

SUBMITTAL COVERSHEET **Nanuet UFSD –Phase 3 Projects**

Architect:
 KSQ Architects
 215 W 40th Street, 15th Floor
 New York, NY 10018

Owner:
 Nanuet Union Free School District
 101 Church Street
 Nanuet, NY 10954

Construction Manager:
 Jacobs
 One Penn Plaza, 54th floor
 New York, NY 10019

Contractor: Joe Lombardo Plumbing & Heating of Rockland Inc

Contract: Ron Lombardo

Address: 321 Spook Rock Road Suite 109A

845-357-6537

Telephone:

Suffern, New York 10901

Fax: 845-357-8529

School Name: Nanuet Union Free School District Phase 3 Bond Projects @ Barr Middle School & Nanuet High School

Type of Submittal:

Re-submittal: ☐ No ☐ Yes

☐ Shop Drawings

☐ Product Data

☐ Schedule

☐ Sample

☐

☐ Test Report

☐ Certificate

☐ Color Sample

☐ Warranty

☐

Submittal Description:

Product Name:

HYDRONIC PIPING VALVES

Manufacturer:

NIBCO

**Subcontractor/
Supplier:**

VARIOUS

References:

Spec. Section No.: 232113

Drawing No(s):

Paragraph:

Rm. or Detail No(s):

Architect's/ Engineer's Review Stamp

Contractor Review Statement:

These documents have been checked for accuracy and coordinated with job conditions and Contract requirements by this office and have been found to comply with the provisions of the Contract Documents.

Ronald J. Lombardo

12.7.23

Name:

Date:

Company Name:

Joe Lombardo Plumbing & Heating of Rockland Inc.

Remarks:

2.12 - STEAM AND STEAM CONDENSATE 2 1/2" TO 8"



NSF 61/372
Class 150/300

HIGH PERFORMANCE BUTTERFLY VALVE

LCS-6822 (Class 150)

LCS-7822 (Class 300)

APPLICATIONS

Ideally suited for commercial, industrial, and mechanical HVAC services. Use in other applications must be approved by the manufacturer

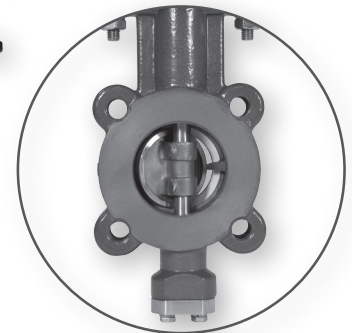
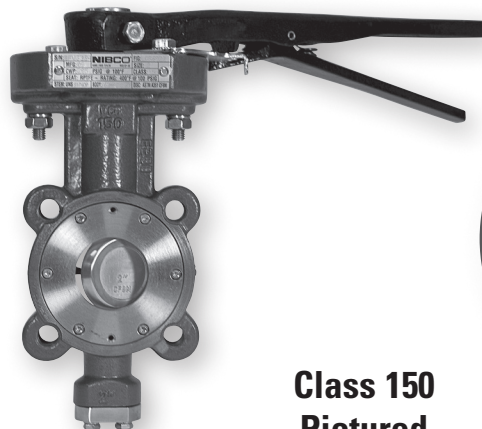
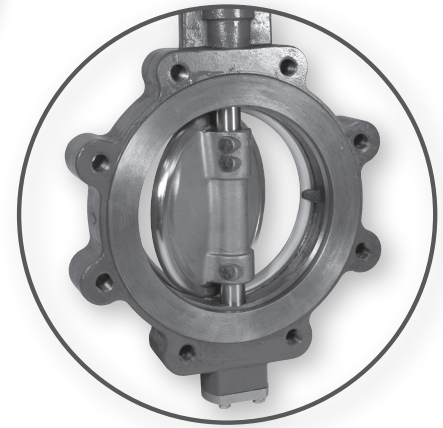
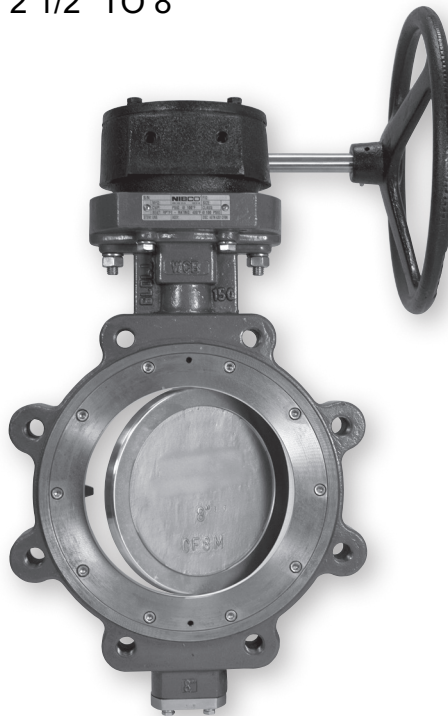
- Heating hot water
- Condenser water
- Glycol
- Chilled water
- Compressed air
- Steam rated - 2" - 12" 150 psi for on/off applications and 50 psi modulating
- Vacuum to 27" Hg
- Chemical process
- Isolation and throttling
- Domestic water

MATERIALS & CONSTRUCTION

- Body constructed of carbon steel
- Stainless steel disc and stem
- Seats of reinforced PTFE for exceptional chemical and heat resistance
- Welded disc pins
- Silicon is not used in the manufacture of this valve

DESIGN CRITERIA

- MSS SP-68 (Design)
- MSS SP-25 (Markings)
- API-609 Seat pressure/temperature ratings/blow-out proof stem
- ASME/ANSI B16.34A, body pressure/temperature ratings
- ASME/ANSI B16.5 flange dimensions
- ISO 5211, actuator mounting top works
- ANSI Class 150 and Class 300
- Dual offset design



**Class 150
Pictured**

FEATURES

- Powder coated epoxy finish
- One-piece stem
- Direct mount actuation
- Live loaded adjustable packing with unique flush-mounted packing gland
- Integrally cast disc-stop
- Dual offset design
- Blow-out proof stem
- Uni-directional dead end service (Arrow on body indicates flow direction)
- Maximum operating temperature 400°F at 100 psi
- 100% production tested per MSS SP-68

WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Visit our website for the most current information.

High Performance Butterfly Valve Series 6822 & 7822

Carbon Steel Body • Stainless Steel Disc and Stem • ISO 5211 Actuation Mounting

CLASS 150 - SIZES 2" THROUGH 30"

CLASS 300 - SIZES 2" THROUGH 24"

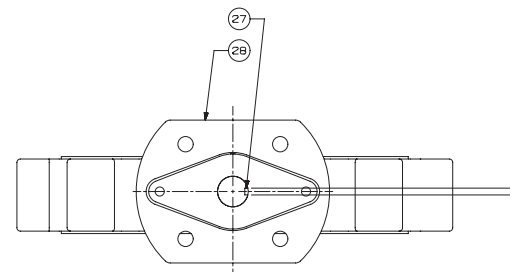
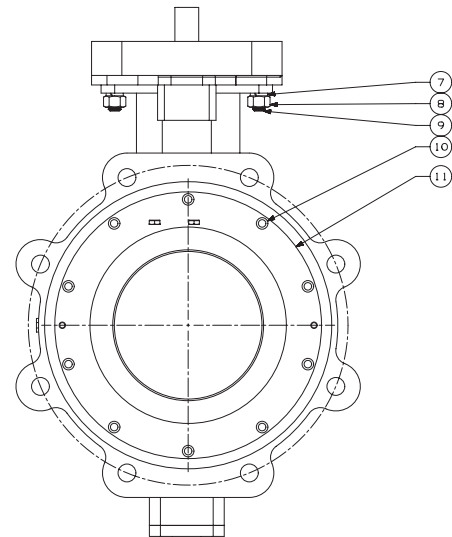
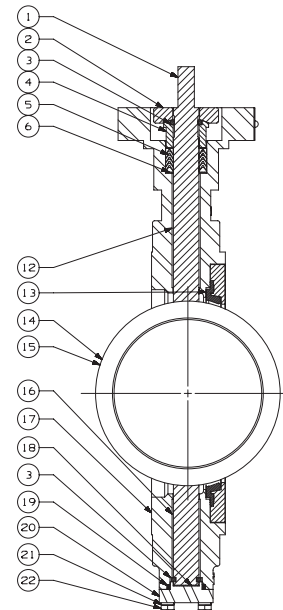
ANSI Class 150 & 300



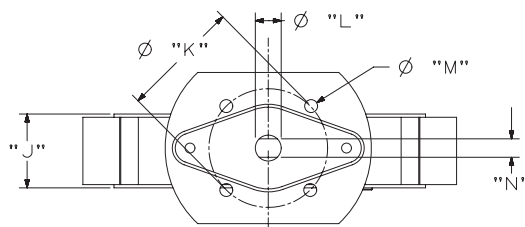
MATERIAL LIST	
PART	SPECIFICATION
1. Stem	Stainless Steel UNS ASTM A564 UNS S17400
2. Flange, Gland	Stainless Steel ASTM A351 Grade CF8M
3. Retainer, Stem (4)	Stainless Steel ASTM A276 UNS S31600
4. Gland, Packing	Stainless Steel ASTM A276 UNS S31600
5. Packing (set)	PTFE
6. Retainer, Packing	Stainless Steel ASTM A276 UNS S31600
7. Lockwasher (2)	Stainless Steel Type 304 18-8
8. Nut (2)	Stainless Steel Type 304 18-8
9. Stud (2)	Stainless Steel Type 304 18-8
10. Screw, SHCS	Stainless Steel Type 304 18-8
11. Retainer, Seat	Stainless Steel ASTM A276 UNS S31600
12. Bushing, Upper	Stainless Steel Type 304 PTFE Coated
13. Seat	PTFE 15% Glass Reinforced
14. Disc	Stainless Steel ASTM A351 Grade CF8M
15. Pin, Disc (2)	Stainless Steel ASTM A276 UNS S31600
16. Bushing, Lower	Stainless Steel TYPE 304 PTFE Coated
17. Body	Carbon Steel ASTM A216 GRADE WCB
18. Disc, Spacer	Stainless Steel ASTM A240 UNS S31600
19. Seal, Lower	PTFE
20. Cap, Body	Stainless Steel ASTM A351 Grade CF8M
21. Lockwasher (4)	Stainless Steel Type 304 18-8
22. Screw, Hex (4)	Stainless Steel Type 304 18-8
23. Handle Assembly	Malleable Iron (shown separately)
24. Plate, Throttle	Steel, Plated (shown separately)
25. Screw, Hex	Carbon Steel, Plated (shown separately)
26. Lockwasher	Carbon Steel, Plated (shown separately)
27. Key	Carbon Steel ASTM A108 Grade 1045
28. ID Plate	Stainless Steel

NOTE: For severe steam applications, contact NIBCO Technical Services.

NOTE: If valve is installed opposite the flow arrow for dead end service a downstream flange is required.



10" - 30" Class 150 Valves
8" - 24" Class 300 Valves



2" - 8" Class 150 Valves
2" - 6" Class 300 Valves

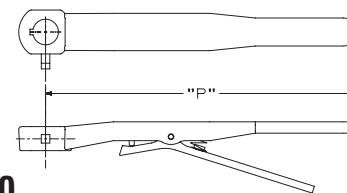
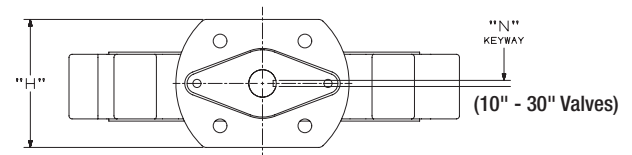
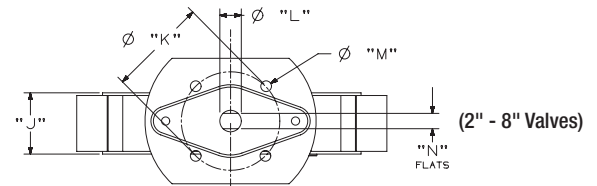
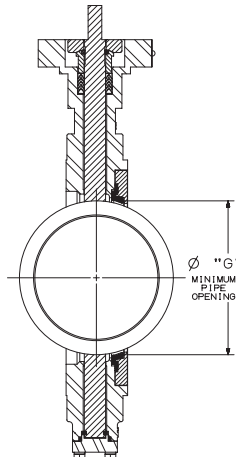
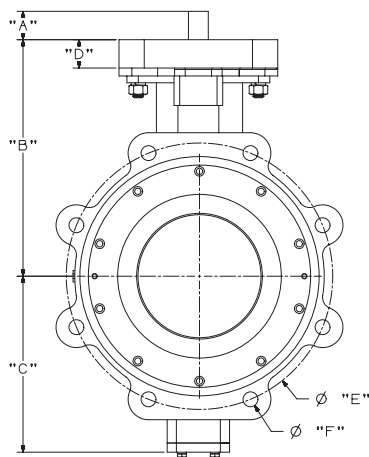
Visit our website for the most current information.



WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

High Performance Butterfly Valve Series 6822

SIZES 2" THROUGH 30"



ANSI CLASS 150

DIMENSIONS — WEIGHTS

Valve Size	Gear Operator Mounting	A		B		C		D		E		F Threads	G	
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm		In.	mm
2"	F07	1.25	31.75	5.78	146.8	3.94	100.1	1.25	31.8	4.75	120.65	4 X 5/8"-11 UNC	1.68	42.7
2½"	F07	1.25	31.75	6.49	164.8	4.06	103.1	1.25	31.8	5.50	139.70	4 X 5/8"-11 UNC	2.24	56.9
3"	F07	1.25	31.75	6.77	172.0	4.37	111.0	1.25	31.8	6.00	152.40	4 X 5/8"-11 UNC	2.72	69.1
4"	F07	1.25	31.75	6.98	177.3	4.80	121.9	1.25	31.8	7.50	190.50	8 X 5/8"-11 UNC	3.38	85.9
5"	F07	1.25	31.75	8.39	213.1	6.38	162.1	1.25	31.8	8.50	215.90	8 X 3/4"-10 UNC	4.48	113.8
6"	F07	1.25	31.75	8.71	221.2	5.97	151.6	1.25	31.8	9.50	241.30	8 X 3/4"-10 UNC	5.34	135.6
8"	F10	1.25	31.75	10.43	264.9	7.76	197.1	1.60	40.6	11.75	298.45	8 X 3/4"-10 UNC	7.28	184.9
10"	F12	2.00	50.80	11.81	300.0	8.61	218.7	1.00	25.4	14.25	361.95	12 X 7/8"-9 UNC	9.13	231.9
12"	F12	2.00	50.80	12.80	325.1	10.63	270.0	1.00	25.4	17.00	431.80	12 X 7/8"-9 UNC	10.68	271.3
14"	F12	2.25	57.15	16.03	407.2	11.68	296.7	1.00	25.4	18.75	476.25	12 X 1"-8 UNC	12.14	308.4
16"	F16	3.00	76.20	16.73	424.9	13.78	350.0	1.88	47.8	21.25	539.75	16 X 1"-8 UNC	13.98	355.1
18"	F16	3.00	76.20	17.72	450.1	14.76	374.9	1.88	47.8	22.75	577.85	16 X 1-1/8"-8 UN*	16.18	411.0
**20"	F16	3.00	76.20	18.94	481.1	16.43	417.3	2.00	50.8	25.00	635.00	20 X 1-1/8"-8 UN*	18.13	460.5
**24"	F16/F25	4.00	101.60	23.23	590.0	19.37	492.0	2.50	63.5	29.50	749.30	20 X 1-1/4"-8 UN*	21.17	537.7
**30"	F25	5.33	135.38	26.90	683.3	24.24	615.7	3.00	76.2	36.00	914.4	28 X 1-1/4"-8 UN*	26.87	682.5

*SPECIAL PITCH CAP SCREW THREAD REQUIRED PER MSS SP-68 SPECIFICATIONS.

**SHORT SCREWS REQUIRED FOR BLIND TAPPED HOLES NEAREST TO STEM FOR 20" AND LARGER VALVES. SEE INSTALLATION, OPERATION & MAINTENANCE GUIDE II FOR SERIES 6822 & 7822.

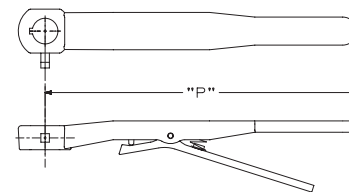
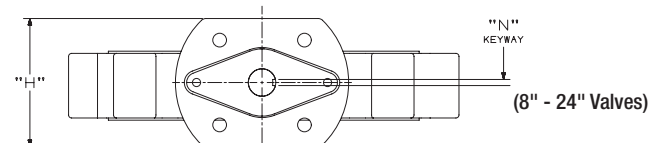
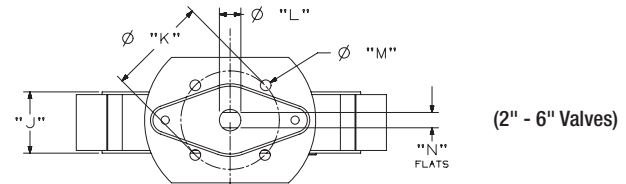
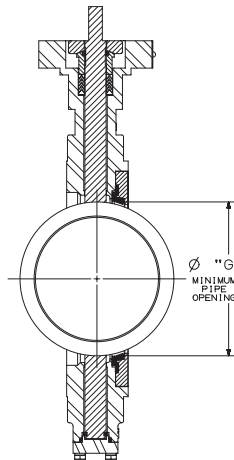
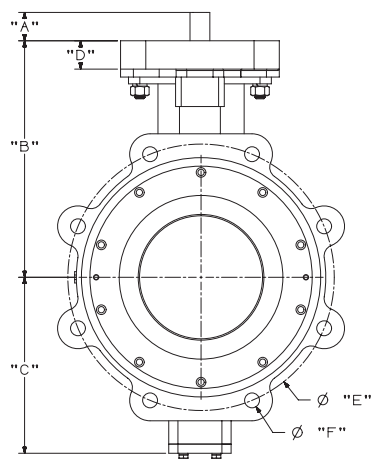
Valve Size	H		J		K		L		M		N		P		Valve Wt.		Operating Torque at 285 psi	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	In.-Lbs.	N-m
2"	4.15	105.4	1.69	42.93	2.76	70.10	0.500	12.700	0.37	9.40	0.375	9.525	13.75	349.3	12.5	6	290	33
2½"	4.15	105.4	1.84	46.74	2.76	70.10	0.625	15.875	0.37	9.40	0.438	11.125	13.75	349.3	16	7	320	36
3"	4.15	105.4	1.88	47.75	2.76	70.10	0.625	15.875	0.37	9.40	0.438	11.125	13.75	349.3	18	8	350	40
4"	4.15	105.4	2.12	53.85	2.76	70.10	0.625	15.875	0.37	9.40	0.438	11.125	13.75	349.3	31	14	510	58
5"	4.15	105.4	2.25	57.15	2.76	70.10	0.750	19.050	0.37	9.40	0.500	12.700	13.75	349.3	38	17	725	82
6"	4.15	105.4	2.25	57.15	2.76	70.10	0.750	19.050	0.37	9.40	0.500	12.700	13.75	349.3	44	20	845	95
8"	5.12	130.0	2.50	63.50	4.02	102.11	0.875	22.225	0.44	11.18	0.625	15.875	—	—	68	31	1430	162
10"	5.25	133.4	2.83	71.88	4.92	124.97	1.125	28.575	0.56	14.22	1/4" X 1/4"	—	—	—	104	47	2400	271
12"	5.25	133.4	3.19	81.03	4.92	124.97	1.125	28.575	0.56	14.22	1/4" X 1/4"	—	—	—	148	67	3650	412
14"	5.25	133.4	3.62	91.95	4.92	124.97	1.375	34.925	0.56	14.22	5/16" X 5/16"	—	—	—	201	91	6000	678
16"	6.50	165.1	4.00	101.60	6.50	165.10	1.875	47.625	0.81	20.57	3/8" X 1/2"	—	—	—	309	140	8800	994
18"	6.50	165.1	4.50	114.30	6.50	165.10	1.875	47.625	0.81	20.57	3/8" X 1/2"	—	—	—	346	157	11500	1299
20"	6.50	165.1	5.00	127.00	6.50	165.10	2.125	53.975	0.81	20.57	1/2" X 1/2"	—	—	—	426	194	16500	1864
24"	11.02	279.9	6.06	153.92	6.50	165.10	2.555	64.897	0.81	20.57	3/4" X 1/2"	—	—	—	675	307	24600	2779
30"	11.25	285.8	7.51	190.75	10.00	254.00	3.142	79.807	0.69	15.53	.866 X .788	—	—	—	1026	466	37175	4200


WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Visit our website for the most current information.

High Performance Butterfly Valve Series 7822

SIZES 2" THROUGH 24"



ANSI CLASS 300

DIMENSIONS — WEIGHTS

Valve Size	Gear Operator Mounting	A		B		C		D		E		F Threads	G	
		In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.		In.	mm.
2"	F07	1.25	31.75	5.78	146.8	3.94	100.1	1.25	31.8	5.00	127.00	8 X 5/8"-11 UNC	1.68	42.7
2½"	F07	1.25	31.75	6.49	164.8	4.06	103.1	1.25	31.8	5.88	149.35	8 X 3/4"-10 UNC	2.24	56.9
3"	F07	1.25	31.75	6.77	172.0	4.37	111.0	1.25	31.8	6.62	168.15	8 X 3/4"-10 UNC	2.72	69.1
4"	F07	1.25	31.75	6.98	177.3	4.80	121.9	1.25	31.8	7.88	200.15	8 X 3/4"-10 UNC	3.38	85.9
5"	F07	1.25	31.75	8.39	213.1	6.38	162.1	1.25	31.8	9.25	234.95	8 X 3/4"-10 UNC	4.42	112.3
6"	F07	1.25	31.75	9.53	242.1	7.75	196.9	1.25	31.8	10.62	269.75	12 X 3/4"-10 UNC	4.07	103.4
8"	F10	2.00	50.80	11.42	290.1	8.91	226.3	2.00	50.8	13.00	330.20	12 X 7/8"-9 UNC	7.03	178.6
10"	F12	2.25	57.15	12.32	312.9	9.88	251.0	1.00	25.4	15.25	387.35	16 X 1"-8 UNC	9.11	231.4
12"	F12	3.00	76.20	13.90	353.1	11.00	279.4	1.00	25.4	17.75	450.85	16 X 1-1/8"-8 UN*	10.55	268.0
14"	F16	3.00	76.20	15.95	405.1	12.57	319.3	2.00	50.8	20.25	514.35	20 X 1-1/8"-8 UN*	11.99	304.5
16"	F16	3.00	76.20	18.31	465.1	15.83	402.1	2.00	50.8	22.50	571.50	20 X 1-1/4"-8 UN*	13.80	350.5
18"	F25	4.33	109.98	19.29	490.0	16.81	427.0	1.25	31.8	24.75	628.65	24 X 1-1/4"-8 UN*	15.81	401.6
**20"	F25	4.33	109.98	22.44	570.0	17.72	450.1	1.25	31.8	27.00	685.80	24 X 1-1/4"-8 UN*	17.50	444.5
**24"	F25	4.33	109.98	24.92	633.0	21.65	549.9	1.25	31.8	32.00	912.80	24 X 1-1/2"-8 UN*	21.50	546.1

*SPECIAL PITCH CAP SCREW THREAD REQUIRED PER MSS SP-68 SPECIFICATIONS.

**SHORT SCREWS REQUIRED FOR BLIND TAPPED HOLES NEAREST TO STEM FOR 20" AND LARGER VALVES. SEE INSTALLATION, OPERATION & MAINTENANCE GUIDE II FOR SERIES 6822 & 7822.

