



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
Little Rock, AR 72231
Phone 501-834-3320
Fax 501-834-5416

Date: 2/21/2024

Return Request: 3/28/2024

Project: Little Rock West High School

Supplier: Comfort Systems USA (Arkansas), Inc.

Manufacturer: Various

Submittal: Plumbing (Valves)

Submittal Number: 22 01 00-03

Drawing # and Installation: Plumbing Drawings

ARCHITECT

Lewis Architects Engineers
11225 Huron Lane, Suite 104
Little Rock, AR 72211
501-223-9302

ENGINEER

Lewis Architects Engineers
11225 Huron Lane, Suite 104
Little Rock, AR 72211
501-223-9302

GENERAL CONTRACTOR

Baldwin & Shell
1000 W. Capitol Ave.
Little Rock, AR 72201
501-374-8677

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
N. Little Rock, AR 72117
501-834-3320

Notes:

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chowell@comfortar.com

9924 Landers Rd.
No. Little Rock, AR 72117

UPBA400/400S 1/4"-2"



Tested and Certified
by IAPMO R&T to
NSF/ANSI 61 and
NSF/ANSI 372 for
Lead Free Compliance.

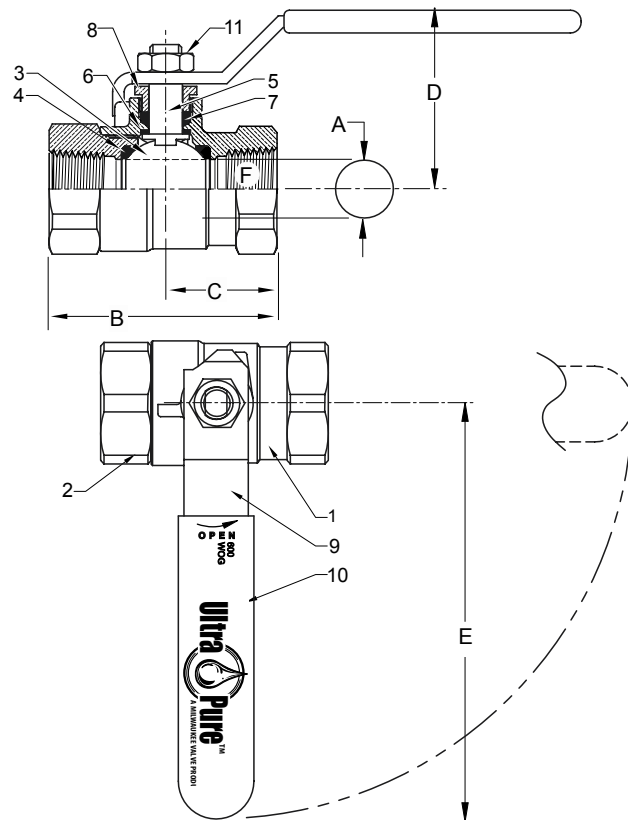
600 psig WOG
Threaded Ends
Blow-Out Proof Stem

Dimensions and Workmanship Conform to MSS SP-110

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Cast Bronze	B584 C89833
2	Tailpiece	Cast Bronze	B584 C89833
3	Ball	Brass w/Hard Chrome Plating	B283 C27450
		316 Stainless Steel (1)	A276 S31600
4	Seat	RPTFE, 15% Glass Filled	Commercial
5	Stem	Brass	B21 C46400, H02
		316 Stainless Steel (1)	A276 S31600
6	Thrust Washer	RPTFE, 25% Glass Filled	Commercial
7	Packing	PTFE	Commercial
8	Packing Nut	Brass	B16 C36000
9	Handle	Steel w/Zinc Plating	Commercial
10	Hand Grip	Vinyl	Commercial
11	Handle Nut	Steel w/Zinc Plating	Commercial

(1) Ball and stem are stainless for UPBA400S



DIMENSIONS

	UNITS	1/4" DN10	3/8" DN10	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50
A (DIA)	INCHES	0.38	0.38	0.50	0.76	1.06	1.31	1.56	2.00
	mm	10	10	13	19	27	33	40	51
B	INCHES	1.86	1.86	2.19	2.59	3.32	3.77	4.28	5.10
	mm	46	46	54	66	84	96	109	130
C	INCHES	1.00	1.00	1.10	1.30	1.59	1.81	2.06	2.37
	mm	25	25	27	33	40	46	52	60
D	INCHES	1.78	1.81	1.91	2.32	2.68	2.82	3.00	3.36
	mm	44	44	47	59	68	72	76	85
E	INCHES	3.82	3.82	3.82	4.55	6.33	6.33	6.33	7.19
	mm	94	94	94	116	161	161	161	183
F	THREAD SIZE	1/4" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
Cv		7	7	13	30	61	110	185	360

Note: DN (Diameter Nominal) = Metric equivalent size.

Note: Lead free refers to the wetted surface of the pipe, fittings and fixtures in potable water systems that have a weighted average lead content ≤0.25%. Source: California Health and Safety Code (116875).

The information presented on this sheet is correct at time of publication. Milwaukee Valve reserves the right to change design and/or materials without notice. For our Installation, Operation and Maintenance Manual and the most current product information go to www.milwaukeevalve.com.

⚠ State of California Prop 65 **WARNING:** Cancer and Reproductive Harm. For more information visit www.p65warnings.ca.gov.



