	51	2 1/2	64	3	75
4	99	2 3/16	56	2 1/8	54	2 9/16	65	2 3/4	70	3 5/8	82	4 1/4	114	5 3/16	128
5 11/16	144	7	178	0.186	0.236	0.536	0.619	0.923	1.840	3.220	4.323	10.085			

Fig. 44T



*Servicios S.W.P.
125 lbs/pulg2 -8.8 kgs/cm2
400° F - 204° C
*Servicios W.O.G.
200 lbs/pulg2 -14 kgs/cm2
*Retención vertical
*Cierre de teflón a bronce
*Extremos roscables
*Medidas de 1/2" a 4"

Retención Tipo Columpio

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/2	13	3/4	19	1	25	1 1/4	32	1 1/2	38	2	51
2 7/16	62	2 29/32	74	3 9/16	74	4 11/16	106	4 15/32	114	5 1/4	133
1 11/16	43	7/8	48	2 5/16	48	2 11/16	68	2 15/16	75	3 25/32	96
0.269	0.403	0.700	0.017	1.398	2.392						

Fig. 85T



*Servicios S.W.P.
125 lbs/pulg2 -8.8 kgs/cm2
400° F - 204° C
*Servicios W.O.G.
200 lbs/pulg2 -14 kgs/cm2
*Tipo columpio
*Cierre de teflón a bronce
*Extremos roscables
*Medidas de 1/2" a 2"

Retención Tipo Columpio

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/2	13	3/4	19	1	25	1 1/4	32	1 1/2	38	2	51
2 7/16	62	2 29/32	74	3 9/16	90	4 11/16	106	4 15/32	114	5 1/4	133
1 11/16	43	7/8	48	2 5/16	59	2 11/16	68	2 15/16	75	3 25/32	96
0.278	0.399	0.731	1.053	1.398	2.397						

Fig. 87T



*Servicios S.W.P.
150 lbs/pulg2 -10.5 kgs/cm2
400° F - 204° C
*Servicios W.O.G.
300 lbs/pulg2 -21 kgs/cm2
*Tipo columpio
*Cierre de teflón a bronce
*Extremos roscables
*Medidas de 1/2" a 2"

Compuerta Roscable

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/4	6	1/2	13	3/4	19	1	25	1 1/4	32	1 1/2	38	2	51
2 1/8	54	2 1/2	63	3	76	3 3/4	95	4 1/4	108	5	127	6	152
1 1/2	38	1 3/4	44	2 1/8	54	2 1/2	64	3	76	3 1/2	89	4 1/4	108
0.253	0.379	0.619	1.020	1.581	2.678	3.778							

Fig. 88



*Servicios S.W.P.
300 lbs/pulg2 -21 kgs/cm2
550° F - 288° C
*Servicios W.O.G.
600 lbs/pulg2 -42 kgs/cm2
*Tipo columpio
*Cierre de bronce a bronce
*Extremos roscables
*Medidas de 1/4" a 2"

Retención Tipo Horizontal

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/4	6	1/2	13	3/4	19	1	25	1 1/4	32	1 1/2	38	2	51	2 1/2	64	3	75	4	99		
1 13/16	46	2 5/16	59	3 13/16	71	4 3/4	83	5 11/16	94	6 1/16	103	7 13/16	122	8	152	9 1/32	179	10 5/16	237		
1 3/8	35	1 1/2	38	1 1/2	38	9/32	58	3/16	56	11/32	60	2/3	70	9/32	83	3/4	95	4/5	117		
0.170		0.293		0.512		0.815		1.068		1.442		2.531		4.212		7.298		15.249			

Fig. 03T



*Servicios S.W.P.
125 lbs/pulg2 -8.8 kgs/cm2
450° F - 204° C
*Servicios W.O.G.
200 lbs/pulg2 -14 kgs/cm2
*Retención horizontal
*Cierre de Teflón a bronce
*Extremos roscables
*Medidas de 1/4" a 4"

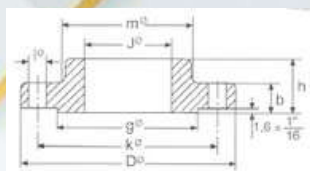
Esfera Roscable de Bronce

pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm	pulg.	mm
1/4	13	3/4	19	1	25	1 1/4	32	1 1/2	38	2	51										
3/8	78	7/32	82	3/16	89	4	102	4/8	11	5/16	132										
2/3/4	57	3/16	77	3/32	79	3/5/16	84	3/7/8	98	4/3/16	106										
5	127	5	127	5	127	5	127	5	127	7/3/4	197	7/3/4	197								
9/16	40	47/64	42	47/64	44	2/1/16	52	2/11/64	55	9/7/16	65										
23/32	18	2/1/32	52	2/7/32	56	2/21/32	67	3/3/16	81	3/3/4	95										
1/2	13	3/4	19	1	25	1 1/4	32	2 1/2	38	2	51										
0.870		1.071		1.280		1.784		2.719		4.387											

Fig. 580



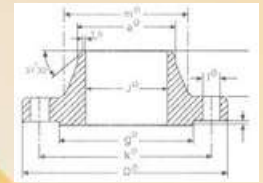
*Servicios S.W.P. 200
lbs/pulg2 -14
kgs/cm2 400° F - 204°
C *Servicios W.O.G.
400 lbs/pulg2 -28
kgs/cm2 *Paso
completo *Bola de
bronce cromado
*Cierre de bronce a
Teflón *Extremos
roscables *Cuerpo
de bronce *Medidas
de 1/4" a 4"



BRIDAS DE ACERO AL CARBÓN ANSI 150 LBS. / SLIP - ON (S.O.)

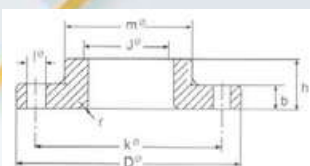
ASME/ANSI B 16.5

Nominal pipe size	Flange Brida				Hub Cuello	Raised face	Drilling template			Approx. weight
Diámetro nóminal	D mm. inches	J mm. inches	b mm. inches	h mm. inches	m mm. inches	g mm. inches	Number	l mm. inches	k mm. inches	Kg. Pounds
1/2"	88.9 3 1/2	22.3 0.88	11.1 7/16	15.9 5/8	30.2 1 3/16	34.9 1 3/8	4	15.9 5/8	60.3 2 3/8	0.5 1
3/4"	98.4 3 7/8	27.7 1.09	12.7 1/2	15.9 5/8	38.1 1 1/2	42.9 1 11/16	4	15.9 5/8	69.8 2 3/4	0.9 2
1"	107.9 4 1/4	34.5 1.36	14.3 9/16	17.5 11/16	49.2 1 15/16	50.8 2	4	15.9 5/8	79.4 3 1/8	0.9 2
1 1/4"	117.5 4 5/8	43.2 1.70	15.9 5/8	20.6 13/16	58.7 2 5/16	63.5 2 1/2	4	15.9 5/8	88.9 3 1/2	1.4 3
1 1/2"	127.0 5	49.5 1.95	17.5 11/16	22.2 7/8	65.1 2 9/16	73.0 2 7/8	4	15.9 5/8	98.4 3 7/8	1.4 3
2"	152.4 6	62.0 2.44	19.1 3/4	25.4 1	77.8 3 1/16	92.1 3 5/8	4	19 3/4	120.6 4 3/4	2.3 5
2 1/2"	177.8 7	74.7 2.94	22.2 7/8	28.6 1 1/8	90.5 3 9/16	104.8 4 1/8	4	19 3/4	139.7 5 1/2	3.2 7
3"	190.5 7 1/2	90.7 3.57	23.8 15/16	30.2 1 3/16	107.9 4 1/4	127.0 5	4	19 3/4	152.4 6	3.6 8
3 1/2"	215.9 8 1/2	103.4 4.07	23.8 15/16	31.7 1 1/4	122.2 4 13/16	139.7 5 1/2	8	19 3/4	177.8 7	5.0 11
4"	228.6 9	116.1 4.57	23.8 15/16	33.3 1 5/16	134.9 5 5/16	157.2 6 3/16	8	19 3/4	190.5 7 1/2	5.9 13
5"	254.0 10	143.8 5.66	23.8 15/16	36.5 1 7/16	163.5 6 7/16	185.7 7 5/16	8	22.2 7/8	215.9 8 1/2	6.8 15
6"	279.4 11	170.7 6.72	25.4 1	39.7 1 9/16	192.1 7 9/16	215.9 8 1/2	8	22.2 7/8	241.3 9 1/2	8.6 19
8"	342.9 13 1/2	221.5 8.72	28.6 1 1/8	44.4 1 3/4	246.1 9 11/16	269.9 10 5/8	8	22.2 7/8	298.4 11 3/4	13.6 30
10"	406.4 16	276.35 10.88	30.2 1 3/16	49.2 1 15/16	304.8 12	323.8 12 3/4	12	25.4 1	361.9 14 1/4	19.5 43
12"	482.6 19	327.15 13.88	31.8 1 1/4	55.6 2 3/16	365.1 14 3/8	381.0 15	12	25.4 1	431.8 17	29.0 64
14"	533.4 21	359.15 14.14	34.9 1 3/8	57.1 2 1/4	400.0 15 3/4	412.7 16 1/4	12	28.6 1 1/8	476.2 18 3/4	41.0 90
16"	596.9 23 1/2	410.5 16.16	36.5 1 7/16	63.5 2 1/2	457.2 18	469.9 18 1/2	16	28.6 1 1/8	539.7 21 1/4	44.5 98
18"	635.0 25	461.8 18.18	39.7 1 9/16	68.3 2 11/16	504.8 19 7/8	533.4 21	16	31.7 1 1/4	577.8 22 3/4	59.0 130
20"	698.5 27 1/2	513.1 20.20	42.9 1 11/16	73.0 2 7/8	558.8 22	584.2 23	20	31.7 1 1/4	635.0 25	75.0 165
22"	749.3 29 1/2	564.4 22.22	46.0 1 13/16	79.4 3 1/8	609.6 24	641.2 25 1/4	20	34.9 1 3/8	692.1 27 1/4	84 185
24"	812.8 32	615.95 24.25	47.6 1 7/8	82.5 3 1/4	663.6 26 1/8	692.1 27 1/4	20	34.9 1 3/8	749.3 29 1/2	99.8 220



BRIDAS DE ACERO AL CARBÓN ANSI 150 LBS. / WELDING NECK (W.N.)

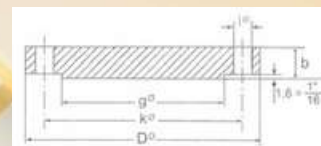
Nominal pipe size	Flange Brida				Hub Cuello		Raised face	Drilling template			Approx. weight
	D mm. inches	J mm. inches	b mm. inches	h mm. inches	a mm. inches	m mm. inches	g mm. inches	Number	i mm. inches	k mm. inches	Pounds
1/2"	88.9 3 1/2	15.75 0.62	11.1 7/16	47.6 1 7/8	21.3 0.84	30.2 1 3/16	34.9 1 3/8	4	15.9 5/8	60.3 2 3/8	0.9 2
3/4"	98.4 3 7/8	20.8 0.82	12.7 1/2	52.4 2 1/16	26.7 1.05	38.1 1 1/2	42.9 1 11/16	4	15.9 5/8	69.8 2 3/4	0.9 2
1"	107.9 4 1/4	26.7 1.05	14.3 9/16	55.6 2 3/16	33.5 1.32	49.2 1 15/16	50.8 2	4	15.9 5/8	79.4 3 1/8	1.4 3
1 1/4"	117.5 4 5/8	35.05 1.38	15.9 5/8	57.1 2 1/4	42.2 1.66	58.7 2 5/16	63.5 2 1/2	4	15.9 5/8	88.9 3 1/2	1.4 3
1 1/2"	127.0 5	40.9 1.61	17.5 11/16	61.9 2 7/16	48.3 1.90	65.1 2 9/16	73.0 2 7/8	4	15.9 5/8	98.4 3 7/8	1.8 4
2"	152.4 6	52.6 2.07	19.1 3/4	63.5 2 1/2	60.4 2.38	77.8 3 1/16	92.1 3 5/8	4	19.05 3/4	120.6 4 3/4	2.7 6
2 1/2"	177.8 7	62.7 2.47	22.2 7/8	69.8 2 3/4	73.1 2.88	90.5 3 9/16	104.8 4 1/8	4	19.0 3/4	139.7 5 1/2	3.6 8
3"	190.5 7 1/2	78.0 3.07	23.8 15/16	69.8 2 3/4	88.9 3.50	107.9 4 1/4	127.0 5	4	19.05 3/4	152.4 6	4.5 10
3 1/2"	215.9 8 1/2	90.2 3.55	23.8 15/16	71.4 2 13/16	101.6 4.0	122.2 4 13/16	139.7 5 1/2	8	19.05 3/4	177.8 7	5.4 12
4"	228.6 9	102.4 4.03	23.8 15/16	76.2 3	114.3 4.50	134.9 5 5/16	157.2 6 3/16	8	19.05 3/4	190.5 7 1/2	6.8 15
5"	254.0 10	128.3 5.05	23.8 15/16	88.9 3 1/2	141.2 5.56	163.5 6 7/16	185.7 7 5/16	8	22.2 7/8	215.9 8 1/2	8.6 19
6"	279.4 11	154.2 6.07	25.4 1	88.9 3 1/2	168.4 6.63	192.1 7 9/16	215.9 8 1/2	8	22.2 7/8	241.3 9 1/2	10.9 24
8"	342.9 13 1/2	202.7 7.98	28.6 1 1/8	101.6 4	219.2 8.63	246.1 9 11/16	269.9 10 5/8	8	22.2 7/8	298.4 11 3/4	17.7 39
10"	406.4 16	254.5 10.02	30.2 1 3/16	101.6 4	273.0 10.75	304.8 12	323.8 12 3/4	12	25.4 1	361.9 14 1/4	23.6 52
12"	482.6 19	304.8 12.00	31.8 1 1/4	114.3 4 1/2	323.8 12.75	365.1 14 3/8	381.0 15	12	25.4 1	431.8 17	36.3 80
14"	533.4 21	To be specified by purchaser	34.9 1 3/8	127.0 5	355.6 14.00	400.0 15 3/4	412.7 16 1/4	12	28.6 1 1/8	476.2 18 3/4	50.0 110
16"	596.9 23 1/2		36.5 1 7/16	127.0 5	406.4 16.00	457.2 18	469.9 18 1/2	16	28.6 1 1/8	539.7 21 1/4	64.0 140
18"	635.0 25		39.7 1 9/16	139.7 5 1/2	457.2 18.00	504.8 19 7/8	533.4 21	16	31.7 1 1/4	577.8 22 3/4	68.0 150
20"	698.5 27 1/2		42.9 1 11/16	144.5 5 11/16	508.0 20.00	558.8 22	584.2 23	20	31.7 1 1/4	635.0 25	81.6 180
22"	749.3 29 1/2		46.0 1 13/16	149.2 5 7/8	558.0 22.0	616 24 1/4	641.2 25 1/4	20	34.9 1 3/8	692.1 27 1/4	102 225
24"	812.8 32		47.6 1 7/8	152.4 6	609.6 24.00	663.6 26 1/8	692.1 27 1/4	20	34.9 1 3/8	749.3 29 1/2	118 260



BRIDAS DE ACERO AL CARBÓN ANSI 150 LBS. / LAP JOINT (L.J.)

