

BRONZE AND BRASS BALL VALVES	
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Rev 12/17

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HAMMONDVALVE

8100/8111* 3/4"-1 1/4"

Brass Flange Ball Valve

Two Piece • Full Port

600 WOG

8100 Threaded Ends/8111 Solder Ends

Sold In Packages of 2

Kit Includes 4 Bolts & Nuts, Plus T-Handle (1)

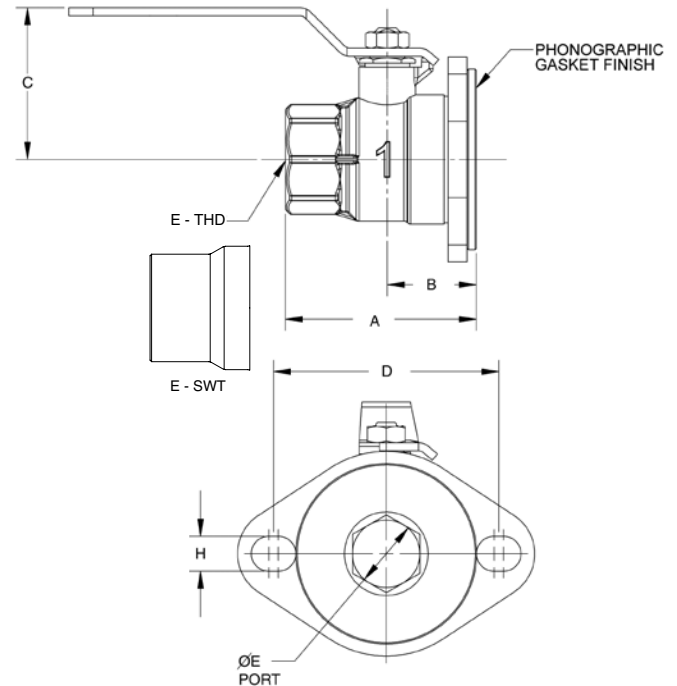
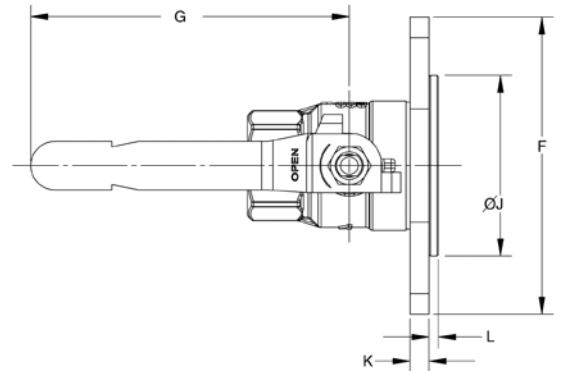
Blow-Out Proof Stem

MSS SP-110, ASME A112.4.14

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	Brass with Nickel chrome Plating	B283
4	Ball Seal	PTFE	Commercial
5	Stem	Brass	B124
6	O-Ring	Buna-N	D2006
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Zinc Plated Steel	Commercial
11	Hand Grip	Zinc Plated Steel	Commercial

*Not intended for use in potable water.



DIMENSIONS

	UNITS	3/4" DN20	1" DN25	1-1/4" DN32
A O.V.L./THD	INCHES	2.50	2.81	2.99
	mm	64	71	76
A O.V.L./SWT	INCHES	2.69	3.13	3.38
	mm	68	80	86
B	INCHES	1.24	1.32	1.32
	mm	31	34	34
C	INCHES	1.95	2.12	2.31
	mm	50	54	59
D	INCHES	3.29	3.29	3.29
	mm	84	84	84
E PORT DIA.	INCHES	0.75	1.00	1.25
	mm	19	25	32
F FLANGE DIA.	INCHES	4.33	4.33	4.33
	mm	110	110	110
G	INCHES	4.72	4.72	4.72
	mm	120	120	120
H MTG. HOLE	INCHES	0.51	0.51	0.51
	mm	13	13	13
J	INCHES	2.67	2.67	2.67
	mm	68	68	68
K	INCHES	0.28	0.28	0.28
	mm	7	7	7
L	INCHES	0.14	0.14	0.14
	mm	4	4	4

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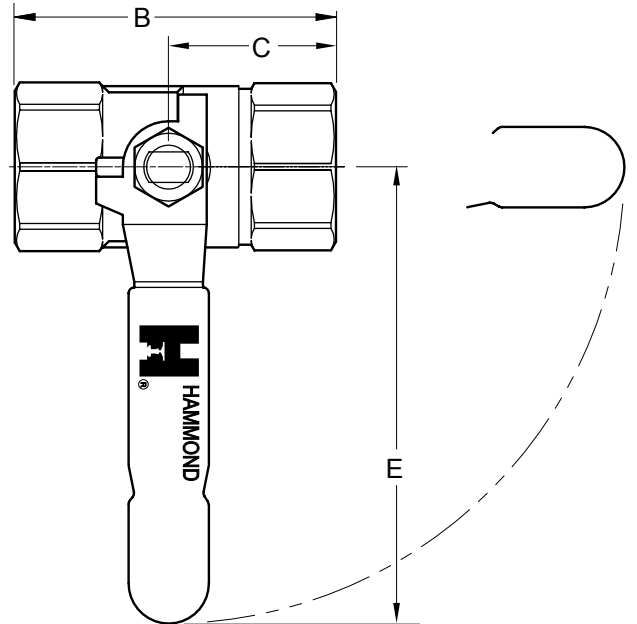
8201* 1/4"-4"

**Brass Ball Valve
Two Piece
Standard Port (1/2" - 4") Full Port (1/4" - 3/8")
400 WOG
Threaded Ends
Blow-Out Proof Stem
MSS SP-110**

MATERIALS LIST

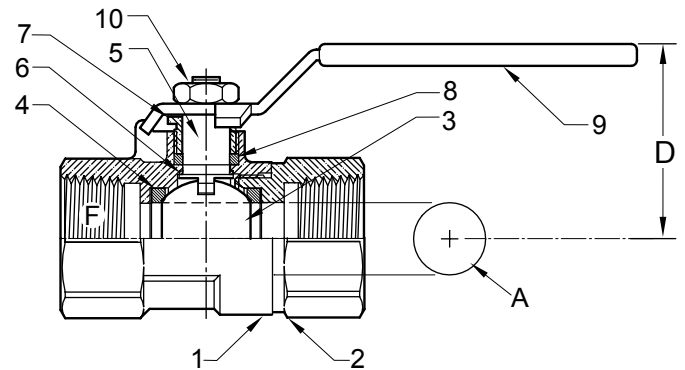
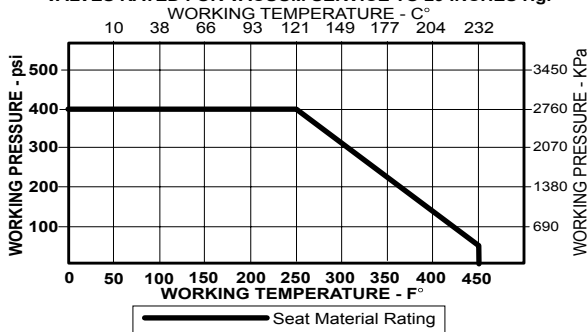
ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	Brass, CP	B283
		Brass CP, Cast	B584
4	Seat	PTFE	
5	Stem	Brass	B124
6	Thrust Washer	PTFE	
7	Gland Nut	Brass	B16
8	Gland Packing	PTFE	
9	Handle	Steel w/Zinc Plating	Commercial
10	Handle Nut	Brass	B16

*Not intended for use in potable water.



PRESSURE - TEMPERATURE DATA

VALVES RATED FOR VACUUM SERVICE TO 29 INCHES Hg.



DIMENSIONS

	UNITS	1/4" DN6	3/8" DN10	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50	2-1/2" DN65	3" DN80	4" DN100
A (DIA)	INCHES	0.31	0.31	0.39	0.59	0.76	0.98	1.26	1.50	2.00	2.52	2.95
	mm	8	8	10	15	19	25	32	38	51	64	75
B	INCHES	1.65	1.65	2.30	2.55	3.05	3.43	3.76	4.21	5.50	6.22	7.31
	mm	42	42	58	65	78	87	96	107	140	158	186
C	INCHES	0.83	0.83	1.15	1.28	1.53	1.72	1.88	2.11	2.75	3.11	3.66
	mm	21	21	29	33	39	44	48	54	70	80	93
D	INCHES	1.38	1.38	1.50	1.61	2.00	2.17	2.72	2.87	3.66	4.02	4.33
	mm	35	35	38	41	51	55	69	73	93	102	110
E	INCHES	3.31	3.31	3.31	3.31	4.65	4.65	5.28	5.28	7.87	7.87	7.87
	mm	84	84	84	84	118	118	134	134	200	200	200
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	2-2/1" NPT	3" NPT	4" NPT
Cv		9	9	12	18	40	72	112	161	287	448	645

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

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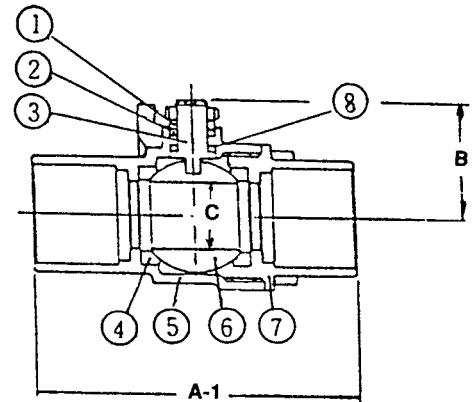
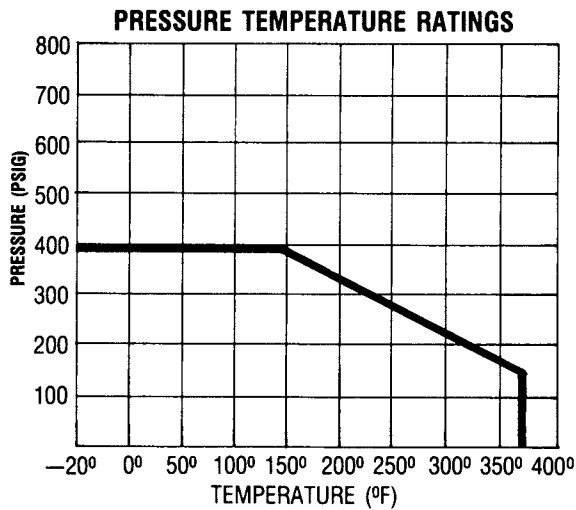
8201-15/8211-15* 1/2"-1"

Brass Ball Valve
Two Piece
Standard Port
400 PSI WOG
Threaded or Solder Ends
Blow-Out Proof Stem

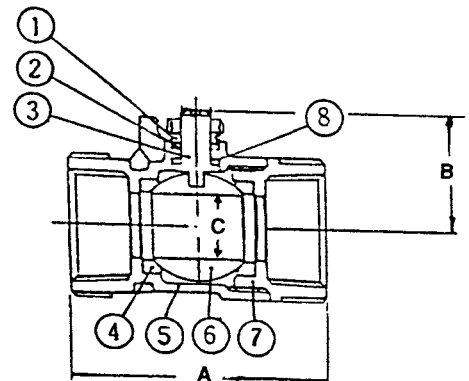
*Not intended for use in potable water.

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	FOLLOWER	BRASS	ASTM B124, C37700
2	STEM PACKING	TFE	
3	STEM PACKING	BRASS	ASTM B124, C37700
4	SEAT	TFE	
5	BODY	FORGED BRASS	ASTM B283, C37770
6	BALL	BRASS, CP	ASTM B283, C37770
7	END PIECE	FORGED BRASS	ASTM B283, C37770
8	THRUST WASHER	TFE	ASTM B283, C37770



8211-15 Solder



8201-15 Threaded

DIMENSIONS

	UNITS	A	A-1	B	C	C _V	TORQUE IN LBS.
1/2	INCHES	1.84	2.05	0.94	0.41	6.8	20
	mm	47	52	24	10		
3/4	INCHES	2.16	2.81	1.06	0.59	14	30
	mm	55	71	27	15		
1	INCHES	2.63	3.25	1.41	0.78	28	50
	mm	67	83	36	20		

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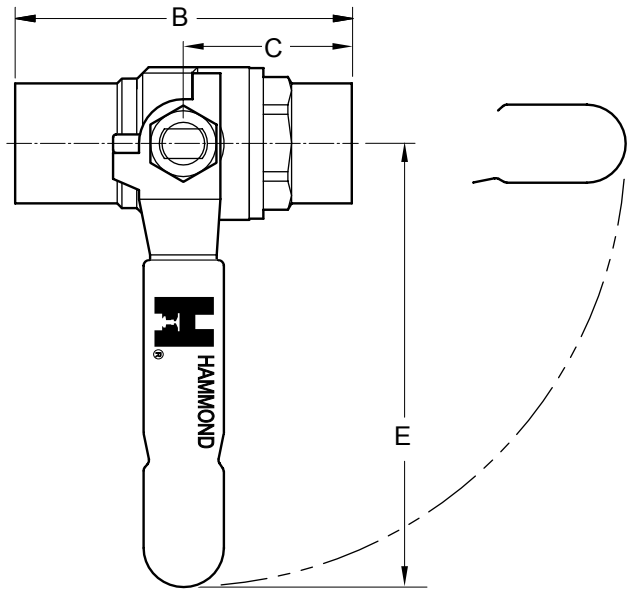
8211* 3/8"-3"

**Brass Ball Valve
Two Piece
Standard Port
400 WOG
Solder Ends
Blow-Out Proof Stem
MSS SP-110**

MATERIALS LIST

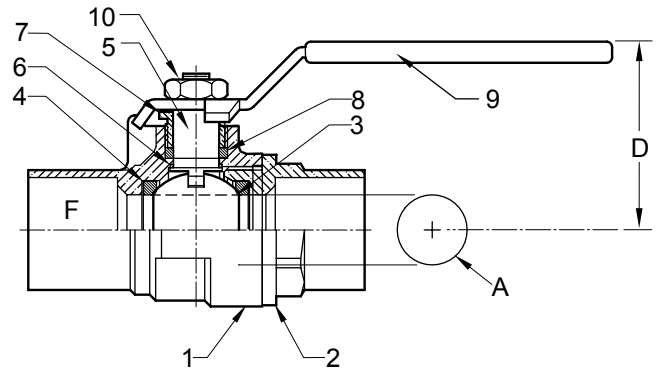
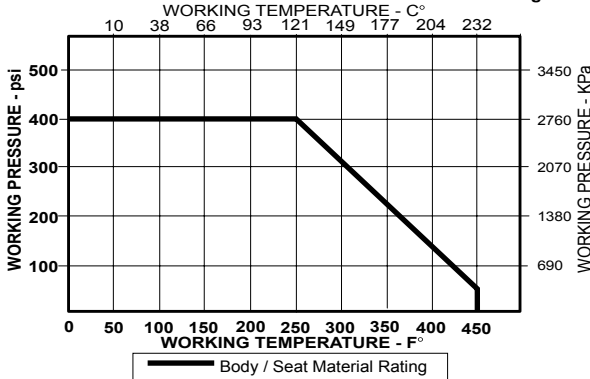
ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	Brass, CP	B283
		Brass CP, Cast	B584
4	Seat	PTFE	
5	Stem	Brass	B124
6	Thrust Washer	PTFE	
7	Gland Nut	Brass	B16
8	Gland Packing	PTFE	
9	Handle	Steel w/Zinc Plating	Commercial
10	Handle Nut	Brass	B16

*Not intended for use in potable water.



PRESSURE - TEMPERATURE DATA

VALVES RATED FOR VACUUM SERVICE TO 29 INCHES Hg.



DIMENSIONS

	UNITS	3/8" DN10	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50	2-1/2" DN65	3" DN80
A (DIA)	INCHES	0.31	0.39	0.59	0.76	0.98	1.26	1.50	2.00	2.52
	mm	8	10	15	19	25	32	38	51	64
B	INCHES	1.75	2.19	2.83	3.44	3.85	4.43	5.23	5.94	6.97
	mm	45	56	72	87	98	113	133	151	177
C	INCHES	0.88	1.14	1.42	1.72	1.93	2.23	2.62	2.97	3.49
	mm	22	29	36	44	49	57	67	75	89
D	INCHES	1.38	1.50	1.61	2.00	2.17	2.72	2.87	3.66	4.02
	mm	35	38	41	51	55	69	73	93	102
E	INCHES	3.31	3.31	3.31	4.65	4.65	5.28	5.28	7.87	7.87
	mm	84	84	84	118	118	134	134	200	200
F	TUBE SIZE Ø	0.51	0.63	0.88	1.13	1.38	1.63	2.13	2.63	3.13
Cv		9	12	18	40	72	112	161	287	448

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

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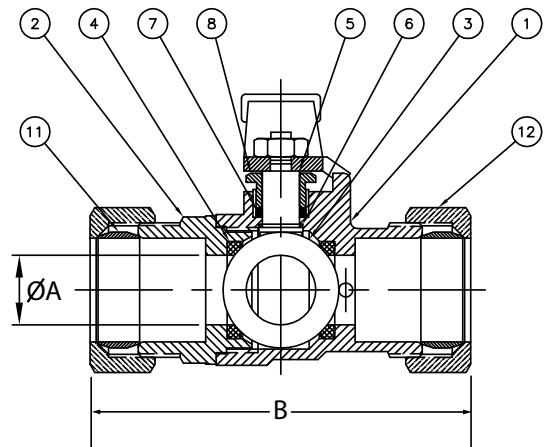
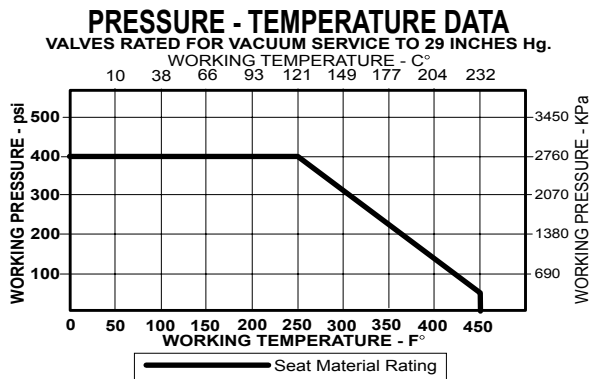
8271* 1/2"-3/4"

Brass Ball Valve
Two Piece
Full Port
150 SWP/400 WOG
Compression Ends
Blow-Out Proof Stem
ASME A112.4.14

MATERIALS LIST

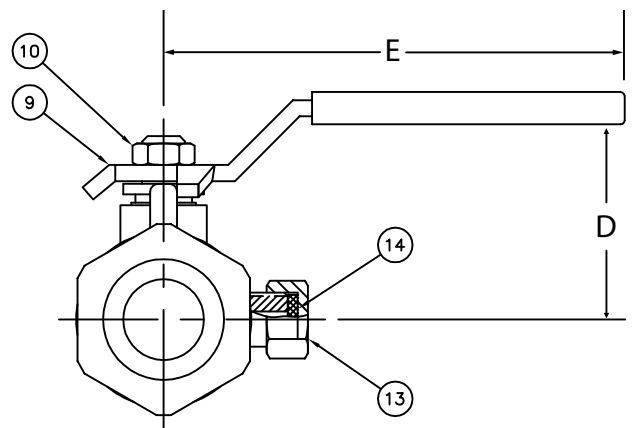
ITEM	PART	MATERIALS	ASTM SPEC.
1	BODY	BRASS	ASTM B283
2	TAILPIECE	BRASS	ASTM B283
3	BALL	BRASS	ASTM B283
4	SEAT	PTFE	
5	STEM	BRASS	ASTM B124
6	THRUST WASHER	PTFE	
7	PACKING RING	PTFE	
8	GLAND NUT	BRASS	ASTM B124
9	HANDLE	CARBON STEEL	CARBON STEEL
10	HANDLE NUT	CARBON STEEL	CARBON STEEL
11	FERRULE	BRASS	ASTM B124
12	COMPRESSION NUT	BRASS	ASTM B283
13	DRAIN PLUG CAP	BRASS	ASTM B124
14	DRAIN PLUG SEAL	PTFE	

*Not intended for use in potable water.