ML133E/ML233E/ML333E* 2"-12"

Iron Butterfly Valve for Potable Water

200 psi Non-Shock WOG

Bi-Directional Dead End Service to 200 psi Max

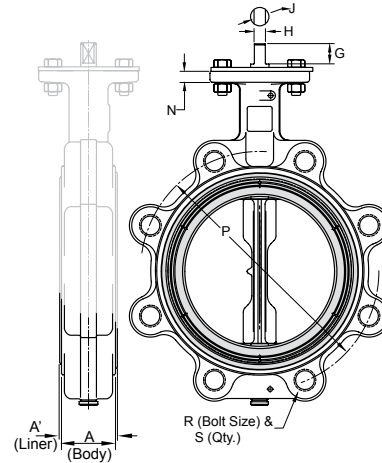
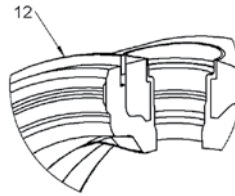
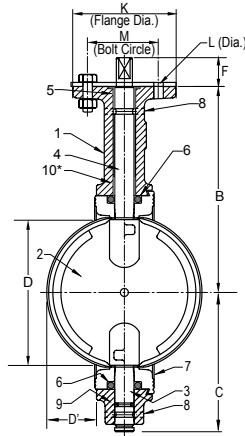
Specifications: API-609 MSS SP-67 Type 1



ABS Type Approved;
Cat. A
CFR-46



Tested and Certified by
IAFMP R&T to NSF/ANSI 372
and NSF/ANSI 61



MATERIALS LIST

ITEM	PART	MATERIALS
1	BODY	DUCTILE IRON ASTM A536
2	DISC	ALUMINUM BRONZE ASTM B148
3	BOTTOM STEM	STAINLESS STEEL TYPE 416
4	TOP STEM	STAINLESS STEEL TYPE 416
5	TOP BEARING	REINFORCED NYLON
6	SEAL	
7	LINER	EPDM
8	ROLL PIN	STAINLESS STEEL
9	STEM SEAL	EPDM, BUNA, VITON
10	LOWER BEARING	REINFORCED NYLON
11	OPERATOR	LEVER HANDLE
		EPOXY COATED LEVER HANDLE
		GEAR OPERATOR
		GEAR OPERATOR WITH MEMORY STOP
		GEAR OPERATOR WITH LOCK
		ACTUATOR-AIR/AIR
12	RETAINING RING	ACTUATOR-AIR/SPRING
		ACTUATOR-ELECTRIC
12	RETAINING RING	1066 SPRING STEEL (65Mn)

DIMENSIONS

	INCHES DN	VALVE SIZE									
		2	2-1/2	3	4	5	6	8	10	12	
A (Body)	INCHES	1.69	1.81	1.81	2.07	2.19	2.19	2.38	2.69	3.06	
	mm	43	46	46	52	55	55	60	68	78	
A ¹ (Body)	INCHES	1.82	1.94	1.94	2.20	2.32	2.32	2.51	2.82	3.21	
	mm	46	49	49	55	58	58	63	71	82	
B	INCHES	5.50	6.00	6.25	7.00	7.53	8.00	9.38	10.56	12.06	
	mm	139	152	158	177	191	203	238	268	306	
C	INCHES	3.06	3.31	3.75	4.25	4.94	5.56	5.56	7.88	9.25	
	mm	77	84	95	108	125	141	166	200	235	
D (Chord Dia)	INCHES	1.49	2.01	2.64	3.67	4.71	5.66	7.72	9.70	11.68	
	mm	37	51	67	93	119	143	196	246	296	
D ¹ (Intrusion)	INCHES	0.28	0.44	0.69	1.06	1.50	1.94	2.84	3.69	4.50	
	mm	7	11	17	27	38	49	72	93	114	
F	INCHES	1.13	1.13	1.13	1.13	1.13	1.13	1.50	1.50	1.50	
	mm	28	28	28	28	28	28	38	38	38	
G	INCHES	0.81	0.81	0.81	0.81	0.81	0.81	1.06	1.06	1.06	
	mm	20	20	20	20	20	20	27	27	27	
H	INCHES	0.35	0.35	0.35	0.40	0.40	0.44	0.53	0.71	0.71	
	mm	8	8	8	10	10	11	13	18	18	
J	INCHES	0.50	0.50	0.50	0.56	0.56	0.62	0.75	1.00	1.00	
	mm	12	12	12	14	14	14	19	25	25	
K	INCHES	0.44	0.44	0.44	0.44	0.44	0.44	0.56	0.56	0.56	
	mm	11	11	11	11	11	11	14	14	14	
L (Dia)	INCHES	3.25	3.25	3.25	3.25	3.25	3.25	5.00	5.00	5.00	
	mm	82	82	82	82	82	82	127	127	127	
M	INCHES	0.44	0.44	0.44	0.44	0.44	0.44	0.50	0.50	0.50	
	mm	11	11	11	11	11	11	12	12	12	
N	INCHES	4.75	5.50	6.00	7.50	8.50	9.50	11.75	14.25	17.00	
	mm	120	139	152	190	215	241	298	362	431	
P	INCHES	5/8-11	5/8-11	5/8-11	5/8-11	3/4-10	3/4-10	3/4-10	7/8-9	7/8-9	
	mm	4	4	4	8	8	8	8	12	12	
R	INCHES	0.44	0.44	0.44	0.44	0.44	0.44	0.56	0.56	0.56	
	mm	11	11	11	11	11	11	14	14	14	
S	INCHES	3.25	3.25	3.25	3.25	3.25	3.25	5.00	5.00	5.00	
	mm	82	82	82	82	82	82	127	127	127	

***Note:** Lead free refers to the wetted surface of the pipe, fittings and fixtures in potable water systems that have a weighted average lead content $\leq 0.25\%$. Source: California Health and Safety Code (116875).