G MAINTENANCE GUIDE HIGH SERIES 6022 & 7022.																	Operating Torque	
Valve Size	H		J		K		L		M		N		P		Valve		at 700 psi	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	In.-Lbs.	N-m
2"	4.15	105.4	1.69	42.93	2.76	70.10	0.500	12.700	0.37	9.40	0.375	9.525	13.75	349.3	14	6	390	44
2½"	4.15	105.4	1.84	46.74	2.76	70.10	0.625	15.875	0.37	9.40	0.438	11.125	13.75	349.3	21	10	425	48
3"	4.15	105.4	1.88	47.75	2.76	70.10	0.625	15.875	0.37	9.40	0.438	11.125	13.75	349.3	27	12	450	51
4"	4.15	105.4	2.12	53.85	2.76	70.10	0.625	15.875	0.37	9.40	0.438	11.125	13.75	349.3	49	22	725	82
5"	4.15	105.4	2.31	58.67	2.76	70.10	0.750	19.050	0.37	9.40	0.500	12.700	13.75	349.3	60	27	1000	113
6"	4.15	105.4	2.31	58.67	2.76	70.10	0.750	19.050	0.37	9.40	0.500	12.700	13.75	349.3	71	32	1250	141
8"	5.12	130.0	2.88	73.15	4.02	102.11	1.125	28.575	0.44	11.18	1/4" X 1/4"		—	—	121	55	2025	229
10"	5.25	133.4	3.25	82.55	4.92	124.97	1.375	34.925	0.56	14.22	5/16" X 5/16"		—	—	143	65	3775	426
12"	5.25	133.4	3.62	91.95	4.92	124.97	1.625	41.275	0.56	14.22	3/8" X 3/8"		—	—	216	98	5725	647
14"	6.50	165.1	4.62	117.35	6.50	165.10	1.875	47.625	0.81	20.57	1/2" X 3/8"		—	—	378	172	11500	1299
16"	6.50	165.1	5.25	133.35	6.50	165.10	1.875	47.625	0.81	20.57	1/2" X 3/8"		—	—	488	222	15338	1733
18"	11.02	279.9	5.88	149.35	10.0	254.00	2.555	64.897	0.75	19.05	3/4" X 1/2"		—	—	720	327	19516	2205
20"	11.02	279.9	6.30	160.02	10.0	254.00	2.555	64.897	0.75	19.05	3/4" X 1/2"		—	—	855	389	26022	2940
24"	11.02	279.9	7.12	180.85	10.0	254.00	2.555	64.897	0.75	19.05	3/4" X 1/2"		—	—				

Visit our website for the most current information.



WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

High Performance Butterfly Valve Technical Data

CLASS 150 HPBFV 6800 Series Flow Data

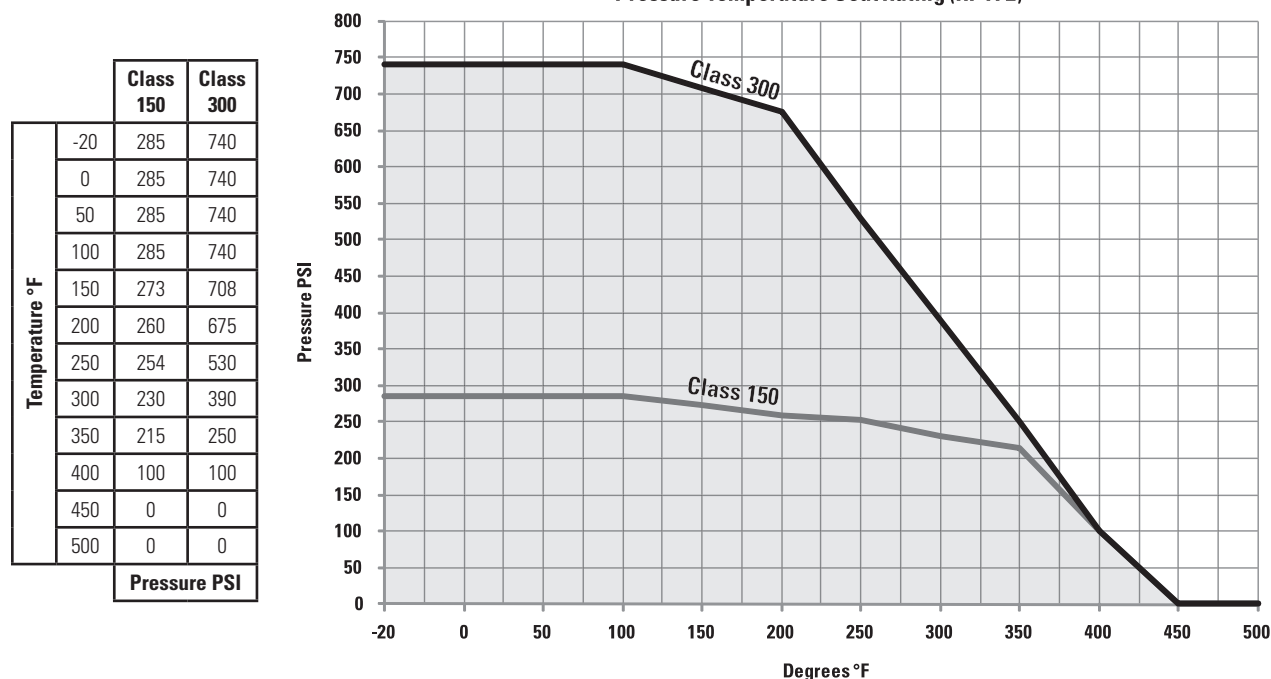
Valve Size	Cv Rating	DISC OPEN - Degrees								
		10°	20°	30°	40°	50°	60°	70°	80°	90°
2"	92	2	6	13	20	30	43	72	81	92
2½"	150	3	11	21	33	50	71	117	132	150
3"	260	5	18	36	57	86	122	203	230	260
4"	460	9	32	64	101	152	216	360	405	460
5"	760	15	53	106	167	251	357	595	670	760
6"	1150	23	81	161	253	380	540	879	1015	1150
8"	2100	42	147	295	462	695	987	1640	1850	2100
10"	3200	64	225	450	705	1056	1505	2496	2816	3200
12"	4700	94	330	660	1035	1551	2210	3666	4136	4700
14"	5800	116	406	815	1276	1915	2726	4525	5105	5800
16"	8000	160	560	1120	1760	2640	3760	6240	7040	8000
18"	10500	210	735	1470	2310	3465	4935	8190	9240	10500
20"	14000	280	980	1960	3080	4620	6580	10920	12320	14000
24"	21000	420	1470	2940	4620	6930	9870	16380	18480	21000
30"	33500	670	2345	4690	7370	11055	15745	26130	29480	33500

CLASS 300 HPBFV 7800 Series Flow Data

Valve Size	Cv Rating	DISC OPEN - Degrees								
		10°	20°	30°	40°	50°	60°	70°	80°	90°
2"	92	2	6	13	20	30	43	72	81	92
2½"	150	3	11	21	33	50	71	117	132	150
3"	260	5	18	36	57	86	122	203	230	260
4"	460	9	32	65	101	152	216	360	405	460
5"	760	15	53	106	167	251	357	595	670	760
6"	1150	23	81	161	253	380	540	879	1015	1150
8"	1900	38	133	266	418	627	895	1485	1675	1900
10"	2800	56	196	392	616	925	1316	2185	2465	2800
12"	4100	82	287	575	905	1355	1930	3200	3610	4100
14"	5500	110	385	770	1210	1815	2585	4290	4840	5500
16"	7600	152	532	1065	1675	2510	3575	5930	6690	7600
18"	9900	198	695	1390	2180	3270	4655	7725	8715	9900
20"	13000	260	910	1820	2860	4290	6110	10140	11440	13000
24"	19500	390	1365	2730	4290	6435	9165	15210	17160	19500

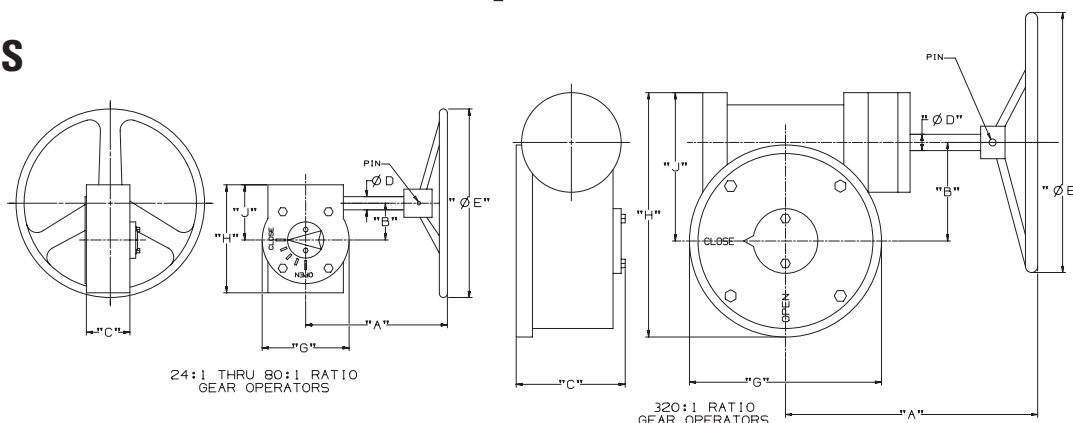
Cv = Flow in U.S. Gallons per minute of 60°F water with a 1 psi pressure drop across valve

Pressure Temperature Seat Rating (RPTFE)



High Performance Butterfly Valve Technical Data

OPERATORS



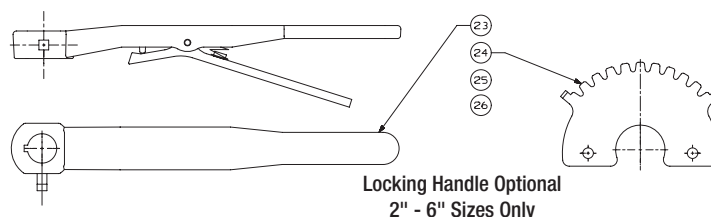
GEAR OPERATOR DIMENSIONS

Valve Size		Gear Operator Figure Number	NIBCO Material Number	Ratio	Gear Operator Efficiency	Gear Operator Mounting	A		B		C		D	
Class 150	Class 300						In.	mm.	In.	mm.	In.	mm.	In.	mm.
2"	2"	G024:1-1-8	RG70001	24:1	15%	F07	5.77	146.6	1.73	43.9	2.65	67.3	0.625	15.88
2-1/2", 3", 4"	2-1/2", 3", 4"	G024:1-3-8 W/STSA-4	RG70002	24:1	15%	F07	5.77	146.6	1.73	43.9	2.65	67.3	0.625	15.88
5" 6"	5" 6"	G024:1-3-8 W/STSA-5	RG70003	24:1	15%	F07	5.77	146.6	1.73	43.9	2.65	67.3	0.625	15.88
8"	—	G030:1-1-12 W/STSA-6	RG70004	30:1	19%	F10	9.50	241.3	2.50	63.5	3.00	76.2	0.750	19.05
—	8"	G030:1-1-12	RG70005	30:1	19%	F10	9.50	241.3	2.50	63.5	3.00	76.2	0.750	19.05
10"	—	G030:1-2-12	RG70006	30:1	19%	F12	9.50	241.3	2.50	63.5	3.00	76.2	0.750	19.05
12"	—	G050:1-1-16	RG70007	50:1	20%	F12	9.00	228.6	3.00	76.2	3.00	76.2	0.750	19.05
14"	10"	G050:1-3-16	RG70008	50:1	20%	F12	9.00	228.6	3.00	76.2	3.00	76.2	0.750	19.05
—	12"	G080:1-2-16	RG70009	80:1	16%	F12	10.75	273.1	4.75	120.7	4.40	111.8	1.000	25.40
16"	14"	G080:1-1-16	RG70010	80:1	16%	F16	10.75	273.1	4.75	120.7	4.40	111.8	1.000	25.40
18"	—	G080:1-1-1-20	RG70011	80:1	16%	F16	10.75	273.1	4.75	120.7	4.40	111.8	1.000	25.40
—	16"	G0320:1-3-20	RG70020	320:1	15%	F16	15.51	394.0	6.06	153.9	6.46	164.1	1.190	30.23
20"	—	G0320:1-1-20	RG70012	320:1	15%	F16	15.51	394.0	6.06	153.9	6.46	164.1	1.190	30.23
24"	18" 20"	G0320:1-2-20	RG70013	320:1	15%	F25	15.51	394.0	6.06	153.9	6.46	164.1	1.190	30.23
30"	24"	G0320:1-4-20	RG70021	320:1	15%	F25	15.51	394.0	6.06	153.9	6.46	164.1	1.190	30.23