ASME/ANSI B 16.5

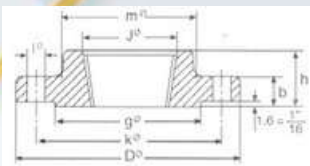
Nominal pipe size	Flange Brida					Hub Cuello	Drilling template			Approx. weight
	D	J	b	h	r	m	Number	i	k	
	mm. inches	mm. inches	mm. inches	mm. inches	mm. inches	mm. inches		mm. inches	mm. inches	Pounds
1/2"	88.9 3 1/2	22.9 0.90	11.1 7/16	15.9 5/8	3.2 1/8	30.2 1 3/16	4	15.9 5/8	60.3 2 3/8	0.5 1
3/4"	98.4 3 7/8	28.2 1.11	12.7 1/2	15.9 5/8	3.2 1/8	38.1 1 1/2	4	15.9 5/8	69.8 2 3/4	1.9 2
1"	107.9 4 1/4	35.05 1.38	15.9 5/8	17.5 11/16	3.2 1/8	49.2 1 15/16	4	15.9 5/8	79.4 3 1/8	1.9 2
1 1/4"	117.5 4 5/8	43.7 1.72	17.5 11/16	20.6 13/16	8.8 3/16	58.7 2 5/16	4	15.9 5/8	88.9 3 1/2	1.4 3
1 1/2"	127.0 5	50.0 1.97	19.1 3/4	22.2 7/8	6.35 1/4	65.1 2 9/16	4	15.9 5/8	98.4 3 7/8	1.4 3
2"	152.4 6	62.5 2.46	22.2 7/8	25.4 1	7.9 5/16	77.8 3 1/16	4	19.0 3/4	120.6 4 3/4	3.2 5
2 1/2"	177.8 7	75.4 2.97	23.8 15/16	28.6 1 1/8	7.9 5/16	90.5 3 9/16	4	19.0 3/4	139.7 5 1/2	3.2 7
3"	190.5 7 1/2	91.4 3.60	23.8 15/16	30.2 1 3/16	9.5 3/8	107.9 4 1/4	4	19.0 3/4	152.4 6	3.6 8
3 1/2"	215.9 8 1/2	104.1 4.10	23.8 15/16	31.7 1 1/4	9.5 3/8	122.2 4 13/16	8	19.0 3/4	177.8 7	5.0 11
4"	228.6 9	116.8 4.60	23.8 15/16	33.3 1 5/16	11.1 7/16	134.9 5 5/16	8	19.0 3/4	190.5 7 1/2	5.9 13
5"	254.0 10	144.5 5.69	23.8 15/16	36.5 1 7/16	11.1 7/16	163.5 6 7/16	8	22.2 7/8	215.9 8 1/2	6.8 15
6"	279.4 11	171.45 6.72	25.4 1	39.7 1 9/16	12.7 1/2	192.1 7 9/16	8	22.2 7/8	241.3 9 1/2	8.6 19
8"	342.9 13 1/2	222.25 8.72	28.6 1 1/8	44.4 1 3/4	12.7 1/2	246.1 9 11/16	8	22.2 7/8	298.4 11 3/4	13.6 30
10"	406.4 16	277.4 10.92	30.2 1 3/16	49.2 1 15/16	12.7 1/2	304.8 12	12	25.4 1	361.9 14 1/4	19.5 43
12"	482.6 19	328.2 12.92	31.8 1 1/4	55.6 2 3/16	12.7 1/2	365.1 14 3/8	12	25.4 1	431.8 17	29.0 64
14"	533.4 21	360.2 14.18	34.9 1 3/8	79.4 3 1/8	12.7 1/2	400.0 15 3/4	12	28.6 1 1/8	476.2 18 3/4	47.6 105
16"	596.9 23 1/2	411.2 16.19	36.5 1 7/16	87.3 3 7/16	12.7 1/2	457.2 18	16	28.6 1 1/8	539.7 21 1/4	63.5 140
18"	635.0 25	462.3 18.20	39.7 1 9/16	96.8 3 13/16	12.7 1/2	504.8 19 7/8	16	31.7 1 1/4	577.8 22 3/4	72.6 160
20"	698.5 27 1/2	514.35 20.25	42.9 1 11/16	103.2 4 1/16	12.7 1/2	558.8 22	20	31.7 1 1/4	630.0 25	88.5 195
22"	749.3 29 1/2	565.2 22.25	46.0 1 13/16	108 4 1/4	12.7 1/2	616 24 1/4	20	34.9 1 3/8	692.1 27 1/4	111.2 245
24"	812.8 32	615.95 24.25	47.6 1 7/8	111.1 4 3/8	12.7 1/2	663.6 26 1/8	20	34.9 1 3/8	749.3 29 1/2	125 275



BRIDAS DE ACERO AL CARBÓN ANSI 150 LBS. / BLIND (CIEGA)

ASME/ANSI B 16.5

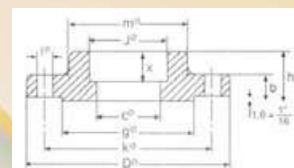
Nominal pipe size	Flange Brida		Resalte	Taladros			Approx. weight Peso
	D mm. inches	b mm. inches	g mm. inches	Number	i mm. inches	k mm. inches	Pounds
1/2"	88.9 3 1/2	11.1 1 1/16	34.9 1 3/8	4	15.9 5/8	60.3 2 3/8	0.5 1
3/4"	98.4 3 7/8	12.7 1/2	42.9 1 11/16	4	15.9 5/8	69.8 2 3/4	0.9 2
1"	108.0 4 1/4	14.3 9/16	50.8 2	4	15.9 5/8	79.4 3 1/8	0.9 2
1 1/4"	117.5 4 5/8	15.9 5/8	63.5 2 1/2	4	15.9 5/8	88.9 3 1/2	1.4 3
1 1/2"	127.0 5	17.5 11/16	73.0 2 7/8	4	15.9 5/8	98.4 3 7/8	1.8 4
2"	152.4 6	19.1 3/4	92.1 3 5/8	4	19.0 3/4	120.6 4 3/4	2.3 5
2 1/2"	177.8 7	22.2 7/8	104.8 4 1/8	4	19.0 3/4	139.7 5 1/2	3.2 7
3"	190.5 7 1/2	23.8 15/16	127.0 5	4	19.0 3/4	152.4 6	4.1 9
3 1/2"	215.9 8 1/2	23.8 15/16	139.7 5 1/2	8	19.0 3/4	177.8 7	5.9 13
4"	228.6 9	23.8 15/16	157.2 6 3/16	8	19.0 3/4	190.5 7 1/2	7.7 17
5"	254.0 10	23.8 15/16	185.7 7 5/16	8	22.2 7/8	215.9 8 1/2	9.1 20
6"	279.4 11	25.4 1	215.9 8 1/2	8	22.2 7/8	241.3 9 1/2	11.8 26
8"	342.9 13 1/2	28.6 1 1/8	215.9 8 1/2	8	22.2 7/8	298.4 11 3/4	21 46.2
10"	406.4 16	30.2 1 13/16	323.8 12 3/4	12	25.4 1	361.9 14 1/4	31.8 70
12"	482.6 19	31.8 1 1/4	381.0 15	12	25.4 1	431.8 17	49.9 110
14"	533.4 21	34.9 1 3/8	412.7 16 1/4	12	28.6 1 1/8	476.2 18 3/4	63.5 140
16"	596.9 23 1/2	36.5 1 7/16	469.9 18 1/2	16	28.6 1 1/8	539.7 21 1/4	81.6 180
18"	635.0 25	39.7 1 9/16	533.4 21	16	31.7 1 1/4	577.8 22 3/4	99.8 220
20"	698.5 27 1/2	42.9 1 11/16	584.2 23	20	31.7 1 1/4	630.0 25	129 285
22"	749.3 29 1/2	46.0 1 13/16	641.2 25 1/4	20	34.9 1 3/8	692.1 27 1/4	161 355
24"	812.8 32	47.6 1 7/8	692.1 27 1/4	20	34.9 1 3/8	749.3 29 1/2	195 430



BRIDAS DE ACERO AL CARBÓN ANSI 150 LBS. / THREADED (ROSCADA)

ASME/ANSI B 16.5

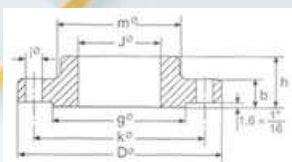
Nominal pipe size	Flange Brida				Hub Cuello	Raised face	Drilling template			Approx. weight
	D mm. inches	J mm. inches	b mm. inches	h mm. inches	m mm. inches	g mm. inches	Number	i mm. inches	k mm. inches	Pounds
1/2"	88.9 3 1/2	En las bridas THREADED 150 Lbs. no se requiere ensanche de boca	11.1 7/16	15.9 5/8	30.2 1 3/16	34.9 1 3/8	4	15.9 5/8	60.3 2 3/8	0.5 1
3/4"	98.4 3 7/8		12.7 1/2	15.9 5/8	38.1 1 1/2	42.9 1 11/16	4	15.9 5/8	69.8 2 3/4	0.9 2
1"	107.9 4 1/4		14.3 9/16	17.5 11/16	49.2 1 15/16	50.8 2	4	15.9 5/8	79.4 3 1/8	0.9 2
1 1/4"	117.5 4 5/8		15.9 5/8	20.6 13/16	58.7 2 5/16	63.5 2 1/2	4	15.9 5/8	88.9 3 1/2	1.4 3
1 1/2"	127.0 5		17.5 11/16	22.2 7/8	65.1 2 9/16	73.0 2 7/8	4	15.9 5/8	98.4 3 7/8	1.5 3.3
2"	152.4 6		19.1 3/4	25.4 1	77.8 3 1/16	92.1 3 5/8	4	19.0 3/4	120.6 4 3/4	2.3 5.1
2 1/2"	177.8 7		22.2 7/8	28.6 1 1/8	90.5 3 9/16	104.8 4 1/8	4	19.0 3/4	139.7 5 1/2	3.7 8.1
3"	190.5 7 1/2		23.8 15/16	30.2 1 3/16	107.9 4 1/4	127.0 5	4	19.0 3/4	152.4 6	4.2 9.2
3 1/2"	215.9 8 1/2		23.8 15/16	31.7 1 1/4	122.2 4 13/16	139.7 5 1/2	8	19.0 3/4	177.8 7	5.3 11.7
4"	228.6 9		23.8 15/16	33.3 1 5/16	134.9 5 5/16	157.2 6 3/16	8	19.0 3/4	190.5 7 1/2	5.9 13
5"	254.0 10		23.8 15/16	36.5 1 7/16	163.5 6 7/16	185.7 7 5/16	8	22.2 7/8	215.9 8 1/2	7 15.4
6"	279.4 11		25.4 1	39.7 1 9/16	192.1 7 9/16	215.9 8 1/2	8	22.2 7/8	241.3 9 1/2	8.4 18.6
8"	342.9 13 1/2		28.6 1 1/8	44.4 1 3/4	246.1 9 11/16	269.9 10 5/8	8	22.2 7/8	298.4 11 3/4	13 28.6
10"	406.4 16		30.2 1 3/16	49.2 1 15/16	304.8 12	323.8 12 3/4	12	25.4 1	361.9 14 1/4	19.5 43
12"	482.6 19		31.8 1 1/4	55.6 2 3/16	365.1 14 3/8	381.0 15	12	25.4 1	431.8 17	29.5 64.9
14"	533.4 21		34.9 1 3/8	57.1 2 1/4	400.0 15 3/4	412.7 16 1/4	12	28.6 1 1/8	476.2 18 3/4	41 90
16"	596.9 23 1/2		36.5 1 7/16	63.5 2 1/2	457.2 18	469.9 18 1/2	16	28.6 1 1/8	539.7 21 1/4	47 103.4
18"	635.0 25		39.7 1 9/16	68.3 2 11/16	504.8 19 7/8	533.4 21	16	31.7 1 1/4	577.8 22 3/4	59 130
20"	698.5 27 1/2		42.9 1 11/16	73.0 2 7/8	558.8 22	584.2 23	20	31.7 1 1/4	635.0 25	75 165
24"	812.8 32		47 1 7/8	82.5 3 1/4	663.6 26 1/8	692.1 27 1/4	20	34.9 1 3/8	749.3 29 1/2	100 220



BRIDAS DE ACERO AL CARBÓN ANSI 150 LBS. / SOCKET WELD (S.W.)

ASME/ANSI B 16.5

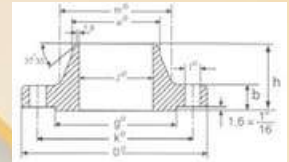
Nominal pipe size	Flange Brida						Hub Cuello	Raised face	Drilling template			Approx. weight Pounds
	D mm. inches	C mm. inches	j mm. inches	x mm. inches	b mm. inches	h mm. inches	m mm. inches	g mm. inches	Number	i mm. inches	k mm. inches	
1/4"	88.9 3 1/2	9.1 0.36	14.7 0.58	9.5 3/8	11.1 7/16	15.9 5/8	30.2 1 3/16	34.9 1 3/8	4	15.9 5/8	60.3 2 3/8	0.3 0.7
3/8"	88.9 3 1/2	12.4 0.49	18.3 0.72	9.5 3/8	11.1 7/16	15.9 5/8	30.2 1 3/16	34.9 1 3/8	4	15.9 5/8	60.3 2 3/8	0.4 0.8
1/2"	88.9 3 1/2	15.7 0.62	22.35 0.88	9.5 3/8	11.1 7/16	15.9 5/8	30.2 1 3/16	34.9 1 3/8	4	15.9 5/8	60.3 2 3/8	0.4 0.9
3/4"	98.4 3 7/8	20.8 0.82	27.7 1.09	11.1 7/16	12.7 1/2	15.9 5/8	38.1 1 1/2	42.9 1 11/16	4	15.9 5/8	69.8 2 3/4	0.7 1.5
1"	107.9 4 1/4	26.7 1.05	34.5 1.36	12.7 1/2	14.3 9/16	17.5 11/16	49.2 1 15/16	50.8 2	4	15.9 5/8	79.4 3 1/8	0.9 2
1 1/4"	117.5 4 5/8	35.05 1.38	43.2 1.70	14.3 9/16	15.9 5/8	20.6 13/16	58.7 2 5/16	63.5 2 1/2	4	15.9 5/8	88.9 3 1/2	1.2 2.6
1 1/2"	127.0 5	40.9 1.61	49.5 1.95	15.9 5/8	17.5 11/16	22.2 7/8	65.1 2 9/16	73.0 2 7/8	4	15.9 5/8	98.4 3 7/8	1.5 3.3
2"	152.4 6	52.6 2.07	62.0 2.44	17.5 11/16	19.1 3/4	25.4 1	77.8 2 1/16	92.1 3 5/8	4	19.0 3/4	120.6 4 3/4	2.3 5.1
2 1/2"	177.8 7	62.7 2.47	74.7 2.94	19.05 3/4	22.3 7/8	28.6 1 1/8	90.5 2 9/16	104.8 4 1/8	4	19.0 3/4	139.7 5 1/2	3.7 8.1
3"	190.5 7 1/2	78.0 3.07	90.7 3.57	20.6 13/16	23.8 15/16	30.2 1 3/16	107.9 4 1/4	127.0 5	4	19.0 3/4	152.4 6	4.2 9.2
3 1/2"	215.9 8 1/2	90.2 3.55	103.4 4.07	22.2 7/8	23.8 15/16	31.7 1 1/4	122.2 4 13/16	139.7 5 1/2	8	19.0 3/4	177.8 7	5.3 11.7
4"	228.6 9	102.4 4.03	116.1 4.57	23.8 15/16	23.8 15/16	33.3 1 5/16	134.9 5 5/16	157.2 6 3/16	8	19.0 3/4	190.5 7 1/2	5.9 13
5"	254.0 10	128.3 5.05	143.8 5.66	23.8 15/16	23.8 15/16	36.5 1 7/16	134.9 5 5/16	185.7 7 5/16	8	22.2 7/8	215.9 8 1/2	7 15.4
6"	279.4 11	154.2 6.07	170.7 6.72	27.0 1 1/16	25.4 1	39.7 1 9/16	192.1 7 9/16	215.9 8 1/2	8	22.2 7/8	241.3 9 1/2	8.4 18.5
8"	342.9 13 1/2	202.7 7.98	221.5 8.72	31.7 1 1/4	28.6 1 1/8	44.4 1 3/4	246.1 9 11/16	269.9 10 5/8	8	22.2 7/8	298.4 11 3/4	13 28.6
10"	406.4 16	254.5 10.02	276.35 10.88	33.3 1 15/16	30.2 1 3/16	49.2 1 15/16	304.8 12	323.8 12 3/4	12	25.4 1	361.9 14 1/4	19.5 43
12"	482.6 19	304.8 12.00	327.15 12.88	39.7 1 9/16	31.8 1 1/4	55.6 2 3/16	365.1 14 3/8	381.0 15	12	25.4 1	431.8 17	29.5 64.9
14"	533.4 21	336.55 13.25	359.15 14.14	41.3 1 5/8	34.9 1 3/8	57.1 2 1/4	400.0 15 3/4	412.7 16 1/4	12	28.6 1 1/8	476.2 18 3/4	41 90
16"	596.9 23 1/2	387.35 15.25	410.5 16.16	44.4 1 3/4	36.5 1 7/16	63.5 2 1/2	457.2 18	469.9 18 1/2	16	28.6 1 1/8	539.7 21 1/4	44.5 98
18"	635.0 25	438.15 17.25	461.8 18.18	42.2 1 15/16	39.7 1 9/16	68.3 2 11/16	504.8 19 7/8	533.4 21	16	31.7 1 1/4	577.8 22 3/4	59 130
20"	698.5 27 1/2	488.95 19.25	513.1 20.20	50.0 2 1/8	42.9 1 7/8	73.0 2 7/8	558.8 22	584.2 23	20	31.7 1 1/4	635.0 25	75 165
24"	812.8 32	590.55 23.25	615.95 24.25	63.5 2 1/2	47.6 1 7/8	82.5 3 1/4	663.6 26 1/8	692.1 27 1/4	20	34.9 1 3/8	749.3 29 1/2	100 220



BRIDAS DE ACERO AL CARBÓN ANSI 300 LBS. / SLIP - ON (S.O.)