DIMENSIONS

	UNITS	A	B	C	D	E
		INCHES	0.39	3.2	0.89	1.54
1/2	mm	10	82	23	39	86
3/4	INCHES	0.59	3.23	1.05	1.66	3.37
	mm	15	82	27	42	86



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8281* 1/2"-3/4"

Brass Ball Valve
Two Piece
Full Port
150 SWP/400 WOG
Pex Ends
Blow-Out Proof Stem
ASME A112.4.14

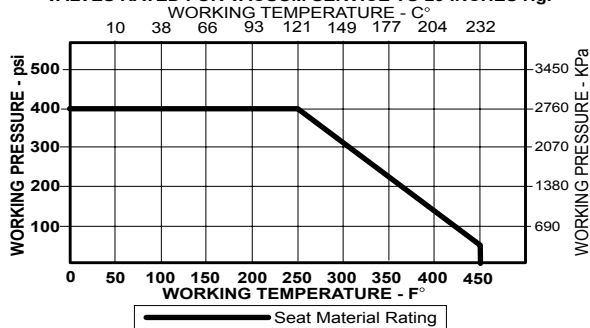
MATERIALS LIST

*Not intended for use in potable water.

ITEM	PART	MATERIALS	ASTM SPEC.
1	BODY	BRASS	ASTM B283
2	TAILPIECE	BRASS	ASTM B283
3	BALL	BRASS	ASTM B283
4	SEAT	PTFE	
5	STEM	BRASS	ASTM B124
6	THRUST WASHER	PTFE	
7	PACKING RING	PTFE	
8	GLAND NUT	BRASS	ASTM B124
9	HANDLE	CARBON STEEL	
10	HANDLE NUT	CARBON STEEL	

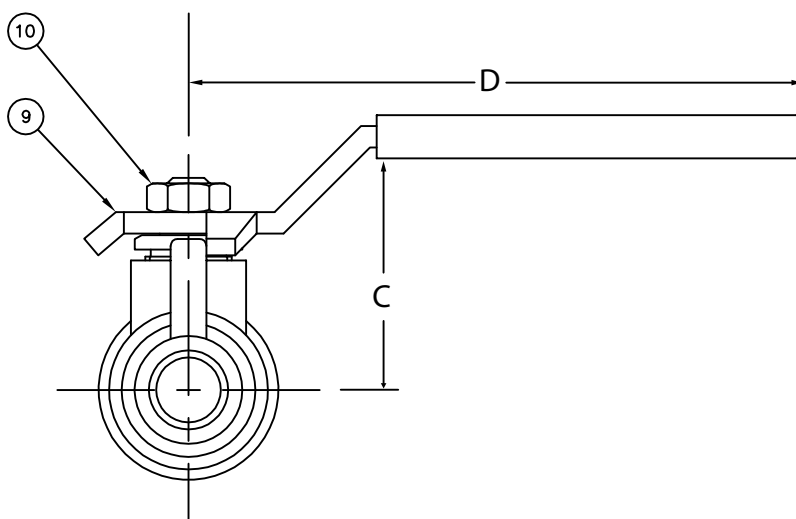
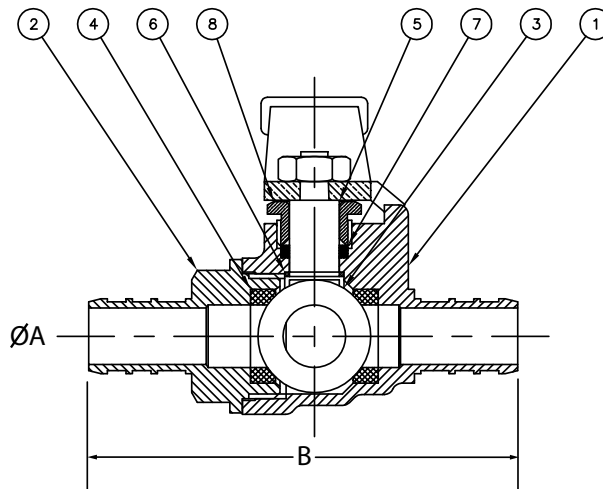
PRESSURE - TEMPERATURE DATA

VALVES RATED FOR VACUUM SERVICE TO 29 INCHES Hg.



DIMENSIONS

	UNITS	A	B	C	D
1/2	INCHES	0.35	2.7	1.5	3.37
	mm	9	69	38	86
3/4	INCHES	0.54	2.87	1.64	3.36
	mm	14	73	42	85



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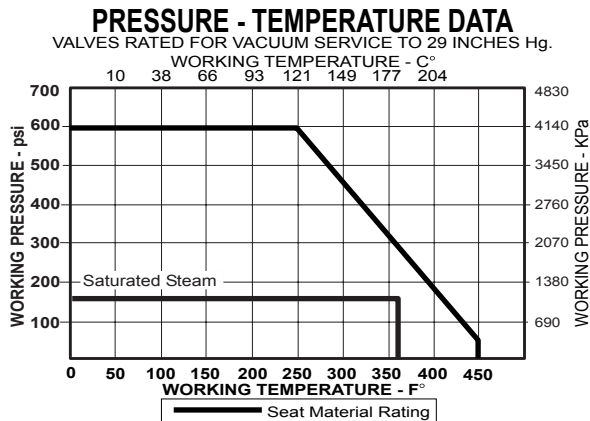
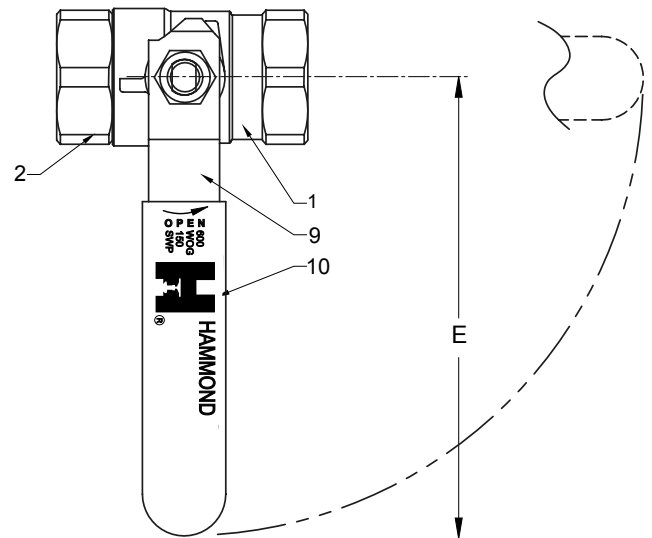
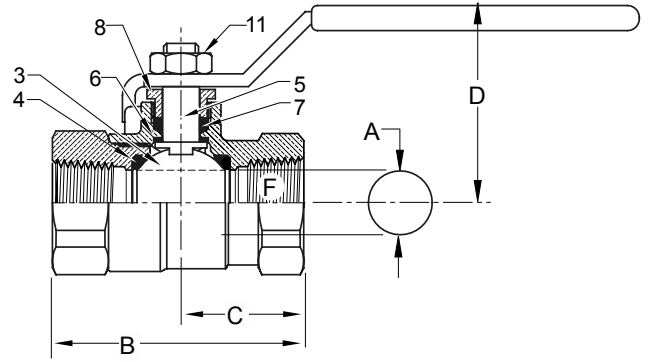
8301A/8303A* 1/4"-2"

**Bronze Ball Valve
Two Piece
Full Port
600 WOG/150 SWP (1)
Threaded Ends
Blow-Out Proof Stem
MSS SP-110**

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Cast Bronze	B584
2	Tailpiece	Brass	B283
		Cast Bronze (1 1/4" & up)	B584
3	Ball	Brass w/Hard Chrome Plating	B16
		316 Stainless Steel (B8303A)	A276
4	Seat	RPTFE, 15% Glass Filled	
5	Stem	Brass	B16
		316 Stainless Steel (8303A)	A276
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Packing	PTFE	
8	Packing Nut	Brass	B16
9	Handle	Steel w/Zinc Plating	Commercial
10	Hand Grip	Vinyl	
11	Handle Nut	Steel w/Zinc Plating	Commercial

*Not intended for use in potable water.



DIMENSIONS

	UNITS	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
		DN10	DN10	DN15	DN20	DN25	DN32	DN40	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.

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8301A/8303A* P2 1/2"-2"

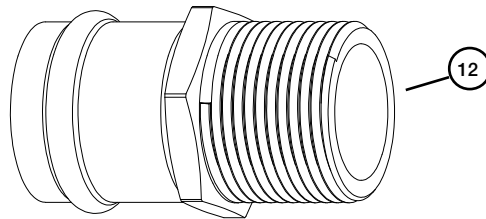
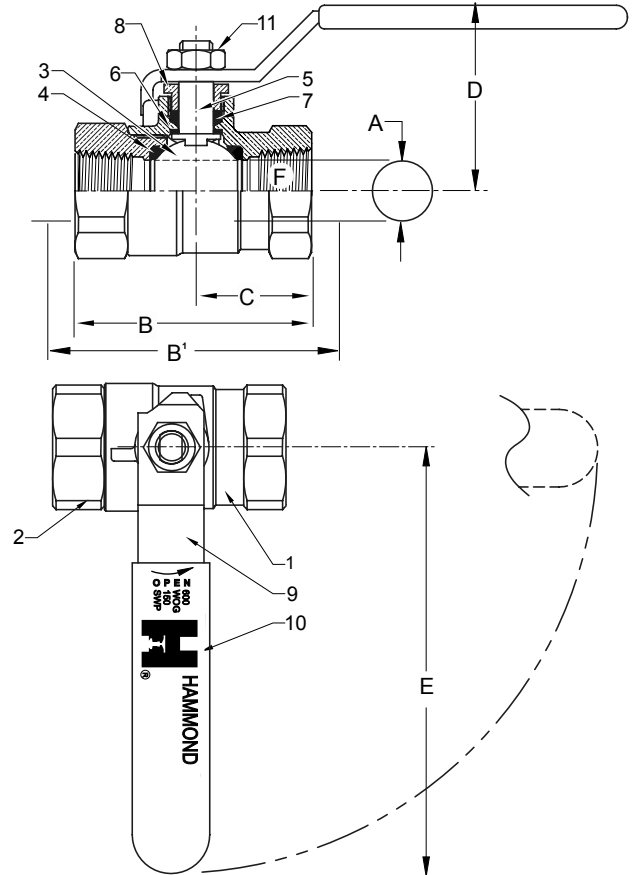
**Bronze Ball Valve
Two Piece
Full Port
200 psig @ 250°F†
Press x Press Ends
Blow-Out Proof Stem
MSS SP-110**



*Not intended for use in potable water.

MATERIAL LIST

ITEM	PART	MATERIAL	ASTM SPEC
1	Body	Cast Bronze	B584
2	Tailpiece	Brass	B283
		Cast Bronze (1 1/4" & up)	B584
3	Ball	Brass w/Hard Chrome Plating	B16
		316 Stainless Steel (8303A P2)	A276
4	Seat	RPTFE, 15% Glass Filled	
5	Stem	Brass	B16
		316 Stainless Steel (8303A P2)	A276
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Packing	PTFE	
8	Packing Nut	Brass	B16
9	Handle	Steel w/Zinc Plating	Commercial
10	Hand Grip	Vinyl	
11	Handle Nut	Steel w/Zinc Plating	Commercial
12	Press Adapters	Brass Fitting w/EPDM O-Ring	B283



Press End Adapter (4151 Series)

DIMENSIONS

	UNITS	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
		DN15	DN20	DN25	DN32	DN40	DN50
A (DIA)	INCHES	0.50	0.76	1.06	1.31	1.56	2.00
	mm	13	19	27	33	40	51
STD INSERTION DEPTH	INCHES	0.87	0.98	0.98	1.02	1.42	1.58
	mm	22	25	25	26	36	40
B	INCHES	2.19	2.59	3.32	3.77	4.28	5.10
	mm	54	66	84	96	109	130
B1	INCHES	5.19	6.17	7.32	7.84	8.76	11.10
	mm	132	157	186	199	228	282
C	INCHES	1.10	1.30	1.59	1.81	2.06	2.37
	mm	27	33	40	46	52	60
D	INCHES	1.91	2.32	2.68	2.82	3.00	3.36
	mm	47	59	68	72	76	85
E	INCHES	3.82	4.55	6.33	6.33	6.33	7.19
	mm	94	116	161	161	161	183
F	THREAD SIZE	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
Cv		13	30	61	110	185	360

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

†Non-Shock

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8311A/8313A* 3/8"-2"

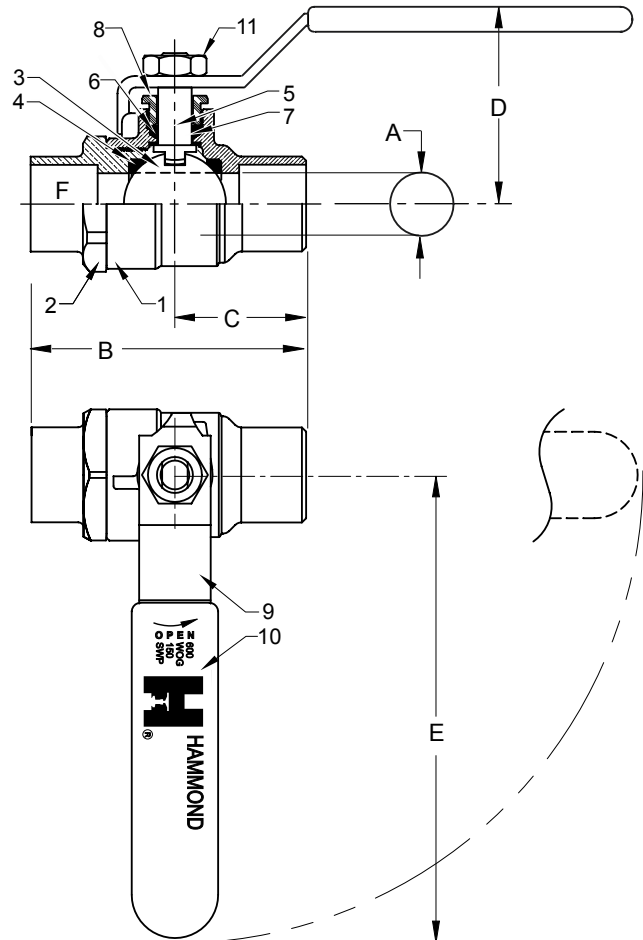
**Bronze Ball Valve
Two Piece
Full Port
600 WOG
Solder Ends
Blow-Out Proof Stem
MSS SP-110**

MATERIALS LIST

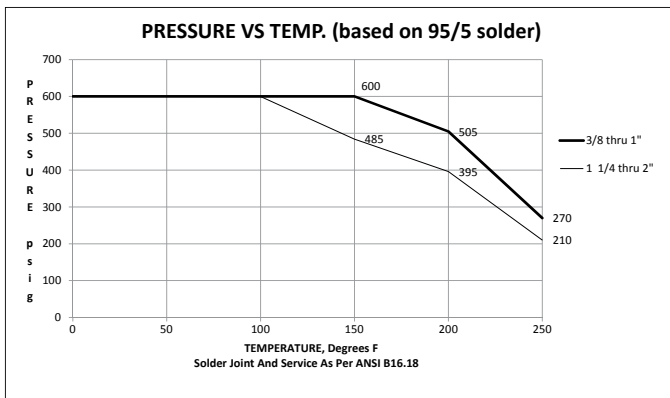
ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Cast Bronze	B584
2	Tailpiece	Brass	B283
		Cast Bronze (1 1/4" & up)	B584
3	Ball	Brass w/Hard Chrome Plating	B16
		316 Stainless Steel (1)	A276
4	Seat	RPTFE, 15% Glass Filled	
5	Stem	Brass	B16
		316 Stainless Steel (1)	A276
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Packing	PTFE	
8	Packing Nut	Brass	B16
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 8313A.

*Not intended for use in potable water.



PRESSURE - TEMPERATURE DATA VALVES RATED FOR VACUUM SERVICE TO 29 INCHES Hg.



DIMENSIONS

	UNITS	3/8" DN10	1/2" DN15	3/4" DN20	1" DM25	1-1/4" DM32	1-1/2" DN40	2" DN50
A (DIA)	INCHES	0.38	0.50	0.76	1.06	1.31	1.56	2.00
	mm	10	13	19	27	32	40	51
B	INCHES	2.05	2.39	3.17	3.75	5.00	6.00	6.75
	mm	52	59	81	95	127	152	172
C	INCHES	0.91	1.07	1.50	1.79	2.49	3.00	3.37
	mm	23	27	38	46	63	76	86
D	INCHES	1.80	1.87	2.19	2.67	2.82	2.99	3.51
	mm	44	46	56	68	72	76	89
E	INCHES	3.80	3.80	4.56	6.31	6.31	6.31	7.19
	mm	97	97	116	160	160	160	183
F	TUBE SIZE Ø	0.51	0.63	0.88	1.13	1.38	1.63	2.13
Cv		7	15	35	60	110	185	360

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

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8501/8503* 1/4"-3"

**Bronze Ball Valve
Two Piece
Standard Port (1"-3") Full Port (1/4"-3/4")
600 WOG/150 SWP (1)
Threaded Ends
Blow-Out Proof Stem
MSS SP-110**

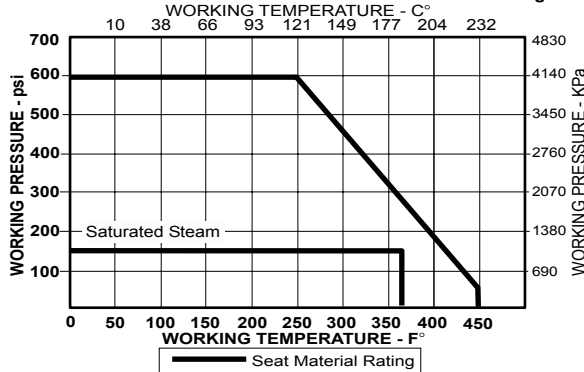
MATERIALS LIST

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

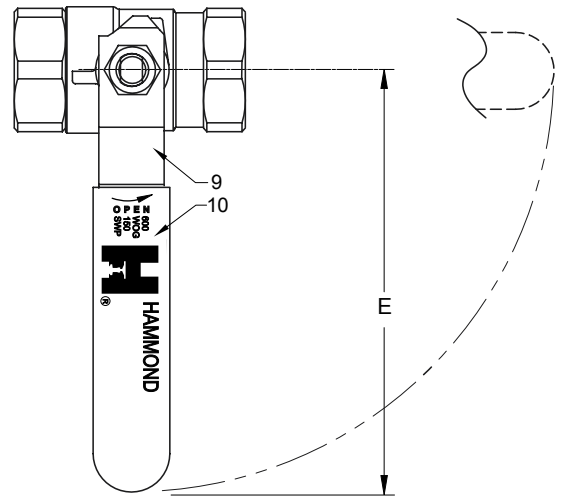
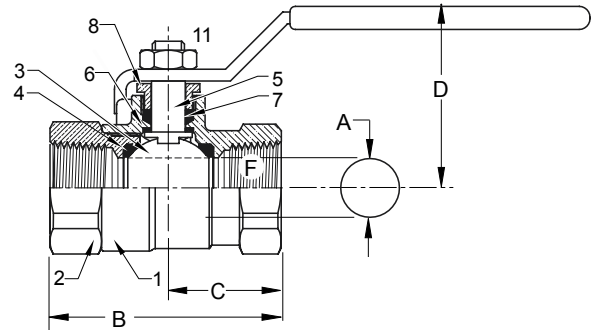
- (1) Hammond Valve recommends the use of Stainless steel ball and stem for steam applications. Please consult factory for more information.
(2) Stem is stainless for 8503 and 2-1/2"-3" 8501

PRESSURE - TEMPERATURE DATA

VALVES RATED FOR VACUUM SERVICE TO 29 INCHES Hg.