Valve Size		E		G		H		J		Weight		Mounting Screws	Handwheel Pin Size	Hand Wheel Figure No.
Class 150	Class 300	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg			
2"	2"	8	203	4.00	101.6	5.07	128.8	2.90	73.7	12	5.5	5/16"-18 UNC	Ø.190 X 1.63 LONG	RG70014
2-1/2", 3", 4"	2-1/2", 3", 4"	8	203	4.00	101.6	5.07	128.8	2.90	73.7	12	5.5	5/16"-18 UNC	Ø.190 X 1.63 LONG	RG70014
5" 6"	5" 6"	8	203	4.00	101.6	5.07	128.8	2.90	73.7	12	5.5	5/16"-18 UNC	Ø.190 X 1.63 LONG	RG70014
8"	—	12	305	6.00	152.4	6.90	175.3	3.90	99.1	26.5	12	3/8"-16 UNC	Ø.190 X 1.63 LONG	RG70015
—	8"	12	305	6.00	152.4	6.90	175.3	3.90	99.1	26.5	12	3/8"-16 UNC	Ø.190 X 1.63 LONG	RG70015
10"	—	12	305	6.00	152.4	6.90	175.3	3.90	99.1	26.5	12	1/2"-13 UNC	Ø.190 X 1.63 LONG	RG70015
12"	—	16	406	6.70	170.2	7.80	198.1	4.60	116.8	37.5	17	1/2"-13 UNC	Ø.190 X 1.63 LONG	RG70016
14"	10"	16	406	6.70	170.2	7.80	198.1	4.60	116.8	37.5	17	1/2"-13 UNC	Ø.190 X 1.63 LONG	RG70016
—	12"	16	406	10.25	260.4	11.50	292.1	6.25	158.8	72	33	1/2"-13 UNC	Ø.380 X 1.81 LONG	RG70017
16"	14"	16	406	10.25	260.4	11.50	292.1	6.25	158.8	72	33	3/4"-10 UNC	Ø.380 X 1.81 LONG	RG70017
18"	—	20	508	10.25	260.4	11.50	292.1	6.25	158.8	74	34	3/4"-10 UNC	Ø.380 X 2.50 LONG	RG70018
—	16"	20	508	11.81	300.0	17.00	431.8	11.10	281.9	200	91	3/4"-10 UNC	Ø.380 X 2.50 LONG	RG70019
20"	—	20	508	11.81	300.0	17.00	431.8	11.10	281.9	200	91	3/4"-10 UNC	Ø.380 X 2.50 LONG	RG70019
24"	18" 20"	20	508	11.81	300.0	17.00	431.8	11.10	281.9	200	91	5/8"-11 UNC	Ø.380 X 2.50 LONG	RG70019
30"	24"	20	508	11.81	300.0	17.00	431.8	11.10	281.9	200	91	5/8"-11 UNC	Ø.380 X 2.50 LONG	RG70019

LEVER HANDLE

Item	Description	Material
23	Handle Assembly	Malleable Iron
24	Plate, Throttle	Steel, Plated
25	Screw, Hex	Carbon Steel, Plated
26	Lockwasher	Carbon Steel, Plated

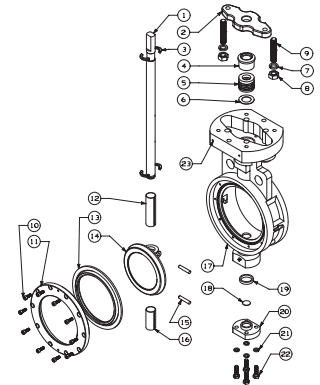


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High Performance Butterfly Valve Technical Data

MATERIAL LIST

PART	SPECIFICATION	PART	SPECIFICATION
1. Stem	Stainless Steel UNS ASTM A564 UNS S17400	12. Bushing, Upper	Stainless Steel Type 304 PTFE Coated
2. Flange, Gland	Stainless Steel ASTM A351 Grade CF8M	13. Seat	PTFE 15% Glass Reinforced
3. Retainer, Stem (2)	Stainless Steel ASTM A276 UNS S31600	14. Disc	Stainless Steel ASTM A351 Grade CF8M
4. Gland, Packing	Stainless Steel ASTM A276 UNS S31600	15. Pin, Disc (2)	Stainless Steel ASTM A276 UNS S31600
5. Packing	PTFE	16. Bushing, Lower	Stainless Steel Type 304 PTFE Coated
6. Retainer, Packing	Stainless Steel ASTM A276 UNS S31600	17. Body	Carbon Steel ASTM A216 Grade WCB
7. Lockwasher (2)	Stainless Steel Type 304 18-8	18. Disc, Spacer	Stainless Steel ASTM A240 UNS S31600
8. Nut (2)	Stainless Steel Type 304 18-8	19. Seal, Lower	PTFE
9. Stud (2)	Stainless Steel Type 304 18-8	20. Cap, Body	Stainless Steel ASTM A351 Grade CF8M
10. Screw, SHCS	Stainless Steel Type 304 18-8	21. Lockwasher (4)	Stainless Steel Type 304 18-8
11. Retainer, Seat	Stainless Steel ASTM A276 UNS S31600	22. Screw, Hex (4)	Stainless Steel Type 304 18-8



NIBCO HPBFV REPLACEMENT PARTS

LCS6822 SERIES CLASS 150	GEAR OPERATOR KIT		HANDWHEEL		HANDWHEEL PIN		STEM BUSHING / KEY		LEVER HANDLE KIT	LEVER BUSHING	STEM SEAL KIT	RPTFE SEAT (only)
	RATIO	PART NO. NUMBER	SIZE	PART NO. NUMBER	SIZE	PART NO. NUMBER	SIZE	PART NO. NUMBER	PART NO. NUMBER	PART NO. NUMBER	PART NO. NUMBER	PART NO. NUMBER
2"	24:1	RG70001	8" OD X .625" BORE	RG70014	Ø.190" X 1.63" LONG	RG700130	Ø.500 X .375 FLATS	DIRECT	RG70031	RG70034	RG700110	RG700080
2½"	24:1	RG70002	8" OD X .625" BORE		Ø.190" X 1.63" LONG		Ø.625 X .438 FLATS	RG70022	RG70032	DIRECT	RG700111	RG700081
3"	24:1		8" OD X .625" BORE		Ø.190" X 1.63" LONG		Ø.625 X .438 FLATS					RG700082
4"	24:1		8" OD X .625" BORE		Ø.190" X 1.63" LONG		Ø.625 X .438 FLATS					RG700083
5"	24:1		RG70003		8" OD X .625" BORE		Ø.190" X 1.63" LONG	Ø.750 X .500 FLATS		RG70023	RG70033	DIRECT
6"	24:1	8" OD X .625" BORE		Ø.190" X 1.63" LONG	Ø.750 X .500 FLATS		RG700113	RG700085				
8"	30:1	RG70004	12" OD X .750" BORE	RG70015	Ø.190" X 1.63" LONG	RG700131	Ø.875 X .625 FLATS	RG70024		RG700114	RG700086	
10"	30:1	RG70006	12" OD X .750" BORE		Ø.190" X 1.63" LONG		.250" X .250" X 2" LG.	RG70025		RG700115	RG700087	
12"	50:1	RG70007	16" OD X .750" BORE	RG70016	Ø.190" X 1.63" LONG		.250" X .250" X 2" LG.		RG700116	RG700088		
14"	50:1	RG70008	16" OD X .750" BORE		Ø.190" X 1.63" LONG		.312" X .312" X 2-1/4" LG.	RG70026		RG700117	RG700089	
16"	80:1	RG70010	16" OD X 1.00" BORE	RG70017	Ø.380" X 1.81" LONG		.500" X .375" X 3" LG.	RG70028		RG700118	RG700090	
18"	80:1	RG70011	20" OD X 1.00" BORE	RG70018	Ø.380" X 2.50" LONG		.500" X .375" X 3" LG.				RG70029	
20"	320:1	RG70012	20" OD X 1.19" BORE	RG70019	Ø.380" X 2.50" LONG		.500" X .500" X 3" LG.	RG70030		RG700120	RG700093	
24"	320:1	RG70013	20" OD X 1.19" BORE		Ø.380" X 2.50" LONG		.750" X .500" X 4" LG.					
30"	320:1	RG70021	20" OD X 1.19" BORE				Ø.380" X 2.50" LONG	.866" X .788" X 5" LG.	RG700032		RG700121	RG700094

LCS7822 SERIES CLASS 300	GEAR OPERATOR KIT		HANDWHEEL		HANDWHEEL PIN		STEM BUSHING / KEY		LEVER HANDLE KIT	LEVER BUSHING	STEM SEAL KIT	RPTFE SEAT (only)
	RATIO	PART NO. NUMBER	SIZE	PART NO. NUMBER	SIZE	PART NO. NUMBER	SIZE	PART NO. NUMBER	PART NO. NUMBER	PART NO. NUMBER	PART NO. NUMBER	
2"	24:1	RG70001	8" OD X .625" BORE	RG70014	Ø.190" X 1.63" LONG	RG700130	Ø.500 X .375 FLATS	DIRECT	RG70031	RG70034	RG700110	RG700080
2½"	24:1	RG70002	8" OD X .625" BORE		Ø.190" X 1.63" LONG		Ø.625 X .438 FLATS	RG70022	RG70032	DIRECT	RG700111	RG700081
3"	24:1		8" OD X .625" BORE		Ø.190" X 1.63" LONG		Ø.625 X .438 FLATS					RG700082
4"	24:1		8" OD X .625" BORE		Ø.190" X 1.63" LONG		Ø.625 X .438 FLATS					RG700083
5"	24:1		RG70003		8" OD X .625" BORE		Ø.190" X 1.63" LONG	Ø.750 X .500 FLATS	RG70023	RG70033	DIRECT	RG700112
6"	24:1	8" OD X .625" BORE		Ø.190" X 1.63" LONG	Ø.750 X .500 FLATS	RG700122	RG700085					
8"	30:1	RG70005	12" OD X .750" BORE	RG70015	Ø.190" X 1.63" LONG	RG70021	.250" X .250" X 2" LG.	RG70025			RG700123	RG700095
10"	50:1	RG70008	16" OD X .750" BORE	RG70016	Ø.190" X 1.63" LONG		.312" X .312" X 2-¼" LG.	RG70026			RG700124	RG700096
12"	80:1	RG70009	16" OD X 1.00" BORE	RG70017	Ø.380" X 1.81" LONG		.375" X .375" X 3" LG.	RG70027			RG700125	RG700097
14"	80:1	RG70010	16" OD X 1.00" BORE		Ø.380" X 1.81" LONG		.500" X .375" X 3" LG.	RG70028			RG700126	RG700098
16"	320:1	RG70020	20" OD X 1.19" BORE	RG70019	Ø.380" X 2.50" LONG		.500" X .375" X 3" LG.	RG70030				RG700127
18"	320:1	RG70013	20" OD X 1.19" BORE		Ø.380" X 2.50" LONG	.750" X .500" X 4" LG.					RG700128	RG700100
20"	320:1		20" OD X 1.19" BORE		Ø.380" X 2.50" LONG	.750" X .500" X 4" LG.					RG700101	
24"	320:1		RG70021		20" OD X 1.19" BORE	Ø.380" X 2.50" LONG	.866" X .788" X 5" LG.	RG700032			RG700129	RG700102

NOTES

- Replacement Gear Operators includes Handwheel, Handwheel Pin, 4 Cap Screws, 4 Lock Washers, Key and Stem Bushing (if required) for mounting to BFV.
- Stem Seal Kit includes Upper Packing Set, Packing Retainer, and Lower Body Cap Seal.
- Lever Handle Kit includes Handle, Throttle Plate, Lockwashers, Bolts, and Bushing (if required).

