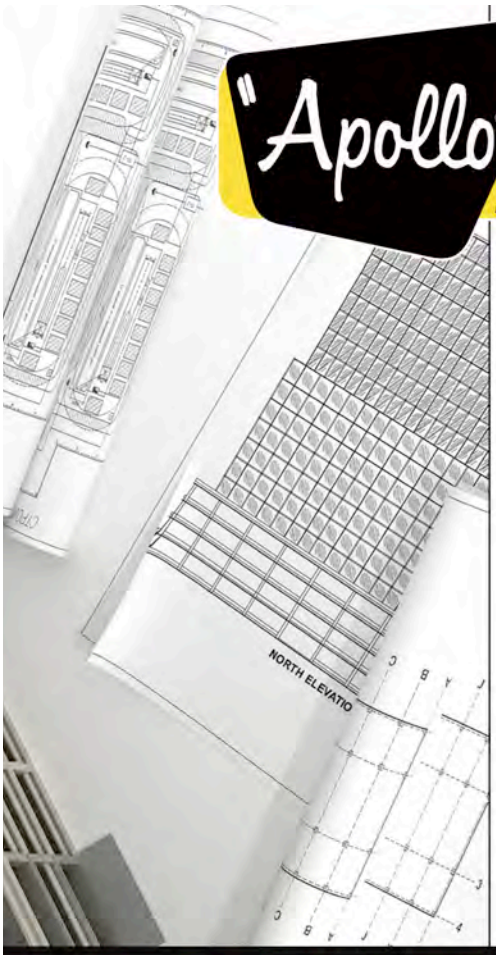
COMMERCIAL
PRODUCTS CATALOG

NOW AVAILABLE
Lead Free Options

- BALL VALVES
- BUTTERFLY VALVES
- RELIEF VALVES
- BACKFLOW PREVENTERS
- NEW GATE, GLOBE & CHECK VALVES
- IN-LINE CHECK VALVES
- PIPELINE STAINERS
- WATER GAUGES
- PLUMBING SPECIALTIES

"Apollo" Valves
manufactured in the USA
by CONBRACO Industries

APOLLO VALVES
"Apollo" 5 YEAR WARRANTY
ON ALL DOMESTIC MADE PRODUCT
MADE IN USA



"Apollo" Valves
manufactured in the USA
by CONBRACO Industries

A history of Quality, Service and Innovation

Now in its ninth decade, Conbraco Industries, Inc. is a leading manufacturer of flow control products for U.S. and international markets. The company's headquarters is based in Matthews, North Carolina with manufacturing plants and foundries located in Pageland and Conway, South Carolina.

Conbraco has a history of new product development and innovation that dates back to the company's inception in 1928. Today, the Conbraco line of products is marketed under the "Apollo Valves" brand and includes: ball valves, butterfly valves, backflow prevention devices, water pressure reducing valves, mixing valves, safety relief valves, water gauges, strainers, vacuum breakers, valve actuators and more.

Conbraco's vertically integrated manufacturing ensures a consistency of production, testing, quality and availability. It's your assurance that Conbraco flow control products will deliver long term performance advantages. All Conbraco plants are registered to ISO 9001 quality standards.

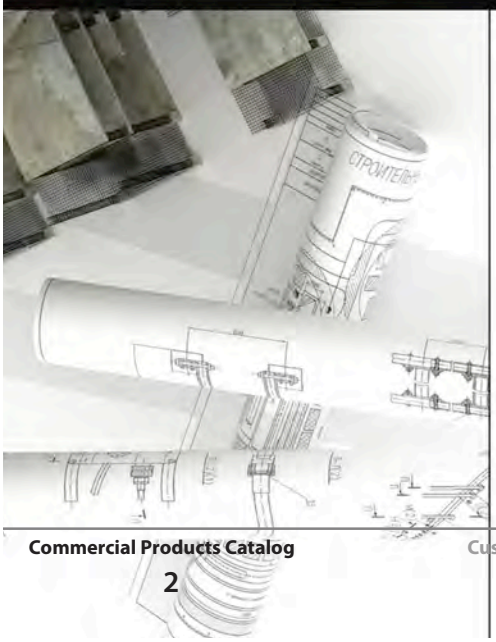
The Conbraco line continues to expand - with new products, designs and advanced materials - to better serve the needs of our customers in the chemical processing, pulp and paper, petroleum, residential and commercial plumbing and heating markets, as well as manufacturing and other markets.

PAGELAND, SC
Bronze Foundry and Manufacturing Plant

PAGELAND, SC
Final Assembly and Distribution Center

CONWAY, SC
Steel Foundry and Manufacturing Plant

MATTHEWS, NC
Corporate Headquarters



Throughout this catalog, products that have a Lead Free* option will be identified with this logo.

* LEAD FREE: The wetted surfaces of these products shall contain n more than 0.25% lead by weighted average. Complies with CA AB 1953, MD HB 372, and VT S.152. ANSI 3rd party certified & listed.

** Any imported products are clearly identified as "Apollo International".

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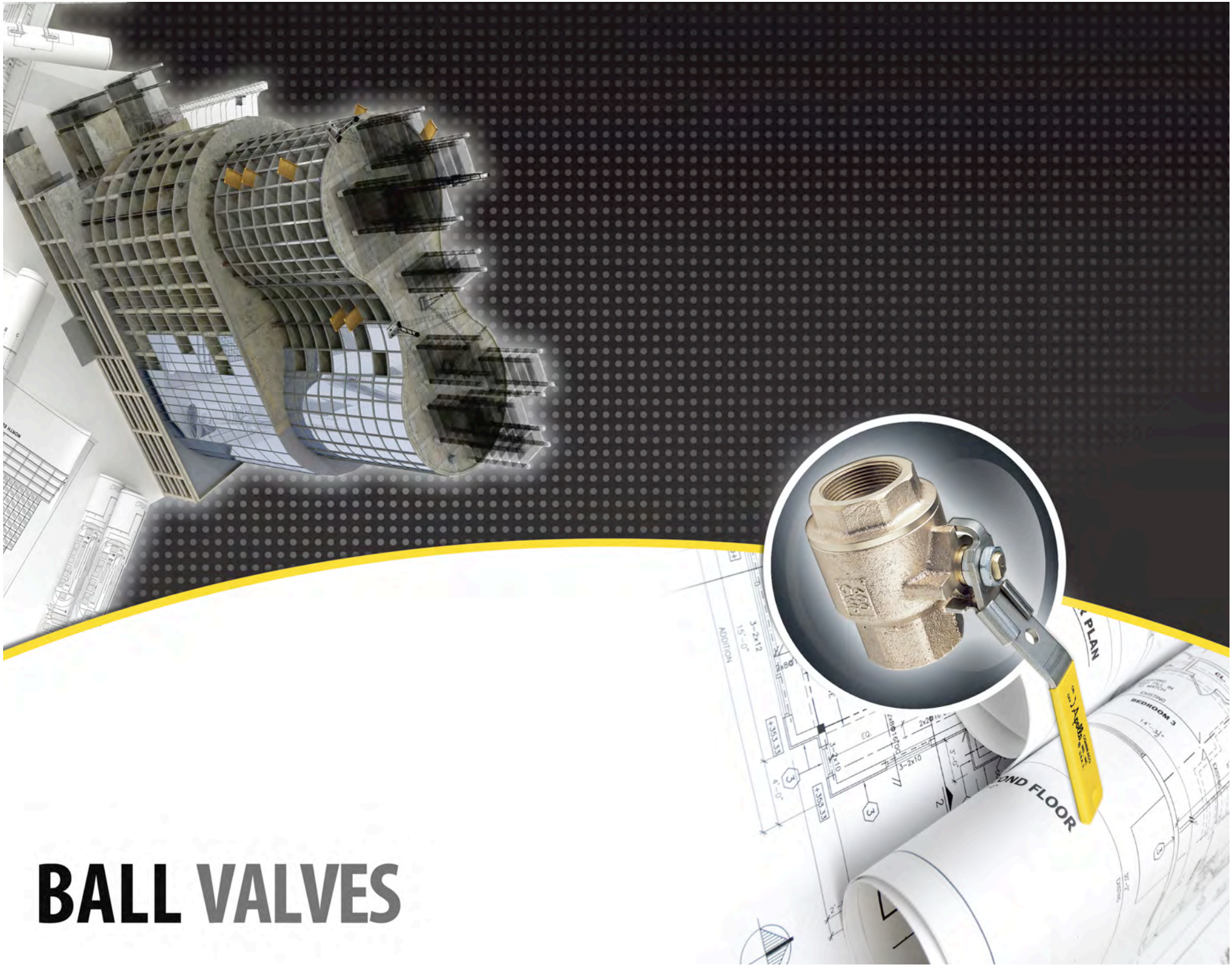
APOLLO BALL VALVES CERTIFICATION KEY

American Society of Mechanical Engineers Section I - Power Boilers	**Canadian Standards Association**
American Society of Mechanical Engineers Section VIII - Pressure Vessels	**American Society of Sanitary Engineering**
American Society of Mechanical Engineers Section IV - Heating Boilers	**National Sanitation Foundation**
National Board of Boiler & Pressure Vessel Inspectors	**Underwriters Laboratory**
Factory Mutual	**Uniform Plumbing Code**
Communauté Européenne/ Pressure Equipment Directive	**International Association of Plumbing & Mechanical Officials**
American National Standards Institute	**Truesdail Laboratories**
Manufacturers Standardization Society	**International Code Council**



BALL VALVES

APOLLO® NUMBERING SYSTEM FORMULA: 70 105 01

XX - XXX - XX

XX - X X X - XX

Series		Configuration		Variations		Size		Options
32	Bronze Ball Valve, Regular-Port	1	FNPT	4	316 Stainless Steel Vented Ball & Stem	1	1/4"	See Chart Below
50	Bronze Gas Valve, AGA & UL Listed	2	Solder	9	Pinned Retainer	2	3/8"	
51	Bronze Gas Valve, AGA	3	Union End NPT			3	1/2"	
6P	Cast Iron, Ball Valve, Full-Port, Flanged	4	Union End Solder			4	3/4"	
6Q	Cast Iron BV, Full-Port, Epoxy Coated	5	Spring Return			5	1"	
64	Brass Ball Valve, Full-Port, International	6	3-Way NPT			6	1-1/4"	
64W	Brass Ball Valve, Apollo-Press®, International	7	Full-Port Refrigeration Valves			7	1-1/2"	
70	Bronze	8	Male X FNPT			8	2"	
70LF	Bronze Ball Valve, Lead Free**	9	3-Way Solder			9	2-1/2"	
71	Bronze with Pads					0	3"	
75	Bronze BV, Std. Port, Padlocking w/Auto Drain					A	4"	
77	Bronze Full-Port							
77B	Bronze, Full-Port with Side Tap							
77C	Bronze Ball Valve, Full Port							
77CLF	Bronze Ball Valve, Full Port, Lead Free**							
77D	Bronze Ball Valve, Full Port, Direct Mount for Actuators							
77W	Bronze BV, Full Port, Apollo-Press Connections							
77WLF	Bronze BV, Full Port, Apollo-Press Connections, Lead Free**							
77X	Bronze BV, Full Port, PEX Connections							
78	Specialty Valves							
79	Refrigerant Valves							
7B	Bronze, Full-Port, Hydro							
7k	Bronze, with Drain							
80	Bronze, UL Listed							
81	Bronze, UL Listed, Plain Ball							
82	Bronze Three-Piece Full-Port							
90	Bronze, Unibody, UL Listed - Saturn®							
91	Bronze, Unibody - Saturn®							
94A	Brass, Full-Port, UL Listed, International							
94ALF	Brass, Full Port, International, Lead Free**							
94M	Brass Mini-Ball Valve, Std. Port							
95	Bronze, Stop & Drain							
95LF	Bronze, Stop & Drain, Lead Free**							
95A	Brass Ball Valve, Full-Port, International							
9A	Bronze, Unibody, Heavy Pattern							

*BODY SIZE WHEN ENDS ARE MIXED.

** LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with CA AB 1953 and VT S.152

NOTE: NOT ALL VARIATIONS AND FEATURES ARE VAILABLE ON SAME VALVE. CONSULT CONBRACO REPRESENTATIVE.

ALL MANUFACTURING FACILITIES REGISTERED TO ISO 9001:2000 STANDARDS.

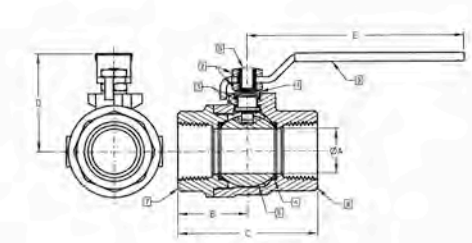
NUMBERING SYSTEM OPTIONS

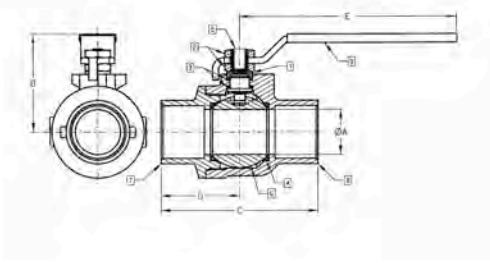
-01	Standard	-18	Plain Yellow Grip	-45	Less Lever and Nut	-72	RTFE Packing
-02	Grounded	-19	Lock Plate	-46	Latch-Lock Lever - Lock in Closed Position Only	-83	SS Tee Handle & Nut (77B)
-03	1-1/4" Stem extension	-20	Slot Vented Ball (bi-directional)	-47	SS Oval Latch-Lock Handle & Nut	-84	Reverse SS Tee Handle & Nut (77B)
-04	2-1/4" Stem extension	-21	UHMWPE Trim (non-PTFE)	-48	SS Oval Handle (No Latch) & Nut	-85	Short Tee Handle (77B)
-05	Plain Ball	-24	Graphite Pack	-49	Assembled Dry	-92	Memory Stop
-07	Tee Handle	-27	Stainless Steel Latch-Lock Lever & Nut	-50	2-1/4" Carbon Steel Locking Stem Extension	-93	-03 & balancing stop
-08	90˚ Reversed Stem	-30	Cam-Lock and Grounded	-56	Multifill Seats & Packing	-94	-04 & balancing stop
-09	Stainless Steel Lever	-31	7B Series w/Boss NOT Drilled/Tapped	-57	Oxygen Cleaned	-BC	Ball Check
-10	Stainless Steel Lever & Nut	-32	Stainless Steel Tee Handle & Nut	-58	Chain Lever - Horizontal	-HC	Hose Thread and Cap Option
-11	Therma-Seal™ Insulating Handle	-35	VTFE Trim (PTFE)	-59	SS External Trim - 3-pc. Valves	-SV	Safety vent - 77-100/7K-100 series (Auto drain)
-12	Stamped "157 SWP" & Bagged	-36	Stainless Steel Hi-Rise Round Handle, Stainless Steel Nut	-60	Grounded Ball & Stem	-SW	Limit switch mounted
-13	Stamped "157 SWP"	-39	SS Hi-rise Locking Wheel Handle, SS Nut	-62	Body Center Section	-TH	Tested, Hydrostatic-TC Tested, Hydrostatic, w/certification
-14	Side Vented Ball (uni-directional)	-40	Cyl-Loc and Grounded	-63	NPT x Solder/socket weld	-TW	Tested, Hydrostatic, w/witness and certification
-15	Wheel Handle, Steel	-41	Automatic Drain	-64	250 SWP		
-16	Chain Lever - Vertical			-65	Multifill Seats & Graphite Packing		
-17	Rough Chrome Plated						

Full-Port Bronze Ball Valves 77C-100/200 Series

Contractor Series Full Port Bronze Ball Valve with Solid Ball

Apollo's® solid ball design delivers real full-port performance with 100 percent American construction.





FEATURES

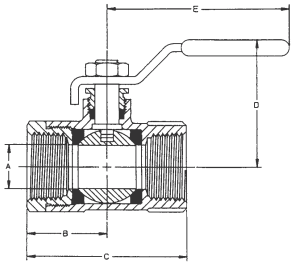
- American-made bronze castings
- Chrome plated solid machined ball
- 600 psig CWP, non-shock
- 150 SWP
- Premium multi-fill MTFE seats and seals
- Adjustable packing
- Blow-out proof stem design
- Vacuum service to 29 in. Hg
- Full-port design through 2-1/2"
- Flexible handle orientation
- Now available in 2-1/2" NPS
- Also available in a Lead free* version as the 77CLF Series. Same full port features as 77C Series. ANSI/NSF61 Section 8, Annex F & G listed.
- Available with stainless steel vented ball and stem as 77C-140 Series (threaded), 77C-240 Series (solder).
- ANSI B16.18 solder end version available as 77C-200 Series
- Options
  - Therma-Seal™ insulating handle (-11)
  - SS Latch-lock handle (-27),
  - 2-1/4" stem extension (-04)
  - SS oval locking handle (-47)
  - SS vented ball and stem
  - CS tee handle (-07)
  - 04 and balancing stop (-94)
  - Other handle options available
  - Chrome plated (-17) NPT only

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	Cv	Wt. (lbs.)
Threaded Connection								
77C-101-01	1/4	0.37	0.95	1.97	1.76	3.74	4.5	0.6
77C-102-01	3/8	0.37	1.07	2.09	1.76	3.74	7.2	0.6
77C-103-01	1/2	0.50	1.15	2.25	1.79	3.74	15.5	0.6
77C-104-01	3/4	0.75	1.32	2.65	2.00	4.88	35.6	1.1
77C-105-01	1	1.00	1.53	3.07	2.19	4.88	68.1	1.8
77C-106-01	1-1/4	1.25	2.04	4.08	3.13	7.06	125.0	4.2
77C-107-01	1-1/2	1.50	2.21	4.43	3.29	7.06	177.0	4.6
77C-108-01	2	2.00	2.76	5.29	3.83	7.06	389.0	8.1
77C-109-01	2-1/2	2.50	3.12	6.37	4.51	8.06	503.0	16.2
Solder Connection								
77C-202-01	3/8	0.37	1.30	2.21	1.76	3.74	7.2	0.6
77C-203-01	1/2	0.50	1.41	2.58	1.79	3.74	15.5	0.6
77C-204-01	3/4	0.75	1.64	3.03	2.00	4.88	35.6	1.0
77C-205-01	1	1.00	1.92	3.61	2.19	4.88	68.1	1.6
77C-206-01	1-1/4	1.25	2.36	4.44	3.13	7.06	125.0	3.9
77C-207-01	1-1/2	1.50	2.63	4.89	3.29	7.06	177.0	5.8
77C-208-01	2	2.00	3.17	6.06	3.83	7.06	389.0	10.2
77C-209-01	2-1/2	2.50	3.77	7.14	4.51	8.06	503.0	14.8

Regular Port Economy Ball Valves 32-100 Series

Regular Port Threaded End Bronze Ball Valve

NPT threaded ball valve rated to 400 psig CWP, non-shock and 125 psig for saturated steam. Blowout-proof stem design with adjustable packing gland.



FEATURES

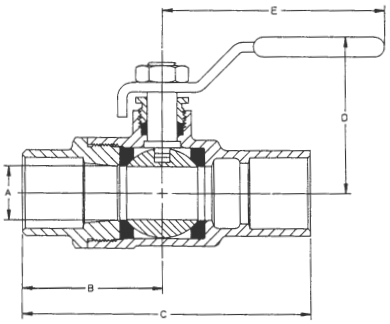
- Chromium plated ball
- PTFE seats and MPTFE stuffing box ring
- Options Include:
  - Tee handle (-07)
  - Round handle (-15)
  - 1-1/4" stem extension (-03)
  - 2-1/4" stem extension (-04)
  - SS latch-lock lever & nut (-27)
  - Balancing stop (-92)

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
32-101-01	1/4	0.37	0.80	1.60	1.65	2.87
32-102-01	3/8	0.37	0.80	1.60	1.65	2.87
32-103-01	1/2	0.40	1.00	2.00	1.68	2.87
32-104-01	3/4	0.65	1.20	2.41	1.90	3.87
32-105-01	1	0.75	1.55	3.09	2.18	4.87
32-106-01	1-1/4	1.00	1.72	3.44	2.53	5.50
32-107-01	1-1/2	1.12	1.93	3.87	2.69	5.50
32-108-01	2	1.50	2.17	4.37	2.94	5.50

Regular Port Economy Ball Valves 32-200 Series

Regular Port Solder End Bronze Ball Valve

Solder end ball valve with vacuum service to 29" Hg. 400 psig CWP, non-shock 125 psig for saturated steam. Blowout-proof design with adjustable packing gland.



FEATURES

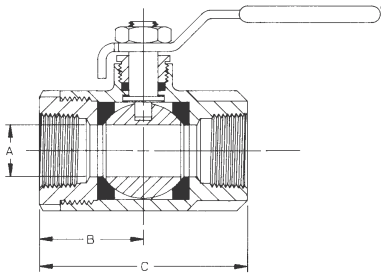
- Chromium plated ball
- PTFE seats and MPTFE Stuffing box ring
- Options Include:
  - Tee handle (-07)
  - Round handle (-15)
  - 1-1/4" stem extension (-03)
  - 2-1/4" stem extension (-04)
  - SS latch-lock lever & nut (-27)
  - Balancing stop (-92)

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
32-203-01	1/2	0.40	1.29	2.65	1.68	2.87
32-204-01	3/4	0.65	1.73	3.56	1.90	3.87
32-205-01	1	0.75	2.11	4.26	2.18	4.87
32-206-01	1-1/4	1.00	2.36	4.60	2.53	5.50
32-207-01	1-1/2	1.12	2.84	5.42	2.69	5.50
32-208-01	2	1.50	3.33	6.48	2.94	5.50

General Purpose Standard Port Valves 70-100/200 Series

Standard Port Threaded Bronze Ball Valve

This Apollo valve is the most widely used and trusted bronze ball valve in the industry. It features blowout-proof stem, RPTFE seats and stuffing box ring and chromium-plated ball.



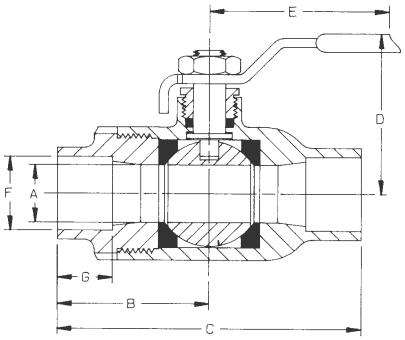
FEATURES

- Rated 600 psig CWP, non-shock
- 150 psig for saturated steam
- 70LF Lead Free* option. NSF 61 Section 8, Annex F & G listed
- Adjustable packing gland
- Multiple options available (see pages 12-13)

Model Number	Size (in.)	Dimensions* (in.) A	B	C
70-101-01	1/4	0.37	1.03	2.06
70-102-01	3/8	0.37	1.03	2.06
70-103-01	1/2	0.50	1.12	2.25
70-104-01	3/4	0.68	1.50	3.00
70-105-01	1	0.87	1.68	3.37
70-106-01	1-1/4	1.00	2.00	4.00
70-107-01	1-1/2	1.25	2.18	4.37
70-108-01	2	1.50	2.34	4.68
70-109-01A	2-1/2	2.00	3.12	6.25
70-100-01	3	2.50	3.37	6.75
70-10A-01	4	3.12	3.68	7.37

**Body only. Total will vary with handle and end connection options. Contact Conbraco Customer Service for these dimensions.*
All 70-100 Series valves are available in sizes 1/4" through 4".

NOTE: 1/4", 3/8", and 1/2" are full port.



Model Number	Size (in.)	Dimensions (in.)* A	B	C	D	E	F	G
70-202-01	3/8	0.37	1.28	2.56	1.75	3.87	0.505	0.37
70-203-01	1/2	0.50	1.43	2.87	1.75	3.87	0.63	0.50
70-204-01	3/4	0.68	1.93	3.87	2.12	4.87	0.88	0.75
70-205-01	1	0.87	2.25	4.50	2.25	4.87	1.13	0.90
70-206-01	1-1/4	1.00	2.31	4.62	2.62	5.50	1.38	0.96
70-207-01	1-1/2	1.25	2.62	5.25	3.06	8.00	1.63	1.09
70-208-01	2	1.50	3.18	6.37	3.25	8.00	2.13	1.34
70-209-01A	2-1/2	2.00	3.74	7.51	3.72	8.00	2.63	1.48
70-200-01	3	2.50	4.12	8.25	4.12	8.00	3.13	1.67
70-20A-01	4	3.12	4.61	9.22	5.22	9.94	4.13	2.16

**Based on 70-200-01 – Dimensions may vary with options.*
Soldering temperature: 500°F or less

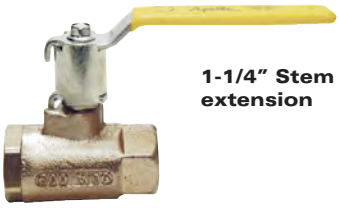
NOTE: 1/4", 3/8", and 1/2" are full port.

General Purpose Standard Port Valves 70 Series

Handle Options

Apollo offers these options on the 70 Series as well as many other valve series.

70-100-03



1-1/4" Stem extension

70-100-04

2-1/4" Stem extension

STANDARD BALL VALVE WITH STEM EXTENSION

Ideal for hydronic or low pressure steam applications, this valve features a stem extension to accommodate insulation or to relocate handle position. This ball valve is equipped with chromium-plated ball, RPTFE seats and stuffing box ring, a blowout-proof stem design and adjustable packing gland.

70-100-16/58

CHAIN LEVER BALL VALVES

Reliable quarter turn operation in overhead applications. A favorite for use in industrial environments. Standard design features include blowout-proof stem and RPTFE seats and seals.

- Specify suffix -16 for assembly with valve in vertical position
- Specify -58 for valve in horizontal position

70-100-07

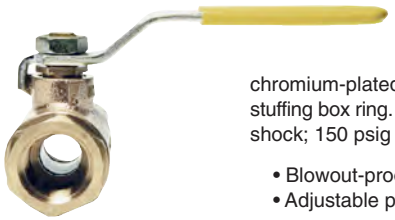
THREADED VALVE WITH TEE HANDLE

Tee handle is ideal when space is limited and where safety is a consideration. Handle still provides visual indication of OPEN or CLOSED position. Valve features a chromium-plated ball, RPTFE seats and stuffing box ring, a blowout-proof stem design and adjustable packing gland.

- Rated 600 psig CWP non-shock
- 150 psig for saturated steam

70-100-08

THREADED BALL VALVE WITH 90° REVERSED STEM



Use in critical applications when handle is required to be in a parallel position when closed. Features chromium-plated ball, RPTFE seats and stuffing box ring. Rated 600 psig CWP, non-shock; 150 psig for saturated steam.

- Blowout-proof stem design
- Adjustable packing gland

70-100-11

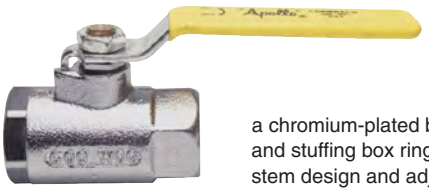
THREADED VALVE WITH THERMA-SEAL® HANDLE

The Therma-Seal thermal insulating tee-handle is designed to be use in applications where piping insulation is required. Manufactured from high strength glass reinforce nylon, these handles are ideally suited for the toughest commercial and industrial applications. Handles are available as a factory installed option (-11 option suffix) or as a kit for retro fits.

General Purpose Standard Port Valves 70 Series

Apollo offers these options on the 70 Series as well as many other valve series.

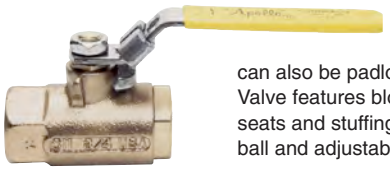
70-100-17 THREADED VALVE WITH ROUGH CHROME PLATING



Use where a clean environment is required; for matching up with other chrome-plated equipment. Features a chromium-plated ball, RPTFE seats and stuffing box ring, a blowout-proof stem design and adjustable packing gland.

- Rated 600 psig CWP, non-shock
- 150 psig for saturated steam

70-100-27 THREADED BALL VALVE WITH LATCH LOCK



Sliding lock mechanism secures handle in open or closed position. Valve can also be padlocked open or closed. Valve features blowout proof stem, RPTFE seats and stuffing box ring, chrome plated ball and adjustable packing gland.

- 600 psig CWP, non-shock
- 150 psig for saturated steam
- Available with auto drain option for pneumatic applications. Use the following suffix key to specify latch lock valve with auto drain option: -27 -41

70-100-41 BALL VALVE WITH AUTOMATIC DRAIN

When this valve is shut-off for maintenance of pneumatic tool, pressure from valve to tool is automatically drained to atmosphere to prevent accidental operation of the tool, causing possible injury.

- Conforms to certain OSHA requirements in pneumatic installations
- Easy, safe maintenance of pneumatic tools
- Cannot be used where drained media could cause damage
- Temperature range = 50°F to 200°F
- Rated 125 psig CWP, non-shock air or water
- Available with latch lock option, specify -27 -41 suffix

70-100-30 THREADED BALL VALVE WITH CAM-LOCK® HANDLE

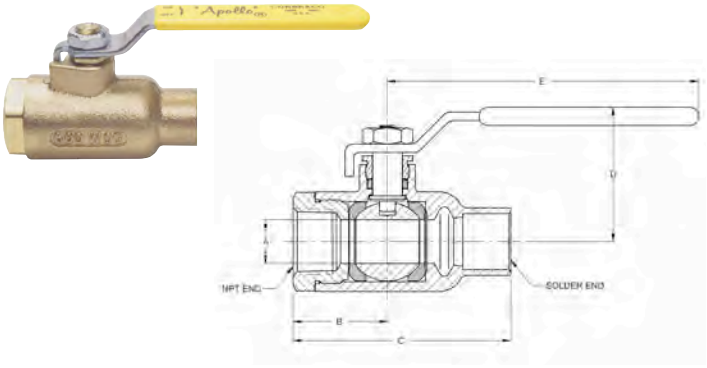
Patented Cam-Lock® handle gives valve extra protection against accidental operation. Reliable quarter-turn shut-off from a versatile, ruggedly built valve.

- RPTFE seats and stuffing box ring
- Rated 600 psig CWP, non-shock

General Purpose Standard Port Valves 70-200-63 Series

Ball Valve with Threaded and Solder Ends

Eliminates special pipe connector for connecting dissimilar piping such as iron and copper. Reliable shut-off and easy quarter-turn operation.



FEATURES

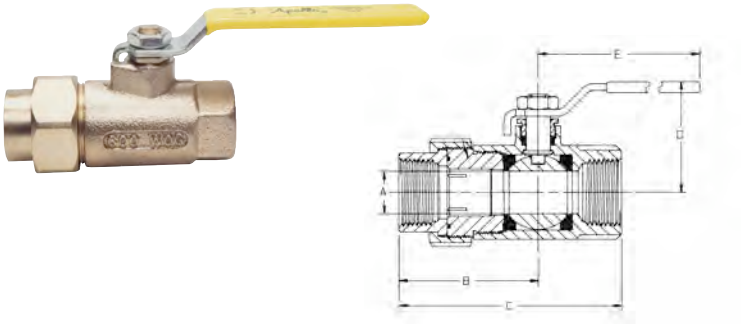
- Rated 600 psig CWP, non-shock
- 150 psig for saturated steam
- Body is solder, retainer is threaded
- Chromium-plated ball
- Blowout-proof stem design
- RPTFE seats and stuffing box ring

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
70-202-63	3/8	0.37	1.02	2.30	1.75	3.87
70-203-63	1/2	0.50	1.09	2.51	1.75	3.87
70-204-63	3/4	0.68	1.48	3.41	2.12	4.87
70-205-63	1	0.87	1.67	3.91	2.25	4.87
70-206-63	1-1/4	1.00	1.98	4.28	2.62	5.50
70-207-63	1-1/2	1.25	2.19	4.75	3.06	8.00
70-208-63	2	1.50	2.35	5.51	3.25	8.00
70-200-63	3	2.50	3.37	7.49	4.12	8.00

General Purpose Standard Port Valves 70-300/400 Series

Ball Valve with Single Union End

This valve combines a pipe union with ball valve shut-off; it saves time and labor by eliminating the need for extra connections. Viton O-ring sealed union requires light torque for proper seal.



FEATURES

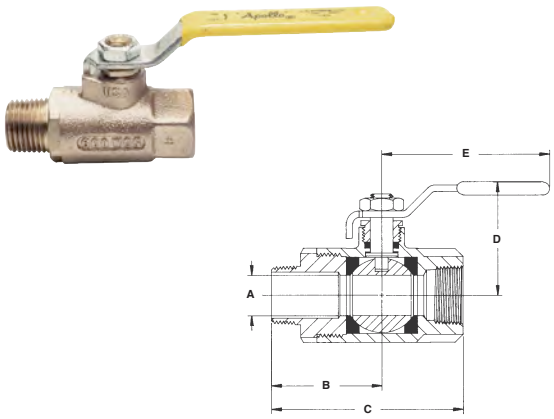
- Chromium-plated ball
- Blowout-proof stem design
- Adjustable packing gland
- 600 psig CWP, non-shock
- NPT and solder

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
NPT						
70-301-01	1/4	0.37	1.90	2.93	1.75	3.87
70-302-01	3/8	0.37	1.90	2.93	1.75	3.87
70-303-01	1/2	0.50	2.01	3.14	1.81	3.87
70-304-01	3/4	0.68	2.46	3.96	2.12	4.87
70-305-01	1	0.87	2.78	4.46	2.25	4.87
70-306-01	1-1/4	1.00	2.68	4.68	2.62	5.50
70-307-01	1-1/2	1.25	2.87	5.06	3.05	8.00
70-308-01	2	1.50	3.25	5.59	3.24	8.00
Solder						
70-403-01	1/2	0.50	2.00	3.43	1.75	3.87
70-404-01	3/4	0.68	2.62	4.56	2.06	4.78
70-405-01	1	0.87	2.81	5.06	2.25	4.78
70-406-01	1-1/4	1.00	2.87	5.18	2.62	5.50
70-407-01	1-1/2	1.25	2.92	5.53	3.10	8.00
70-408-01	2	1.50	3.50	6.75	3.24	8.00

General Purpose Standard Port Valves 70-800 Series

Male x Female NPT Ball Valve

Eliminates need for extra nipple when connecting to female connection to save time and labor. Ruggedly built for lasting performance with chromium-plated ball and blowout-proof stem.



FEATURES

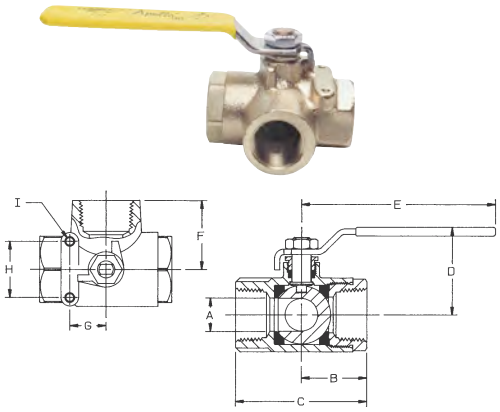
- 600 psig CWP, non-shock
- 150 SWP
- RPTFE seats and stuffing box ring
- Adjustable stem packing
- Vacuum service to 29" Hg.

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
70-801-01	1/4	0.37	1.40	2.43	1.75	3.87
70-802-01	3/8	0.37	1.46	2.50	1.75	3.87
70-803-01	1/2	0.50	1.68	2.81	1.81	3.87
70-804-01	3/4	0.68	2.00	3.50	2.12	4.87
70-805-01	1	0.87	2.31	4.00	2.25	4.87
70-806-01	1-1/4	1.00	2.31	4.31	2.62	5.50
70-807-01	1-1/2	1.25	3.00	5.18	3.06	8.00

Diverter Valves 70-600 Series

Threaded 3-Way Ball Valve

Ideal for applications requiring flow diversion, this valve combines the features of two 2-way valves. Its large ports make tank selection and fluid transfers simpler. Easy quarter-turn operation.



FEATURES

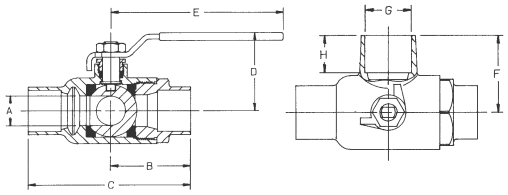
- Simple quarter-turn operation
- Chromium plated ball
- 400 psig CWP, non-shock
- Blowout-proof stem
- Adjustable stem packing

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H	I
70-601-01	1/4	0.37	1.12	2.32	1.80	3.88	1.18	0.875	1.37	10-24
70-602-01	3/8	0.37	1.12	2.32	1.80	3.88	1.18	0.875	1.37	10-24
70-603-01	1/2	0.50	1.09	2.25	1.75	3.87	1.18	0.87	1.37	10-24
70-604-01	3/4	0.68	1.50	3.00	2.12	4.87	1.62	0.87	1.37	10-24
70-605-01	1	0.81	1.59	3.18	2.25	4.87	1.71	0.87	1.37	10-24
70-606-01	1-1/4	1.00	1.97	3.95	2.69	5.50	2.01	0.93	1.50	1/4-20
70-607-01	1-1/2	1.25	2.21	4.40	2.87	5.50	2.38	0.94	1.50	1/4-20
70-608-01	2	1.50	2.34	4.69	3.00	5.50	2.50	0.94	1.50	1/4-20

Diverter Valves 70-900 Series

3-Way Diverter Valve with Solder Ends

Tank selection and fluid transfers are easier because of large port diameters. The valve is 100 percent air tested under water. Designed to be soft soldered without dissembly.



FEATURES

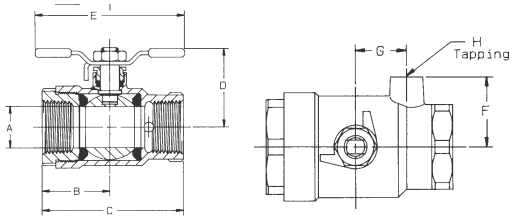
- Simple quarter-turn operation
- Chromium plated ball
- 400 psig CWP, non-shock
- Blowout-proof stem
- Adjustable packing

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H
70-903-01	1/2	0.50	1.44	2.87	1.75	3.87	1.34	0.628	0.50
70-904-01	3/4	0.68	1.94	3.87	2.12	4.87	1.69	0.878	0.90
70-905-01	1	0.81	2.19	4.42	2.25	4.87	1.87	1.129	0.90

Two-Piece, Full Port 7B-100 Series

Full Port Hydo Valve with Double Female NPT

Design features tee handle and side tapping; can be used as a drain feature or with 1/8" and 1/4" test cocks, sensing lines, or pressure gauges. Offers extended service life with its chromium-plated ball and RPTFE packing and PTFE seats.



FEATURES

- Rated 400 psig CWP, non-shock
- Adjustable packing
- Blowout-proof stem design
- 125 psig SWP
- -31 Option: boss not drilled & tapped

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H
7B-101-01	1/4	0.37	1.03	2.06	1.37	2.68	0.93	0.53	1/8 NPT
7B-102-01	3/8	0.37	1.03	2.06	1.37	2.68	0.93	0.53	1/8 NPT
7B-103-01	1/2	0.50	1.09	2.18	1.43	2.68	1.00	0.53	1/8 NPT
7B-104-01	3/4	0.75	1.28	2.68	1.62	3.00	1.12	0.75	1/8 NPT
7B-105-01	1	1.00	1.66	3.43	1.90	4.00	1.31	0.94	1/8 NPT
7B-106-01	1-1/4	1.25	1.87	3.87	2.18	4.00	1.62	1.15	1/4 NPT
7B-107-01	1-1/2	1.50	2.05	4.22	2.60	5.62	1.81	1.31	1/4 NPT
7B-108-01	2	2.00	2.47	5.02	2.95	5.62	2.18	1.68	1/4 NPT

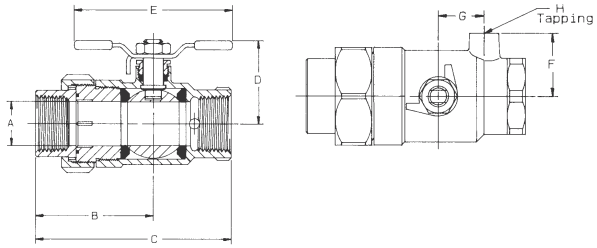
Two-Piece, Full Port 7B-300 Series

Full Port Hydo Valve with Two Female NPT Ports and Single Union End

Valves offer union ends to make pipeline disassembly easier. Design features tee handle and side tapping; can be used as a drain feature or with 1/8" and 1/4" test cocks, sensing lines, or pressure gauges. Rated 400 psig CWP, non-shock, and is equipped with a rugged chromium-plated ball.

FEATURES

- Blowout-proof stem design
- PTFE seats
- Full flow, minimum pressure drop
- -31 Option: boss not drilled & tapped



Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H
7B-301-01	1/4	0.37	2.13	2.92	1.37	2.68	0.93	0.53	1/8 NPT
7B-303-01	1/2	0.50	2.21	3.08	1.43	2.68	0.93	0.53	1/8 NPT
7B-304-01	3/4	0.75	2.25	3.67	1.62	3.00	1.12	0.75	1/8 NPT
7B-305-01	1	1.00	2.71	4.50	1.90	4.00	1.31	0.94	1/8 NPT
7B-307-01	1-1/2	1.50	3.43	5.62	2.60	5.62	1.81	1.31	1/4 NPT
7B-308-01	2	2.00	4.00	6.56	2.95	5.62	2.18	1.68	1/4 NPT

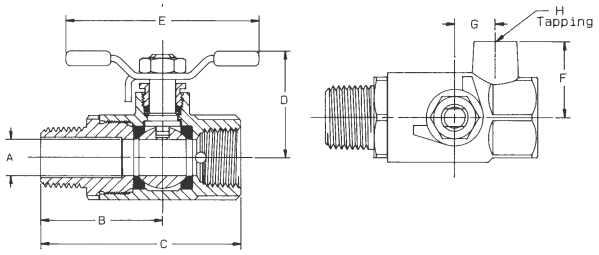
Two-Piece, Full Port 7B-800 Series

Male x Female Full Port Hydro Ball Valve

Eliminates leak path and need for extra nipples. Full port design assures full flow and minimum pressure drop. Includes adjustable packing gland, chromium-plated ball and PTFE seats.