The information presented on this sheet is correct at the time of publication. Milwaukee Valve reserves the right to change design, and/or material specifications without notice. For the Installation, Operation and Maintenance Manual (IOM) see the Technical/Service Information section on our website. For the most current information access www.milwaukeevalve.com



M**L****2****3****4****V****A**

VALVE SERIES	BODY STYLE	OPERATOR	BODY MATERIAL	DISC MATERIAL	LINER MATERIAL	SPECIAL OPTIONS
H - H SERIES (250 PSI) M - M SERIES O - O SERIES U - U SERIES (75 PSI)	L - LUG BODY W - WAFER BODY	1 - VALVE ONLY 2 - LEVER HANDLE 3 - GEAR OPERATOR 5 - GEAR W/MEMORY STOP 9 - GEAR WITH LOCK	2 - CAST IRON* 3 - DUCTILE IRON *MILWAUKEE VALVE RESERVES THE RIGHT TO UPGRADE THE BODY WITHOUT NOTICE FOR NO ADDITIONAL COST.	2 - NICKEL PLATED DUCTILE IRON 3 - ALUMINUM/BRONZE 4 - CF8M(316) STAINLESS STEEL 7 - NYLON COATED DUCTILE IRON 8 - EPOXY COATED DUCTILE IRON	B - BUNA-N E - EPDM H - HYPALON NB - FDA BLACK NEOPRENE NW - FDA WHITE NEOPRENE T - TEFLON OVER BUNA (AVAILABLE W/SS DISC ONLY) V - VITON	S - 316 STEM W/AB OR NP DISC A - EPOXY COATED BODY AD - ASSEMBLE DRY-NO
		*PNEUMATIC AND ELECTRIC ACTUATION OPTIONS AVAILABLE				

Rev 7/1/2020

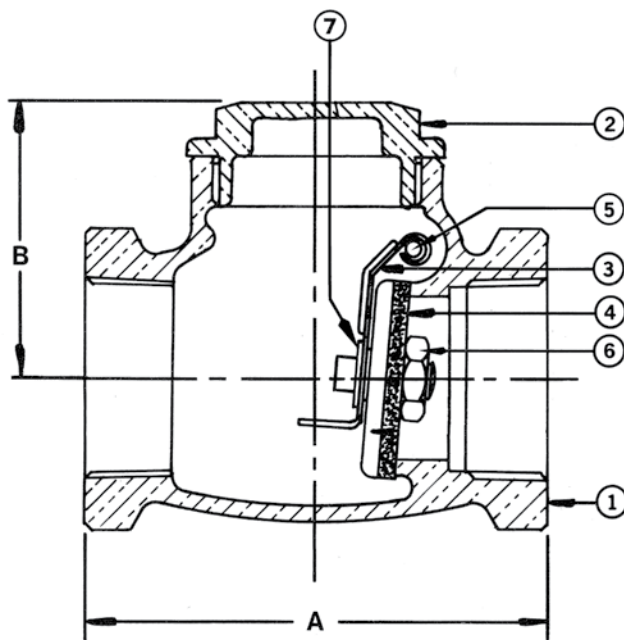
MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Bronze	B584 C89833
2	Cap	Bronze	B584 C89833
3	Lever	Stainless Steel (1/4"-2")	A276 S30200
		Bronze (2 1/2"-3")	B584 C89833
4	Disc	Brass	ASTM B21 C46400, H02 (1/4"-1 1/2")
		Bronze	ASTM B584 C89833 (2"-3")
5	Pin	Stainless Steel	A276 S30400 (1"-2")
		Stainless Steel	A582 S30300 (1/4"-3/4") (2 1/2"-3")
6	Disc Nut	Brass	B21 C46400 H02 (2 1/2"-3")
7	Retaining Ring	Stainless Steel	A276 S30400
8	Plug (not shown)	Brass	B21 C46400, H02

DIMENSIONS

Units	Size	A	B	Cv
INCHES	1/4	2.13	1.44	3.3
mm		54	37	
INCHES	3/8	2.13	1.44	6.0
mm		54	37	
INCHES	1/2	2.31	1.44	10.0
mm		59	37	
INCHES	3/4	2.63	1.69	18.0
mm		67	43	
INCHES	1	3.25	2.00	31.0
mm		83	51	
INCHES	1 1/4	3.56	2.13	54.0
mm		91	54	
INCHES	1 1/2	4.00	2.38	76.0
mm		102	60	
INCHES	2	4.75	2.81	131.0
mm		130	208	
INCHES	2 1/2	6.00	3.63	233.8
mm		152	92	
INCHES	3	6.88	4.19	286.4
mm		175	106	

† Non-Shock



Note: Lead free refers to the wetted surface of the pipe, fittings and fixtures in potable water systems that have a weighted average lead content $\leq 0.25\%$. Source: California Health and Safety Code (116875).

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⚠ State of California Prop 65 **WARNING:** Cancer and Reproductive Harm. For more information visit www.p65warnings.ca.gov.