*Not intended for use in potable water.



DIMENSIONS

	UNITS	1/4" DN6	3/8" DN10	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50	2-1/2" DN65	3" DN80
A (DIA)	INCHES	0.38	0.38	0.50	0.76	0.88	1.06	1.31	1.56	2.00	2.31
	mm	10	10	13	19	22	27	33	40	51	59
B	INCHES	1.86	1.86	2.19	2.64	3.17	3.50	3.96	4.30	5.56	6.20
	mm	46	46	54	65	78	86	97	105	136	152
C	INCHES	1.00	1.00	1.10	1.30	1.58	1.74	1.97	2.15	2.79	3.10
	mm	25	25	27	32	39	43	48	53	68	76
D	INCHES	1.78	1.81	1.91	2.08	2.25	2.66	2.84	3.00	3.47	3.90
	mm	44	44	47	51	55	65	70	74	85	96
E	INCHES	3.81	3.81	3.81	4.56	4.56	6.31	6.31	7.19	7.19	7.19
	mm	93	93	93	112	112	155	155	176	176	176
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	2-1/2" NPT	3" NPT
Cv		7	7	13	30	38	61	87	121	228	305

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

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8501/8503* P2 1/2"-2"



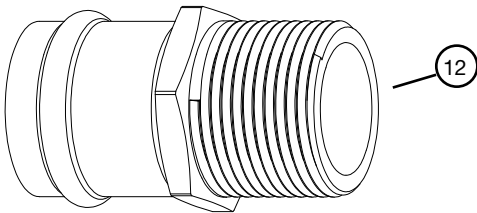
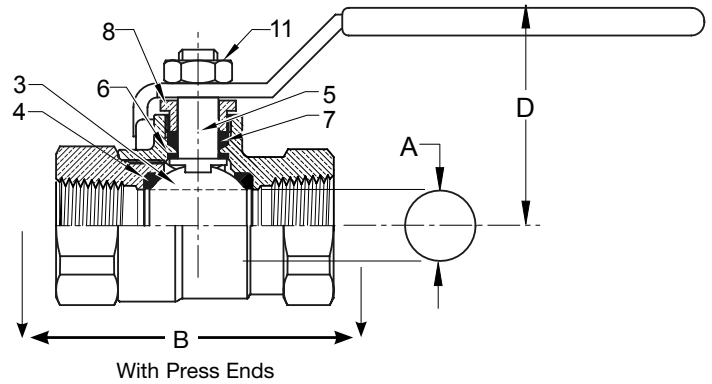
Bronze Ball Valve
Two Piece
Standard Port (1"-2") Full Port (1/2"-3/4")
200 psig @ 250°Ft
Press x Press Ends
Press x Threaded Ends Available (Consult Factory)
Blow-Out Proof Stem
Conforms to MSS SP-110

*Not intended for use in potable water.

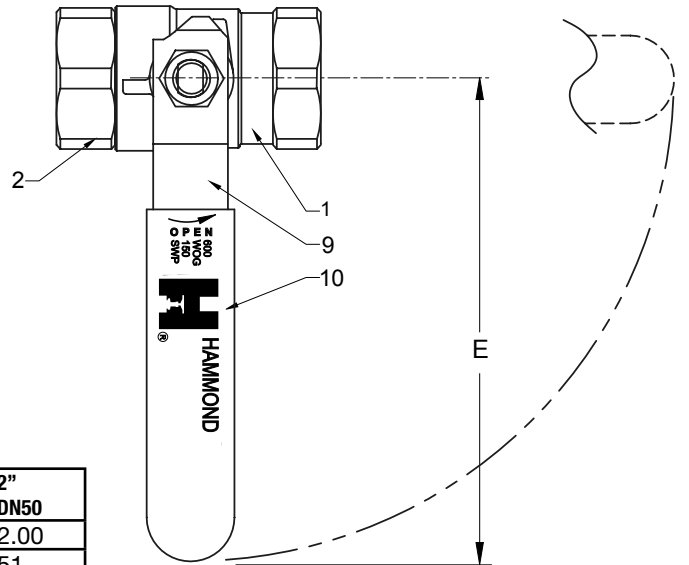
MATERIAL LIST

ITEM	PART	MATERIAL	ASTM SPEC
1	Body	Cast Bronze	B584
2	Tailpiece	Brass	B283
		Cast Bronze (1 1/4" & up)	B584
3	Ball	Brass w/Hard Chrome Plating	B283
		316 Stainless Steel (1)	A276
4	Seat	RPTFE, 15% Glass Filled	
5	Stem	Brass	B16
		316 Stainless Steel (1)	A276
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Packing	PTFE	
8	Packing Nut	Brass	B16
9	Handle	Steel w/Zinc Plating	Commercial
10	Hand Grip	Vinyl	
11	Handle Nut	Steel w/Zinc Plating	Commercial
12	Press Adapters	Brass Fitting w/EPDM O-Ring	B283

(1) 8503 P2



Press End Adapter (4151 Series)



DIMENSIONS

	UNITS	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50
	A (DIA)	INCHES	0.50	0.76	1.06	1.31	1.56
	mm	13	19	27	33	40	51
STD INSERTION DEPTH	INCHES	0.87	0.98	0.98	1.02	1.42	1.58
	mm	22	25	25	26	36	40
B	INCHES	5.19	6.22	7.17	7.57	8.44	10.30
	mm	132	158	182	192	214	262
D	INCHES	1.91	2.32	2.68	2.82	3.00	3.36
	mm	47	59	68	72	76	85
E	INCHES	3.82	4.55	6.33	6.33	6.33	7.19
	mm	94	116	161	161	161	183

+Non-Shock

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8501E/8503E* 1/4"-2"

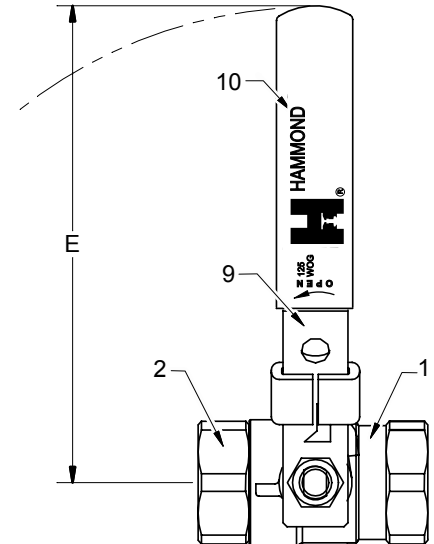
**Bronze Ball Valve
Two Piece
Standard Port (1"-2") Full Port (1/4"-3/4")
Safety Exhaust
Locking Handle
Blow-Out Proof Stem
MSS SP-110**

MATERIALS LIST

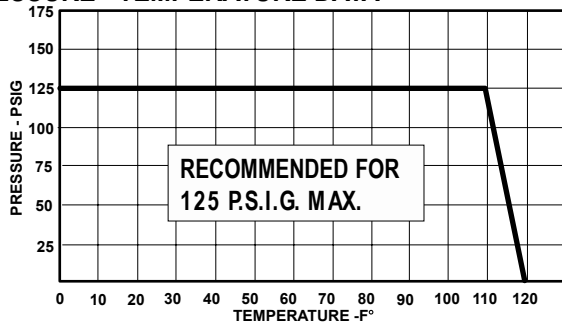
ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Cast Bronze	B584
2	Tailpiece	Brass	B283
		Cast Bronze (1 1/4" & up)	B584
3	Ball	Brass w/Hard Chrome Plating	B16
		316 Stainless Steel (1)	A276
4	Seat	RPTFE, 15% Glass Filled	
5	Stem	Brass	B16
		316 Stainless Steel (1)	A276
6	Thrust Washer	RPTFE, 25% Glass Filled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

(1) Ball & Stem are stainless for 8503E.

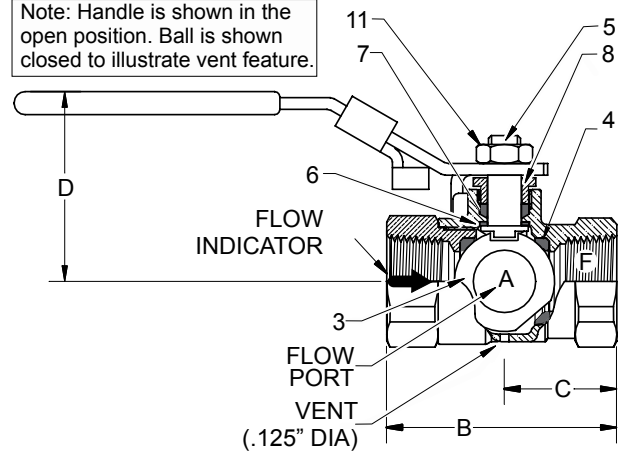
*Not intended for use in potable water.



PRESSURE - TEMPERATURE DATA



Note: Handle is shown in the open position. Ball is shown closed to illustrate vent feature.



DIMENSIONS

	UNITS	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
		DN10	DN10	DN15	DN20	DN25	DN32	DN40	DN50
A (DIA)	INCHES	0.38	0.38	0.5	0.76	0.88	1.06	1.31	1.56
	mm	10	10	13	19	22	27	33	40
B	INCHES	1.86	1.86	2.19	2.65	3.17	3.50	3.96	4.30
	mm	47	47	55	67	80	89	101	109
C	INCHES	1	1	1.10	1.30	1.58	1.74	1.97	2.15
	mm	25	25	27	33	40	44	50	55
D	INCHES	1.81	1.81	1.91	2.08	2.25	2.66	2.84	3.00
	mm	46	46	48	53	57	67	72	76
E	INCHES	3.82	3.82	3.82	4.84	4.84	6.35	6.35	7.20
	mm	97	97	97	123	123	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	12	30	38	61	87	121

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

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8501H/8511H* 1/2"-3/4"

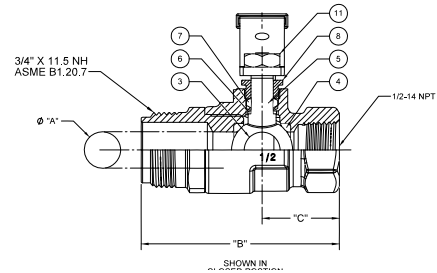
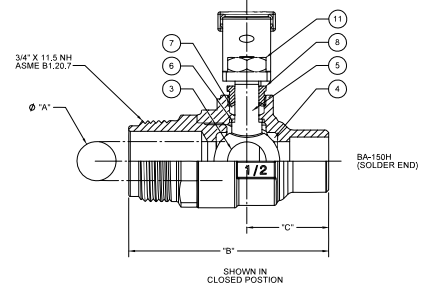
**Bronze Ball Valve
Two Piece
Full Port
Threaded x 3/4" Hose End (8501H)
Solder x 3/4" Hose End (8511H)
Dust Cap and Chain
Blow-Out Proof Stem
MSS SP-110**

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Bronze	B584
2	Tailpiece	Brass	B16
3	Ball	Brass w/Hard Chrome Plating	B16
4	Seat	RPTFE, 15% Glass Filled	
5	Stem	Brass	B16
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Packing	PTFE	
8	Packing Nut	Brass	B16
9	Handle	Steel w/Zinc Plating	Commercial
10	Hand Grip	Vinyl	
11	Handle Nut	Steel w/Zinc Plating	Commercial
12	Dust Cap	Polypropylene	
13	Gasket	EPDM	
14	Chain	Brass Bead	

NOTE: Pressure / Temperature ratings shown are for valve only.
Hose side pressure and temperature limit is based on connected hose and is the users responsibility.

***Not intended for use in potable water.**

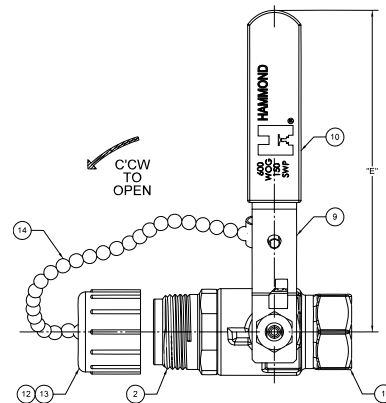


**Do not pressurize cap.
Pressure not to exceed 40 psi.**

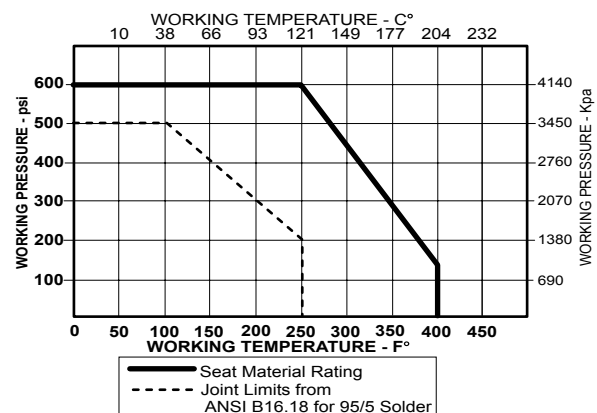
DIMENSIONS

	UNITS	1/2"	3/4"
		DN15	DN20
ØA	INCHES	0.50	0.76
	mm	13	19
B (8501H)	INCHES	2.70	2.90
	mm	69	74
B' (8511H)	INCHES	2.55	3.05
	mm	65	78
C (8501H)	INCHES	1.10	1.30
	mm	28	33
C' (8511H)	INCHES	1.10	1.45
	mm	28	37
D	INCHES	1.88	2.14
	mm	48	54
E	INCHES	3.81	4.62
	mm	97	117
F	THREADED INLET	NPT	NPT
Cv		13	30

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



PRESSURE - TEMPERATURE DATA (See Note)



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8501H/8503H P1 1/2"-3/4"

**Bronze Ball Valve
Two Piece
Full Port
200 psig @ 250°F†
Press x Hose End
Dust Cap and Chain
Blow-Out Proof Stem
Conforms to MSS SP-110**



MATERIAL LIST

ITEM	PART	MATERIAL	ASTM SPEC
1	Body	Bronze	B584
2	Tailpiece	Brass	B16
3	Ball	Brass w/Hard Chrome Plating	B16
		316 Stainless Steel (1)	A276
4	Seat	RPTFE, 15% Glass Filled	
5	Stem	Brass	B16
		316 Stainless Steel (1)	A276
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Packing	PTFE	
8	Packing Nut	Brass	B16
9	Handle	Steel w/Zinc Plating	Commercial
10	Hand Grip	Vinyl	
11	Handle Nut	Steel w/Zinc Plating	Commercial
12	Dust Cap	Polypropylene	
13	Gasket	EPDM	
14	Chain	Brass Bead	
15	Press Adapters	Brass Fitting w/EPDM O-Ring	B283

+NON-SHOCK

(1) Ball & Stem are stainless steel for 8503H P1

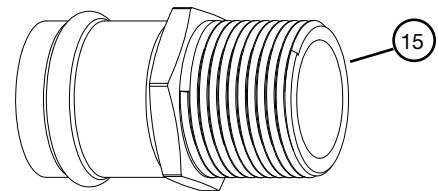
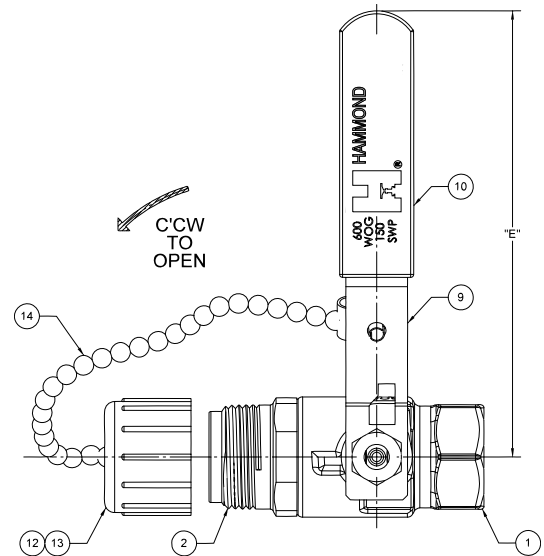
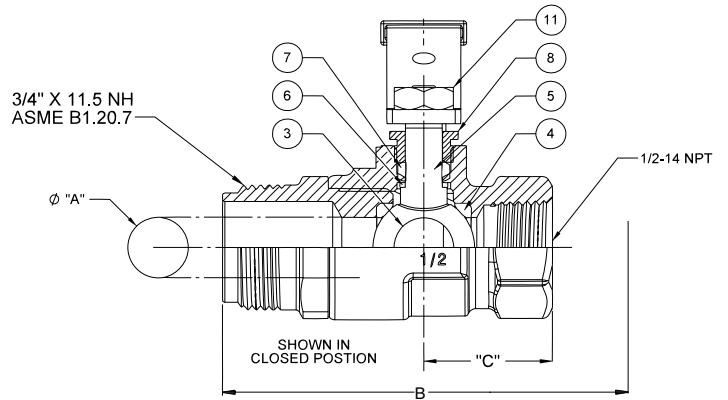
**Do not pressurize cap.
Pressure not to exceed 40 psi.**

DIMENSIONS

	UNITS	1/2"	3/4"
		DN15	DN20
A	INCHES mm	0.50 13	.76 19
B	INCHES mm	2.70 69	2.90 74
STD INSERTION DEPTH	INCHES mm	.87 22	.98 25
C	INCHES mm	1.10 28	1.30 33
D	INCHES mm	1.88 48	2.14 54
E	INCHES mm	3.81 97	4.62 117
F	THREAD INLET	NPT	NPT
Cv		13	30

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

*Not intended for use in potable water.