FEATURES

- Rated 125 psig for saturated steam
- 400 psig CWP, non-shock
- -31 Option: boss not drilled & tapped

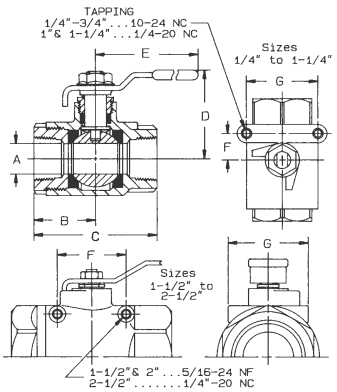


Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H
7B-801-01	1/4	0.37	1.40	2.43	1.37	2.56	0.93	0.53	1/8 NPT
7B-802-01	3/8	0.37	1.46	2.50	1.37	2.56	0.93	0.53	1/8 NPT
7B-803-01	1/2	0.50	1.68	2.78	1.43	2.56	1.00	0.53	1/8 NPT
7B-804-01	3/4	0.75	1.88	3.28	1.70	2.68	1.12	0.75	1/8 NPT
7B-805-01	1	1.00	2.39	4.17	1.93	3.62	1.31	0.94	1/8 NPT
7B-806-01	1-1/4	1.25	2.66	4.66	2.13	3.62	1.62	1.15	1/4 NPT
7B-807-01	1-1/2	1.50	2.86	5.03	2.71	5.12	1.81	1.31	1/4 NPT
7B-808-01	2	2.00	3.34	5.89	3.06	5.12	2.18	1.68	1/4 NPT

Two-Piece, Full Port 77-100 Series

Full Port Panel Mount Ball Valve

Designed for easy actuator mounting or panel mounting where highest Cv values are desired. Chromium-plated ball and RPTFE seats and stuffing box ring. Also available with 250 lb. steam trim option.



FEATURES

- Heavy duty cast bronze body
- Full flow, minimum pressure drop
- Extended stems optional
- Balance stop optional
- Locked retainer optional
- Chain lever kits available 3/4"-2-1/2"
- 600 CWP, non-shock pressure rating
- 150 SWP

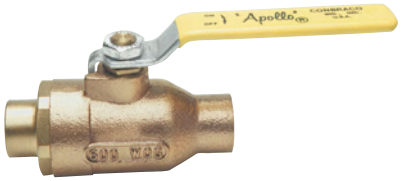
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	Cv*.
77-101-01	1/4	0.43	1.12	2.25	1.81	3.87	0.50	1.12	8.1
77-102-01	3/8	0.50	1.12	2.25	1.81	3.87	0.50	1.12	15
77-103-01	1/2	0.50	1.12	2.25	1.81	3.87	0.50	1.12	15
77-104-01	3/4	0.81	1.56	3.12	2.12	4.87	0.87	1.37	51
77-105-01	1	1.00	1.81	3.62	2.62	5.50	0.93	1.50	68
77-106-01	1-1/4	1.25	2.12	4.25	2.87	5.50	0.93	1.50	125
77-107-01	1-1/2	1.50	2.37	4.75	3.34	8.00	2.08	3.06	177
77-108-01	2	2.00	2.65	5.37	3.71	8.00	2.41	3.52	389
77-109-01	2-1/2	2.50	3.25	6.50	4.12	8.00	2.75	3.37	503

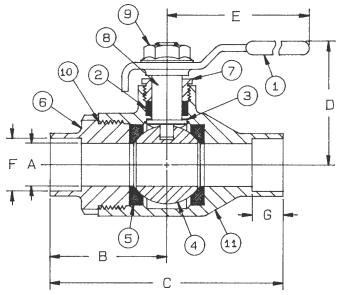
**The Cv factor is the gallons of water per minute that the valve will pass with 1 psig pressure drop.*

Two-Piece, Full Port 77-200 Series

Full Port Solder End Ball Valve

Designed to be soldered into lines without disassembly. This allows a tested valve to be installed without disturbing the seats and seals. Designed for soft solder with melt points less than 500°F.





FEATURES

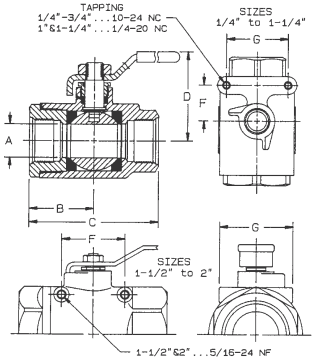
- Heavy duty cast bronze body
- Chromium plated ball
- Blowout-proof stem design
- 600 CWP, non-shock pressure rating
- Full flow, minimum pressure drop
- Adjustable packing gland

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G
77-204-01	3/4	0.81	2.12	4.12	2.12	4.87	0.88	0.75
77-205-01	1	1.00	2.33	4.60	2.62	5.50	1.13	0.90
77-206-01	1-1/4	1.25	2.60	5.15	2.87	5.50	1.38	0.96
77-207-01	1-1/2	1.50	3.00	6.00	3.34	8.00	1.63	1.09
77-208-01	2	2.00	3.62	7.24	3.71	8.00	2.13	1.34
77-209-01	2-1/2	2.50	3.93	7.87	4.12	8.00	2.63	1.48

Two-Piece, Full Port 77-900 Series

Full Port SAE Straight-Thread O-Ring Boss Ball Valves

Connections are designed for extended leak-free and energy saving performance in a broad range of applications, especially in manufacturing environments.



FEATURES

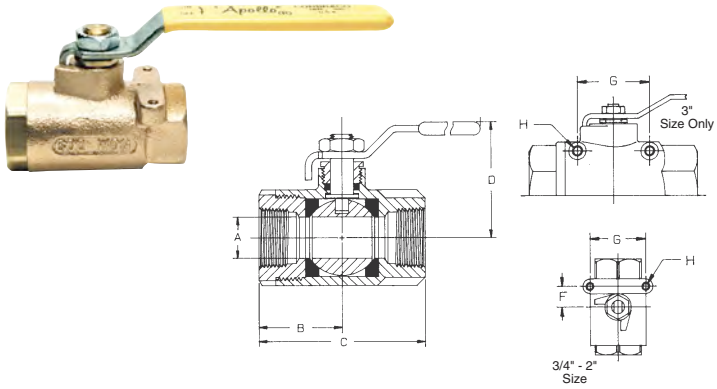
- 600 CWP non-shock
- Cast bronze body
- SAE J512/514 connections
- Chrome-plated ball standard
- Blowout-proof stem and lever handle standard
- Drilled and tappped actuation pad standard

Model Number	Nom. Tube O.D. (in.)	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G
77-901-01	1/4	7/16-20	0.43	1.12	2.25	1.81	3.87	0.50	1.12
77-902-01	3/8	9/16-18	0.50	1.12	2.25	1.81	3.87	0.50	1.12
77-903-01	1/2	3/4-16	0.50	1.12	2.25	1.81	3.87	0.50	1.12
77-904-01	3/4	11/16-12	0.81	1.56	3.12	2.12	4.87	0.87	1.37
77-905-01	1	15/16-12	1.00	1.81	3.62	2.62	5.50	0.93	1.50
77-906-01	1-1/4	1-5/8-12	1.25	2.12	4.25	2.87	5.50	0.93	1.50
77-907-01	1-1/2	1-7/8-12	1.50	2.37	4.75	3.34	8.00	2.08	3.06
77-908-01	2	2-1/2-12	2.00	2.65	5.37	3.71	8.00	2.41	3.52

Standard Port Two Piece Valve w/ Mounting Pad 71-100 Series

Ball Valve with Mounting Pad

Designed to easily accommodate spring return handle, actuator or simple panel mounting. Threaded end connections with RPTFE seats and stuffing box ring.



FEATURES

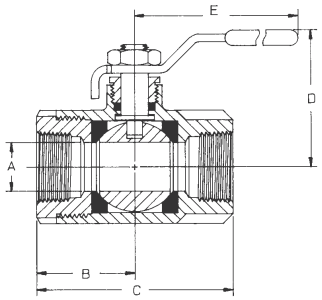
- 3/4″ to 3″ models (See 77 Series for 1/4″ - 1/2″)
- 600 CWP non-shock
- Blowout-proof stem
- Chrome-plated ball standard
- Round handle optional
- Adjustable packing

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H
71-104-01	3/4	0.68	1.50	3.00	2.12	4.87	0.87	1.37	10-24 NC
71-105-01	1	0.87	1.68	3.37	2.25	4.87	0.87	1.37	10-24 NC
71-106-01	1-1/4	1.00	2.00	4.00	2.62	5.50	0.93	1.50	1/4-20 NC
71-107-01	1-1/2	1.25	2.18	4.37	2.87	8.00	0.93	1.50	1/4-20 NC
71-108-01	2	1.50	2.34	4.68	3.06	8.00	0.93	1.50	1/4-20 NC
71-100-01	3	2.50	3.37	6.75	4.12	8.00	N/A	2.75	1/4-20 NC

Steam Valves 70-140-64 Series

250 Lb. Bronze Steam Ball Valve

Designed for reliable operation on high pressure steam systems and with fluids of widely varying temperatures. Ideal for use with high thermal expansion rates. Stainless steel vented ball and stem standard.



FEATURES

- Heavy cast bronze body
- ASTM B584 bronze body
- Vented ball
- Special high-temperature MTFE seats and stem packing
- 250 SWP rating
- Red handle graphics for identification
- American-made bronze casting
- Thermal relief ball design

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
70-141-64	1/4	0.37	1.03	2.06	1.75	3.87
70-142-64	3/8	0.37	1.03	2.06	1.75	3.87
70-143-64	1/2	0.50	1.12	2.25	1.75	3.87
70-144-64	3/4	0.68	1.50	3.00	2.12	4.87
70-145-64	1	0.87	1.68	3.37	2.25	4.87
70-146-64	1-1/4	1.00	2.00	4.00	2.62	5.50
70-147-64	1-1/2	1.25	2.18	4.37	3.06	8.00
70-148-64	2	1.50	2.34	4.68	3.25	8.00
70-140-64	3	2.50	3.37	6.75	4.12	8.00

*(*Also available in 71 & 77 Series)*

Hydronic Valves 70-100-94 Series

Ball Valve with Balancing Stop and Stem Extension

Ideal for HVAC systems. Stop plate and a 2-1/4" stem extension combination to accommodate insulation and handle repositioning.

FEATURES

- Chromium-plated ball
- RPTFE seats
- Stuffing box ring
- Blowout-proof stem design
- Adjustable packing gland
- 600 psig CWP cold, non-shock
- 150 psig saturated steam

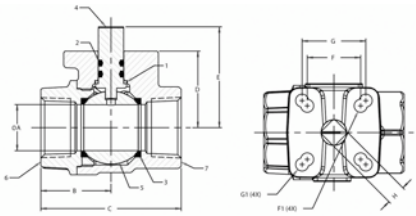
Contact customer service for exact handle dimensions

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	Wt (lb.)
70-101-94	1/4	0.37	1.03	2.06	3.83	3.87	0.84
70-102-94	3/8	0.37	1.03	2.06	3.83	3.87	0.83
70-103-94	1/2	0.50	1.12	2.25	3.83	3.87	0.90
70-104-94	3/4	0.68	1.50	3.00	4.20	4.87	1.78
70-105-94	1	0.87	1.68	3.37	4.33	4.87	2.11
70-106-94	1-1/4	1.00	2.00	4.00	4.70	5.50	3.77
70-107-94	1-1/2	1.25	2.18	4.37	5.14	8.00	5.08
70-108-94	2	1.50	2.34	4.68	5.33	8.00	6.51
70-109-94A	2-1/2	2.00	3.12	6.25	5.80	8.00	14.47

Ball Valve with Direct ISO Mounting 77D Series

Full Port Bronze Ball Valve with Direct ISO Mounting Pad

Apollo's solid stainless steel ball design in a bronze valve with an integral ISO 5211 mounting pad with 100% American construction.



FEATURES

- 600 CWP pressure rating
- Multi-fill seats and stem bearing
- Blowout-proof stem design
- Vacuum service to 29 in. Hg
- Dual o-ring stem seal (EPDM is standard)
- Ball is slot vented to equalize cavity and line pressure
- MSS SP-110 compliant
- Actuator ready

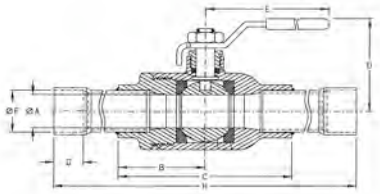
Suffix	Material	Temp Range	Steam (max)
-01E (std)	EPDM	-20 to 400°F	150 SWP @ 366°F
-01N	Nitrile	-20 to 250°F	15 SWP @ 250°F
-01V	Viton	-20 to 400°F	50 SWP @ 297°F

Number	Size	A	B	C	D	E	F (SQUARE)	ØF1 (SQUARE)	G	ØG1	H (DIN SQ)
77D-143-01E	1/2	0.50	1.15	2.25	1.00	1.37	0.997	0.224	1.167	0.281	0.275
77D-144-01E	3/4	0.75	1.33	2.65	1.38	1.79	1.167	0.281	1.392	0.281	0.275
77D-145-01E	1	1.00	1.54	3.07	1.67	2.20	1.167	0.281	1.392	0.281	0.430
77D-147-01E	1-1/2	1.50	2.12	4.23	2.31	3.05	N/A	N/A	1.949	0.344	0.551
77D-148-01E	2	2.00	2.43	4.85	2.68	3.43	N/A	N/A	1.949	0.344	0.551

"Safe" Solder Valves (Two-Piece) 77-200 Series

Bronze Full Port Ball Valve with 6" Female Brazed Extensions (Solder Cup)

Solder end, 600 psig CWP, cold non-shock. 150 psig saturated steam.



FEATURES

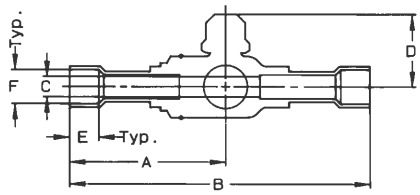
- Chromium plated ball
- Adjustable packing gland
- RPTFE seats and stuffing box ring
- Blowout-proof stem design
- Full flow, minimum pressure drop

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H
77-204-C8	3/4	0.81	2.12	4.12	2.12	4.87	0.88	0.75	16.12
77-205-C8	1	1.00	2.33	4.64	2.62	5.50	1.13	0.90	16.64
77-206-C8	1-1/4	1.25	2.60	5.15	2.87	5.50	1.38	0.96	17.15
77-207-C8	1-1/2	1.50	3.00	6.00	3.34	8.00	1.63	1.09	18.00
77-208-C8	2	2.00	3.62	7.24	3.71	8.00	2.13	1.34	19.24
77-209-C8	2-1/2	2.50	3.93	7.87	4.12	8.00	2.63	1.48	19.87

"Safe" Solder Valves (Two-Piece) 79-700 Series

UL-Listed Refrigerant Ball Valve Assembly

Complete hermetically welded assembly includes copper extensions and forged brass refrigerant ball valve with capped, triple-sealed stem to minimize leaks.



FEATURES

- Chrome plated ball
- RPTFE seats and seals
- Full port through 2-5/8"
- Bi-directional flow design
- Sizes from 3/8" to 3-1/8" O.D. tube
- All sizes UL listed
- Rated 500 psig CWP, non-shock
- For use with refrigerant Group 2 fluids

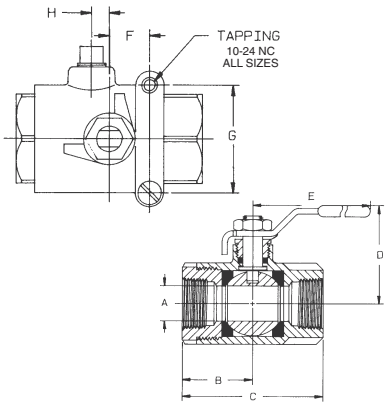
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	Cv*
79-701-01	3/8	3.38	6.45	0.45	1.56	0.38	0.38	8.5
79-702-01	1/2	3.38	6.45	0.45	1.56	0.38	0.50	8.5
79-703-01	5/8	3.56	6.82	0.50	1.56	0.50	0.62	9.8
79-704-01	7/8	3.91	7.53	0.68	1.79	0.75	0.87	32.0
79-705-01	1-1/8	4.39	8.51	0.87	1.98	0.90	1.12	44.0
79-706-01	1-3/8	4.42	8.94	1.25	2.62	0.96	1.38	66.0
79-707-01	1-5/8	4.55	9.19	1.25	2.62	1.09	1.62	148.0
79-708-01	2-1/8	5.16	10.31	1.50	2.93	1.34	2.12	218.0
79-709-01	2-5/8	6.50	13.00	2.50	3.90	1.48	2.62	440.0

**The Cv factor is the gallons of water per minute that the valve will pass with 1 psig pressure drop.*

Purge & Drain Valves 78-660 & 690 Series

Bronze Ball Valve with Center Drain

Center tap drain allows for winterization or purge and drain function. Features bronze body with built-in mounting pad for panel mounting or actuation. Ideal for hydronic heating and marine applications.



FEATURES

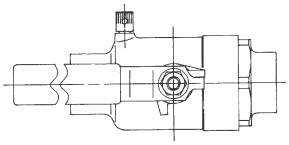
- Chrome plated ball
- RPTFE seats and stuffing box ring
- Stainless steel lever and nut
- Blowout-proof stem
- 600 psig CWP, non-shock
- Adjustable packing
- Drainable ball cavity to prevent freezing

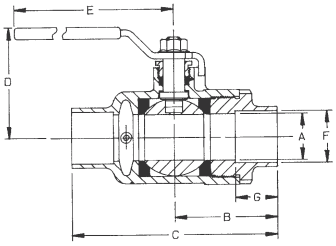
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H.
78-664-01	3/4	0.68	1.50	3.00	2.12	4.87	0.87	1.37	0.17
78-665-01	1	0.87	1.68	3.37	2.25	4.87	0.87	1.37	0.21
78-666-01	1-1/4	1.00	2.00	4.00	2.62	5.50	0.93	1.50	0.28
78-667-01	1-1/2	1.25	2.18	4.37	3.05	8.00	0.93	1.50	0.40
78-962-01	2	1.50	2.34	4.68	3.24	8.00	0.93	1.50	0.45

Stop & Waste Valves 95 Series

Full-Port Solder End Stop and Waste Valve

Perfect choice for hydronic and water systems where system draining is required. Replaces globe style stop and waste valves. Designed to be soft soldered into lines with no disassembly. 95-100 Series are NPT, 95-200 are solder.





FEATURES

- Rated 400 psig CWP, non-shock
- Drain cap designed to prevent fluid loss
- 95LF Lead Free* option. NSF 61 Section 8, Annex F & G listed
- Cast bronze body
- Adjustable packing gland
- Many handle options available

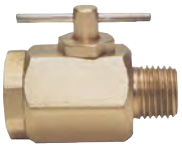
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G
95-103-01	1/2	0.50	1.09	2.18	1.75	3.87		
95-104-01	3/4	0.81	1.56	3.12	2.15	4.87		
95-105-01	1	1.00	1.81	3.62	2.43	4.87		
95-203-01	1/2	0.50	1.43	2.87	1.75	3.87	0.63	0.50
95-204-01	3/4	0.81	2.12	4.12	2.15	4.87	0.88	0.75
95-205-01	1	1.00	2.21	4.43	2.43	4.87	1.13	0.90

Instrumentation Valves 78-260/290 Series

Brass and Bronze Instrumentation Ball Valves

Male x Female threaded. 400 psig CWP, non-shock. Air and liquid service.

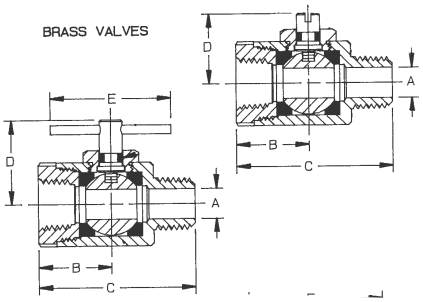
78-290: Bronze

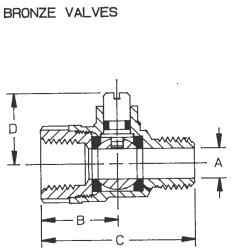


78-260: Brass

FEATURES

- Micro-finish ball
- Blowout-proof stem design
- PTFE seats
- Nitrile stem seal
- Plated steel tee handle
- Compact design
- Optional mixed end fittings available





BRASS INSTRUMENTATION BALL VALVE- Tee Handle								
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	Cv*	Wt.
78-260-05	1/8M X 1/8F	0.21	0.37	1.43	0.87	1.25	4.00	0.20
78-261-05	1/4M X 1/4F	0.31	0.43	1.43	0.87	1.25	5.50	0.19

BRASS INSTRUMENTATION BALL VALVE - Screw Slot								
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	Cv*	Wt.
78-262-05	1/8M X 1/8F	0.21	0.37	1.43	0.75	N/A	4.00	0.20
78-263-05	1/4M X 1/4F	0.31	0.43	1.43	0.75	N/A	5.50	0.19

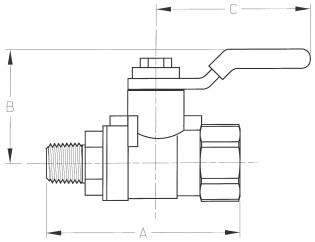
BRONZE INSTRUMENTATION BALL VALVE (International) - Screw Slot								
	Model Size	Dimensions (in.)						
Number	(in.)	A	B	C	D	E	Cv*	Wt.
78-290-01	1/8M X 1/4F	0.21	0.80	1.60	0.72	N/A	4.00	0.19
78-291-01	1/4M X 1/4F	0.31	0.80	1.60	0.72	N/A	5.50	0.19
78-292-01	1/8 X 1/4 SAE	0.21	0.80	1.60	0.72	N/A	4.00	0.19
78-293-01	1/4 X 1/4 SAE	0.31	0.80	1.60	0.72	N/A	5.50	0.19

**The Cv factor is the gallons of water per minute that the valve will pass with a 1 psig pressure drop.*

Mini Ball Valve (International) 94 MVB Series

Mini Ball Valve

Designed for steam, water, oil or gas in commercial and light industrial use. Conventional port, constructed of heavy-duty forged brass, 100% Teflon® seats and gland follower with double viton o-rings, to prevent steam leakage.



FEATURES

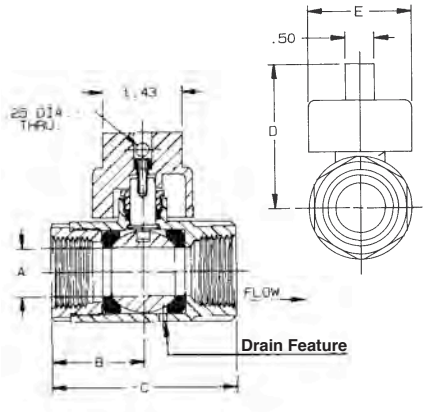
- Reversible handle
- Blowout-proof stem
- Double viton o-rings
- Large raised wrench flats
- Chrome plated brass ball
- Maximum 600 psig at 100°F, non-shock
- Temps from -40°F to 300°F
- Each mini is air-tested twice: in the open and closed position
- CSA/ANSI Z21.15 (1/2 psig), CGA9.1
- ASME B16.44 (2 and 5 psig)
- MSS-SP110

Model Number	Size (in.)	Dimensions (in.) A	B	C	Internal Ø	Wt. (lbs.)
94MBV01	1/4 FNPT x 1/8 MNPT	1.96	1.25	1.67	0.31	0.19
94MBV02	1/4 FNPT x 1/4 MNPT	2.04	1.15	1.67	0.31	0.20
94MBV03	1/4 FNPT x 1/4 FNPT	1.63	1.28	1.67	0.31	0.17
94MBV04	1/8 FNPT x 1/8 MNPT	1.97	1.20	1.67	0.31	0.16
94MBV05	1/8 FNPT x 1/8 FNPT	1.61	1.23	1.67	0.31	0.16

Irrigation Valves 78-620 Series

Threaded Irrigation Valve

Ideal for underground use or where drained media will not cause damage. Auto-drain feature (when valve is in closed position) is standard. Stainless steel cover, and chromium plated ball.



FEATURES

- Adjustable packing gland
- RPTFE seats and seals
- Blowout-proof stem design
- 200 psig water, CWP, non-shock
- Temperature range +50°F to 200°F

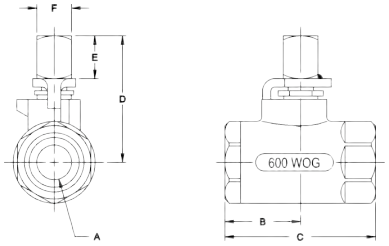
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
78-621-01	3/4	0.68	1.47	2.96	2.40	1.81
78-622-01	1	0.87	1.66	3.34	2.53	1.81
78-623-01	1-1/4	1.00	1.98	3.97	3.00	2.50
78-624-01	1-1/2	1.25	2.12	4.28	3.18	2.50
78-625-01	2	1.50	2.35	4.67	3.37	2.50

Square head operator option avail-

Irrigation Valves 78-130 Series

Female End Valve for Underground Service

Ideal for underground or below grade applications. This series (1/4"-2"FNPT) features a square head nut welded to the stem to allow operations with a ground key from standard grade.



Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F
78-131-01	1/4	0.37	1.03	2.06	1.75	0.62	0.50
78-132-01	3/8	0.37	1.03	2.06	1.75	0.62	0.50
78-133-01	1/2	0.50	1.09	2.18	1.83	0.62	0.50
78-134-01	3/4	0.68	1.50	3.00	2.12	0.62	0.62
78-135-01	1	0.87	1.68	3.37	2.25	0.62	0.62
78-136-01	1 1/4	1.00	2.00	4.00	2.88	0.75	0.75
78-137-01	1 1/2	1.25	2.18	4.38	3.06	0.75	0.75
78-138-01	2	1.50	2.34	4.68	3.25	0.75	0.75

Irrigation Valves 78-114-01 Series

SAE Male Thread Valve for Underground Service

Features the same square head nut as the 78-134-01 Series but with an optional SAE male thread on one end. Apollo valves can be manufactured with a variety of end connections.

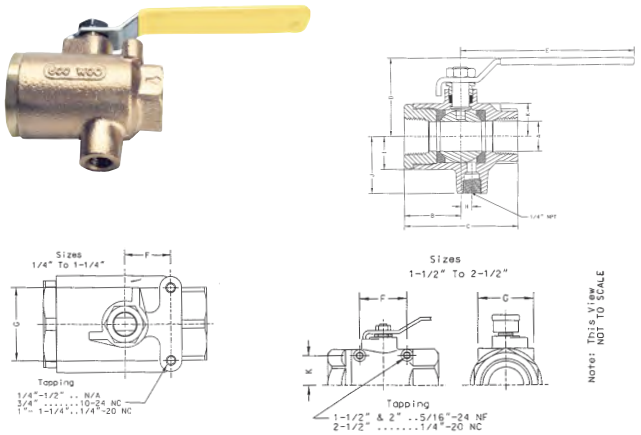
FEATURES

- 1-1/16 SAE male o-ring x 3/4 FNPT

Air Exhaust Valves 7K-100 Series

Full Port Safety Exhaust Valve with 1/4" NPT Tap for Drain

For use on pneumatic equipment where full flow is required. Standardly furnished with a 1/4" NPT tapped drain to accommodate a muffler or to pipe the exhausted air to a safe location.



FEATURES

- Safely vents compressed air (or other non-hazardous gased) from piping downstream of the closed valve
- Sizes 1/4" - 2-1/2"
- FNPT threads
- Rated 125 psig-air or water, CWP, non-shock
- Temperature range: +50°F - +200°F
- Optional stainless steel latch lock handle that locks in closed position only, specify suffix (-46)

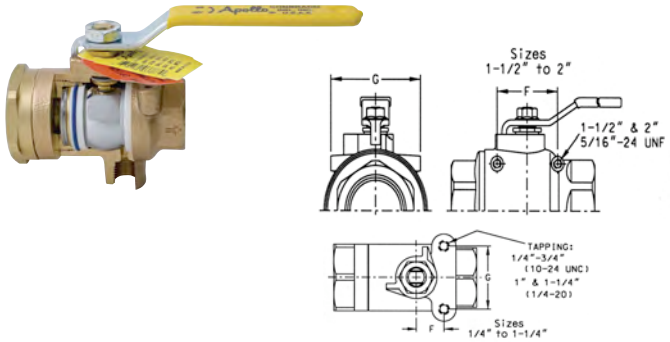
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H	I	J	K
7K-101-01	1/4	0.37	1.03	2.06	1.75	3.87	N/A	N/A	0.09	0.53	1.18	N/A
7K-102-01	3/8	0.37	1.03	2.06	1.75	3.87	N/A	N/A	0.09	0.53	1.18	N/A
7K-103-01	1/2	0.50	1.10	2.19	1.75	3.87	N/A	N/A	0.12	0.59	1.25	N/A
7K-104-01	3/4	0.81	1.56	3.12	2.12	4.78	0.87	1.37	0.29	0.90	1.56	0.90
7K-105-01	1	1.00	1.80	3.61	2.62	5.50	0.93	1.50	0.31	1.12	1.78	1.12
7K-106-01	1-1/4	1.25	2.12	4.25	2.87	5.50	0.93	1.50	0.37	1.37	2.03	1.37
7K-107-01	1-1/2	1.50	2.37	4.74	3.30	7.78	2.08	3.06	0.50	1.56	2.21	1.28
7K-108-01	2	2.00	2.70	5.38	3.71	7.78	2.41	3.52	0.62	2.03	2.68	1.56

Also available in 70 & 77 Series as - 41 option (without tapped drain)

Air Exhaust Valves 7K-SV Series

Secure-Vent Feature (-SV)

Available on the Apollo 77 and 7K full port bronze ball vales. The SV option raised the performance bar for automatic venting valves used in compressed air systems powering tools and equipment.
(7K-SV Series Shown)



FEATURES

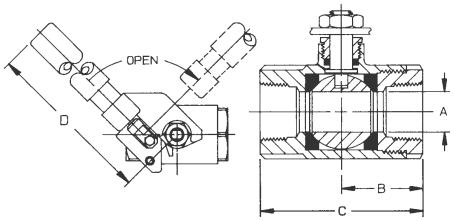
- Safely vents compressed air (or other non-hazardous gased) from piping downstream of the closed valve
- Reliable shut-off and venting -20°F-200°F, 0 to 200 psig CWP, non-shock
- Economical "no leakage" operation
- Belleville spring live-loaded active upstream seating
- Available with a full compliment of handles

Number	Size	Dimensional (in.) A	B	C	D	E	F	G
7K-101-SV	1/4	0.43	1.43	2.52	1.76	3.88	0.50	1.12
7K-102-SV	3/8	0.50	1.60	2.69	1.76	3.88	0.50	1.12
7K-103-SV	1/2	0.50	1.50	2.59	1.76	3.88	0.50	1.12
7K-104-SV	3/4	0.81	1.82	3.37	2.16	5.43	0.87	1.37
7K-105-SV	1	1.00	2.05	3.86	2.69	5.43	0.93	1.50
7K-106-SV	1 1/4	1.25	2.37	4.50	2.91	5.43	0.93	1.50
7K-107-SV	1 1/2	1.50	2.37	7.78	3.31	7.78	2.08	3.06
7K-108-SV	2	2.00	3.00	5.69	3.73	7.78	2.40	3.52

Shut-Off Valves 71-500 Series

Valve with Spring Return Handle

Ideal in applications where the valve must be in OFF position at all times such as feeding fuel lines. Can be used in reverse with 90° reverse stem option. Basic configuration: spring return to CLOSED. All lever components are stainless steel.



FEATURES

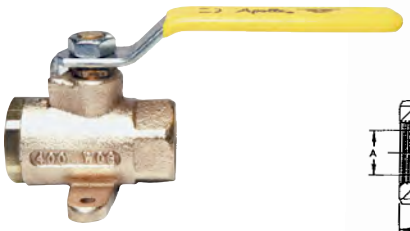
- Torque nearly three times that of standard valves
- Rated 600 psig CWP, non-shock
- 150 psig for saturated steam
- Spring return to OPEN (-08)

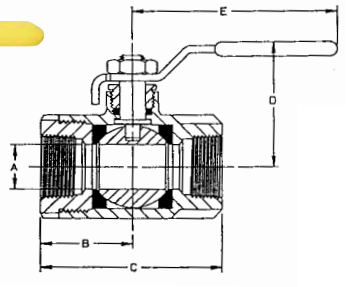
Model Number	Size Size (in.)	Dimensions (in.) A	B	C	D
71-501-01	1/4	0.43	1.12	2.25	7.00
71-502-01	3/8	0.50	1.12	2.25	7.00
71-503-01	1/2	0.50	1.12	2.25	7.00
71-504-01	3/4	0.68	1.50	3.00	7.00
71-505-01	1	0.87	1.68	3.37	7.00
71-506-01	1-1/4	1.00	2.00	4.00	9.00
71-507-01	1-1/2	1.25	2.18	4.37	9.00
71-508-01	2	1.50	2.34	4.68	9.00

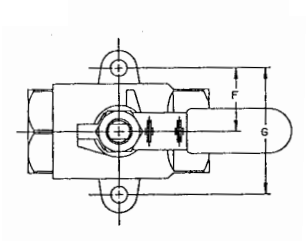
Surface Mount Shut-Off Valves 78-256 Series

Multi Purpose Shut-Off Valve with Mounting Ears

Excellent for use with liquid fuels and often specified as a fuel tank shut-off valve in marine applications. All wetted parts are brass or cast bronze. Mounting ears for easy, positive installation.







FEATURES

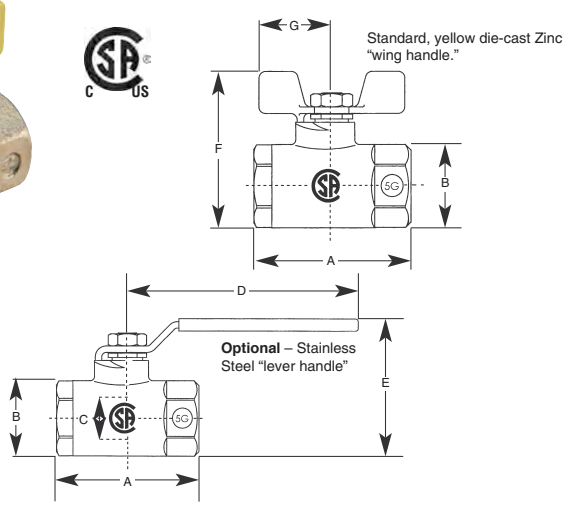
- 400 psig CWP, non-shock
- Tested to 100 psig air under water
- Optional tee handle
- NPT threaded, both ends
- RPTFE seats and seals

Model Number	Size (in.)*	Dimensions (in.) A	B	C	D	E	F	G
78-248-01	1/4	0.43	1.12	2.25	1.78	3.87	0.93	1.87
78-250-01	3/8	0.43	1.12	2.25	1.78	3.87	0.93	1.87
78-256-01	1/2	0.50	1.12	2.25	1.78	3.87	0.93	1.87
78-438-01	3/4	0.68	1.50	3.00	2.12	4.87	1.06	2.12

Gas/Fuel Shut-Off Valves GB-10 Series

CSA Gas Shut-Off Valves

Manual shut-off valves engineered specifically for low pressure gas service. Canadian Standard Association design and capacity certified with American-made quality. High-copper content body, chrome-plated ball, and PTFE seats.



FEATURES

- Complies with ANSI Z21.15, CR91-002, and ASME 16.44
- Use with natural, manufactured, mixed and liquefied petroleum gasses, LP gas-air mixtures
- Standard die-cast zinc "wing" handle, epoxy coated, for easy shut-off
- Temperature range: 32°F - 125°F at pressures of 1/2 and 5 psig
- Lever (-L1) or tee handle (-T1)

Model Number	Size (in.)	Connection	BTU/Hr*
51GB201	3/8	3/8 NPT	318,700
51GB301	1/2	1/2 NPT	623,750
51GB401	3/4	3/4 NPT	1,265,000
51GB501	1	1 NPT	2,037,500

** Capacity based on a gas having a heating value of 1000 Btu/cubic feet and an S.G. of 0.64 at a P.D. of 1" W.C.*

	Dimensions (in.)						
Size (in.)	A	B	C	D	E	F	G
3/8	2.04	1.06	0.38	3.85	2.24	2.20	0.81
1/2	2.24	1.18	0.50	3.85	2.30	2.24	0.81
3/4	2.97	1.55	0.69	4.75	2.85	2.90	1.00
1	3.33	1.81	0.88	4.75	3.10	3.15	1.00

Gas Appliance Ball Valves (International) GB-15 & GB-16 Series

Gas Ball Valve

Designed for natural gas, manufactured and mixed gas, liquified petroleum gases and LP gas-air mixture applications. They comply with the latest editions of the standards listed in "Features."

GB-15

GB-16

FEATURES

- ANSI Z21.15, CGA9.1
- ASME B16.44
- UL Guide YRBX
- UL Guide MHKZ
- UL Guide YRPV
- UL Guide YSDT

Model Number	Part Number	Size & End Connection (in.)
GB-15	51GF301	1/2 FNPT x 1/2 FNPT
GB-15	51GF401	3/4 FNPT x 3/4 FNPT
GB-16	51GG201	1/2 FNPT x 3/8 Flare
GB-16	51GG301	1/2 FNPT x 1/2 Flare

Gas/Fuel Shut-Off Valves GB-50 & GB-50A Series

CSA Gas Shut-Off Valves

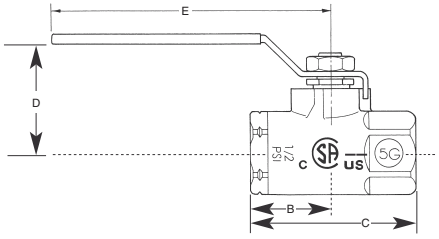
Designed for indoor "main burner" applications with cast-in single or dual pilot tap for faster, simpler installation. ASTM B584 bronze body, chrome-plated ball, brass stem, retainer and gland screws for corrosion resistance.

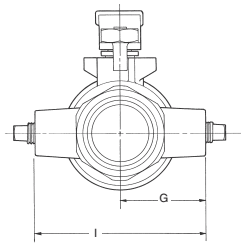
GB-50

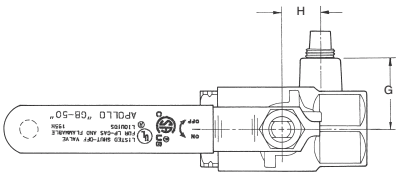
GB-50A

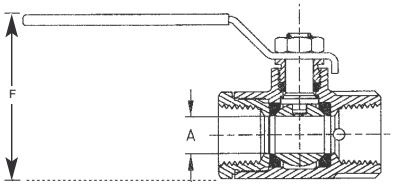
FEATURES

- For natural gas, manufactured and mixed Gas, liquefied petroleum gasses and LP gas-air mixtures
- Rated pressures of 1/2 and 5 psig
- Standard connection is FNPT x FNPT
- CSA/ANSI Z21.15
- UL125, UL842
- High capacity
- Standard with a reversible plated steel lever handle. Optional "tee" handle (-07)
- ANSI Z21.15, CGA9.1
- ASME B16.44 (2 and 5 psig)
- MSS-SP110
- UL Guide YRBX
- UL Guide MHKZ
- UL Guide YRPV
- UL Guide YSDT









Number Single Tapped	Dual Tapped	Size (in.)	Tapping	Dimensions(in.) A	B	C	D	E	F	G	H	I	Capacity BTU/hr
50GB301	--	1/2	1/8	0.50	1.11	2.25	1.68	3.85	2.27	1.00	0.53	-	693000
50GB401	50GB401A	3/4	1/8	0.75	1.26	2.67	1.93	3.85	2.72	1.12	0.75	2.24	1258000
50GB501	50GB501A	1	1/8	1.00	1.65	3.42	2.19	4.78	3.18	1.53	0.94	3.06	3144000
50GB601	50GB601A	1-1/4	1/8	1.25	1.87	3.86	2.37	4.78	3.56	1.62	1.15	3.24	6441000
50GB701	50GB701A	1-1/2	1/8	1.50	2.05	4.22	2.81	5.40	4.21	1.81	1.31	3.62	7745000
50GB801	50GB801A	2	1/8	2.00	2.48	5.02	3.18	5.40	4.93	2.18	1.68	4.36	14741000
50GB5A1	50GB5A1A	1	1/4	1.00	1.65	3.42	2.19	4.78	3.18	1.53	0.94	3.06	3144000
50GB6A1	50GB6A1A	1-1/4	1/4	1.25	1.87	3.86	2.37	4.78	3.56	1.62	1.15	3.24	6441000
50GB7A1	50GB7A1A	1-1/2	1/4	1.50	2.05	4.22	2.81	5.40	4.21	1.81	1.31	3.62	7745000
50GB8A1	50GB8A1A	2	1/4	2.00	2.48	5.02	3.18	5.40	4.93	2.18	1.68	4.36	14741000

**Note: Capacities based on 1000 Btu/cubic feet gas at 0.64 specific gravity, at a P.D. of 1" W.C.*

Gas/Fuel Shut-Off Valves 77G-UL Series

Full Port CSA & UL Gas Shut-Off Valves

UL and CSA listed fuel shut off valve that features a durable bronze body, premium "multi-fill" MPTFE seats and stem packing, and a "Solid Ball" design that delivers true full port flow performance.