ASME/ANSI B 16.5

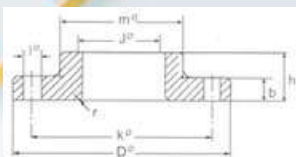
Nominal pipe size	Flange Brida				Hub Cuello	Raised face	Drilling template			Approx. weight
	D mm. inches	J mm. inches	b mm. inches	h mm. inches	m mm. inches	g mm. inches	Number	i mm. inches	k mm. inches	Pounds
1/2"	95.2 3 3/4	22.3 0.88	14.3 9/16	22.2 7/8	38.1 1 1/2	34.9 1 3/8	4	15.9 5/8	66.7 2 5/8	0.9 2
3/4"	117.5 4 5/8	27.7 1.09	15.9 5/8	25.4 1	47.6 1 7/8	42.9 1 11/16	4	19.0 3/4	82.5 3 1/4	1.4 3
1"	123.8 4 7/8	34.5 1.36	17.5 11/16	27.0 1 1/16	54.0 2 1/8	50.8 2	4	19.0 3/4	88.9 3 1/2	1.4 3
1 1/4"	133.35 5 1/4	43.2 1.70	19.05 3/4	27.0 1 1/16	63.5 2 1/2	63.5 2 1/2	4	19.0 3/4	98.4 3 7/8	1.8 4
1 1/2"	155.6 6 1/8	49.5 1.95	20.6 13/16	30.2 1 3/16	69.8 2 3/4	73.0 2 7/8	4	22.2 7/8	114.3 4 1/2	2.7 6
2"	165.1 6 1/2	62.0 2.44	22.2 7/8	33.3 1 5/16	84.1 3 5/16	92.1 3 5/8	8	19.05 3/4	127.0 5	3.2 7
2 1/2"	190.5 7 1/2	74.7 2.49	25.4 1	38.1 1 1/2	100.0 3 15/16	104.8 4 1/8	8	22.2 7/8	149.2 5 7/8	4.5 10
3"	209.55 8 1/4	90.7 3.57	28.6 1 1/8	42.9 1 11/16	117.5 4 5/8	127.0 5	8	22.2 7/8	168.3 6 5/8	5.9 13
3 1/2"	228.6 9	103.4 4.07	30.2 1 3/16	44.4 1 3/4	133.35 5 1/4	139.7 5 1/2	8	22.2 7/8	184.15 7 1/4	7.7 17
4"	254.0 10	116.1 4.57	31.8 1 1/4	47.6 1 7/8	146.05 5 3/4	157.2 6 3/16	8	22.2 7/8	200.0 7 7/8	10.0 22
5"	279.4 11	143.3 5.66	34.9 1 3/8	50.8 2	177.8 7	185.7 7 5/16	8	22.2 7/8	234.95 9 1/4	12.7 28
6"	317.5 12 1/2	170.7 6.72	36.5 1 7/16	52.4 2 1/16	206.4 8 1/8	215.9 8 1/2	12	22.2 7/8	269.9 10 5/8	17.7 39
8"	381.0 15	221.5 8.72	41.3 1 5/8	61.9 2 7/16	260.3 10 1/4	269.9 10 5/8	12	25.4 1	330.2 13	26.3 58
10"	444.5 17 1/2	276.35 10.88	47.6 1 7/8	66.7 2 5/8	320.7 12 5/8	323.8 12 3/4	16	28.6 1 1/8	387.3 15 1/4	36.7 81
12"	520.7 20 1/2	327.15 12.88	50.8 2	73.0 2 7/8	374.6 14 3/4	381.0 15	16	31.7 1 1/4	450.8 17 3/4	52.2 115
14"	584.2 23	359.15 14.14	54.0 2 1/8	76.2 3	425.4 16 3/4	412.7 16 1/4	20	31.7 1 1/4	514.3 20 1/4	74.8 165
16"	647.7 25 1/2	410.5 16.16	57.2 2 1/4	82.5 3 1/4	482.6 19	469.9 18 1/2	20	34.9 1 3/8	571.5 22 1/2	86.6 190
18"	711.2 28	461.8 18.18	60.3 2 3/8	88.9 3 1/2	533.4 21	533.4 21	24	34.9 1 3/8	628.6 24 3/4	113 250
20"	774.7 30 1/2	513.1 20.20	63.5 2 1/2	95.2 3 3/4	587.4 23 1/8	584.2 23	24	34.9 1 3/8	685.8 27	143 315
22"	838.2 33	564.4 22.22	66.7 2 5/8	101.6 4	641.2 25 1/4	641.2 25 1/4	24	41.3 1 5/8	742.9 29 1/4	168 370
24"	914.4 36	615.95 24.25	69.8 2 3/4	106.4 4 3/16	701.7 27 5/8	692.1 27 1/4	24	41.3 1 5/8	812.8 32	215 475



BRIDAS DE ACERO AL CARBÓN ANSI 300 LBS. / WELDING NECK (W.N.)

ASME/ANSI B 16.5

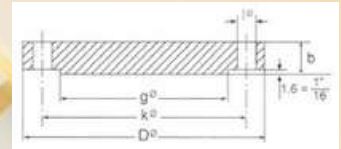
Nominal pipe size	Flange Brida				Hub Cuello		Raised face	Drilling template			Approx. weight Pounds
	D mm. inches	J mm. inches	b mm. inches	h mm. inches	a mm. inches	m mm. inches	g mm. inches	Number	i mm. inches	k mm. inches	
1/2"	95.2 3 3/4	15.75 0.62	14.3 9/16	52.4 2 1/16	21.3 0.84	38.1 1 1/2	34.9 1 3/8	4	15.9 5/8	66.7 2 5/8	0.9 2
3/4"	117.5 4 5/8	20.8 0.82	15.9 5/8	57.1 2 1/4	26.7 1.05	47.6 1 7/8	42.9 1 11/16	4	19.05 3/4	82.5 3 1/4	1.4 3
1"	123.8 4 7/8	26.7 1.05	17.5 11/16	61.9 2 7/16	33.5 1.32	54.0 2 1/8	50.8 2	4	19.05 3/4	88.9 3 1/2	1.8 4
1 1/4"	133.35 5 1/4	35.05 1.38	19.05 3/4	65.1 2 9/16	42.2 1.66	63.5 2 1/2	63.5 2 1/2	4	19.05 3/4	98.4 3 7/8	2.3 5
1 1/2"	155.6 6 1/8	40.9 1.61	20.6 13/16	68.3 2 11/16	48.3 1.90	69.8 2 3/4	73.0 2 7/8	4	22.2 7/8	114.3 4 1/2	3.2 7
2"	165.1 6 1/2	52.6 2.07	22.2 7/8	69.8 2 3/4	60.45 2.38	84.1 3 5/16	92.1 3 5/8	8	19.05 3/4	127.0 5	4.1 9
2 1/2"	190.5 7 1/2	62.7 2.47	25.4 1	76.2 3	73.1 2.88	100.0 3 15/16	104.8 4 1/8	8	22.2 7/8	149.2 5 7/8	5.4 12
3"	209.55 8 1/4	78.0 3.07	28.6 1 1/8	79.4 3 1/8	88.9 3.50	117.5 4 5/8	127.0 5	8	22.2 7/8	168.3 6 5/8	6.8 15
3 1/2"	228.6 9	90.2 3.55	30.2 1 3/16	81.0 3 3/16	101.6 4.00	133.35 5 1/4	139.7 5 1/2	8	22.2 7/8	184.15 7 1/4	8.2 18
4"	254.0 10	102.4 4.03	31.8 1 1/4	85.7 3 3/8	114.3 4.50	146.05 5 3/4	157.2 6 3/16	8	22.2 7/8	200.0 7 7/8	11.3 25
5"	279.4 11	128.3 5.05	34.9 1 3/8	98.4 3 7/8	141.2 5.56	177.8 7	185.7 7 5/16	8	22.2 7/8	234.95 9 1/4	14.5 32
6"	317.5 12 1/2	154.2 6.07	36.5 1 7/16	98.4 3 7/8	168.4 6.63	206.4 8 1/8	215.9 8 1/2	12	22.2 7/8	269.9 10 5/8	19.0 42
8"	381.0 15	202.7 7.98	41.3 1 5/8	111.1 4 3/8	219.2 8.63	260.35 10 1/4	269.9 10 5/8	12	25.4 1	330.2 13	30.4 67
10"	444.5 17 1/2	254.5 10.02	47.6 1 7/8	117.5 4 5/8	273.0 10.75	320.7 12 5/8	323.8 12 3/4	16	28.6 1 1/8	387.3 15 1/4	41.3 91
12"	520.7 20 1/2	304.8 12.00	50.8 2	130.2 5 1/8	323.85 12.75	374.6 14 3/4	381.0 15	16	31.7 1 1/4	450.8 17 3/4	63.5 140
14"	584.2 23	To be specified by purchaser	54.0 2 1/8	142.9 5 5/8	355.6 14.00	425.4 16 3/4	412.7 16 1/4	20	31.7 1 1/4	514.3 20 1/4	81.6 180
16"	647.7 25 1/2		57.2 2 1/4	146.5 5 3/4	406.4 16.00	482.6 19	469.9 18 1/2	20	34.9 1 3/8	571.5 22 1/2	113 250
18"	711.2 28		60.3 2 3/8	158.75 6 1/4	457.2 18.00	533.4 21	533.4 21	24	34.9 1 3/8	628.6 24 3/4	145 320
20"	774.7 30 1/2		63.5 2 1/2	161.9 6 3/8	508.0 20.00	587.4 23 1/8	584.2 23	24	34.9 1 3/8	685.8 27	181 400
22"	838.2 33		66.7 2 5/8	165.1 6 1/2	558.8 22.0	641.2 25 1/4	641.2 25 1/4	24	41.3 1 5/8	742.9 29 1/4	211 465
24"	914.4 36		69.8 2 3/4	168.3 6 5/8	609.5 24.00	701.7 27 5/8	692.1 27 1/4	24	41.3 1 5/8	812.8 32	263 580



BRIDAS DE ACERO AL CARBÓN ANSI 300 LBS. / LAP JOINT (L.J.)

ASME/ANSI B 16.5

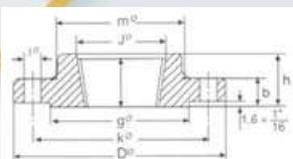
Nominal pipe size	Flange Brida				Hub Cuello	Raised face	Drilling template			Approx. weight Pounds
	D mm. inches	J mm. inches	b mm. inches	h mm. inches	r mm. inches	m mm. inches	Number	i mm. inches	k mm. inches	
1/2"	95.2 3 3/4	22.9 0.90	14.3 9/16	22.2 7/8	3.2 1/8	38.1 1 1/2	4	15.9 5/8	66.7 2 5/8	0.9 2
3/4"	117.5 4 5/8	28.2 1.11	15.9 5/8	25.4 1	3.2 1/8	47.6 1 7/8	4	19.0 3/4	82.5 3 1/4	1.4 2.4
1"	123.8 4 7/8	35.05 1.38	17.5 11/16	27.0 1 1/16	3.2 1/8	54.0 2 1/8	4	19.0 3/4	88.9 3 1/2	2.4 3
1 1/4"	133.3 5 1/4	43.7 1.72	19.05 3/4	27.0 1 1/16	4.8 3/16	63.5 2 1/2	4	19.0 3/4	98.4 3 7/8	1.8 4
1 1/2"	155.6 6 1/8	50.0 1.97	20.6 13/16	30.2 1 3/16	6.35 1/4	69.8 2 3/4	4	22.2 7/8	114.3 4 1/2	2.7 6
2"	165.1 6 1/2	62.5 2.46	22.2 7/8	33.3 1 5/16	7.9 5/16	84.1 3 5/16	8	19.0 3/4	127.0 5	3.2 7
2 1/2"	190.5 7 1/2	75.4 2.97	25.4 1	38.1 1 1/2	7.9 5/16	100.0 3 15/16	8	22.2 7/8	149.2 5 7/8	4.5 10
3"	209.5 8 1/4	91.4 3.60	28.6 1 1/8	42.9 1 11/16	9.5 3/8	117.5 4 5/8	8	22.2 7/8	168.3 6 5/8	5.9 13
3 1/2"	228.6 9	104.1 4.10	30.2 1 3/16	44.4 1 3/4	9.5 3/8	133.35 5 1/4	8	22.2 7/8	184.15 7 1/4	7.7 17
4"	254.0 10	116.8 4.60	31.8 1 1/4	47.6 1 7/8	11.1 7/16	146.05 5 3/4	8	22.2 7/8	200.0 7 7/8	10 22
5"	279.4 11	144.5 5.69	34.9 1 3/8	50.8 2	11.1 7/16	177.8 7	8	22.2 7/8	234.9 9 1/4	12.7 28
6"	317.5 12 1/2	171.45 6.75	36.5 1 7/16	52.4 2 1/16	12.7 1/2	206.3 8 1/8	12	22.2 7/8	269.9 10 5/8	17.7 39
8"	381.0 15	222.25 8.75	41.3 1 5/8	61.9 2 7/16	12.7 1/2	269.9 10 5/8	12	25.4 1	330.2 13	26.3 58
10"	444.5 17 1/2	277.4 10.92	47.6 1 7/8	95.2 3 3/4	12.7 1/2	320.7 12 5/8	16	28.6 1 1/8	387.3 15 1/4	41.3 91
12"	520.7 20 1/2	328.2 12.92	50.8 2	101.6 4	12.7 1/2	374.6 14 3/4	16	31.7 1 1/4	450.8 17 3/4	63.5 140
14"	584.2 23	360.2 14.18	54.0 2 1/8	111.1 4 3/4	12.7 1/2	425.4 16 3/4	20	31.7 1 1/4	514.3 20 3/4	86.2 190
16"	647.7 25 1/2	411.2 16.19	57.2 2 1/4	120.65 4 3/4	12.7 1/2	482.6 19	20	34.9 1 3/8	571.5 22 1/2	113 250
18"	711.2 28	462.3 18.20	60.3 2 3/8	130.2 5 1/8	12.7 1/2	533.4 21	24	34.9 1 3/8	628.6 24 3/4	134 295
20"	774.7 30 1/2	514.35 20.25	63.5 2 1/2	139.7 5 1/2	12.7 1/2	587.4 23 1/8	24	34.9 1 3/8	685.8 27	268 370
22"	838.2 33	565.2 22.25	66.7 2 5/8	146 5 3/4	12.7 1/2	641.2 25 1/4	24	41.3 1 5/8	742.9 29 1/4	197 435
24"	914.4 36	615.95 24.25	69.8 2 3/4	152.4 6	12.7 1/2	701.7 27 5/8	24	41.3 1 5/8	812.8 32	249 550



BRIDAS DE ACERO AL CARBÓN ANSI 300 LBS. / BLIND (CIEGA)

ASME/ANSI B 16.5

Nominal pipe size	Flange Brida		Resalte		Taladros		Approx. weight Peso Pounds
	D mm. inches	b mm. inches	g mm. inches	Number	l mm. inches	k mm. inches	
1/2"	95.2 3 3/4	14.3 9/16	34.9 1 3/8	4	15.9 5/8	66.7 2 5/8	0.9 2
3/4"	117.5 4 5/8	15.9 5/8	42.9 1 11/16	4	19.0 3/4	82.5 3 1/4	1.4 3
1"	123.8 4 7/8	17.5 11/16	50.8 2	4	19.9 3/4	88.9 3 1/2	1.4 3
1 1/4"	133.3 5 1/4	19.0 3/4	63.5 2 1/2	4	19.9 3/4	98.4 3 7/8	1.8 4
1 1/2"	155.6 6 1/8	20.6 13/16	73.0 2 7/8	4	22.2 7/8	114.3 4 1/2	2.7 6
2"	162.1 6 1/2	22.2 7/8	92.1 3 5/8	8	19.0 3/4	127.0 5	3.6 8
2 1/2"	190.5 7 1/2	25.4 1	104.8 4 1/8	8	22.2 7/8	149.2 5 7/8	5.4 12
3"	209.5 8 1/4	28.6 1 1/8	127.0 5	8	22.2 7/8	168.3 6 5/8	7.3 16
3 1/2"	228.6 9	30.2 1 3/16	139.7 5 1/2	8	22.2 7/8	184.1 7 1/4	9.5 21
4"	254.0 10	31.8 1 1/4	157.2 6 3/16	8	22.2 7/8	200.0 7 7/8	12.2 27
5"	279.4 11	34.9 1 3/8	185.7 7 5/16	8	22.2 7/8	234.9 9 1/4	15.9 35
6"	317.5 12 1/2	36.5 1 7/16	215.9 8 1/2	12	22.2 7/8	269.9 10 5/8	22.7 50
8"	381.0 15	41.3 1 5/8	269.9 10 5/8	12	25.4 1	330.2 13	37.7 81
10"	444.5 17 1/2	47.6 1 7/8	323.8 12 3/4	16	28.6 1 1/8	387.3 15 1/4	57 125
12"	520.7 20 1/2	50.8 2	381.0 15	16	31.7 1 1/4	450.8 17 3/4	84 181
14"	584.2 23	54.0 2 1/8	412.7 16 1/4	20	31.7 1 1/4	514.3 20 3/4	113 250
16"	647.7 25 1/2	57.2 2 1/4	469.9 18 1/2	20	34.9 1 3/8	571.5 22 1/2	135 295
18"	711.2 28	60.3 2 3/8	533.4 21	24	34.9 1 3/8	628.6 24 3/4	178 392
20"	774.7 30 1/2	63.5 2 1/2	584.2 23	24	34.9 1 3/8	685.8 27	229 505
22"	838.2 33	66.7 2 5/8	641.2 25 1/4	24	41.3 1 5/8	742.9 29 1/4	290 640
24"	914.4 36	69.8 2 3/4	692.1 27 1/4	24	41.3 1 5/8	812.8 32	358 790