Press End Adapter (4151 Series)

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8501M* 1/4"-2"

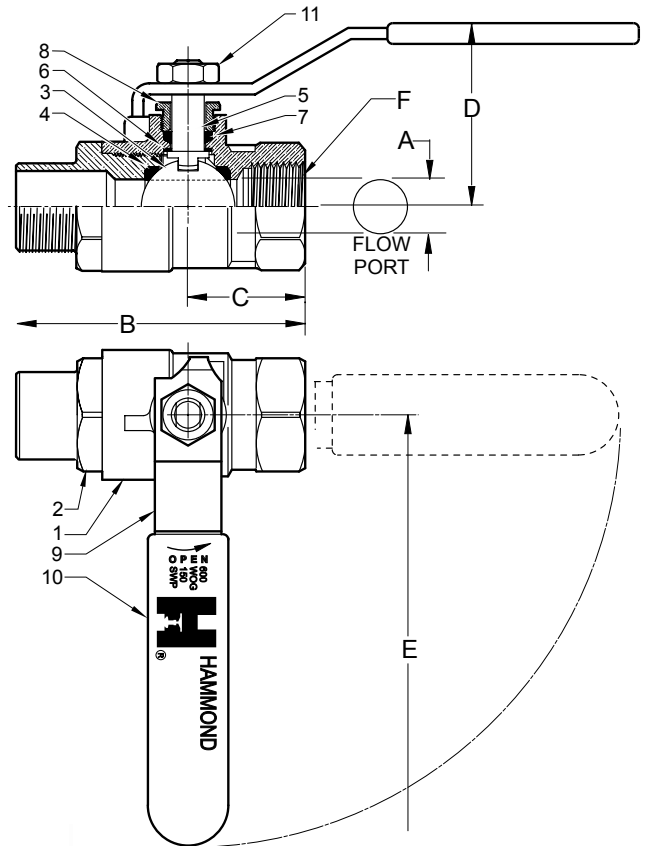
Bronze Ball Valve
Two Piece
Standard Port (1"-2") Full Port (1/4"-3/4")
600 WOG/150 SWP*
FNPT x MNPT Connections
Blow-Out Proof Stem
MSS SP-110

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Cast Bronze	B584
2	Tailpiece	Brass/Bronze (1" & up)	B16/B584
3	Ball	Brass w/Hard Chrome Plating	B16
4	Seat	RPTFE, 15% Glass Filled	
5	Stem	Brass	B16
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Packing	PTFE	
8	Packing Nut	Brass	B16
9	Handle	Steel w/Zinc Plating	Commercial
10	Hand Grip	Vinyl	
11	Handle Nut	Steel w/Zinc Plating	Commercial

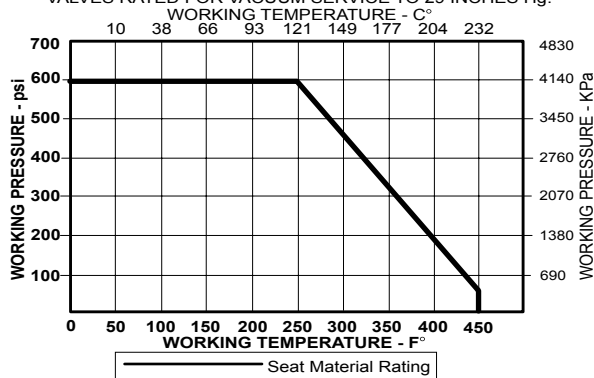
* Please consult factory for more information regarding steam applications.

*Not intended for use in potable water.



PRESSURE - TEMPERATURE CHART

VALVES RATED FOR VACUUM SERVICE TO 29 INCHES Hg.



DIMENSIONS

	UNITS	1/4" DN6	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	0.88	1.06	1.31	1.56
	mm	10	10	13	19	22	27	33	40
B	INCHES	2.50	2.52	2.80	3.22	3.64	4.24	4.69	4.95
	mm	64	64	71	82	93	108	119	126
C	INCHES	1.00	1.00	1.09	1.30	1.59	1.75	1.97	2.15
	mm	25	25	28	33	40	45	50	55
D	INCHES	1.76	1.76	1.87	2.20	2.28	2.67	2.77	3.00
	mm	45	45	48	56	58	68	70	77
E	INCHES	3.79	3.79	3.80	4.55	4.54	6.32	6.32	7.20
	mm	96	96	96	116	115	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		11	11	17	30	40	52	90	115

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

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8503H/8513H* 1/2"-3/4"

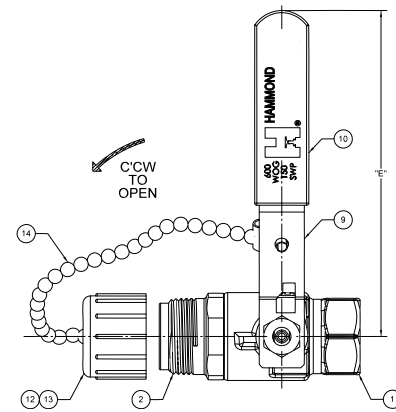
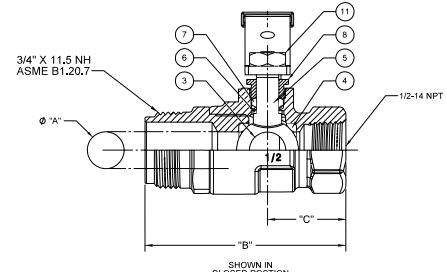
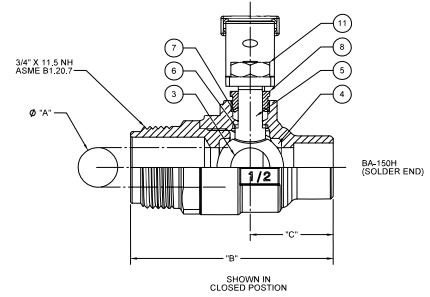
**Bronze Ball Valve
Two Piece
Full Port
Threaded x 3/4" Hose End (8503H)
Solder x 3/4" Hose End (8513H)
Dust Cap and Chain
Blow-Out Proof Stem
MSS SP-110**

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Bronze	B584
2	Tailpiece	Brass	B16
3	Ball	316 Stainless Steel	A276
4	Seat	RPTFE, 15% Glass Filled	
5	Stem	316 Stainless Steel	A276
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Packing	PTFE	
8	Packing Nut	Brass	B16
9	Handle	Steel w/Zinc Plating	Commercial
10	Hand Grip	Vinyl	
11	Handle Nut	Steel w/Zinc Plating	Commercial
12	Dust Cap	Polypropylene	
13	Gasket	EPDM	
14	Chain	Brass Bead	

NOTE: Pressure / Temperature ratings shown are for valve only.
Hose side pressure and temperature limit is based on connected hose and is the users responsibility.

*Not intended for use in potable water.



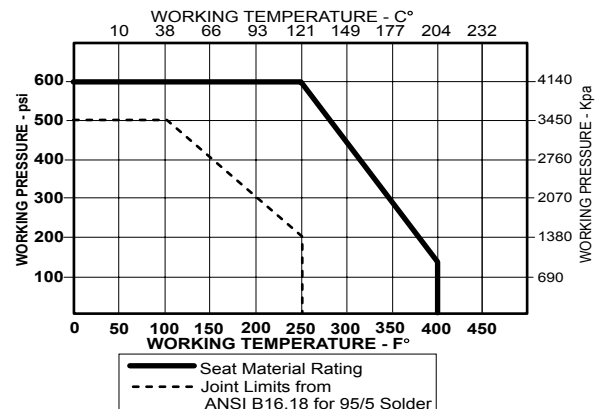
**Do not pressurize cap.
Pressure not to exceed 40 psi.**

DIMENSIONS

ØA	UNITS	1/2" DN15	3/4" DN20
	INCHES	0.50	0.76
B (8503H)	INCHES	2.70	2.90
	mm	69	74
B' (8513H)	INCHES	2.55	3.05
	mm	65	78
C (8503H)	INCHES	1.10	1.30
	mm	28	33
C' (8513H)	INCHES	1.10	1.45
	mm	28	37
D	INCHES	1.88	2.14
	mm	48	54
E	INCHES	3.81	4.62
	mm	97	117
F	THREADED INLET	NPT	NPT
Cv		13	30

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

PRESSURE - TEMPERATURE DATA (See Note)



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8511/8513* 3/8"-3"

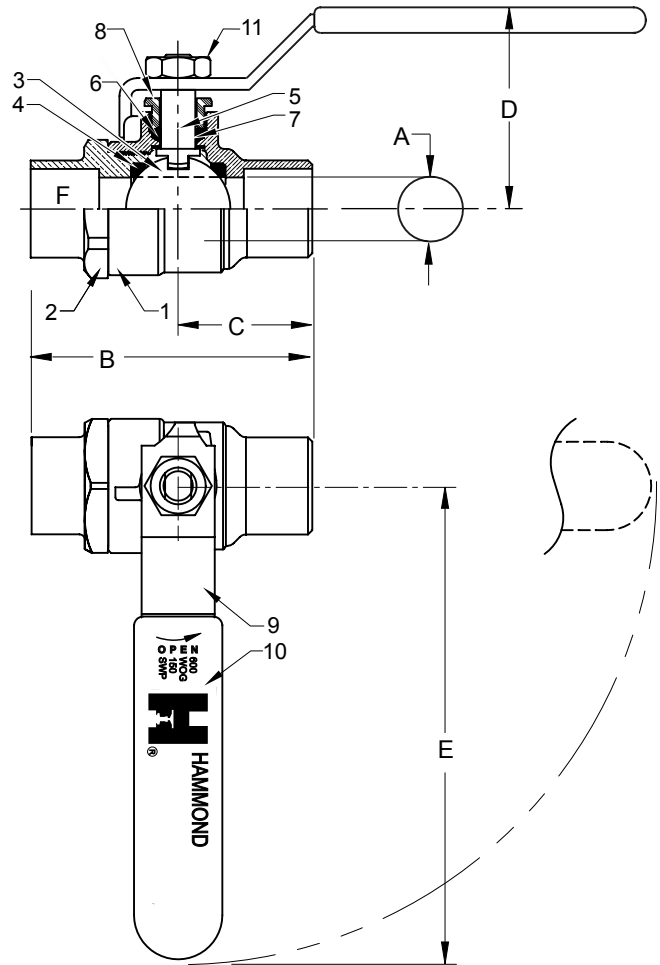
Bronze Ball Valve
Two Piece
Standard Port (1"-3") Full Port (3/8"-3/4")
600 WOG
Solder Ends
Blow-Out Proof Stem
MSS SP-110

MATERIALS LIST

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

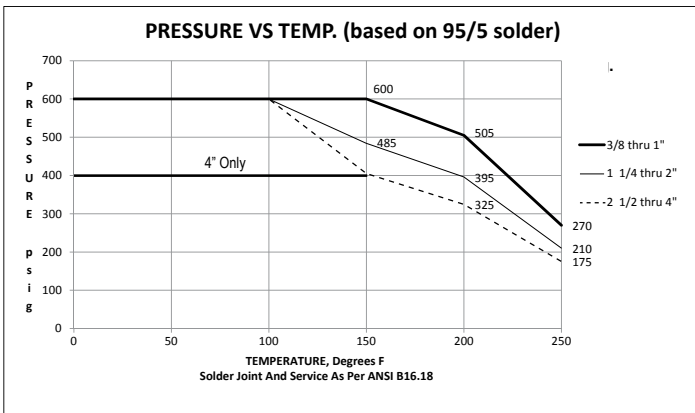
(1) Stem is stainless for 8513 and 2-1/2"-3" 8511.

*Not intended for use in potable water.



PRESSURE - TEMPERATURE DATA

VALVES RATED FOR VACUUM SERVICE TO 29 INCHES Hg.



DIMENSIONS

	UNITS	3/8" DN10	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50	2-1/2" DN65	3" DN80
A (DIA)	INCHES	0.38	0.50	0.76	0.88	1.06	1.31	1.56	2.00	2.31
	mm	10	13	19	22	27	33	40	51	59
B	INCHES	2.10	2.39	3.05	3.71	4.54	5.00	6.25	7.34	8.16
	mm	52	59	75	91	111	123	153	180	200
C	INCHES	0.90	1.07	1.56	1.76	2.27	2.50	3.13	3.67	4.07
	mm	22	26	38	43	56	61	77	90	100
D	INCHES	1.80	1.89	2.13	2.29	2.67	2.85	3.02	3.47	3.88
	mm	44	46	52	56	65	70	74	85	95
E	INCHES	3.81	3.81	4.56	4.56	6.31	6.31	7.19	7.19	7.19
	mm	93	93	112	112	155	155	176	176	176
F	TUBE SIZE	0.51	0.63	0.88	1.13	1.38	1.63	2.13	2.63	3.13
Cv		7	13	35	38	61	87	121	228	305

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

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 Hammond Valve is a registered trade mark of Milwaukee Valve Company.

8604/8603* 1/4"-3"

**Bronze Ball Valve
Three Piece
Full Port
600 WOG/150 SWP (1)
Threaded Ends
Blow-Out Proof Stem
MSS SP-110**

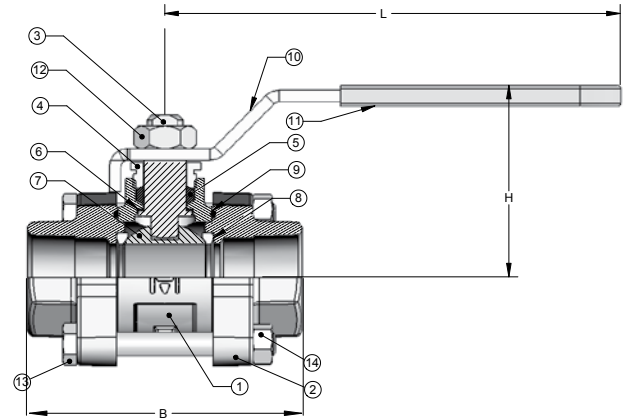
MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Cast Bronze	B584
2	End Cap	Bronze	B584
3	Stem	Brass	B16
		316 Stainless Steel (2)	A276
4	Packing Nut	Brass	B16
5	Packing	PTFE	
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Ball	CP Brass	B16
		316 Stainless Steel (2)	A276
8	Seat	RPTFE, 15% Glass Filled	
9	O-Ring	Viton	Commercial
10	Handle	Steel w/Zinc Plating	Commercial
11	Handle Grip	Vinyl	Commercial
12	Handle Nut	Steel w/Zinc Plating	Commercial
13	Bolt	Steel w/Zinc Plating	Commercial
14	Nut	Steel w/Zinc Plating	Commercial

(1) Hammond Valve recommends the use of Stainless Steel ball and stem for steam applications. Please consult factory for more information.

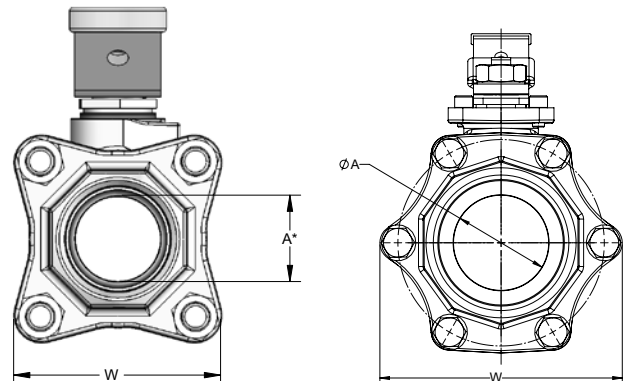
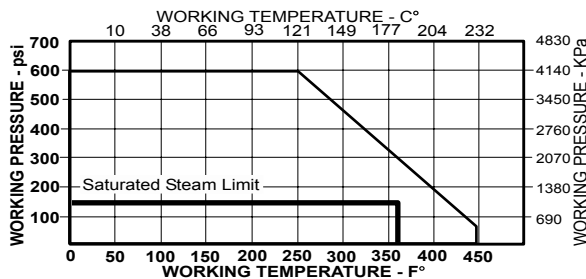
(2) Ball and stem are stainless for 8603

***Not intended for use in potable water.**



PRESSURE and TEMPERATURE CHART

VALVES RATED FOR VACUUM SERVICE TO 29 INCHES Hg.



1/4"-2" Sizes

2-1/2"-3" Sizes

DIMENSIONS

	UNITS	1/4" DN6	3/8" DN10	1/2" DN15	3/4" DN20	1" D25	1-1/4" D32	1-1/2" D40	2" D50	2-1/2" DN 65	3" * DN 80
A	INCHES	0.50	0.50	0.50	0.75	1	1.25	1.50	2.00	2.50	2.50
	mm	13	13	13	19	25	32	38	51	64	64
B	INCHES	3.03	3.03	3.03	3.65	3.82	4.86	5.06	6.00	7.00	7.00
	mm	77	77	77	90	97	123	129	152	178	178
H	INCHES	1.65	1.65	1.65	2.24	2.65	2.86	3.03	3.26	4.09	4.09
	mm	42	42	42	57	67	73	77	83	104	104
L	INCHES	4.03	4.03	4.06	4.58	6.30	6.32	7.20	7.20	8.00	8.00
	mm	102	102	103	116	160	161	183	183	203	203
W	INCHES	1.95	1.95	1.95	2.19	2.48	3.00	3.13	3.78	6.25	6.25
	mm	50	50	50	56	63	76	80	96	159	159
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	2-1/2" NPT	3" NPT
Cv		7	7	17	31	60	110	185	360	390	390

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

* 3" is Standard Port.

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8604/8603* P2 1/2"-2"

**Bronze Ball Valve
Three Piece
Full Port**

**200 psig @ 250°Ft
Press x Press Ends**

Press x Threaded Ends Available (Consult Factory)

Blow-Out Proof Stem

Conforms to MSS SP-110

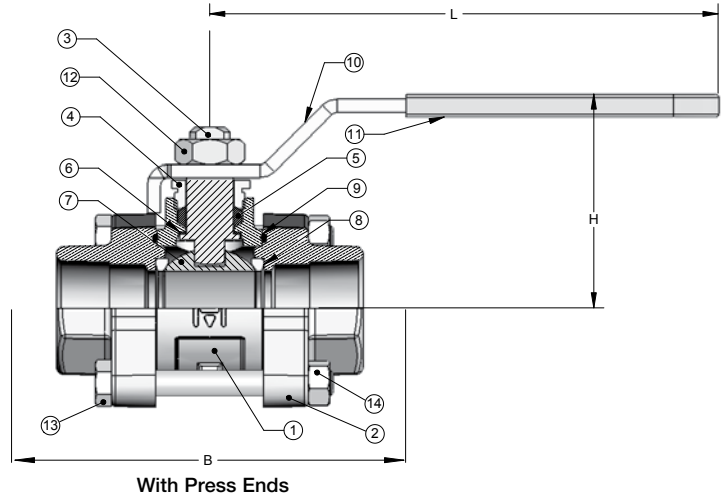


MATERIAL LIST

ITEM	PART	MATERIAL	ASTM SPEC
1	Body	Bronze	B584
2	End Cap	Bronze	B584
3	Stem	Brass	B16
		316 Stainless Steel (1)	A276
4	Packing Nut	Brass	B16
5	Packing	PTFE	
6	Thrust Washer	RPTFE, 25% Glass Filled	
7	Ball	CP Brass	B16
		316 Stainless Steel (1)	A276
8	Seat	RPTFE, 15% Glass Filled	
9	O'Ring	Viton	Commercial
10	Handle	Steel w/Zinc Plating	Commercial
11	Hand Grip	Vinyl	Commercial
12	Handle Nut	Steel w/Zinc Plating	Commercial
13	Bolt	Steel w/Zinc Plating	Commercial
14	Nut	Steel w/Zinc Plating	Commercial
15	Press Adapters	Brass Fitting w/EPDM O-Ring	B283

(1) Ball & Stem are stainless steel for 8603 P2

***Not intended for use in potable water.**

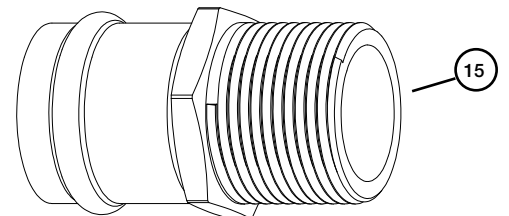
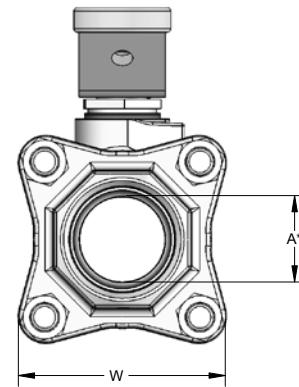


DIMENSIONS

	UNITS	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
		DN15	DN20	DN25	DN32	DN40	DN50
A (DIA)	INCHES	0.50	0.75	1.00	1.25	1.50	2.00
	mm	13	19	25	32	38	51
STD INSERTION DEPTH	INCHES	0.87	0.98	0.98	1.02	1.42	1.58
	mm	22	25	25	26	36	40
B	INCHES	3.03	3.65	3.82	4.86	5.06	6.00
	mm	77	90	97	123	129	152
H	INCHES	1.65	2.24	2.65	2.86	3.03	3.26
	mm	42	57	67	73	77	83
L	INCHES	4.06	4.58	6.30	6.32	7.20	7.20
	mm	103	116	160	161	183	183
W	INCHES	1.95	2.19	2.48	3.00	3.13	3.78
	mm	50	56	63	76	80	96
F	THREAD SIZE	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
		NPT	NPT	NPT	NPT	NPT	NPT
Cv	INCHES	17	31	60	110	185	360