NEW

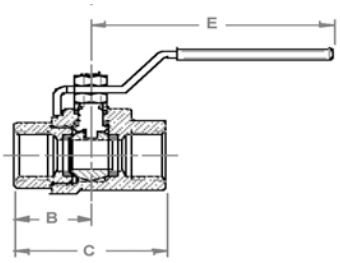
FEATURES

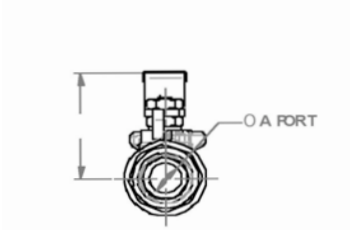
- Blowout-proof stem design
- Durable bronze construction
- Maximum body pressure: 600 psig CWP
- Pressure CSA: up to 125 psig
- Temperature range CSA: -20°F to 150°F
- Pressure UL: 250 psig max @ 125°F
- MSS SP-110 ball valves
- CSA to ASME B16.33, 125
- CGA 3.16-M88, 125
- UL Listed

  MHKZ
  YSDT
  YQNZ
  YRBX
  YRPV

- CUL Listed

  YRPV7
  YRBX7
  MHKZ7
  YSDT7



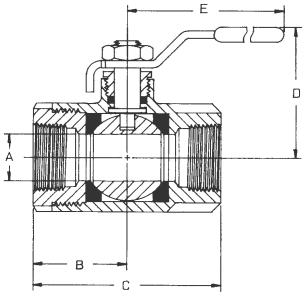


Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	Wt
70G103UL	1/2	0.50	1.19	2.35	1.80	3.74	0.68
70G104UL	3/4	0.75	1.42	2.74	1.98	4.78	1.26
70G105UL	1	1.00	1.64	3.18	2.18	4.78	2.08

Gas/Fuel Shut-Off Valves 80-100 Series

UL Listed Gas Shut-Off Valves

UL listed and designed as safe shut-off valve for LP gas, natural gas, flammable liquids and heated oil. Features easy quarter-turn ON/OFF, a large port to reduce pressure drop and NPT connections.



FEATURES

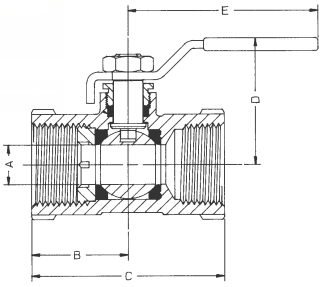
- RPTFE seats and seals
- Rated 600 psig CWP, non-shock
- 250 psig LP Gas
- Tee handle (-07)
- Latch lock handle (-27)
- Oxygen cleaned (-57)

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
80-101-01	1/4	0.37	1.03	2.06	1.75	3.87
80-102-01	3/8	0.37	1.03	2.06	1.75	3.87
80-103-01	1/2	0.50	1.12	2.25	1.81	3.87
80-104-01	3/4	0.68	1.50	3.00	2.12	4.87
80-105-01	1	0.87	1.68	3.37	2.25	4.87
80-106-01	1-1/4	1.00	2.00	4.00	2.62	5.50
80-107-01	1-1/2	1.25	2.18	4.37	2.87	5.50
80-108-01	2	1.50	2.34	4.68	3.06	5.50
80-109-01	2-1/2	2.50	3.25	6.50	4.12	8.00
80-100-01	3	2.50	3.37	6.75	4.12	8.00

Gas/Fuel Shut-Off Valves 90-100 Series

UL Listed Uni-Body Threaded Ball Valve

A compact valve that's UL listed at 300 psig CWP, non-shock for fuel, inert gases and flammable liquids. Features chromium-plated ball, RPTFE seats and seals.



FEATURES

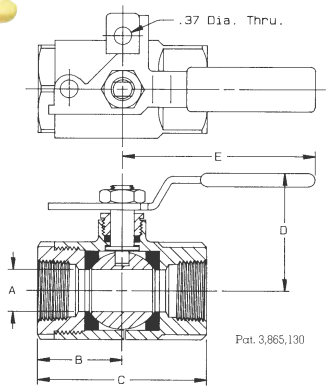
- Blowout-proof stem design
- One piece bronze body
- Optional tee handle (-07)
- Reduced port

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
90-103-01	1/2	0.37	1.14	2.15	1.68	3.87
90-104-01	3/4	0.50	1.36	2.61	1.75	3.87
90-105-01	1	0.62	1.50	2.90	2.00	4.87
90-106-01	1-1/4	0.81	1.81	3.50	2.18	4.87
90-107-01	1-1/2	1.00	2.06	3.79	2.62	5.50
90-108-01	2	1.25	2.43	4.42	2.81	5.50

Padlocking Valves 75-100-41 Series

Padlocking Ball Valve with Automatic Drain

Meets OSHA standards and provides for easy, safe maintenance of pneumatic tools. Valve can be padlocked OPEN or CLOSED with same hardware. Built with RPTFE seats and stuffing box ring.



FEATURES

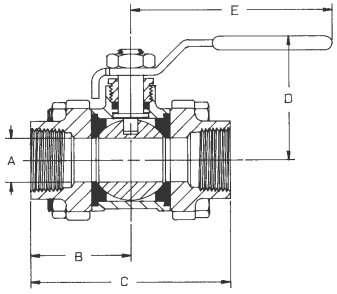
- Blowout-proof stem design
- Adjustable packing gland
- Chromium-plated ball
- Threaded end connections
- Rated to 125 psig - air or water
- Temperature range: 50°F to 200°F
- Specify suffix -01 for valve without drain option

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
75-101-41	1/4	0.43	1.12	2.25	1.81	3.00
75-102-41	3/8	0.50	1.12	2.25	1.81	3.00
75-103-41	1/2	0.50	1.12	2.25	1.81	3.00
75-104-41	3/4	0.87	1.68	3.37	2.25	3.87
75-105-41	1	0.87	1.68	3.37	2.25	3.87
75-106-41	1-1/4	1.00	2.00	4.00	2.62	5.50
75-107-41	1-1/2	1.25	2.16	4.37	2.87	5.50
75-108-41	2	1.50	2.34	4.68	3.06	5.50

Three-Piece Full Port Valves 82-100 Series

Full Port Bronze NPT Three-Piece Valve

This inline repairable threaded ball valve offers RPTFE seats and seals and a 600 CWP, non-shock rating. SAE Grade 8 zinc plated, carbon steel body bolts standard.



FEATURES

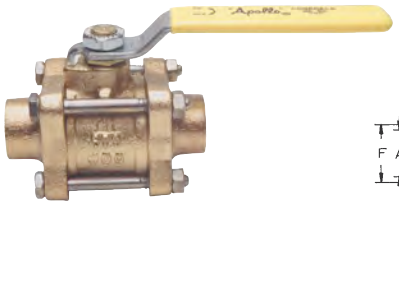
- Cast bronze body
- Cast bronze endcaps (1/2"-4")
- Adjustable packing nut
- Full port in all sizes
- 600 CWP, 150 SWP
  400 CWP-3" & 4"
- Numerous options available

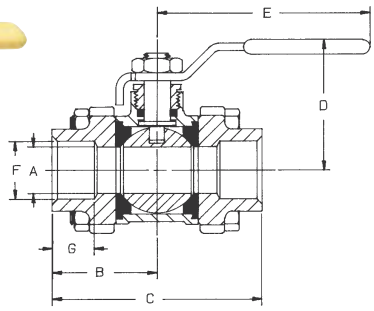
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
82-101-01	1/4	0.43	1.28	2.56	1.81	3.87
82-102-01	3/8	0.50	1.28	2.56	1.81	3.87
82-103-01	1/2	0.62	1.40	2.81	1.93	4.87
82-104-01	3/4	0.81	1.71	3.43	2.18	4.87
82-105-01	1	1.00	1.93	3.87	2.62	5.50
82-106-01	1-1/4	1.25	2.37	4.75	2.87	5.50
82-107-01	1-1/2	1.50	2.62	5.25	3.37	8.00
82-108-01	2	2.00	3.01	6.03	3.68	8.00
82-109-01	2-1/2	2.50	3.62	7.25	5.14	9.75
82-140-01	3	3.00	4.18	8.37	8.10	19.13
82-14A-01	4	4.00	5.43	10.86	8.88	19.13

Three-Piece Full Port Valves 82-200 Series

Full Port Bronze Three-Piece Solder/Brazed End Valve

Valve features full port and is easily repaired inline. Designed for soft soldering or brazed installation. Includes RPTFE seats and seals. 600 psig CWP, non-shock, 150 psi steam working pressure.





FEATURES

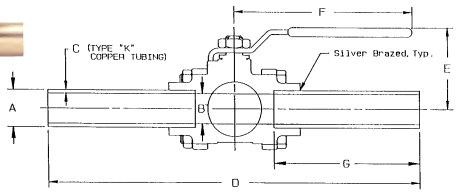
- Chromium-plated ball
- Equipped with SAE Grade 8 body bolts
- 600 CWP
  400 CWP-3" & 4"
- 150 SWP

Model Number	Size* (in.)	Dimensions (in.) A	B	C	D	E	F	G
82-202-01	3/8	0.50	1.28	2.56	1.81	3.87	0.50	0.37
82-203-01	1/2	0.62	1.40	2.81	1.93	4.87	0.63	0.50
82-204-01	3/4	0.81	1.71	3.43	2.18	4.87	0.88	0.75
82-205-01	1	1.00	1.93	3.87	2.62	5.50	1.13	0.90
82-206-01	1-1/4	1.25	2.37	4.75	2.87	5.50	1.38	0.96
82-207-01	1-1/2	1.50	2.60	5.25	3.37	8.00	1.63	1.09
82-208-01	2	2.00	3.01	6.03	3.68	8.00	2.13	1.34
82-209-01	2-1/2	2.50	3.62	7.25	5.14	9.38	2.63	1.47
82-240-01	3	3.00	4.18	8.37	8.10	19.13	3.13	1.66

Three-Piece Brazed Tube-End Valves 82-200/82-240 Series

Three-Piece Full Port Valve with Brazed Tubing

This valve is useful in pharmaceutical, medical gas and pneumatic applications where valves should not be disassembled prior to soldering or brazing.



Nominal Tubing O.D.

FEATURES

- Available with nominal 6" type K tubing brazed into the solder end cup
- Rated 600 psig CWP, non-shock
- Optional gage port tapping
- Complies with NFPA99 and CGA G4.1
- Cleaned for oxygen service (-57 suffix)
- Larger sizes available. Contact factory for details

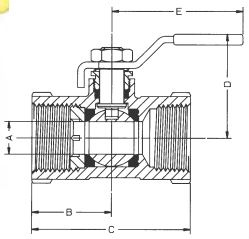
Standard Model No.	Standard Model No. 316 Ball & Stem	Oxygen Cleaned Model No.	Oxygen Cleaned Model No. 316 Ball & Stem
82-203-B8	82-243-A8	82-203-A1	82-243-A7
82-204-A8	82-244-B3	82-204-A2	82-244-B2
82-205-B7	82-245-B1	82-205-A1	82-245-B0
82-206-B7	82-246-B0	82-206-A1	82-246-A9
82-207-B2	82-247-B2	82-207-A1	82-247-B0
82-208-B7	82-248-B2	82-208-A1	82-248-B1
82-209-A2	82-249-A2	82-209-A3	82-249-A3
-	82A-240-A2	-	82A-240-A1
-	82A-24A-A0	-	82A-24A-A1

Size (in.)	Dimensions (in.) A*(in.)	B	C	D	E	F	G
1/2	5/8	0.62	0.05	13.81	2.00	4.87	6.00
3/4	0.87	0.81	0.07	13.93	2.18	4.87	6.00
1	1.12	1.00	0.07	14.04	2.62	5.50	6.00
1-1/4	1.37	1.25	0.07	14.81	2.87	5.50	6.00
1-1/2	1.62	1.50	0.07	15.07	3.37	8.00	6.00
2	2.12	2.00	0.08	15.23	3.70	8.00	6.00
2-1/2	2.63	2.44	0.10	23.45	5.13	9.94	9.60
3	3.13	3.00	0.11	23.87	6.67	18.00	9.42
4	3.13	3.00	0.11	23.87	6.67	18.00	9.42

General Purpose Uni-Body Valves 9A-100 Series

Heavy Pattern Uni-Body Threaded Ball Valve

One piece bronze valve eliminates leak paths. Features static grounding devices and adjustable packing gland. Lever handle standard.



FEATURES

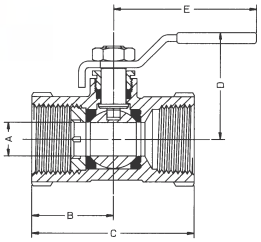
- Rated 600 psig CWP, non-shock
- Blowout-proof stem design
- 150 SWP

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
9A-101-01	1/4	0.37	1.34	2.59	1.68	3.87
9A-102-01	3/8	0.37	1.34	2.59	1.68	3.87
9A-103-01	1/2	0.37	1.34	2.59	1.81	3.87
9A-104-01	3/4	0.50	1.44	2.84	1.84	3.87
9A-105-01	1	0.62	1.72	3.28	2.00	4.87
9A-106-01	1-1/4	0.81	1.94	3.84	2.18	4.87
9A-107-01	1-1/2	1.00	2.06	4.00	2.68	5.50
9A-108-01	2	1.25	2.29	4.56	2.87	5.50

General Purpose Uni-Body Valves 91-100 Series

Threaded Uni-Body Ball Valve

A compact valve featuring a chromium-plated ball, adjustable packing gland, blowout-proof stem design and RPTFE seats and seals. Lever handle standard, tee handle optional.



FEATURES

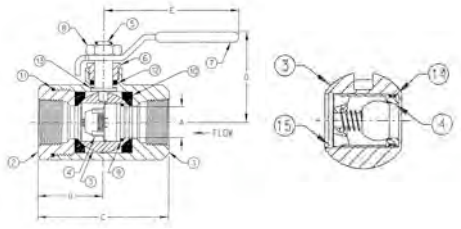
- 400 psig CWP non-shock
- 150 psig saturated steam

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E
91-101-01	1/4	0.37	1.14	2.15	1.68	3.87
91-102-01	3/8	0.37	1.14	2.15	1.68	3.87
91-103-01	1/2	0.37	1.14	2.15	1.68	3.87
91-104-01	3/4	0.50	1.36	2.61	1.75	3.87
91-105-01	1	0.62	1.50	2.90	2.00	4.87
91-106-01	1-1/4	0.81	1.81	3.50	2.18	4.87
91-107-01	1-1/2	1.00	2.06	3.79	2.62	5.50

Specialty Valves 70-100-BC Series

Ball Valves with Integral Check Female x Female

Combines two functions in a single design: positive shut-off and bubble tight check capabilities. The BC Series is a unidirectional version of the industry standard Apollo 70 Series ball valve.



FEATURES

- Blowout-proof stem
- RPTFE seats and stuffing box ring
- Adjustable packing gland
- Chromium plated ball
- Nitrile elastomers in check
- Positive shut-off and bubble-tight check capability
- 250 psi @ 200°F max

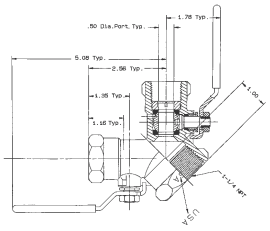
Dimensional Specifications

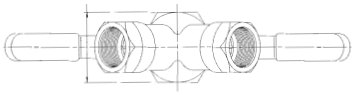
Number	Size	A	B	C	D	E	Wt./100
70-103-BC	1/2"	0.50	1.12	2.25	1.80	3.87	0.63
70-104-BC	3/4"	0.68	4.50	3.00	2.12	4.87	1.33
70-105-BC	1"	0.87	1.68	3.37	2.25	4.87	1.77
70-106-BC	1 1/4"	1.00	2.00	4.00	2.73	5.50	3.29
70-107-BC	1 1/2"	1.25	2.18	4.37	3.09	8.00	4.63
70-108-BC	2"	1.50	2.34	4.68	3.28	8.00	6.01

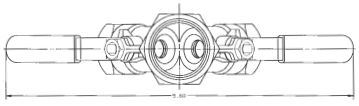
Specialty Valves 78-274-01 Series

Dual Wye Auto Drain Ball Valve

Dual action modular valve, ideal for compressor applications where safety exhaust may be needed for two air lines at once.







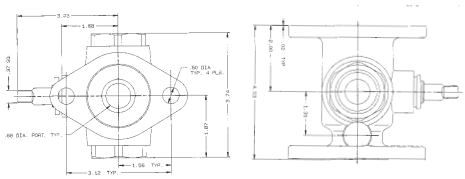
FEATURES

- 1-1/4" FNPT Inlet x (2) 3/4" FNPT outlets
- 600 CWP

Specialty Valves 78-970-01 Series

Hydronic3-Way, 4-Seated Ball Valve with Flanged Pump Connections

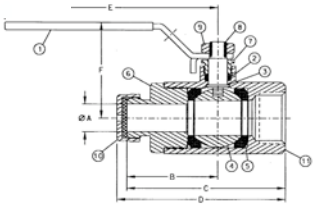
Can be used in hydronic geothermal or other HVAC applications where diversion of flow is required, along with positive shut-off. Designed to connect directly to circulator pump flange connections.



Specialty Valves 70-HC Series

Cap & Chain Valve with 3/4 Inch Hose Connection Heavy Brass Cap and Reverse Handle

Ideally suited for direct connections to hoses, valve features a securely attached cover with chain which prevents damage to hose threads. -200 model designed for soft soldering into lines without disassembly.



FEATURES

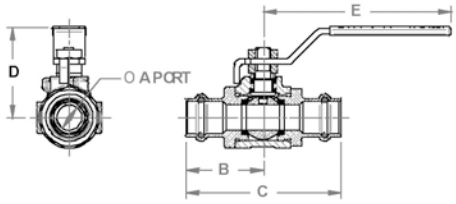
- Reverse handle is standard for easier installation
- Stainless steel lever & nut standard
- NPT and solder connections
- Chromium plated ball
- Blowout-proof stem design
- RPTFE seats and stuffing box ring
- Adjustable packing gland
- Full pressure rated brass hose cap
- -11 Therma-Seal® insulating handle option
- 70-14x-HC- SS ball and stem options

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F
70-103-HC	1/2 NPT x 3/4 Hose	0.50	1.68	2.81	2.97	3.87	1.75
70-104-HC	3/4 NPT x 3/4 Hose	0.68	1.96	3.50	3.67	4.87	2.12
70-105-HC	1 NPT x 3/4 Hose	0.87	2.24	3.92	4.16	5.28	2.43
70-203-HC	1/2 Solder x 3/4 Hose	0.50	1.68	3.14	3.28	3.89	1.75
70-204-HC	3/4 Solder x 3/4 Hose	0.68	1.96	3.94	4.09	4.89	2.12
70-195-HC	1 Solder x 3/4 Hose	0.87	2.24	4.49	4.73	5.28	2.43

Apollo-Press® Ball Valves 77W Series

Apollo Series 77W Apollo-Press® Ball Valves

Apollo 77W Series Apollo-Press® ball valves install in seconds, but the valve and the connection are made to last. Can be installed in most plumbing and heating systems including potable water. Not for use with natural gas.



FEATURES

- Full port
- Ridgid® "XL" Press Tool compatible
- MSS SP-110
- NSF/ANSI 61-8 2008 180°F
- Directive 2002/95/EC (RoHS) Compliant
- Made in the USA
- Blowout-proof stem
- 200 CWP, non-shock to 250°F
- Excellent for hydronic heating (50% glycol max)
- Compatible with most 77C Series options
- 77WLF Lead Free* option. NSF 61 Section 8, Annex F & G Listed 180°F

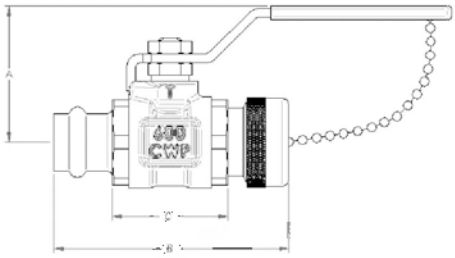
Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	Wt. (lbs)
77W-103-01	1/2	0.50	1.54	3.08	1.50	3.74	0.6
77W-104-01	3/4	0.75	1.78	3.55	2.01	4.78	1.1
77W-105-01	1	1.00	1.93	3.86	2.20	4.78	1.8
77W-106-01	1-1/4	1.25	2.44	4.87	3.13	7.04	4.3
77W-107-01	1-1/2	1.50	2.91	5.81	3.10	7.04	4.6
77W-108-01	2	2.00	3.74	7.47	3.48	7.04	8.2

Apollo-Press® Ball Valves 77W-HC Series

Apollo-Press®x Hose Cap & Chain Ball Valve

Designed for direct mechanical connection to ASTM B88-Type K,L, and M copper tubing in the hard drawn condition for sizes 1/2"-3/4". Valves feature a 3/4" hose connection with heavy brass cap to protect the threads and is full pressure rated.

Not for use with natural gas.



FEATURES

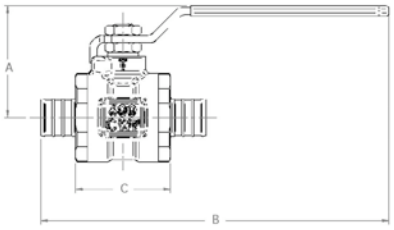
- Full Port
- Ridgid® "XL" Press Tool compatible
- Adjustable stem packing
- Blowout-proof stem design
- Corrosion resistant materials
- Made in the USA
- Silicone free
- MSS SP-110 ball valves
- ANSI/NSF 61 Section 8
- Directive 2002/95/CE (RoHS) compliant
- Heavy brass dust cover is full pressure rated
- Compatible with most 77C Series options

Model Number	Size (in.)	Dimensions (in.) A	B	C	Wt. (lbs)
77W-103-HC	1/2	1.80	3.12	1.54	0.61
77W-104-HC	3/4	2.01	3.45	1.72	1.09

Apollo Pex Ball Valves 77X Series

Apollo Series 77X Pex Ball Valve

Full port body, three-piece, bronze ball valve with integral crimp-ready PEX pipe end connections. Rated 32°F to 210°F, 200 psig. ASTM F1807 standard specification for metal insert fittings utilizing a copper crimp ring for SDR9 cross linked PEX tubing.



FEATURES

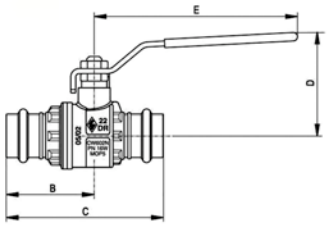
- Adjustable stem packing
- Blowout-proof stem design
- Silicon free
- MSS SP-110 ball valves
- Directive 2002/95/CE (RoHS) compliant

Model Number	Size (in.)	Dimensions (in.) A	B	C	Wt. (lbs)
77X-103-01	1/2	1.78	5.13	1.54	0.58
77X-104-01	3/4	1.98	6.26	1.72	1.03
77X-105-01	1	2.17	6.57	1.99	1.79

Forged Brass (International) 64W Series

Apollo International Apollo-Press® Ball Valves

Designed for direct mechanical connection to ASTM B88 Type K,L, and M copper tubing in the hard drawn condition for sizes 2-1/2"-4". Ideal for installation in plumbing and heating systems, including potable water.



FEATURES

- Full port
- Adjustable stem packing
- Blowout-proof stem
- Dezincification resistant brass body
- Maximum operating pressure based on press connection: 200 psi
- Valve design rating: 600 CWP
- Temperature range: 0°F-250°F
- MSS SP-110 ball valves
- UL Classified EPH
- Ridgid® "XL" Press Tool compatible

Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	Wt. (lbs)
64W0901	2-1/2	2-1/2	2.40	8.33	5.08	8.07	10.09
64W0001	3	3	2.87	9.07	5.51	8.07	15.6
64W0A01	4	4	3.82	10.63	6.30	10.24	24.5

OPTIONS

Optional Kits Valve Size	2" Stem Extensions	Lever Handles
2-1/2"-3"	78150501	78165002
4"	-	78165102

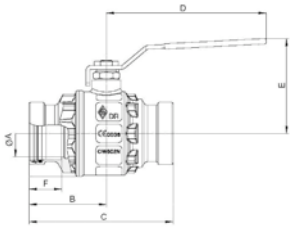
APPROVED APPLICATIONS

- Potable water
- Hydronic heating (50% glycol max)
- Not compatible with soft annealed copper tubing

Forged Brass (International) 64WC Series

Apollo International Apollo-Press® Ball Valves

Same features and design as the 64W Series except for the feature of being Ridgid® XL-C tool compatible.

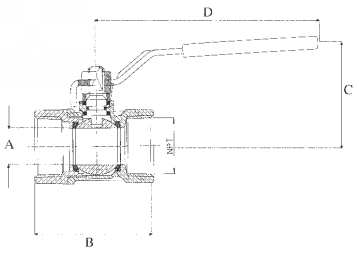


Model Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	Wt. (lbs)
64WC0901	2-1/2	2.40	3.94	7.30	8.07	5.08	1.65	9.0
64WC0001	3	2.87	4.63	8.60	8.07	5.51	1.97	14.6
64WC0A01	4	3.82	5.30	10.26	10.24	6.30	3.42	22.5

Forged Brass Ball Valves (International) 64 Series

Apollo International Full Port Brass Ball Valves

Economy full port forged brass ball valve with maximum flow; ideal choice for all plumbing applications. Lever handle is standard on all sizes.



FEATURES

- Sizes from 1/4" to 4"
- Threaded (-100) and solder end (-200) connections
- Pressure rated to 600 psig CWP non-shock, all sizes
- Adjustable stem packing nut
- Temperatures to 366°F (185°C)
- Blowout-proof stem
- Chrome plated brass ball
- Secondary o-ring stem seal
- PTFE seats, thrust bearing and stem packing

STANDARDS COMPLIANCE

- ANSI Z21.15.CGA9.1
- AGA No. 3-88
- ANSI B1.20.1
- ANSI B16.18
- CAN/CGA-3.16-M88
- ASME/ANSI B16.33
- ASME/ANSI B16.38
- MSS SP-110
- UL Guide YSDT
- UL Guide YRPV
- UL Guide VQGU
- ANSI/NSF 61-8
- RoHS Compliant
- ASME B16.44

Optional Kits Valve Size (in.)	Stem Extensions	Balancing Stops	Locking Handles	Lever Handles
1/4, 3/8 and 1/2	**78-1501-01**	**78-1506-01**	**78-1659-02**	**78-1646-01***
3/4 and 1	**78-1502-01**	**78-1507-01**	**78-1660-02**	**78-1647-01**
1-1/4 and 1-1/2	**78-1503-01**	**78-1508-01**	**78-1661-02**	**78-1648-01**
2	**78-1504-01**	**78-1509-01**	**78-1662-02**	**78-1649-01**
2-1/2 and 3	**78-1505-01**	-	-	**78-1650-01**
4	-	-	-	**78-1651-01**

Note: Lever handle available on 1/2" - 4". Kits are not UL marked.

64-100 (NPT)		Dimensions (in.)					
Model Number	Size (in.)	A	B	C	D	Cv	Wt. ea
64-101-01	1/4 NPT	0.39	2.02	1.75	3.85	6	0.33
64-102-01	3/8 NPT	0.39	2.02	1.75	3.85	7	0.30
64-103-01	1/2 NPT	0.59	2.44	1.88	3.85	19	0.51
64-104-01	3/4 NPT	0.78	2.71	2.28	4.80	34	0.80
64-105-01	1 NPT	0.98	3.07	2.44	4.80	50	1.25
64-106-01	1-1/4 NPT	1.25	3.42	3.07	6.02	104	2.26
64-107-01	1-1/2 NPT	1.57	3.89	3.34	6.02	268	3.39
64-108-01	2 NPT	1.96	4.33	3.79	6.37	309	4.25
64-109-01	2-1/2 NPT	2.56	5.59	5.02	8.07	629	8.60
64-100-01	3 NPT	3.15	6.45	5.45	8.07	1018	13.35
64-10A-01	4 NPT	3.94	7.60	6.34	10.23	1622	22.05

64-200 (Solder)		Dimensions (in.)					
Model Number	Size (in.)	A	B	C	D	Cv	Wt. ea
64-203-01	1/2	0.59	2.53	1.88	3.85	19	0.51
64-204-01	3/4	0.78	2.99	2.28	4.80	34	0.78
64-205-01	1	0.98	3.58	2.44	4.80	50	1.14
64-206-01	1-1/4	1.25	4.09	3.07	6.02	104	2.07
64-207-01	1-1/2	1.57	4.56	3.34	6.02	268	3.42
64-208-01	2	1.96	5.43	3.79	6.37	309	4.49
64-209-01	2-1/2	2.56	6.93	5.02	8.07	629	10.00
64-200-01	3	3.15	8.09	5.45	8.07	1018	15.00

Versatile Iron Ball Valves (International) IBV-125 Series (6P Series)

Cast Iron Full Port Class 125 Flanged Ball Valve

Meets MSS SP-72, ANSI B16.10 and federal WW-V-35 performance standards. Can be used to replace any IBBM gate valve or plug valve. Low profile handle for easy installation in tight areas.

FEATURES

- Full port design in all sizes offers superior flow rate
- No bronze seat rings, disc rings or stems to wear out
- Quarter-turn operation offers instant, positive shut off with zero leakage
- Gear operator standard for 8" and 10"
- Stainless steel ball resists corrosion
- Handle indicates valve operation status
- Large actuator mounting pad standard
- Blowout-proof stainless steel stem
- PTFE seats and packing, not nitrile or EPDM
- Opens and closes easily, without cheater bar

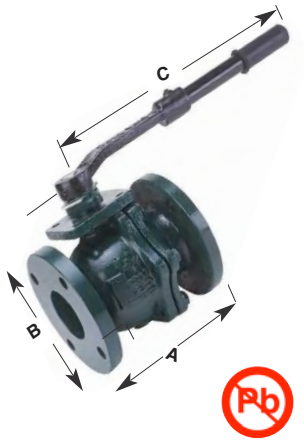
IBV Model No.	IBVE Model No.	Size (in.)	Dimensions (in.) A	B	C	D	Wt./100 (lbs.)
6P-208-01	6Q-208-01	2	7.00	6.00	9.00	3.00	22.0
6P-209-01	6Q-209-01	2-1/2	7.50	7.00	16.00	3.70	34.0
6P-200-01	6Q-200-01	3	8.00	7.50	16.00	4.00	38.0
6P-20A-01	6Q-20A-01	4	9.00	9.00	19.70	4.80	58.0
6P-20C-01	6Q-20C-01	6	10.50	11.00	26.00	7.20	118.0
6P-20E-01	6Q-20E-01	8*	11.50	13.50	-	9.24	345.0
6P-20G-01	-	10*	13.00	16.00	-	11.81	440.0

** with manual gear operator*

Versatile Iron Ball Valves (International) IBVE-125 Series (6Q Series)

Epoxy Coated Ductile Iron Full Port Class 125 Flanged Ball Valve

All of the same design and construction features of the IBV-125 plus an FDA-approved, heat fused epoxy coating making them ideal for corrosive water service as well as food contact applications. Rated 200 CWP @ 200°F



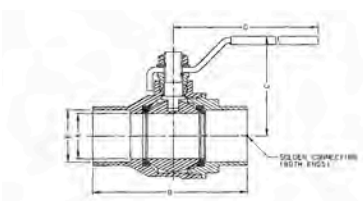
Forged Brass Economy Valves 94A Series

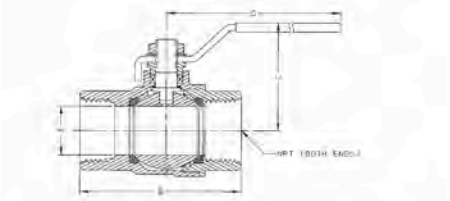
Apollo International Economy Full Port Ball Valves

Built for reliability with minimum investment. These full port ball valves with forged brass body are UL listed and CSA approved. 1/4"-2", 600 CWP. 2-1/2"-4", 400 CWP non-shock.

FEATURES

- Adjustable stem packing nut
- ANSI/NSF 61
- Silicone free
- 100% factory tested
- 94ALF Lead Free* option. NSF 61 Section 8, Annex F & G listed





CSA listed (File # 226234) per the following standards:

CAN 1-9.1	1/2 psig
CGA 3.16	125 psig
CGA CR91-002	5 psig
ANSI Z21.15	1/2 psig
ASME B16.44	5 psig
ANSI/ASME B16.33	125 psig

UL listed (File # MH18844) per the following guides:

LP-Gas Shut-Off Valves (YSDT)
Manual Valves (MHKZ)
Compressed Gas Shut-Off Valves (YQNZ)
Flammable Liquid Shut-Off Valves (YRBX)
Gas Shut-Off Valves (YRPV)

FM

ANSI/NSF 61 (1/4" - 2")

MSS-SP110

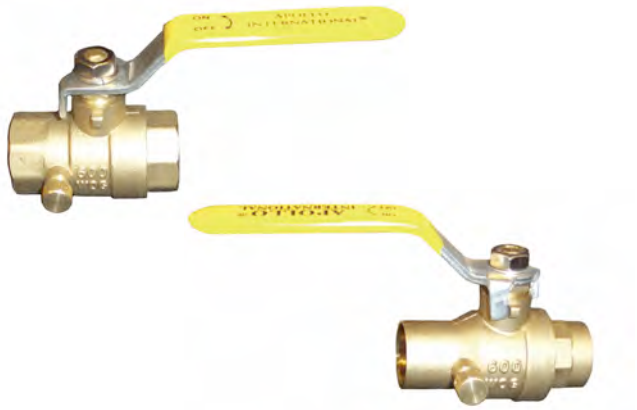
Size	Replacement Handles	2-1/4" Stem Extension + Memory Stop
1/4"-3/8"	W932400	78217101
1/2"	W932500	78217201
3/4"	W936000	78217301
1"	W932600	78217401
1-1/4"	W932700	78217501
1-1/2"-2"	W932800	78217601
2-1/2"-3"	W932900	78217701
4"	W933000	N/A

*Kits do not include nut.

Part No.	Size	A	NPT B	C	D	E	Wt. (Lb.)
94A-101-01	1/4"	0.395	1.746	1.278	3.543	-	0.33
94A-102-01	3/8"	0.407	1.756	1.278	3.543	-	0.30
94A-103-01	1/2"	0.583	2.047	1.921	3.543	-	0.44
94A-104-01	3/4"	0.748	2.362	2.087	3.780	-	0.66
94A-105-01	1"	0.945	2.756	2.559	4.528	-	1.10
94A-106-01	1-1/4"	1.260	3.307	2.953	4.528	-	1.57
94A-107-01	1-1/2"	1.575	3.661	3.346	5.512	-	2.40
94A-108-01	2"	1.969	4.181	3.681	5.512	-	3.37
94A-109-01	2-1/2"	2.520	5.378	4.764	8.661	-	7.60
94A-100-01	3"	2.953	6.039	5.079	8.661	-	9.36
94A-10A-01	4"	3.945	7.386	5.868	9.606	-	16.86
Solder							
94A-203-01	1/2"	0.583	2.047	1.839	3.543	0.630	0.38
94A-204-01	3/4"	0.748	2.748	1.996	3.780	0.878	0.64
94A-205-01	1"	0.945	3.228	2.441	4.528	1.130	0.99
94A-206-01	1-1/4"	1.260	3.819	2.854	4.528	1.378	1.40
94A-207-01	1-1/2"	1.575	4.425	3.169	5.512	1.630	2.17
94A-208-01	2"	1.969	5.315	3.449	5.512	2.130	2.97
94A-209-01	2-1/2"	2.520	6.263	4.764	8.661	2.630	6.36
94A-200-01	3"	2.953	7.150	5.079	8.661	3.130	8.32
94A-20A-01	4"	3.945	7.386	5.868	9.606	4.130	15.78

International Economy Valves 95A Series

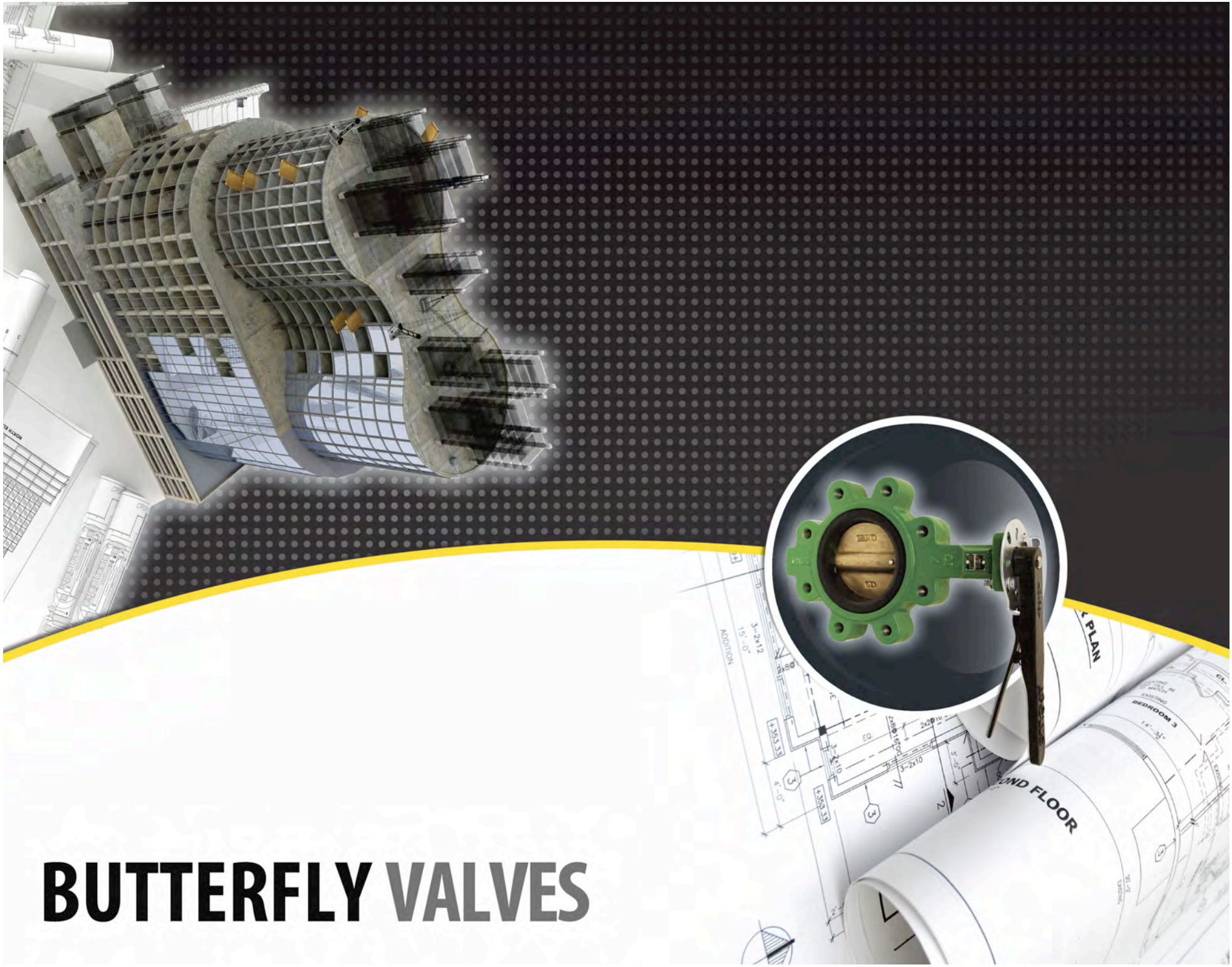
Apollo International Economy Full Port Ball Valve with Stop & Waste



FEATURES

- Pressure rated to 600 psig CWP
- Temperatures to 300°F (148.8°C) max
- Suitable for water, oil and gas
- Adjustable packing nut
- Compact
- Full port design
- Ideal for draining in any plumbing or hydronic heating system

Threaded	Sweat	Size (in.)
95A-303-01	95A-403-01	1/2
95A-304-01	95A-404-01	3/4
95A-305-01	95A-405-01	1



BUTTERFLY VALVES

General Purpose Butterfly Valves

Apollo International LD/WD 141 Series

The Apollo LD141/WD141 Series ductile iron butterfly valves are ideal for use in industrial and HVAC/mechanical applications. The WD141 Series is a wafer style valve and the LD141 Series is a companion lug style.