BRIDAS DE ACERO AL CARBÓN ANSI 300 LBS. / THREADED (ROSCADA)

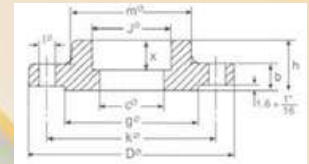
ASME/ANSI B

Nominal pipe size	Flange Brida						Raised face	Drilling template			Approx. weight Pounds
	D mm. inches	J mm. inches	b mm. inches	h mm. inches	x mm. inches	m mm. inches		g mm. inches	Number	l mm. inches	k mm. inches
1/2"	95.2 3 3/4	23.6 0.93	14.3 9/16	22.2 7/8	15.9 5/8	38.1 1 1/2	34.9 1 3/8	4	15.9 5/8	66.7 2 5/8	0.9 2
3/4"	117.5 4 5/8	28.95 1.14	15.9 5/8	25.4 1	15.9 5/8	47.6 1 7/8	42.9 1 11/16	4	19.05 3/4	82.5 3 1/4	1.4 3
1"	123.8 4 7/8	35.8 1.14	17.5 11/16	27.0 1 1/16	17.5 11/16	54.0 2 1/8	50.8 2	4	19.05 3/4	88.9 3 1/2	1.4 3
1 1/4"	133.35 5 1/4	44.45 1.75	19.0 3/4	27.0 1 1/16	20.6 13/16	63.5 2 1/2	63.5 2 1/2	4	19.05 3/4	98.4 3 7/8	1.9 4.2
1 1/2"	155.6 6 1/8	50.56 1.99	20.6 13/16	30.2 1 3/16	22.2 7/8	69.8 2 3/4	73 2 7/8	4	22.2 7/8	114.3 4 1/2	2.8 6.2
2"	165.1 6 1/2	63.5 2.50	22.2 7/8	33.3 1 5/16	28.6 1 1/8	84.1 3 5/16	92.1 3 5/8	8	19.05 3/4	127 5	3.3 7.3
2 1/2"	190.5 7 1/2	76.2 3.00	25.4 1	38.1 1 1/2	31.7 1 1/4	100.0 3 15/16	104.8 4 1/8	8	22.2 7/8	149.2 5 7/8	4.6 10.1
3"	209.5 8 1/4	92.2 3.63	28.6 1 1/8	42.9 1 11/16	31.7 1 1/4	117.5 4 5/8	127 5	8	22.2 7/8	168.3 6 5/8	6.3 13.91
3 1/2"	228.6 9	104.9 4.13	30.2 1 3/16	44.4 1 3/4	36.5 1 7/16	133.35 5 1/4	139.7 5 1/2	8	22.2 7/8	184.15 7 1/4	7.8 17.2
4"	254.0 10	117.6 4.63	31.8 1 1/4	47.6 1 7/8	36.5 1 7/16	146.05 5 3/4	157.2 6 3/16	8	22.2 7/8	200 7 7/8	10.2 22.4
5"	279.4 11	144.5 5.69	34.9 1 3/8	50.8 2	42.9 1 11/16	177.8 7	185.7 7 5/16	8	22.2 7/8	234.9 9 1/4	12.9 28.4
6"	317.5 12 1/2	171.45 6.75	36.5 1 7/16	52.4 2 1/16	46 2 1/16	206.4 8 1/8	215.9 8 1/2	12	22.2 7/8	269.9 10 5/8	17.7 39
8"	381.0 15	222.25 8.75	41.3 1 5/8	61.9 2 7/16	50.8 2	260.35 10 1/4	269.9 10 5/8	12	25.4 1	330.2 13	26 57.2
10"	444.5 17 1/2	276.35 10.88	47.6 1 7/8	66.7 2 5/8	55.6 2 3/16	320.7 12 5/8	323.8 12 3/4	16	28.6 1 1/8	387.3 15 1/4	37.5 82.5
12"	520.7 20 1/2	328.7 12.94	50.8 2	73.0 2 7/8	60.3 2 3/8	374.6 14 3/4	381 15	16	31.7 1 1/4	450.8 17 3/4	37.5 82.5
14"	584.2 23	360.4 14.19	54.0 2 1/8	76.2 3	63.5 2 1/2	425.4 16 3/4	412.7 16 1/4	20	31.7 1 1/4	514.3 20 3/4	74.8 190
16"	647.7 25 1/2	411.2 16.19	57.2 2 1/4	82.5 3 1/4	68.3 2 11/16	482.6 19	469.9 18 1/2	20	34.9 1 3/8	571.5 22 1/2	86.2 165
18"	711.2 28	462.0 18.19	60.3 2 3/8	88.9 3 1/2	69.8 2 3/4	533.4 21	533.4 21	24	34.9 1 3/8	628.6 24 3/4	113 250
20"	774.7 30 1/2	512.8 20.19	63.5 2 1/2	95.2 3 3/4	73.0 2 7/8	587.4 23 1/8	584.2 23	24	34.9 1 3/8	685.8 27	143 315
24"	914.4 36	614.4 24.19	69.9 2 3/4	106.4 4 3/16	82.5 3 1/4	701.7 27 5/8	692.1 27 1/4	24	41.3 1 5/8	812.8 32	215 475



SMART SOLUTIONS

BRIDAS

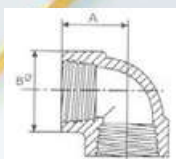


BRIDAS DE ACERO AL CARBÓN ANSI 300 LBS. / SOCKET WELD (S.W.)

ASME/ANSI B 16.5

Nominal pipe size	Flange Brida					Cuello	Resalte					Approx. weight
	D mm. inches	C mm. inches	j mm. inches	x mm. inches	b mm. inches	h mm. inches	m mm. inches	g mm. inches	Number	l mm. inches	k mm. inches	Pounds
1/4"	95.2 3 3/4	9.1 0.36	14.7 0.58	9.5 3/8	14.3 9/16	22.2 7/8	38.1 1 1/2	34.9 1 3/8	4	15.9 5/8	66.7 2 5/8	0.5 1.1
3/8"	95.2 3 3/4	12.4 0.49	18.3 0.72	9.5 3/8	14.3 9/16	22.2 7/8	38.1 1 1/2	34.9 1 3/8	4	15.9 5/8	66.7 2 5/8	0.6 1.3
1/2"	95.2 3 3/4	15.7 0.62	22.35 0.88	9.5 3/8	14.3 9/16	22.2 7/8	38.1 1 1/2	34.9 1 3/8	4	15.9 5/8	66.7 2 5/8	0.7 1.5
3/4"	117.5 4 5/8	20.8 0.82	27.7 1.09	11.1 7/16	15.9 5/8	25.4 1	47.9 1 7/8	42.9 1 11/16	4	19.05 3/4	82.5 3 1/4	1.2 2.6
1"	123.8 4 7/8	26.7 1.05	34.5 1.36	12.7 1/2	17.5 11/16	27 1 1/16	54 2 1/8	50.8 2	4	19.05 3/4	88.9 3 1/2	1.4 3.1
1 1/4"	133.35 5 1/4	35.05 1.38	43.2 1.70	14.3 9/16	19.05 3/4	27 1 1/16	63.5 2 1/2	63.5 2 1/2	4	19.05 3/4	98.4 3 7/8	1.9 4.2
1 1/2"	155.6 6 1/8	40.9 1.61	49.5 1.95	15.9 5/8	20.6 13/16	30.2 1 3/16	69.8 2 3/4	73 2 7/8	4	22.2 7/8	114.3 4 1/2	2.8 6.2
2"	165.1 6 1/2	52.6 2.07	62 2.44	17.5 11/16	22.2 7/8	33.3 1 5/16	84.1 3 5/16	92.1 3 5/8	8	19.05 3/4	127 5	3.3 7.3
2 1/2"	190.5 7 1/2	62.7 2.47	74.7 2.94	19.05 3/4	25.4 1	38.1 1 1/2	100 3 15/16	104.8 4 1/8	8	22.2 7/8	149.2 5 7/8	4.6 10.1
3"	209.5 8 1/4	78.0 3.07	90.7 3.57	20.6 13/16	28.6 1 1/8	42.9 1 11/16	117.5 4 5/8	127 5	8	22.2 7/8	168.3 6 5/8	6.3 13.9
3 1/2"	228.6 9	90.2 3.55	103.4 4.07	22.2 7/8	30.2 1 3/16	44.4 1 3/4	133.35 5 1/4	139.7 5 1/2	8	22.2 7/8	184.15 7 1/4	7.8 17.2
4"	254 10	102.4 4.03	116.1 4.57	23.8 15/16	31.8 1 1/4	47.6 1 7/8	146.05 5 3/4	157.2 6 3/16	8	22.2 7/8	200 7 7/8	10.2 22.4

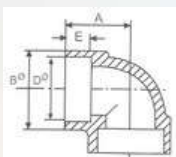
SMART SOLUTIONS



Codo 90° (Roscado)

ASME/ANSI B 16.11

NW	3,000 Lbs.			6,000 Lbs.		
	A	Bø	Weight Peso	A	Bø	Weight Peso
Pulg.	mm.	mm.	kg%	mm.	mm.	kg%
1/4"	24.5	25.5	14	28.5	33.5	30
3/8"	28.5	33.5	27	33.5	38	45.5
1/2"	33.5	38	41.5	38	46	72
3/4"	38	46	65	44.5	55.5	115.5
1"	44.5	55.5	103.5	51	62	161.5
1 1/4"	51	62	130.5	60.5	75.5	267
1 1/2"	60.5	75.5	221.5	63.5	84	320.5
2"	63.5	84	247	86	110	794
2 1/2"	86	110	734	95.5	120.5	985
3"	95.5	120.5	778	114.5	152.5	1,800
4"	114.5	152.5	1,328	---	---	---



Codo 90° (SW)

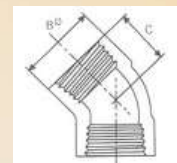
ASME/ANSI B 16.11

NW	3,000 Lbs.					6,000 Lbs.				
	A	Bø	Dø	E	Weight Peso	A	Bø	Dø	E	Weight Peso
Pulg.	mm.	mm.	mm.	mm.	kg%	mm.	mm.	mm.	mm.	kg%
1/4"	24.5	25.5	14	13.5	12	---	---	---	---	---
3/8"	24.5	25.5	17.5	11	10.4	---	---	---	---	---
1/2"	28.5	33.5	21.5	12.5	21.8	33.5	38	21.7	14.5	40
3/4"	33.5	38	27.1	14.5	30.8	38	46	27.1	16	62.1
1"	38	46	33.8	16	46.7	44.5	55.5	33.8	17.5	102.1
1 1/4"	44.5	55.5	42.6	17.5	67.1	51	62	42.6	19	132.1
1 1/2"	51	62	48.7	19	90.2	60.5	75.5	48.7	22	237
2"	60.5	75.5	61.1	22	136.1	63.5	84	61.1	22	272.4
2 1/2"	76	92	73.8	34.5	280	86	110	73.8	30	580
3"	86	110	89.8	29	440	95.5	120.5	89.8	32	840
4"	114.5	152.5	115.4	48	1,330	114.5	152.5	115.4	35	1,580



SMART SOLUTIONS

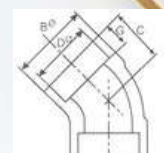
CONEXIONES DE ALTA PRESION ACERO AL CARBON e inoxidable



Codo 45° (Roscado)

ASME/ANSI B 16.11

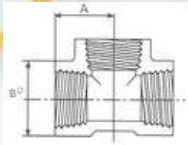
NW	3,000 Lbs.			6,000 Lbs.		
	Bø	C	Weight Peso	Bø	C	Weight Peso
Pulg.	mm.	mm.	kg%	mm.	mm.	kg%
1/4"	25.5	19	11.5	38	25.5	40.5
3/8"	38	25.5	36.5	38	25.5	38.5
1/2"	38	25.5	34	46	28.5	61
3/4"	46	28.5	53.5	55.5	33.5	102
1"	55.5	33.5	92	62	35	117.5
1 1/4"	62	35	96.5	75.5	43	207
1 1/2"	75.5	43	183.5	84	43.5	261
2"	84	43.5	193	101.5	52.5	437
2 1/2"	101.5	52.5	346	120.5	63.5	700
3"	120.5	63.5	545	152.5	79.5	1.416
4"	152.5	79.5	950	----	----	----



Codo 45° (SW)

ASME/ANSI B

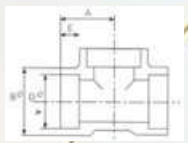
NW	3,000 Lbs.					6,000 Lbs.				
	Bø	C	Dø	G	Weight Peso	Bø	C	Dø	G	Weight Peso
Pulg.	mm.	mm.	mm.	mm.	kg%	mm.	mm.	mm.	mm.	kg%
1/4"	25.5	19	14	9.5	9.5	----	----	----	----	----
3/8"	25.5	19	17.5	11	9	----	----	----	----	----
1/2"	38	25.5	21.5	11	26	38	25.5	21.7	12.5	31
3/4"	38	25.5	27.1	12.5	25	46	28.5	27.1	14.5	52
1"	46	28.5	33.8	14.5	38.1	55.5	33.5	33.8	16	92
1 1/4"	55.5	33.5	42.6	16	60.8	62	35	42.6	14.5	102
1 1/2"	62	35	48.7	16	70.8	75.5	43	48.7	17.5	191.5
2"	75.5	43	61.1	17.5	113.5	84	43.5	61.1	15	228.5
2 1/2"	101.5	52.5	73.8	24	336	101.5	52.5	73.8	20.5	404
3"	118	63.5	89.8	32	470	118	63.5	89.8	28.5	580
4"	146	79.5	115.4	38	900	146	79.5	115.4	38	1,065



TEE (Roscado)

ASME/ANSI B 16.11

NW	3,000 Lbs.			6,000 Lbs.		
	A	Bø	Weight Peso	A	Bø	Weight Peso
Pulg.	mm.	mm.	kg%	mm.	mm.	kg%
1/4"	24.5	25.5	19.5	28.5	33.5	41.5
3/8"	28.5	33.5	38	33.5	38	62.5
1/2"	33.5	38	56	38	46	98
3/4"	38	46	84	44.5	55.5	164.5
1"	44.5	55.5	136	51	62	219
1 1/4"	51	62	164.5	60.5	75.5	331.5
1 1/2"	60.5	75.5	310	63.5	84	442.5
2"	63.5	84	317.5	86	110	850
2 1/2"	86	110	880	95.5	120.5	1,310
3"	95.5	120.5	950	114.5	152.5	2,400
4"	114.5	152.5	1,720	---	---	---



TEE (SW)

ASME/ANSI B 16.11

NW	3,000 Lbs.					6,000 Lbs.				
	A	Bø	Dø	G	Weight Peso	Bø	C	Dø	G	Weight Peso
Pulg.	mm.	mm.	mm.	mm.	kg%	mm.	mm.	mm.	mm.	kg%
1/4"	25.5	25.5	14	13.5	15.5	---	---	---	---	---
3/8"	24.5	25.5	17.5	11	14.1	---	---	---	---	---
1/2"	28.5	33.5	21.7	12.5	30.8	33.5	38	21.7	14.5	52.6
3/4"	33.5	38	27.1	14.5	38.6	38	46	27.1	16	88.1
1"	38	46	33.8	16	60.8	44.5	55.5	33.8	17.5	144
1 1/4"	44.5	55.5	42.6	17.5	93.1	51	62	42.6	19	179.3
1 1/2"	51	62	48.7	19	123.8	60.5	75.5	48.7	22	324
2"	60.5	75.5	61.1	22	191.1	63.5	84	61.1	22	350.5
2 1/2"	76	92	73.8	34.5	370	86	110	73.8	30	880
3"	86	110	89.8	29	550	95.5	120.5	89.8	32	1,050
4"	114.5	152.5	115.4	48	1,900	114.5	152.5	115.4	35	2,220

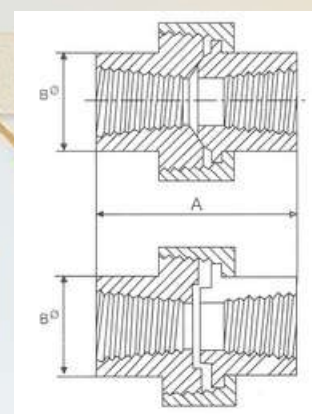


SMART SOLUTIONS

CONEXIONES DE ALTA PRESION ACERO AL CARBON e inoxidable

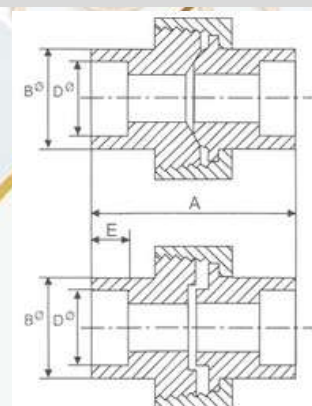
Tuerca de unión (Roscado)