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2.12 STEAM IPS GATE VALVES 1/2 TO 2"

Class 150 Bronze Gate Valves

Union Bonnet • Rising Stem • Solid Wedge

150 PSI/10.3 bar saturated steam to 366° F/185° C
300 PSI/20.7 bar non-shock cold working pressure

CONFORMS TO MSS SP-80

MATERIAL LIST

PART	SPECIFICATION
1. Handwheel Nut	300 Series Stainless Steel
2. Identification Plate	Aluminum
3. Handwheel	Malleable Iron ASTM A 47
4. Stem	Silicon Bronze ASTM B 371 Alloy C69400/C69430 or ASTM B 99 Alloy C65100
5. Packing Nut	Bronze ASTM B 62 or ASTM B124 Alloy C84400 or Brass ASTM B16
6. Packing Gland	Bronze ASTM B 62 or ASTM B584 Brass ASTM B16 C36000
7. Packing	Aramid Fibers with Graphite
8. Bonnet	Bronze ASTM B 62
9. Union Nut	Bronze ASTM B 62
10. Body	Bronze ASTM B 62
11. Wedge	Bronze ASTM B 62

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions													Master Ctn. Qty.
Size		A		B		C		T-134		S-134			
In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.		
¼	8	1.96	50	4.81	122	x	x	1.08	0.49	x	x	50	
⅜	10	1.96	50	4.81	122	0.79	20	1.12	0.51	1.02	0.46	50	
½	15	2.31	59	4.81	122	0.76	19	1.12	0.51	1.06	0.48	40	
¾	20	2.51	64	5.81	148	0.98	25	1.70	0.77	1.54	0.70	30	
1	25	2.92	74	7.09	180	1.13	29	2.38	1.08	2.26	1.03	20	
1 ¼	32	3.20	81	8.13	206	1.18	30	3.73	1.69	3.56	1.61	10	
1 ½	40	3.33	85	9.81	249	1.29	33	4.67	2.12	4.46	2.02	10	
2	50	3.44	87	11.56	294	1.31	33	7.77	3.53	7.14	3.24	6	
2 ½	65	4.35	110	14.31	364	1.81	46	12.70	5.77	12.30	5.58	4	
3	80	5.31	135	16.50	419	1.97	50	18.74	8.51	17.13	7.78	2	

x Not available this size.

FREEZING WEATHER PRECAUTION: Subsequent to testing a piping system, valves should be left in an open position to allow complete drainage.

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 116.



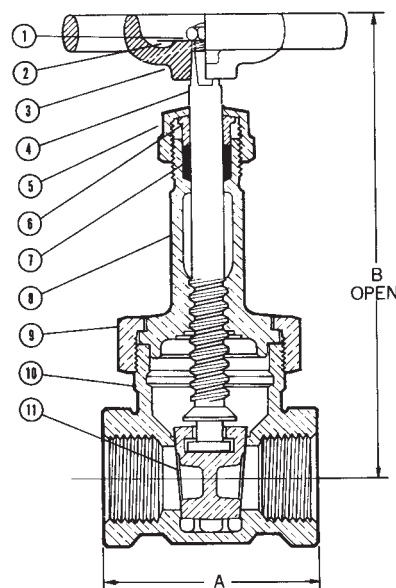
WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.



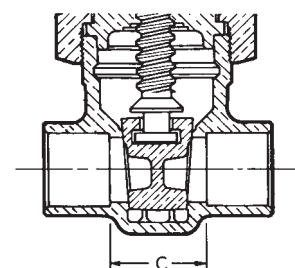
T-134
Threaded



S-134
Solder



T-134
NPT x NPT



S-134
C x C

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2.12 - STEAM AND STEAM CONDENSATE 2 1/2" TO 8" Class 125 Iron Body Gate Valves

Bolted Bonnet • Outside Screw and Yoke • Solid Wedge • Bronze Mounted • Stem Pack Ring Material Options

200 PSI/13.8 bar non-shock cold working pressure to -20°F to 150°F/-29°C to 66°Ct
Maximum working temperature 450°F/232°C at 125 PSI/8.6 bar
125 PSI/8.6 bar saturated steam to 353°F/178°C

CONFORMS TO MSS SP-70

MATERIAL LIST

PART	SPECIFICATION
1. Stem	Copper Alloy, ASTM B16 C36000
2. Nut, Handwheel	Cast Copper Alloy, ASTM B584 C84400
3. Nameplate, I.D.	Aluminum
4. Handwheel, Blue	Cast Iron, ASTM A126-B
5. Bushing, Yoke	Cast Copper Alloy, ASTM B584 C84400
6. Screw, Hex - Bonnet Cap	Steel, ASTM A307 / SAE J429
7. Cap, Bonnet	Ductile Iron, ASTM A536
8. Nut, Square - Bonnet Cap	Steel, ASTM A563
9. Bonnet ¹	Cast Iron, ASTM A126-B
10. Nut, Heavy Hex - GLD Follow	Steel, ASTM A563
11. Gland Follower	Ductile Iron, ASTM A536
12. Pack Gland	Powdered Metal, ASTM B783
13. Pack Ring	F617-O: Aramid Fibers/Graphite F617-OTP: Synthetic Fibers/PTFE
14. Bolt, SQ Head - GLD Follow	Steel, ASTM A307 / SAE J429
15. Screw, Hex - Body	Steel, ASTM A307 / SAE J429
16. Gasket, Body	Graphite/SST
17. Nut, Hex - Body	Steel, ASTM A563
18. Collar, Stem	Copper Alloy, ASTM B16 C36000
19. Pin, Wedge	Copper Alloy, ASTM B140 C31600
20. Ring, Seat - Wedge	Cast Copper Alloy, ASTM B584 C84400
21. Wedge ²	Cast Iron, ASTM A126-B
22. Ring, Seat - Body	Cast Copper Alloy, ASTM B584 C84400
23. Body	Cast Iron, ASTM A126-B

¹ Sizes thru 8", Yoke and Bonnet are intergral. 10" and 12" sizes separate. Yoke is bolted to Bonnet.

² Sizes 2" thru 6" have Cast Copper Alloy Wedges. Sizes 8" thru 12" made with Cast Iron Wedge with Cast Copper Alloy Face Rings.

NOTE: 1. F-617-O available 2"-24". F-617-OTP available 2"-12".

2. NIBCO may substitute Ductile Iron ASTM A395 (60-40-18) for ASTM A126 Class B Cast Iron for the Body, Bonnet, Wedge, or Disc. NIBCO may substitute Ductile Iron ASTM A395 (60-40-18) or ASTM A536 (65-45-12) for all other ASTM A126 Class B Cast Iron components.

DIMENSIONS—WEIGHTS—QUANTITIES

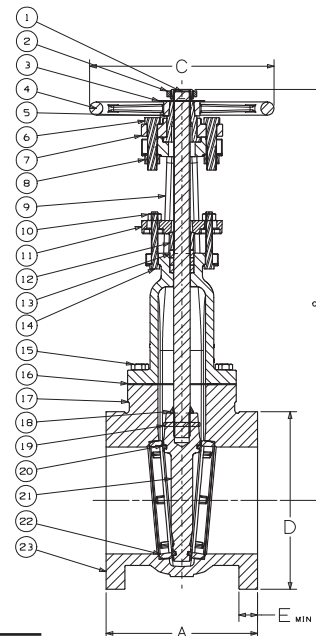
Dimensions																			
Size		F-617-O/OTP		T-617-O		A		B		C		D		E		F-617-O/OTP		T-617-O	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.
2	50	7.00	178	5.63	143	16.26	413	8.00	203	6.00	152	0.62	16	41	19	30	14		
2½	65	7.50	191	5.88	149	17.26	438	8.00	203	7.00	178	0.69	18	55	25	39	18		
3	80	8.00	203	6.13	156	19.44	494	8.00	203	7.50	114	0.75	19	67	30	47	21		
4	100	9.00	229	6.50	165	23.54	598	10.25	260	9.00	229	0.94	24	107	49	77	35		
5	125	10.00	254	—	—	27.01	686	10.25	260	10.00	254	0.94	24	145	66	—	—		
6	150	10.50	267	—	—	30.73	781	12.00	305	11.00	279	1.00	25	178	81	—	—		
8	200	11.50	292	—	—	40.29	1023	14.00	356	13.50	343	1.12	28	309	140	—	—		
10	250	13.00	330	—	—	48.45	1231	16.25	413	16.00	406	1.19	30	481	219	—	—		
12	300	14.00	356	—	—	56.26	1429	18.00	457	19.00	483	1.25	32	706	321	—	—		



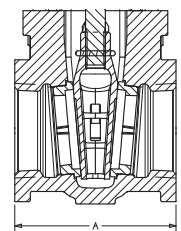
**F-617-O
F-617-OTP**
Flanged



T-617-O
Threaded



**F-617-O
F-617-OTP**
Flg x Flg



T-617-O
NPT x NPT

FREEZING WEATHER PRECAUTION: Subsequent to testing a piping system, valves should be left in an open position to allow complete drainage.

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 116.


WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Visit our website for the most current information.

2.12 - STEAM GLOBE VALVE 2 1/2" TO 8" Class 125 Iron Body Globe Valves

Bolted Bonnet • Renewable Seat and Disc* • Bronze Mounted

200 PSI/13.8 bar non-shock cold working pressure to -20°F to 150°F/-29°C to 66°C*
Maximum working temperature 450°F/232°C at 125 PSI/8.6 bar
125 PSI/8.6 bar saturated steam to 353°F/178°C

CONFORMS TO MSS SP-85

MATERIAL LIST

PART	SPECIFICATION
1. Handwheel Nut	Steel ASTM A307
2. Identification Plate	Aluminum
3. Handwheel	Cast Iron ASTM A126 Class B
4. Yoke Bushing	Brass ASTM B584 Alloy C84400
5. Bonnet	Cast Iron ASTM A126 Class B
6. Stem	Copper Alloy ASTM B16 Alloy C36000
7. Gland Follower Nut	Copper Alloy ASTM F467 Alloy C27000
8. Gland Follower	Cast Iron ASTM A126 Class B or Ductile Iron ASTM A536
9. Packing Gland	Zinc Plated Powdered Iron ASTM B783 or Copper Alloy ASTM B16
10. Gland Follower Stud	Steel ASTM A307
11. Packing	Aramid Fibers / Graphite
12. ¹ Body Bolt	Steel ASTM A307/SAE J429
13. Body Gasket	Graphite/SST
14. ¹ Body Nut	Steel ASTM A563
15. Swivel Nut	Copper Alloy ASTM B584 Alloy C84400
16. ² Disc Cage	Cast Iron ASTM A126 Class B
17. ³ Disc	Copper Alloy ASTM B584 Alloy C84400 (B)
**18. ⁴ Disc Plate	Cast Iron ASTM A126 Class B
**19. Disc Nut	Copper Alloy
20. Seat Ring	Copper Alloy ASTM B584 Alloy C84400
21. Body	Cast Iron ASTM A126 Class B

¹ 2" and 10" have hex head steel capscrew.

² 2" thru 5" are Cast Copper Alloy ASTM B584 Alloy C84400

³ For (B) Disc, 2" thru 6" have Bronze ASTM B584 Alloy C84400 Disc.

⁴ 8" thru 10" have Iron Disc with Copper Alloy Disc Face Rings and Brass Pilots.

⁵ 2" thru 4" are Cast Copper Alloy ASTM B584 Alloy C84400.

⁶ 2" thru 8" have Aramid Fibers/Graphite packings. 10" has wire reinforced carbon yarn/resilient core with graphite and zinc finish.

**For PTFE Seat Valves Only.

NOTE: NIBCO may substitute Ductile Iron ASTM A395 (60-40-18) for ASTM A126 Class B Cast Iron for the Body, Bonnet, Wedge, or Disc. NIBCO may substitute Ductile Iron ASTM A395 (60-40-18) or ASTM A536 (65-45-12) for all other ASTM A126 Class B Cast Iron components.