WD 141 Wafer

LD 141 Lug

FEATURES

- Compatible with ANSI 125# & 150# flanges
- ISO 5211 top plate allows choice of apollo pneumatic actuators and manual operators
- Conforms to MSS SP-67 & API 609
- LD141 Series suitable for end of line service to rated pressure
- 3"-24" meet performance requirements of AWWA C-504

PRESSURE RATINGS

- 2" to 12": 200 psi
- 14" to 24": 150 psi

***Torque Rating (in. lbs.)**

Valve Size (in.)	(mm)	Full Rated Pressures (psig) ΔP50	ΔP100	ΔP150	ΔP200	Flow Cv Full Open
2	50	100	106	111	117	115
2.5	65	150	163	176	189	196
3	80	207	220	232	244	302
4	100	290	323	357	390	600
5	125	423	481	540	598	1022
6	150	599	691	783	875	1579
8	200	1060	1183	1307	1430	3136
10	250	1671	1872	2074	2275	5340
12	300	2568	2795	3023	3250	8250
14	350	2640	3070	3500	N/A	11917
16	400	4260	4880	5500	N/A	16388
18	450	6287	7243	8200	N/A	21705
20	500	8360	9180	10000	N/A	27908
24	600	15427	16813	18200	N/A	43116

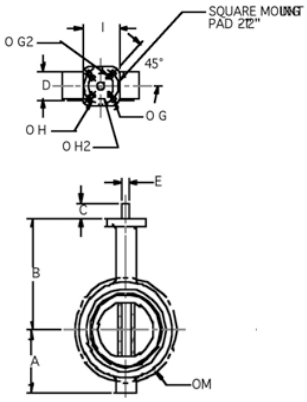
*Lubricating media service

XX 141 - XX - X X - 1 - X

Series	Size	Disc Material	Seat Material	Operator
WD141 = Wafer body LD141 = Lug body	02 = 2"" 25 = 2.5" 03 = 3" 04 = 4" 05 = 5" 06 = 6" 08 = 8" 10 = 10" 12 = 12" 14 = 14" 16 = 16" 18 = 18" 20 = 20" 24 = 24"	B = Aluminum bronze D = Ductile iron A536 nickel plated S = Stainless steel, CF8M	E = EPDM -30°F to 275°F N = Buna-N 10°F to 180°F	0 = None (bare stem) 1 = 10 position handle 2 = Gear operatore 3 = Infinite position handle 4 = Locking handle 5 = Gear operator w/ chainwheel 7 = Locking gear operator 8 = Locking gear operator w/chainwheel

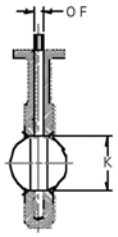
General Purpose Butterfly Valves

Apollo International LD/WD 141 Series

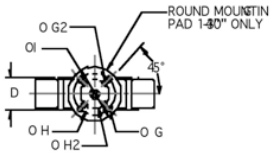


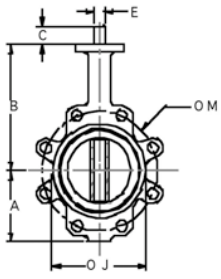
DOUBLE-D AND KEYED STEM

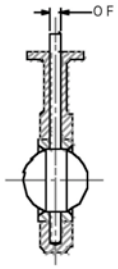
Size (in)	Size (mm)	Dimensions A	B	C	D	E	ØF	G	G2	Key
2	50	3.25	6.375	1.25	1.75	0.394	0.496	0.375	--	--
2-1/2	65	3.75	6.880	1.25	1.88	0.394	0.496	0.375	--	--
3	80	4.00	7.130	1.25	1.88	0.394	0.496	0.375	--	--
4	100	4.88	7.880	1.25	2.13	0.472	0.621	0.375	--	--
5	125	5.38	8.380	1.25	2.25	0.551	0.745	0.375	--	--
6	150	5.88	8.880	1.25	2.25	0.551	0.745	0.375	--	--
8	200	7.13	10.250	1.75	2.50	0.669	0.870	0.563	0.438	--
10	250	8.25	11.500	1.88	2.75	0.866	1.120	0.563	0.438	--
12	300	9.75	13.250	1.88	3.13	0.866	1.244	0.563	--	--
14	350	11.00	14.500	1.88	3.13	0.945	1.244	0.563	--	--
16	400	12.00	15.750	2.00	3.50		1.313	0.563	--	.313 sq
18	450	14.38	16.630	2.00	4.25		1.500	0.813	--	.375 sq
20	500	14.63	18.880	2.50	5.25		1.625	0.813	--	.375 sq
24	600	18.00	22.130	2.75	6.13		2.000	0.813	--	.500 sq



Size (in.)	Dimensions H	H2	I	J	K	L	N (141)	M	# Holes	Tap UNC
2	2.756	--	2.699	4.00	2.09	1.113	0.688	4.75	4	.625-11
2-1/2	2.756	--	2.699	4.75	2.54	1.706	0.688	5.50	4	.625-11
3	2.756	--	2.699	5.13	3.09	2.450	0.688	6.00	4	.625-11
4	2.756	--	2.699	6.75	4.09	3.488	0.688	7.50	8	.625-11
5	2.756	--	2.699	7.75	4.85	4.296	0.813	8.50	8	.750-10
6	2.756	--	2.699	8.63	6.13	5.697	0.813	9.50	8	.750-10
8	4.921	4.015	4.606	10.56	7.89	7.468	0.813	11.75	8	.750-10
10	4.921	4.015	4.606	13.06	9.89	9.484	0.938	14.25	12	.875-9
12	4.921	--	4.606	16.00	11.89	11.456	0.938	17.00	12	.875-9
14	4.921	--	ø5.91	17.13	13.38	13.000	1.060	18.75	12	1.00-8
16	4.921	--	ø5.91	20.00	15.38	14.970	1.060	21.25	16	1.00-8
18	6.496	--	ø8.27	21.38	17.38	16.847	1.250	22.75	16	1.125-7
20	6.496	--	ø8.27	23.31	19.38	18.650	1.250	25.00	20	1.125-7
24	6.496	--	ø8.27	27.88	23.38	22.558	1.380	29.50	20	1.125-7





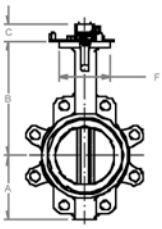


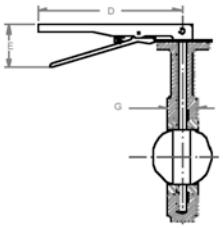
Valve (in.)	(mm)	Weight (lbs) WD141 Series	LD141 Series
2	50	6	8
2-1/2	65	6	10
3	80	7	11
4	100	11	17
5	125	113	20
6	150	16	23
8	200	29	39
10	250	44	62
12	300	70	97
14	350	-	148
16	400	-	206
18	450	-	277
20	500	-	410
24	600	-	592

Contractor Grade Butterfly Valves

Apollo International LC149 Series

The Apollo LC149 Series cast iron butterfly valves are ideal for use in Industrial and HVAC/Mechanical applications. The LC149 Series is a lug style valve designed to be economical yet have high pressure capabilities.

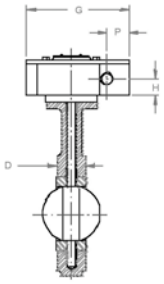


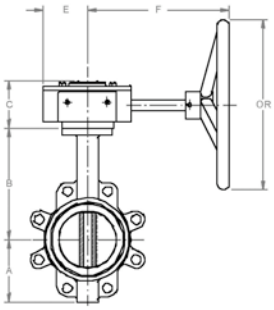


FEATURES

- Compatible with ANSI 125# & 150# flanges
- ISO 5211 top plate allows choice of Apollo pneumatic actuators and manual operators
- "Double-D" stem design
- Conforms to MSS SP-67 & API 609 & ISO 5752
- Suitable for end of line service to rated pressure
- Extended neck for up to 2" of insulation
- Max operating pressure, 200 psi; temperature range, -30°F to 275°F

Size (in)	Dimensions						
	A	B	C	D	E	F	G
2	3.25	6.38	1.25	10.50	3.00	2.70	1.75
2-1/2	3.75	6.88	1.25	10.50	3.00	2.70	1.88
3	4.00	7.13	1.25	10.50	3.00	2.70	1.88
4	4.88	7.88	1.25	10.50	3.00	2.70	2.13
5	5.38	8.38	1.25	10.50	3.00	2.70	2.25
6	5.88	8.88	1.25	10.50	3.00	2.70	2.25
8	7.13	10.25	2.00	14.00	3.75	4.61	2.50





Size (in)	Dimensions									
	A	B	C	D	E	F	G	H	P	ØR
6	5.88	8.88	3.38	2.25	3.09	9.16	7.20	1.45	1.58	11.88
8	7.13	10.25	3.38	2.50	3.25	9.48	8.00	1.62	1.50	11.88
10	8.25	11.50	3.38	2.75	3.25	9.48	8.00	1.62	1.50	11.88
12	9.75	13.25	3.38	3.13	3.25	9.48	8.00	1.62	1.50	11.88

***Torque Rating (in. lbs.)**

Valve Size (in.)	(mm)	Full Rated Pressures (psig)				Flow
		ΔP50	ΔP100	ΔP150	ΔP200	Cv Full Open
2	50	100	106	111	117	115
2.5	65	150	163	176	189	196
3	80	207	220	232	244	302
4	100	290	323	357	390	600
5	125	423	481	540	598	1022
6	150	599	691	783	875	1579
8	200	1060	1183	1307	1430	3136
10	250	1671	1872	2074	2275	5340
12	300	2568	2795	3023	3250	8250

*Lubricating media service

LC149 - XX - X

Series	Size	Operator
LC149 = Lug body	02 = 2""	0 = None (bare stem)
	25 = 2.5"	1 = 10 position handle
	03 = 3"	2 = Gear operatore
	04 = 4"	3 = Infinite position handle
	05 = 5"	4 = Locking handle
	06 = 6"	5 = Gear operator w/ chainwheel
	08 = 8"	
	10 = 10"	7 = Locking gear operator
	12 = 12"	8 = Locking gear operator w/chainwheel


Apollo ACTUATION
www.apollovalves.com
ACTUATION

Pneumatic Actuators

Apollo® Rack & Pinion

Designed and manufactured for the ultimate in durability and reliability, the new Apollo® Pneumatic Rack & Pinion Actuators provide outstanding service life.

Apollo Actuation's new Rack & Pinion actuator reintroduces the replaceable insert drive adapters in all but the largest models. Many units retain dual "F" series bolt patterns and this combination of features will facilitate direct mounting of several valve styles.

FEATURES

- **Cast Aluminum Body**
  Yellow chromate coated
  polyester powder coat finish
- **Die Cast Aluminum End Caps**
  Yellow chromate coated
  polyester powder coat finish
- **Die Cast Aluminum Pistons**
  Yellow chromate coated
- **Aluminum Alloy Pinion**
  7075-T6 hard-coat anodized finish
- **Drive Inserts**
  Extruded aluminum
  Hard-coat anodized finish
- **Preloaded Concentric Springs**
  Deltatone® coated
- **Piston Guides**
  Molybdenum disulfide filled
  polyamide
- **Bushings**
  Polyoxymethylene (POM)
- **O-Ring Seals**
  Standard Temp. (-4°F to 180°F): Buna-N
  High Temp. (-4°F to 250°F): Fluorocarbon
  Low Temp. (-40°F to180°F): Silcone
- **Capscrews, Nuts & Other Hardware**
  304 stainless steel

APOLLO® PNEUMATIC ACTUATOR NUMBERING SYSTEM

AX - XXXX - X - XX - X - X

Action	Size	Seal Option	Spring Set	Limit Stop	Insert
D - Double Actiong S - Spring Return K - Kit	0012* 0025 0040 0065 0100 0150 0200 0350 0600 0950 1600 2500* 4000*	N - Nitrile (Normal temp range, -4° to 175°F) H - Fluorocarbon (High temp range, -4° to 250°F) L - Silicone (Low temp range, -40° to 175°F)	A-00 (DA) 01 02 03 04 05 06 07 08 10 12 14	0- None** (Std. on sizes 0012, 2500, & 4000) 1 -Single Adjustable Limit Stop (For sizes 0025 thru 1600 only) 2 -Dual Adjustable Limit Stops (For sizes 0025 thru 1600 only)	A - STD B - Without

** Units with no adapters option*
*** Optional double stroke adjustment plate is available for 2500 & 4000 (see price list)* ***Notes:*** *Add suffix "F" for fail open units*

Automation Product
AE Series

Apollo® AE Series Electric Actuators

Ruggedly built and designed for easy installation, new Apollo® AE Series electric actuators deliver the most standard features and performance in their class – for a surprisingly low price. Five output torques, one housing 200, 400, 600, 800 and 1,000 inch-pounds.

FEATURES

- Long service life
- Newly developed anodized die cast aluminum housing
- Fiberglass reinforced nylon cover with UV stabilizers resists corrosion
- Nitrile gasket and seals cover all penetration points in housing and cover
- Precision cut and heat treated alloy spur gears
- Permanently lubricated enclosed gear train
- Stainless steel push-and-turn manual override shaft, position indicator shaft and female output
- ISO 5211 F07 drive output reduces inventory of mounting kits
- 115 AC, 220 AC and 24 AC -- All AC models feature a 25% duty cycle below 100˚F
- 12 and 24 DC -- All DC voltage models provide 100% duty cycle for 1 hour after which DC motor is reduced to 80% duty cycle
- Operates from -40˚F (when equipped with heater and thermostat) to 150˚F
- Actuators can be ordered with one, two or three additional limit switches
- For low temperatures: actuators can be equipped with a thermostatically controlled heater element
- Motor brake is necessary when mounting actuator to a butterfly valve

AE - X - X XXX

Torque	Voltage	Options	
200 400 600 800 1000 Enter all digits of Torque Value	1 – 115 vac 2 – 24 vac 3 – 220 vac 4 – 12 vdc 5 – 24 vdc	0 – Standard A – One extra switch & cam B – Two extra switches & cams C – Three extra switches and cams D – Heater and Thermostat (15 watt) F – Motor Brake (115 VAC & 24 VAC Only) P - Positioner 4-20 mA T - Transmitter 4-20 mA	

Actuator Accessories

Valve Position Monitors, Solenoids, and Positioners

VALVE POSITION MONITORS

Here's the ultimate in valve monitoring: Position monitors feature a high visibility, color-coded indicator to display valve position. All monitors are designed to correspond to the latest NAMUR standard for actuator/position monitoring units. Plated steel or stainless steel mounting kits are available to provide a pre-engineered mounting solution for maximizing position monitor performance and direct mounting to actuators. Other brands also available. See our Actuator Catalog for details.

SOLENOIDS

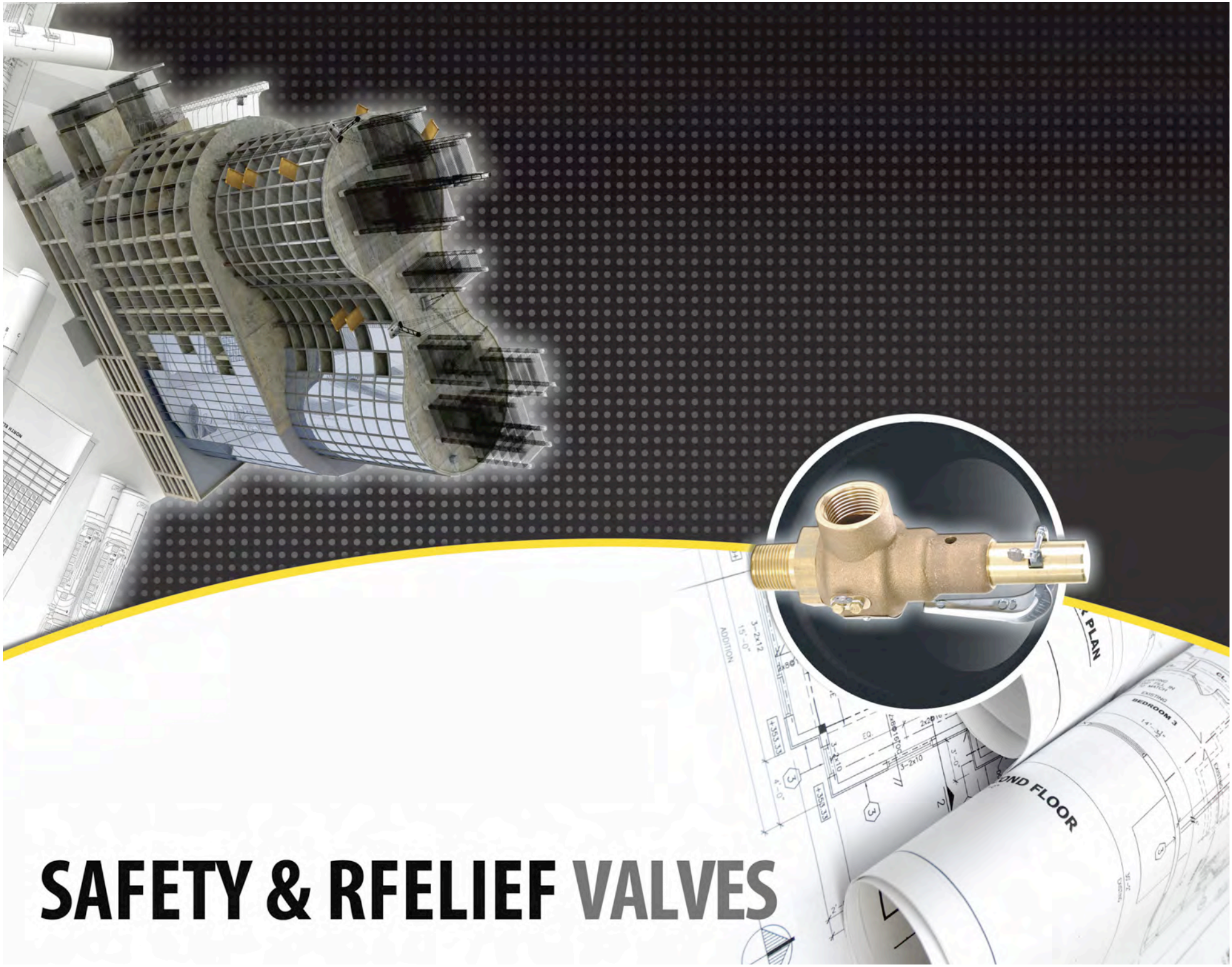
Apollo® actuators can be supplied with solenoids manufactured by AVC (Automatic Valve Company). Our 3/4 way, field convertible, direct mount (NAMUR pattern) solenoid valves feature a variety of interchangeable integrated molded coils. They're compatible with both spring return and double acting actuators.

POSITIONERS

Apollo valve positioners are excellent tools for increasing the gain of your valve package, often reducing your actuator size due to your increased ability to accurately control higher air deliveries, and the flexibility to add options and accessories to complete your control package's performance.

Their simple design makes PMV positioners (shown here) easy to understand, calibrate and repair. Rugged construction provides operation in a variety of tough applications. Compact size minimizes space requirements. A complete package means the user can select the right positioner for his application. A bright indicator makes it easy for operators to visually check the valve position. Spool valve design requires very little maintenance. The electro-pneumatic unit eliminates the need for an extra product and additional connections. PMV positioners are proven products recognized for providing years of reliable service. Other brands are also available from your Apollo distributor.

Apollo offers both pneumatic and electro-pneumatic positioners as standard. Pneumatic positioners may be used on either double acting or spring return actuators. The anodized aluminum housing provides excellent product integrity and good corrosion resistance. Options include special coatings, stainless steel housings and a variety of accessory items which can help you meet your most demanding control applications. See our Actuator Catalog for complete details.



SAFETY & RFELIEF VALVES

ASME Section IV Hot Water Relief Valves RVW10 (10) Series

Section IV ASME Hot Water Relief Valves

These capacity-certified relief valves protect against excessive water pressure (from thermal expansion) and steam generated when Btu input controls fail. Valves comply with ASME Section IV requirements. Ideal for use with hot water boilers and heating systems.

HV

10-102 & 10-303

10-104 & 10-301

10-321

10-408 & 10-418

10-407 & 10-417

10-624 & OEM Style

FEATURES

- Pressures from 20 to 150 psig
- Brass or bronze body available with optional satin or polished chrome finish
- Maximum temperature service: 250°F
- 10-321 in polished chrome only
- Registered in all Canadian Provinces and Territories, CRN #0G8547.5C
- Stainless steel springs standard except 10-214
- 10-624/634 are high capacity safety relief valves ideal for OEM applications
- 10-418/417 are ideal for use in swimming pool heater applications

SUFFIX KEY Part Number Pressure psig	Plain Brass	Satin Chrome	Polished Chrome
20	-02	-41	-67
22	-03	-42	-68
25	-04	-43	-69
30	-05	-44	-70
35	-06	-45	-71
40	-07	-46	-72
43	-08	-47	-73
45	-09	-48	-74
50	-10	-49	-75
55	-11	-50	-76
60	-12	-51	-77

Note: *When ordering, specify pressure and finish by adding the two digit suffix after the product number, i.e. 10-102-05: 3/4" FNPT x 1" FNPT at 30 psig with plain brass finish.*

Part Number	Size(in.) Inlet NPT	Size(in.) Outlet NPT	Certified Pressure Range psig	Height (in.)	Wt./100 (lbs.)	*Certified Capacity 30 psig	40 psig	50 psig	75 psig
10-102	3/4 F	1 F	20-60	3.31	105	710,000	870,000	1,035,000	-
10-104	3/4 M	1 F	20-60	3.75	109	710,000	870,000	1,035,000	-
10-301	3/4 M	3/4 F	20-60	3.75	114	550,000	675,000	805,000	-
10-303	3/4 F	3/4 F	20-60	3.31	115	550,000	675,000	805,000	-
10-321	3/4 M	3/4 F	20-60	3.75	123	425,000	525,000	625,000	-
10-407	3/4 M	3/4 F	30	3.00	62	535,000	–	-	-
10-408	3/4 F	3/4 F	30	2.75	65	535,000	–	-	-
10-417	3/4 M	3/4 F	20-80	3.00	62	477,000	587,000	697,000	972,000
10-418	3/4 F	3/4 F	20-80	2.75	65	477,000	587,000	697,000	972,000

**National Board Capacity Certified – BTU Per Hour (90% of actual capacity at 10% accumulation). ASME boiler and pressure vessel code – Section IV – Heating Boilers*

Part	Size(in.) Inlet	Size(in.) Outlet	Certified Pressure Range	Height	Wt./100	*Certified Capacity 30	75	100	125	150
10-624	3/4 M	3/4 F	30-150	4.62	106	689,000	1,405,000	1,802,000	2,199,000	2,597,000
10-634	3/4 F	3/4 F	30-150	4.62	106	689,000	1,405,000	1,802,000	2,199,000	2,597,000

Note: *To order 10-620 series add pressure set point to the end of base number (i.e. 10624150=150psig).*

ASME Section VIII Safety Valves RVS32 & RVS52 (10-322, 10-512) Series

National Board capacity certified safety valves; brass body with optional satin or polished chrome finish. Protects against excess pressure from thermal expansion and steam caused by failure of BTU input controls. Ideally suited for OEM applications such as steam cookers, autoclaves, sterilizers, coffee makers and similar equipment.

10-512

10-322

Set Pressure	*Certified Capacities 10-322 lbs./hr.	10-512 lbs./hr.
15	-	151
20	325	178
25	375	205
30	425	232
35	475	258
40	525	285
45	575	312
50	625	339
55	675	366
60	725	392

** ASME (UV) Rating – 90% of actual capacity at 10% accumulation. Capacity in lbs. of saturated steam per hour*

FEATURES

- Pressure settings 15 to 60 psig
- Discharge capacities to 725 lbs./hr.
- Stainless steel springs
- 10-322 in polished chrome only
- Registered in all Canadian Provinces and Territories, CRN #0G8547.5C

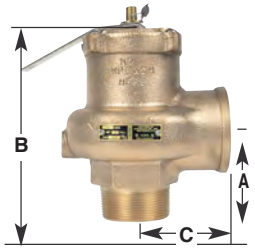
Part Number	Size(in.):	Inlet NPT	Outlet NPT	Pressure Range psig	Height (in.)	Wt./100 (lbs.)
10-322		3/4 M	3/4 F	20-60	3.75	128
10-512		1/2 M	1/2 F	15-60	2.62	58

10	-	XXX	-	X	-	XX	-	X
		512 = 1/2 x 1/2 322 = 3/4 x 3/4		B - Plain Brass S - Satin Chrome P - Polished Chrome		Set Pressure in PSIG (2 digits)		B - BSPP Connections CE -PED/CE S - Stainless Steel Trim V - Viton X - Outlet not threaded

ASME Section IV Low Pressure Steam Safety Valves RVS14 (14-200) Series

High Capacity Low Pressure Steam Boiler Safety Valves

National Board capacity certified in accordance with ASME Section IV at 15 psig. For commercial and industrial boilers. Capacities up to 6843 lbs./hr.



HV

FEATURES

- PTFE coated o-ring for positive seal
- One piece body, all bronze construction
- rust proofed steel spring
- Nozzle type chrome plated seat
- Optional test gag available to allow hydrostatic testing (add "G" suffix to pressure code when ordering)
- Registered in all Canadian Provinces and Territories, CRN #0G8547.5C

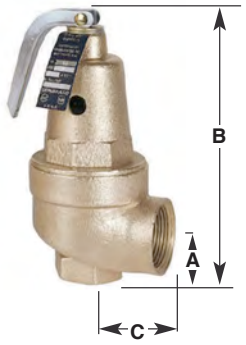
Part Number	Size (in.)	*Capacity lbs./hr.	Wt./Each (lbs.)	Dimensions (in.) A	B	C
14-205-08	2 x 2	3150	8.4	3.00	7.12	3.12
14-206-08	2-1/2 x 2-1/2	4676	13.0	3.50	8.25	3.50
14-207-08	3 x 3	6843	17.0	4.12	9.37	3.87

**National Board Capacity Certified at 15 psig.(90% of actual capacity at 33% accumulation.)*
*Note: When ordering specify pressure by adding the two digit key number after the part number as follows: 5 psig - **03**; 6 psig - **04**; 8 psig - **05**; 10 psig - **06**; 12 psig - **07**; 15 psig - **08***

ASME Section IV Hot Water Relief Valves RVW60/61 (10-600) Series

Section IV ASME Hot Water Relief Valves

High-capacity heating valves with female inlet, expanded or standard female outlet. Elevated seat for drainage of water away from seat area. Entire pressure range is National Board capacity certified.



HV

FEATURES

- High BTU capacity rating
- Silicone seat
- Fabric reinforced molded diaphragm isolates spring from water at all times
- Bronze body and spring cage
- Maximum temperature service 250°F
- Registered in all Canadian Provinces and Territories, CRN #0G8547.5C
- Protects against excessive water pressure due to failure of controls to regulate BTU input

Part Number	Size(in.) Inlet NPT	Size(in.) Outlet NPT	Pressure Range psig	Wt./100 (lbs.)	Dimensions (in.) A	B	C
10-604	3/4F	3/4F	15-160	232	1.03	5.25	1.62
10-614	3/4F	1 F	15-160	226	1.03	5.25	1.72
10-605	1F	1F	15-160	410	1.25	6.69	2.00
10-615	1 F	1-1/4F	15-160	390	1.25	6.69	2.00
10-606	1-1/4F	1-1/4F	15-160	795	1.25	8.37	2.47
10-616	1-1/4F	1-1/2F	15-160	755	1.25	8.37	2.47
10-607	1-1/2F	1-1/2F	15-160	1100	2.00	10.75	2.75
10-617	1-1/2F	2F	15-160	1145	2.00	10.75	2.75
10-608	2F	2F	15-160	2375	2.19	14.00	3.69
10-618	2F	2-1/2F	15-160	2315	2.19	14.00	3.66

Use Suffix No. to designate last two digits of Product No. for desired pressure. Other pressure settings available upon request.
BTU/HR at 10% over-pressure. National Board Certified. Ratings are 90% of actual at 10% accumulation.

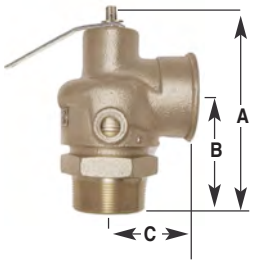
Pressure psig	Suffix Number	3/4 x 3/4 10-604	1 x 1 10-605	1-1/4 x 1-1/4 10-606	1-1/2 x 1-1/2 10-607	2 x 2 10-608
30	-05	827,000	1,339,000	2,316,000	3,151,000	5,193,000
50	-10	1,209,000	1,956,000	3,384,000	4,604,000	7,589,000
60	-12	1,399,000	2,265,000	3,918,000	5,331,000	8,786,000
75	-15	1,686,000	2,728,000	4,720,000	6,421,000	10,583,000
100	-20	2,162,000	3,500,000	6,055,000	8,238,000	13,577,000
125	-25	2,639,000	4,272,000	7,390,000	10,054,000	16,571,000
150	-34	3,116,000	5,044,000	8,725,000	11,871,000	19,565,000

Pressure psig	Suffix Number	3/4 x 1 10-614	1 x 1-1/4 10-615	1-1/4 x 1-1/2 10-616	1-1/2 x 2 10-617	2 x 2-1/2 10-618
30	-05	970,000	1,570,000	2,716,000	3,696,000	6,091,000
50	-10	1,418,000	2,295,000	3,969,000	5,400,000	8,900,000
60	-12	1,641,000	2,657,000	4,596,000	6,252,000	10,305,000
75	-15	1,977,000	3,200,000	5,535,000	7,531,000	12,412,000
100	-20	2,536,000	4,105,000	7,101,000	9,661,000	15,924,000
125	-25	3,096,000	5,011,000	8,668,000	11,792,000	19,435,000
150	-34	3,655,000	5,916,000	10,234,000	13,923,000	22,947,000

ASME Section IV Low Pressure Steam Safety Valves RVS12 (12-200) Series

Economy Low Pressure Steam Heating Boiler Safety Valves

Use on medium and large commercial steam heating boilers. National Board capacity certified at 15 psig: PTFE coated O-ring seat seal.



HV

FEATURES

- All bronze construction
- 3/8" NPT side tapping for drain
- Top guide, rust proof steel spring
- High capacity
- Registered in all Canadian Provinces and Territories, CRN #0G8547.5C

Part Number	Size(in.) Inlet NPT	Outlet NPT	Max. Pressure psig	Capacity* lbs./hr.	Wt./100 (lbs.)	Dimensions (in.) A	B	C
12-205	2	2	15	2500	514	6.00	3.75	2.62
12-206	2-1/2	2-1/2	15	3529	835	8.50	5.25	3.06
12-208	3	3	15	4100	1162	9.50	6.00	3.75

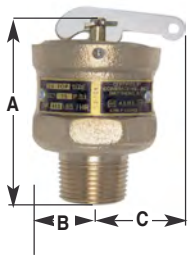
Note: When ordering specify pressure by adding the two digit key number after the product number as follows: 5 psig - 03; 6 psig - 04; 8 psig - 05; 10 psig - 06; 12 psig - 07; 15 psig - 08
**National Board Capacity Certified-(15 psi rating, 90% of actual capacity at 33% accumulation.)*

ASME Section IV Low Pressure Steam Safety Valves RVS13 (13) Series

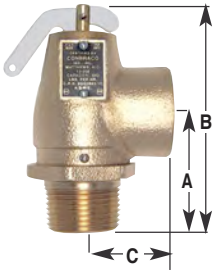
Low Pressure Steam Heating Boiler Safety Valves

National Board capacity certified at 15 psig in accordance with ASME Section IV; optional rough or polished chrome finish; positive drainage of condensate from seat area.

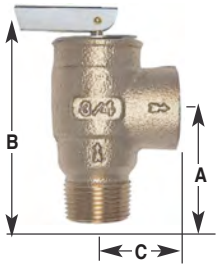
HV



13-101



13-200



13-511

FEATURES

- Flat seat, PTFE faced disc for positive seal
- Standard set pressure of 15 psig, capacities apply to valves set at 15 psig
- No. 13-101 is top outlet discharge
- Registered in all Canadian Provinces and Territories, CRN #0G8547.5C

Part Number	Size(in.) Inlet NPT	Outlet NPT	Pressure psig	Max. Capacity* lbs./Hr.	Wt./100 (lbs.)	Dimensions (in.) A	B	C
13-101-B15	3/4 M	Top	15	410	64	2.87	0.94	1.250
13-211-B15	3/4 M	3/4 F	15	475	107	1.81	3.69	1.437
13-202-B15	1 M	1 F	15	643	110	2.06	3.87	1.218
13-213-B15	1-1/4 M	1-1/2 F	15	1200	218	2.53	4.50	1.875
13-214-B15	1-1/2 M	2 F	15	1900	320	3.00	5.25	2.187
13-511-B15	3/4 M	3/4 F	15	407	62	1.69	3.25	1.187
13-512-B15	3/4 F	3/4 F	15	407	59	1.81	2.75	1.187

**National Board Capacity Certified at 15 psig (90% of actual capacity at 33% accumulation.)*

Notes:
1) Pressure settings available: 5 to 15 psig in 1psig increments
2) Per ASME Code Section IV only 15 psi settings are "HV" and "NB" stamped

13 - XXX - X - XX - X

XXX	X	XX	X
101 = 3/4"M x Top 211 = 3/4"M x 3/4"F 202 = 1"M x 1"F 213 = 1-1/4" M x 1-1/2"F 214 = 1-1/2"M x 2" 511 = 3/4"M x 3/4"F 512 = 3/4"F x 3/4"F	B - Plain Brass S - Satin Chrome* P - Polished Chrome*	Set Pressure in PSIG (2 digits)	A - Air Service (non-ASME)

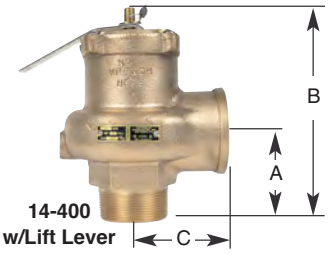
**Satin or polished chrome available for models 13-211 and 13-511 only Other models POA.*

Non-Code Air Relief Valves RVA14 (14-400/500) Series

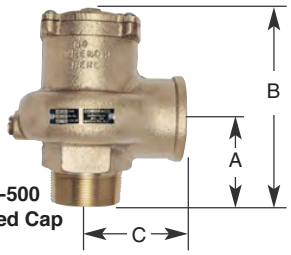
High volume air relief valves designed for non-ASME code low pressure air and gas service. Rugged bronze construction features elastomer soft seating and TFE coated discs. Standard test lever for model 14-400 and optional plain cap, weather resistant sealed body for model 14-500.

FEATURES

- Vibration resistant soft seat is standard
- Stainless steel spring
- One piece unified bronze body design
- High flow "top-guided" design
- Inlet sizes 2", 2-1/2", and 3"
- Set pressures 4 to 22 psig @ 400°F max



14-400
w/Lift Lever



14-500
Sealed Cap

Part Number	Size (in./mm.)	Dimensions(in./mm.) A	B	C	Wt./Ea (lbs./kg.)
14-X05	2 x 2 *50M x 50F*	3 *76*	6-1/2 *165*	3-1/8 *79*	8.4 *3.81*
14-X06	2-1/2 x 2-1/2 *65M x 65F*	3-1/2 *89*	7-5/8 *194*	3-1/2 *89*	12.5 *5.7*
14-X07	3 x 3 *80M x 80F*	4-1/8 *105*	8-3/4 *222*	3-7/8 *98*	17.0 *7.7*

14 - X - XX - XX

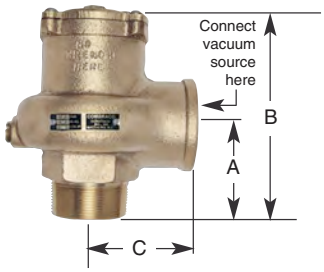
4 = Air Relief, with Test Lever 5 = Air Relief, Sealed Cap	05 = 2" NPT 06 = 2-1/2" NPT 07 = 3" NPT	Set Pressure in PSIG (2 digits) 04-22

Vacuum Relief Valves RVV14 (14-600) Series

High flow vacuum relief valves feature one piece cast bronze bodies, teflon coated discs and elastomer soft seating provide accurate and dependable operation. Ideal for use with high volume vacuum systems, bulk hauling tanks and trailers, powdered solids/bulk handling and pneumatic conveying equipment.

FEATURES

- Weather resistant construction
- Elastomer soft seat is vibration resistant
- Stainless steel spring
- One piece unified bronze body design
- High capacity "top-guided" design
- TFE/chrome plated internals
- Connection sizes 2", 2-1/2", and 3"
- Relief settings 8" to 30" Hg @ 400°F max



14-600

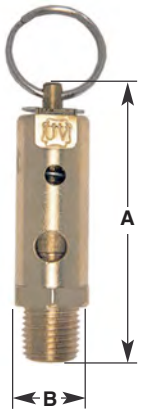
Part Number	Size (in./mm.)	Dimensions(in./mm.) A	B	C	Wt./Ea (lbs./kg.)
14-605	2 x 2 *50M x 50F*	3 *76*	6-1/2 *165*	3-1/8 *79*	8.4 *3.81*
14-606	2-1/2 x 2-1/2 *65M x 65F*	3-1/2 *89*	7-5/8 *194*	3-1/2 *89*	11.8 *5.4*
14-607	3 x 3 *80M x 80F*	4-1/8 *105*	8-3/4 *222*	3-7/8 *98*	16.3 *7.4*

14 - 6 XX - V - XX

05 = 2" NPT 06 = 2-1/2" NPT 07 = 3" NPT		Vacuum Relief Setting, HG Inches Mercury

ASME Section VIII Safety Valves RVA15 (15-100) Series

ASME Air Relief Valves



FEATURES

- National Board Certified 15 psig through 250 psig (15112 40-200 psi)
- Stainless steel springs with viton soft seat
- Viton o-ring seat, 3/4" & 1" only
- Registered in all Canadian Provinces and Territories: CRN #0G8547.5C
- Maximum temp. 325°F
- ASTM B16 brass body
- High performance molded seat design Sizes 1/4" to 1/2"
- Optional dual ASME/European Pressure Equipment Directive Compliance

Part Number	Inlet Size (in.)	Dimensions (in.) A	B	Wt./100 (lbs.)
15-112	1/4 NPT	2.625	.78	18.5
15-115	3/8 NPT	3.250	1.125	42.2
15-117	1/2 NPT	3.375	1.125	45.3
15-118	3/4 NPT	4.062	1.218	58.0
15-119	1 NPT	5.125	1.875	153.0

NATIONAL BOARD CERTIFIED CAPACITIES FOR AIR AND GAS SERVICE IN AIR COMPRESSORS, AIR RECEIVERS AND GAS LINES

Set Pressure psig	Capacities in SCFM @ 10% Accumulation 15-112 1/4"	15-115 & 117 3/8" or 1/2"	15-118 3/4"	15-119 1"
15	24	60	107	222
20	28	70	124	256
25	32	79	140	290
30	35	88	156	323
35	39	98	174	361
40	43	109	193	398
50	51	128	229	473
60	60	149	265	547
75	72	179	319	659
80	76	190	337	696
100	92	230	409	845
120	108	271	481	995
125	112	281	499	1032
140	124	312	553	1144
150	133	332	589	1218
160	141	353	625	1293
165	145	363	644	1330
175	153	383	680	1405
180	157	393	698	1442
200	173	432	770	1591
220	189	475	842	1740
230	198	495	878	1815
235	202	505	896	1852
250	214	535	950	1964

Other factory settings available upon request.

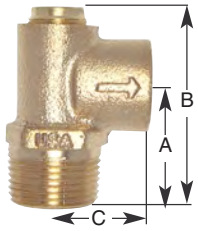
15 - XXX - X - XXX - XX

112 = 1/4 NPT 115 = 3/8 NPT 117 = 1/2 NPT 118 = 3/4 NPT 119 = 1 NPT	B - Plain Brass	Set Pressure in PSIG	CE - PED/CE Aluminum Seal

Pressure Relief Valves RVW16 (16-200) Series

Pressure Relief Valves

Pressure relief valves relieve excess pressure in cold water supply systems, storage tanks, and well pumps. Also suitable for air, oil, and other non-hazardous liquids.



16-200

FEATURES

- Cast bronze body, stainless steel springs
- Standard pressure settings from 50 to 175 psig
- Silicone soft seat ensures seat tightness, extended service life
- All valves are 100% factory tested
- Maximum recommended service temperature 120°F

Part Number	Size (in.)	Wt./100 (lbs.)	Dimensions (in.) A	B	C
16-202	1/2 M x 1/2 F	33.0	1.41	2.12	1.00
16-203	3/4 M x 1/2 F	37.5	1.41	2.50	1.00

*Note: When ordering, specify pressure by adding the two digit suffix after the product number, i.e.: 50 psig: **-01**; 75 psig: **-02**; 100 psig: **-03**; 125 psig: **-04**; 150 psig: **-05**; 175 psig: **-06***

By-Pass Relief Valves RVW16A (16-500) Series

Adjustable relief valves protect equipment by providing low volume liquid relief or bypass control. Excess volume may be discharged back to the low pressure source. Ideal for agricultural sprayers and simple commercial or industrial pressurized systems.

FEATURES

- Adjustable relief settings, in two ranges to 600 psi
- Cast bronze body, stainless steel springs
- Choice of Nitrile (Buna) or PTFE soft seats
- Knurled locknut locks pressure adjustment
- Viton stem seal, polypropylene body gasket
- Maximum recommended service temperature 120°F

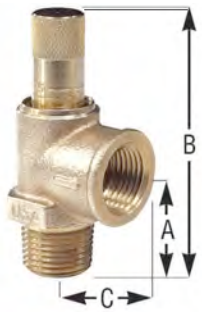
Part Number	Size (in.)	Wt./100 (lbs.)	Relief Range	Seat Material
16-501-01	1/2 M x 1/2 F	0.62	50 - 250	Nitrile
16-501-02	1/2 M x 1/2 F	0.62	250 - 600	Nitrile
16-501-25	1/2 M x 1/2 F	0.62	50 - 250	PTFE
16-501-60	1/2 M x 1/2 F	0.62	250 - 600	PTFE

Calibrated Pressure Relief Valves

Allows for in-line pressure adjustments without the need for a pressure gauge. Provides static overpressure protection for liquid filled systems such as well pumps, tanks, and fire protection systems.