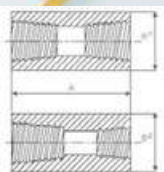
NW	Pulg.	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
3,000 Lbs.	A/mm	45	45	51	57	64	71	79	90
	B Oct/mm	26*	26*	30	36.5	44.6	55*	60.5	73.6
	Weight= kg% Peso	14	20	35	42.5	65	97.5	125.5	201



Tuerca de unión (SW)

NW	Pulg.	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
3,000 Lbs.	A/mm	45	45	47.5	57	64	71	79	90
	B Oct/mm	26*	26*	30.7	36.5	44.6	55*	60.5	73.6
	Dø/mm	17.5	17.5	21.7	27.4	34.1	42.6	49	61.1
	E/mm	11	11	13	14.5	16	17.5	19	22.2
	Weight= kg% Peso	22.5	34	39	48	66	115	142	245

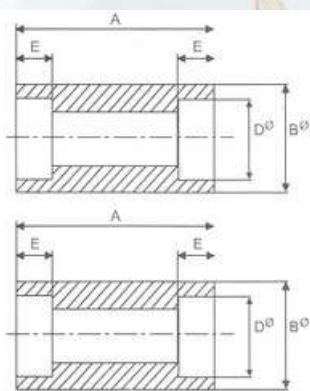




COPLE (Roscado)

ASME/ANSI B 16.11

NW	Pulg.	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
3,000 Lbs.	A/mm	35	38	47.5	51	60.5	66.5	79	85.5	92	108	120.5
	Dø/mm	19	22	29	35	44.5	57	63.5	76	92	108	140
	Weight Peso = kg%	4.5	5.9	12.7	19.1	38.6	68	99.3	137	207	308	544
6,000 Lbs.	A/mm	35	38	47.5	51	60.5	66.5	79.5	85.5	92	108	120.5
	Dø/mm	25.5	32	38	44.5	57	63.5	76	92	108	127	159
	Weight Peso = kg%	6.3	18.1	31.2	40.8	85.2	105	181	340	419	610	1,030



COPLE (SW)

ASME/ANSI B 16.11

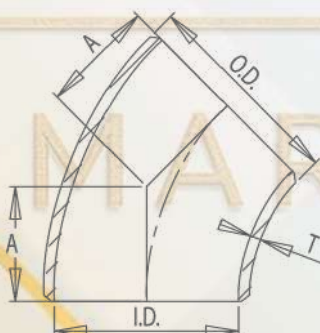
NW	3,000 Lbs.					6,000 Lbs.				
	A	Bø	Dø	E	Weight Peso	A	Bø	Dø	E	Weight Peso
Pulg.	mm.	mm.	mm.	mm.	kg%	mm.	mm.	mm.	mm.	kg%
1/4"	26.5	22	14	10	5	----	----	----	----	----
3/8"	24.9	25.5	17.5	10	6.4	----	----	----	----	----
1/2"	28.2	31.5	21.5	10	12.7	28.2	38	21.7	10	23.2
3/4"	34.2	38	27.1	13	18.6	34.2	44.5	27.1	13	32
1"	36.2	44.5	33.8	13	26.3	36.2	57	33.8	13	63.6
1 1/4"	36.2	57	42.6	13	47.7	36.2	63.5	42.6	13	72.2
1 1/2"	36.2	63.5	48.7	13	56.8	36.2	76	48.7	13	117.2
2"	48.6	76	61.1	16	92.2	48.6	92	61.1	16	207.9
2 1/2"	47.6	92	73.8	16	140	47.6	108	73.8	16	280
3"	47.6	108	89.8	16	180	47.6	127	89.8	16	323
4"	53.8	140	115.4	19.1	323	53.8	159	115.4	19.1	622

CONEXIONES ACERO AL CARBÓN WPB - A 234

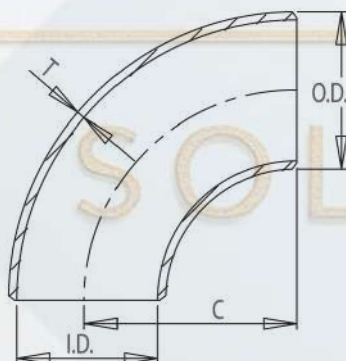
CODO 90° RADIO LARGO

Diámetro		Estándar			Reforzado		
Nominal	Exterior	Diámetro Interior	Espesor de Pared	Peso por Kgs.	Diámetro Interior	Espesor de Pared	Peso por Kgs.
1"	1.315	1.049	0.133	0.18	0.957	0.179	0.22
1 1/4"	1.660	1.380	0.140	0.25	1.278	0.191	0.36
1 1/2"	1.900	1.610	0.145	0.36	1.500	0.200	0.54
2"	2.375	2.067	0.154	0.73	1.939	0.218	0.95
2 1/2"	2.875	2.469	0.203	1.45	2.323	0.276	1.72
3"	3.500	3.068	0.216	2.18	2.900	0.300	2.86
4"	4.500	4.026	0.237	4.04	3.826	0.337	5.67
5"	5.563	5.047	0.258	6.85	4.813	0.375	9.62
6"	6.625	6.065	0.280	10.89	5.761	0.432	15.60
8"	8.625	7.981	0.322	21.70	7.625	0.500	32.27
10"	10.75	10.02	0.365	37.86	9.750	0.500	50.39
12"	12.75	12.00	0.375	55.84	11.75	0.500	71.73
14"	14.00	13.25	0.375	70.37	13.00	0.500	97.25
16"	16.00	15.25	0.375	93.52	15.00	0.500	122.58
18"	18.00	17.25	0.375	119.00	17.00	0.500	158.00
20"	20.00	19.25	0.375	147.00	19.00	0.500	194.00
24"	24.00	23.25	0.375	212.00	23.00	0.500	282.00

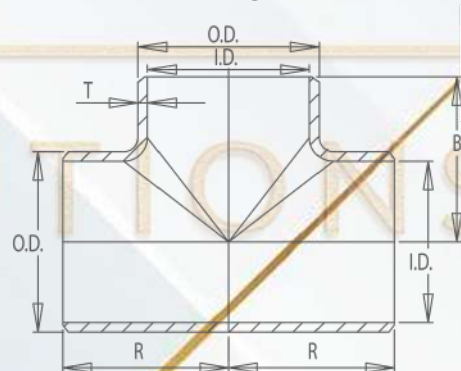
CODO 45° RADIO LARGO



CODO 90° RADIO LARGO



TEE RECTA

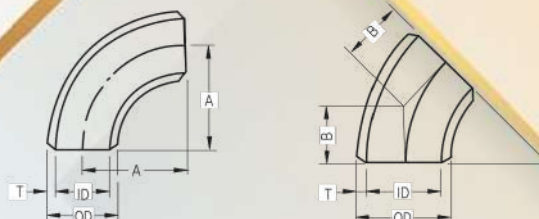


TEE (STRAIGHT)

90° Elbow (Long, Short)

45° Elbow (Long)

STD, Sch40, X-S, Sch80, Sch160, XX-S



Nominal Pipe Size	Outside Diameter O.D	Center to End			STD		Sch40		X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
		Long		Short	T	I.D	T	I.D	T	I.D	T	I.D	T	I.D			
		A	B	A													
1/2	0.840	1.50	0.62		0.109	0.622	0.109	0.622	0.147	0.546	0.147	0.546	0.188	0.464	0.294	0.252	1/2
3/4	1.050	1.50	0.75		0.113	0.824	0.113	0.824	0.154	0.742	0.154	0.742	0.219	0.612	0.308	0.434	3/4
1	1.315	1.50	0.88	1.00	0.133	1.049	0.133	1.049	0.179	0.957	0.179	0.957	0.250	0.815	0.358	0.599	1
1- 1/4	1.660	1.88	1.00	1.25	0.140	1.380	0.140	1.380	0.191	1.278	0.191	1.278	0.250	1.160	0.382	0.896	1- 1/4
1- 1/2	1.900	2.25	1.12	1.50	0.145	1.610	0.145	1.610	0.200	1.500	0.200	1.500	0.281	1.338	0.400	1.100	1- 1/2
2	2.375	3.00	1.38	2.00	0.154	2.067	0.154	2.067	0.218	1.939	0.218	1.939	0.344	1.687	0.436	1.503	2
2- 1/2	2.875	3.75	1.75	2.50	0.203	2.469	0.203	2.469	0.276	2.323	0.276	2.323	0.375	2.125	0.552	1.771	2- 1/2
3	3.500	4.25	2.00	3.00	0.216	3.068	0.216	3.068	0.300	2.900	0.300	2.900	0.438	2.624	0.600	2.800	3
3- 1/2	4.000	5.25	2.25	3.50	0.226	3.548	0.226	3.548	0.318	3.364	0.318	3.364					3- 1/2
4	4.500	6.00	2.50	4.00	0.237	4.026	0.237	4.026	0.337	3.826	0.337	3.826	0.531	3.438	0.674	3.152	4
5	5.563	7.50	3.12	5.00	0.258	5.047	0.258	5.047	0.375	4.813	0.375	4.813	0.625	4.313	0.750	4.063	5
6	6.625	9.00	3.75	6.00	0.280	6.065	0.280	6.065	0.432	5.761	0.432	5.761	0.719	5.187	0.864	4.897	6
8	8.625	12.00	5.00	8.00	0.322	7.981	0.322	7.981	0.500	7.625	0.500	7.625	0.906	6.813	0.875	6.875	8
10	10.750	15.00	6.25	10.00	0.365	10.020	0.365	10.020	0.500	9.750	0.500	9.750	1.125	8.500	1.000	8.750	10
12	12.750	18.00	7.50	12.00	0.375	12.000	0.406	11.938	0.500	11.750	0.688	11.374	1.312	10.126	1.000	10.750	12
14	14.000	21.00	8.75	14.00	0.375	13.250	0.438	13.124	0.500	13.000	0.750	12.500	1.406	11.188			14
16	16.000	24.00	10.00	16.00	0.375	15.250	0.500	15.000	0.500	15.000	0.844	14.312	1.594	12.812			16
18	18.000	27.00	11.25	18.00	0.375	17.250	0.562	16.876	0.500	17.000	0.938	16.124	1.781	14.438			18
20	20.000	30.00	12.50	20.00	0.375	19.250	0.594	18.812	0.500	19.000	1.031	17.938	1.969	16.062			20
22	22.000	33.00	13.50	22.00	0.375	21.250			0.500	21.000	1.125	19.750	2.125	17.750			22
24	24.000	36.00	15.00	24.00	0.375	23.250	0.688	22.624	0.500	23.000	1.219	21.562	2.344	19.312			24
26	26.000	39.00	16.00		0.375	25.250			0.500	25.000							26
28	28.000	42.00	17.25		0.375	27.250			0.500	27.000							28
30	30.000	45.00	18.50		0.375	29.250			0.500	29.000							30
32	32.000	48.00	19.75		0.375	31.250	0.688	30.624	0.500	31.000							32

CODO 45° RADIO LARGO

Diámetro		Estándar			Reforzado		
Nominal	Exterior	Diámetro Interior	Espesor de Pared	Peso por Kgs.	Diámetro Interior	Espesor de Pared	Peso por Kgs.
1"	1.315	1.049	0.133	0.10	0.957	0.179	0.13
1 1/4"	1.660	1.380	0.140	0.15	1.278	0.191	0.20
1 1/2"	1.900	1.610	0.145	0.20	1.500	0.200	0.28
2"	2.375	2.067	0.154	0.39	1.939	0.218	0.54
2 1/2"	2.875	2.469	0.203	0.77	2.323	0.276	0.91
3"	3.500	3.068	0.216	1.13	2.900	0.300	1.50
4"	4.500	4.026	0.237	2.04	3.826	0.337	2.81
5"	5.563	5.047	0.258	3.40	4.813	0.375	4.76
6"	6.625	6.065	0.280	5.31	5.761	0.432	7.71
8"	8.625	7.981	0.322	10.57	7.625	0.500	15.56
10"	10.75	10.02	0.365	18.75	9.750	0.500	24.29
12"	12.75	12.00	0.375	27.88	11.75	0.500	35.23
14"	14.00	13.25	0.375	35.46	13.00	0.500	45.40
16"	16.00	15.25	0.375	45.85	15.00	0.500	60.84
18"	18.00	17.25	0.375	60.00	17.00	0.500	79.00
20"	20.00	19.25	0.375	74.00	19.00	0.500	97.00
24"	24.00	23.25	0.375	106.00	23.00	0.500	141.00

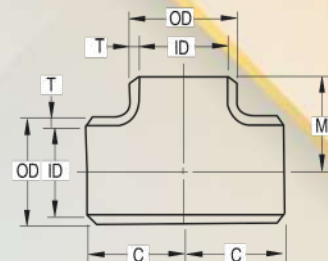
TEE RECTA

Diámetro		Estándar			Reforzado		
Nominal	Exterior	Diámetro Interior	Espesor de Pared	Peso por Kgs.	Diámetro Interior	Espesor de Pared	Peso por Kgs.
2"	2.375	2.067	0.154	1.43	1.939	0.218	1.87
2 1/2"	2.875	2.469	0.203	2.68	2.323	0.276	3.08
3"	3.500	3.068	0.216	3.82	2.900	0.300	4.50
3 1/2"	4.000	3.548	0.226	5.18	3.364	0.318	6.17
4"	4.500	4.026	0.237	5.99	3.826	0.337	8.44
5"	5.563	5.047	0.258	9.94	4.813	0.375	12.93
6"	6.625	6.065	0.280	16.47	5.761	0.432	19.30
8"	8.625	7.981	0.322	27.69	7.625	0.500	34.50
10"	10.75	10.02	0.365	41.31	9.750	0.500	58.57
12"	12.75	12.00	0.375	66.74	11.75	0.500	84.90
14"	14.00	13.25	0.375	102.60	13.00	0.500	127.12
16"	16.00	15.25	0.375	109.87	15.00	0.500	167.53
18"	18.00	17.25	0.375	151.00	17.00	0.500	193.00
20"	20.00	19.25	0.375	229.00	19.00	0.500	265.00
24"	24.00	23.25	0.375	347.00	23.00	0.500	424.00

TEE (RECTA)

WPB - A234

STD, Sch40, X-S, Sch80, Sch160, XX-S



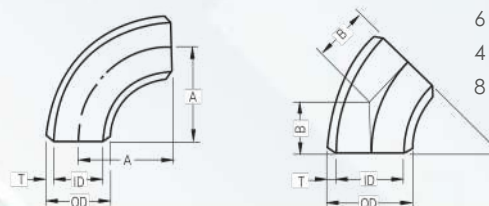
ASME B16.9

(Unit : inch)

Nominal Pipe Size	Outside Diameter O.D	Center to End		STD		Sch40		X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
		Run	Outlet	M	T	I.D	T	I.D	T	I.D	T	I.D	T	I.D	T	
36																3
38	36.000	26.50	26.50	0.375	35.250	0.750	34.500	0.500	35.000							6
40	38.000	28.00	28.00	0.375	37.250			0.500	37.000							3
42	40.000	29.50	29.50	0.375	39.250			0.500	39.000							8
44	42.000	30.00	28.00	0.375	41.250			0.500	41.000							4
46	44.000	32.00	30.00	0.375	43.250			0.500	43.000							0
48	46.000	33.50	31.50	0.375	45.250			0.500	45.000							4
	48.000	35.00	33.00	0.375	47.250			0.500	47.000							2

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394~421
- Wall Thickness Conform to ASME B 36.10M Specifications

90° Elbow (Radio Corto) 45° Elbow (Radio Largo) STD, Sch40, X-S, Sch80, Sch160, XX-S



ASME B16.9

(Unit : inch)

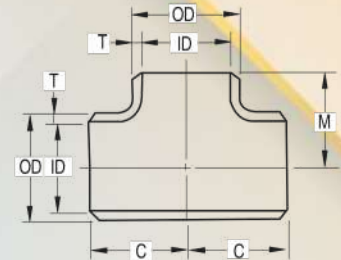
Nominal Pipe Size	Outside Diameter O.D	Center to End			STD		Sch40		X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
		Long		Short	T	I.D	T	I.D	T	I.D	T	I.D	T	I.D	T	I.D	
		A	B	A													
34	34.000	51.00	21.00		0.375	33.250	0.688	32.624	0.500	33.000							34
36	36.000	54.00	22.25		0.375	35.250	0.750	34.500	0.500	35.000							36
38	38.000	57.00	23.62		0.375	37.250			0.500	37.000							38
40	40.000	60.00	24.88		0.375	39.250			0.500	39.000							40
42	42.000	63.00	26.00		0.375	41.250			0.500	41.000							42
44	44.000	66.00	27.38		0.375	43.250			0.500	43.000							44
46	46.000	69.00	28.62		0.375	45.250			0.500	45.000							46
48	48.000	72.00	29.88		0.375	47.250			0.500	47.000							48