Nordstrom Screwed Gland-Type Iron Plug Valves

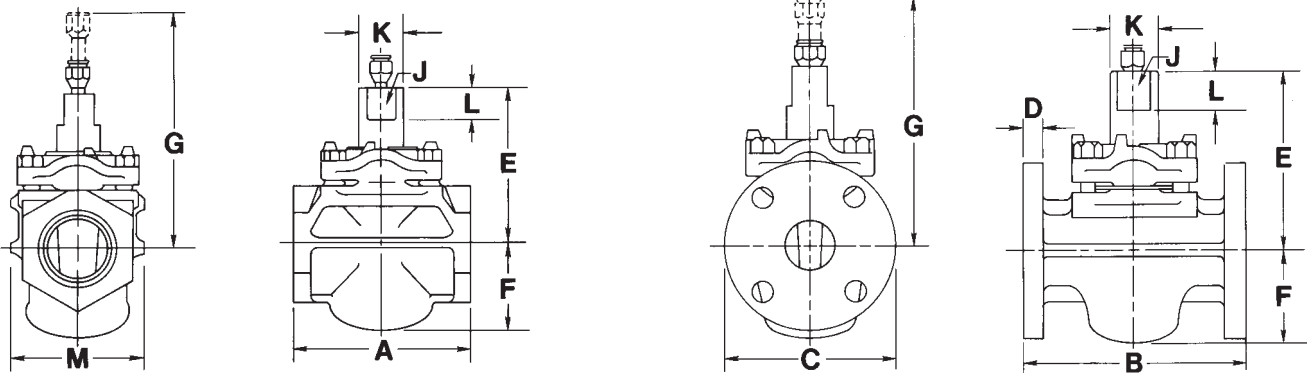
Regular Pattern

200 CWP (13.8 bar)

400 psig (27.6 bar) Test

Figure 114 – Threaded, Wrench-Operated, Sizes ½ to 3

Figure 115 – Flanged, Wrench-Operated, Sizes 1 to 4



Size	NPS DN	½ 15	¾ 20	1 25	1½ 40	2 50	2½ 65	3 80	4 100
End-to-end, threaded, Figure 114	A	3.75 95	3.75 95	4.38 111	5.13 130	6.50 165		8.06 205	
End-to-end, flanged, Figure 115	B			5.50 140	6.50 165	7.50 191	8.25 210	9.00 229	9.00 229
Diameter of flange	C			4.3 108	5.0 127	6.0 152	7.0 178	7.5 191	9.0 229
Thickness of flange	D			.50 13	.63 16	.69 18	.75 19	.81 21	1.00 25
Center to top of stem	E	3.9 99	3.9 99	4.1 104	4.9 124	5.7 145	6.2 157	7.0 178	7.5 191
Center to bottom of body, Figure 114	F	2.0 51	2.0 51	2.2 56	2.8 71	3.2 81	3.6 91	4.2 107	4.6 117
Center to bottom of body, Figure 115	F			2.2 56	2.8 71	3.2 81		4.2 107	
Clearance required to remove sealant fitting	G	6.5 165	6.5 165	6.7 170	7.5 191	8.3 211	8.8 224	9.6 244	10.1 257
Width of stem flats	J	.81 21	.81 21	.88 22	1.00 25	1.13 29	1.25 32	1.38 35	1.38 35
Diameter of stem	K	1.09 28	1.09 28	1.22 31	1.41 36	1.59 40	1.78 45	1.97 50	1.97 50
Height of stem flats	L	.9 23	.9 23	1.0 25	1.2 30	1.4 36	1.5 38	1.8 46	1.8 46
Extreme width of body, Figure 114	M	3.2 81	3.2 81	3.4 86	4.1 104	4.8 122	5.3 135	6.0 152	
Size of Sealant Stick	—	B	B	B	B	B	B	B	B
Size of wrench	—	D-8	D-8	E-8	J-8	K-8	L-8	M-8	M-8
Length of wrench	—	5.5 140	5.5 140	7.0 178	10.5 267	14.0 356	17.5 445	21.0 533	21.0 533
Weight (approx.) Figure 114	—	6 3	6 3	8 4	14 6	22 10		47 21	
Weight (approx.) Figure 115	—			11 5	19 9	28 13	43 20	60 27	74 34

Flanges are drilled to ANSI Class 125 Cast Iron Flange Standard Template. For drilling and bolting data, See page 40.

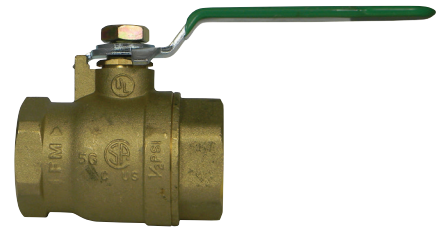
Figures 114 and 115 valves conform to the following standards where applicable: ANSI B1.20.1; ANSI B16.1; ANSI B16.10; API 5B; ASTM A126, Class B; and MSS SP-78. See page 34.

SUBMITTAL DATA SHEET

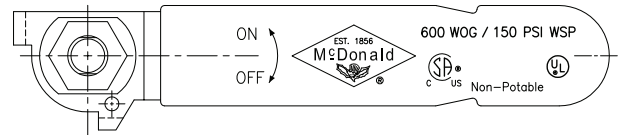
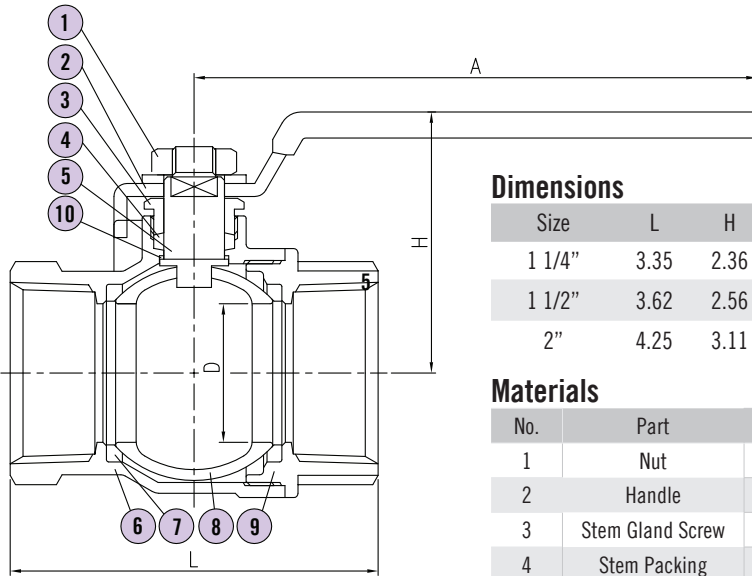
Gas (only) Ball Valve – 10710

(Sizes 1 1/4", 1 1/2", and 2")

FNPT x FNPT



A.Y. McDonald Mfg. Co. Gas Ball Valves are constructed of heavy duty forged brass. They are designed for residential, commercial, and industrial use in low pressure gas applications. Valves listed are suitable for use with natural, manufactured, mixed and LP gases and with LP gas - air mixtures.