FEATURES

- 1/2" or 3/4" inlet connection
- Factory preset at 100 psi
- Pressure range 50 to 175 psi, calibrated in 25 psi increments
- Cast bronze body, SS springs
- Silicone soft seat, EPDM cap seal
- Maximum service temp: 200°F



Part Number	Size (in.)	Wt./100 (lbs.)	Dimensions (in.) A	B	C
16-503-01	1/2 M x 1/2 F	37	1.31	3.44	1.00
16-504-01	3/4 M x 1/2 F	37	1.31	3.44	1.00

Hot Water Relief Valves RVW17 (17-400) Series

Pressure Relief Valves

Prevents excessive thermal expansion buildup in plumbing systems, tank applications and tankless water heaters. Conforms to HUD/FHA requirements: ideal for well systems.

FEATURES

- Bronze body, stainless steel spring
- CSA certified design to ANSI Z21.22 "Relief Valves for Hot Water Supply Systems"
- ASME capacity certified from 75 to 150 psig*
- CRN #0G8547.5C Registered in all Canadian Provinces and Territories

Model Number	Size (in.)	CSA Capacity Rating (BTU/Hr)	Wt./100 (lbs.)	*ASME Certified Discharge Capacities BTU/HR. 75	100	125	150
17-401	1/2 M x 1/2 F	15,000	57	-	-	-	-
17-402	3/4 M x 3/4 F	200,000	53	505,000	648,000	791,000	934,000

Note: When ordering specify pressure by adding the two digit key number after the product number as follows: 75 psig - 01; 100 psig - 02; 125 psig - 03; 150 psig - 04; 160 psig - 05
** 3/4 model only: National Board Capacity Certified - BTU per hour (90% of actual capacity at 10% accumulation) ASME boiler and pressure vessel code - Section IV - Heating Boilers*

Temperature & Pressure Relief Valves TP (18C-400) Series

Water Heater T&P Relief Valves

Feature unique non-metallic coating which protects the element against galvanic and electromechanical corrosion by isolating it from the heated water. This coating is electrostatically applied for uniform coverage, then thermobonded, resulting in optimum adhesion for extended service life. CSA design certified at all settings to ANSI Z21.22. ASME Section IV rated at 125 psig and 150 psig settings for 3/4" NPT only.

FEATURES

- Meets HUD/FHA requirements
- Cast bronze body, SS spring
- Rated 210°F maximum
- CRN #0G0053.6C Registered in all Canadian Provinces and Territories
- ASME capacity certified for 3/4" NPT only

Part Number	Size (in.)	Element Length (in.)	Wt./100 (lbs.)	CSA Capacity rating BTU/HR.
18C-401	1/2 M x 1/2 F	1.44	48.0	15,000
18C-401	1/2 M x 1/2 F	3.00	54.0	15,000
18C-402	3/4 M x 3/4 F	1.44	52.0	95,000
18C-402	3/4 M x 3/4 F	3.00	58.0	105,000
18C-402	3/4 M x 3/4 F	8.00	62.0	105,000

SUFFIX KEY Pressure psig	Coated Element Length 1.44"	3"	8"
125	-27	-29	-36
150	-28	-30	-37
175	-	-24	-

**Suffixes -24, -36 and -37 not available with model 18C-401.*

Temperature & Pressure Relief Valves TPX (18C-402X) Series

Extended Shank Water Heater T&P Relief Valves

Relief valves with an extended body length (2") for protection of water heaters with extra insulation. Unique non-metallic coating protects thermal element against galvanic and electromechanical corrosion. CSA design certified at all settings to ANSI Z21.22. ASME Section IV rated at 125 psig and 150 psig settings.

FEATURES

- Meets HUD/FHA requirements
- Cast bronze body, SS spring
- Rated 210°F maximum
- CRN #0G0053.6C Registered in all Canadian Provinces and Territories
- ASME capacity certified

Part Number	Size (in.)	Element Length (in.)	Wt./100 (lbs.)	Pressure psig	CSA Capacity Rating BTU/HR.
18C-402X-39	3/4 M x 3/4 F	3	64.0	125	105,000
18C-402X-38	3/4 M x 3/4 F	3	64.0	150	105,000

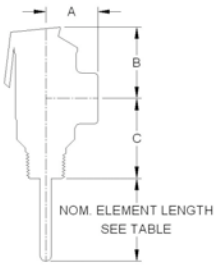
Temperature & Pressure Relief Valves TP (18C-400) Series

High Capacity Commercial T&P Valves

The Apollo 18C-500 Series bronze automatic temperature and pressure relief valves are used for protection of high capacity commercial hot water heaters and storage tanks.

FEATURES

- 3/4" through 2" NPT connections
- ASME Section IV certified capacity
- CSA listed and Certified to ANSI Z21.22
- 125 and 150 psig set pressures at 210°F max
- Coated element protects against corrosion
- SS elements (1-1/2" and 2")
- Canadian Registraion Number CRN-0G1438.6C



Part Number	Inlet Size	A	B	C
18C511	3/4" MNPT (20)	1.50 (40)	3.47 (88)	2.54 (65)
18C512	3/4" FNPT (20)	1.50 (40)	3.47 (88)	2.35 (60)
18C521	1" MNPT (25)	1.56 (40)	3.47 (88)	2.15 (55)
18C522	1" FNPT (25)	1.56 (40)	4.25 (108)	1.13 (29)
18C531	1-1/4" MNPT (32)	1.75 (44)	4.34 (110)	1.91 (49)
18C542	1-1/2" FNPT (40)	2.47 (63)	5.84 (148)	1.71 (43)
18C551	2" MNPT x 1-1/2" FNPT (50) (40)	2.47 (63)	5.84 (148)	2.59 (66)

All dimensions in inches (mm)

Part No.	Size	Nominal Element Length	Inlet Type	CSA Cap. Rating BTU/HR.	*ASME Cap. Rating BTU/HR.
18C5113125	3/4"	3"	M	185,000	1,619,000
18C5113150	3/4"	3"	M	185,000	1,912,000
18C5115125	3/4"	5"	M	205,000	1,619,000
18C5115150	3/4"	5"	M	205,000	1,912,000
18C5118125	3/4"	8"	M	205,000	1,619,000
18C5118150	3/4"	8"	M	205,000	1,912,000
18C5123125	3/4"	3"	F	185,000	1,619,000
18C5123150	3/4"	3"	F	185,000	1,912,000
18C5125125	3/4"	5"	F	205,000	1,619,000
18C5125150	3/4"	5"	F	205,000	1,912,000
18C5128125	3/4"	8"	F	205,000	1,619,000
18C5128150	3/4"	8"	F	205,000	1,912,000
18C5213125	1"	3"	M	500,000	1,825,000
18C5213150	1"	3"	M	500,000	2,155,000
18C5215125	1"	5"	M	500,000	1,825,000
18C5215150	1"	5"	M	500,000	2,155,000
18C5225125	1"	5"	F	750,000	3,070,000
18C5225150	1"	5"	F	750,000	3,625,000
18C5228125	1"	8"	F	750,000	3,070,000
18C5228150	1"	8"	F	750,000	3,625,000
18C5314125	1-1/4"	4"	M	750,000	3,070,000
18C5314150	1-1/4"	4"	M	750,000	3,625,000
18C5424125	1-1/2"	4"	F	1,200,000	5,125,000
18C5424150	1-1/2"	4"	F	1,200,000	6,050,000
18C5513125	2" x 1-1/2"	3"	M	1,200,000	5,125,000
18C5513150	2" x 1-1/2"	3"	M	1,200,000	6,050,000

** National Board certified capacity per ASME Section IV-Heating Boilers; specify number, thermostat length and set pressure when ordering. EX: 18C-511-3-150*

ASME Section I & VIII Safety Valves 19 Series

Bronze Safety Valves for Steam, Air & Gas Service

National Board capacity certified, high capacity, ideal for use with steam boilers, sterilizers, pressure vessels, compressors, and pressure piping systems.

FEATURES

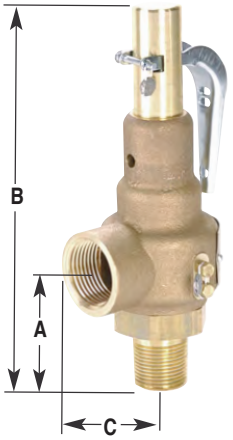
- Pressures: 15 through 300 psig steam, air, gas
- Max. temp. 406°F with stainless steel trim
- 13 Sizes, 1/2" through 2-1/2" NPT
- stainless steel springs
- Optional 316 stainless steel wetted trim (Specify 19L or 19S Series)
- Available in metal and soft seat designs
- Metal to metal seat lapped to optical flatness
- PFA Teflon® soft seat easily replaced
- Double ring, full bore, high capacity
- Tapped body drain facilitates piping of condensate away from equipment
- Registered in all Canadian Provinces and Territories, CRN #0G8547.5C
- Wide wrenching hex for easier, faster installations
- Dual ASME/CE European Pressure Equipment Directive Compliant option

19 - X - X X - X - XXX - XX

Trim Standard	Orifice Letter	Inlet Size	Service	Pressure Setting	Specials
M = Brass/Metal Seat	D	C = 1/2"	A = Sect. I Steam	in psig	A = Anti-Vibration
K = Brass/PFA "Soft" Seat	E	D = 3/4"	K = Sect. VIII Air		CE = PED/CE
Optional	F	E = 1"	L = Sect. VIII Steam		X = Oxygen Clean
L= SS/PFA "Soft" Seat	G	F = 1-1/4"	N = Non-Code Air		Other Suffixes Factory Issued
S = SS/Metal Seat	H	G = 1-1/2"	P = Non-Code Steam		
	J	H = 2"			
		J = 2-1/2"			

ASME Section I & VIII Safety Valves 19 Series (cont'd)

Bronze Safety Valves for Steam, Air & Gas Service



Part Number	Orifice Designation	Size (in.) Inlet x Outlet	Wt./Ea. (lbs.)	Dimensions (in.) A	B	C
19KDC	D	1/2 x 3/4	1.6	2.21	6.52	1.37
19KDD	D	3/4 x 3/4	1.6	2.21	6.52	1.37
19KED	E	3/4 x 1	2.0	2.50	7.16	1.75
19KEE	E	1 x 1	2.2	2.64	7.30	1.75
19KFE	F	1 x 1-1/4	4.1	2.95	9.34	2.00
19KFF	F	1-1/4 x 1-1/4	4.3	2.95	9.34	2.00
19KGF	G	1-1/4 x 1-1/2	7.4	3.38	11.01	2.37
19KGG	G	1-1/2 x 1-1/2	7.6	3.38	11.01	2.37
19KHG	H	1-1/2 x 2	11.5	3.63	11.96	2.75
19KHH	H	2 x 2	11.6	3.63	11.96	2.75
19KJG	J	1-1/2 **F** X 2-1/2	20.0	3.80	14.00	3.50
19KJH	J	2 x 2-1/2	19.9	4.06	14.25	3.50
19KJJ	J	2-1/2 x 2-1/2	20.8	4.50	14.68	3.50

ASME Section I Steam
Power Boiler - "V" steam lbs./hr. steam @ 3% accumulation

**Specify Model 19S with stainless steel wetted trim for steam settings beyond 250 psig.*

Set Pressure psig	Orifice D	E	F	G	H	J
15	174	310	484	794	1,240	2,035
25	229	408	637	1,045	1,631	2,677
40	311	555	866	1,421	2,217	3,641
50	366	653	1,019	1,672	2,608	4,283
100	646	1,152	1,798	2,950	4,602	7,557
125	787	1,404	2,191	3,595	5,609	9,210
150	929	1,656	2,585	4,240	6,616	10,864
165	1,014	1,807	2,821	4,628	7,220	11,856
200	1,211	2,160	3,371	5,531	8,630	14,170
250	1,494	2,664	4,158	6,822	10,644	17,477
300*	1,777	3,168	4,945	8,112	12,658	20,784
Approx	5.7	10.1	15.7	25.8	40.3	66.1
1 psi increments						

ASME Section VIII Steam
Unfired Pressure Vessels - "UV" steam lbs./hr. @ 10% accumulation

**Specify Model 19S with stainless steel wetted trim for steam settings beyond 250 psig.*

Set Pressure psig	Orifice D	E	F	G	H	J
15	179	320	499	819	1,278	2,099
25	234	417	652	1,070	1,669	2,741
40	322	574	896	1,471	2,295	3,768
50	382	682	1,064	1,746	2,725	4,474
100	684	1,220	1,904	3,124	4,875	8,005
125	835	1,489	2,324	3,813	5,950	9,770
150	985	1,758	2,744	4,502	7,025	11,535
165	1,076	1,920	2,996	4,916	7,670	12,594
200	1,287	2,296	3,584	5,881	9,175	15,066
250	1,590	2,834	4,424	7,259	11,325	18,596
300*	1,892	3,373	5,265	8,639	13,479	22,132
Approx.	6.0	10.8	16.8	27.6	43.0	70.6
1 psi increments						

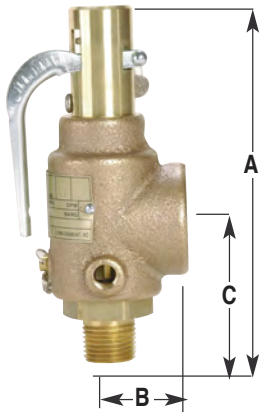
ASME Section VIII Air
Unfired Pressure Vessels - "UV" air SCFM @ 10% accumulation

Set Pressure psig	Orifice D	E	F	G	H	J
15	64	114	178	292	455	747
25	83	149	232	381	594	976
40	115	204	319	524	817	1,342
50	136	243	379	622	970	1,593
100	244	434	678	1,112	1,736	2,849
125	297	530	828	1,358	2,118	3,478
150	351	626	977	1,603	2,501	4,106
165	383	683	1,067	1,750	2,731	4,484
200	459	818	1,276	2,094	3,267	5,364
250	566	1,009	1,575	2,584	4,032	6,621
300	673	1201	1874	3075	4,798	7,878
Approx.	2.2	3.8	6.0	9.8	15.3	25.1
1 psi increments						

ASME Section I & VIII Safety Valves 29 Series

OEM Style Bronze Safety Valves for Steam, Air & Non-Hazardous Gas

Ideally suited for OEM applications where compact size, dependable performance and maximum economy are required. These rugged safety valves feature a top guided design and patented Teflon® "soft-seat" for dramatically reduced seat leakage. Flow ratings are National Board certified.



UV

V

CE

FEATURES

- Stainless steel springs are standard
- PFA Teflon® seat resists corrosive boiler chemicals
- Pressure settings from 30 to 200 psig
- Rust proofed steel stem and spring washers
- Lower control ring ensures short, consistent blowdown
- Tapped body drain allows piping of condensate away from equipment
- Reduced repair costs; soft seat easily replaced
- Registered in All Canadian Provinces under CSA B51 CRN #0G8547.5C
- Optional European Pressure Equipment Directive Compliance

Part Number	Size(in.) Inlet	Outlet	Wt./Ea. (lbs.)	Dimensions (in.) A	B	C
29-102	3/8	1	1.30	5.41	1.25	2.12
29-202	1/2	1	1.33	5.41	1.25	2.12
29-302	3/4	1	1.90	5.41	1.25	2.12
29-303	3/4	1-1/4	3.43	7.25	1.69	2.75
29-402	1	1-1/4	3.43	7.25	1.69	2.75
29-501	1-1/4	1-1/4	3.48	7.25	1.69	2.75

Set Pressure	29-102 29-202 29-302	29-303 29-402 29-501
50	238	479
75	331	664
100	423	851
125	516	1,036
150	608	1,223
200	794	1,596
Approx. 1 psi increments	3.7	7.4
50	251	504
75	350	704
100	448	902
125	547	1,102
150	646	1,299
200	844	1,697
Approx. 1 psi increments	3.9	8.0
50	89	180
75	124	250
100	159	321
125	194	391
150	230	463
200	300	604
Approx. 1 psi increments	1.4	2.8

ASME Section I Steam
Power Boiler "V" steam lbs./hr. @ 3% accumulation

ASME Section VIII Steam
Unfired pressure vessels - "UV" steam lbs./hr. @ 10% accumulation

ASME Section VIII Air
Unfired pressure vessels - "UV" air SCFM @ 10% accumulation

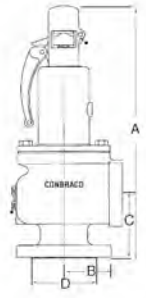
29 - XXX - XX - XX - X

	Inlet x Outlet Size	Service	Set Pressure	Options
Bronze body Brass Trim Teflon® soft seat	102 = 3/8" x 1" 202 = 1/2" x 1" 302 = 3/4" x 1" 303 = 3/4" x 1-1/4" 402 =1" x 1-1/4" 501 = 1-1/4" x 1-1/4"	A = ASME Sect. I Steam K = ASME Sect. VIII Air L = ASME Sect. VIII Steam	Set pressure, PSIG (range 30-200 psig)	S = Stainless Steel Wetted Trim (Models 29-202 and 29-303 only) CE - PED Complaint

ASME Section I & VIII Safety Valves 119 Series

Cast Iron Safety Valve

High capacity safety valves ideal for use with all types of boilers, pressure vessels and pressure piping systems. Their top-guided design includes two control rings that ensure seat tightness. Direct replacement for most competitive models.



FEATURES

- Set pressures to 250 psig @ 450°F max
- Flanged inlet sizes: 1-1/2" through 6" ANSI 250lb; some sizes available in female NPT
- National Board Certified ASME flow ratings
- Metal to metalseating, lapped to optical flatness
- 316 stainless steel wetted trim (disc and nozzel) is standard
- Semi-nozzle design comes in eight orifice sizes
- Rust proof steel stem, spring and spring washers
- Drip pan elbows are available (see page 73)
- Registered in all Canadian Provinces Under CSA B51, CRN #0G8547.5C
- Optional dual ASME/European Pressure Equipment Directive Compliance

Information required for ordering 119 series valves:
1. Determine the orifice letter that corresponds to your required flow rate from the following capacity charts.
2. Select the inlet x outlet connection options from the list of models available for that orifice (above).
3. Specify base model number, set pressure, ASME Code section and service.
For Further information request brochure SRCA9000

Base Model Number	Valve Size(in.)	Orifice Letter	Orifice Area (Sq. in.)	Dimensions(in.) A	B	C	Hex D	Wt./lbs. APP
119 JGC	1-1/2 250# x 2 1/2 FNPT	J	1.36	15.00	4.00	4.31		35
119 KHC	2 250# x 3 FNPT	K	1.93	16.00	4.00	4.62		36
119 KHA	2 FNPT x 3 FNPT	K	1.93	16.00	4.00	4.62	3-3/4	37
119 KJC	2-1/2 250# x 3 FNPT	K	1.93	16.00	4.00	4.62		41
119 KKC	3 250# X 3 FNPT	K	1.93	16.00	4.00	4.63		45
119 LJC	2-1/2 250# x 4 FNPT	L	2.99	22.00	5.12	5.62		84
119 LJA	2-1/2 FNPT x 4 FNPT	L	2.99	22.00	5.12	5.62	5-3/8	81
119 LKC	3 250# x 4 FNPT	L	2.99	22.00	5.12	5.62		85
119 LMC	4 250# X 4 FNPT	L	2.99	22.00	5.13	5.63		90
119 MKA	3 FNPT x 4 FNPT	M	3.77	22.00	5.12	5.62	5-3/8	80
119 MKC	3 250# x 4 FNPT	M	3.77	22.00	5.12	5.62		87
119 MMC	4 250# X 4 FNPT	M	3.77	22.00	5.13	5.63		95
119 NMD	4 250# x 6 125#	N	4.55	28.00	7.25	6.75		210
119 PMD	4 250# x 6 125#	P	6.69	28.00	7.25	6.75		215
119 QPD	6 250# x 8 125#	Q	11.59	42.00	10.00	9.25		530
119 RPD	6 250# x 8 125#	R	16.79	42.00	10.00	9.25		530

ASME Section I & VIII Safety Valves 119 Series

ASME Section I *- Steam Boilers - Pounds of saturated steam per hour @ 3% or 2 psig accumulation, whichever is greater.*

ASME Section VIII *- Pressure Vessels - Pounds of saturated steam per hour @ 10% or 3 psig accumulation, whichever is greater.*

ASME Section VIII *- Pressure Vessels - Standard cubic feet of air per minute @ 10% or 3 psig, whichever is greater.*

Orifice J

Set Press. psig	Sec. I lbs./hr.	VIII Stm. lbs./hr.	VIII Air SCFM
15	1947	2008	715
30	2868	2929	1043
50	4096	4280	1523
75	5646	5969	2124
100	7227	7657	2726
125	8809	9346	3327
150	10390	11034	3928
175	11971	12723	4529
200	13552	14412	5130
225	15133	16100	5731
250	16714	17789	6332

Orifice K

Set Press. psig	Sec. I lbs./hr.	VIII Stm. lbs./hr.	VIII Air SCFM
15	2761	2848	1014
30	4067	4154	1479
50	5809	6070	2161
75	8008	8465	3013
100	10250	10860	3865
125	12493	13255	4718
150	14735	15650	5570
175	16978	18045	6423
200	19220	20440	7275
225	21463	22834	8128
250	23705	25229	8980

Orifice L

Set Press. psig	Sec. I lbs./hr.	VIII Stm. lbs./hr.	VIII Air SCFM
15	4286	4421	1574
30	6314	6449	2295
50	9018	9423	3354
75	12432	13141	4678
100	15913	16859	6001
125	19394	20577	7324
150	22876	24295	8648
175	26357	28013	9971
200	29838	31731	11294
225	33320	35449	12618
250	36801	39167	13941

Orifice M

Set Press. psig	Sec. I lbs./hr.	VIII Stm. lbs./hr.	VIII Air SCFM
15	5410	5580	1986
30	7969	8140	2897
50	11382	11894	4234
75	15691	16587	5904
100	20085	21280	7574
125	24480	25973	9245
150	28874	30666	10915
175	33268	35358	12586
200	37662	40051	14256
225	42056	44744	15926
250	46451	49437	17597

Orifice N

Set Press. psig	Sec. I lbs./hr.	VIII Stm. lbs./hr.	VIII Air SCFM
15	6522	6728	2395
30	9608	9814	3493
50	13723	14340	5104
75	18918	19998	7118
100	24215	25655	9132
125	29513	31313	11146
150	34811	36971	13160
175	40108	42629	15173
200	45406	48287	17187
225	50704	53944	19201
250	56002	59602	21215

Orifice P

Set Press. psig	Sec. I lbs./hr.	VIII Stm. lbs./hr.	VIII Air SCFM
15	9592	9895	3522
30	14131	14434	5138
50	20183	21091	7507
75	27823	29412	10469
100	35615	37733	13431
125	43407	46055	16393
150	51199	54376	19355
175	58990	62697	22317
200	66782	71018	25278
225	74574	79340	28240
250	82366	87661	31202

Orifice Q

Set Press. psig	Sec. I lbs./hr.	VIII Stm. lbs./hr.	VIII Air SCFM
15	16617	17141	6101
30	24480	25004	8900
50	34964	36537	13005
75	48200	50952	18136
100	61698	65368	23267
125	75197	79783	28398
150	88695	94199	33529
175	102193	108614	38660
200	115691	123030	43791
225	129189	137445	48923
250	142687	151861	54054

Orifice R

Set Press. psig	Sec. I lbs./hr.	VIII Stm. lbs./hr.	VIII Air SCFM
15	24061	24820	8834
30	35446	36205	12887
50	50628	52903	18830
75	69791	73776	26260
100	89336	94649	33689
125	108880	115522	41119
150	128425	136395	48549
175	147969	157267	55978
200	167514	178140	63408
225	187059	199013	70837
250	206603	219886	78267

ASME Section VIII Safety Relief Valves 500 Series

Versatile ASME Section VIII safety relief valve certified for steam, air/gas and liquid service. Choice of bronze, carbon steel or stainless steel bodies to suit a wide range of applications.

FEATURES

- Set pressures to 1200 psig @ 800°F max
- Inlet sizes 1/2" through 2"
- Wide range of materials and options
- High capacity full nozzle design
- Stainless steel springs are standard
- Short "tuned" blowdown
- API 527 seat tightness
- Back pressure tight bonnet design
- Packed lever and screwed cap designs
- One trim suitable for all types of service
- Optional soft seating
- CSA B51 CRN #0G8547.5C
- Optional Dual ASME/CE European Pressure Equipment Directive Compliance Marking

Part Number	Orifice Designation	Size (in.) Inlet x Outlet	Flow Area(sq. in.)	A (in.)	B (in.)	C (in.)	Wt. Ea. (lbs.)
5xxDC	D	1/2 X 1	0.13	2.37	7.50	1.62	2.0
5xxDCD*	D	1/2 X 3/4	0.13	2.37	7.50	1.62	2.0
5xxDD	D	3/4 X 1	0.13	2.37	7.50	1.62	2.0
5xxDDD*	D	3/4 X 3/4	0.13	2.37	7.50	1.62	2.0
5xxED	E	3/4 X 1-1/4	0.23	2.62	9.00	2.00	3.0
5xxEE	E	1 X 1-1/4	0.23	2.62	9.00	2.00	3.0
5xxFE	F	1 X 1-1/2	0.36	2.87	10.25	2.37	5.0
5xxFF	F	1-1/4 X 1-1/2	0.36	2.87	10.25	2.37	5.0
5xxGF	G	1-1/4 X 2	0.59	3.25	13.25	2.62	9.0
5xxGG	G	1-1/2 X 2	0.59	3.25	13.25	2.62	9.5
5xxHG	H	1-1/2 X 2-1/2	0.92	3.50	15.00	2.75	15.5
5xxHH	H	2 X 2-1/2	0.92	3.50	15.00	2.75	16.0
5xxJH	J	2 X 3	1.50	4.00	17.00	3.25	23.0

**3/4" outlet option available with 510 and 520 bronze bodied models only.*

PART NUMBERING SYSTEM 500 SERIES SAFETY RELIEF VALVE

POSITION 1 2	3	4	5	6	7	8	9 10	11 12 13 14
SERIES BODY/TRIM MAT'L	CAP STYLE	ORIFICE LETTER	INLET	CONNECTION	SERVICE	SEAT	SPECIAL OPTIONS	SET PRESSURE
5 2	3	J	H	B	K	M	A A	0 4 2 5
51=BRONZE/BRASS	1=SCREWED CAP	D	C=1/2	B=MNPT X FNPT	J=SEC VIII LIQUID	M=METAL	FACTORY ISSUED	SET PRESSURE,
52=BRONZE/ STAINLESS	2=SCREWED + GAG	E	D=3/4	D=3/4" OUTLET 510 & 520 ONLY	K=SEC VIII AIR	N=NEOPRENE	LETTERS / NUMBERS OR SPECIAL OPTIONS OR FEATURES	psig (4 DIGITS)
53=CARBON/ STAINLESS	3=PACKED LEVER	F	E=1		L=SEC VIII STEAM	K=PCTFE	"AA"=DEFAULT STANDARD "CE"=PED COMPLIANT	VACUUM
54=ALL STAINLESS	4=PACKED + GAG	G	F=1-1/4		M=NON CODE LIQUID	V=VITON	"HT" HIGH TEMP. SPRING	"HG" PREFIX+ 2 DIGIT
		H	G=1-1/2		N=NON CODE AIR / GAS	E=EPDM		"OX" CLEANED FOR OXYGEN SERVICE
		J	H=2		P=NON CODE STEAM	B=NITRILE		
					Q=VACUUM	S=SILICONE		

Notes:
1. *The ASME Code Section VIII requires a lift lever for the following services: air, steam, or hot water over 140°F*
2. *Maximum back pressure is 50 psig.*
3. *High temperature stainless steel alloy spring is required above 550°F / 288°C. Specify option "HT"*
4. *Service limits for PCTFE seat: -330 to +250°F / -201 to 121°C*

ASME Section VIII Safety Relief Valves 500 Series

Series	510	520	530	540
Body	Bronze	Bronze	Carbon Steel	Stainless Steel
Trim	Brass	Stainless	Stainless	Stainless
Max. Set-Steam	250 PSI	300 PSI	900 PSI (D/E) 600 PSI (F/G) 500 PSI (H/J)	900 PSI (D/E) 600 PSI (F/G) 500 PSI (H/J)
Max. Set-Air/Gas/Liquid	300 PSI	1200 PSI (D)[1] 900 PSI (E) 600 PSI (F/G) 500 PSI (H/J)	1200 PSI (D)[1] 900 PSI (E) 600 PSI (F/G) 500 PSI (H/J)	1200 PSI (D)[1] 900 PSI (E) 600 PSI (F/G) 500 PSI (H/J)
Temp. Limits*	-320/406˚F	-320/422˚F	-20/800˚F	-320/800˚F

[1] *Max set pressure for liquids is 1000 psi.*

Notes:

- *Limits based upon materials of construction and use of metal to metal seating. Refer to 500 series soft seat chart for limitations based upon elastomer.*
- *Specify "HT" high temperature Inconel springs for service temperature beyond 550˚F.*
- * *Models 510, 520 and 540 are suitable for cryogenic service to -320˚F, subject to special preparation and use of "K" option PCTFE seat. Consult factory for details.*

ASME SECTION VIII WATER - US GALLONS PER MINUTE @ 10% OVERPRESSURE. NATIONAL BOARD CERTIFIED.

Set Press.	Orifice					
psig	D	E	F	G	H	J
15	14	25	40	65	102	167
20	16	29	45	74	115	189
25	18	32	50	82	127	208
30	19	34	54	89	138	226
35	21	37	58	96	149	244
40	22	40	62	102	160	261
45	24	42	66	108	169	277
50	25	44	70	114	178	292
55	26	46	73	120	187	306
60	28	48	76	125	195	320
65	29	50	79	130	203	333
70	30	52	82	135	211	345
75	31	54	85	140	218	357
80	32	56	88	145	226	369
85	33	58	91	149	233	381
90	34	59	93	153	239	392
95	35	61	96	158	246	402
100	36	63	98	162	252	413
125	40	70	110	181	282	462
150	44	77	121	198	309	506
175	47	83	130	214	334	546
200	50	89	139	229	357	584
225	53	94	148	242	378	619
250	56	99	156	256	399	653
275	59	104	163	268	418	685
300	62	108	171	280	437	715
325	64	113	178	291	455	744
350	66	117	184	302	472	772
375	69	121	191	313	489	799
400	71	125	197	323	505	826
425	73	129	203	333	520	851
450	75	133	209	343	535	876
475	77	136	215	352	550	900
500	79	140	220	361	564	923
525	81	143	226	370		
550	83	147	231	379		
575	85	150	236	388		
600	87	153	241	396		
625	89	157				
650	91	160				
675	92	163				
700	94	166				
725	96	169				
750	97	171				
775	99	174				
800	100	177				
825	102	180				
850	104	183				
875	105	185				
900	107	188				
950	109					
1000	112					

Note: To determine water capacity at 25% overpressure, multiply the capacity at 10% by 1.066.

ASME Section VIII Safety Relief Valves 500 Series

ASME SECTION VIII STEAM - POUNDS PER HOUR OF SATURATED STEAM @ 10% OVERPRESSURE. NATIONAL BOARD CERTIFIED.

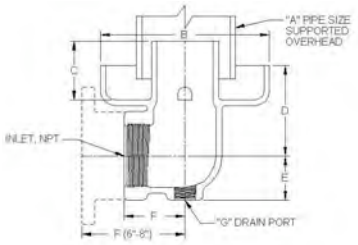
Set Press.	Orifice					
psig	D	E	F	G	H	J
15	188	331	520	853	1332	2180
20	216	381	600	984	1536	2513
25	245	432	679	1114	1740	2846
30	274	482	759	1245	1943	3180
35	305	538	846	1388	2168	3546
40	337	593	934	1532	2392	3913
45	368	649	1021	1676	2616	4280
50	400	705	1108	1819	2840	4646
55	431	760	1196	1963	3064	5013
60	463	816	1283	2106	3288	5380
65	494	872	1371	2250	3512	5746
70	526	927	1458	2393	3736	6113
75	558	983	1546	2537	3960	6479
80	589	1038	1633	2680	4184	6846
85	621	1094	1721	2824	4408	7213
90	652	1150	1808	2968	4632	7579
95	684	1205	1896	3111	4857	7946
100	715	1261	1983	3255	5081	8313
125	873	1539	2421	3972	6201	10146
150	1031	1817	2858	4690	7322	11979
175	1189	2095	3295	5408	8442	13812
200	1346	2373	3733	6126	9562	15645
225	1504	2651	4170	6843	10683	17478
250	1662	2929	4607	7561	11803	19312
275	1820	3207	5045	8279	12924	21145
300	1977	3485	5482	8997	14044	22978
325	2135	3763	5919	9714	15165	24811
350	2293	4041	6357	10432	16285	26644
375	2451	4319	6794	11150	17405	28477
400	2608	4597	7231	11867	18526	30311
425	2766	4875	7669	12585	19646	32144
450	2924	5153	8106	13303	20767	33977
475	3082	5431	8543	14021	21887	35810
500	3239	5709	8981	14738	23008	37643
525	3397	5987	9418	15456		
550	3555	6266	9855	16174		
575	3713	6544	10293	16892		
600	3870	6822	10730	17609		
625	4028	7100				
650	4186	7378				
675	4344	7656				
700	4501	7934				
725	4659	8212				
750	4817	8490				
775	4975	8768				
800	5132	9046				
825	5290	9324				
850	5448	9602				
875	5606	9880				
900	5763	10158				
Approx. 1 psi Increment	6.3	11.1	17.5	28.7	44.8	73.3

ASME SECTION VIII AIR - STANDARD CUBIC FEET OF AIR PER MINUTE @ 10% OVERPRESSURE. NATIONAL BOARD CERTIFIED.

Set Press.	Orifice					
psig	D	E	F	G	H	J
15	67	118	185	304	474	776
20	77	136	213	350	547	895
25	87	154	242	397	619	1013
30	97	172	270	443	692	1132
35	109	191	301	494	772	1262
40	120	211	332	545	851	1393
45	131	231	363	596	931	1523
50	142	251	395	648	1011	1654
55	154	271	426	699	1091	1784
60	165	290	457	750	1170	1915
65	176	310	488	801	1250	2045
70	187	330	519	852	1330	2176
75	198	350	550	903	1410	2306
80	210	370	581	954	1489	2437
85	221	389	612	1005	1569	2567
90	232	409	644	1056	1649	2698
95	243	429	675	1107	1729	2828
100	255	449	706	1158	1808	2959
125	311	548	862	1414	2207	3611
150	367	647	1017	1669	2606	4264
175	423	746	1173	1925	3005	4916
200	479	845	1329	2180	3404	5569
225	535	944	1484	2436	3802	6221
250	592	1043	1640	2691	4201	6874
275	648	1142	1796	2947	4600	7526
300	704	1240	1951	3202	4999	8179
325	760	1339	2107	3458	5398	8831
350	816	1438	2263	3713	5796	9484
375	872	1537	2418	3969	6195	10136
400	928	1636	2574	4224	6594	10789
425	985	1735	2730	4480	6993	11441
450	1041	1834	2885	4735	7392	12094
475	1097	1933	3041	4991	7791	12746
500	1153	2032	3197	5246	8189	13399
525	1209	2131	3352	5501		
550	1265	2230	3508	5757		
575	1321	2329	3664	6012		
600	1378	2428	3819	6268		
625	1434	2527				
650	1490	2626				
675	1546	2725				
700	1602	2824				
725	1658	2923				
750	1715	3022				
775	1771	3121				
800	1827	3220				
825	1883	3319				
850	1939	3418				
875	1995	3517				
900	2051	3616				
950	2163					
1000	2276					
1050	2388					
1100	2501					
1150	2613					
1200	2725					
Approx. 1 psi Increment	2.2	4	6.2	10.2	16	26.1

Accessories
Drip Pan Elbow

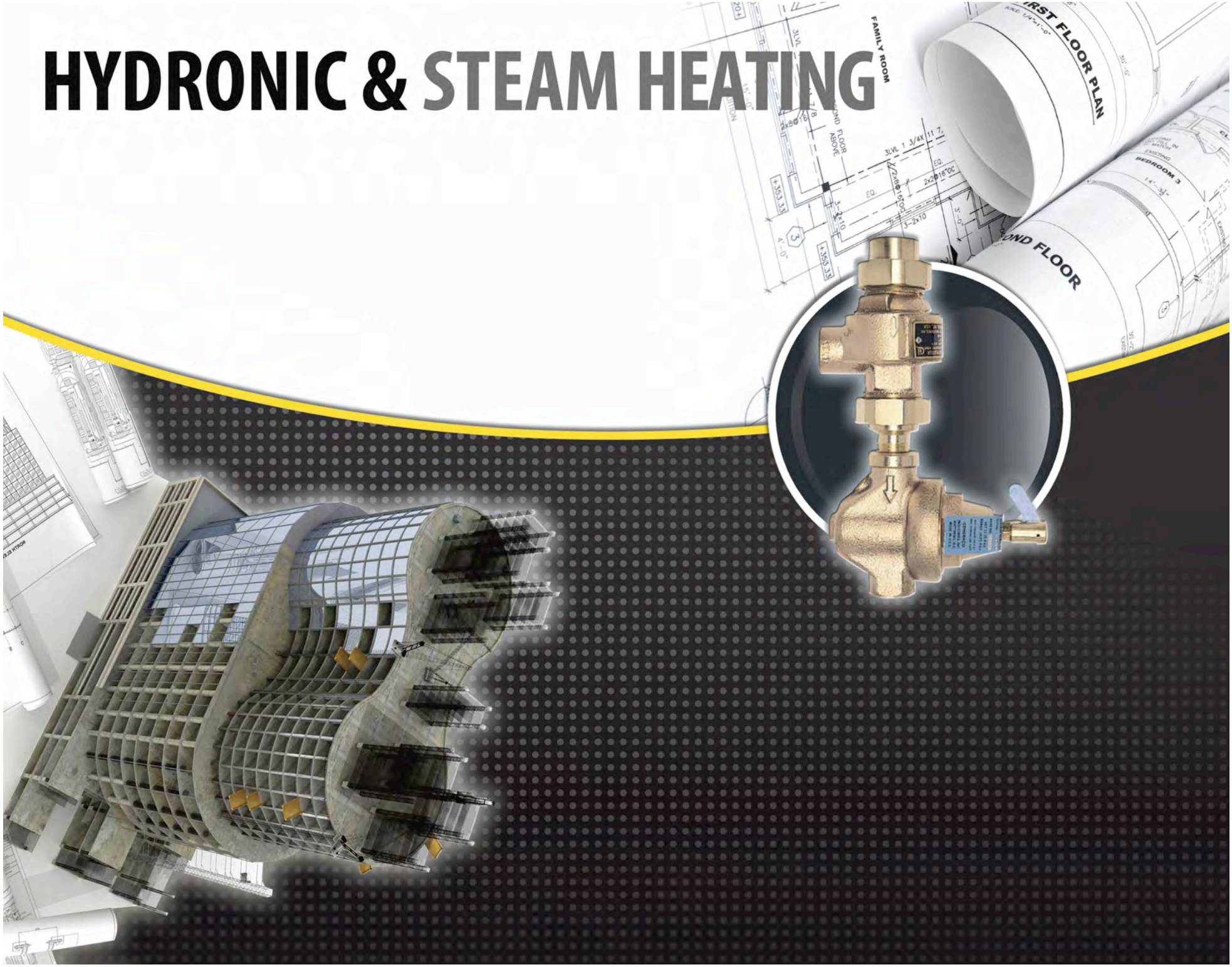
The use of a drip pan elbow is highly recommended for steam service safety valves. When attached to a safety valve outlet, these elbows collect and remove condensate as well as isolate the valve from discharge piping stresses. Elbows through 4" feature female NPT threads and connect to the valve outlet by means of a close nipple. The 6" and 8" elbows have integral 125# ANSI B16.1 flanges and bolt directly to the valve outlet.



Part Number	Inlet in (mm)	A in (mm)	B in (mm)	C in (mm)	D in (mm)	E in (mm)	F in (mm)	G NPT	Weight lbs.(kg)
DPE07	3/4 (20)	2.00 (51)	3.75 (95)	1.88 (48)	2.00 (51)	1.00 (25)	1.50 (38)	1/4	2 (1)
DPE10	1 (25)	2.00 (51)	3.75 (95)	1.88 (48)	2.00 (51)	1.00 (25)	1.50 (38)	1/4	2 (1)
DPE12	1-1/4 (32)	2.00 (51)	5.50 (140)	2.47 (63)	4.13 (105)	1.44 (37)	2.13 (54)	3/8	7.5 (3)
DPE15	1-1/2 (40)	2.00 (51)	5.50 (140)	2.47 (63)	4.13 (105)	1.44 (37)	2.13 (54)	3/8	7.5 (3)
DPE20	2 (50)	3.00 (76)	6.25 (159)	2.31 (59)	3.63 (92)	1.63 (41)	2.25 (57)	1/2	8.5 (4)
DPE25	2-1/2 (65)	4.00 (102)	7.38 (187)	3.00 (76)	4.31 (109)	1.94 (49)	2.69 (68)	3/4	12 (5)
DPE30	3 (80)	4.00 (102)	8.00 (203)	3.50 (89)	4.88 (124)	2.31 (59)	3.13 (80)	3/4	19 (9)
DPE40	4 (100)	6.00 (152)	9.63 (245)	4.50 (114)	5.75 (146)	2.88 (73)	3.75 (95)	3/4	25 (11)
DPE60	6 (150)	8.00 (203)	12.75 (324)	6.63 (168)	7.44 (189)	4.19 (106)	8.00 (203)	3/4	105 (48)
DPE80	8 (200)	10.00 (254)	16.50 (419)	7.50 (191)	9.44 (240)	5.38 (137)	10.75 (273)	1	202 (92)

Note: Ordering size of drip pan elbow is also nominal outlet size of safety valve.