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394~421
- Wall Thickness Conform to ASME B 36.10M Specifications

TEE (RECTA)

WPB - A234

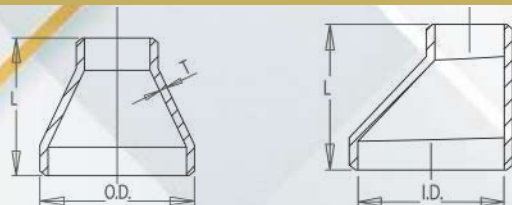
STD, Sch40, X-S, Sch80, Sch160, XX-S



(Unit : inch)

Nominal Pipe Size	Outside Diameter O.D	Center to End		STD		Sch40	
		Run C	Outlet M	T	I.D	T	I.D
1/2	0.840	1.00	1.00	0.109	0.622	0.109	0.622
3/4	1.050	1.12	1.12	0.113	0.824	0.113	0.824
1	1.315	1.50	1.50	0.133	1.049	0.133	1.049
1-1/4	1.660	1.88	1.88	0.140	1.380	0.140	1.380
1-1/2	1.900	2.25	2.25	0.145	1.610	0.145	1.610
2	2.375	2.50	2.50	0.154	2.067	0.154	2.067
2-1/2	2.875	3.00	3.00	0.203	2.469	0.203	2.469
3	3.500	3.38	3.38	0.216	3.068	0.216	3.068
3-1/2	4.000	3.75	3.75	0.226	3.548	0.226	3.548
4	4.500	4.12	4.12	0.237	4.026	0.237	4.026
5	5.563	4.88	4.88	0.258	5.047	0.258	5.047
6	6.625	5.62	5.62	0.280	6.065	0.280	6.065
8	8.625	7.00	7.00	0.322	7.981	0.322	7.981
10	10.750	8.50	8.50	0.365	10.020	0.365	10.020
12	12.750	10.00	10.00	0.375	12.000	0.406	11.938
14	14.000	11.00	11.00	0.375	13.250	0.438	13.124
16	16.000	12.00	12.00	0.375	15.250	0.500	15.000
18	18.000	13.50	13.50	0.375	17.250	0.562	16.876
20	20.000	15.00	15.00	0.375	19.250	0.594	18.812
22	22.000	16.50	16.50	0.375	21.250		
24	24.000	17.00	17.00	0.375	23.250	0.688	22.624
26	26.000	19.50	19.50	0.375	25.250		
28	28.000	20.50	20.50	0.375	27.250		
30	30.000	22.00	22.00	0.375	29.250		
32	32.000	23.50	23.50	0.375	31.250	0.688	30.624
34	34.000	25.00	25.00	0.375	33.250	0.688	32.624

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T	I.D	T	I.D	T	I.D	T	I.D	
0.147	0.546	0.147	0.546	0.188	0.464	0.294	0.252	1/2
0.154	0.742	0.154	0.742	0.219	0.612	0.308	0.434	3/4
0.179	0.957	0.179	0.957	0.250	0.815	0.358	0.599	1
0.191	1.278	0.191	1.278	0.250	1.160	0.382	0.896	1-1/4
0.200	1.500	0.200	1.500	0.281	1.338	0.400	1.100	1-1/2
0.218	1.939	0.218	1.939	0.344	1.687	0.436	1.503	2
0.276	2.323	0.276	2.323	0.375	2.125	0.552	1.771	2-1/2
0.300	2.900	0.300	2.900	0.438	2.624	0.600	2.300	3
0.318	3.364	0.318	3.364					3-1/2
0.337	3.826	0.337	3.826	0.531	3.438	0.674	3.152	4
0.375	4.813	0.375	4.813	0.625	4.313	0.750	4.063	5
0.432	5.761	0.432	5.761	0.719	5.187	0.864	4.897	6
0.500	7.625	0.500	7.625	0.906	6.813	0.875	6.875	8
0.500	9.750	0.594	9.562	1.125	8.500	1.000	8.750	10
0.500	11.750	0.688	11.374	1.312	10.126	1.000	10.750	12
0.500	13.000	0.750	12.500	1.406	11.188			14
0.500	15.000	0.844	14.312	1.594	12.812			16
0.500	17.000	0.938	16.124	1.781	14.438			18
0.500	19.000	1.031	17.938	1.969	16.062			20
0.500	21.000	1.125	19.750	2.125	17.750			22
0.500	23.000	1.219	21.562	2.344	19.312			24
0.500	25.000							26
0.500	27.000							28
0.500	29.000							30
0.500	31.000							32
0.500	33.000							34

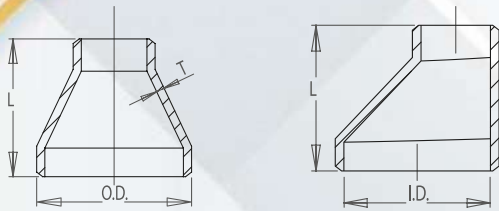


REDUCCIONES CONCENTRICAS Y EXCENTRICAS C-40

WPB - A234

Tamaño del tubo	DIAMETRO GRANDE			DIAMETRO PEQUEÑO			Largo	Nro. de cédula del tubo	Peso aprox. en kilogramos
	Diámetro exterior	Diámetro interior	Espesor de la pared	Diámetro exterior	Diámetro interior	Espesor de la pared			
NPS	O.D.	I.D.	T	O.D.	I.D.	T	L		
1/4 x 1/4	26.7	20.96	2.87	21.3	15.76	2.77	38	40	0.10
1 x 1/4	33.4	26.64	3.38	26.7	20.96	2.87	51	40	0.16
1 x 1/2	33.4	26.64	3.38	21.3	15.76	2.77	51	40	0.16
1 1/4 x 1	42.2	35.08	3.56	33.4	26.64	3.38	51	40	0.22
1 1/4 x 3/4	42.2	35.08	3.56	26.7	20.96	2.87	51	40	0.19
1 1/4 x 1/2	42.2	35.08	3.56	21.3	15.76	2.77	51	40	0.19
1 1/2 x 1 1/4	48.3	40.94	3.68	42.2	35.08	3.56	64	40	0.29
1 1/2 x 1	48.3	40.94	3.68	33.4	26.64	3.38	64	40	0.26
1 1/2 x 3/4	48.3	40.94	3.68	26.7	20.96	2.87	64	40	0.25
1 1/2 x 1/2	48.3	40.94	3.68	21.3	15.76	2.77	64	40	0.25
2 x 1 1/2	60.3	52.48	3.91	48.3	40.94	3.68	76	40	0.43
2 x 1 1/4	60.3	52.48	3.91	42.2	35.08	3.56	76	40	0.40
2 x 1	60.3	52.48	3.91	33.4	26.64	3.38	76	40	0.37
2 x 3/4	60.3	52.48	3.91	26.7	20.96	2.87	76	40	0.34
2 1/2 x 2	73.0	62.68	5.16	60.3	52.48	3.91	89	40	0.73
2 1/2 x 1 1/2	73.0	62.68	5.16	48.3	40.94	3.68	89	40	0.68
2 1/2 x 1 1/4	73.0	62.68	5.16	42.2	35.08	3.56	89	40	0.64
2 1/2 x 1	73.0	62.68	5.16	33.4	26.64	3.38	89	40	0.59
3 x 2 1/2	88.9	77.92	5.49	73.0	62.68	5.16	89	40	1.00
3 x 2	88.9	77.92	5.49	60.3	52.48	3.91	89	40	0.91
3 x 1 1/2	88.9	77.92	5.49	48.3	40.94	3.68	89	40	0.86
3 x 1 1/4	88.9	77.92	5.49	42.2	35.08	3.56	89	40	0.82
3 x 1	88.9	77.92	5.49	33.4	26.64	3.38	89	40	0.77
3 1/2 x 3	101.6	90.12	5.74	88.9	77.92	5.49	102	40	1.27
3 1/2 x 2 1/2	101.6	90.12	5.74	73.0	62.68	5.16	102	40	1.22
3 1/2 x 2	101.6	90.12	5.74	60.3	52.48	3.91	102	40	1.18
3 1/2 x 1 1/2	101.6	90.12	5.74	48.3	40.94	3.68	102	40	1.18
3 1/2 x 1 1/4	101.6	90.12	5.74	42.2	35.08	3.56	102	40	1.13
4 x 3 1/2	114.3	102.26	6.02	101.6	90.12	5.74	102	40	1.59
4 x 3	114.3	102.26	6.02	88.9	77.92	5.49	102	40	1.50
4 x 2 1/2	114.3	102.26	6.02	73.0	62.68	5.16	102	40	1.45
4 x 2	114.3	102.26	6.02	60.3	52.48	3.91	102	40	1.41
4 x 1 1/2	114.3	102.26	6.02	48.3	40.94	3.68	102	40	1.36

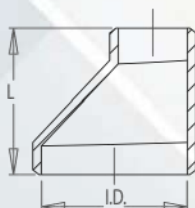
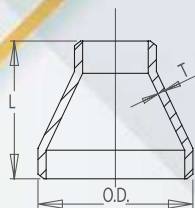
Tamaño del tubo	DIAMETRO GRANDE			DIAMETRO PEQUEÑO			Largo	Nro. de cédula del tubo	Peso aprox. en kilogramos
	Diámetro exterior	Diámetro interior	Espesor de la pared	Diámetro exterior	Diámetro interior	Espesor de la pared			
NPS	O.D.	I.D.	T	O.D.	I.D.	T	L		
4 x 1 1/4	114.3	102.26	6.02	42.16	35.052	3.556	102	40	1.36
4 x 1	114.3	102.26	6.02	33.4	26.64	3.38	102	40	1.27
5 x 4	141.3	128.20	6.55	114.3	102.26	6.02	127	40	2.49
5 x 3 1/2	141.3	128.20	6.55	101.6	90.12	5.74	127	40	2.40
5 x 3	141.3	128.20	6.55	88.9	77.92	5.49	127	40	2.31
5 x 2 1/2	141.3	128.20	6.55	73.0	62.68	5.16	127	40	2.18
5 x 2	141.3	128.20	6.55	60.3	52.48	3.91	127	40	2.13
6 x 5	168.3	154.08	7.11	141.3	128.20	6.55	140	40	3.45
6 x 4	168.3	154.08	7.11	114.3	102.26	6.02	140	40	3.36
6 x 3 1/2	168.3	154.08	7.11	101.6	90.12	5.74	140	40	3.22
6 x 3	168.3	154.08	7.11	88.9	77.92	5.49	140	40	3.13
6 x 2 1/2	168.3	154.08	7.11	73.0	62.68	5.16	140	40	2.99
6 x 2	168.3	154.08	7.11	60.3	52.48	3.91	140	40	2.95
8 x 6	219.1	202.74	8.18	168.3	154.08	7.11	152	40	5.58
8 x 5	219.1	202.74	8.18	141.3	128.20	6.55	152	40	5.22
8 x 4	219.1	202.74	8.18	114.3	102.26	6.02	152	40	4.90
8 x 3 1/2	219.1	202.74	8.18	101.6	90.12	5.74	152	40	4.81
8 x 3	219.1	202.74	8.18	88.9	77.92	5.49	152	40	4.45
10 x 8	273.0	254.46	9.27	219.1	202.74	8.18	178	40	10.02
10 x 6	273.0	254.46	9.27	168.3	154.08	7.11	178	40	9.39
10 x 5	273.0	254.46	9.27	141.3	128.20	6.55	178	40	8.85
10 x 4	273.0	254.46	9.27	114.3	102.26	6.02	178	40	8.35
12 x 10	323.8	304.74	9.53	273.0	254.46	9.27	203	*	14.70
12 x 8	323.8	304.74	9.53	219.1	202.74	8.18	203	*	13.83
12 x 6	323.8	304.74	9.53	168.3	154.08	7.11	203	*	13.38
12 x 5	323.8	304.74	9.53	141.3	128.20	6.55	203	*	12.61
12 x 4	323.8	304.74	9.53	114.3	102.26	6.02	203	*	11.88
14 x 12	355.6	336.54	9.53	323.8	304.74	9.53	330	*	28.62
14 x 10	355.6	336.54	9.53	273.0	254.46	9.27	330	*	27.85
14 x 8	355.6	336.54	9.53	219.1	202.74	8.18	330	*	27.22
14 x 6	355.6	336.54	9.53	168.3	154.08	7.11	330	*	26.85
16 x 14	406.4	387.34	9.53	355.6	336.54	9.53	356	*	34.20
16 x 12	406.4	387.34	9.53	323.8	304.74	9.53	356	*	32.98
16 x 10	406.4	387.34	9.53	273.0	254.46	9.27	356	*	32.25
16 x 8	406.4	387.34	9.53	219.1	202.74	8.18	356	*	31.48
16 x 6	406.4	387.34	9.53	168.3	154.08	7.11	356	*	30.57
18 x 16	457.0	437.94	9.53	406.4	387.34	9.53	381	*	39.60
18 x 14	457.0	437.94	9.53	355.6	336.54	9.53	381	*	39.01
18 x 12	457.0	437.94	9.53	323.8	304.74	9.53	381	*	38.46
18 x 10	457.0	437.94	9.53	273.0	254.46	9.27	381	*	37.97
18 x 8	457.0	437.94	9.53	219.1	202.74	8.18	381	*	37.08
20 x 18	508.0	488.94	9.53	457.0	437.94	9.53	508	*	55.79
20 x 16	508.0	488.94	9.53	406.4	387.34	9.53	508	*	54.88
20 x 14	508.0	488.94	9.53	355.6	336.54	9.53	508	*	53.98



REDUCCIONES CONCENTRICAS Y EXCENTRICAS

WPB - A234

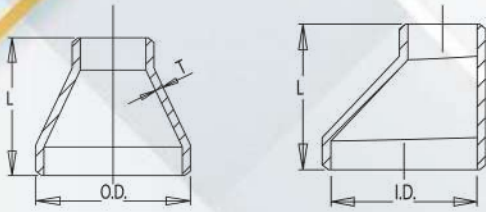
Tamaño del tubo	DIAMETRO GRANDE			DIAMETRO PEQUEÑO			Largo	Nro. de cédula del tubo	Peso aprox. en kilogramos
	Diámetro exterior	Diámetro interior	Espesor de la pared	Diámetro exterior	Diámetro interior	Espesor de la pared			
NPS	O.D.	I.D.	T	O.D.	I.D.	T	L		
20 x 12	508.0	488.94	9.53	323.8	304.74	9.53	508	*	53.52
20 x 10	508.0	488.94	9.53	273.0	254.46	9.27	508	*	53.07
24 x 20	508.0	488.94	9.53	508.0	488.94	9.53	508	*	70.76
24 x 18	610.0	590.94	9.53	457.0	437.94	9.53	508	*	69.40
24 x 16	610.0	590.94	9.53	406.4	387.34	9.53	508	*	68.04
24 x 14	610.0	590.94	9.53	355.6	336.54	9.53	508	*	66.68
24 x 12	610.0	590.94	9.53	323.8	304.74	9.53	508	*	65.32
24 x 10	610.0	590.94	9.53	273.0	254.46	9.27	508	*	63.96
30 x 24	762.0	742.94	9.53	610.0	590.94	9.53	610	*	142.88
30 x 20	762.0	742.94	9.53	508.0	488.94	9.53	610	*	142.88
30 x 18	762.0	742.94	9.53	457.0	437.94	9.53	610	*	142.88
36 x 30	914.0	894.94	9.53	762.0	742.94	9.53	610	*	171.91
36 x 24	914.0	894.94	9.53	610.0	590.94	9.53	610	*	171.91
36 x 20	914.0	894.94	9.53	508.0	488.94	9.53	610	*	171.91
42 x 36	1067.0	1047.94	9.53	914.0	894.94	9.53	610	*	200.94
42 x 30	1067.0	1047.94	9.53	762.0	742.94	9.53	610	*	200.94
42 x 24	1067.0	1047.94	9.53	610.0	590.94	9.53	610	*	200.94
48 x 42	1219.0	1199.94	9.53	1067.0	1047.94	9.53	711	*	238.13
48 x 36	1219.0	1199.94	9.53	914.0	894.94	9.53	711	*	238.13
48 x 30	1219.0	1199.94	9.53	762.0	742.94	9.53	711	*	238.13
48 x 24	1219.0	1200.15	9.53	609.6	590.55	9.53	711	*	238.13