Dimensions

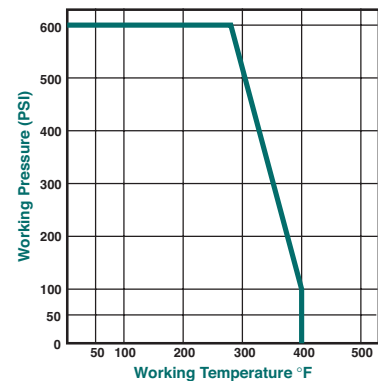
Size	L	H	D	A
1 1/4"	3.35	2.36	1.26	5.12
1 1/2"	3.62	2.56	1.50	5.12
2"	4.25	3.11	1.97	7.87

Materials

No.	Part	Material
1	Nut	Steel
2	Handle	Steel
3	Stem Gland Screw	Brass
4	Stem Packing	Teflon
5	Stem	Brass
6	Body	Forged Brass Cast Brass
7	Ball Disc Packing	Teflon
8	Ball Disc	Chrome Plated Brass
9	End Plug	Forged Brass
10	Thrust Washer	Teflon PTFE

TEMPERATURE / PRESSURE RATING

1 1/4", 1 1/2", 2" ONLY



Non-Potable Use Only

SUBMITTAL INFORMATION

- 600 WOG / 150 PSI WSP
- Sizes: 1 1/4", 1 1/2", 2"
- Ambient working temp. = -40°F to 125°F (1 1/4" & 1 1/2")
- Ambient working temp = .32°F to 125°F (2")
- 1/4 turn operation
- 2 piece forged brass body
- Blow out proof stem
- Full Port
- Conforms to MSS-SP-110
- Teflon Seats

Valves manufactured to:

B16.44 5 PSIG

Z21.15 1/2 PSIG

842 5 PSIG

NO-LEAD: The weighted average of the wetted surface of this no-lead product contacted by consumable water contains less than one quarter of one percent (0.25%) lead.



A.Y. McDonald Mfg. Co.
4800 Chavenelle Rd
Dubuque, IA 52002

Toll Free: 1-800-292-2737
sales@aymcdonald.com
aymcdonald.com

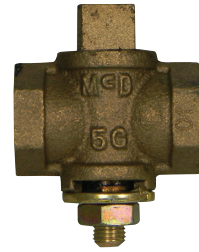
A.Y. McDonald considers the information on this assembly drawing correct when published. Item and option availability, including specifications, are subject to change without notice.

Submitted by:

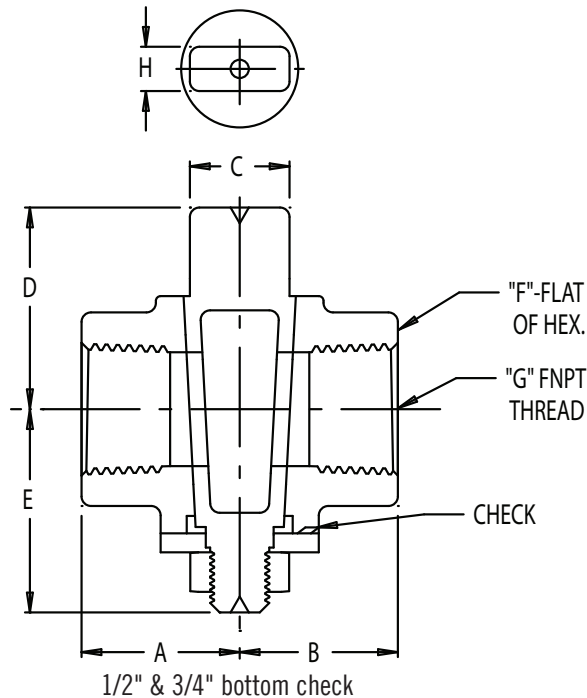
SUBMITTAL DATA SHEET

Bronze Low Pressure Gas Valve - Plug Style - Gas Only
Flat / Tee Head with Check – 10596

FNPT x FNPT

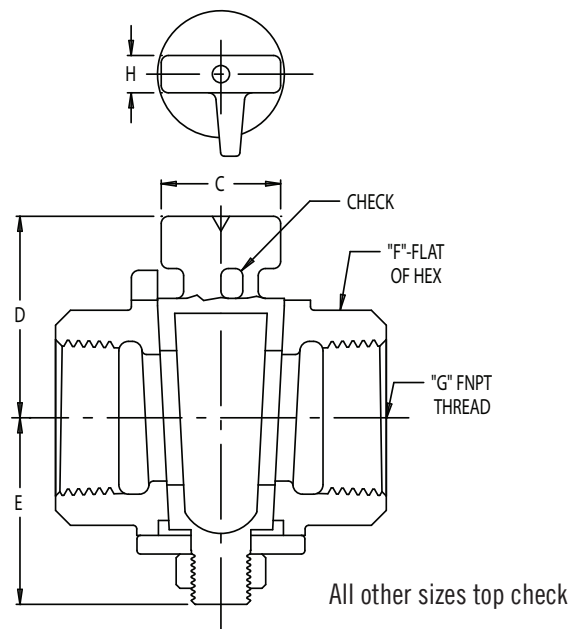


A.Y. McDonald Mfg. Co. low pressure natural or propane gas valves are for use indoors on house piping system, between the meter outlet and the inlet connection of the gas appliance. At ambient temperatures of 32 to 125 degrees Fahrenheit.



Dimensions

Part No.	Model No.	Size	A	B	C	D	E	F	G	H
4215-190	10596	1/2"	1.00	1.00	.63	1.28	1.27	1.06	1/2	.28
4215-193	10596	3/4"	1.16	1.16	.75	1.59	1.39	1.28	3/4	.28



Dimensions

Part No.	Model No.	Size	A	B	C	D	E	F	G	H
4212-184	10596	1/4"	.93	.93	.56	1.47	1.19	.94	1/4	.25
4212-188	10596	3/8"	.93	.93	.56	1.47	1.19	.94	3/8	.25
4212-125	10596	1"	1.38	1.38	1.05	1.67	1.58	1.59	1	.32
4212-129	10596	1 1/4"	1.61	1.61	1.19	1.96	1.98	2.19	1 1/4	.38
4212-133	10596	1 1/2"	1.70	1.70	1.38	1.94	2.09	2.25	1 1/2	.44
4212-137	10596	2"	2.18	2.18	1.88	2.54	2.38	2.75	2	.50

SUBMITTAL INFORMATION

- Sizes: 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"
- 2 PSIG
- NOTE: All A.Y. McDonald plug style gas valves are factory set. DO NOT TAMPER WITH BOTTOM NUT.