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

+Non-Shock



Press End Adapter (4151 SERIES)

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8614/8613* 3/8" - 3"

**Bronze Ball Valve
Three Piece
Full Port
600 WOG
Solder Ends
Blow-Out Proof Stem
MSS SP-110**

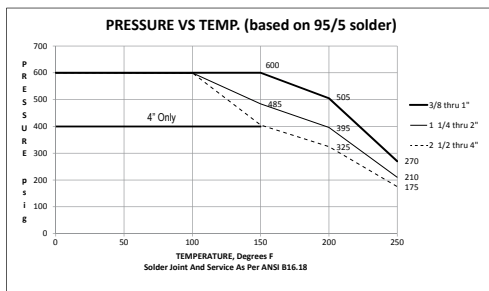
MATERIALS LIST

ITEM	PART	MODEL/SIZE	MATERIALS	ASTM SPEC.
1	Body	8614/8613	Cast Bronze	B584
2	Tailpiece	8614/8613	Bronze	B584
3	Ball	8614	Chrome Plated Brass	B16
		8613	316 Stainless Steel (1)	A276
4	Packing	8614	Brass	B16
		8613	316 Stainless Steel (1)	A276
5	O-Ring	8614/8613	Viton	MIL-R-83248
6	Seat	8614/8613	15% Glass RPTFE	
7	Thrust, Washer	8614/8613	25% Glass RPTFE	
8	Packing, Male	2-1/2"-3"	PTFE (2 1/2" - 3")	
	Packing, "V"	3/8"-2"	PTFE (3/8" - 2")	
9	Packing, "V"	8614/8613	PTFE	
10	Packing, Female	8614/8613	PTFE	
11	Packing Follower	8614/8613	Brass	B16
12	Hex Jam Nut	8614/8613	Stainless Steel	Commercial
13	Nut Locker	8614/8613	S.S. Type 301/302	
14	Washer, Internal Tooth	8614/8613	Stainless Steel	Commercial
15	Belleville, Washer	8614/8613	S.S. 17-7 PH	Commercial
16	Hex Head Cap Screw	8614/8613	SAE, Grade 8	Commercial
17	Socket Head Cap Screw	2-1/2"-3"	Commercial Carbon Steel	Zinc Plated
18	Handle Assy	8614/8613	-	-
19	Gland Nut	3/8"-2"	Brass	B16
20	Hex Nut	3/8"-2"	Commercial	SAE 5140

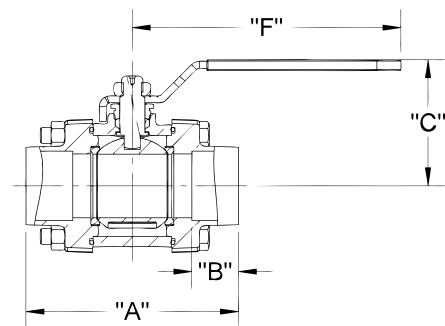
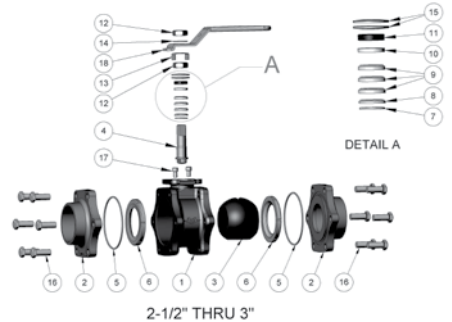
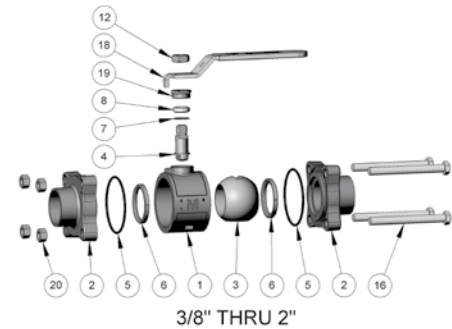
(1) Ball and stem are stainless for 8613

PRESSURE and TEMPERATURE CHART

VALVES RATED FOR VACUUM SERVICE TO 29 INCHES Hg.
 --- Seat Material Rating
 - - - - Solder Joints per ANSI B16.18



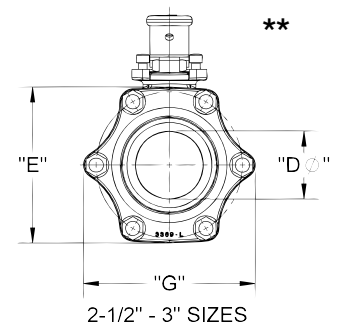
*Not intended for use in potable water.



DIMENSIONS

	UNITS	3/8" DN10	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50	2-1/2" DN65	3" DN80
A	INCHES	2.68	3.02	3.56	3.81	4.66	5.00	5.70	7.01	7.01
	mm	68	77	90	97	118	127	145	178	178
B	INCHES	0.44	0.51	0.76	0.92	0.98	1.10	1.35	1.48	1.67
	mm	11	13	19	23	25	28	34	38	42
C	INCHES	1.85	1.85	2.20	2.65	2.79	2.97	3.47	5.44	5.44
	mm	47	47	56	67	71	75	88	138	138
D	INCHES	0.45	0.50	0.75	1.00	1.25	1.50	2.00	2.50	2.50
	mm	11	13	19	25	32	38	51	64	64
E	INCHES	1.32	1.32	2.13	2.41	2.94	3.13	3.86	5.74	5.74
	mm	34	34	54	61	75	80	98	146	146
F	INCHES	3.80	3.80	4.55	6.32	6.32	6.32	7.20	8.10	8.10
	mm	96	96	116	160	160	160	183	206	206
G	INCHES	1.92	1.92	2.13	2.41	2.94	3.13	3.86	6.31	6.31
	mm	49	49	54	61	75	80	98	160	160
Cv		7	17	31	60	110	185	360	390	390

*3" is standard Port. **2-1/2" & 3" Only.



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8614-22/8613-22* 1/2"-3"

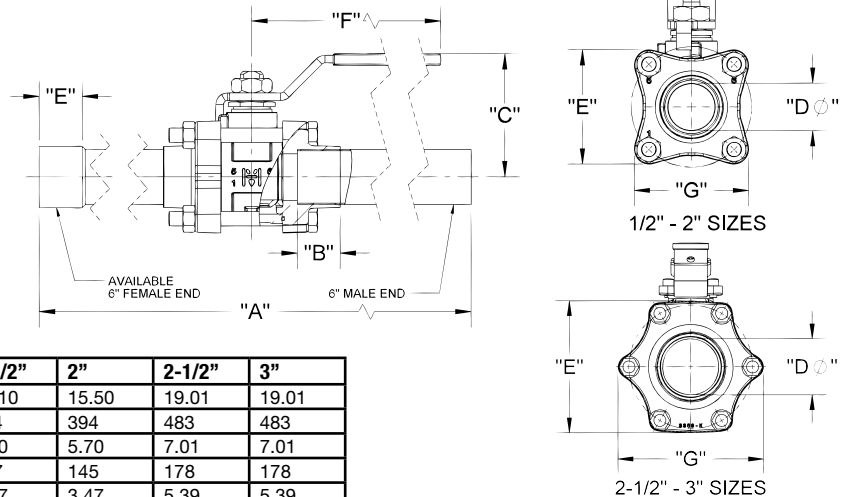
**Bronze Ball Valve
Three Piece
Full Port
600 WOG
Extended Tube Ends
Inline Repairable
Blow-Out Proof Stem
MSS SP-110**

MATERIALS LIST

ITEM	PART	MODEL/SIZE	MATERIALS	ASTM SPEC.
1	Body	8614-22/8613-22	Bronze	B584
2	Sil. Braised Stub, Male	8614-22/8613-22	Bronze, Copper Tube	
3	Ball	8614-22	Chrome Plated Brass	B16
		8613-22	316 Stainless Steel (1)	A276
4	Stem	8614-22	Brass	B16
		8614-22/8613-22	316 Stainless Steel (1)	A276
5	Seat	8614-22/8613-22	15% Glass RPTFE	
6	O-Ring	8614-22/8613-22	Viton	MIL-R-83248
7	Washer, Thrust	8614-22/8613-22	25% Glass RPTFE	
8	Packing	8614-22/8613-22	PTFE	
	Packing, Male	8614-22/8613-22	PTFE	
9	Packing, "V"	8614-22/8613-22	PTFE	
10	Packing, Female	8614-22/8613-22	PTFE	
11	Packing Follower	8614-22/8613-22	Brass	B16
12	Washer, Belleville	8614-22/8613-22	17-7 PH S.S.	Commercial
13	Nut Locker	8614-22/8613-22	S.S. 301	Commercial
14	Handle Assy	8614-22/8613-22	-	
15	Hex Head Cap Screw	8614-22/8613-22	SAE, Grade 8	Commercial
16	Nut, Jam	8614-22/8613-22	Steel, Zinc Plating	Commercial
17	Washer, Internal Tooth	8614-22/8613-22	Stainless Steel	Commercial
18	Socket Head Cap Screw	2-1/2"-3"	Commercial Carbon Steel	Zinc Plated
19	Gland Nut	1/2"-2"	Brass	B16
20	Hex Nut	1/2"-2"	Commercial	SAE 5140

(1) Ball and stem are stainless for 8613-22

** Pressure temperature charts contain valve seat (1) Ball and stem are stainless for 350STE and body ratings for standard valves. Solder end valves are de-rated by the limitations of the joint as specified in ASME 16.18. Brazing installations can be likewise derated. Consult ASME 16.18 and the American Welding Society for the actual joint ratings of the material being used for the specific application. Pressure and Temperature ratings may be further derated in accordance with the pressure rating associated with the type of copper tube used for the stub end. Call the factory for accurate application data.



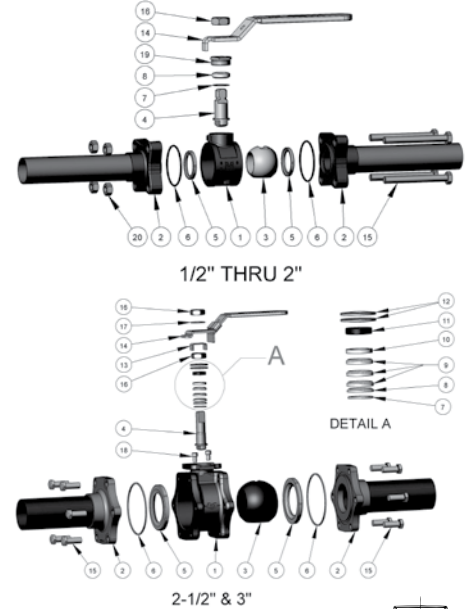
DIMENSIONS

	UNITS	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
A	INCHES	13.84	13.92	13.95	14.82	15.10	15.50	19.01	19.01
	mm	352	354	354	376	384	394	483	483
B	INCHES	3.02	3.56	3.81	4.66	5.00	5.70	7.01	7.01
	mm	77	90	97	118	127	145	178	178
C	INCHES	1.85	2.20	2.65	2.80	2.97	3.47	5.39	5.39
	mm	47	56	67	71	75	88	137	137
ØD	INCHES	0.50	0.75	1.00	1.25	1.50	2.00	2.44	2.91
	mm	13	19	25	32	38	51	62	74
E	INCHES	1.32	2.13	2.41	2.94	3.13	3.86	5.74	5.74
	mm	34	54	61	75	80	98	146	146
F	INCHES	1.92	2.13	2.41	2.94	3.13	3.86	6.31	6.31
	mm	49	54	61	75	80	98	160	160
G	INCHES	3.80	4.56	6.32	6.32	6.32	7.20	8.10	8.10
	mm	97	116	161	161	161	183	206	206
Cv		17	31	60	110	185	360	390	390

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

* Designed for soft solder or brazed installation without disassembly.

*Not intended for use in potable water.



Available Options

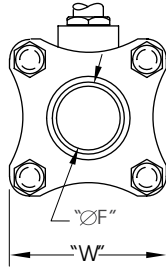
- Male Tube Ends - Type "K" (Standard)
- Female Tube Ends - Type "L" (-F)
- Cleaned For Oxygen Service In Accordance With NFPA 99C (-OC)
- Stainless-Steel Ball And Stem (-S)
- Stainless-Steel Locking Lever (-LD)
- Oval Handle (-OH)
- Oval Locking Handle (-LO)
- Stem Extension (-XH)
- Stainless-Steel Lever Handle (-SH)
- Gauge Ports

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8614-22-G/8613-22-G* 1/2"-2"

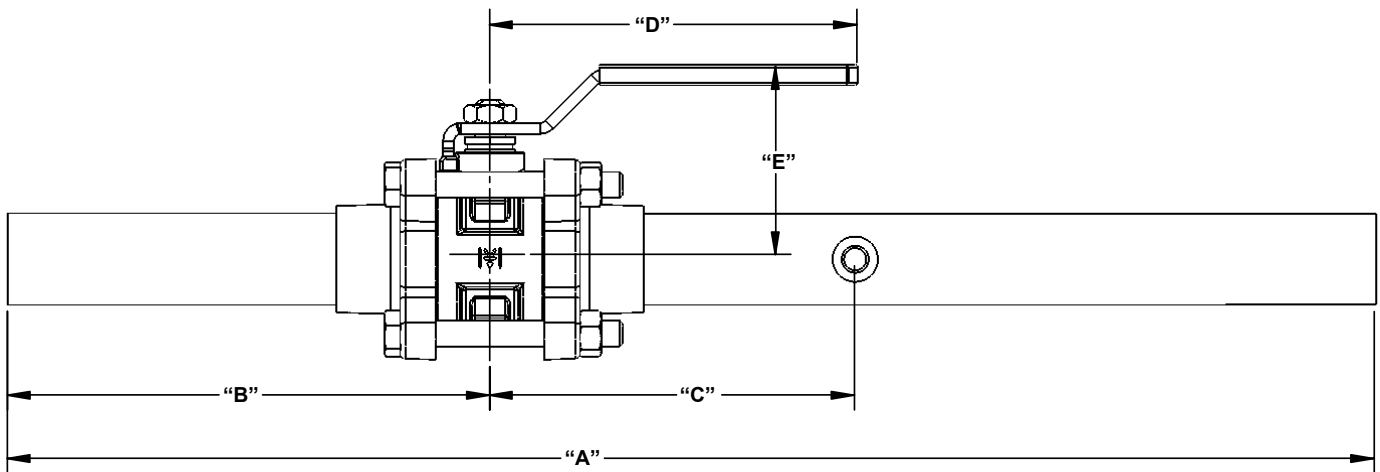
**Bronze Ball Valve
Three Piece
Full Port
600 WOG
Extended Tube Ends with 1/8" NPT Gauge Port
Inline Repairable
Blow-Out Proof Stem
MSS SP-110**

***Not intended for use in potable water.**



Available Options

- Male Tube Ends - Type "K" (Standard)
- Female Tube Ends - Type "L" (-F)
- Cleaned For Oxygen Service In Accordance With NFPA 99C (-OC)
- Stainless-Steel Ball And Stem (-S)
- Stainless-Steel Locking Lever (-LD)
- Oval Handle (-OH)
- Oval Locking Handle (-LO)
- Stem Extension (-XH)
- Stainless-Steel Lever Handle (-SH)



DIMENSIONS

	UNITS	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50
A	INCHES	21.00	21.00	21.00	21.00	21.00	21.00
	mm	533	533	533	533	533	533
B	INCHES	6.90	7.00	7.00	7.40	7.60	7.70
	mm	175	178	178	188	193	196
C	INCHES	6.40	6.10	5.90	5.50	5.40	5.00
	mm	163	155	150	140	137	127
D	INCHES	3.80	4.80	4.80	6.50	7.40	7.40
	mm	97	122	122	165	188	188
E	INCHES	1.60	2.30	2.40	2.80	3.10	3.60
	mm	41	58	61	71	79	91
F	INCHES	0.50	0.75	1.00	1.25	1.50	2.00
	mm	13	19	25	32	38	51
G	INCHES	1.90	2.20	2.50	3.00	3.00	4.00
	mm	48	56	64	76	76	102
Cv		17	31	60	110	185	360

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

** Pressure temperature charts contain valve seat (1) Ball and stem are stainless for 350STE and body ratings for standard valves. Solder end valves are de-rated by the limitations of the joint as specified in ASME 16.18. Brazing installations can be likewise derated. Consult ASME 16.18 and the American Welding Society for the actual joint ratings of the material being used for the specific application. Pressure and Temperature ratings may be further derated in accordance with the pressure rating associated with the type of copper tube used for the stub end. Call the factory for accurate application data.

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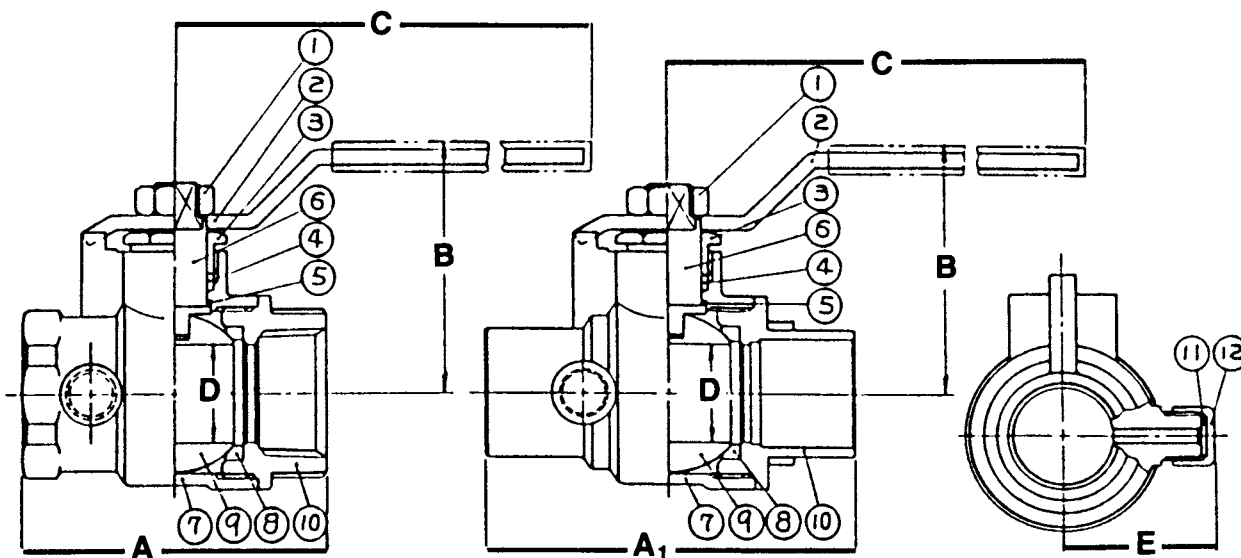
8701/8711* 1/2"-1"

Drainable Brass Ball Valve
Two Piece
Full Port
600 psig WOG
Threaded or Solder Ends
Blow-Out Proof Stem
ASME A112.4.14

MATERIALS LIST

*Not intended for use in potable water.