HYDRONIC & STEAM HEATING



Hydronic Heating Specialties EXT (16-XT) Series

Expansion Tanks for Hydronic Systems

Conbraco non-potable expansion tanks help maintain balanced pressure throughout a hot water heating system by absorbing thermal expansion. Pre-pressurized, they're designed to prevent system damage and unnecessary discharges by relief valves and ensure long, trouble-free system life.

FEATURES

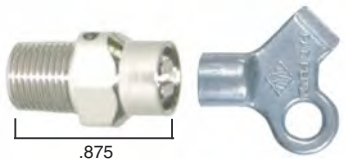
- Welded steel construction
- Rugged flexible diaphragm
- Pre-charged at 12 psig
- Compact design saves energy and space
- Glycol compatible
- Maximum working pressure: 150 psig
- Ideal for peak use systems such as car washes, processing plants, and hotels

Part Number	Capacity (gal.)	Exp. Vol. (gal.)	Connection	A	B	Net Wt. (lbs.)
16-XT1-03	2.1	1.4	1/2 NPT	11.75	8.00	6.3
16-XT3-03	5.0	3.0	1/2 NPT	16.00	10.50	11.5
16-XT5-03	6.0	4.2	1/2 NPT	14.00	12.75	13.7
16-XT7-03	14.6	8.5	1 NPT	20.00	15.75	24.0

Hydronic Heating Specialties RAV (27-200) Series

Radiator Air Valve

Manual air purge valves for hot water radiators/heating systems.



Part Number	Size (in.)	Wt./100 (lbs.)
27-202-02	1/8	2.0
H-2404-00	Key only	0.9

Hydronic Heating Specialties FF (35) Series

All Bronze Feed Water Pressure Regulators

Available in 1/2" union threaded, threaded and solder union configurations. Purge lever/fast fill feature. Cartridge replaceable inline.

FEATURES

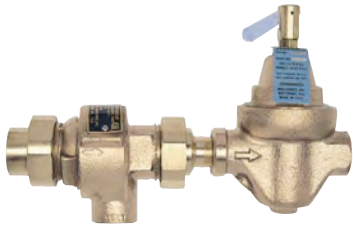
- No cage screws
- Factory pre-set to 15 psig - adjustable 10 to 25 psig
- Temperatures to 210°F
- High capacity
- SS strainer, in-line, standard
- Choice of inlet connections

Part Number	Size (in.)	Height (in.)	Length (in.)	Wt./100 (lbs.)
35-503-01	1/2 Union Threaded	5.25	4.31	255
35-603-01	1/2 Threaded	5.25	3.50	225
35-703-01	1/2 Solder Union	5.25	3.18	232

Hydronic Heating Specialties FFB (35-6A3/6H3) Series

All Bronze Combination Backflow Preventer & Feed Water Regulators

Positive protection against backflow when supply pressure falls below system pressure.



FEATURES

- Suitable for hot water service
- Designed for continuous pressure, hot or cold water service
- Built-in strainer
- Max pressure 175 psig
- Max temp 250°F
- Backflow device is ASSE and CSA listed

Part Number	Size (in.)	Height (in.)	Length (in.)	Wt./100 (lbs.)
35-6A3-BF	1/2 Union NPT x NPT	5.25	8.50	450
35-6H3-BF	1/2 Solder Union x NPT	5.25	8.50	440
35-6A3-BFC*	1/2 Union NPT x NPT	5.25	8.50	450
35-6H3-BFC*	1/2 Solder Union x NPT	5.25	8.50	440

** "C" Models for Canadian market - Discharge port not threaded.*

Hydronic Heating Specialties FCT (35-403) Series

Multi-Orifice Control Valve

Provides flow control on tankless heaters; for delivery of 2-1/2, 3, 3-1/2, and 4 GPM. Easy adjustment.

FEATURES

- Maximum temperature: 250°F
- Maximum pressure: 150 psig

Part Number	Size (in.)	Height (in.)	Length (in.)	Wt./100 (lbs.)
35-403-01	1/2 Solder	2.11	2.00	42.8

Hydronic Heating Specialties FC & FCS (35FC) Series

All Bronze Hydronic Flow Check Valves

The flow check is designed to provide positive shut-off when water service is interrupted.

FEATURES

- Corrosion resistant
- Wear resistant metal to metal seat
- Replaceable seat assembly
- By-pass option (included on threaded versions)
- Sweat or thread connection available
- Designed for easy maintenance
- Suitable for hot or cold water service
- Maximum working pressure 50 psi for 3/4" - 1-1/4" 125 psig for 1-1/2" - 2"
- Maximum operating temperature: 250°F

Part Number	Size (in.)	Connection	Wt./100 (lbs.)
35-FC4-01	3/4	NPT	233
35-FC5-01	1	NPT	261
35-FC6-01	1-1/4	NPT	502
35-FC7-01	1-1/2	NPT	867
35-FC8-01	2	NPT	1220
35-FC4-02	3/4	Sweat	112
35-FC5-02	1	Sweat	155

Hydronic Heating Specialties BAV (58) Series

Balancing Valves

Provide dependable hydronic control; for use with 1/2" and 3/4" coper water piing. Pressure rated to 150 psig.

FEATURES

- Cast bronze body
- Made in USA

Part Number	Size (in.)	C_V	Wt./100 (lbs.)
58-003-01	1/2 Solder	4	30.0
58-004-01	3/4 Solder	14	53.4

Hydronic Heating Specialties PBS (78-600) Series

Bronze Purge, Balance and Shut-Off Valve

Straight-through flow; all brass cover and chain prevent accidental system drainage; hose thread connection for disposal of drained media.

FEATURES

- RPTFE seals
- Adjustable packing
- 600 psig CWP in open position

Model Number	Description	Size (in.)	Wt./100 (lbs.)
78-645-01	FNPT x FNPT x Hose	1/2	206
78-646-01	FNPT x FNPT x Hose	3/4	206
78-668-01	Solder x Solder x Hose	3/4	206
78-668-02	Solder x Solder x Hose	1	359
78-671-01*	Solder x Solder x Hose	3/4	198

**Available with screwdriver slotted stainless steel stem.*

Water Heater Accessories EXV (78-RV) Series

Bronze Water Heater Shut-Off Valves with Thermal Expansion Control Relief Valve

These valves combine thermal expansion protection and water heater shut-off in a single, simple installation. Thery're space saving and a less costly alternative to large expansion tanks for avoiding potential hazards in closed systems.

FEATURES

- Solder, NPT, and Pex connections available
- Corrosion resistant, all bronze body
- Chrome plated ball
- Stainless steel fasteners and springs
- Bubble-tight shut-off
- Listed with IAPMO
- 78LF-RV Lead Free* option
- 210°F max
- Relief valve available with hose barb fitting, 1/2" Pex fitting, 3/8" compression fitting or 1/2" combination sweat/thread fitting which makes discharge piping assembly easy
- Expansion control valve taps into side of shut-off valve
- Listed with CSA B125.1 & B125.3
- City of Los Angeles approved

78 - X - X - X - RV

3 = 3/4 SWT	0 = 125 psig	4 = Hose barb
4 = 3/4 THD	1 = 100 psig	5 = Pex
7 = 3/4 PEX	2 = 80 psig	6 = Compression fitting
		7 = 1/2" NPT/SWT fitting

Example: 78-304-RV = 3/4 SWT, 125 psig with hose barb.

Water Heater Accessories EXP (40-XT) Series

Expansion Tanks for Potable Systems

Designed to protect closed water supply systems, appliances and piping from the hazards of thermal expansion, such as premature water heater failure. Installs easily on direct fired gas, oil and electric hot water heaters and storage tanks. Their pre-pressurized steel design includes an expansion membrane that stops any contact between the water and air in the tank.

FEATURES

- Ideal for use in dorms, apartments, office buildings and hospitals
- Maximum working pressure: 150 psig
- 100 percent non-metallic non-corrosive water reservoir
- Field adjustable pre-charge
- Compatible with most standard water heaters and storage tanks
- Diaphragm construction
- Pre-charge pressure 40 psig

Part Number	Capacity (Gal.)	Exp. Vol. (Gal.)	Connection	Dimensions (in.) A	Dimensions (in.) B	Net Wt. (lbs.)
40-XT1-03	2.1	1.25	3/4 NPT	11.75	8.00	6.3
40-XT3-03	5.0	3.00	3/4 NPT	16.00	10.50	11.5
40-XT5-03	6.5	4.20	3/4 NPT	18.50	10.50	13.7

Vacuum Relief Valves VR (37-200) Series

Vacuum Relief Valves for Water Heater Protection

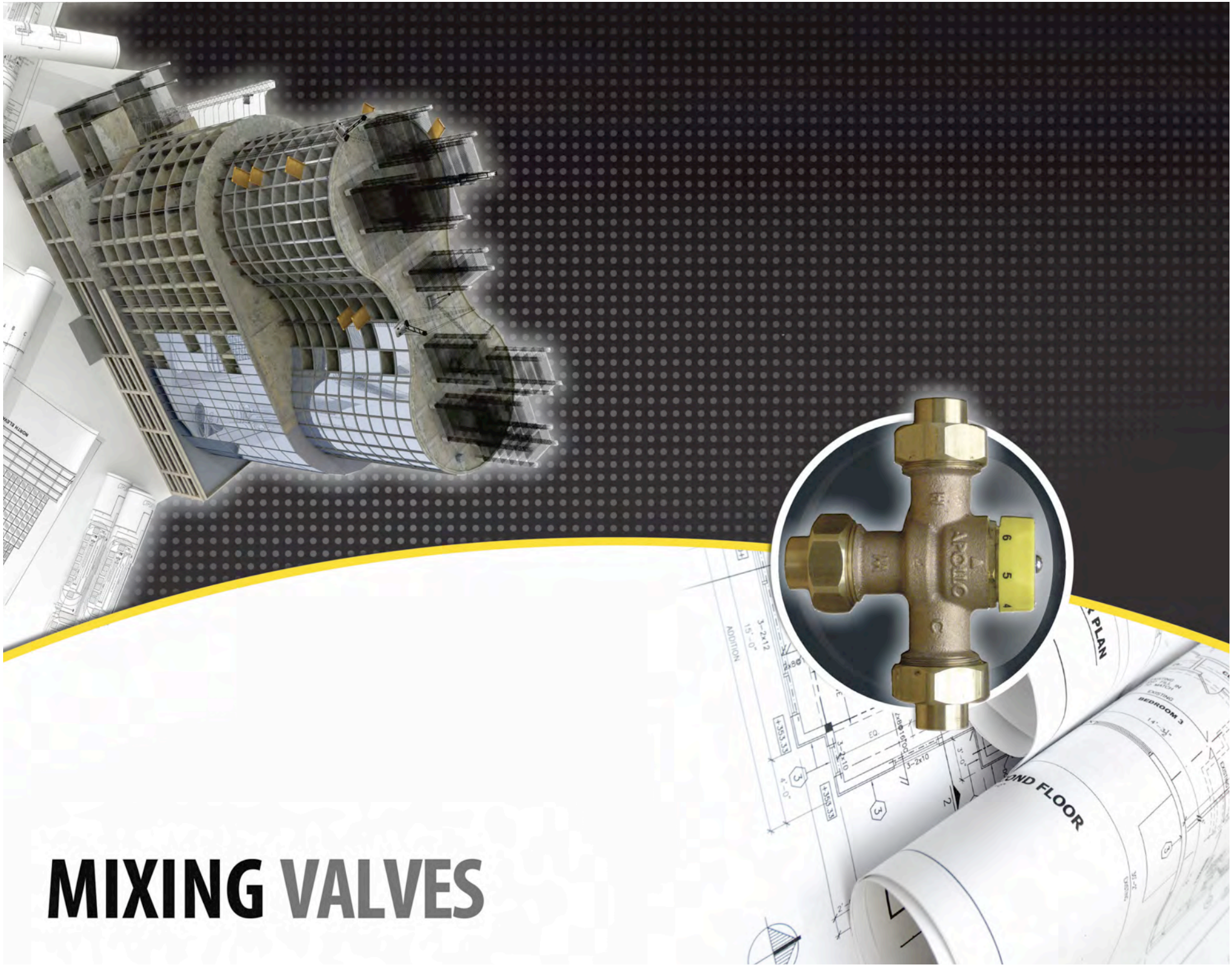
Automatically vents a system if a vacuum should occur. Prevents siphoning of the water from the system and collapse of a tank. Design certified by CSA in accordance with ANSI Z21.22. Also suitable for low pressure (15 psig maximum) steam service.

Part Number	Size (in.)	Venting Capacity	Wt./100 (lbs.)
37-201	1/2	15 CFM	30.4
37-202	3/4	16 CFM	32.4

*Suffix key: Satin Brass - **01**; Satin Chrome - **02***
**NOTE: These valves are not designed for anti-siphon backflow prevention. To prevent back-siphonage of polluted water into a potable water system, choose from Conbraco's line of backflow preventers.*

FEATURES

- Maximum temperature: 250°F
- Rated for water pressures to 200 psig
- Model 37-200 brass body (EPDM rubber
- Auto-vacuum relief at less than 1/2" vacuum
- Venting capacity as measured in cfm of air @2" mercury (vacuum)



MIXING VALVES

Mixing Valves
Hydronic
TV (34-200) Series

Mixing Valves

Designed to provide non-ASSE extension of water heater capacity and hot water temperature control in residential hot water heater and hydronic heating applications. Numbered indicator control allows easy setup and fingertip control. Available in low or high temperature options depending on floor or baseboard application.

FEATURES

- Low temperature range (85°-120°F)
- Standard temperature range (120°-180°F)
- Stainless steel spring
- Bronze body
- Thermoplastic shuttle assembly
- Solder connections are standard

Size (in.)	Connection	Low Temp. 85˚-120˚	Standard Temp 120˚-180˚	Wt./100 (lbs.)
1/2	Solder	**34-203-L1**	**34-203-01**	140
3/4	Solder	**34-204-L1**	**34-204-01**	146

To order Repair Kits use part numbers 34-200-01RK (high temp.), 34-200-L1RK (low temp.)

Mixing Valves "Point of Source" MVA (34A) Series

Thermostatic Mixing Valves

34A Series are ASSE 1017 certified mixing valves designed for hot water distribution systems; or "point of source" applications. High temperature versions are designed for radiant heat applications, to provide better control of hot water supply. Numbered indicator control allows easy setup and fingertip control. Available in standard or high temperature range options depending on application. Integrated check provides added protection of thermostat and cross connection control.

FEATURES

- Standard temperature range (85°-140°F)
- High temperature range (120°-180°F)
- Stainless steel spring
- Bronze body
- Supply pressures to 125 psig
- Union threaded, solder, CPVC and PEX connections
- Inlet checks and strainers
- High flow capacity
- Broad temperature adjustment range
- Hot and cold water failure protection
- CSA B125.01 (34A only)
- Calibrated max 120°F setpoint option avail.
- 20 mesh screens on both inlets
- Maximum flow 19 gpm @ 30 psid
- 34ALF Lead Free[1] option

Size (in.)	Connection	Standard Temp. 85˚-140˚	Cal. Max. Temp 120°	High Temp* 120˚-180˚
1/2	SWT x SWT x SWT	**34A-213-S**	**34A-213-BS**	**34A-213-HS**
1/2	FNPT x FNPT x FNPT	**34A-213-T**	**34A-213-BT**	**34A-213-HT**
1/2	CPVC x CPVC x CPVC	**34A-213-C**	**34A-213-BC**	
1/2	PEX x PEX x PEX	**34A-213-X**	**34A-213-BX**	
1/2	SWT x SWT x CPVC	**34A-213-SC**	**34A-213-BSC**	
1/2	FNPT x FNPT x CPVC	**34A-213-TC**	**34A-213-BTC**	
1/2	PEX x PEX x CPVC	**34A-213-XC**	**34A-213-BXC**	
1/2	CPVC x CPVC x PEX	**34A-213-CX**	**34A-213-BCX**	
3/4	SWT x SWT x SWT	**34A-214-S**	**34A-214-BS**	**34A-214-HS**
3/4	FNPT x FNPT x FNPT	**34A-214-T**	**34A-214-BT**	**34A-214-HT**
3/4	CPVC x CPVC x CPVC	**34A-214-C**	**34A-214-BC**	
3/4	PEX x PEX x PEX	**34A-214-X**	**34A-214-BX**	
3/4	SWT x SWT x CPVC	**34A-214-SC**	**34A-214-BSC**	
3/4	FNPT x FNPT x CPVC	**34A-214-TC**	**34A-214-BTC**	
3/4	PEX x PEX x CPVC	**34A-214-XC**	**34A-214-BXC**	
3/4	CPVC x CPVC x PEX	**34A-214-CX**	**34A-214-BCX**	
1	SWT x SWT x SWT	**34A-215-S**	**34A-215-BS**	**34A-215-HS**
1	FNPT x FNPT x FNPT	**34A-215-T**	**34A-215-BT`**	**34A-215-HT**
1	CPVC x CPVC x CPVC	**34A-215-C**	**34A-215-BC**	
1	PEX x PEX x PEX	**34A-215-X**	**34A-215-BX**	
1	SWT x SWT x CPVC	**34A-215-SC**	**34A-215-BSC**	
1	FNPT x FNPT x CPVC	**34A-215-TC**	**34A-215-BTC**	
1	PEX x PEX x CPVC	**34A-215-XC**	**34A-215-BXC**	
1	CPVC x CPVC x PEX	**34A-215-CX**	**34A-215-BCX**	

** High temperature versions are **not** ASSE 1017 certified.*

Mixing Valves
MVC (34C) Series

Commercial High Capacity Mixing Valves

34C Series ASSE 1017 listed, high-capacity mixing valves are thermostatically controlled regulating valves designed for use in large commercial potable and non-potable hot water systems or "point of source" applications. Simple adjustment of water temperature from 90°-140°F or 130°-180°F.

FEATURES

- Sizes: 3/4", 1", 1-1/4", 1-1/2", 2"
- Standard temp range (90°-140°F)
- High temp range (130°-180°F)
- Threaded connections
- Installs easily on heating source
- Patented design for easy in-line maintenance
- Supply pressures to 150 psig
- U. S. Patent No. 6,328,219
- CSA B125.01

Size (in.)	Standard Temp.* 90˚-140˚ F	High Temp. 130˚-180˚ F
3/4	34C-104-01	34C-104-H1
1	34C-105-01	34C-105-H1
1-1/4	34C-106-01	34C-106-H1
1-1/2	34C-107-01	34C-107-H1
2	34C-108-01	34C-108-H1

ASSE 1017 Certified

Mixing Valves "Point of Use" MVD (34D) Series

Mini-Mixer Mixing Valves

ASSE 1070 certified, "point of use" mixing valves are designed to sense and maintain preset outlet temperature compensating for fluctuations in hot and cold water supply temperatures and pressures. The mixed water temperature adjustment range is 85°F to 120°F and will hold a desired temperature within ±2°F. The 34D also features an adjustable temperature limit stop to prevent the valve from being set above 120°F.

34D Single Outlet "Point Of Use" Mini Mixer

FEATURES

- Corrosion resistant bronze body
- 3/8" compression connections
- Easy maintenance
- Safe, consistent outlet temperature
- Elevated temperature thermal element protection
- CSA B125.01
- Under sink mounting kit included
- Chrome plate option
- Tamper resistant locking cap
- Scald protection
- Integrated check valves
- Single outlet for sensor type faucets
- Bypass tee option for standard connections
- 34DLF Lead Free[1] option

Single Outlet Part Number	Size (in.) Inlet x Outlet	Finish
34D-302-01	3/8 COMP. x 3/8 COMP.	Bronze
34D-302-17	3/8 COMP. x 3/8 COMP.	Chrome Plated

Cold Water Bypass Double Outlet Part Number	Size (in.) Inlet x Outlet	Finish
34D-302-B1	3/8 COMP. x 3/8 COMP.	Bronze
34D-302-B17	3/8 COMP. x 3/8 COMP.	Chrome Plated

Mixing Valves
Dual Purpose
MVB (34B) Series

Scald Protection Mixing Valves

ASSE 1017 and 1070 certified mixing valves are designed for "point of source" or "point of use" applications with high flow. These valves use a thermostatic element that senses outlet temperature and will compensate for fluctuating inlet temperature and pressure. The mixed water temperature range is 85°-120°F and will hold a desired temperature within ±3°F. The 34B also features adjustable temperature limit stop to prevent the valve from being set above 120°F.

FEATURES

- High flow rates
- Stainless steel spring
- Bronze body
- Threaded, solder, Pex, or CPVC connections
- CSA B125.01
- Inlet checks and strainers
- Cold water failure protection
- Built in temperature limit stop
- Supply pressures to 125 psig
- Tamper resistant locking cap
- 34BLF Lead Free[1] option

Model Number	Series Number	Connection Type
MVB12	34B213T	1/2" FNPT
MVB34	34B214T	3/4" FNPT
MVB1	34B215T	1" FNPT
MVBS12	34B213S	1/2" Solder
MVBS34	34B214S	3/4" Solder
MVBS1	34B215S	1" Solder
MVBC12	34B213C	1/2" CPVC
MVBC34	34B214C	3/4" CPVC
MVBC1	34B215C	1" CPVC
MVBX12	34B213X	1/2" PEX
MVBX34	34B214X	3/4" PEX
MVBX1	34B215X	1" PEX

Automatic Temperature Controller MVHL 34HL Series

Innovation From Apollo®...The First Multiple-Fixture Mixing Valve That Meets ASSE 1017 and the New ASSE 1069 Standard

Only Apollo® offers fast delivery on the first water temperature mixing assembly to meet ASSE 1017 and the strict performance levels required by the new ASSE 1069 Standard.

The new 34HL Automatic Temperature Control Mixing Valve uses proven Apollo thermostatic control to produce a consistent mix of water from low through high flow range.

This single assembly controls mixed water temperatures to multiple-outlet shower and sink installations. It's the ideal choice in new construction or retrofits in nursing homes, prisons, hospitals, schools, gymnasiums, airports and other facilities where constant safe water temperature needs to be maintained at several outlets without the use of independent ASSE 1016 shower valves.

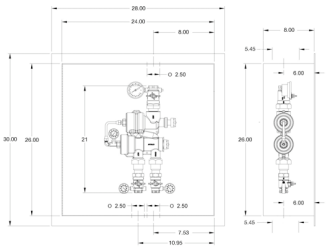


Figure 1: Typical Valve Dimensions with Stainless Steel Recessed Cabinet Option

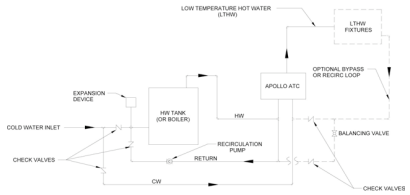


Figure 2: Typical Installation with Optional Recirculation loop

FEATURES

- The Apollo 34HL Automatic Temperature Controller is an advanced thermostatic mixing valve capable of maintaining safe, consistent temperature control of water at low and high flows to within ± 3.6° F.
- The 34HL will provide consistent temperature control at flow rates as high as 60 GPM and as low as 1.5 GPM, including mid-range flow between high and low.
- This high quality Apollo valve performs its function without requiring recirculation pumps like other systems in order to achieve low flow control.
- Integral strainers and checks are provided at the hot and cold supply inlets for greater reliability and performance.
- These cast bronze thermostatic mixing valves are manufactured to the same exacting standards that have made the Apollo name famous for durability and reliability.

PRODUCT SPECIFICATIONS

Maximum Static Pressure	150 psig (1034 kpa)
Maximum Water Temperature	200° F (93° C)
Minimum ASSE 1017 Flow	0.5 gpm (1.9 lpm)
Minimum ASSE 1069 Flow	1.5 gpm (5.7 lpm)
Temperature Adjustment Range	90° F - 140° F
Maximum Inlet Pressure Differential	30 psi (207kpa)
Inlet Connection	1" NPT
Outlet Connection	1-1/4" NPT
Temperature Gauge	0-200°F
Pressure Gauge	0-160 psi
Shipping Weight	36 lbs

Automatic Temperature Controller (ATC) MVHL 34HL Series

The First Multiple-Fixture Mixing Valve that Meets ASSE 1017 and the New ASSE 1069 Standard **Continued**

OPERATION

- The 34HL design is patented with a variable fluid flow assembly and dual thermal actuated controls for either low or high flow conditions.
- The passages are calibrated to control water temperature during all flow conditions without a "dead zone" between low and high flow.
- The 34HL also provides fluid shutoff as required by ASSE 1069 in the case that either the hot or cold supply lines fail (or are shut off for any reason) to prevent scalding or thermal shock.
- The valve can be tamper-resistant to limit the water temperature from exceeding safe conditions as required by ASSE 1069.
- The valve also meets the requirements of ASSE 1017 for Point of Source Applications.

This device will service end-use fixture fittings, including but not limited to, gang showers and sitz baths, by supplying tempered water at a preset temperature through a single supply pipe and will meet ASSE standard 1069 2005. ASSE 1069 devices are designed to reduce the risk of scalding and thermal shock during changes in hot or cold water supply pressure or temperature, or loss of cold water supply.

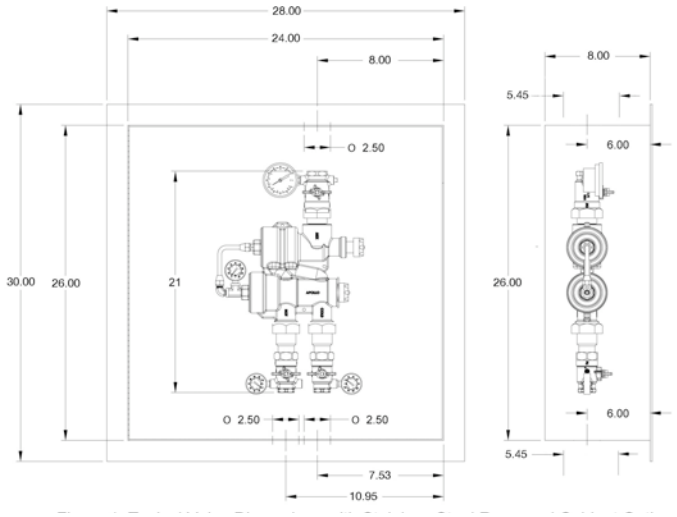


Figure 1: *Typical Valve Dimensions with Stainless Steel Recessed Cabinet Option*

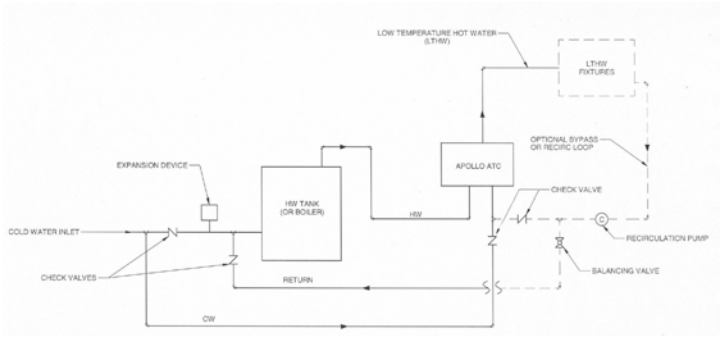


Figure 2: *Typical Installation with Optional Recirculation Loop*

Standard Approvals

ASSE 1069-Automatic Temperature Control Mixing Valves

This device will control outlet water temperature to individual or multiple fixtures within 3.6°F to reduce the risk of scalding or thermal shock. This device is intended to be installed where the bather has no access to the temperature adjustment, and where no further mixing occurs downstream of the device.

The Apollo 34HL ATC will meet the performance requirements of ASSE 1069 at flow as low as 1.5 GPM up through maximum flow rate.

ASSE 1017-Temperature Actuated Mixing Valves for Hot Water Distribution Systems

This device will control outlet set water temperature to hot water distribution systems near the hot water source within 3°F below 2 GPM and within 5°F above 5 GPM.

FLOW CAPACITY

Model	Min. Flow to ASSE 1069	Pressure Drop Across Valve 10 psi (69 kpa)	20 psi (138 kpa)	30 psi (207 kpa)	45 psi (310 kpa)
34HL10501	1.5 gpm 6 lpm	22 gpm 83 lpm	42 gpm 159 lpm	52 gpm 197 lpm	60 gpm 227 lpm

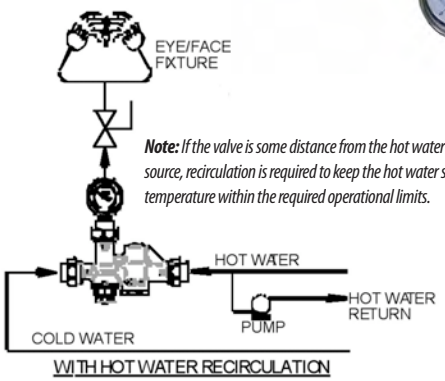
OPTIONS:

34HL10517 - Nickel plated
34HLBOX01 - Cabinet, flush mount, SS
34HLBOX02 - Cabinet, flush mount, CS powder coat
34HLBOX03 - Cabinet, wall mount, SS
34HLBOX04 - Cabinet, wall mount, CS powder coat

Emergency Eye Wash/ Face Wash Mixing Valve MVE 34E Series

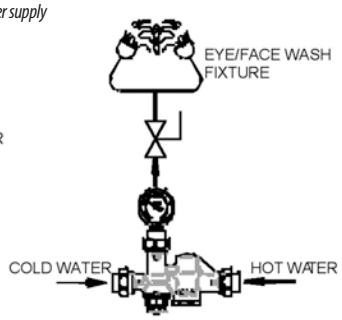
MVE 34E
Typical Installations

Designed to control the cold and hot water temperature to deliver tepid water at a predetermined temperature to emergency eyewash/face-wash fixtures. The device provides a precise temperature and flow control in the event of cold water, hot water and thermostatic element failures.



Note: *If the valve is some distance from the hot water source, recirculation is required to keep the hot water supply temperature within the required operational limits.*

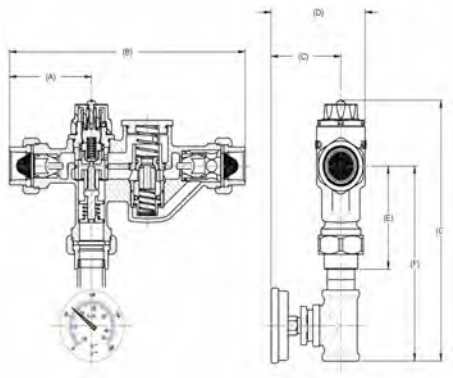
WITH HOT WATER RECIRCULATION



NO RECIRCULATION

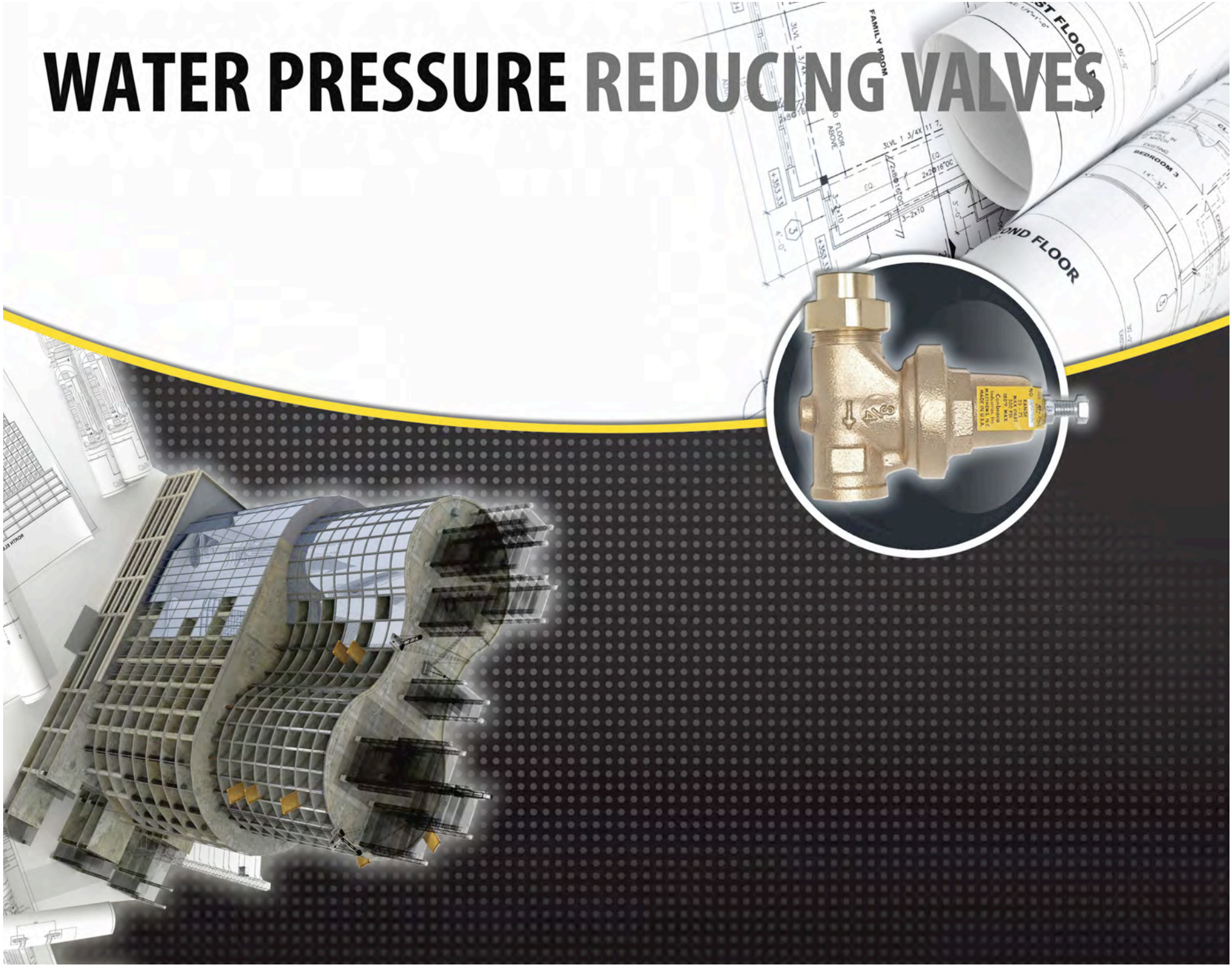
FEATURES

- Hot & cold water supply failure protection patented design
- Tepid water temperature limit control and adjustment
- Tepid water temperatue adjustment handle with locking mechanism for tamper-resistant protection
- Integral inlet check valves and strainers
- Superior thermostatic element technology for optimum reliability and dependability
- Thermostatic element failure and over travel protection
- High efficiency and positive shut-off check valves
- In-line accessibility and servicabillity of failure protection module and mixing valve internal components
- ASSE 1071 and ANSI/ISEA Z358.1
- Meets requirements of the EPA Safe Drinking Water Act
- Corrosion resistant components
- 34ELF Lead Free[1] option



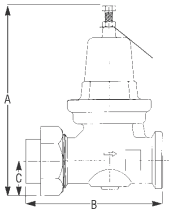
Model No. Series No. Connection	**MVE-12** **34E103T** 1/2" FPT	**MVES-12** **34E103S** 1/2" Solder	**MVE-34** **34E104T** 3/4" FPT	**MVES-34** **34E104S** 3/4" Solder
A (in.)	3.09	3.22	3.09	3.10
B (in.)	8.90	9.15	8.90	8.90
C (in.)	2.66	2.66	2.67	2.67
D (in.)	3.60	3.60	3.60	3.60
E (in.)	3.45	3.45	3.45	3.45
F (in.)	5.77	5.77	6.32	6.32
G (in)	7.83	7.83	8.39	8.39
Unit Wt. (lbs.)	3.94	3.73	5.13	5.07

WATER PRESSURE REDUCING VALVES



Water Pressure Reducing Valves
PR (36) Series

Controls high water pressure and problem fluctuations. Reduces supply pressures up to 300 psig to more functional range. Factory set at 50 psig; adjusts with turn of a bolt.



FEATURES

- Nitrile diaphragm (FDA grade) 180°F
- No cage screws to rust
- Meets ASSE and CSA standards
- Listed with IAPMO
- Integral high-capacity SS strainer
- City of Los Angeles approved
- Replaceable cartridge
- Comes standard with union pipe end
- Corrosion resistant bronze construction
- Available in sizes from 1/2" to 2"
- Integral thermal expansion by-pass
- 36LF Lead Free[1] option

36 [36LF] – X X X – X X

End Connection	Options	Size	Body	Pressure Range
1-Single Union FNPT x FNPT	0-STD	3 - 1/2	0-(Standard)	1-25-75psig
2-FNPT xFNPT	C-CPVC	4 - 3/4	P-Plugged 1/4" NPT	(Standard)
3-Single Solder Union x FNPT	S-Stainless Steel Screw + Seal	5 - 1	G-1/4" NPT w/ Pressure Gauge	2-10-35 psig*
4-Double Union NPT x FNPT	X-PEX Tail Pc	6 - 1-1/4		3-75-125 psig*
5-Double Union Solder x Solder		7 - 1-1/2		
8-Double Union CPVC		8 - 2		
9-Double Union PEX*				

Note: Not all variations are available in each size. Check with customer service.

** Items marked are not IAPMO listed*

Note: Flow data is based on static conditions of: Inlet pressure =100 psig: Outlet pressure = 50 psig. All data is for female NPT versions only. Pressure fall-off is the pressure by which the outlet pressure drops as flow demand is needed.

36 Series Water Capacity (GPM)				
Pipe Size (in.)	Fall Off (psi)	Pressure Differential (psi) 25	50	75
1/2	5	1.7	2.0	2.3
	10	4.3	5.0	5.8
	15	8.5	10.0	11.5
	20	15.3	18.0	20.7
3/4	5	3.4	4.0	4.6
	10	7.7	9.0	10.4
	15	14.5	17.0	19.6
	20	22.1	26.0	29.9
1	5	5.1	6.0	6.9
	10	11.9	14.0	16.1
	15	22.1	26.0	29.9
	20	34.0	40.0	46.0
1-1/4	5	8.5	10.0	11.5
	10	19.6	23.0	26.5
	15	35.7	42.0	48.3
	20	52.7	62.0	71.3
1-1/2	5	11.9	14.0	16.1
	10	27.2	32.0	36.8
	15	47.6	56.0	64.4
	20	68.0	80.0	92.0
2	5	15.3	18.0	20.7
	10	39.1	46.0	52.9
	15	66.3	78.0	89.7
	20	93.5	110.0	126.5

36-100 & 36-300 Series Part Numbers Pipe Thread Union x FNPT	Solder Joint Union x FNPT	CPVC Union x FNPT	Size (in.)	Dimensions (in.) A	B	C	Wt./ 100 (lbs.)
36-103	**36-303**		1/2	6.12	4.62	1.00	350
36-104	**36-304**	**36-3C4**	3/4	6.12	4.62	1.00	340
36-105	**36-305**	**36-3C5**	1	6.50	5.12	1.12	450
36-106	**36-306**		1-1/4	8.62	6.37	1.37	1020
36-107	**36-307**		1-1/2	8.62	6.62	1.37	1045
36-108	**36-308**		2	11.75	8.44	1.81	2250
36-200 Series Part Numbers (FNPT x FNPT)							
36-203			1/2	6.12	3.69	1.00	311
36-204			3/4	6.12	3.69	1.00	305
36-205			1	6.50	4.06	1.12	415
36-206			1-1/4	8.62	5.19	1.37	910
36-207			1-1/2	8.62	5.31	1.37	909
36-208			2	11.75	7.12	1.81	1880
36-400 & 36-500 Series Part Numbers Double Union FNPT x FNPT	**Double Union Solder x Solder**	**Double Union CPVC x CPVC**	**Size(in.)**	**Dimensions (in.) A**	**B**	**C**	**Wt./ 100 (lbs.)**
36-403	**36-503**		1/2	6.12	5.81	1.00	389
36-404	**36-504**	**36-5C4**	3/4	6.12	5.81	1.00	372
36-405	**36-505**	**36-5C5**	1	6.50	6.50	1.12	495
36-406	**36-506**		1-1/4	8.62	7.69	1.37	1090
36-407	**36-507**		1-1/2	8.62	8.00	1.37	1183
36-408	**36-508**		2	11.75	10.06	1.81	2472
36-800 Series Part Numbers (Less Unions)							
36-806			1-1/4	8.62	5.81	1.37	910
36-900 & 36-9C4 Series Part Numbers							
36-904	Pex x Pex		3/4	6.12	5.81	1.00	372
36-9C4	3/4" Union FNPT x 3/4" Pex Union		3/4	6.12	5.81	1.00	372

Water Pressure Reducing Valves
36 Series Jump Kit

Water Pressure Reducing Valves

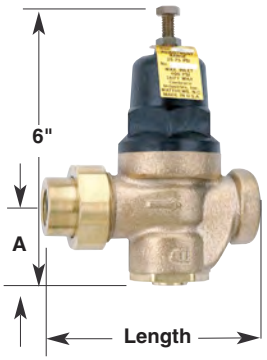
Same rough-in dimensions as a 36 Series PRV but used as a spacer to flush system.