- Bronze Body and Plug
- Manually Operated
- 1/2" & 3/4" valves manufactured to:



B16.44 5 PSIG



Non-Potable Use
Only

WARNING: It is unlawful in **CALIFORNIA & VERMONT** (effective 1/1/2010); **MARYLAND** (effective 1/1/2012); **LOUISIANA** (effective 1/1/2013) and the **UNITED STATES OF AMERICA** (effective 1/4/2014) to use **THIS PRODUCT** in the installation or repair of any public water system or any plumbing in a facility or system that provides water for human consumption. The wetted surface area of **THIS PRODUCT** has a weighted average lead content greater than 0.25%.



A.Y. McDonald Mfg. Co.
 4800 Chavenelle Rd
 Dubuque, IA 52002

Toll Free: 1-800-292-2737
 sales@aymcdonald.com
 aymcdonald.com

A.Y. McDonald considers the information on this assembly drawing correct when published. Item and option availability, including specifications, are subject to change without notice.

Submitted by:

SUBMITTAL DATA SHEET

Black Iron Gas Valve - Plug Style - Gas Only
Tamperproof Flat Head – 10685B

FNPT x FNPT



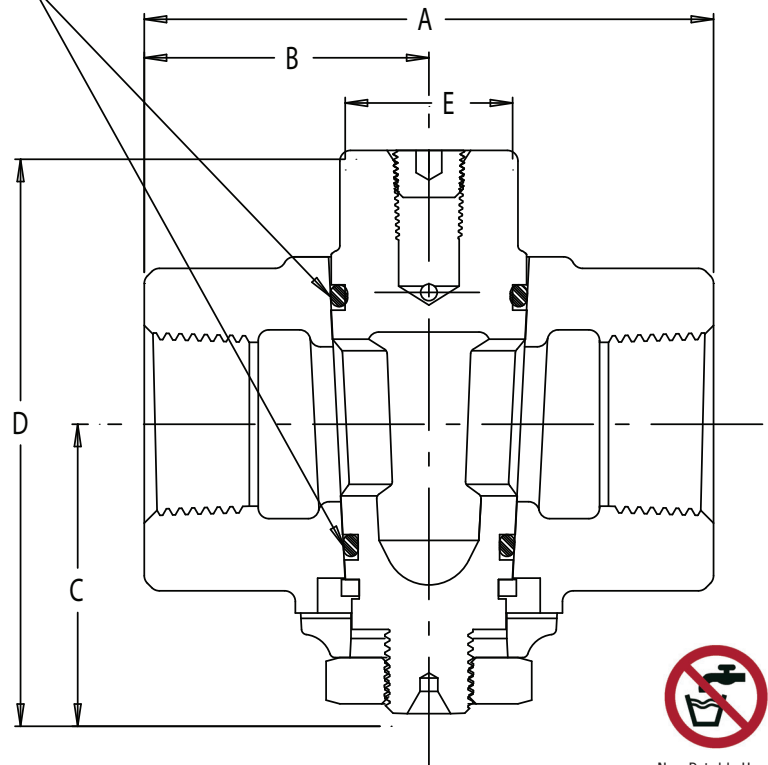
A.Y. McDonald Mfg. Co. Iron Body Gas Plug Valves are designed for use with natural, manufactured and propane gas only. Use in above ground gas piping systems. These valves are considered full port of flow.

Dimensions

Size	A	B	C	D	E
1/2"	3.14	1.57	1.66	3.16	1.00
3/4"	3.14	1.57	1.66	3.16	1.00
1"	3.36	1.68	1.86	3.53	1.12
1 1/4"	3.88	1.94	2.38	4.38	1.38
1 1/2"	4.66	2.33	2.66	4.99	1.62
2"	5.60	2.80	2.97	5.57	1.87



Nitrile "O" RINGS



Non-Potable Use
Only

SUBMITTAL INFORMATION

- 175 PSIG
- Ambient temperatures between -20°F to 150°F
- Less Check
- Brass Plug
- May be re-lubricated while in service and under pressure
- Threads per ANSI/ASME B1.20.1
- Iron castings conform to ASTM A126 Class B Iron
- Manufactured to the guidelines set forth in ANSI/ASME B16.33 (latest revision)
- Brass castings conform to ASTM B584, UNS C83600 or C84400 (latest revision)
- NOTE: All A.Y. McDonald plug style gas valves are factory set
DO NOT TAMPER WITH BOTTOM NUT

WARNING: It is unlawful in **CALIFORNIA & VERMONT** (effective 1/1/2010); **MARYLAND** (effective 1/1/2012); **LOUISIANA** (effective 1/1/2013) and the **UNITED STATES OF AMERICA** (effective 1/4/2014) to use **THIS PRODUCT** in the installation or repair of any public water system or any plumbing in a facility or system that provides water for human consumption. The wetted surface area of **THIS PRODUCT** has a weighted average lead content greater than 0.25%.



A.Y. McDonald Mfg. Co.
4800 Chavenelle Rd
Dubuque, IA 52002

Toll Free: 1-800-292-2737
sales@aymcdonald.com
aymcdonald.com

A.Y. McDonald considers the information on this assembly drawing correct when published. Item and option availability, including specifications, are subject to change without notice.