ITEM	PART	MATERIALS	ASTM SPEC.
1	HANDLE NUT	STEEL, ZINC PLATED	AISI TYPE 1010
2	HANDLE, PLASTIC COATED	STEEL, ZINC PLATED	AISI TYPE 1010
3	STUFFING NUT	BRASS ROD	ASTM B124,C37700
4	PACKING RING	TFE	
5	THRUST WASHER	TFE	
6	STEM	BRASS ROD	ASTM B124,C37700
7	BODY	BRASS FORGING	ASTM B283,C37700
8	BALL SEALS	TFE	
9	BALL/CHROME	BRASS FORGING	ASTM B283,C37700
10	END PIECE	BRASS FORGING	ASTM B283,C37700
11	DRAIN CAP WASHER	PLASTIC	POLYETHYLENE
12	DRAIN CAP	BRASS FORGING	ASTM B283,C37700



8701 Threaded

8711 Solder

DIMENSIONS

	UNITS	A	A-1	B	C	D	E	Cv	TORQUE IN LBS.
1/2	INCHES	2	2.13	1.53	3.31	0.5	1	18	32
	mm	51	54	39	84	13	25		
3/4	INCHES	2.44	2.91	2	4.66	0.78	1.19	34	50
	mm	62	74	51	118	20	30		
1	INCHES	3	3.53	2.16	4.66	1	1.38	57	60
	mm	76	90	55	118	25	35		

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8901* 1/4"-4"

Brass Ball Valve

Two Piece

Full Port

600 WOG (1/4" - 3") 400 WOG (4")

Threaded Ends

Blow-Out Proof Stem

MSS SP-110, ASME A112.4.14



1/4" through 2" Only

*Not intended for use in potable water.

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	CP Brass (3/8" - 1 1/4")	B283
		CP Brass, Cast (1 1/2" - 4")	B584
4	Ball Seal	PTFE	Commercial
5	Stem	Brass	B124
6	O-Ring	Buna-N	D2006
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B16
9	Packing	PTFE	Commercial
10	Handle	Zinc Plated Steel	Commercial
11	Hand Grip	Zinc Plated Steel	Commercial
****12	Body Seal	PTFE	Commercial

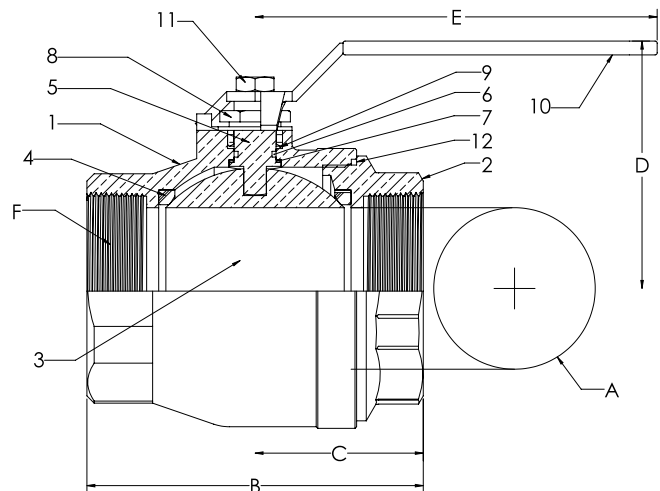
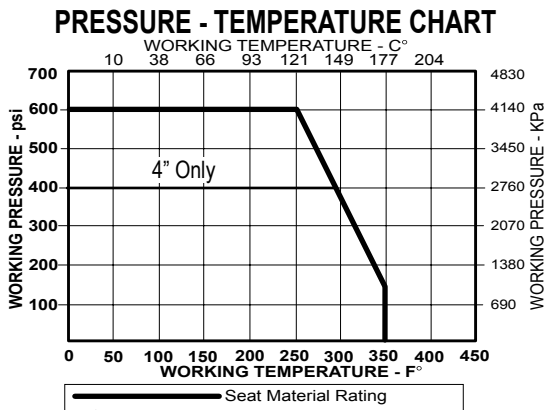
*Also Available 8901-07

(Locks only in closed position)

** Not Suitable For Ammonia Service

***Not intended for use in potable water.

****4" Valve Only



DIMENSIONS

	UNITS	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
		INCHES	0.39	0.39	0.51	0.76	1.00	1.26	1.50	2.00	2.48	2.95
A (DIA)	mm	10	10	13	19	25	32	38	51	63	75	100
	INCHES	1.87	1.87	2.25	2.62	3.06	3.50	3.75	4.38	5.16	6.00	8.20
B	mm	47	47	57	67	78	89	95	111	131	152	208
	INCHES	0.95	0.95	1.12	1.31	1.91	2.21	1.87	2.19	2.58	3.00	4.11
C	mm	24	24	28	33	49	56	47	56	66	76	104
	INCHES	1.42	1.42	1.46	1.93	2.10	2.33	2.52	2.96	3.94	4.37	5.93
D	mm	36	36	37	49	53	59	64	75	100	111	151
	INCHES	3.14	3.14	3.14	4.35	4.35	5.00	5.00	6.90	7.87	7.87	9.65
E	mm	80	80	80	110	110	127	127	175	200	200	245
	INCHES	1/4"	3/8"	1/2"	3/4"	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT	2-2/1" NPT	3" NPT	4" NPT
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	2-2/1" NPT	3" NPT	4" NPT
Cv		12	12	18	40	72	112	161	287	307	323	584

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8911* 1/2"-4"

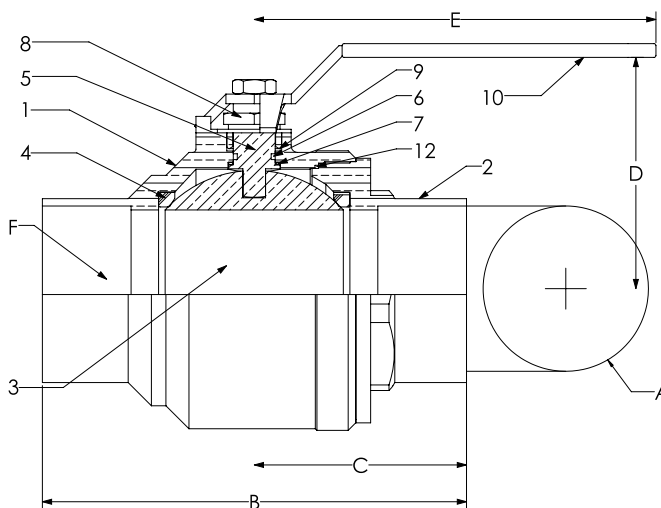
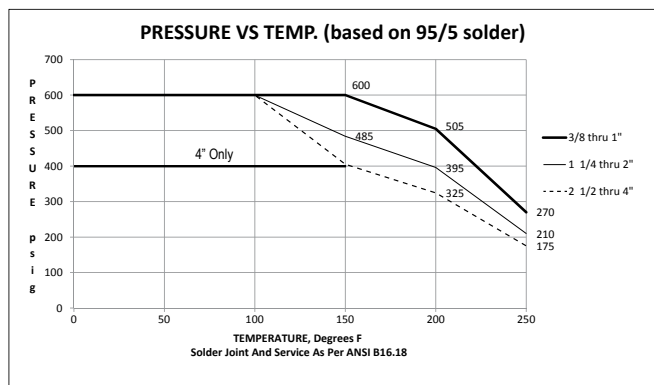
**Brass Ball Valve
Two Piece
Full Port
600 WOG (1/2" - 3") 400 WOG (4")
Solder Ends
Blow-Out Proof Stem
MSS SP-110, ASME A112.4.14**

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	CP Brass (1/2" - 1 1/4")	B283
		CP Brass, Cast (1 1/2" - 4")	B584
4	Ball Seal	PTFE	Commercial
5	Stem	Brass	B124
6	O-Ring	Buna-N	D2006
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B16
9	Packing	PTFE	Commercial
10	Handle	Zinc Plated Steel	Commercial
11	Hand Grip	Zinc Plated Steel	Commercial
**12	Body Seal	PTFE	Commercial

*Not intended for use in potable water.
**4" Valve Only

PRESSURE - TEMPERATURE CHART VACUUM SERVICE TO 29 INCHES Hg.



DIMENSIONS

	UNITS	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
A	INCHES	0.50	0.76	1.00	1.26	1.50	2.00	2.48	2.95	3.94
	mm	13	19	25	32	38	51	63	75	100
B	INCHES	2.28	3.10	3.56	4.13	4.64	5.75	7.25	8.25	10.33
	mm	58	79	90	105	118	146	184	210	262
C	INCHES	1.14	1.55	1.78	2.06	2.32	2.87	3.62	4.12	5.17
	mm	29	39	45	52	59	73	92	105	131
D	INCHES	1.46	1.93	2.10	2.33	2.52	2.96	3.94	4.37	5.96
	mm	37	49	53	59	64	75	100	111	151
E	INCHES	3.14	4.35	4.53	5.00	5.00	6.90	7.87	7.87	9.65
	mm	80	110	110	127	127	175	200	200	245
F	TUBE SIZE	0.63	0.88	1.13	1.38	1.63	2.13	2.63	3.13	4.13
Cv		18	40	72	112	161	287	307	323	584

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BA-480B* 1/2"-3"

**Brass Ball Valve
Two Piece
Full Port
200 psig @ 250°F†
Press x Press Ends
Blow-Out Proof Stem**



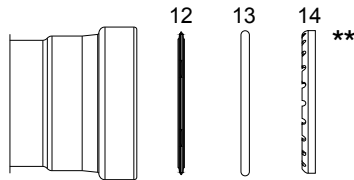
*Not intended for use in potable water.

MATERIALS LIST

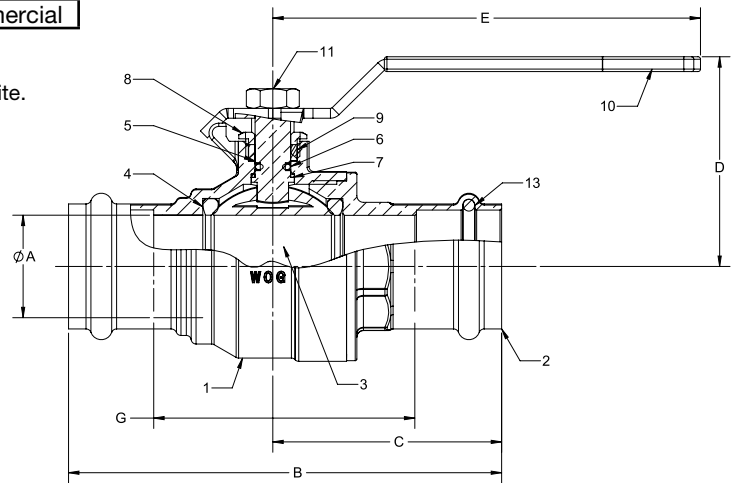
ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	CP Brass Ball	B283
4	Ball Seat	PTFE	Commercial
5	Stem	Brass	B124
6	Stem O-Ring	Buna-N	
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	Commercial
11	Handle Nut	Steel w/Zinc Plating	Commercial
12	Tube O-Ring	EPDM	Commercial
13**	Backing Ring	Plastic	Commercial
14**	Gripping Ring	Stainless Steel	Commercial

*Ultra Press Valves are designed and qualified for use in copper tubing systems only, Types K, L, & M per ASTM B88.

**For Installation Instructions please see engineering section on website.



** 2 1/2" & 3" Requires XLC installation jaws.



DIMENSIONS

	UNITS	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50	2-1/2" DN65	3" DN80
A	INCHES	0.51	0.76	0.98	1.26	1.50	2.01	2.48	2.95
	mm	13	19	25	32	38	51	63	75
B	INCHES	3.16	3.71	4.28	5.20	6.31	7.44	11.92	14.07
	mm	80	94	109	132	160	189	303	357
C	INCHES	1.63	1.92	2.18	2.75	3.40	3.96	5.96	7.04
	mm	41	49	55	70	86	101	151	179
D	INCHES	1.62	2.01	2.21	2.46	2.62	3.13	3.94	4.12
	mm	41	51	56	63	67	80	100	111
E	INCHES	3.15	4.33	4.33	5.12	5.12	6.89	7.87	7.87
	mm	80	110	110	130	130	175	200	200
G	INCHES	1.52	1.73	2.31	3.16	3.49	4.28	8.17	9.86
	mm	39	44	59	80	89	109	208	250
Cv		18	40	72	112	161	287	448	645

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BA-480BH* 1/2"-3/4"

Brass Ball Valve
Two Piece
Full Port
200 psig @ 250°F†
Press x Hose Ends
Blow-Out Proof Stem



*Not intended for use in potable water.

MATERIALS LIST

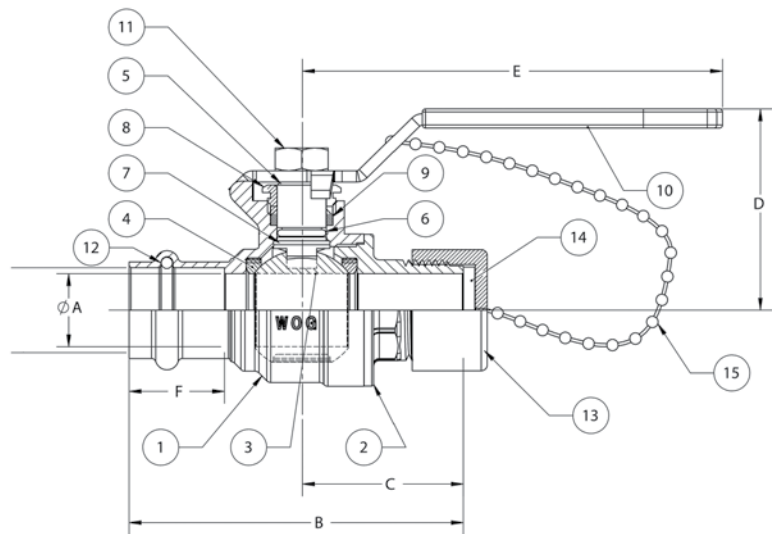
ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	CP Brass Ball	B283
4	Ball Seat	PTFE	Commercial
5	Stem	Brass	B124
6	Stem O-Ring	Buna-N	
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	Commercial
11	Handle Nut	Steel w/Zinc Plating	Commercial
12	Tube O-Ring	Plastic	Commercial
13	Hose Cap	Polypropylene	
14	Cap Gasket	EPDM	
15	Chain	Brass Bead	

*Ultra Press Valves are designed and qualified for use in copper tubing systems only, Types K, L, & M per ASTM B88.

DIMENSIONS

	UNITS	1/2" DN15	3/4" DN20
A	INCHES	0.51	0.76
	mm	13	19
B	INCHES	3.06	3.50
	mm	78	90
C	INCHES	1.41	1.66
	mm	36	42
D	INCHES	1.62	2.01
	mm	41	51
E	INCHES	3.15	4.33
	mm	80	110
F-TUBE DIA	INCHES	0.82	0.99
	mm	21	25
Cv		18	40

NOTE: Pressure / Temperature ratings shown are for valve only. Hose side pressure and temperature limit is based on connected hose and is the users responsibility.



**Do not pressurize cap.
Pressure not to exceed 40 psi.**

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BA-480S* 1/2"-2"

Brass Ball Valve
Two Piece
Full Port
200 psig @ 250°F†
Press x Press Ends
Blow-Out Proof Stem



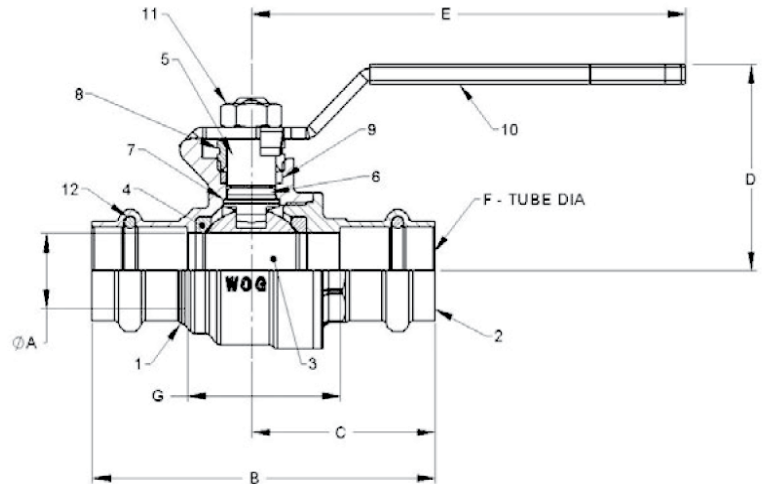
*Not intended for use in potable water.

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	316 S.S.	A276
4	Ball Seat	PTFE	Commercial
5	Stem	316 S.S.	A276
6	Stem O-Ring	Buna-N	Commercial
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	Commercial
11	Handle Nut	Steel w/Zinc Plating	Commercial

*Ultra Press Valves are designed and qualified for use in copper tubing systems only, Types K, L, & M per ASTM B88.

**For Installation Instructions please see engineering section on website.



DIMENSIONS

	UNITS	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50
A	INCHES	0.51	0.76	0.98	1.26	1.50	2.01
	mm	13	19	25	32	38	51
B	INCHES	3.16	3.71	4.28	5.20	6.31	7.44
	mm	80	94	109	132	160	189
C	INCHES	1.63	1.92	2.18	2.75	3.40	3.96
	mm	41	49	55	70	86	101
D	INCHES	1.62	2.01	2.21	2.46	2.62	3.13
	mm	41	51	56	63	67	80
E	INCHES	3.15	4.33	4.33	5.12	5.12	6.89
	mm	80	110	110	130	130	175
G	INCHES	1.52	1.73	2.31	3.16	3.49	4.28
	mm	39	44	59	80	89	109
Cv		18	40	72	112	161	287

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BA-480SH* 1/2"-3/4"

Brass Ball Valve
Two Piece
Full Port
200 psig @ 250°F†
Press x Hose Ends
Blow-Out Proof Stem



*Not intended for use in potable water.

MATERIALS LIST

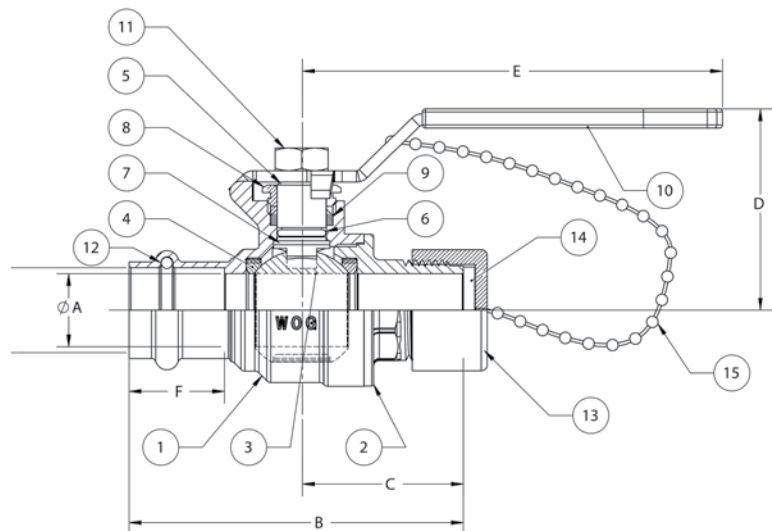
ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	316 S.S.	A276
4	Ball Seat	PTFE	Commercial
5	Stem	316 S.S.	A276
6	Stem O-Ring	Buna-N	
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	Commercial
11	Handle Nut	Steel w/Zinc Plating	Commercial
12	Tube O-Ring	Plastic	Commercial
13	Hose Cap	Polypropylene	
14	Cap Gasket	EPDM	
15	Chain	Brass Bead	

*Ultra Press Valves are designed and qualified for use in copper tubing systems only, Types K, L, & M per ASTM B88.