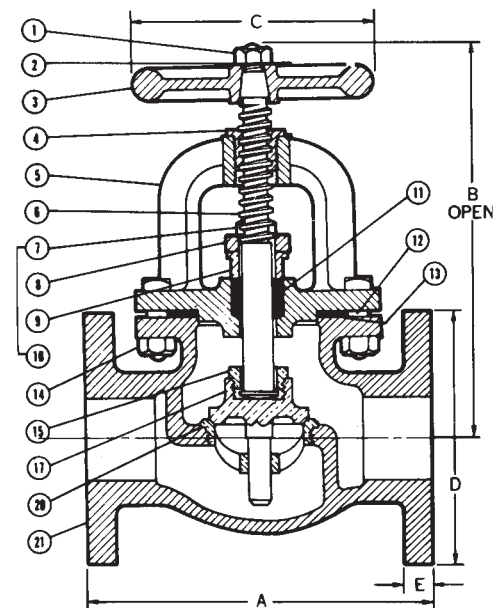
DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions										Weight	
		A	B	C	D	E							
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.
2	50	8.00	203	10.19	259	7	178	6.00	152	.63	16	32	15
2½	65	8.50	216	11.81	300	8	203	7.00	178	.69	17	49	22
3	80	9.50	241	12.50	318	8	203	7.50	191	.75	19	65	30
4	100	11.50	292	15.81	402	10	254	9.00	229	.94	24	98	44
5	125	13.00	330	16.50	419	10	254	10.00	254	.94	24	140	63
6	150	14.00	356	18.88	479	12	305	11.00	279	1.00	25	182	83
8	200	19.50	495	21.13	537	16	406	13.50	343	1.13	29	361	164
10	250	24.50	622	25.19	640	18	457	16.00	406	1.19	30	586	266

*With proper machining facilities.


F-718-B

Flanged


F-718-B

Flg x Flg

FREEZING WEATHER PRECAUTION: Subsequent to testing a piping system, valves should be left in an open position to allow complete drainage.

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 116.


WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Visit our website for the most current information.

2.12 - STEAM AND STEAM CONDENSATE 2" TO 8" CHECK VALVES "

Class 125 Iron Body Check Valves

Bolted Bonnet • Horizontal Swing • Renewable Seat and Disc*

200 PSI/13.8 bar non-shock cold working pressure to -20°F to 150°F/-29°C to 66°C*

Maximum working temperature 450°F/232°C at 125 PSI/8.6 bar

125 PSI/8.6 bar saturated steam to 353°F/178°C

CONFORMS TO MSS SP-71 TYPE 1

MATERIAL LIST

PART	SPECIFICATION
1. Body Bolt	Steel ASTM A307
2. Identification Plate	Aluminum
3. Bonnet	Cast Iron ASTM A126 Class B
4. Body Gasket	Synthetic Fibers
5. Body Nut	Steel ASTM A563
6. Side Plug	Brass ASTM B16 Alloy C36000
7. Hanger Pin	Brass ASTM B16 Alloy C36000
8. Hanger	Ductile Iron ASTM A536
9. ¹ Disc	Brass ASTM B584 Alloy C84400 or ASTM A536 Ductile Iron with Brass Face Ring
10. Seat Ring	Brass ASTM B584 Alloy C84400
11. Disc Nut	Brass ASTM B16 Alloy C36000
12. Body	Cast Iron ASTM A126 Class B
13. ¹ Disc Bolt	Brass ASTM B16 Alloy C36000
14. Disc Plate**	Cast Iron ASTM A126 Class B
15. Disc Cage**	Cast Iron ASTM A126 Class B

¹2" thru 4" have Bronze ASTM B584 Disc.

5" thru 12" have Iron Disc with Bronze Disc Face Rings and Disc Bolt.

**These items are not in the -B, only the -W and -Y.

DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions													
Size		F-918-B		T-918-B		A		B		D		E	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
2	50	8.00	203	6.50	165	3.94	100	6.00	152	.63	16	24	11
2½	65	8.50	216	7.50	191	4.50	114	7.00	178	.69	17	35	16
3	80	9.50	241	8.00	203	5.13	130	7.50	191	.75	19	47	21
4	100	11.50	292	9.38	238	6.13	156	9.00	229	.94	24	80	36
5	125	13.00	330	x	x	6.81	173	10.00	254	.94	24	100	45
6	150	14.00	356	x	x	8.00	203	11.00	279	1.00	25	146	66
8	200	19.50	495	x	x	9.44	240	13.50	343	1.13	29	274	124
10	250	24.50	622	x	x	12.06	306	16.00	406	1.19	30	426	193
12	300	27.50	699	x	x	16.13	410	19.00	483	1.25	32	675	306

Note: On pump discharge, the preferred check valves are:

- inline, spring assisted, center-guided, lift checks
- spring assisted twin (double) disc
- swing design with lever and weight or lever and spring

*Proper machining facilities required.

x Not available this size.

2½" thru 12" are available with lever and weight or lever and spring.

Install 5 pipe diameters minimum downstream from pump discharge or changes in direction to avoid flow turbulence. Flow straighteners may be required in extreme cases.

NIBCO Iron Body Check Valves may be installed in both horizontal and vertical lines with upward flow or in any intermediate position.

Warning – Do Not Use For Reciprocating Air Compressor Service.

♦ For detailed Operating Pressure, refer to Pressure Temperature Chart on page 114.



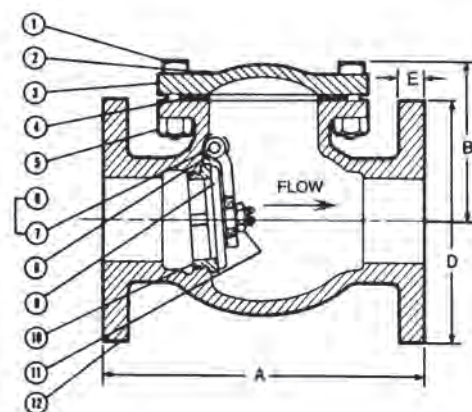
F-918-B

Flanged



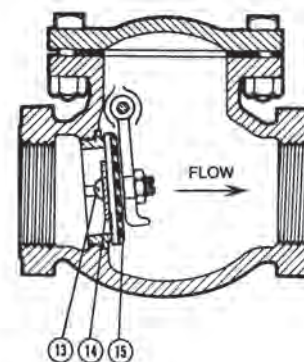
T-918-B

Threaded



F-918-B

Flg x Flg



T-918

NPT x NPT

Buna-N Disc Shown



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

2.12 - STEAM AND STEAM CONDENSATE 2 1/2" TO 8" STRAINERS

ES-MS-758

Model: 758

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

Cast Iron Flanged End Y Strainers

Model: 758

Sizes: 3/4"- 24"

PRESSURE/TEMPERATURE-NON-SHOCK		
Size	Material	Rating
3/4"-12"	Cast Iron	200psi @ -20 to 150°F
		13.79 bar @ 65.56°C
		125psi @ 450°F
		8.62 bar @ 232.22°C
14"-24"	Cast Iron	150psi @ -20 to 150°F
		10.34 bar @ 65.56°C
		100psi @ 353°F
		6.89 bar @ 178.33°C

758 - Class 125

Features

- Mueller "BREECH-LOK STRAINERS" furnished as standard in sizes 8" and larger
- A one-quarter turn securely locks the screen in its seat
- Allows for easy bolting of the cover flange
- Tapered seats in both the body and cover flange retain screen and prevent particle bypass

Construction

- All covers have NPT blowoff outlet at location C. See next page
- Recessed seat in the cover assures accurate screen alignment
- Bosses at the inlet and outlet flanges are provided for the gauge taps

Self-Cleaning

- Self-cleaning is accomplished by opening the plug or valve connected to the blowoff outlet
- Advise when strainers are to be mounted in vertical piping so we can rotate the cover to position the blowoff at the lowest point



Model 758

Blowoff Outlets

- Outlets are NPT tapped
- Sizes of tapping specified on next page
- Not normally furnished with plug. Plug available, specify with order

Capacity

- Generously proportioned bodies
- Open Area Ratio much greater than pipe size, ensuring low pressure drop

Screens

MODEL	SIZES	STANDARD (WATER)		STEAM RECOMMENDATION	
		MATERIAL	OPENING	MATERIAL	OPENING
758	3/4" - 4"	304SS	.062 perf	304SS	.045 perf
758	5" - 10"	304SS	.125 perf	304SS	.045 perf
758	12" and Up	304SS	.125 perf	304SS	.062 perf

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

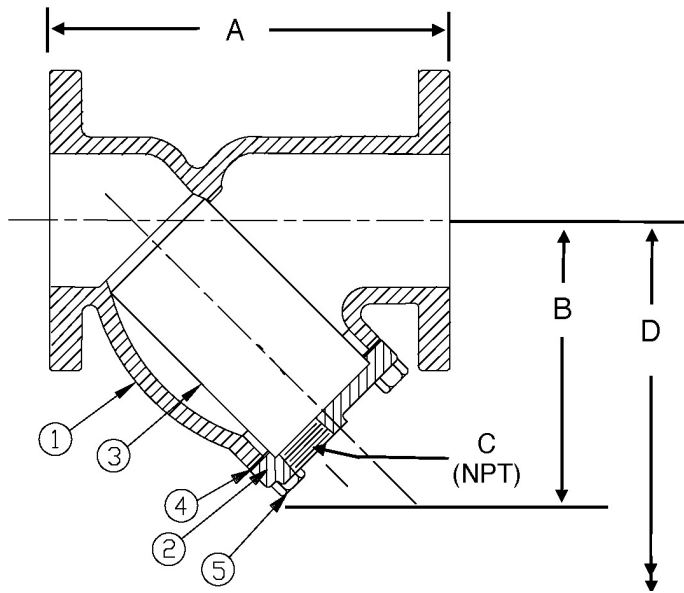
***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Mueller Steam Specialty product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Mueller Steam Specialty Technical Service. Mueller Steam Specialty reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Mueller Steam Specialty products previously or subsequently sold.

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A WATTS Brand

Materials



BILL OF MATERIAL - 758		
ITEM	DESCRIPTION	MATERIAL
1	BODY	Cast Iron ASTM A126-B
2	COVER **	Cast Iron ASTM A126-B
3	SCREEN	304 SS
4	GASKET	Non-Asbestos
5	HEX HEAD CAP SCREWS	SAE J429 Gr. 5

** Cover may be manufactured from equivalent grade plate material

Pressure Drop

See Pressure Drop Charts in Technical Data section of the Mueller Steam Specialty Engineering binder. Cv values are noted in the Dimensions and Weights table below.

Dimensions and Weights

SIZE		DIMENSIONS						WEIGHT		CV	
A		B		C (NPT)		D Screen Removal					
in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	GPM	
3/4	187	3 3/4	95	1/2	15	5	127	10	4.5	15	
1	187	3 7/8	98	1/2	15	5	127	10	4.5	22	
1 1/4	190	4 3/4	120	1/2	15	6 1/2	165	13	5.9	38	
1 1/2	190	4 3/4	120	1/2	15	6 1/2	165	13	5.9	42	
2	200	5 1/4	133	1/2	15	7	178	18	8	70	
2 1/2	254	6 1/2	165	1	25	9 3/4	248	28	12	110	
3	257	7	178	1	25	10	254	34	15	140	
4	308	8 1/4	210	1 1/2	40	12	305	60	27	245	
5	397	11 1/4	286	2	50	17	432	95	43	400	
6	470	13 1/2	343	2	50	20	508	133	60	600	
8	549	15 1/2	394	2	50	22 3/4	578	247	112	1,000	
10	654	18 1/2	470	2	50	28	711	370	168	1,580	
12	759	21 3/4	553	2	50	30	762	579	263	2,200	
14	846	25	635	2	50	36 1/2	927	863	392	3,200	
16	984	26 1/2	673	2	50	42	1067	1380	627	4,900	
18	1105	31	788	2	50	45 1/2	1156	2272	1032	6,100	
20	1257	38 3/16	970	2	50	55 3/8	1407	2675	1213	8,000	
24	1486	44 1/16	1119	2	50	67 1/4	1708	4880	2213	11,000	

Apply For Certified Drawings.

Limited Warranty: Mueller Steam Specialty warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge. This shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** Any implied warranties that are imposed by law are limited in duration to one year.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights.