REDUCCIONES CONCENTRICAS Y EXCENTRICAS CXS

WPB - A234

Tamaño del tubo	DIAMETRO GRANDE			DIAMETRO PEQUEÑO			Largo	Nro. de cédula del tubo	Peso aprox. en kilogramos
	Diámetro exterior	Diámetro interior	Espesor de la pared	Diámetro exterior	Diámetro interior	Espesor de la pared			
NPS	O.D.	I.D.	T	O.D.	I.D.	T	L		
¾ x ½	26.7	18.88	3.91	21.3	13.84	3.73	38	80	0.11
1 x ¾	33.4	24.30	4.55	26.7	18.88	3.91	51	80	0.20
1 x ½	33.4	24.30	4.55	21.3	13.84	3.73	51	80	0.19
1 ¼ x 1	42.2	32.50	4.85	33.4	24.30	4.55	51	80	0.26
1 ¼ x ¾	42.2	32.50	4.85	26.7	18.88	3.91	51	80	0.24
1 ¼ x ½	42.2	32.50	4.85	21.3	13.84	3.73	51	80	0.23
1 ½ x 1 ¼	48.3	38.14	5.08	42.2	32.50	4.85	64	80	0.35
1 ½ x 1	48.3	38.14	5.08	33.4	24.30	4.55	64	80	0.33
1 ½ x ¾	48.3	38.14	5.08	26.7	18.88	3.91	64	80	0.29
1 ½ x ½	48.3	38.14	5.08	21.3	13.84	3.73	64	80	0.29
2 x 1 ½	60.3	49.22	5.54	48.3	38.14	5.08	76	80	0.54
2 x 1 ¼	60.3	49.22	5.54	42.2	32.50	4.85	76	80	0.50
2 x 1	60.3	49.22	5.54	33.4	24.30	4.55	76	80	0.45
2 x ¾	60.3	49.22	5.54	26.7	18.88	3.91	76	80	0.43
2 ½ x 2	73.0	58.98	7.01	60.3	49.22	5.54	89	80	0.95
2 ½ x 1 ½	73.0	58.98	7.01	48.3	38.14	5.08	89	80	0.86
2 ½ x 1 ¼	73.0	58.98	7.01	42.2	32.50	4.85	89	80	0.77
2 ½ x 1	73.0	58.98	7.01	33.4	24.30	4.55	89	80	0.68
3 x 2 ½	88.9	73.66	7.62	73.0	58.98	7.01	89	80	1.27
3 x 2	88.9	73.66	7.62	60.3	49.22	5.54	89	80	1.18
3 x 1 ½	88.9	73.66	7.62	48.3	38.14	5.08	89	80	1.09
3 x 1 ¼	88.9	73.66	7.62	42.2	32.50	4.85	89	80	1.04
3 x 1	88.9	73.66	7.62	33.4	24.30	4.55	89	80	1.00
3 ½ x 3	101.6	85.44	8.08	88.9	73.66	7.62	102	80	1.68
3 ½ x 2 ½	101.6	85.44	8.08	73.0	58.98	7.01	102	80	1.59
3 ½ x 2	101.6	85.44	8.08	60.3	49.22	5.54	102	80	1.50
3 ½ x 1 ½	101.6	85.44	8.08	48.3	38.14	5.08	102	80	1.45
3 ½ x 1 ¼	101.6	85.44	8.08	42.2	32.50	4.85	102	80	1.45
4 x 3 ½	114.3	97.18	8.56	101.6	85.44	8.08	102	80	2.22
4 x 3	114.3	97.18	8.56	88.9	73.66	7.62	102	80	2.13
4 x 2 ½	114.3	97.18	8.56	73.0	58.98	7.01	102	80	2.09
4 x 2	114.3	97.18	8.56	60.3	49.22	5.54	102	80	1.95
4 x 1 ½	114.3	97.18	8.56	48.3	38.14	5.08	102	80	1.91



REDUCCIONES CONCENTRICAS Y EXCENTRICAS CXS

WPB - A234

Tamaño del tubo NPS	DIAMETRO GRANDE			DIAMETRO PEQUEÑO			Largo L	Nro. de cédula del tubo	Peso aprox. en kilogramos
	Diámetro exterior O.D.	Diámetro interior I.D.	Espesor de la pared T	Diámetro exterior O.D.	Diámetro interior I.D.	Espesor de la pared T			
4 x 1 1/4	114.3	97.18	8.56	42.2	32.50	4.85	102	80	1.86
4 x 1	114.3	97.18	8.56	33.4	24.30	4.55	102	80	1.81
5 x 4	141.3	122.24	9.53	114.3	97.18	8.56	127	80	3.40
5 x 3 1/2	141.3	122.24	9.53	101.6	85.44	8.08	127	80	3.13
5 x 3	141.3	122.24	9.53	88.9	73.66	7.62	127	80	2.86
5 x 2 1/2	141.3	122.24	9.53	73.0	58.98	7.01	127	80	2.77
5 x 2	141.3	122.24	9.53	60.3	49.22	5.54	127	80	2.72
6 x 5	168.3	146.36	10.97	141.3	122.24	9.53	140	80	5.22
6 x 4	168.3	146.36	10.97	114.3	97.18	8.56	140	80	4.85
6 x 3 1/2	168.3	146.36	10.97	101.6	85.44	8.08	140	80	4.54
6 x 3	168.3	146.36	10.97	88.9	73.66	7.62	140	80	4.40
6 x 2 1/2	168.3	146.36	10.97	73.0	58.98	7.01	140	80	4.13
6 x 2	168.3	146.36	10.97	60.3	49.22	5.54	140	80	3.90
8 x 6	219.1	193.70	12.70	168.3	146.36	10.97	152	80	8.53
8 x 5	219.1	193.70	12.70	141.3	122.24	9.53	152	80	7.98
8 x 4	219.1	193.70	12.70	114.3	97.18	8.56	152	80	7.71
8 x 3 1/2	219.1	193.70	12.70	101.6	85.44	8.08	152	80	7.21
8 x 3	219.1	193.70	12.70	88.9	73.66	7.62	152	80	6.80
10 x 8	273.0	247.60	12.70	219.1	193.70	12.70	178	*	13.34
10 x 6	273.0	247.60	12.70	168.3	146.36	10.97	178	*	12.84
10 x 5	273.0	247.60	12.70	141.3	122.24	9.53	178	*	12.20
10 x 4	273.0	247.60	12.70	114.3	97.18	8.56	178	*	10.98
12 x 10	323.8	298.40	12.70	273.0	247.60	12.70	203	*	18.82
12 x 8	323.8	298.40	12.70	219.1	193.70	12.70	203	*	17.51
12 x 6	323.8	298.40	12.70	168.3	146.36	10.97	203	*	16.96
12 x 5	323.8	298.40	12.70	141.3	122.24	9.53	203	*	16.47
12 x 4	323.8	298.40	12.70	114.3	97.18	8.56	203	*	15.74
14 x 12	355.6	330.20	12.70	323.8	298.40	12.70	330	*	36.74
14 x 10	355.6	330.20	12.70	273.0	247.60	12.70	330	*	34.79
14 x 8	355.6	330.20	12.70	219.1	193.70	12.70	330	*	33.84
14 x 6	355.6	330.20	12.70	168.3	146.36	10.97	330	*	32.79
16 x 14	406.40	381.000	12.700	355.6	330.20	12.70	356	*	44.45

REDUCCIONES CONCENTRICAS Y EXCENTRICAS CXS

WPBa -p rAox2. 3e4n

Tamaño del tubo	DIAMETRO GRANDE			DIAMETRO PEQUEÑO			Largo	Nro. de cédula del tubo	Peso kilogramos
	Diámetro exterior	Diámetro interior	Espesor de la pared	Diámetro exterior	Diámetro interior	Espesor de la pared			
NPS	O.D.	I.D.	T	O.D.	I.D.	T	L		
16 x 12	406.4	381.00	12.70	323.8	298.40	12.70	356	*	43.45
16 x 10	406.4	381.00	12.70	273.0	247.60	12.70	356	*	42.32
16 x 8	406.4	381.00	12.70	219.1	193.70	12.70	356	*	41.32
16 x 6	406.4	381.00	12.70	168.3	146.36	10.97	356	*	40.73
18 x 16	457.0	431.60	12.70	406.4	381.00	12.70	381	*	53.52
18 x 14	457.0	431.60	12.70	355.6	330.20	12.70	381	*	53.07
18 x 12	457.0	431.60	12.70	323.8	298.40	12.70	381	*	52.16
18 x 10	457.0	431.60	12.70	273.0	247.60	12.70	381	*	51.26
18 x 8	457.0	431.60	12.70	219.1	193.70	12.70	381	*	45.36
20 x 18	508.0	482.60	12.70	457.0	431.60	12.70	508	*	73.48
20 x 16	508.0	482.60	12.70	406.4	381.00	12.70	508	*	72.12
20 x 14	508.0	482.60	12.70	355.6	330.20	12.70	508	*	71.21
20 x 12	508.0	482.60	12.70	323.8	298.40	12.70	508	*	70.31
20 x 10	508.0	482.60	12.70	273.0	247.60	12.70	508	*	68.95
24 x 20	610.0	584.60	12.70	508.0	482.60	12.70	508	*	91.17
24 x 18	610.0	584.60	12.70	457.0	431.60	12.70	508	*	89.36
24 x 16	610.0	584.60	12.70	406.4	381.00	12.70	508	*	88.00
24 x 14	610.0	584.60	12.70	355.6	330.20	12.70	508	*	86.18
24 x 12	610.0	584.60	12.70	323.8	298.40	12.70	508	*	85.27
24 x 10	610.0	584.60	12.70	273.0	247.60	12.70	508	*	84.37
30 x 24	762.0	736.60	12.70	610.0	584.60	12.70	610	*	142.88
30 x 20	762.0	736.60	12.70	508.0	482.60	12.70	610	*	142.88
30 x 18	762.0	736.60	12.70	457.0	431.60	12.70	610	*	142.88
36 x 30	914.0	888.60	12.70	762.0	736.60	12.70	610	*	171.91
36 x 24	914.0	888.60	12.70	610.0	584.60	12.70	610	*	171.91
36 x 20	914.0	888.60	12.70	508.0	482.60	12.70	610	*	171.91
42 x 36	1067.0	1041.60	12.70	914.0	888.60	12.70	610	*	200.94
42 x 30	1067.0	1041.60	12.70	762.0	736.60	12.70	610	*	200.94
42 x 24	1067.0	1041.60	12.70	610.0	584.60	12.70	610	*	200.94
48 x 42	1219.0	1193.60	12.70	1067.0	1041.60	12.70	711	*	238.13
48 x 36	1219.0	1193.60	12.70	914.0	888.60	12.70	711	*	238.13
48 x 30	1219.0	1193.60	12.70	762.0	736.60	12.70	711	*	238.13
48 x 24	1219.0	1193.60	12.70	610.0	584.60	12.70	711	*	238.13

CAP

WPB - A234

STD, Sch40, X-S, Sch80, Sch160, XX-S



ASME B16.9

Nominal Pipe Size	Outsid Diameter	Length E	Limiting Thickn for Len	Length EI	STD		Sch40	
					T	I.D.	T	I.D.
1/2	0.840	1.00	0.18	1.00	0.109	0.622	0.109	0.622
3/4	1.050	1.00	0.15	1.00	0.113	0.824	0.113	0.824
1	1.315	1.50	0.18	1.50	0.133	1.049	0.133	1.049
1-1/4	1.660	1.50	0.19	1.50	0.140	1.380	0.140	1.380
1-1/2	1.900	1.50	0.20	1.50	0.145	1.610	0.145	1.610
2	2.375	1.50	0.22	1.75	0.154	2.067	0.154	2.067
2-1/2	2.875	1.50	0.28	2.00	0.203	2.469	0.203	2.469
3	3.500	2.00	0.30	2.50	0.216	3.068	0.216	3.068
3-1/2	4.000	2.50	0.32	3.00	0.226	3.548	0.226	3.548
4	4.500	2.50	0.34	3.00	0.237	4.026	0.237	4.026
5	5.563	3.00	0.38	3.50	0.258	5.047	0.258	5.047
6	6.625	3.50	0.43	4.00	0.280	6.065	0.280	6.065
8	8.625	4.00	0.50	5.00	0.322	7.981	0.322	7.981
10	10.750	5.00	0.50	6.00	0.365	10.020	0.365	10.020
12	12.750	6.00	0.50	7.00	0.375	12.000	0.406	11.938
14	14.000	6.50	0.50	7.50	0.375	13.250	0.438	13.124
16	16.000	7.00	0.50	8.00	0.375	15.250	0.500	15.000
18	18.000	8.00	0.50	9.00	0.375	17.250	0.562	16.876
20	20.000	9.00	0.50	10.00	0.375	19.250	0.594	18.812
22	22.000	10.00	0.50	10.00	0.375	21.250		
24	24.000	10.50	0.50	12.00	0.375	23.250	0.688	22.624
26	26.000	10.50			0.375	25.250		
28	28.000	10.50			0.375	27.250		
30	30.000	10.50			0.375	29.250		
32	32.000	10.50			0.375	31.250	0.688	30.624
34	34.000	10.50			0.375	33.250	0.688	32.624

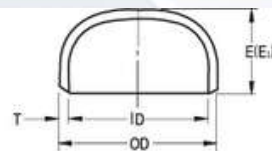
(Unit : inch)

X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T	I.D.	T	I.D.	T	I.D.	T	I.D.	
0.147	0.546	0.147	0.546	0.188	0.464	0.294	0.252	1/2
0.154	0.742	0.154	0.742	0.219	0.612	0.308	0.434	3/4
0.179	0.957	0.179	0.957	0.250	0.815	0.358	0.599	1
0.191	1.278	0.191	1.278	0.250	1.160	0.382	0.896	1-1/4
0.200	1.500	0.200	1.500	0.281	1.338	0.400	1.100	1-1/2
0.218	1.939	0.218	1.939	0.344	1.687	0.436	1.503	2
0.276	2.323	0.276	2.323	0.375	2.125	0.552	1.771	2-1/2
0.300	2.900	0.300	2.900	0.438	3.124	0.600	2.800	3
0.318	3.364	0.318	3.364					3-1/2
0.337	3.826	0.337	3.826	0.531	3.438	0.674	3.152	4
0.375	4.813	0.375	4.813	0.625	4.313	0.750	4.063	5
0.432	5.761	0.432	5.761	0.719	5.187	0.864	4.897	6
0.500	7.625	0.500	7.625	0.906	6.813	0.875	6.875	8
0.500	9.750	0.594	9.750	1.125	8.500	1.000	8.750	10
0.500	11.750	0.688	11.374	1.312	10.126	1.000	10.750	12
0.500	13.000	0.750	12.500	1.406	11.188			14
0.500	15.000	0.844	14.312	1.594	12.812			16
0.500	17.000	0.938	16.124	1.781	14.438			18
0.500	19.000	1.031	17.938	1.969	16.062			20
0.500	21.000	1.125	19.756	2.125	17.750			22
0.500	23.000	1.218	21.579	2.344	19.312			24
0.500	25.000							26
0.500	27.000							28
0.500	29.000							30
0.500	31.000							32
0.500	33.000							34

STD, Sch40, X-S, Sch80, Sch160, XX-S

ASME B16.9

Nominal Pipe Size	Outsid Diameter	Length E	Limiting Thickn for Len	Length EI	STD		Sch40	
					T	I.D.	T	I.D.
36	36.000	10.50			0.375	35.250	0.750	34.500
38	38.000	12.00			0.375	37.250		
40	40.000	12.00			0.375	39.250		
42	42.000	12.00			0.375	41.250		
44	44.000	13.50			0.375	43.250		
46	46.000	13.50			0.375	45.250		
48	48.000	13.50			0.375	47.250		



(Unit : inch)

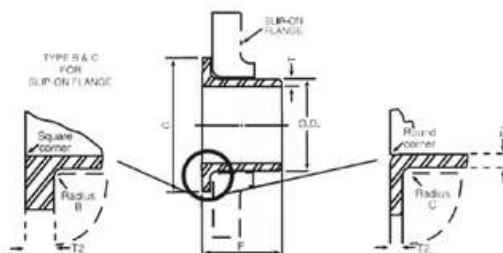
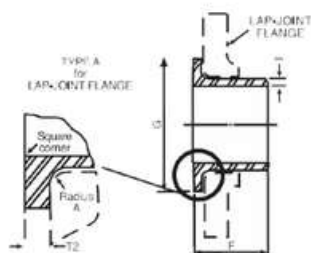
X-S		Sch80		Sch160		XX-S		Nominal Pipe Size
T	I.D.	T	I.D.	T	I.D.	T	I.D.	
0.500	35.000							36
0.500	37.000							38
0.500	39.000							40
0.500	41.000							42
0.500	43.000							44
0.500	45.000							46
0.500	47.000							48

- For Bevel Details See Page 356
- For Dimensional Tolerances See Page 362
- For Approx Weight See Page 394-421
- Wall Thickness Conform to ASME B 36.10M Specifications

STUB END ACERO INOXIDABLE ASTM - A 403

Conexiones Soldables con y sin Costura

Normas de Fabricación	Normas de Dimensionamiento	Aplicación
Normas de Fabricación	MSS SP-43 ANSI B-16.5, B-16.28	Para usos generales con Pipe
Aceros inoxidables: TP 304, 316, Grados L y Especiales		