DIMENSIONS

	UNITS	1/2" DN15	3/4" DN20
A-PORT DIA	INCHES	0.51	0.76
	mm	13	19
B	INCHES	3.06	3.50
	mm	78	90
C	INCHES	1.41	1.66
	mm	36	42
D	INCHES	1.62	2.01
	mm	41	51
E	INCHES	3.15	4.33
	mm	80	110
F-TUBE DIA	INCHES	0.82	0.99
	mm	21	25
Cv		18	40

NOTE: Pressure / Temperature ratings shown are for valve only. Hose side pressure and temperature limit is based on connected hose and is the users responsibility.



**Do not pressurize cap.
Pressure not to exceed 40 psi.**

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BA-481B* 1/2"-3"

Brass Ball Valve

Two Piece

Full Port

200 psig @ 250°F†

Press x Press Ends

With Extension Stem & Memory Stop

Blow-Out Proof Stem

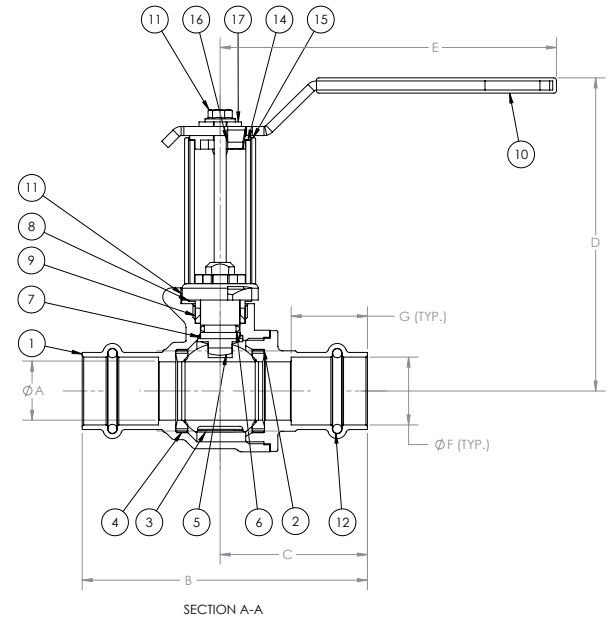


*Not intended for use in potable water.

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	CP Brass Ball	B283
4	Ball Seat	PTFE	Commercial
5	Stem	Brass	B124
6	Stem O-Ring	Buna-N	
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	B633
11	Handle Bolt	Steel w/Zinc Plating	Commercial
12	Tube O-Ring	EPDM	D2000 NSF61
13	Stem Stop Plate	Steel w/Zinc Plating	Commercial
14	Internal Extension Tube	Steel w/Zinc Plating	Commercial
15	External Extension Tube	Steel w/Zinc Plating	Commercial
16	Upper Stem Adaptor	Steel w/Zinc Plating	Commercial
17	Memory Stop	Steel w/Zinc Plating	Commercial

*Ultra Press Valves are designed and qualified for use in copper tubing systems only, Types K & L per ASTM B88.



DIMENSIONS

	UNITS	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
		DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80
A-PORT DIA	INCHES	0.51	0.76	0.98	1.26	1.50	2.01	2.48	2.95
	mm	13	19	25	32	38	51	63	75
B	INCHES	3.16	3.71	4.28	5.20	6.31	7.44	11.92	14.07
	mm	80	94	109	132	160	189	303	357
C	INCHES	1.63	1.92	2.18	2.75	3.40	3.96	5.96	7.04
	mm	41	49	55	70	86	101	151	179
D	INCHES	3.87	4.26	4.46	4.71	4.87	5.38	6.19	6.37
	mm	98	108	113	120	124	137	157	162
E	INCHES	3.15	4.33	4.33	5.12	5.12	6.89	7.87	7.87
	mm	80	110	110	130	130	175	200	200
G	INCHES	1.52	1.73	2.31	3.16	3.49	4.28	8.17	9.86
	mm	39	44	59	80	89	109	208	250
Cv		18	40	72	112	161	287	448	645

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BA-481S* 1/2"-2"

Brass Ball Valve

Two Piece

Full Port

200 psig @ 250°F†

Press x Press Ends

With Extension Stem & Memory Stop

Blow-Out Proof Stem

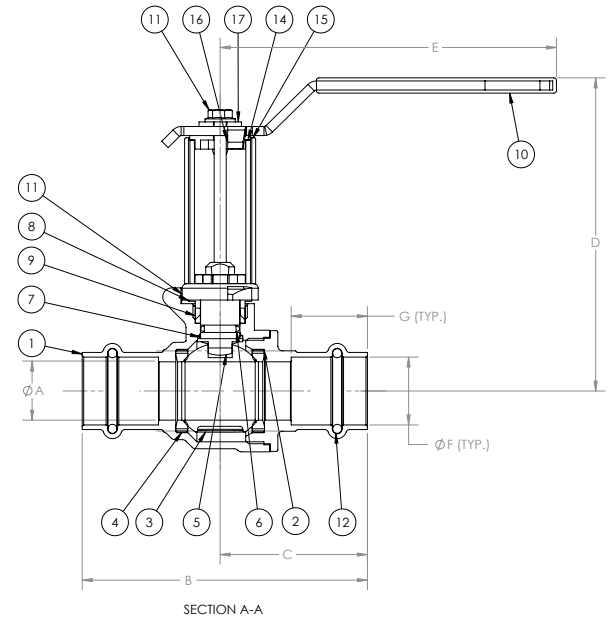
*Not intended for use in potable water.



MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	316 S.S.	A276
4	Ball Seat	PTFE	Commercial
5	Stem	316 S.S.	A276
6	Stem O-Ring	Buna-N	
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	B633
11	Handle Bolt	Steel w/Zinc Plating	Commercial
12	Tube O-Ring	EPDM	D2000 NSF61
13	Stem Stop Plate	Steel w/Zinc Plating	Commercial
14	Internal Extension Tube	Steel w/Zinc Plating	Commercial
15	External Extension Tube	Steel w/Zinc Plating	Commercial
16	Upper Stem Adaptor	Steel w/Zinc Plating	Commercial
17	Memory Stop	Steel w/Zinc Plating	Commercial

*Ultra Press Valves are designed and qualified for use in copper tubing systems only, Types K & L per ASTM B88.



DIMENSIONS

	UNITS	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
		DN15	DN20	DN25	DN32	DN40	DN50
A-PORT DIA	INCHES	0.51	0.76	0.98	1.26	1.50	2.01
	mm	13	19	25	32	38	51
B	INCHES	3.16	3.71	4.28	5.20	6.31	7.44
	mm	80	94	109	132	160	189
C	INCHES	1.63	1.92	2.18	2.75	3.40	3.96
	mm	41	49	55	70	86	101
D	INCHES	3.87	4.26	4.46	4.71	4.87	5.38
	mm	98	108	113	120	124	137
E	INCHES	3.15	4.33	4.33	5.12	5.12	6.89
	mm	80	110	110	130	130	175
G	INCHES	1.52	1.73	2.31	3.16	3.49	4.28
	mm	39	44	59	80	89	109
Cv		18	40	72	112	161	287

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BA-490B* 1/2"-2"

Brass Ball Valve

Two Piece

Full Port

200 psig @ 250°F†

Press x Threaded Ends

Blow-Out Proof Stem

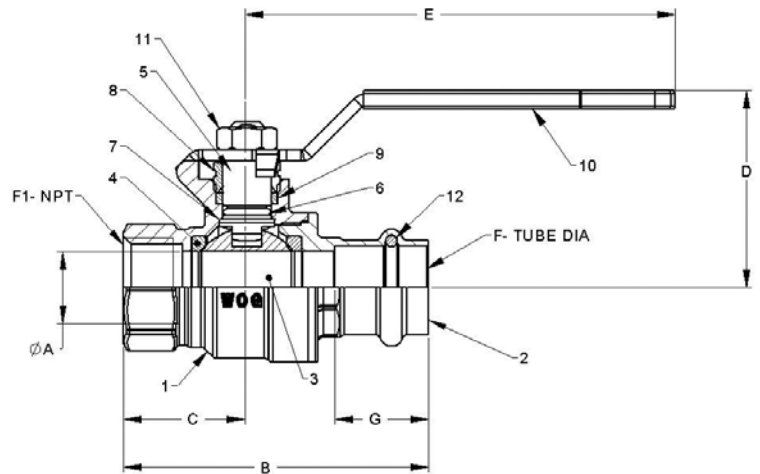


*Not intended for use in potable water.

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	CP Brass Ball	B283
4	Ball Seat	PTFE	Commercial
5	Stem	Brass	B124
6	Stem O-Ring	Buna-N	
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	Commercial
11	Handle Bolt	Steel w/Zinc Plating	Commercial
12	Tube O-Ring	Plastic	D2000 NSF61

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DIMENSIONS

	UNITS	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50
A-PORT DIA	INCHES	0.51	0.76	0.98	1.26	1.50	2.00
	mm	13	19	25	32	38	51
B	INCHES	2.77	3.23	3.71	4.12	4.86	6.14
	mm	70	82	94	105	123	156
C	INCHES	1.14	1.31	1.53	1.71	1.88	2.19
	mm	29	33	39	43	48	56
D	INCHES	1.46	1.93	2.10	2.33	2.52	2.96
	mm	37	49	53	59	64	75
E	INCHES	3.14	4.35	4.35	5.00	5.00	6.90
	mm	80	110	110	127	127	175
F-TUBE DIA	INCHES	0.63	0.88	1.13	1.38	1.63	2.13
	mm	15	20	25	32	40	50
F1 NPT	INCHES	1/2"-14	3/4"-14	1"-11.5	1-1/4"-11.5	1-1/2"-11.5	2"-11.5
G	INCHES	0.83	1.00	1.00	1.02	1.42	1.57
	mm	21	25	25	26	36	40
Cv		18	40	72	112	161	287

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BA-490S* 1/2"-2"

Brass Ball Valve
Two Piece
Full Port
200 psig @ 250°F†
Press x Threaded Ends
Blow-Out Proof Stem

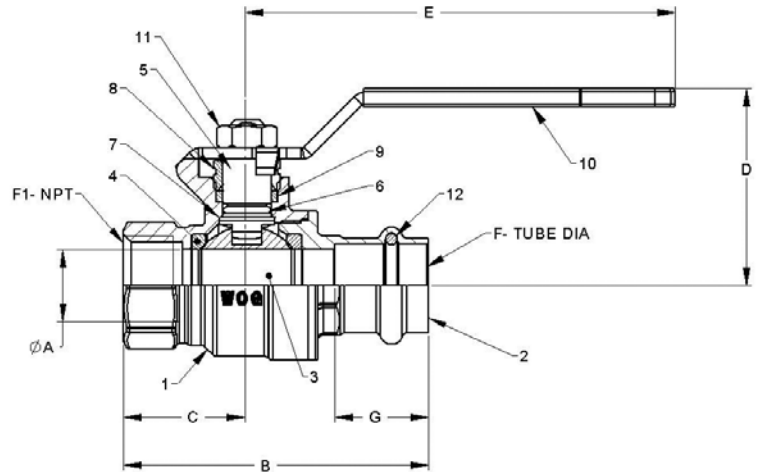


*Not intended for use in potable water.

MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	316 S.S.	A276
4	Ball Seat	PTFE	Commercial
5	Stem	316 S.S.	A276
6	Stem O-Ring	Buna-N	
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	Commercial
11	Handle Bolt	Steel w/Zinc Plating	Commercial
12	Tube O-Ring	EPDM	D2000 NSF61

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DIMENSIONS

	UNITS	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50
A-PORT DIA	INCHES	0.51	0.76	0.98	1.26	1.50	2.00
	mm	13	19	25	32	38	51
B	INCHES	2.77	3.23	3.71	4.12	4.86	6.14
	mm	70	82	94	105	123	156
C	INCHES	1.14	1.31	1.53	1.71	1.88	2.19
	mm	29	33	39	43	48	56
D	INCHES	1.46	1.93	2.10	2.33	2.52	2.96
	mm	37	49	53	59	64	75
E	INCHES	3.14	4.35	4.35	5.00	5.00	6.90
	mm	80	110	110	127	127	175
F-TUBE DIA	INCHES	0.63	0.88	1.13	1.38	1.63	2.13
	mm	15	20	25	32	40	50
F1 NPT	Inches	1/2"-14	3/4"-14	1"-11.5	1-1/4"-11.5	1-1/2"-11.5	2"-11.5
G	INCHES	0.83	1.00	1.00	1.02	1.42	1.57
	mm	21	25	25	26	36	40
Cv		18	40	72	112	161	287

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BA-491B* 1/2"-2"

Brass Ball Valve

Two Piece

Full Port

200 psig @ 250°F†

Press x Threaded Ends

With Extension Stem & Memory Stop

Blow-Out Proof Stem

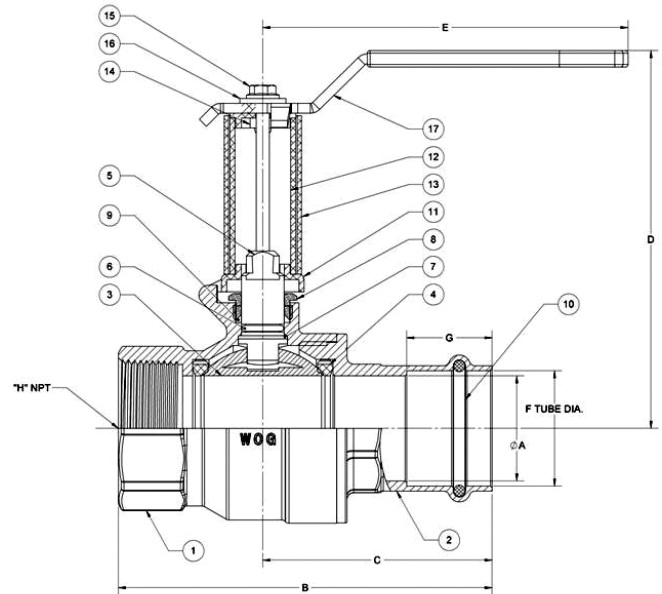
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MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	CP Brass Ball	B283
4	Ball Seat	PTFE	Commercial
5	Stem	Brass	B124
6	Stem O-Ring	Buna-N	
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	B633
11	Handle Bolt	Steel w/Zinc Plating	Commercial
12	Tube O-Ring	EPDM	D2000 NSF61
13	Stem Stop Plate	Steel w/Zinc Plating	Commercial
14	Internal Extension Tube	Steel w/Zinc Plating	Commercial
15	External Extension Tube	Steel w/Zinc Plating	Commercial
16	Upper Stem Adaptor	Steel w/Zinc Plating	Commercial
17	Memory Stop	Steel w/Zinc Plating	Commercial

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DIMENSIONS

	UNITS	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50
A-PORT DIA	INCHES	0.51	0.76	0.98	1.26	1.50	2.01
	mm	13	19	25	32	38	51
B	INCHES	2.76	3.58	3.98	4.51	5.50	6.44
	mm	70	91	101	115	140	164
C	INCHES	1.63	1.92	2.18	2.75	3.46	3.46
	mm	41	49	55	70	88	88
D	INCHES	3.55	4.08	4.28	4.53	4.65	5.13
	mm	90	104	109	115	118	130
E	INCHES	3.28	4.38	4.38	4.38	6.97	6.97
	mm	83	111	111	111	177	177
F TUBE Ø	INCHES	0.63	0.88	1.13	1.38	1.64	2.13
	mm	16	22	29	35	42	54
G	INCHES	0.83	0.99	0.99	1.02	1.42	1.58
	mm	21	25	25	26	36	40
H	THRD SIZE	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
Cv		18	40	72	112	161	287

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BA-491S* 1/2"-2"

Brass Ball Valve

Two Piece

Full Port

200 psig @ 250°F†

Press x Threaded Ends

With Extension Stem & Memory Stop

Blow-Out Proof Stem

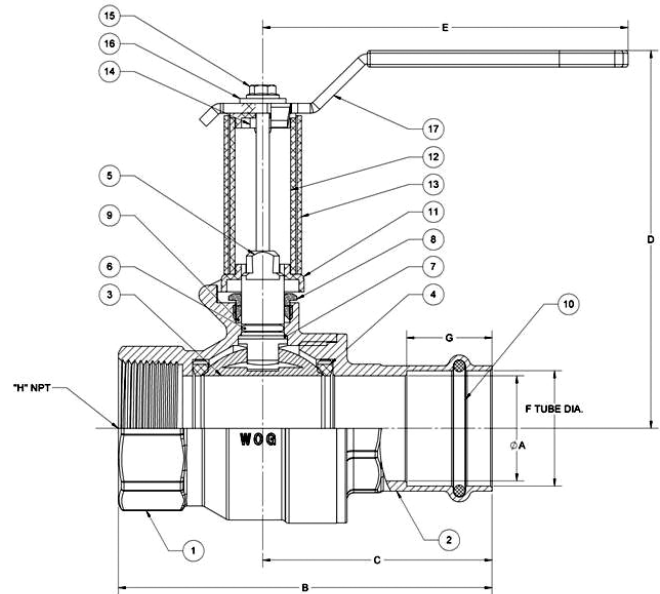


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MATERIALS LIST

ITEM	PART	MATERIALS	ASTM SPEC.
1	Body	Brass, Forged	B283
2	Tailpiece	Brass, Forged	B283
3	Ball	316 S.S.	A276
4	Ball Seat	PTFE	Commercial
5	Stem	316 S.S.	A276
6	Stem O-Ring	Buna-N	
7	Thrust Washer	PTFE	Commercial
8	Gland Nut	Brass	B124
9	Packing	PTFE	Commercial
10	Handle	Steel w/Zinc Plating	B633
11	Handle Bolt	Steel w/Zinc Plating	Commercial
12	Tube O-Ring	EPDM	D2000 NSF61
13	Stem Stop Plate	Steel w/Zinc Plating	Commercial
14	Internal Extension Tube	Steel w/Zinc Plating	Commercial
15	External Extension Tube	Steel w/Zinc Plating	Commercial
16	Upper Stem Adaptor	Steel w/Zinc Plating	Commercial
17	Memory Stop	Steel w/Zinc Plating	Commercial