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Latin America: T: (52) 81-1001-8600 • MuellerSteam.com

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2.12 - STEAM AND STEAM CONDENSATE 1/2" TO 2" STRAINERS

ES-MS-11-M

Model: 11M

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

Cast Iron Screwed End Y Strainers

Model: 11M

Sizes: 1/4" - 4"

PRESSURE/TEMPERATURE-NON-SHOCK

Model	Material	Rating
11M	Cast Iron	400psi @ -20°F to 150°F 27.58 bar @ 65.56°C 250psi @ 406°F 17.24 bar @ 207.78°C

11M

Class 250

Features

- Machined seats in both body and cap align and lock the screen in place to stop sediment bypass

Construction

- Gasketed cap is used for easy disassembly and assembly.
- 3" and 4" models have a Bolted Cap

Self-Cleaning

- Self cleaning is accomplished by opening the plug or valve connected to the blowoff outlet

Blowoff Outlets

- Outlets are NPT Tapped
- Sizes of tapping specified on the next page
- Not normally furnished with plug. Plug available, specify with order



Model 11M

Capacity

- Generously proportioned bodies
- Open Area Ratio much greater than pipe size, ensures low pressure loss

Screens

MODEL	SIZES	STANDARD (WATER)		STEAM RECOMMENDATION	
		MATERIAL	OPENING	MATERIAL	OPENING
11M	1/2" - 2"	304SS	20 mesh	304SS	30 mesh
11M	2 1/2" - 4"	304SS	.062 perf	304SS	.045 perf

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

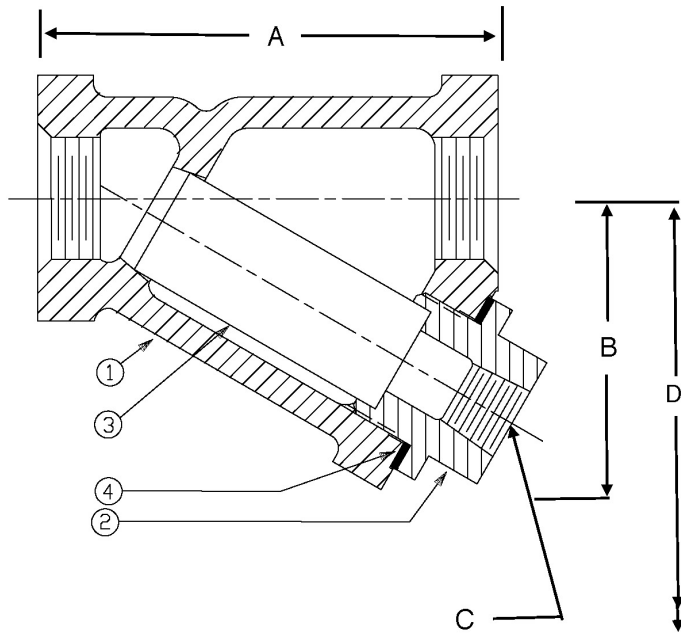
***The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.**

Mueller Steam Specialty product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Mueller Steam Specialty Technical Service. Mueller Steam Specialty reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Mueller Steam Specialty products previously or subsequently sold.

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Materials



BILL OF MATERIAL - 11M		
ITEM	DESCRIPTION	MATERIAL
1	BODY	Cast Iron ASTM A126-B
2	CAP	Cast Iron ASTM A126-B
3	SCREEN	304 SS
4	GASKET	Metal Filled Graphite

BILL OF MATERIAL - 11BC ONLY (3", 4")		
Not Shown	COVER **	Cast Iron ASTM A126-B
Not Shown	HEX HEAD CAP SCREWS	SAE J429 Gr. 5

** Cover may be manufactured from equivalent grade plate material

Pressure Drop

See Pressure Drop Charts in Technical Data section of the Mueller Steam Specialty Engineering binder. Cv values are noted in the Dimensions and Weights table below.

Dimensions and Weights

SIZE		DIMENSIONS								WEIGHT		Cv
	A	B	C	D								
in.	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	GPM	
1/4	3 ³ / ₁₆	81	2 ¹ / ₁₆	52	1/4	6	2 ³ / ₈	61	1.6	0.7	7	
3/8	3 ³ / ₁₆	81	2 ¹ / ₁₆	52	1/4	6	2 ³ / ₈	61	1.6	0.7	7	
1/2	3 ³ / ₁₆	81	2 ¹ / ₁₆	52	1/4	6	2 ³ / ₈	61	1.6	0.7	8	
1	3 ³ / ₄	95	2 ⁷ / ₁₆	61	3/8	10	3	77	2.4	1.1	16	
1	4	102	2 ⁵ / ₈	66	3/8	10	3 ¹ / ₄	83	3.0	1.4	22	
1 1/4	5	127	3 ³ / ₈	85	3/4	20	5	127	5.2	2.3	38	
1 1/2	5 ³ / ₄	146	3 ⁷ / ₈	98	1	20	5	127	8.0	3.6	50	
2	7	177	4 ³ / ₄	121	1 1/2	25	6 ¹ / ₈	157	22.0	5.7	76	
2 1/2	9 ¹ / ₄	234	5 ⁷ / ₈	149	1 1/2	40	7 ⁷ / ₈	174	22.0	10.0	125	
3	10	254	6	152	1 1/2	40	8	204	30.0	13.6	160	
4	15 ³ / ₁₆	386	11 ¹ / ₄	286	1 1/2	40	16	406	70.0	32.0	245	

Apply For Certified Drawings.

Limited Warranty: Mueller Steam Specialty warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge. This shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** Any implied warranties that are imposed by law are limited in duration to one year.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights.



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2.11 HYDRONIC BALL VALVES 2" TO 1/2"

Brass Ball Valves

Two-Piece Body • Full Port • Blowout-Proof Stem • PTFE Seats

1/4"-2" 600 PSI/41.4 Bar Non-Shock Cold Working Pressure

2 1/2"-4" 400 PSI/27.6 Bar Non-Shock Cold Working Pressure

CSA CERTIFIED TO ASME B16.44 AND CR91-002 (THREADED 1/4"-4")

- UL LISTED (THREADED 1/4"-4") • FM APPROVED (THREADED 1/4"-2")
- CRN: 0C19353.5XX*

Threaded

CSA (1/4" - 4"):

- CR91-002: 1/2 psig, 2 psig, and 5 psig (these are specific approved categories)
- ASME B16.33: 125 psig (maximum)
- Temperature is -4° F to 194° F

Threaded

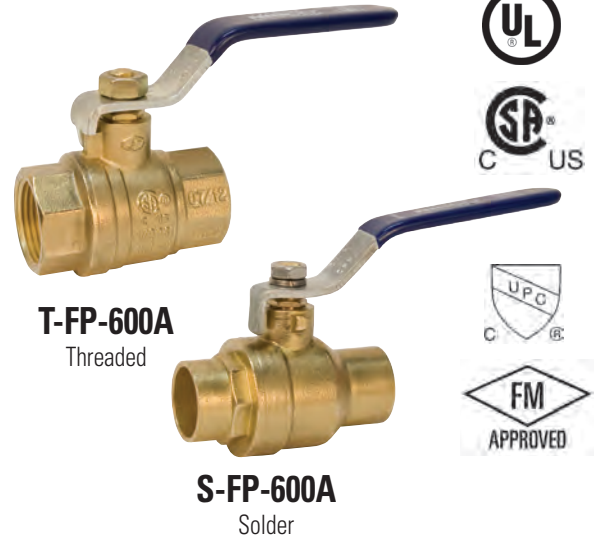
FM (1/4" - 2"):

- 175wvp Threaded

UL, Gas and Oil (1/4" - 4"):

- YQNZ, Compressed Gas Shutoff Valves: 250 psi
- YRBX, Flammable Liquid Shutoff Valves: 250 psi
- YRPV, Gas Shutoff Valves: 250 psi
- YSDT, LP-Gas Shutoff Valves: 250 psi
- MHKZ, Manual Valves: 250 psi

*Please contact Technical Customer Service for the CRN Jurisdictions/Provinces list



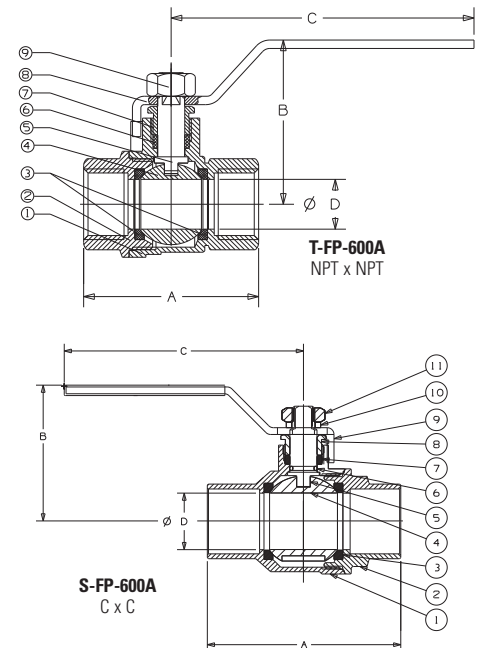
MATERIAL LIST

PART	SPECIFICATION
1. Body	Forged Brass ² CU > 57%
2. End Cap	Forged Brass ² CU > 57%
3. Ball Seat	PTFE
4. Ball	Chrome Plated Brass - C46500 (1/4"-1"), Stainless Steel 316 (1 1/4"-4")
5. Stem	Brass
6. O-Ring (Stem Seal)*	Fluorocarbon (FKM)
7. Stem Packing	PTFE
8. Packing Nut	Brass
9. Lever Handle ¹	Steel, Plated
10. Lock Washer*	Stainless Steel
11. Handle Nut ¹	Stainless Steel

Note: * Parts 6 and 10 are applicable of S-FP-600A only.

¹ Due to Standard Approvals, Lever Handles and Nuts are not interchangeable between Solder and Threaded.

² For Material Certification, contact NIBCO Technical Services.



DIMENSIONS—WEIGHTS—QUANTITIES

Dimensions

Size		T-FP-600A		S-FP-600A		T-FP-600A		S-FP-600A		T-FP-600A		S-FP-600A		Port D		T-FP-600A		S-FP-600A		T-FP-600A		S-FP-600N	
		A		A		B		B		C		C				Lbs. Kg.		Lbs. Kg.		Ctn. Qty.		Ctn. Qty.	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	Ctn.	Qty.	Ctn.	Qty.
¼	8	1.76	45	—	—	1.73	44	—	—	3.54	90	—	—	.39	10	.33	.15	—	—	18	—	—	—
⅜	10	1.76	45	1.75	44	1.73	44	1.58	40	3.54	90	3.78	96	.39	10	.30	.14	.38	.17	18	—	18	18
½	15	2.05	52	2.01	51	1.92	49	1.78	45	3.54	90	3.78	96	.59	15	.44	.20	.40	.18	18	—	18	18
¾	20	2.36	60	2.74	70	2.09	53	2.13	54	3.78	96	3.98	101	.75	19	.66	.30	.67	.30	12	—	12	12
1	25	2.76	70	3.35	85	2.56	65	2.52	64	4.53	115	4.41	112	.98	25	1.10	.50	1.12	.51	6	—	6	6
1¼	32	3.31	84	3.78	96	2.95	75	2.65	67	4.53	115	5.04	128	1.26	32	1.57	.71	1.49	.67	4	—	4	4
1½	40	3.66	93	4.42	112	3.35	85	3.12	79	5.51	140	6.22	158	1.57	40	2.40	1.09	2.38	1.08	2	—	2	2
2	50	4.18	106	5.34	136	3.68	93	3.41	87	5.51	140	6.22	158	1.97	50	3.37	1.53	3.62	1.64	2	—	2	2
2½	65	5.38	137	6.28	160	4.76	121	4.76	121	8.66	220	8.66	220	2.56	65	7.60	3.45	6.36	2.88	3	—	3	3
3	75	6.04	153	7.15	182	5.08	129	5.08	129	8.66	220	8.66	220	2.95	75	9.36	4.24	8.32	3.77	2	—	2	2
4	100	7.39	188	—	—	5.87	149	—	—	9.61	244	—	—	3.89	99	16.85	7.64	—	—	1	—	—	—

NOT FOR USE WITH POTABLE DRINKING WATER APPLICATIONS AFTER JANUARY 3, 2014.