Stub ends células 5 S, 10 S y 40 S MSS

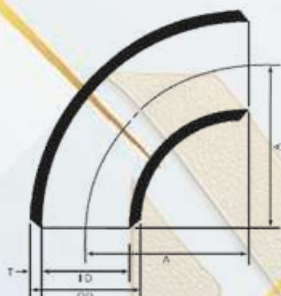
Diámetro Nominal	Diámetro Nominal	Longitud F	Diámetro de la Ceja G	Radio de la Ceja		Espesor Pared		Peso Aproximado		Espesor de la Ceja Tipo A		Tipo C Céd. 5, 10 y 40
				A nominal	B y C	Sch 10 s	Sch 40 S	Sch 10 s	Sch 40 S	Céd. 10	Céd. 40	
1/2"	0.84	2.00	1.38	0.12	0.03	0.083	0.019	0.06	0.08	0.095 2.4	0.109 2.8	No menor de 87 1/2% del espesor nominal (T1)
3/4"	1.05	2.00	1.69	0.12	0.03	0.083	0.113	0.08	0.10	0.097 2.5	0.113 2.9	
1"	1.32	2.00	2.00	0.12	0.03	0.109	0.113	0.13	0.16	0.120 3.0	0.133 3.4	
1 1/4"	1.66	2.00	2.50	0.19	0.03	0.109	0.140	0.18	0.23	0.124 3.1	0.140 3.6	
1 1/2"	1.9	2.00	2.88	0.25	0.03	0.109	0.145	0.21	0.28	0.126 3.2	0.145 3.7	
2"	2.38	2.50	3.62	0.31	0.03	0.109	0.154	0.34	0.47	0.130 3.3	0.154 3.9	
2 1/2"	2.88	2.50	4.12	0.31	0.03	0.120	0.203	0.45	0.74	0.156 4.0	0.203 5.2	
3"	3.35	2.50	5.00	0.38	0.03	0.120	0.216	0.57	1.01	0.161 4.1	0.216 5.5	
4"	4.5	3.00	6.19	0.44	0.03	0.120	0.237	0.87	1.68	0.169 4.3	0.237 6.0	
6"	6.62	3.50	8.50	0.50	0.06	0.134	0.280	1.64	3.37	0.194 4.9	0.280 7.1	
8"	8.62	4.00	10.62	0.50	0.06	0.148	0.322	2.65	5.67	0.218 5.5	0.322 8.2	
10"	10.75	5.00	12.75	0.50	0.06	0.165	0.365	4.38	9.55	0.245 6.2	0.365 9.3	
12"	12.75	6.00	15.00	0.50	0.06	0.180	0.375	6.74	13.80	0.26 6.6	0.375 9.5	

CODO 90 R.L. ACERO INOXIDABLE ASTM - A 403

Conexiones Soldables con y sin Costura

Normas de Fabricación	Normas de Dimensionamiento	Aplicación
ASTM A-403	ANSI B-16.5, B-16.28	Para usos generales con Pipe
ASTM A-774		

Aceros inoxidables: TP 304, 316, Grados L y Especiales



Codos 90° Radio Largo Cédula 10 S

Diámetro Nominal	Diámetro Externo	mm.	Diámetro Interno	Espesor de pared	mm.	Centro A Extremo	Peso Aprox.
1/2"	0.840	21.34	0.674	0.083	2.11	1.500	0.06
3/4"	1.050	26.67	0.884	0.083	2.11	1.125	0.06
1"	1.315	33.40	1.097	0.109	2.77	1.500	0.16
1 1/4"	1.660	42.16	1.442	0.109	2.77	1.875	0.20
1 1/2"	1.900	48.26	1.682	0.109	2.77	2.250	0.28
2"	2.375	60.33	2.157	0.109	2.77	3.000	0.47
2 1/2"	2.875	73.03	2.635	0.120	3.05	3.750	0.79
3"	3.500	88.90	3.260	0.120	3.05	4.500	1.16
4"	4.500	114.30	4.260	0.120	3.05	6.000	2.00
6"	6.625	168.28	6.357	0.134	3.40	9.000	4.96
8"	8.625	219.08	8.329	0.148	3.76	12.000	9.55
10"	10.750	273.05	10.420	0.165	4.19	15.000	16.60
12"	12.750	323.85	12.390	0.180	4.57	18.000	25.80

Codos 90° Radio Largo Cédula 40 S

Diámetro Nominal	Diámetro Externo	mm.	Diámetro Interno	Espesor de pared	mm.	Centro A Extremo	Peso Aprox.
1/2"	0.840	21.34	0.622	0.109	2.77	1.500	0.08
3/4"	1.050	26.67	0.824	0.113	2.87	1.125	0.10
1"	1.315	33.40	1.049	0.133	3.38	1.500	0.21
1 1/4"	1.660	42.16	1.380	0.140	3.56	1.875	0.25
1 1/2"	1.900	48.26	1.610	0.145	3.68	2.250	0.36
2"	2.375	60.33	2.067	0.154	3.91	3.000	0.65
2 1/2"	2.875	73.03	2.469	0.203	5.16	3.750	1.29
3"	3.500	88.90	3.068	0.216	5.49	4.500	2.02
4"	4.500	114.30	4.026	0.237	6.02	6.000	3.84
6"	6.625	168.28	6.065	0.280	7.11	9.000	10.10
8"	8.625	219.08	7.981	0.322	8.18	12.000	20.30
10"	10.750	273.05	10.020	0.365	9.27	15.000	36.00
12"	12.750	323.85	12.000	0.375	9.53	18.000	53.00

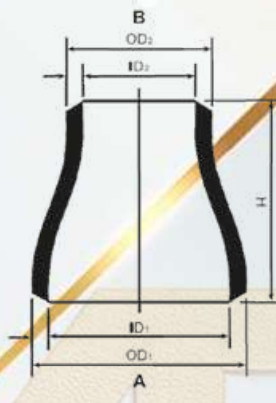
REDUCCIONES CONCENTRICAS ACERO INOXIDABLE ASTM - A 403



Reducción concéntrica, cédula 10 S

Extremo ancho A					Extremo ancho B					
Diámetro Nominal	Diámetro Exterior OD	mm.	Espesor de pared	mm.	Diámetro exterior OD	mm.	Espesor de pared	mm.	Extremo a extremo	Peso Aprox.
3/4" x 1/2"	1.050	26.67	0.083	2.11	0.840	21.34	0.083	2.11	1.500	0.04
1" x 3/4"	1.315	33.40	0.109	2.77	1.050	26.67	0.083	2.11	2.000	0.10
1" x 1/2"	1.315	33.40	0.109	2.77	0.840	21.34	0.083	2.11	2.000	0.09
1 1/4" x 1"	1.660	42.16	0.109	2.77	1.315	33.40	0.109	2.77	2.000	0.12
1 1/4" x 3/4"	1.660	42.16	0.109	2.77	1.050	26.67	0.083	2.11	2.000	0.11
1 1/4" x 1 1/4"	1.900	48.26	0.109	2.77	1.660	42.16	0.109	2.77	2.500	0.18
1 1/2" x 1"	1.900	48.26	0.109	2.77	1.315	33.40	0.109	2.77	2.000	0.17
1 1/2" x 3/4"	1.900	48.26	0.109	2.77	1.050	26.67	0.083	2.11	2.500	0.15
1 1/2" x 1/2"	1.900	48.26	0.109	2.77	0.840	21.34	0.083	2.11	2.500	0.14
2" x 1 1/2"	2.375	60.33	0.109	2.77	1.900	48.26	0.109	2.77	3.000	0.27
2" x 1 1/4"	2.375	60.33	0.109	2.77	1.660	42.16	0.109	2.77	3.000	0.25
2" x 1"	2.375	60.33	0.109	2.77	1.315	33.40	0.109	2.77	3.000	0.23
2 1/2" x 2"	2.875	73.03	0.120	3.05	2.375	60.33	0.109	2.77	3.500	0.43
2 1/2" x 1 1/2"	2.875	73.03	0.120	3.05	1.900	48.26	0.109	2.77	3.500	0.39
3" x 2 1/2"	3.500	88.90	0.120	3.05	2.875	73.03	0.120	3.05	3.500	0.52
3" x 2"	3.500	88.90	0.120	3.05	2.375	60.33	0.109	2.77	3.500	0.48
3" x 1 1/2"	3.500	88.90	0.120	3.05	1.900	48.26	0.109	2.77	3.500	0.45
4" x 3"	4.500	114.30	0.120	3.05	3.500	88.90	0.120	3.05	4.000	0.76
4" x 2 1/2"	4.500	114.30	0.120	3.05	2.875	73.03	0.120	3.05	4.000	0.71
4" x 2"	4.500	114.30	0.120	3.05	2.375	60.33	0.109	2.77	4.000	0.67
6" x 4"	6.625	168.28	0.134	3.40	4.500	114.30	0.120	3.05	5.500	1.65
8" x 6"	8.625	219.08	0.148	3.76	6.625	168.28	0.134	3.40	6.000	2.72
10" x 8"	10.750	273.05	0.165	4.19	8.625	219.08	0.148	3.76	7.000	4.49
10" x 6"	10.750	273.05	0.165	4.19	6.625	168.28	0.134	3.40	7.000	4.14
12" x 10"	12.750	323.85	0.180	4.57	10.750	273.05	0.165	4.19	8.000	6.78
12" x 8"	12.750	323.85	0.180	4.57	8.625	219.08	0.148	3.76	8.000	6.31

REDUCCIONES CONCENTRICAS ACERO INOXIDABLE ASTM - A 403

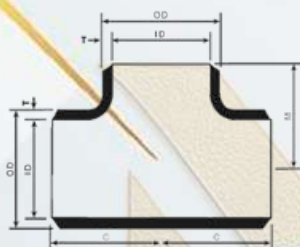


Reducción concéntrica, cédula 40 S

Extremo ancho A					Extremo ancho B					
Diámetro Nominal	Diámetro Exterior OD	mm.	Espesor de pared	mm.	Diámetro exterior OD	mm.	Espesor de pared	mm.	Extremo a extremo	Peso Aprox.
3/4" x 1/2"	1.050	26.67	0.113	2.87	0.840	21.34	0.109	2.77	1.500	0.06
1" x 3/4"	1.315	33.40	0.133	3.38	1.050	26.67	0.133	2.87	2.000	0.12
1" x 1/2"	1.315	33.40	0.133	3.38	0.840	21.34	0.109	2.77	2.000	0.11
1 1/4" x 1"	1.660	42.16	0.140	3.56	1.315	33.40	0.133	3.38	2.000	0.16
1 1/4" x 3/4"	1.660	42.16	0.140	3.56	1.050	26.67	0.133	2.87	2.000	0.14
1 1/4" x 1 1/4"	1.900	48.26	0.145	3.68	1.660	42.16	0.140	3.56	2.500	0.24
1 1/2" x 1"	1.900	48.26	0.145	3.68	1.315	33.40	0.133	3.38	2.000	0.22
1 1/2" x 3/4"	1.900	48.26	0.145	3.68	1.050	26.67	0.133	2.87	2.500	0.20
1 1/2" x 1/2"	1.900	48.26	0.145	3.68	0.840	21.34	0.109	2.77	2.500	0.18
2" x 1 1/2"	2.375	60.33	0.154	3.91	1.900	48.26	0.145	3.68	3.000	0.37
2" x 1 1/4"	2.375	60.33	0.154	3.91	1.660	42.16	0.140	3.56	3.000	0.35
2" x 1"	2.375	60.33	0.154	3.91	1.315	33.40	0.133	3.38	3.000	0.32
2 1/2" x 2"	2.875	73.03	0.203	5.16	2.375	60.33	0.154	3.91	3.500	0.72
2 1/2" x 1 1/2"	2.875	73.03	0.203	5.16	1.900	48.26	0.145	3.68	3.500	0.66
3" x 2 1/2"	3.500	88.90	0.216	5.49	2.875	73.03	0.203	5.16	3.500	0.93
3" x 2"	3.500	88.90	0.216	5.49	2.375	60.33	0.154	3.91	3.500	0.85
3" x 1 1/2"	3.500	88.90	0.216	5.49	1.900	48.26	0.145	3.68	3.500	0.78
4" x 3"	4.500	114.30	0.237	6.02	3.500	88.90	0.216	5.49	4.000	1.45
4" x 2 1/2"	4.500	114.30	0.237	6.02	2.875	73.03	0.203	5.16	4.000	1.37
4" x 2"	4.500	114.30	0.237	6.02	2.375	60.33	0.154	3.91	4.000	1.27
6" x 4"	6.625	168.28	0.280	7.11	4.500	114.30	0.237	6.02	5.500	3.30
8" x 6"	8.625	219.08	0.322	8.18	6.625	168.28	0.280	7.11	6.000	5.71
10" x 8"	10.750	273.05	0.365	9.27	8.625	219.08	0.322	8.18	7.000	9.58
10" x 6"	10.750	273.05	0.365	9.27	6.625	168.28	0.280	7.11	7.000	8.78
12" x 10"	12.750	323.85	0.375	9.53	10.750	273.05	0.365	9.27	8.000	13.60
12" x 8"	12.750	323.85	0.375	9.53	8.625	219.08	0.322	8.18	8.000	12.70

TEE Recta Acero Inoxidable ASTM - A 403

Conexiones Soldables con y sin Costura		
Normas de Fabricación	Normas de	Aplicación
ASTM A-403	Dimensionamiento	Para usos generales con Pipe
ASTM A-4774	ANSI B-16.5, B-16.28	
Aceros inoxidables: TP 304, 316, Grados L y Especiales		



TEE Cédula 10 S

Diámetro Nominal	Diámetro Exterior OD	mm.	Diámetro interno ID	Espesor de pared	mm.	C Centro de Orilla		Peso Aprox.
1/2"	0.840	21.34	0.674	0.083	2.11	1.000	1.000	0.07
3/4"	1.050	26.67	0.884	0.083	2.11	1.125	1.125	0.09
1"	1.315	33.40	1.097	0.109	2.77	1.500	1.500	0.20
1 1/4"	1.660	42.16	1.442	0.109	2.77	1.875	1.875	0.33
1 1/2"	1.900	48.26	1.682	0.109	2.77	2.250	2.250	0.46
2"	2.375	60.33	2.157	0.109	2.77	2.500	2.500	0.63
2 1/2"	2.875	73.03	2.635	0.120	3.05	3.000	3.000	1.01
3"	3.500	88.90	3.260	0.120	3.05	3.375	3.375	1.37
4"	4.500	114.30	4.260	0.120	3.05	4.125	4.125	2.15
6"	6.625	168.28	6.357	0.134	3.40	5.625	5.625	4.76
8"	8.625	219.08	8.329	0.148	3.76	7.000	7.000	8.46
10"	10.750	273.05	10.420	0.165	4.19	8.500	8.500	14.20
12"	12.750	323.85	12.390	0.180	4.57	10.000	10.000	21.60

TEE Cédula 10 S

Diámetro Nominal	Diámetro Exterior OD	mm.	Diámetro interno ID	Espesor de pared	mm.	C Centro de Orilla		Peso Aprox.
1/2"	0.840	21.34	0.622	0.109	2.77	1.000	1.000	0.08
3/4"	1.050	26.67	0.824	0.113	2.87	1.125	1.125	0.11
1"	1.315	33.40	1.049	0.133	3.38	1.500	1.500	0.24
1 1/4"	1.660	42.16	1.380	0.140	3.56	1.875	1.875	0.41
1 1/2"	1.900	48.26	1.610	0.145	3.68	2.250	2.250	0.60
2"	2.375	60.33	2.067	0.154	3.91	2.500	2.500	0.87
2 1/2"	2.875	73.03	2.469	0.203	5.16	3.000	3.000	1.66
3"	3.500	88.90	3.068	0.216	5.49	3.375	3.375	1.90
4"	4.500	114.30	4.026	0.237	6.02	4.125	4.125	4.13
6"	6.625	168.28	6.065	0.280	7.11	5.625	5.625	9.73
8"	8.625	219.08	7.981	0.322	8.18	7.000	7.000	18.00
10"	10.750	273.05	10.020	0.365	9.27	8.500	8.500	30.80
12"	12.750	323.85	12.000	0.375	9.53	10.000	10.000	44.30



SMART SOLUTIONS



VALORES

ÉTICA Nuestros colaboradores son responsables de la mejor conducta, moralidad e integridad para un mejor clima organizacional.

CONFIANZA Cada uno de nuestros colaboradores tiene la capacidad de responder por el resultado y metas de su proceso.

COMPROMISO. El testimonio y satisfacción de nuestros clientes, es nuestro compromiso y mejor carta de presentación.

TRABAJO EN EQUIPO. El colaborador comparte responsabilidades para el cumplimiento de los objetivos.

MEJORA CONTINUA. Creemos y confiamos en que, a través del cumplimiento de objetivos y política de calidad, se logra una mejora en eficacia de SGC y la satisfacción de nuestros clientes.