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DIMENSIONS

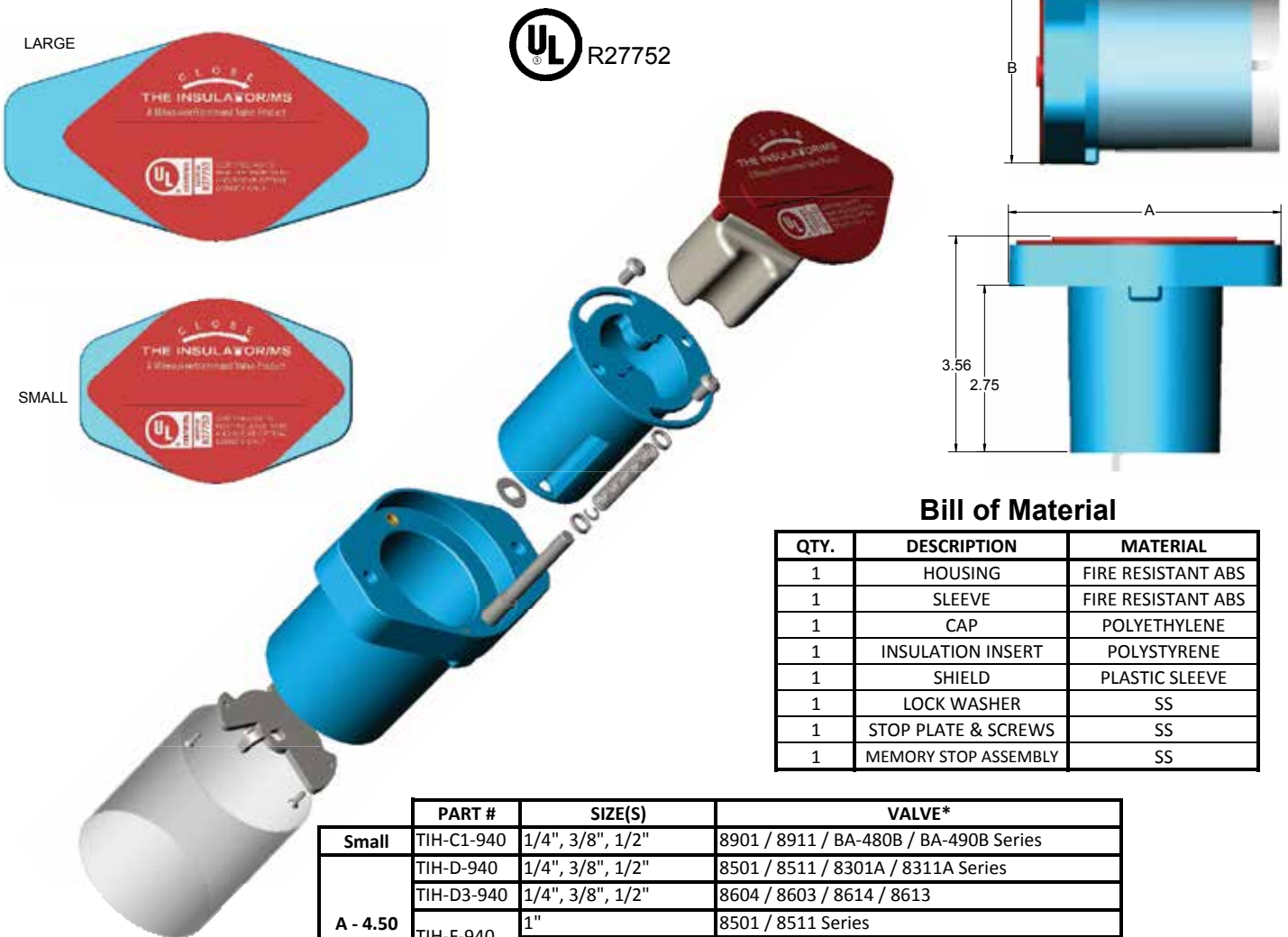
	UNITS	1/2" DN15	3/4" DN20	1" DN25	1-1/4" DN32	1-1/2" DN40	2" DN50
A-PORT DIA	INCHES	0.51	0.76	0.98	1.26	1.50	2.01
	mm	13	19	25	32	38	51
B	INCHES	2.76	3.58	3.98	4.51	5.50	6.44
	mm	70	91	101	115	140	164
C	INCHES	1.63	1.92	2.18	2.75	3.46	3.46
	mm	41	49	55	70	88	88
D	INCHES	3.55	4.08	4.28	4.53	4.65	5.13
	mm	90	104	109	115	118	130
E	INCHES	3.28	4.38	4.38	4.38	6.97	6.97
	mm	83	111	111	111	177	177
F TUBE Ø	INCHES	0.63	0.88	1.13	1.38	1.64	2.13
	mm	16	22	29	35	42	54
G	INCHES	0.83	0.99	0.99	1.02	1.42	1.58
	mm	21	25	25	26	36	40
H	THRD SIZE	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT
Cv		18	40	72	112	161	287

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THE INSULATOR/MS Bronze & Brass Ball Valves

Hammond Valve's insulated extension handle is designed to prevent condensation and other extraneous moisture from entering your insulated piping system, while also minimizing thermal energy loss from the system via metal extension tubes, levers, and similar parts.

Our handle design incorporates a unique memory stop feature that requires no disassembly or removal of the handle to engage and make adjustments.



Bill of Material

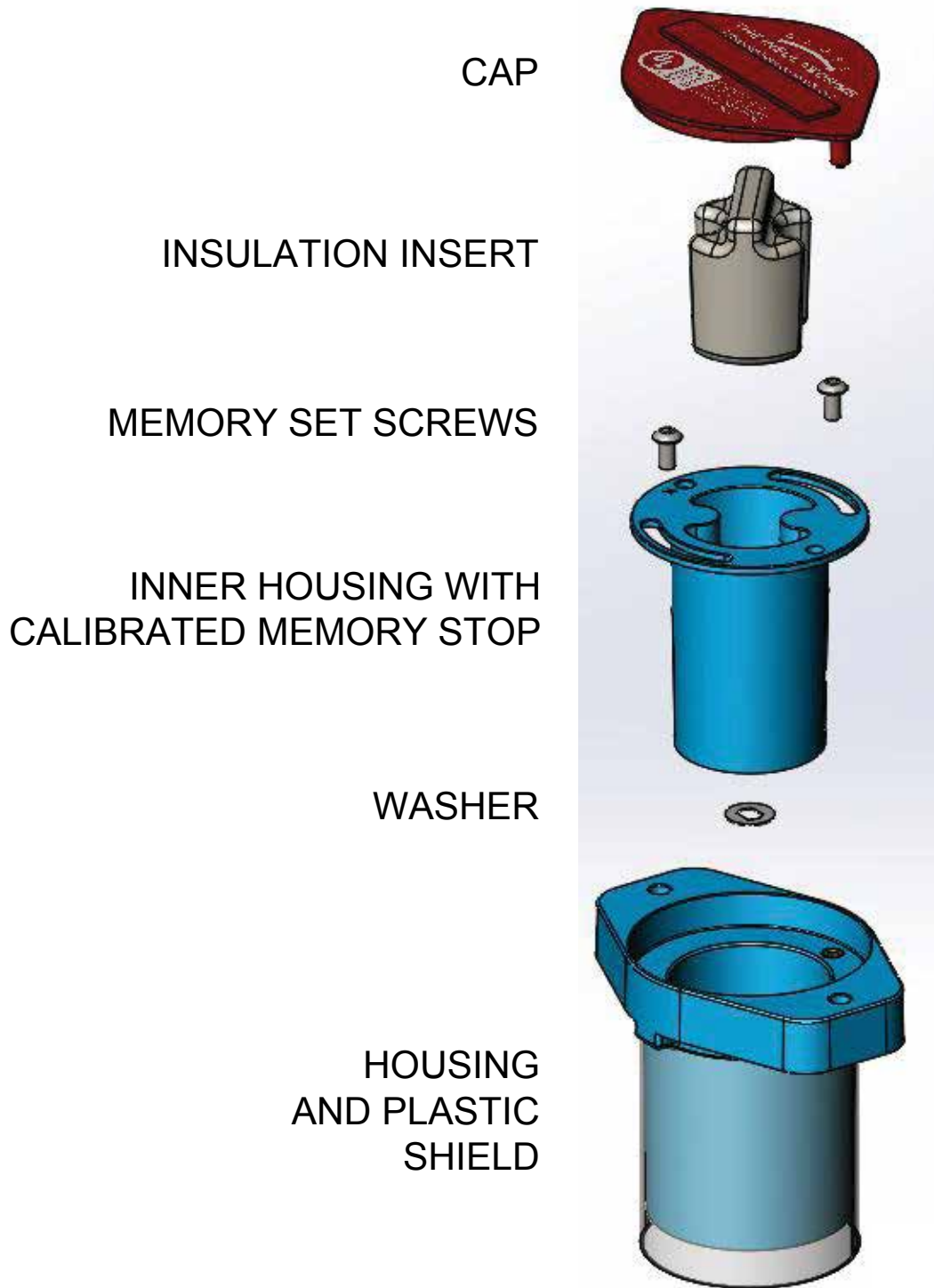
QTY.	DESCRIPTION	MATERIAL
1	HOUSING	FIRE RESISTANT ABS
1	SLEEVE	FIRE RESISTANT ABS
1	CAP	POLYETHYLENE
1	INSULATION INSERT	POLYSTYRENE
1	SHIELD	PLASTIC SLEEVE
1	LOCK WASHER	SS
1	STOP PLATE & SCREWS	SS
1	MEMORY STOP ASSEMBLY	SS

	PART #	SIZE(S)	VALVE*
Small	TIH-C1-940	1/4", 3/8", 1/2"	8901 / 8911 / BA-480B / BA-490B Series
A - 4.50	TIH-D-940	1/4", 3/8", 1/2"	8501 / 8511 / 8301A / 8311A Series
	TIH-D3-940	1/4", 3/8", 1/2"	8604 / 8603 / 8614 / 8613
	TIH-F-940	1"	8501 / 8511 Series
		3/4"	8501 / 8511 / 8301A / 8311A Series
B - 3.06	TIH-F3-940	3/4"	8604 / 8603 / 8614 / 8613
	TIH-H1-940	3/4", 1", 1 1/4", 1 1/2"	8901 / 8911 / BA-480B / BA-490B Series
Large A - 7.00	TIH-J-940	2"	8501 / 8511 Series
		1 1/4", 1 1/2"	8501 / 8511 / 8301A / 8311A Series
		1"	8301A / 8311A Series
B - 3.44	TIH-J1-940	2"	8901 / 8911 / BA-480B / BA-490B Series
	TIH-J3-940	1", 1 1/4", 1 1/2"	8604 / 8603 / 8614 / 8613
	TIH-K-940	2"	8301A / 8311A Series
	TIH-K3-940	2"	8604 / 8603 / 8614 / 8613

To order factory assembled to the valve use suffix 16 (Threaded Only)
Hammond Valve will not factory install Insulator/MS handle on solder end valves.
*Will fit our equivalent Ultrapure Low Lead Valves.

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THE INSULATOR/MS*



* To order factory assembled to the valve use suffix 16 (Threaded Only) Hammond Valve will not factory install Insulator/MS handle on solder end valves.

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THE INSULATOR/MS

INSTALLATION INSTRUCTIONS

1. Cycle valve clockwise to close position.
2. Remove valve handle nut and handle, note orientation of handle stops.
Set handle nut aside for later use.
3. Remove isolation handle cap, set aside.
4. Remove isolation handle insulation insert, set aside.
5. Loosen and remove the (2) isolation handle button head SCS using a 1/8" Allen wrench, set aside.
6. Remove the isolation handle sleeve, set aside.
7. Assemble isolation handle housing to valve stem (ensure isolation handle plastic shield is placed around isolation handle housing for insulated lines), orientate stop position the same as handle was in step 2.
8. Assemble handle nut to stem to hold housing in place. Use the included washer, if needed, for a secure fit between isolation handle housing and handle nut.
9. Isolation handle sleeve assembly
 - a. Non-memory stop setting
 - i. Assemble isolation handle sleeve into housing. Locate "X" on isolation handle sleeve with "X" on isolation handle housing.
 - ii. Assemble (2) isolation handle button head SCS using a 1/8" Allen wrench. Tighten snug, do not over tighten.
 - b. Memory stop setting
 - i. Assemble isolation handle sleeve into housing. Locate "X" on isolation handle sleeve with "X" on isolation handle housing.
 - ii. Rotate sleeve clockwise until memory slot is located above threaded insert
 - iii. Assemble (2) isolation handle button head SCS using a 1/8" Allen wrench. Do not tighten.
 - iv. Rotate isolation handle housing to open valve to desired memory location.
 - v. Rotate isolation sleeve counterclockwise until the isolation handle plunger hits the valve stop.
 - vi. Tighten snug, do not over tighten (2) isolation handle button head SCS using a 1/8" Allen wrench. The memory stop is now set.
10. Assemble isolation handle insulation insert.
11. Assemble isolation handle cap.

OPTIONS

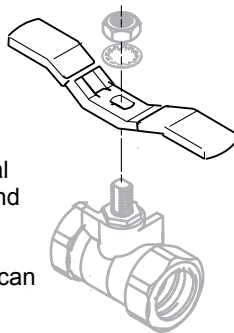
8201/8211
8901/8911
BA480B/BA490B

02 Memory Stop

The "MS" Memory Stop provides an adjustable stop when the valve is used in a balancing application. The memory stop can be set to any preset opening point.

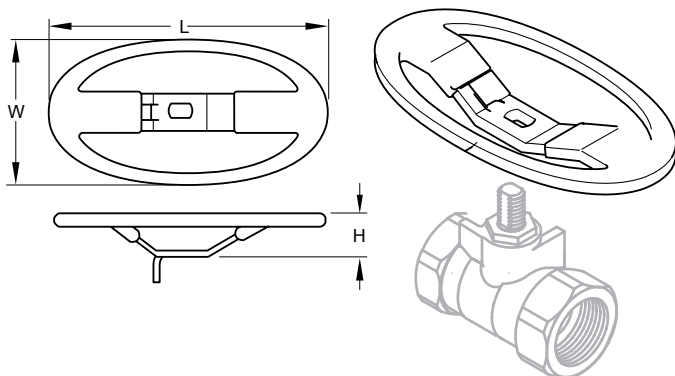
03 Tee Handle

Tee handles offer the same installation space savings as oval handles, with a slightly shorter end to end dimension. Tee handles require more handle force to operate, so accidental openings can be reduced.



04 Oval Handle

Oval handles can be installed where a standard lever handle might encounter interference from adjoining piping. Oval handles can also prevent accidental valve operations, since they have less projection than a lever handle, and require more turning force to operate. The standard oval handle can be field or factory mounted on 8201/8901 series valves up to 2".



06 Extension Handle With Memory Stop

The "XH" stem extension is simple and effective design. This option is designed for installations where pipe insulation would make standard handles inoperable. The stem extension can also be used where a handle needs to be raised above an adjoining obstruction. Installations where the valve is mounted behind a panel

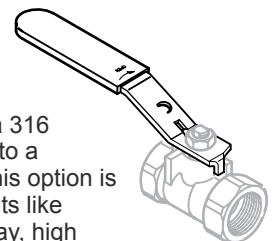


07 Locking Lever Handle



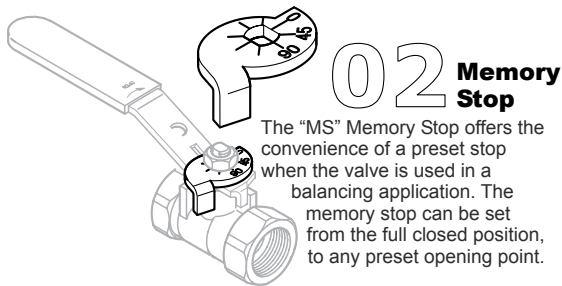
08 Stainless Steel Handle

The "SH" handle option adds a 316 stainless steel handle and nut to a standard bronze ball valve. This option is intended for harsh environments like areas subject to salt water spray, high humidity, cleaning chemicals, etc.



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OPTIONS

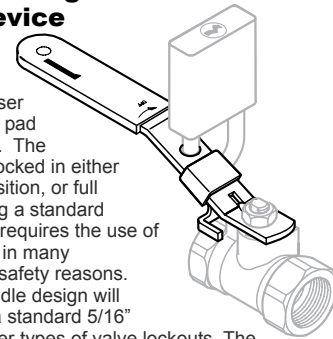


02 Memory Stop

The "MS" Memory Stop offers the convenience of a preset stop when the valve is used in a balancing application. The memory stop can be set from the full closed position, to any preset opening point.

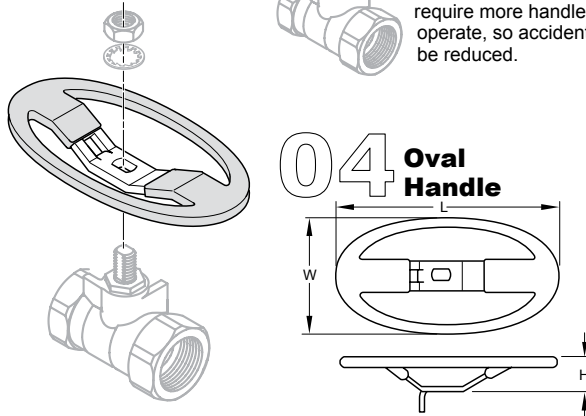
07 Locking Device

The "LD" Locking Handle offers the end user the security of a pad lockable handle. The handle can be locked in either the full open position, or full closed by adding a standard padlock. OSHA requires the use of locking handles in many installations for safety reasons. The locking handle design will accommodate a standard 5/16" pad-lock or other types of valve lockouts. The handle and locking device are also manufactured of stainless steel material for additional strength and corrosion resistance.



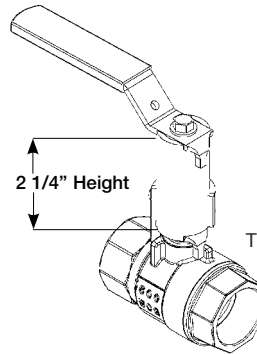
03 Tee Handle

Tee handles offer the same installation space savings as oval handles, with a slightly shorter end to end dimension. Tee handles require more handle force to operate, so accidental openings can be reduced.



04 Oval Handle

Oval handles are intended for several different applications, they can be installed where a standard lever handle might encounter interference from adjoining piping. Oval handles can also prevent accidental valve operations, since they have less projection than a lever handle, and require more turning force to operate. OSHA requires the use of oval handles in many installations for safety reasons. The standard oval handle can be field or factory mounted on 8300/8500/8600 series valves up to 2", and the locking oval handle can be used on sizes up to 1".

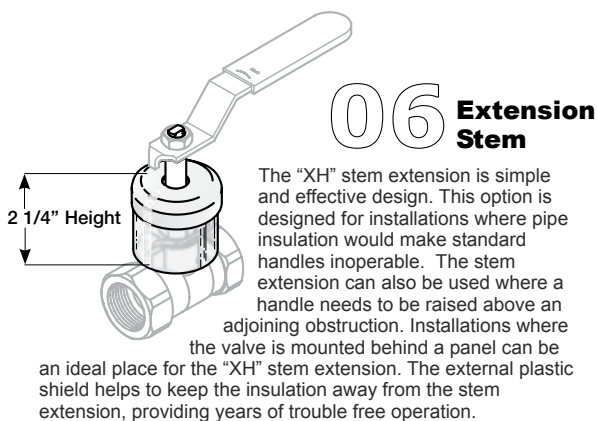
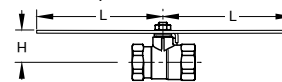
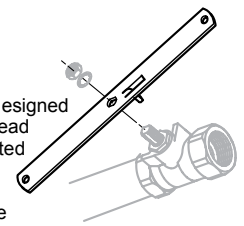


09 Extension Handle with Memory Stop

The "XM" stem extension is all-metallic with an adjustable memory stop. This option is designed for installations where pipe insulation would make standard handles inoperable. The stem extension can also be used where a handle needs to be raised above an adjoining obstruction. Installations where the valve is mounted behind a panel can be an ideal place for the "XM" stem extension. The adjustable memory stop allows the valve opening to be limited to a preset position. This option can be ordered with or without the memory stop.

12 Chain Lever

Chain lever handle kits are designed for installations where overhead ball valves need to be operated on a regular basis. A length of chain is attached to either end of the handle, so that the operator needs only to pull down on the appropriate chain to open or close the valve.



06 Extension Stem

The "XH" stem extension is simple and effective design. This option is designed for installations where pipe insulation would make standard handles inoperable. The stem extension can also be used where a handle needs to be raised above an adjoining obstruction. Installations where the valve is mounted behind a panel can be an ideal place for the "XH" stem extension. The external plastic shield helps to keep the insulation away from the stem extension, providing years of trouble free operation.

Valve Series	Valve Size	Length	Width
8501/8511	1/4" - 1/2"	8 3/8"	1 1/4"
8501/8511	3/4" - 1"	11 1/2"	1 1/2"
8501/8511	1 1/4" - 3"	15 1/4"	2"
*8604/8614/8301A/8311A	1/4" - 1/2"	8 3/8"	1 1/4"
*8604/8614/8301A/8311A	3/4"	11 1/2"	1 1/2"
*8604/8614/8301A/8311A	1" - 1 1/2"	15 1/4"	2"

* Not Available above 1 1/2"

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