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

2.12 - HYDRONIC VALVES 2 1/2" THRU 8"

200 PSI Butterfly Valves

Ductile Iron Body • Extended Neck • Geometric Drive • Molded-In Seat Liner
• Lug and Wafer Style

Sizes 2" through 12"

Install between Std. ASME Class 125/150 flanges.
Lug Style 200 PSI bi-directional dead end service rating without a downstream flange required.



THIRD PARTY CERTIFIED BY QAI TO MEET MSS SP-67 STANDARD •
U.S. COAST GUARD "CATEGORY A" • CERTIFIED LEAD-FREE* BY
TRUESDAIL LABS TO NSF/ANSI 61-8 COMMERCIAL HOT 180°F
AND NSF/ANSI 61 AND 372

MATERIAL LIST

PART	SPECIFICATION
1. Stem	Stainless Steel ASTM A582 Type 416
2. Collar Bushing	Brass ASTM B16
3. Stem Seal	EPDM Rubber
4. Body Seal	EPDM Rubber
5. Nameplate	Aluminum
6. Upper Bushing	Copper CDA 122
7. Liner	EPDM Rubber
8. Disc	Alum. Brz. ASTM B148 Alloy 955
9. Lower Bushing	Copper CDA 122
10. Body Wafer	Ductile Iron ASTM A536
11. Body Lug	Ductile Iron ASTM A536



WD-2000
Wafer Style
EPDM Liner
and Aluminum
Bronze Disc

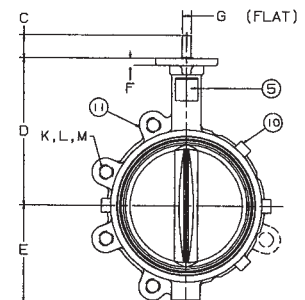
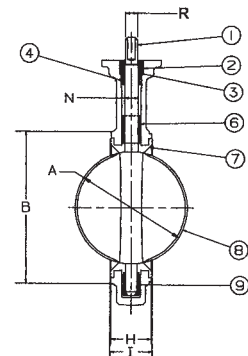
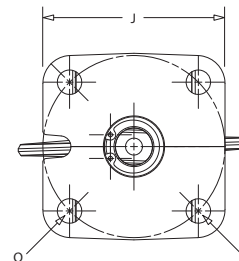


LD-2000
Lug Style
EPDM Liner
and Aluminum
Bronze Disc

NOT RECOMMENDED
FOR STEAM SERVICE

DIMENSIONS — WEIGHTS

Size	In.	mm.	A	B	C	D	E	F	G	H	I	J	K	L	M	N
2	50	2.53	4.00	1.25	5.38	2.88	.38	.312	1.688	1.812	3.25	.500				
2½	65	2.90	4.69	1.25	5.88	3.27	.38	.370	1.812	1.938	3.25	.562				
3	80	3.15	5.12	1.25	6.12	3.40	.38	.370	1.812	1.938	3.25	.562				
4	100	4.09	6.12	1.25	6.88	4.00	.38	.403	2.062	2.188	3.25	.625				
5	125	5.13	7.25	1.25	7.38	4.75	.38	.496	2.188	2.312	3.25	.750				
6	150	6.13	8.25	1.25	8.00	5.29	.38	.496	2.188	2.312	3.25	.750				
8	200	8.13	10.41	1.25	9.25	6.50	.50	.560	2.375	2.500	3.25	.875				
10	250	10.13	12.52	1.25	10.50	8.00	.50	.686	2.688	2.812	4.75	1.125				
12	300	12.13	15.00	1.25	12.00	9.25	.50	.748	3.000	3.125	4.75	1.250				



Capscrew/Stud Data										Lug Weight		Wafer Weight	
Size	In.	mm.	O	P	R	K	L	Wafer Length	Lug Length	M	B.C.	Lbs.	Kg.
2	50	3.25	.437	.437	.437	4	5/8-11unc			4 3/4	7	3.2	5.5
2½	65	3.25	.437	.500	.500	4	5/8-11unc			5 1/2	9	4.1	7.5
3	80	3.25	.437	.500	.500	4	5/8-11unc			6	9.5	4.3	8
4	100	3.25	.437	.562	.562	8	5/8-11unc			7 1/2	15	6.8	11
5	125	3.25	.437	.656	.656	8	3/4-10unc			8 1/2	21	9.5	15
6	150	3.25	.437	.656	.656	8	3/4-10unc			9 1/2	24	10.9	18
8	200	3.25	.437	.781	.781	8	3/4-10unc			11 3/4	34	15.4	28
10	250	5.00	.562	1.000	1.000	12	7/8-9unc			14 1/4	62	28.1	45.5
12	300	5.00	.562	1.062	1.062	12	7/8-9unc			17	90	40.9	70

Refer to
butterfly
valve
technical
information
for bolt
lengths

For actuated service where a lower torque is required use NIBCO Fig. No. WDLXXX-0 or LDLXXX-0 series, sizes 2" thru 12" only. Maximum pressure rating of 100 PSI for wet application and 50 PSI for dry application.

WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

*Weighted average lead content ≤ 0.25%

77V-LF Series

Press End Forged Ball Valve | Small Diameter 1/2" - 2"

LEAD FREE

2.11 - BALL VALVES



"Apollo" PRESS



Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO#:	
Rep:	
Wholesale Dist.:	

DESCRIPTION

The APOLLOPRESS® 77VLF Series lead free* two-piece press ball valve is ideal for installation in most plumbing and heating systems, including potable water. Now with Leak Before Press® feature and 300 psig maximum working pressure. Proudly Made in the USA.

FEATURES

- Lead Free*, ANSI 3rd Party Certified and Listed
- Full-Port Flow
- Superior RPTFE Seats and Packing
- Adjustable Stem Packing
- Ridgid® XL Press Tool Compatible
- Leak Before Press® Technology
- Blowout-Proof Stem
- Corrosion Resistant Materials
- Silicone Free Assembly
- 100% Factory Tested
- **Made in USA, ARRA Compliant**

PERFORMANCE RATING*

- Maximum Operating Pressure: 300 psi
- Temperature Range: 0°F - 250°F

**APOLLOPRESS® connectors are designed for direct mechanical connection to ASTM B88-Type K, L, and M copper tubing in the hard drawn condition. Press connectors are not suitable for steam or flammable gas service.*

APPROVALS

- MSS SP-110 Ball Valves
- NSF/ANSI 61 Water Quality
- NSF/ANSI 372 Lead Free
- IAPMO/ANSI Z1157 Ball Valves
- Directive 2011/65/CE (RoHS)

APPROVED APPLICATIONS

- Water Including Potable Water
- Hydronic Heating (90% glycol max)
- Low Pressure Steam, 15 psi max
- Not Suitable for Flammable Gas Service
- Designed for Direct Mechanical Connection to ASTM B88-Type K, L, and M Copper Tubing in the Hard Drawn Condition
- Not Compatible with Soft Annealed Copper Tubing

OPTIONS

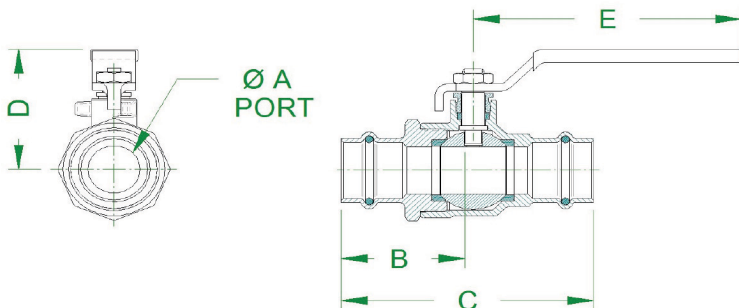
- (-01) Standard Lever Handle
- (-04) 2-1/4" Stem Extension 1/2" - 2-1/2"
- (-07) Tee Handle 1/2" - 2"
- (-11) Therma-Seal™
- Insulating Tee Handle 1/2" - 2"
- (-27) Locking Handle SS 1/2" - 2-1/2"
- 77V140 Series - SS Ball & Stem
- 77V-LF Large Diameter 2-1/2" - 4"

STANDARD MATERIALS LIST

BODY	Lead Free Brass, C27451
SEAT	RPTFE
BALL	Lead Free Brass, C27451, Chrome Plated
STEM PACKING	RPTFE
NUT	Corrosion Resistant Plated Steel
STEM	Lead Free Brass, C27451
RETAINER	Lead Free Brass, C27451
HANDLE	Plated Steel / Insulated Polyvinyl
GLAND	Brass, ASTM B16, C36000
O-RING SEALS	EPDM

DIMENSIONS

MODEL NUMBER	SIZE (IN.)	DIMENSIONS (IN.)					WT. (LB.)
		A	B	C	D	E	
77VLF10301	1/2"	0.50	1.57	2.89	1.66	2.85	0.4
77VLF10401	3/4"	0.75	1.90	3.63	1.91	3.86	0.9
77VLF10501	1"	1.00	2.20	3.88	2.11	3.86	1.2
77VLF10601	1-1/4"	1.25	2.23	4.22	2.44	4.75	2.3
77VLF10701	1-1/2"	1.50	2.84	5.45	2.91	5.42	3.4
77VLF10801	2"	2.00	3.40	6.57	3.69	7.77	6.0



*LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.

163T-PRLF

200 CWP, Bronze, Swing Check Valve

LEAD FREE

2.13- SWING CHECK 1/2 TO 2" HYDRONICS



"Apollo" PRESS



Job Name:	
Job Location:	
Engineer:	
Contractor:	
Tag:	
PO#:	
Rep:	
Wholesale Dist.:	

DESCRIPTION

The lead free* **APOLLOPRESS® Model 163T-PRLF (Series 61YLF) Swing Check** with press connections is a proven combination that provides economical installation and reliable service for potable water applications. These valves are cast, machined, assembled, and tested in South Carolina using proven ASTM quality materials.

FEATURES

- Fast, Reliable, Economical Press Installation
- Ridgid® XL Press Tool Compatible
- Leak Before Press® Technology
- Quick Press End Connection
- Renewable PTFE Seat Disc
- Dezincification Resistant
- **Made in USA, ARRA Compliant**

APPROVALS

- MSS SP-80 Design and Testing
- MSS SP-139 Copper Alloy Gate, Globe, & Check Valves
- NSF/ANSI 61 Water Quality
- NSF/ANSI 372 Lead Free
- CRN OC14667.5

PERFORMANCE RATING

- Maximum Pressure: 200 psi (13.8 bar) non-shock
- Temperature Range: 0°F - 250°F (-18°C - 121°C)

APOLLOPRESS® connectors are designed for direct mechanical connection to ASTM B88-Type K, L, and M copper tubing in the hard drawn condition. Press connectors are not suitable for steam or flammable gas service.

Not recommended for applications which may induce pulsation or repetitive vibration. See Installation Manual for details.

STANDARD MATERIALS LIST

BODY	ASTM B584 C89836 Bronze
CAP	ASTM B584 C89836 Bronze
CONNECTOR HOUSING	UNS C27450 Brass
CONNECTOR O-RING	NSF grade EPDM
HANGER	304 Stainless Steel or ASTM B584 C89836 Bronze
PIN	Stainless Steel
SEAT	PTFE
PLUG	UNS C27450 Brass

DIMENSIONS

MODEL NO.	PART NO.	SIZE (IN.)	HEIGHT (IN.)	LENGTH (IN.)	CV (GPM)	WEIGHT (LB.)
163T12-PRLF	61YLF-203-TIPR	1/2"	1.65	4.3	7.0	.78
163T34-PRLF	61YLF-204-TIPR	3/4"	1.9	5.1	12.0	1.8
163T1-PRLF	61YLF-205-TIPR	1"	2.26	5.9	28.6	2.5
163T114-PRLF	61YLF-206-TIPR	1-1/4"	2.99	7.0	39.0	4.4
163T112-PRLF	61YLF-207-TIPR	1-1/2"	2.99	7.75	56.0	4.5
163T2-PRLF	61YLF-208-TIPR	2"	3.74	8.9	152.0	7.0

For liquids the flow coefficient - Cv - expresses the flow capacity in gallons per minute (GPM) of 60°F water with a pressure drop of 1 psi (lb/in²).

*LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.