Submitted by:

Super Nordstrom Two-Bolt, Cover-Type Iron Plug Valves

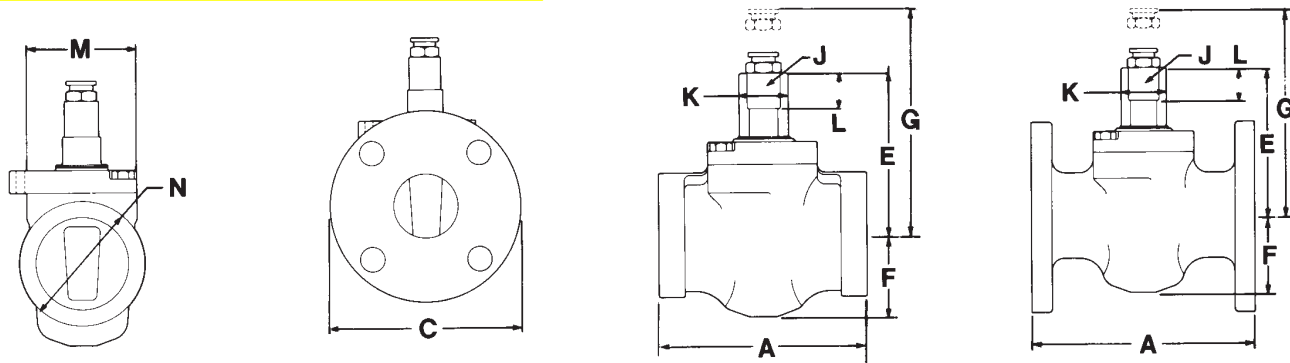
Short Pattern (Gate Length)

200 CWP (13.8 bar)

400 psig (27.6 bar) Test

Figure 142 – Threaded, Wrench-Operated, Sizes 1/2 to 4

Figure 143 – Flanged, Wrench-Operated, Sizes 1 to 5



Size	NPS DN	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80	4 100	5 125
End-to-end, threaded, Figure 142	A	4.50 114	4.50 114	4.50 114	5.00 127	5.00 127	5.88 149	7.00 178	7.62 194	9.00 229	
End-to-end, flanged, Figure 143	B			5.50 140	6.50 165	6.50 165	7.00 178	7.50 191	8.00 203	9.00 229	10.00 254
Diameter of flange	C			4.3 109	4.6 117	5.0 127	6.0 152	7.0 178	7.5 191	9.0 229	10.0 254
Center to top of stem	E	3.8 97	3.8 97	3.8 97	4.1 104	4.1 104	4.7 119	4.7 119	5.6 142	6.3 160	6.3 160
Center to bottom of body	F	1.9 48	1.9 48	1.9 48	2.1 53	2.1 53	2.4 61	2.4 61	3.4 86	4.0 102	4.0 102
Clearance required to remove sealant fitting	G	5.5 140	5.5 140	5.5 140	5.8 147	5.8 147	6.4 163	6.4 163	7.2 183	8.0 203	8.0 203
Width of stem flats	J	.81 21	.81 21	.81 21	1.00 25	1.00 25	1.00 25	1.00 25	1.25 32	1.25 32	1.25 32
Diameter of stem	K	1.06 27	1.06 27	1.06 27	1.38 35	1.38 35	1.38 35	1.38 35	1.75 44	1.75 44	1.75 44
Height of stem flats	L	.9 23	.9 23	.9 23	1.0 25	1.0 25	1.0 25	1.0 25	1.3 33	1.3 33	1.3 33
Extreme width of body, Figure 142	M	2.6 66	2.6 66	2.6 66	3.2 81	3.2 81	3.2 81	3.2 81	4.0 102	4.8 122	
Diameter of hub, Figure 142	N	2.3 58	2.3 58	2.3 58	2.9 74	2.9 74	3.6 91	4.3 109	5.2 132	6.4 163	
Size of Sealant Stick	—	B	B	B	B	B	B	B	B	B	B
Size of wrench	—	SN-1	SN-1	SN-1	SN-2	SN-2	SN-2	SN-2	SN-4*	SN-4*	SN-4*
Length of wrench	—	7.0 178	7.0 178	7.0 178	10.5 267	10.5 267	10.5 267	10.5 267	17.5 445	15.0 381	15.0 381
Weight (approx.) Figure 142	—	6 3	6 3	6 3	9 4	9 4	13 6	17 8	29 13	48 22	
Weight (approx.) Figure 143	—			9 4	14 6	14 6	20 9	25 11	38 17	65 29	80 36

Flanges are drilled to ANSI Class 125 Cast Iron Flange Standard Template. For drilling and bolting data, See page 40.

Figures 142 and 143 valves conform to the following standards where applicable: ANSI B1.20.1; ANSI B16.1; ANSI B16.10; API 5B; ASTM A126, Class B; and MSS SP-78. See page 34.

Figure 143 face-to-face lengths are interchangeable with ANSI Class 125 and API 175 CWP Cast Iron Gate Valves.

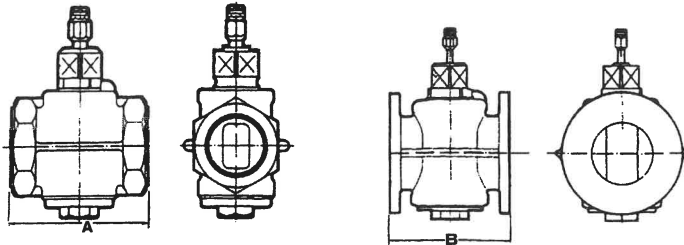
Figure 142 and 143 valves size 5 (125 mm) and smaller are not recommended for temperatures above +200°F (+93°C).

* Use the longer SN-3 wrench for valves used in cold climates such as Canada.