Part Number	Size(in.)	Description
36-404-JK	3/4	Double Union Thread
36-405-JK	1	Double Union Thread
36-406-JK	1-1/4	Double Union Thread
36-504-JK	3/4	Double Union Sweat
36-505-JK	1	Double Union Sweat
36-506-JK	1-1/4	Double Union Sweat
36-504-JKC	3/4	Double Union CPVC
36-505-JKC	1	Double Union CPVC
36-516-JK	1-1/4	Double Union M x F Sweat

Water Pressure Reducing Valves
PRC (36C) Series

Compact Corrosion Resistant Pressure Reducing Valves

Handles supply pressures up to 400 psig; working temperatures to 180°F. All-bronze body, corrosion resistant cage, stainless steel strainer and seat. Meets **ASSE** and **CSA** standards; listed with **IAPMO.**



FEATURES

- EPDM FDA approved diaphragm
- Designed to meet local plumbing codes
- Standard factory setting: 50 psi
- Adjusts from 25 to 75 psi (standard)
- Sealed cage with stainless steel adjusting screw
- Balanced piston design
- Built-in thermal expansion by-pass
- Integral SS strainer
- 36CLF Lead Free[1] option
- IAPMO listed
- Extended control of high pressure conditions using SS adjusting screw
- Pipe union, meter union, female NPT, PEX, CPCV, or solder-joint connections
- ASSE 1003 & CSA B356
- City of Los Angeles approved

36C [36CLF] – X 0 X – X X – X

End Connection	Size (in.)	Cleanout	Pressure Range	Options
1-Single Union NPT x NPT	3 - 1/2	0-Standard	1 - 25-75 psig	C-CPVC Tailpiece
2-FNPT x FNPT (Standard)	4 - 3/4	P- Plugged 1/4 NPT	2 - 10-35 psig (-LP)*	AUB - (3/4"& 1" only)
3-Single Solder Union x NPT	5 - 1	G- 1/4 NPT w/ Pressure Gauge	3- 75-125 psig (-HP)*	
4-Double Union NPT x NPT				
5-Double Union Solder x Solder				
6-Single Union Meter x NPT				
7-90˚ Elbow Meter Union x NPT				
9-Pex x Pex*				

Note: Not all variations are available in each size. Check with customer service.

** Items marked are not IAPMO listed*

Water Pressure Reducing Valves
36C Series

36C Series Water Capacity (GPM)				
Pipe Size (in.)	Fall Off (psi)	Pressure Differential (psi) 25	50	75
1/2	5	1.30	1.50	1.70
	10	4.70	5.50	6.30
	15	10.60	12.50	14.40
	20	15.30	18.00	20.70
3/4	5	2.10	2.50	2.90
	10	6.80	8.00	9.20
	15	13.20	15.50	17.80
	20	18.30	21.50	24.70
1	5	2.80	3.30	3.70
	10	8.50	10.00	11.50
	15	15.30	18.00	20.70
	20	21.30	25.00	28.80

Part Number	Size (in.)	Length	Dimensions (in.) A	Wt./100 (lbs.)
NPT Threaded Inlet x Outlet				
36C-203	1/2	3.50	1.62	200
36C-204	3/4	3.50	1.62	200
36C-205	1	3.75	1.50	225
NPT Threaded Union Inlet x FNPT Outlet				
36C-103	1/2	4.41	1.62	240
36C-104	3/4	4.41	1.62	240
36C-105	1	4.75	1.50	270
Sweat Union Inlet x FNPT Outlet				
36C-303	1/2	4.41	1.62	240
36C-304	3/4	4.75	1.62	240
36C-305	1	4.41	1.50	270
CPVC Union Inlet x FNPT Outlet				
36C-304-01C	3/4	4.75	1.62	240
36C-305-01C	1	4.41	1.50	270
Double Union/Threaded Inlet x Threaded Inlet				
36C-403	1/2	5.37	1.62	280
36C-404	3/4	5.37	1.62	280
36C-405	1	5.87	1.50	310
Double Union/Sweat Inlet x Sweat Outlet				
36C-503	1/2	5.37	1.62	280
36C-504	3/4	5.37	1.62	280
36C-505	1	5.87	1.50	310
Double Union CPVC Inlet x CPVC Outlet				
36C-504-01C	3/4	5.37	1.62	280
36C-505-01C	1	5.87	1.50	310
90˚ Meter Thread Union Inlet x FNPT Outlet				
36C-704	1 x 3/4	9.62	1.62	400
36C-705	1 x 1	13.44	1.50	580
Less Unions				
36C-804	3/4	3.50	1.62	211
36C-805	1	3.75	1.50	218
Double Union/Pex Inlet x Pex Outlet				
36C-903	1/2	5.625	1.62	280
36C-904	3/4	5.625	1.62	280
36C-905	1	6.125	1.62	285

Water Pressure Reducing Valves
36C Series Jump Kit

Water Pressure Reducing Valves

Same rough-in dimensions as a 36C Series PRV but used as a spacer to flush system.

Part Number	Size (in.)	Description
36C-404-JK	3/4	Double Union Thread
36C-405-JK	1	Double Union Thread
36C-504-JK	3/4	Double Union Sweat
36C-505-JK	1	Double Union Sweat
36C-504-JKC	3/4	Double Union CPVC
36C-505-JKC	1	Double Union CPVC
36C-515-JK	1	Double Union M x F Sweat
36C-904-JK	3/4	Double Union Pex x Pex

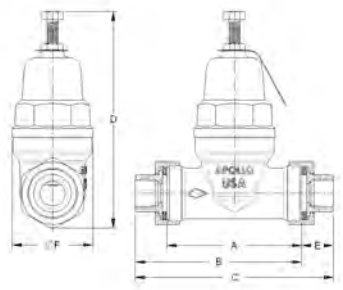
Water Pressure Reducing Valves
PRE-36E Series

Economy Pressure Reducing Valve

Designed to protect residential and commercial water distribution systems by automatically controlling fluctuating supply presures. The dezincification resistant bronze body and dielectric polymer cage provide maximum corrosion resistance. Designed for easy in-line servicing with simple cartidge removal.

FEATURES

- High efficiency flow
- Balanced piston design
- Sealed cage for vault installations
- Built-in thermal expansion by-pass
- Integral stainless steel strainer
- SS adjusting screw and nut
- Modular seat disc and strainer cartridge
- Control pressure ranges: 15-75 psi and 75-150 psi
- NPT, solder, PEX, CPVC, press and push connections
- Maximum supply pressure: 400 psig
- Working temperature range: 33°F - 180°F
- 36ELF Lead Free[1] option
- 100% manufactured in USA



Connect Type	Size (in.)	Dimensions (in) A	B	C	D	E	F	Wt. (Union) (lbs.ea)
Thread	1/2	3-5/8	4-1/2	5-3/8	6	5/8	2-3/4	3.5
Solder	1/2	3-5/8	4-1/2	5-1/2	6	1/2	2-3/4	3.4
PEX	1/2	3-5/8	4-1/2	5-1/2	6	5/8	2-3/4	3.3
CPVC	1/2	3-5/8	4-1/4	5	6	1/2	2-3/4	3.1
Thread	3/4	3-5/8	4-1/2	5-1/2	6	5/8	2-3/4	3.4
Solder	3/4	3-5/8	4-1/2	5-1/2	6	3/4	2-3/4	3.3
PEX	3/4	3-5/8	4-5/8	5-5/8	6	5/8	2-3/4	3.2
CPVC	3/4	3-5/8	4-1/2	5-1/2	6	5/8	2-3/4	3.0
Thread	1	3-5/8	4-5/8	5-3/4	6	5/8	3-3/8	4.5
Solder	1	3-5/8	4-5/8	5-3/4	6	7/8	3-3/8	4.4
PEX	1	3-5/8	4-3/4	6	6	3/4	3-3/8	4.3
CPVC	1	3-5/8	4-3/4	6	6	15/16	3-3/8	4.0

36E - 1 [X] [X] - [X] [X] [X]

End Connection	Union	Size	Pressure Range	Connection
36E - Standard	0-No union	3 - 1/2	01 - 15-75 psig	T -FNPT thread
36ELF - Lead Free	1- Single union	4 - 3/4	03 - 75-150 psig	S - Solder
	2- Double union	5 - 1		C - CPVC
				P - Apollo-Push®
				X - PEX
				PR - Apollo-Press®

36E Series Water Capacity (GPM)				
Pipe Size (in.)	Fall Off (psi)	Pressure Differential (psi) 25	50	75
1/2	10	10	13	16
	15	13	18	22
	20	17	23	29
	30	22	29	36
3/4	10	16	21	26
	15	20	27	32
	20	24	32	40
	30	29	38	48
1	10	25	33	41
	15	30	42	52
	20	34	45	56
	30	35	47	59

Water Pressure Reducing Valves
PRH (36H) Series

Super Capacity all Bronze Pressure Reducing Valves

Available with optional rugged Y strainer for commercial and light industrial applications. Controls supply pressures up to 400 psig.

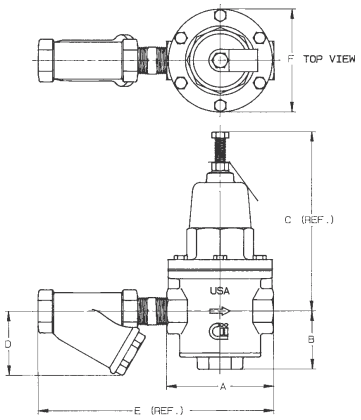
FEATURES

- Designed to meet ASSE and CSA standards; listed with IAPMO
- Large yoke-type design aids flow and reduces pressure loss
- Initial pressure up to 400 psig
- Maximum temperature 180°F
- Integral by-pass relief protects against thermal expansion
- Bronze body & cage, stainless steel replaceable seat
- Sizes: 1/2", 3/4", 1", 1-1/4", 1-1/2", 2", & 3" NPT - threads (inlet and outlet): 2-1/2" & 3" offered in 150 lb. flange
- Bottom access for easy inline repair
- Sealed cage is standard
- Stainless steel bolts, adjustment screws and spring
- 36HLF Lead Free[1] option

36H [36HLF] - X X X -0 X

End Connection	Options	Size (in.)	Pressure Range
2-NPT x NPT (Standard)	0-Standard	3 - 1/2	1-25-75 psig (Standard)
7-Flanged (2-1/2"-3" only)	1-W/Y Strainer	4 - 3/4	2-10-35 psig
		5 - 1	3-75-125 psig
		6 - 1-1/4	
		7 - 1-1/2	
		8 - 2	
		9 - 2-1/2	
		0 - 3	

Note: Not all variations are available in each size. Check with customer service.



Size (NPT) (in.)	Dimensions (in.) A	B	C	D	E	F	Wt. With Strainer	Wt. Without Strainer
1/2	4.12	2.25	7.00	1.87	8.37	4.00	7	6
3/4	4.12	2.25	7.00	2.44	9.00	4.00	8	6
1	4.82	2.31	7.50	4.00	10.25	4.69	12	8
1-1/4	6.75	3.19	10.00	3.37	12.50	6.50	29	24
1-1/2	6.19	3.19	10.00	3.87	13.12	6.50	29	23
2	8.12	3.50	12.50	4.62	16.00	7.62	47	38
2-1/2	8.12	3.50	12.50	5.94	16.69	7.62	49	37
3	10.37	3.94	15.12	6.94	20.50	9.75	87	70
Flanged								
2-1/2	10.37	3.50	12.50	7.12	21.69	7.62	105	55
3	12.50	3.94	15.12	8.12	24.50	9.75	136	92

Note: Flow data is based on static conditions of: Inlet pressure =100 psig: Outlet pressure = 50 psig. All data is for female NPT versions only. Pressure fall-off is the pressure by which the outlet pressure drops as flow demand is needed.

36H Series Water Capacity (GPM)

Pipe Size (in.)	Fall Off (psi)	Pressure Differential (psi) 25	50	75
1/2	5	8.5	10.0	11.5
	10	13.6	16.0	18.4
	15	17.9	21.0	24.2
	20	21.3	25.0	28.8
3/4	5	10.6	12.5	14.4
	10	20.4	24.0	27.6
	15	28.1	33.0	38.0
	20	34.0	40.0	46.0
1	5	17.0	20.0	23.0
	10	29.8	35.0	40.3
	15	40.8	48.0	55.2
	20	51.0	60.0	69.0
1-1/4	5	21.3	25.0	28.8
	10	51.9	61.0	70.2
	15	80.8	95.0	109.3
	20	106.3	125.0	143.8
1-1/2	5	29.8	35.0	40.3
	10	61.5	72.3	83.1
	15	90.1	106.0	121.9
	20	113.1	133.0	153.0
2	5	55.3	65.0	74.8
	10	126.7	149.0	171.4
	15	174.3	205.0	235.8
	20	231.2	272.0	312.8
2-1/2	5	58.7	69.0	79.4
	10	132.6	156.0	179.4
	15	200.6	236.0	271.4
	20	271.2	319.0	366.9
3	5	80.8	95.0	109.3
	10	176.0	207.0	238.1
	15	282.5	332.4	382.3
	20	365.5	430.0	494.5

Water Pressure Reducing Valves A127 Series

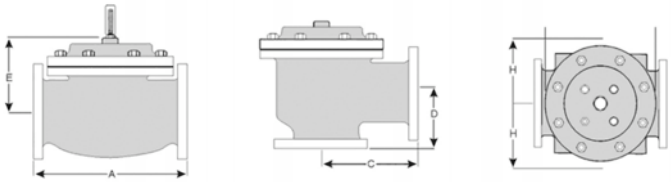
Apollo Control Valve

Apollo control valves are ideal for a wide range of commercial and industrial applications, wherever the flow, pressure or level of liquids needs to be controlled.

Hydraulically operated diaphragm main valve automatically controls non-corrosive, non-abrasive fluids by means of a wide range of pilots.

FEATURES

- Ductile Iron Body & Bonnet, ASTM A536 Grade 65-45-12
- NSF Epoxy coated
- Bronze / stainless steel internals
- Buna-N elastomers 40°F - 180°F
- Lead Free[1] option
- Wye strainer protects pilot system from debris
- Isolation ball valves simplify maintenance and trouble shooting
- Each valve is 100% factory tested and can be pre-set to your requirements
- Wide range of control pilots and functions
- Opening speed control is standard



Globe Angle

Valve Sizes		Service Ratings - Ductile Iron	
Globe Flanged	1 1/4" - 24"	150# Flanged	250 psi MAWP
Angle Flanged	1 1/4" - 16"	300# Flanged	640 psi MAWP
Globe / Angle Threaded	1 1/4" - 3"	Threaded	640 psi MAWP
Globe / Angle Grooved	1 1/2" - 4"	Grooved	300 psi MAWP

Size (in.)	End Connections A				End Connections C				End Connections D				E	H
	Screwed	Grooved	150# FLGD	300# FLGD	Screwed	Grooved	150# FLGD	300# FLGD	Screwed	Grooved	150# FLGD	300# FLGD	All	All
1-1/4 - 1-1/2	8 3/4	8 3/4	8 1/2	8 3/4	4 3/8	4 3/8*	4 1/4	4 3/8	3 1/8	3 1/8*	3	3 1/8	6	10
2	9 7/8	9 7/8	9 3/8	9 7/8	4 3/4	4 3/4	4 3/4	5	3 7/8	3 7/8	3 7/8	4 1/8	6	11
2 1/2	10 1/2	10 1/2	10 1/2	11 1/8	6	6	6	6 3/8	4	4	4	4 3/8	7	11
3	13	13	12	12 3/4	6 1/2	6 1/2	6	6 3/8	4 1/2	4 1/2	4	4 3/8	6 1/2	11
4	—	15 1/4	15	15 5/8	—	7 5/8	7 1/2	7 13/16	—	5 5/8	5 1/2	5 13/16	8	12
6	—	—	17 3/4	18 5/8	—	—	10	10 1/2	—	—	6	6 1/2	10	13
8	—	—	25 3/8	26 3/8	—	—	12 11/16	13 3/16	—	—	8	8 1/2	11 7/8	14
10	—	—	29 3/4	31 1/8	—	—	14 7/8	15 9/16	—	—	11 3/8	12 1/16	15 3/8	17
12	—	—	34	35 1/2	—	—	17	17 3/4	—	—	11	11 3/4	17	18
14	—	—	39	40 1/2	—	—	—	—	—	—	—	—	18	20
16	—	—	40 3/8	42	—	—	20 13/16	21 5/8	—	—	15 11/16	16 1/2	19	20
24	—	—	62	63 3/4	—	—	—	—	—	—	—	—	27	28 1/2

*Grooved End Not Available in 1-1/4"

For further information request brochure ACVBR9000

Water Pressure Reducing Valves A127 Series

MORE FEATURES

- Automatically reduces a higher up stream pressure to a constant lower downstream pressure
- Constant outlet pressure regardless of variations in upstream pressure or flow
- Adjustable opening speed
- Pilot operated main valve is not subject to pressure fall-off
- Outlet pressure is adjustable with a single screw
- Optional low-flow bypass, Model A127-LF

MATERIAL OPTIONS

- Carbon Steel
- Stainless Steel
- Bronze
- Aluminum
- Nickel aluminum bronze
- Viton and EPDM elastomers
- Stainless steel pilots and tubing
- Stainless steel internals

Apollo Control Valve Continued

Other Control Functions	
A94	Diaphragm Check Valve
A108-2	Pressure Relief/Pressure Sustaining
A110	Differential Control
A115-2	Solenoid Control
A115-4	Solenoid Control/high capacity pilot
A120	Rate of Flow Control
A127LF/727LF	Low flow bypass
A800	Float Controlled On/Off Service
A810	Float Controlled, Modulating
A22 / A88	Digital Electronic Control, regulates pressure, flow or level
A127LF/727LF	Low Flow Bypass

Water Pressure Reducing Valves Accessories W-8078-00 Series

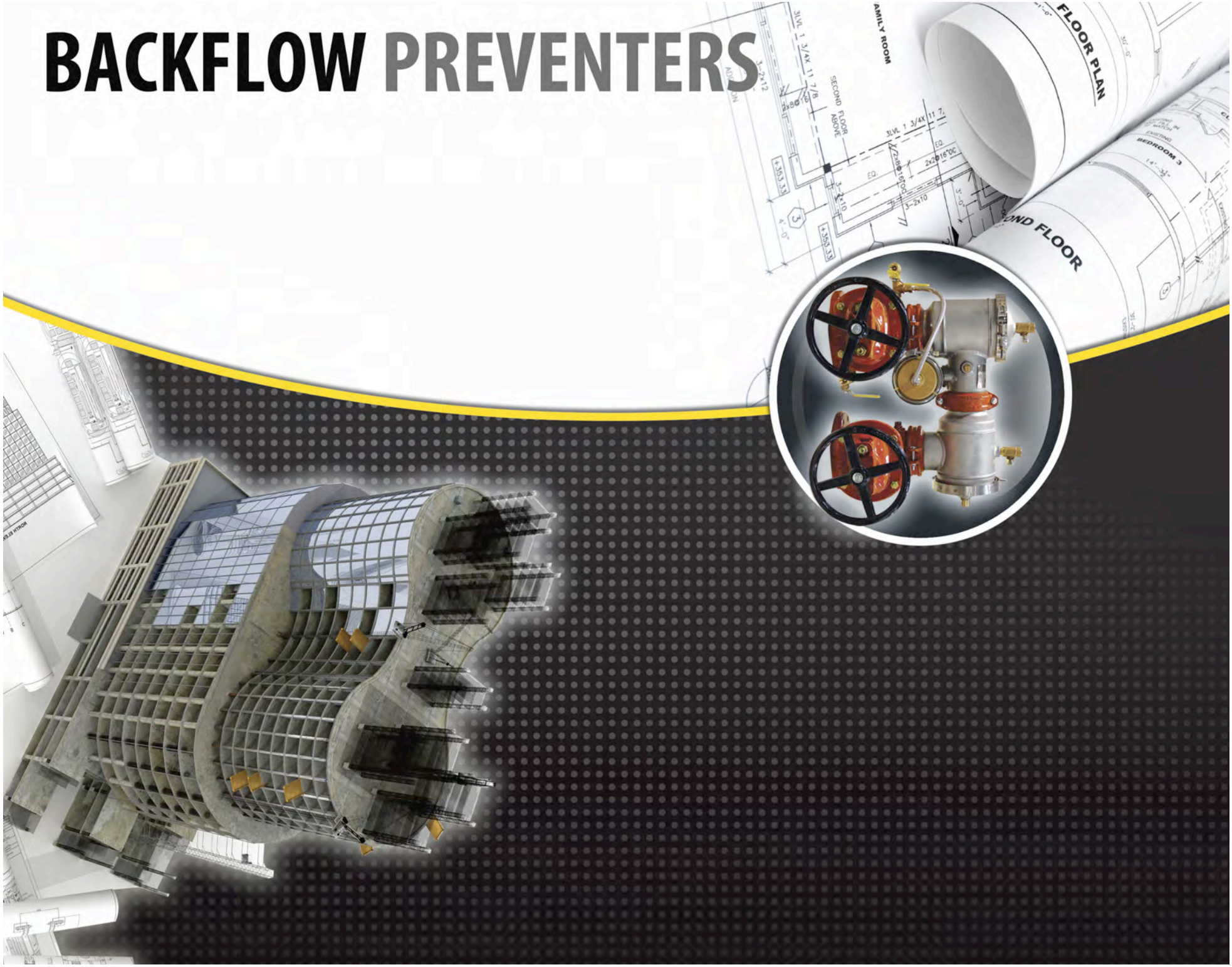
3/4" Hose Thread Pressure Gauges

This hose connection pressure gauge includes a high pressure memory indicator that is used for testing water pressure. Temp. range: 50°F to 130°F.

Part Number	Pressure Range	Wt./100 (lbs.)
W-8078-00	0-300 psig	46

For additional information see catalog SRCA9000

BACKFLOW PREVENTERS



Top Entry Double Check Valve Assembly DC-4A Series

Top Entry Double Check Valve Assembly

Designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The modular check valves have replaceable seats and reversible silicone seat discs. Apollo ball valve shutoffs with stainless steel handles and nuts are standard.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.

Sizes 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"

MATERIALS	
Body	Bronze
Caps	Cast Bronze C84400
Check Valves	Glass-Filled PPO
Springs	300 Series Stainless Steel
Seat Discs	Chloramine-resistant Silicone
O-rings	Chloramine-resistant EPDM
Ball Valve Handles	Stainless Steel

See Backflow Catalog for dimensions and flow curves

FEATURES

- Low pressure loss
- Captured spring cartridge check valves
- Compact yet easy to maintain
- Top access for testing, fast repair and maintenance
- Corrosion resistant
- No special tools required
- 5 year, domestic warranty
- 4ALF-100 Lead-Free[1] option
- UL - Pending
- ASSE 1015
- CSA
- Other approvals pending*
- Chloramine-resistant elastomers
- Patent pending
- Horizontal and vertical flow up approvals
- Maximum working pressure 175 psi
- Temperature range 33°F - 180°F
- CSA B64.4
- Designed, manufactured, assembled and tested in South Carolina, USA

**Contact factory for approval details*

40A[X] - 1 [X] [X] - T [X] [X]

	Y-Strainer	Size (in.)	Shut-Off Valve	Options
40A - Standard 4ALF - Lead Free[1]	0-Standard 1-w/ Y-strainer (shipped loose)	3-1/2" 4-3/4" 5-1" 6-1-1/4" 7-1-1/2" 8-2"	1-less ball valves (UL Classified) 2-w/ball valves (Standard) 4-w/union ball valves	F- SAE threaded test cocks (standard 1/2", 3/4", 1") LL-locking lever handles (1-1/4", 1-1/2", 2") LR-locking round handles (1/2", 3/4", 1")

Example: 4A-104-T4LR = 3/4" double check valve assembly with union ball valves with round locking lever handles

Top Entry Double Check Valve Assembly DC-40 Series

Top Entry Double Check Valve Assembly

Designed to protect against back-flow from a cross-connection of non-health hazard pollutant. Within the assembly are two mechanically independent, spring-loaded poppet type check valves set in an integral cast bronze body. Both check valves are designed at an inclined angle upward from horizontal centerline of the assembly, and all test cocks are mounted at the top to assure easy access during repair and maintenance when unit is installed in a pit or tight places.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.

Sizes 3/4", 1", 1-1/4", 1-1/2", 2"

MATERIALS	
Body and covers	Bronze
Springs	Stainless Steel
Poppets	Glass-Filled Celcon
Seat discs	Silicone Rubber
Replaceable seats	Glass-Filled PPO
Fasteners	Stainless Steel
Ball valve handles	Stainless Steel

See Backflow Catalog for dimensions and flow curves

FEATURES

- Top access for fast testing, and maintenance
- Corrosion resistant
- Low head loss
- Interchangeable poppets and springs
- Replaceable seats & reversable seat discs
- Approved for horizontal installations
- 5 year, domestic warranty
- Lead-Free[1] option
- CSA
- USC FCCCHR
- AWWA C-510
- ASSE 1015
- Comes standard with Apollo full port ball valves with stainless steel handles
- Maximum working pressure 175 psi
- Temperature range 33°F - 180°F
- Designed, manufactured, assembled and tested in South Carolina, USA

**Contact factory for approval details*

40 [X] - 1 X X - T X X

	Y-Strainer	Size (in.)	Shut-Off Valve	Options
40 - Standard 40LF - Lead Free[1]	0-Standard 1-w/ Y-strainer (1-1/4"-2" shipped loose)	4-3/4" 5-1" 6-1-1/4" 7-1-1/2" 8-2"	1-less ball valves (UL Classified) 2-w/ball valves (Standard) 4-w/union ball valves	F- SAE threaded test cocks LL-locking lever handles (1-1/4", 1-1/2", 2")

Example: 40-104-T4LL = 3/4" double check valve assembly with union ball valves with locking lever handles

Backflow Preventers DC-4A Series

Double Check Valve Assembly

The Apollo® MODEL DC-4A Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The body is stainless steel from 2-1/2"-8" and FDA epoxy coated ductile iron in the 10" and 12". Available with a wide variety of shutoff valve options.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.

Sizes 2-1/2"-12"

MATERIALS	
Body (2-1/2"-8")	304 Stainless Steel
Body (10 & 12")	FDA Epoxy Coated Ductile Iron
Covers (2-1/2"-6")	Glass Filled PPO/SS
Covers (8")	304 Stainless Steel
Covers(10 & 12")	FDA Epoxy Coated Ductile Iron
Relief Valve	Bronze
Check Valves	Bronze/Glass-filled PPO/SS
Springs	Stainless Steel
Seat Discs	Chloramine-resistant Silicone

See Backflow Catalog for dimensions and flow curves

TriForce™ Check

FEATURES

- Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance, no special tools required
- Snap-in check retainers: 2-1/2"-6", bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Lead-Free[1] option
- Approved for horizontal and vertical up flow*
- Chloramine-resistant elastomers
- ASSE 1015 (2-1/2"-8")
- FM (2-1/2"-8")
- UL, ULC Classified
- Other approvals pending*
- Maximum working pressure 175 psi• Temperature range 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085, 7,533,699
- Made in the USA
- 5 year, domestic warranty

Contact factory for approval details

4A - X - 1 X X - 0 X

	Y-Strainer	Size (in.)	Shut-Off Valve
4A - Standard 4ALF - Lead Free[1]	0-Standard 1-w/ Y-strainer (shipped loose)	3 - 1/2 4 - 3/4 5 - 1 6 - 1-1/4 7 - 1-1/2 8 - 2 9 - 2-1/2 0 - 3	1-Less Shut-off Valves 2-NRS Flg x NRS Flg 3-OS&Y Flg x OS&Y Flg 4-OS&Y Flg x Monitored Butterfly Vlv Grv 6-OS&Y Flg x Post indicator Flg** 7-OS&Y Flg x OS&Y Grv 8-OS&Y Grv x OS&Y Grv 9-Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10-OS&Y Flg x Post Indicator Grv** 11-NRS Grv x NRS Grv 12-NRS Flg x NRS Grv

Example: 4A-10A-03 = 4" size with OS&Y flanged x flanged shut-off valves (shown above)

Note: Not all variations are available in each size. Check with customer service.

** Post indicator with plate & nut option not available in 2-1/2" size.*

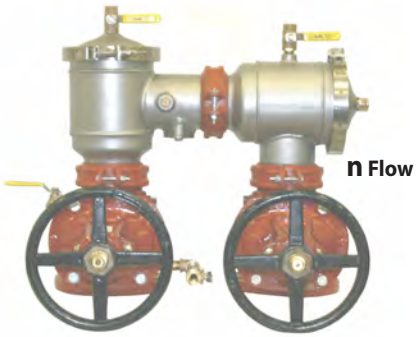
Backflow Preventers DC-4An Series

n Style Double Check Valve Assembly

The Apollo® MODEL DC-4An Double Check Valves are designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The Tri-Force™ center stem guided check valves feature replaceable and reversible silicone seat discs. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check. The n style flow body is stainless steel from 2-1/2"-8" and FDA epoxy coated ductile iron in the 10" and 12". Available in a wide variety of shut-off valves.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psi across the valve during normal operation. Should the downstream pressure increase to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition.



n Flow

Sizes 2-1/2"-12"

TriForce™ Check

Optional Valve Setter (see pg

4An X - 1 X X - 0 X

	Y-Strainer	Size (in.)	Shut-Off Valve
4An - Standard 4AnLF - Lead Free[1]	0-Standard 1-w/ Y-strainer (shipped loose)	9-2-1/2" 0-3" A-4" C-6" E-8" G-10" H-12"	1-Less Shut-off Valves 2-NRS Flg x NRS Flg 3-OS&Y Flg x OS&Y Flg 4-OS&Y Flg x Monitored Butterfly Vlv Grv 6-OS&Y Flg x Post indicator Flg** 7-OS&Y Flg x OS&Y Grv 8-OS&Y Grv x OS&Y Grv 9-Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10-OS&Y Flg x Post Indicator Grv** 11-NRS Grv x NRS Grv 12-NRS Flg x NRS Grv

Example: 4AN-10A-03 = 4" size with OS&Y flanged x flanged shut-off valves (shown above)

*** Post indicator with plate & nut option not available in 2-1/2" size.*

FEATURES

- Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance, no special tools required
- Snap-in check retainers: 2-1/2"-6", bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Lead-Free[1] option
- Small installation space required - small footprint
- Chloramine-resistant elastomers
- ASSE 1015 (2-1/2"-8")
- UL, ULC Classified
- FM (2-1/2"-8")
- Maximum working pressure 175 psi
- Other approvals pending*
- Temperature range 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085, 7,533,699
- Made in the USA
- 5 year, domestic warranty

Contact factory for approval details

MATERIALS	
Body (2-1/2"-8")	304 Stainless Steel
Body (10 & 12")	FDA Epoxy Coated Ductile Iron
Covers (2-1/2"-6")	Glass Filled PPO/SS
Covers (8")	304 Stainless Steel
Covers(10 & 12")	FDA Epoxy Coated Ductile Iron
Relief Valve	Bronze
Check Valves	Bronze/Glass-filled PPO/SS
Springs	Stainless Steel
Seat Discs	Chloramine-resistant Silicone

See Backflow Catalog for dimensions and flow curves

Double Check Detector Backflow Preventers DCDA-4A Series

DCDA-4A Double Check Detector Assembly

The Apollo® MODEL DCDA-4A Double Check Detector Assembly is designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The by-pass assembly serves to measure accurate water use of up to 2 GPM. Available in a wide variety of shut-off options.

The Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement is approved by the Tenth Edition of the USC FCC&HR Manual of Cross Connection Control as well as ASSE. The arrangement provides the same level of protection as the original (still optional) Type 1 bypass and the testing procedure is the same.

Type 2 (Standard)

TriForce™ Check

Type 1

Sizes 2-1/2"-12"

4A [X] - 6 [X] [X] - [X] [X]

By-Pass Sub-Assembly	Options	Size (in.)	Meter Options	Shut-Off Valve
4A - Standard 4ALF - Lead Free[1]	0 - Type 1 w/ 1/2" Double Check 2 - Type 2 w/1/2" Single Check (Standard) 3 - Type 1 w/ bypass on left* 4 - Type 2 w/ bypass on left*	9-2-1/2" 0-3" A-4" C-6" E-8" G-10" H-12"	C-Cubic feet/min E-Gallons/min G-Less meter	1- Less Shut-off Valves 2- NRS Flg x NRS Flg 3- OS&Y Flg x OS&Y Flg 4- OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv 6- OS&Y Flg x Post indicator Flg** 7- OS&Y Flg x OS&Y Grv 8- OS&Y Grv x OS&Y Grv 9- Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10-OS&Y Flg x Post Indicator Grv** 11-NRS Grv x NRS Grv 12-NRS Flg x NRS Grv

Example:
4A-60A-E3 = 4" size with OS&Y flanged x flanged shut-off valves w/meter in gallons.

** Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side*

*** Post indicator with plate & nut option not available in 2-1/2" size.*

MATERIALS	
Body (2-1/2"-8")	304 Stainless Steel
Body (10 & 12")	FDA Epoxy Coated Ductile Iron
Covers (2-1/2"-6")	Glass Filled PPO/SS
Covers (8")	304 Stainless Steel
Covers(10 & 12")	FDA Epoxy Coated Ductile Iron
Relief Valve	Bronze
Check Valves	Bronze/Glass-filled PPO/SS
Springs	Stainless Steel
Seat Discs	Chloramine-resistant Silicone

See Backflow Catalog for dimensions and flow curves

FEATURES

- Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance, no special tools required
- Snap-in check retainers: 2-1/2"-6", bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Lead-Free[1] option
- Approved for horizontal and vertical up flow*
- Chloramine-resistant elastomers
- ASSE 1048
- UL, ULC Classified
- Other approvals pending
- Maximum working pressure 175 psi
- Temperature range 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085, 7,533,699
- Made in the USA
- 5 year, domestic warranty
- Optional mounting of bypass on either side for ease of installation

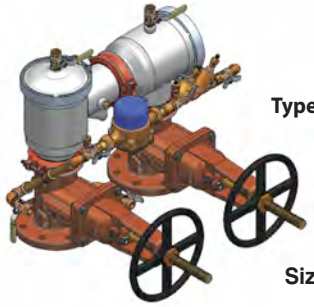
**Contact factory for approval details*

Double Check Detector Backflow Preventers DCDA-4An Series

n Style Double Check Detector Assembly

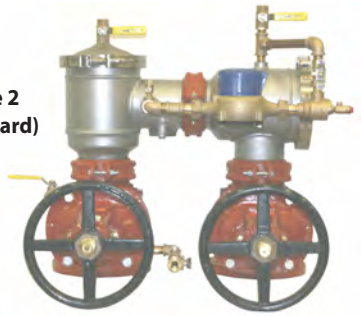
Designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are objectionable, but non-health hazards. The TriForce™ center stem guided check valves feature replaceable and reversible silicone seat discs. The bypass assembly serves to measure water use of up to 2 GPM. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check. The grooved connections on the bodies from 2-1/2" to 10" allow for easy connection to butterfly or gate shut-off valves. The 12" DCDA-4An has flanged connections for gate shut-off valves.

The Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement is approved by the Tenth Edition of the USC FCC&HR Manual of Cross Connection Control as well as ASSE. The arrangement provides the same level of protection as the original (still optional) Type 1 bypass and the testing procedure is the same.



Type 1

Type 2 (Standard)



Sizes 2-1/2"-12"

TriForce™ Check

Optional Valve Setter (see pg 133)

4An [X] - 6 X X - X X

By-Pass Sub-Assembly	Options	Size (in.)	Meter Options	Shut-Off Valve (Inlet x Outlet)
4A - Standard 4AnLF - Lead Free[1]	0 - Type 1 w/ 1/2" Double Check 2 - Type 2 w/1/2" Single Check (Standard) 3 - Type 1 w/ bypass on left* 4 - Type 2 w/ bypass on left*	9-2-1/2" 0-3" A-4" C-6" E-8" G-10" H-12"	C-Cubic feet/min E-Gallons/min G-Less meter	1- Less Shut-off Valves 2- NRS Flg x NRS Flg 3- OS&Y Flg x OS&Y Flg 4- OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv 6- OS&Y Flg x Post Indicator Flg** 7- OS&Y Flg x OS&Y Grv 8- OS&Y Grv x OS&Y Grv 9- Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10-OS&Y Flg x Post Indicator Grv** 11-NRS Grv x NRS Grv 12-NRS Flg x NRS Grv

Example:
4AN-62A-E7 = 4" size with OS&Y flanged x grooved shut-off valves with Type 2 bypass w/ meter in GPM

MATERIALS	
Body (2-1/2"-8")	304 Stainless Steel
Body (10 & 12")	FDA Epoxy Coated Ductile Iron
Covers (2-1/2"-6")	Glass Filled PPO/SS
Covers (8")	304 Stainless Steel
Covers(10 & 12")	FDA Epoxy Coated Ductile Iron
Relief Valve	Bronze
Check Valves	Bronze/Glass-filled PPO/SS
Springs	Stainless Steel
Seat Discs	Chloramine-resistant Silicone

** Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side*

*** Post indicator with plate & nut option not available in 2-1/2" size.*

See Backflow Catalog for dimensions and flow curves

FEATURES

- Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance, no special tool required
- Snap-in check retainers: 2-1/2"-6", bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Lead-Free[1] option
- Small installation space required - small footprint
- Chloramine-resistant elastomers
- ASSE 1048 (other approvals pending*)
- UL, ULC Classified
- Other approvals pending*
- Maximum working pressure 175 psi
- Optional valve setters eliminate need for thrust blocks below grade
- Temperature range 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085, 7,533,699
- Made in the USA
- 5 year, domestic warranty
- Optional mounting of bypass on either side for ease of installation

**Contact factory for approval details*

Backflow Preventers DC-4S Series (previously model DC)

Top Entry Double Check Valve Assembly

The Apollo DC-4S Top Entry Double Check Valve Backflow Preventer is designed to prevent backflow by either back-pressure or back-siphonage from a cross-connection between potable water lines and substances that are objectionable, but not a health hazard. It is an economical device that is easily repaired in the line. The device consists of two independently acting, spring-loaded poppet type cartridge check valves in an integral cast bronze body. Four test cocks and two shut-off valves which are quarter-turn, full-port, resilient-seated and ball type complete the assembly.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. Each check valve is designed to maintain a minimum of 1 psid across the valve during normal operation. If at any time the pressure down-stream of the device increases to within 1 psi of supply pressure, both check valves will close to prevent a backflow condition from occurring.

Sizes 1/2"

FEATURES

- Corrosion resistant
- Easy to install, repair and maintain
- Low head loss
- Replaceable check cartridge modules
- Comes standard with Apollo® full-port ball valves with stainless steel handles
- USC FCCCHR
- AWWA C-510
- Lead-Free[1] option
- ASSE 1015
- Approved for vertical and horizontal installations
- Maximum working pressure 175 psig
- Operating temperature range 33°F-180°F
- Designed, manufactured, assembled and tested in South Carolina, USA
- 5 year, domestic warranty

MATERIALS	
Body and Cover	Bronze
Check Modules	Acetal w/Stainless Steel Springs
Spacer	Stainless Steel
Ball Valve Handles	Stainless Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

4S X – 103 – X X

	Shut-Off Valve	Options (can be combined)
4S - Standard 4S LF - Lead Free[1]	1 - less ball valves 2 - w/ ball valves (standard) 4 - w/union ball valves	F- SAE threaded test cocks (standard on lead free) LL- locking lever handles LR -Locking round handles

Example:
4S-103-A2 = 1/2" double check valve assembly with ball valves

Double Check Valve Backflow Preventers DC-4SG Series

DC-4SG Series Double Check Valve Assembly

The Apollo® DC-4SG Series Double Check Valve is designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are non-health hazards. The modular check valves have replaceable seats and reversible EPDM seat discs. Grooved connections on an epoxy-coated ductile iron body allow for easy connection to butterfly valves or gate valves.

Sizes 2-1/2", 3", 4", 6", 8", 10"#

MATERIALS	
Body	Epoxy-coated (FDA) Ductile Iron
Covers (2-1/2" - 6")	Epoxy-coated (FDA) Steel
Covers (8")	Epoxy-coated (FDA) Ductile Iron
Check Valves (2-1/2" - 6")	Glass-Filled PPO
Check Valves (8")	Bronze
Springs	Stainless Steel
Seat Discs	Chloramine-resistant EPDM
Test Cock Handles	Stainless Steel

See Backflow Catalog for dimensions and flow curves

FEATURES

- Lightweight
- Short lay length
- Low pressure loss
- Modular check valves
- Individual access to check valves
- Reversible/replaceable seat discs
- Approved for vertical (up) and horizontal installations
- Lead-Free[1] option (2-1/2"-6" only)
- Corrosion resistant epoxy-coated ductile iron body
- Gate valves epoxy coated (FDA)
- ASSE 1015
- CSA
- USC FCCCHR
- AWWA C-510
- UL Classified
- FM approved
- US Patents #5,711,341 and #6,343,618

4SG [X] - 1 X X - 0 X - X

	Y-Strainer	Size (in.)	Shut-Off Valve (Inlet x Outlet)	Flow (Optional)
4SG - Standard 4SGLF - Lead Free[1] (2-1/2" - 6")	0 - None (Standard) 1 - With Y-Strainer (Flanged only, shipped loose)	9 - 2-1/2" 0 - 3" A - 4" C - 6" E - 8" G - 10"#	1 - Less Shut-off Valves (grooved-end body) 2 - NRS Flg x NRS Flg 3 - OS&Y Flg x OS&Y Flg 4 - OS&Y Flg x Monitored Butterfly Valve Grv 6 - OS&Y Flg x Flg Post Indicator** 7 - OS&Y Flg x OS&Y Grv 8 - OS&Y Grv x OS&Y Grv 9 - Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10 - OS&Y Flg x Grv Post Indicator**	N -n Flow

Example:
4SG-10A-07 = 4" size with OS&Y flanged x grooved shut-off valves.