Milliken Plug Valves

Cast Iron

Rectangular Port / Reduced Bore

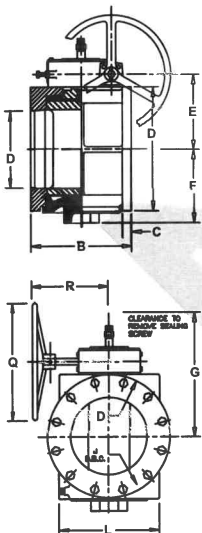


170M/171M ▼

1 1/2" – 8"

Wrench Operated

Nominal Size		in mm	1 1/2 40	2 50	2 1/2 65	3 80	4 100	5 125	6 150	8 200
170M End-to-End (Screwed)	A	in mm	4.38 111	6 152	6.50 165	7.38 187	8.88 225	-	-	-
171M Face-to-Face (Flanged)	B	in mm	4.63 118	7 178	7.50 190	8 203	9 225	10 254	10.50 267	11.50 292
Diameter of Sealing Compound Stick		in mm	.38 9.5	.38 9.5	.50 13	.50 13	.63 16	.63 16	.63 16	.63 16
Wrench (Screwed valves)			J	J	L	L	O	-	-	-
Wrench (Flanged valves)			J	J	L	L	O	P	P	Q
Approximate Weight (Screwed)		lb kg	5.3 2.4	9.5 4.3	15 6.6	22 10	46 21	-	-	-
Approximate Weight (Flanged)		lb kg	11 5	18 8.20	24 11	37 17	53 24	97 44	126 57	170 77



171MG ▼

6" – 12"

Gear Operated

Nominal Size		in mm	6 150	8 200	10 250	12 300
171MG Face-to-Face (Flanged)	B	in mm	10.5 266	11.5 292	13 330	14 356
End CRS to Gear	E	in mm	8.39 213	9.50 241	11.94 303	13.69 348
Top CRS to Gear	R	in mm	10 254	10 254	10 254	10 254
Body Diameter	L	in mm	10.0 254	11.3 287	14 356	17 432
Gear / Wheel Size	Q	in mm	12 305	12 305	12 305	12 305
Approximate Weight		lb kg	157 70	210 95	359 163	493 224



Specification

- Screwed end valves are supplied to ANSI B1.20.1.
- Flanged valves are supplied with flanges to ANSI B16.1, Class 125.
- Flanged valves face dimensions are in accordance with ANSI B16.10, short pattern
- 170M/171M - 200M/201M are CSA/CGA 3.11 Approved (1/2" - 8")

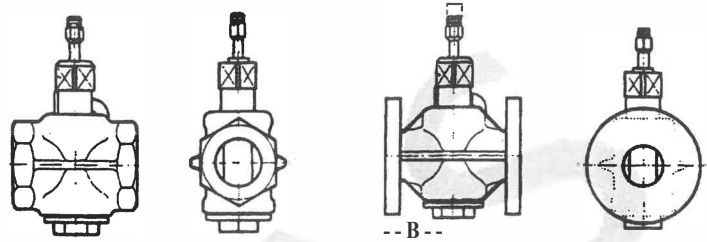
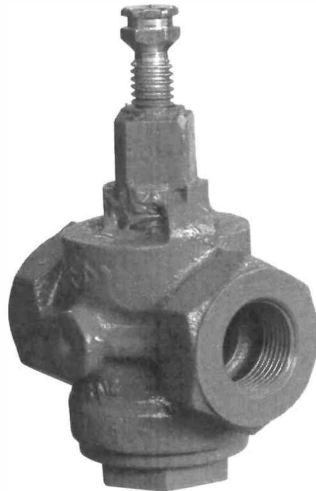
The principle of the Milliken plug valve is as simple as its design. The plug, which is the only moving part of the valve, when open, presents a straight through passage in line with the pipeline, and when turned through 90 degrees to the closed position stops the flow.

A special sealing lubricant is used to effect a completely leak tight seal. When pressure is applied to the valve in the closed position, the parallel plug is forced to the downstream side of the valve. The metal to metal contact of plug and body together with the barrier of sealing lubricant ensures a completely leak tight valve, with the sealant also acting as a lubricant and providing a barrier to reduce corrosion to the plug and body.

Milliken Plug Valves

Cast Iron

Rectangular Port / Full Bore



• 200M/201M

1/2" - 6"

Wrench Operated

Nominal Size		in mm	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	2 1/2 65	3 80	4 100	6 150
200M End-to-End (Screwed)	A	in mm	3.19 81	3.5 88	4.19 106	4.38 111	4.63 117	6 152	6.5 165	7.38 187		
201M Face-to-Face (Flanged)	B	in mm	-	-	-	-	-	7 178	7.5 190	8 203	9 229	10.5 267
Diameter of Sealing Compound Stick		in mm	.38 9.5	.38 9.5	.38 9.5	.38 9.5	.38 9.5	.5 13	.5 13	.63 16	.63 16	.63 16
Wrench			G	G	G	J	J	L	L	O	P	Q
Approximate Weight (Screwed)		lb kg	1.8 .8	2.6 1.2	4.6 2.1	5.7 2.6	6.8 3.1	13 6	19 8.8	31 14	-	-
Approximate Weight (Ranged)		lb kg	-	-	-	-	-	22 10	29 13	42 19	84 38	170 77

Gearing

The Milliken plug valves are available with gear operator options. In this catalogue, we have indicated in the dimensions tables, which valves are fitted with gear operators.

Routine Maintenance

The only maintenance required on plug valves is periodic re-lubrication with valve sealant. Frequency of lubrication should be established for each specific service since requirements will vary widely with temperature, pressure, service fluid and frequency of operation.

Lubricant / Sealant Options

A wide variety of lubricants are available for many different service applications such as oil, asphalt and gases. Most lubricants are available in stick and cartridge form. An economical alternative to removing a valve from the line or disassembling and cleaning, valve cleaner is available to dissolve hardened debris within the sealant system.

• 201MG

6" - 8"

Gear Operated

Nominal Size		in mm	6 150	8 200
201MG Face-to-Face (Flanged)	B	in mm	10.5 267	11.5 292
End CRS to Gear	M	in mm	8.13 206	10.44 265
Top CRS to Gear	N	in mm	10 254	10 254
Gear / Wheel Size	P	in mm	12 305	12 305
Body Diameter	Q	in mm	11.5 292	14 356
Approximate Weight		lb kg	209 95	367 167