*# 10" body is flanged internal connections only (Model 45) **Post indicator option not available in 2-1/2" size*

** Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side*

*** Post indicator with plate & nut option not available in 2-1/2" size.*

Double Check Valve Backflow Preventers DCDA-4SG Series

DCDA-4SG Series Double Check Detector Assembly

The Apollo® DCDA-4SG Series Double Check Detector Assembly is designed to prevent contamination of the potable water supply due to back-siphonage or backpressure from substances that are non-health hazards. The device consists of a mainline double check valve with Apollo® shut-off ball valves as shut-offs. The by-pass serves to measure water use of up to 3 gpm. Grooved connections on an epoxy-coated ductile iron body allow for easy connection to butterfly valves or gate valves.

Sizes 2-1/2", 3", 4", 6", 8", 10"

MATERIALS	
Body (mainline)	Epoxy-coated (FDA) Ductile Iron
Bypass DC	Bronze
Covers (2-1/2" - 6")	Epoxy-coated (FDA) Steel
Covers (8")	Epoxy-coated (FDA) Ductile Iron
Check Valves (2-1/2" - 6")	Glass-Filled Noryl®
Check Valves (8")	Bronze
Springs	Stainless Steel
Seat Discs	Chloramine-resistant EPDM
Test Cock Handles	Stainless Steel

See Backflow Catalog for dimensions and flow curves

FEATURES

- Lightweight
- Short lay length
- Low pressure loss
- Modular check valves
- Individual access to check valves
- Reversible/replaceable seat discs
- Approved for vertical and horizontal installations
- Corrosion resistant epoxy-coated ductile iron body
- US patents #5,711,341 and #6,343,618
- Made in the USA

4SG [X] - 60 X - X [X] - X

Size	Meter Option	Shut-Off Valves (Inlet & Outlet)	Flow (Optional)
9 - 2-1/2" 0 - 3" A - 4" C - 6" E - 8"	C - Cubic feet/min E - Gallons/min G - Less meter	1 - Less Shut-off Valves (grooved-end body) 2 - NRS Flg x NRS Flg 3 - OS&Y Flg x OS&Y Flg 4 - OS&Y Flg x Monitored Butterfly Valve Grv 6 - OS&Y Flg x Flg Post Indicator** 7 - OS&Y Flg x OS&Y Grv 8 - OS&Y Grv x OS&Y Grv 9 - Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10 -Flg Post Ind. x Flg Post Ind.**	N -n Flow

Example:
4SG-60A-E7 = 4" size with meter in gpm and OS&Y flanged x grooved shut-off valves

*** Post indicator with plate & nut option not available in 2-1/2" size.*

Reduced Pressure Principle Backflow Preventers RP-4A Series

Reduced Pressure Principle

The Apollo Series RP-4A Reduced Pressure Principle Backflow Preventer is designed to give maximum protection against backflow caused by either back-pressure or back-siphonage from substances that are hazardous. The durable but economical device is easily maintained in the line with modular check cartridge assemblies that require no special tools. It consists of two independently acting spring-loaded check valves with an automatic differential relief valve located between the check valves. All test-cocks are mounted at the top of the unit to assure easy access during repair and maintenance when unit is installed in tight places.

(4A-214-T2F shown)
Sizes 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"

MATERIALS	
Body and Covers	Bronze
Springs	300 Series SS
Seat Discs	Chloramine-resistant Silicone
Diaphragm	Nitrile and Nylon
Check Modules	Glass-Filled PPO
O-rings	Chloramine-resistant EPDM
Ball Valve Handles	Stainless Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

FEATURES

- Maximum protection against back-pressure /back-siphonage
- Modular check valve cartridges w/easily replaced parts
- Reversible/removable chloramine-resistant silicone seat discs
- Low head pressure loss
- Top mounted test cocks
- Internal sensing passage
- ASSE 1013 (other approvals pending)
- Lead-Free[1] option
- CSA B64.4
- Standard with Apollo full port ball valves with stainless steel handles
- Corrosion resistant
- Maximum working presure 175 psig
- Operating temperature range 33°F-180°F
- Horizontal installation approvals on 1/2" through 2"
- 5 year, domestic warranty
- Designed, manufactured, assembled and tested in South Carolina, USA

4A [X] - 2 X X - T X X

	Y-Strainer	Size (in.)	Shut-Off Valve	Options (can be combined)
4A - Standard 4ALF - Lead Free[1]	0- Standard 1- w/ Y-strainer (shipped loose)	3-1/2" 4-3/4" 5-1" 6-1-1/4" 7-1-1/2" 8-2"	1- less ball valves 2- w/ball valves (Standard) 4- w/union ball valves	F- SAE threaded test cocks (standard 1/2, 3/4", 1") L- lever handle (3/4" & 1" only) LL -locking lever handles (1-1/4", 1-1/2", 2")* LR -Locking round handles (1/2", 3/4", 1")*

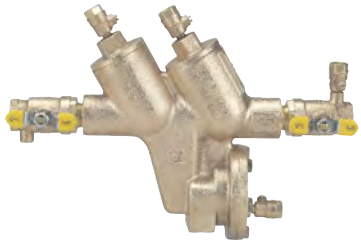
Example:
4A-215-T4LR = 1" Reduced Pressure Backflow Preventer with strainer, union ball valves and round locking handles

** Locking handles not available on T3 options*

Reduced Pressure Backflow Preventers RP-40 Series

Reduced Pressure Principle

The Apollo Series RP-40 Reduced Pressure Principle Backflow Preventer is designed to give maximum protection against backflow caused by either back-pressure or back-siphonage. The durable, but economical, device is easily maintained in the line without any special tools. It consists of two independently acting spring-loaded check poppet valves with an automatic differential relief valve located between the check valves. Three of the testcocks are mounted at the top to assure easy access during repair and maintenance when unit is installed in tight places. (#2 testcock mounted on relief valve cover for tight installations.)



Sizes 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"

MATERIALS	
Body and covers	Bronze
Springs	Stainless Steel
Poppets	Glass-Filled Celcon®
Seat Discs	Silicone Rubber
Diaphragm	Nitrile and Nylon
R.V. Stem	PPO
Fasteners	Stainless Steel
Replaceable Seats	Glass-Filled PPO
Ball Valve Handles	Stainless Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

FEATURES

- Maximum protection against back-pressure/backsiphonage
- Reversible/removable silicone seat discs
- Internal sensing passage
- Designed for easy maintenance
- Low head loss
- Economical
- Corrosion resistant
- Lead-Free[1] option
- Replaceable seat rings
- Comes standard with Apollo full port ball valves with stainless steel handles
- Maximum working pressure 175 psi
- Temperature range 33°F - 180°F
- Replaceable seats
- Designed, manufactured, assembled and tested in South Carolina, USA
- 5 year, domestic warranty

40[X] - 2 X X - T X X

	Y-Strainer	Size	Shut-Off Valves	Options (can be combined)
40 - Standard 40LF - Lead Free[1]	0- Standard 1- w/ Y-strainer (1-1/4"-2"shipped loose)	1-1/4" 2-3/8" 3-1/2" 4-3/4" 5-1" 6-1-1/4" 7-1-1/2" 8-2"	1- less ball valves (UL Classified) 2- w/ball valves (Standard) 4- w/union ball valves	F- SAE threaded test cocks L - lever handle (3/4" & 1" only) LL-locking lever handles (1-1/4", 1-1/2", 2")

Example:
40-218-T4LL = 2" Reduced Pressure Backflow Preventer with strainer, union ball valves and locking lever handles

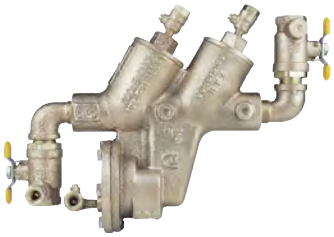
Reduced Pressure Backflow Preventers RP-40 n and Z Series

n and Z Flow Reduced Pressure Principle

The Apollo Series RP-40 Reduced Pressure Principle Backflow Preventer is designed to give maximum protection against backflow caused by either back-pressure or back-siphonage. The durable, but economical, device is easily maintained in the line without any special tools. It consists of two independently acting spring-loaded poppet check valves with an automatic differential relief valve located between the check valves. The diaphragm and the sensing passage are built into the all bronze body to eliminate possible damage. The assembly offers installation flexibility by providing inlet and outlet bronze elbows to meet space requirements, adaptability and lower installation cost. The No. 3 and No. 4 test cocks are mounted at the top to assure easy access during repair and maintenance when unit is installed in tight places.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the internal sensing passage, on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained at approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check valve become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.



Z-Flow

n-Flow

Sizes 3/4", 1", 1-1/4", 1-1/2", 2"

Shown with option (F) - SAE threaded test cocks

MATERIALS	
Body, covers & elbows	Bronze
Springs	Stainless Steel
Poppets	Glass-Filled Celcon®
Seat Discs	Silicone Rubber
Diaphragm	Nitrile and Nylon
R.V. Stem	PPO
Fasteners	Stainless Steel
Replaceable Seats	Glass-Filled PPO
Ball Valve Handles	Stainless Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

FEATURES

- Maximum protection against back-pressure/backsiphonage
- Flexibility in installation
- Low installation cost
- Compact
- Internal sensing passage
- Low head loss
- Reversible/Removable seat discs
- Replaceable seat rings
- Lead-Free[1] option
- 5 year, domestic warranty
- Comes standard with Apollo full port ball valves with stainless steel handles
- Maximum working pressure 175 psig
- Temperature range 33°F-180°F
- UL Classified (less shutoffs)
- USC FCCCHR
- AWWA 511
- ASSE 1013
- CSA B64.4
- Designed, manufactured, assembled and tested in South Carolina, USA

40 [X] – 20 X – T X X X

	Size	Shut-Off Valves	Flow	Options (can be combined)
40 - Standard 40LF - Lead Free[1]	4-3/4" 5-1" 6-1-1/4" 7-1-1/2" 8-2"	1- less ball valves (UL Classified) 2- w/ball valves (Standard) 4- w/union ball valves	N - n-Flow Z - Z-Flow	F- SAE threaded test cocks L- Lever handles (3/4" & 1") LL- locking lever handles (1-1/4", 1-1/2", 2")

Example:

40-208-T4NLL = 2" Reduced Pressure Backflow Preventer with union ball valves, with N-flow, and locking lever handles

See page 134 for air gap drain information.

Backflow Preventers RP-40 Series

Fire Hydrant Backflow Meter

The Apollo® Series RP-40 Fire Hydrant Backflow Meter shall measure potable water flow from a fire hydrant or other non-permanent installation. At the same time it shall protect against backflow by either back-pressure or back-siphonage from a cross-connection between potable water system and substances that are non-health and health hazards. The unit shall consist of a 3/4" short water meter, 1" 40-205 RP device, 1" resilient-seated full port ball valve with locking device, 2-1/2"-7-1/2" NST threaded hose couplings, strainer on inlet of meter and adjustable support rod assembly.

OPERATION

The Fire Hydrant Backflow Meter is connected directly to a fire hydrant with a 2-1/2"-7-1/2" NST fire hose female swivel coupling. The device operates like a standard Reduced Pressure device except the flow through the device is measured by a water meter connected to the inlet of the backflow preventer. Support rod assembly is adjustable to accommodate fire hydrants at different heights from the ground.

Size 1"

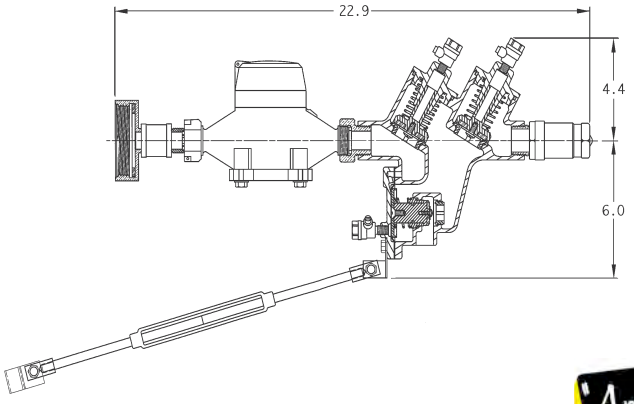
Contact local water authorities for installation/service requirements.

FEATURES

- Normal operating flow range 2-30 gpm
- Accuracy 100% ± 1.5 of actual thruput
- Low flow registration 95% at 1/2 gpm
- Maximum pressure loss 11.0 psi at 30 gpm
- Maximum operating pressuer 150 psi
- Measuring element oscillating piston
- Register is straight reading, hermetically sealed magnetic drive
- Meter maincase is bronze, measuring chamber is Rocksyn, a corrosion resistant thermoplastic material maincase bottom plate is bronze, gears are self-lubricating, molded plastic for long life and minimum friction, magnets are Alnico, trim and casing bolts are stainless steel and strainer is thermoplastic
- Tamperproof locking system inside the meter
- 2-1/1"-7-1/2" NST fire hose swivel couplings, female inlet, male outlet
- Maximum rate listed is for intermittent flow only. Maximum continuous flow rate as specified by AWWA is 15 gpm
- Designed, manufactured, assembled and tested in South Carolina, USA
- 5 year, domestic warranty

DIMENSIONS (in.)—WEIGHTS (lbs.)

NET WEIGHT	24.1
SHIPPING WEIGHT	27.6



Model Number

40-205-FHB	(meter in cu. ft.)
40-205-FHBG	(meter in gallons)

See page 136 for air gap drain information

Reduced Pressure Backflow Preventers RP-40S Series

Stainless Steel Reduced Pressure Principle Backflow Preventer

The Apollo Series RP-40S Stainless Steel Reduced Pressure Principle Backflow Preventer is designed to give maximum protection against backflow caused by either back-pressure or back-siphonage from a cross-connection wherein a contaminant hazard exists (i.e. a health hazard), or a pollutant hazard exists (i.e. a non-hazard). The assembly is composed of two spring-loaded poppet type check valves and a mechanically independent, hydraulically dependent pressure differential relief valve set in an integral stainless steel body. Three of the testcocks are mounted at the top to assure easy access during repair and maintenance when unit is installed in tight places.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the internal sensing passage, on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained at approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check valve become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.

Sizes 1/4", 3/8", 1/2", 3/4", 1"

MATERIALS	
Body and Cover	Stainless Steel
Springs	Stainless Steel
Fasteners	Stainless Steel
Poppets	Glass-Filled Celcon®
Seat Discs	Silicone Rubber
Diaphragm and O-Rings	FDA Fluorocarbon
Replaceable Seats	Glass-Filled PPO
Test Cocks & Handles	Stainless Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

FEATURES

- Stainless steel body and covers
- Easy to install, repair and maintain
- Internal sensing passage
- Low head loss
- Reversible/removable seat discs
- Replaceable seats
- Comes standard with Apollo stainless steel full port ball valves with stainless steel handles
- Maximum working pressure 175 psig
- Temperature range 33°F-180°F
- USC FCCCHR
- ASSE 1013
- CSA
- Designed, manufactured, assembled and tested in South Carolina, USA
- 5 year, domestic warranty

40 - 2 X X - T X S X

Y-Strainer	Size	Shut-Off Valves	Options (can be combined)
0- Standard 1- w/ SS Y-strainer (shipped loose)	1-1/4" 2-3/8" 3-1/2" 4-3/4" 5-1"	1- less ball valves (UL Classified-3/4", 1") 2- w/SS ball valves (Standard)	LL-locking lever handles LR-locking round handles

Reduced Pressure Backflow Preventers RP-4A Series

Reduced Pressure Principle Backflow Preventer

The Apollo® MODEL RP-4A Reduced Pressure Principle Backflow Preventers consist of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage. The durable stainless steel units (2-1/2"-8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in the line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide excellent flow rates which are documented by ASSE or USC FCCC&HR approval curves.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the sensing tube on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.

Sizes 2-1/2"-12"

TriForce™ Check

MATERIALS	
Body (2-1/2"-8")	304 Stainless Steel
Body (10 & 12")	FDA Epoxy Coated Ductile Iron
Covers (2-1/2"-6")	Glass Filled PPO/SS
Covers (8")	304 Stainless Steel
Covers(10 & 12")	FDA Epoxy Coated Ductile Iron
Relief Valve	Bronze
Check Valves	Bronze/Glass-filled PPO/SS
Springs	Stainless Steel
Seat Discs	Chloramine-resistant Silicone

See Backflow Catalog for dimensions and flow curves

FEATURES

- Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body; 10"&12"
- Easy maintenance - no special tools
- Snap-in check retainers, 2-1/2"-6"; bolted-in checks, 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Lead-Free[1] option
- Approved for horizontal flow*
- Chloramine-resistant elastomers
- ASSE 1013 (2-1/2"-8")
- UL, ULC Classified
- CSA (2-1/2"-8")
- FM (2-1/2"-8")
- Other approvals pending*
- Maximum working pressure 175 psi
- Temperature range 33°F-140°F, 180° intermittent
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA
- Optional air gap drains
- 5 year, domestic warranty

Contact factory for approval details

4A [X] - 2 X X - O X

	Y-Strainer	Size	Shut-Off Valves
4A - Standard 4ALF - Lead Free[1]	0- Standard 1- w/ Y-strainer (shipped loose)	9-2-1/2" 0-3" A-4" C-6" E-8" G-10" H-12"	1- Less Shut-off Valves 2- NRS Flg x NRS Flg 3- OS&Y Flg x OS&Y Flg 4- OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv 6- OS&Y Flg x Post indicator Flg** 7- OS&Y Flg x OS&Y Grv 8- OS&Y Grv x OS&Y Grv 9- Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10-OS&Y Flg x Post Indicator Grv** 11-NRS Grv x NRS Grv 12-NRS Flg x NRS Grv

Example: *4A-20A-07 = 4" size with OS&Y flanged x OS&Y grooved (exterior assembly connections) shut-off valves.*

** Post indicator with plate & nut option not available in 2-1/2" size.

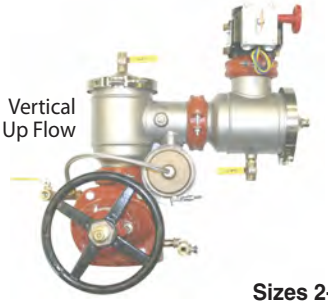
Reduced Pressure Principle Backflow Preventer RP-4An Series

The Apollo® MODEL RP-4AN Reduced Pressure Principle Backflow Preventer consists of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check 180° to a vertical up/vertical up flow. The durable stainless steel units (2-1/2" to 8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in the line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condidion to provide excellent flow rates which are documented by ASSE or USC FCCC&HR approval curves.

OPERATION

During normal flow conditions, the two check valves are held off their seats, supplying water downstream. The relief valve is held shut by supply pressure acting through the sensing tube on the relief valve diaphragm. In the area between the check valves, called the zone, the pressure is maintained approximately 7 psi lower than supply pressure. Should a back-pressure or back-siphonage condition occur, the second check valve will seal, prohibiting the backflow of water. Should the second check become fouled, the pressure in the zone will increase causing the differential relief valve to open to atmosphere. This will maintain the pressure in the zone at least 2 psi lower than supply pressure.

Optional Valve Setter (see pg 133)



Vertical Up Flow

n Flow

Sizes 2-1/2"-12"

TriForce™ Check

MATERIALS	
Body (2-1/2"-8")	304 Stainless Steel
Body (10 & 12")	FDA Epoxy Coated Ductile Iron
Covers (2-1/2"-6")	Glass Filled PPO/SS
Covers (8")	304 Stainless Steel
Covers(10 & 12")	FDA Epoxy Coated Ductile Iron
Relief Valve	Bronze
Check Valves	Bronze/Glass-filled PPO/SS
Springs	Stainless Steel
Seat Discs	Chloramine-resistant Silicone

See Backflow Catalog for dimensions and flow curves

FEATURES

- Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body; 10"&12"
- Easy maintenance - no special tools
- Snap-in check retainers, 2-1/2"-6"; bolted-in checks, 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Lead-Free[1] option
- Small installation space required - small footprint
- Chloramine-resistant elastomers
- Approved for n-flow and vertical up flow
- ASSE 1013 (2-1/2"-8")
- UL, ULC Classified (2-1/2"-8")
- FM (2-1/2"-8")
- Other approvals pending*
- Maximum working pressure 175 psi
- Temperature range 33°F-140°F, 180° intermittent
- Optional valve setters eliminate need for thrust blocks between elbows
- US Patent Nos. 6,443,184; 7,025,085; 7,533,699
- Made in the USA
- Optional air gap drains
- 5 year domestic warranty

Contact factory for approval details

4An [X] - 2 X X - O X

	Y-Strainer	Size	Shut-Off Valves
4An - Standard 4AnLF - Lead Free[1]	0- Standard 1- w/ Y-strainer (shipped loose)	9-2-1/2" 0-3" A-4" C-6" E-8" G-10" H-12"	1- Less Shut-off Valves[2,3] 2- NRS Flg x NRS Flg 3- OS&Y Flg x OS&Y Flg 4- OS&Y Flg x Monitored (Mon.)Butterfly Vlv Grv 6- OS&Y Flg x Post indicator Flg** 7- OS&Y Flg x OS&Y Grv 8- OS&Y Grv x OS&Y Grv 9- Mon. Butterfly Vlv Grv x Mon.Butterfly Vlv Grv 10-OS&Y Flg x Post Indicator Grv** 11-NRS Grv x NRS Grv 12-NRS Flg x NRS Grv

Example:
4AN-20A-07 = 4" size with OS&Y flanged x OS&Y grooved valves

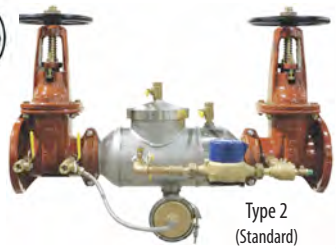
*** Post indicator with plate & nut option not available in 2-1/2" size.*

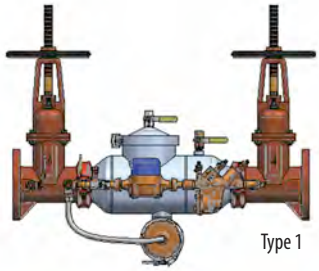
Reduced Pressure Detector Assembly RPDA-4A Series

RPDA-4A Reduced Pressure Detector Assembly

The Apollo® MODEL RPDA-4A Reduced Pressure Detector Assembly consists of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage and at the same time detect leakage or unauthorized use of water from fire or automatic sprinkler systems. The durable stainless steel units (2-1/2" to 8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide low flow rates which are documented by ASSA or USC FCCC&HR approval curves.

The Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement is approved by the Tenth Edition of the USC FCC&HR Manual of Cross Connection Control as well as ASSE. The arrangement provides the same level of protection as the original (still optional) Type 1 bypass and the testing procedure is the same.


Type 2
(Standard)


Type 1

Sizes 2-1/2"-12"


TriForce™
Check

MATERIALS	
Body (2-1/2"-8")	304 Stainless Steel
Body (10 & 12")	FDA Epoxy Coated Ductile Iron
Covers (2-1/2"-6")	Glass Filled PPO/SS
Covers (8")	304 Stainless Steel
Covers(10 & 12")	FDA Epoxy Coated Ductile Iron
Relief Valve	Bronze
Check Valves	Bronze/Glass-filled PPO/SS
Springs	Stainless Steel
Seat Discs	Chloramine-resistant Silicone

See Backflow Catalog for dimensions and flow curves

4A [X] - 7 X X - X [X]

	By-Pass Sub-Assembly Options	Size (in.)	Meter Options	Shut-Off Valve (Inlet x Outlet)
4A - Standard 4ALF - Lead Free[1]	0 - Type 1 w/ 1/2" Reduced Pressure 2 - Type 2 w/1/2" Single Check (Standard) 3 - Type 1 w/ bypass on left* 4 - Type 2 w/ bypass on left*	9-2-1/2" 0-3" A-4" C-6" E-8" G-10" H-12"	C-Cubic feet/min E-Gallons/min G-Less meter	1- Less Shut-off Valves 2- NRS Flg x NRS Flg 3- OS&Y Flg x OS&Y Flg 4- OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv 6- OS&Y Flg x Post Indicator Flg** 7- OS&Y Flg x OS&Y Grv 8- OS&Y Grv x OS&Y Grv 9- Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10-OS&Y Flg x Post Indicator Grv** 11-NRS Grv x NRS Grv 12-NRS Flg x NRS Grv

Example:
4A-72A-E3 = 4" size with OS&Y flanged x flanged shut-off valves Type 2 Bypass w/ meter in gallons.

** Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side*

*** Post indicator with plate & nut option not available in 2-1/2" size.*

FEATURES

- Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance, no special tool required
- Snap-in check retainers: 2-1/2"-6", bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Center stem guided TriForce™ check valves
- Lead-Free[1] option
- Approved for horizontal flow*
- ASSE 1047 (2-1/2"-8")
- UL, ULC Classified
- FM (2-1/2"-8")
- Other approvals pending
- Temperature range 33°F - 140°F, 180°F intermittent
- Maximum working pressure 175 psi
- Optional air gap drains (see page 136 for details and discharge rates)
- US Patent Nos. 6,443,184; 7,025,085, 7,533,699
- Made in the USA
- 5 year, domestic warranty
- Optional mounting of bypass on either side for ease of installation

**Contact factory for approval details*

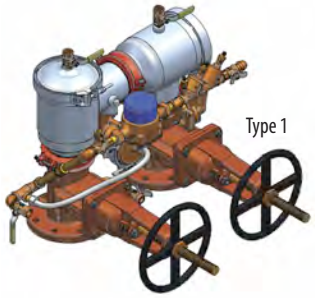
Reduced Pressure Detector Assembly RPDA-4An Series

n Style Reduced Pressure Detector Assembly

The Apollo® MODEL RPDA-4An Reduced Pressure Detector Assembly consists of two independently acting, TriForce™ center stem guided check valves with a differential pressure relief valve located between the check valves. The unit is designed to give maximum protection against backflow of health or non-health hazard fluids by either back-pressure or back-siphonage and at the same time detect leakage or unauthorized use of water from fire or automatic sprinkler systems. The normally vertical up/vertical down oriented body incorporates an internal swivel connection providing the ability to pivot the second check 180° to a vertical up/vertical up flow. The durable stainless steel units (2-1/2" to 8") and the FDA epoxy coated ductile iron units (10" and 12") are easily maintained in the line without any special tools. The TriForce™ check valves operate with a spring assist in the flowing condition to provide low flow rates which are documented by ASSA or USC FCCC&HR approval curves.

The Type 2 bypass uses the first check of the mainline assembly as the first check of the bypass. The second check of the bypass is a single check valve with a model number and serial number for test recording. This arrangement is approved by the Tenth Edition of the USC FCC&HR Manual of Cross Connection Control as well as ASSE. The arrangement provides the same level of protection as the original (still optional) Type 1 bypass and the testing procedure is the same.

Optional Valve Setter (see pg 133)



Type 1

Type 2 (Standard)

Sizes 2-1/2"-12"

4An [X] - 7 X X - X X

	By-Pass Sub-Assembly Options	Size (in.)	Meter Options	Shut-Off Valve (Inlet x Outlet)
4A - Standard 4AnLF - Lead Free[7]	0 - Type 1 w/ 1/2" Reduced Pressure 2 - Type 2 w/1/2" Single Check (Standard) 3 - Type 1 w/ bypass on left* 4 - Type 2 w/ bypass on left*	9-2-1/2" 0-3" A-4" C-6" E-8" G-10" H-12"	C-Cubic feet/min E-Gallons/min G-Less meter	1- Less Shut-off Valves 2- NRS Flg x NRS Flg 3- OS&Y Flg x OS&Y Flg 4- OS&Y Flg x Monitored (Mon.) Butterfly Vlv Grv 6- OS&Y Flg x Post Indicator Flg** 7- OS&Y Flg x OS&Y Grv 8- OS&Y Grv x OS&Y Grv 9- Mon. Butterfly Vlv Grv x Mon. Butterfly Vlv Grv 10-OS&Y Flg x Post Indicator Grv** 11-NRS Grv x NRS Grv 12-NRS Flg x NRS Grv

Example:
4AN-70A-E3 = 4" size with meter in GPM and OS&Y flanged x flanged shut-off valves.

** Orientation of bypass looking downstream. Standard is right hand side. Left hand is on opposite side.*

*** Post indicator with plate & nut option not available in 2-1/2" size.*

MATERIALS	
Body (2-1/2"-8")	304 Stainless Steel
Body (10 & 12")	FDA Epoxy Coated Ductile Iron
Covers (2-1/2"-6")	Glass Filled PPO/SS
Covers (8")	304 Stainless Steel
Covers(10 & 12")	FDA Epoxy Coated Ductile Iron
Relief Valve	Bronze
Check Valves	Bronze/Glass-filled PPO/SS
Springs	Stainless Steel
Seat Discs	Chloramine-resistant Silicone

TriForce™ Check

See Backflow Catalog for dimensions and flow curves

FEATURES

- Stainless steel body: 2-1/2"-8"
- FDA epoxy coated ductile iron body: 10" & 12"
- Easy maintenance, no special tools required
- Snap-in check retainers: 2-1/2"-6", bolted-in checks: 8"-12"
- Low pressure loss as documented by ASSE or USC FCCC&HR backflow preventer approval agencies
- Lead-Free[7] option
- Small installation space required - small footprint
- Chloramine-resistant elastomers
- ASSE 1048 (2-1/2"-8")
- UL, ULC Classified (2-1/2"-8")
- FM (2-1/2"-8")
- Other approvals pending*
- Maximum working pressure 175 psi
- Optional valve setters eliminate need for thrust blocks below grade
- Temperature range 33°F - 140°F, 180°F intermittent
- US Patent Nos. 6,443,184; 7,025,085, 7,533,699
- Made in the USA
- 5 year, domestic warranty
- Optional mounting of bypass on either side for ease of installation

**Contact factory for approval details*

Reduced Pressure Backflow Preventers RP-40 Series

Reduced Pressure Principle

The Apollo Series RP-40 Reduced Pressure Backflow Preventer consists of two independently acting, spring-loaded center stem guided check valves with a differential pressure relief valve located between the check valves. The all bronze relief valve module is easily removed from the ductile iron check valve body. Pressure sensing passages are built into the bronze relief valve module to prevent possible damage from mishandling or vandalism. The unit is available with inlet and outlet shutoff valves. Four test cocks, three on the backflow preventer valve body and one on the inlet shutoff valve, complete the assembly.

Sizes 2-1/2", 3", 4", 6", 8", 10"

MATERIALS	
Body and covers	Epoxy Coated (FDA Approved) Ductile Iron
Springs	Stainless Steel
Seats	Bronze
C.V. Discs	EPDM
R.V. Disc	Silicone
R.V. Diaphragm	Nitrile and Nylon
R.V. Body	Bronze (2-1/2"-6")
R.V. Body	Epoxy Coated (FDA Approved) Ductile Iron For 8" & 10" only
Fasteners	Stainless Steel
Test Cock Handles	Stainless Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

40 [X] - 2 X X - O X

	Y-Strainer	Size	Shut-Off Valves
40 - Standard 40LF - Lead Free[1]	0- Standard 1- w/ Y-strainer (shipped loose)	9-2-1/2" 0-3" A-4" C-6" E-8" G-10"	1- Less gate valves 2- w/ NRS gate valves 3- w/OS&Y gate valves 5-w/Epoxy coated ball valves 6- OS&Y flg x flg post indicator* 7- OS&Y flg x OS&Y grv 8- OS&Y grv x OS&Y grv 10-OS&Y flg x grv post indicator*

**Post indicator w/ plate & nut option not available in 2-1/2" size.*

FEATURES

- Maximum protection against back pressure/back-siphonage
- Reversible/removable seat discs
- Replaceable bronze seats
- Internal sensing passage
- Designed for easy maintanence
- Low head loss
- Lead-Free[1] option
- Economical
- Corrosion resistant
- Maximum working pressure 175 psi
- Gate valves epoxy coated (FDA)
- Lead-Free[1] option
- Horizontal installation approvals
- Temperature range 33°F - 140°F
- UL Classified
- FM approved
- USC FCCCHR
- ASSE 1013
- CSA
- AWWA 511
- Made in the USA
- Designed, manufactured, assembled and tested in South Carolina, USA
- 5 year, domestic warranty

Reduced Pressure Detector Assembly RPDA-40 Series

The Apollo Series RPDA-40 Reduced Pressure Detector Assembly is designed to provide reduced pressure principle protection against cross-connections that present a health hazard, and at the same time detect leakage or unauthorized use of water from fire or automatic sprinkler systems. The mainline unit consists of two independent spring-loaded, poppet type check valve assemblies with a diaphragm actuated and spring-loaded, relief valve assembly located between check valves. Two resilient wedge gate valves and four test cocks complete the mainline unit. The by-pass consists of an approved reduced pressure assembly, four test cocks, two shut-off valves and a water meter.

OPERATION

During no flow conditions, the mainline and by-pass check valves will remain closed. Also, both mainline and by-pass relief valves stay closed due to the pressure differential between supply and zone pressure. If there is a low flow demand (up to a minimum of 3 gpm) of water downstream, which may be caused by a system leak or unauthorized use, the flow is routed through the water meter to monitor such consumption. Higher flow will tend to open the mainline check valves at which point water continues to flow at the by-pass at a rate below capacity. In the event pressure increases downstream, tending to reverse direction of flow, both check valves in the mainline and by-pass are closed to prevent backflow. If the second check valve in either the mainline or by-pass is prevented from closing tightly, leakage into the reduced pressure zone increases pressure and will cause the relief valves to open. If the supply pressure drops to atmosphere or lower than the reduced pressure zone, the relief valves will open creating an internal air gap in both assemblies.

Contact local water authorities for installation/service requirements.

Sizes 3", 4", 6", 8", 10"

MATERIALS	
Body and covers	FDA Approved epoxy-coated ductile iron (mainline), By-pass (bronze)
By-pass components	Bronze
Springs	Stainless Steel (both)
Seats	Bronze (both)
C.V. discs	EPDM (mainline) Silicone rubber (by-pass)
R.V. discs	Silicone rubber (mainline) EPDM (by-pass)
Diaphragm	Nitrile and nylon (both)
R.V. body	Bronze (mainline)
Fasteners	Stainless Steel (both)
Test cock handles	Stainless Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

40 - 7O X - X X

	Size	Meter	Gate Valves
40- Standard	0 – 3" A – 4" C – 6" E – 8" G – 10"	C – With meter in cubic feet E – With meter in gallons G – Less water meter	1 – Less gate valves 3 – With OS&Y gate valves 6 – w/OS&Y gate valve on inlet, NRS gate valve w/ post plate and nut on outlet 7 – With Flanged Inlet x Grooved Outlet (both OS&Y) 8 – With Grooved x Grooved OS&Y gate valves 10 – OS&Y Flg x Grv Post Indicator

FEATURES

- Maximum protection against back pressure/back-siphonage
- Removable seat discs
- Reversible/replaceable seat discs
- Internal sensing passage
- Corrosion resistant
- Easy inline maintenance and testing
- Maximum working pressure 175 psi
- 5 year, domestic warranty
- Horizontal installation approvals
- Temperature range 33°F - 140°F
- UL Classified
- FM approved
- USC FCCCHR
- ASSE 1047
- CSA
- Designed, manufactured, assembled and tested in South Carolina, USA

Vacuum Breaker Backflow Preventers AVB1(38-100) AVB2(38-200)Series

Atmospheric Type Vacuum Breakers

The Apollo Series Atmospheric Type Vacuum Breakers are designed to prevent back-siphonage of polluted water into a potable water system. They should only be installed in areas where spillage of water could not cause damage and where it can be accessible for periodic maintenance. These devices are not designed for continuous pressure application. Should be installed a minimum of 6″ above all downstream piping with no downstream shutoffs.

OPERATION

During flow conditions, the flow of water lifts the float disc and seals the atmospheric vent at all rates of flow, preventing leakage. When a negative pressure is created at the supply line or when the water supply valve upstream of the device is closed, the float disc will fall, thus opening the atmospheric vent. This prevents back-siphonage and creation of vacuum at the discharge line.

AVB1
Sizes 1/4",3/8", 1/2", 3/4", 1", 1-1/4, 1-1/2", 2"

AVB2
Sizes 1/4", 3/8, 1/2", 3/4"

MATERIALS	
Valve Body (AVB1)	Cast Bronze
Valve Body (AVB2)	Forged Brass
Seat Disc	Silicone
Float & Gasket	Polypropylene
Canopy	Chrome-plated Steel
Screw	Zinc-plated Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

SUFFIX NO.	FINISH
01	Rough Brass
03	Rough Chrome
04	Polished Brass (AVB1)
06	Polished Chrome (AVB2)
N	n shape (AVB2)

FEATURES

- Corrosion resistant
- Bronze body (AVB1)
- Forged body (AVB2)
- Suitable for hot or cold water service: (up to 212°F at 125 psig) for up to 1″ (up to 180°F at 125 psig) for 1-1/4″ thru 2″
- Lead-Free[1] option on AVB1/38-100 Series
- Heat resistant silicone seat disc
- Rough brass, rough chrome, or polished chrome finish
- Easy to maintain
- Compact and lightweight
- Durable
- ASSE1001

4A Freeze Resistant Pressure Vacuum Breaker PVB-4A Series

The Apollo Model PVB-4A Pressure Vacuum Breakers are designed to prevent contamination of potable water due to back-siphonage. An integral relief valve serves to reduce the possibility of damage due to intermittent freezing conditions. The modular check valve cartridge has a replaceable seat and a reversible silicone seat disc. Apollo ball valves with stainless steel handles and nuts are standard.

Sizes 1/2", 3/4", 1", 1-1/4",1-1/2", 2"

FEATURES

- Modular cartridge check valve
- Low pressure loss
- Built-in freeze resistant relief valve
- Compact yet easy to maintain
- Apollo ball valves w/SS handles and nuts standard
- Test cocks located for easy draining
- Corrosion resistant
- 5 year, domestic warranty
- Lead-Free[1] option (3/4"-1")
- No special tools required
- Unique canopy detachment
- Patent pending
- ASSE 1020 (1/2"-1"), other approvals pending
- USC FCCCHR 1/2", 3/4", 1"
- Easy maintenance
- Maximum operating pressure 150 psi
- Design pressure 300 psi
- Temperature range 33°F-140°F
- Made in the USA

MATERIALS	
Body	Bronze
Canopy	UV Resistant ABS
Bonnet	Glass-Filled PPO
Check Valve Cartridge	Glass-Filled PPO
Springs	Stainless Steel
Seat Discs	Chloramine-resistant Silicone
Float	Glass-Filled Polypropylene
O-rings	Chloramine-Resistant EPDM
Ball Valve Handles	Stainless Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

4A[X] - 50 X - 0 X X

	Size	Shut-Off Valves	Options (can be combined)
4A - Standard	3-1/2"	1- less ball valves	F-SAE threaded test cocks (standard 1/2", 3/4",1")
4ALF - Lead Free[1] (3/4" - 1" only)	4-3/4"	2- w/ball valves (Standard)	LL-locking lever handles (1-1/4", 1-1/2", 2")
	5-1"	4- w/union ball valves (3/4" and 1" only)	LR -Locking round handles (1/2", 3/4", 1")
	6-1-1/4"		
	7-1-1/2"		
	8-2"		

Pressure Vacuum Breaker Backflow Preventers PVB-4V Series

(previously model PVB)

Freeze Resistant Pressure Vacuum Breaker

The Apollo Series PVB-4V Pressure Vacuum Breaker is designed to prevent contamination of the potable water supply due to back-siphonage. The PVB is ideally suited for continuous pressure, outdoor applications such as irrigation equipment, livestock watering systems, swimming pools, etc. The device consists of a unique one piece cap/float assembly and independently acting check valve, all attractively packaged in a rugged yet compact bronze body. All components are made of corrosion resistant materials, guaranteeing years of reliable service.

Sizes 1/2", 3/4", 1", 1-1/4",1-1/2", 2"

MATERIALS	
Body	Bronze
Canopy	Powder Coated Steel
Cap	Acetal
Check Valve	Acetal
Float	Acetal
Springs	Stainless Steel
Test Cocks	Brass
Ball Valve Handles	Stainless Steel
Seat Disc	Nitrile
O-Ring	Nitrile

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

FEATURES

- Removable integral check valve
- One piece cap/float assembly
- Built-in freeze relief valve in cap/float assembly
- Corrosion resistant construction
- Comes standard with Apollo® full port ball valves with stainless steel handles
- Maximum working pressure 150 psig
- Operating temperature range 33°F-180°F
- USC FCCCHR
- ASSE 1020
- CSA
- Easy maintenance
- 5 year, domestic warranty

4V – 50 X – 0 X X

Size	Shut-Off Valves	Options (can be combined)
3-1/2"	1- less ball valves	F-SAE threaded test cocks
4-3/4"	2- w/ball valves (Standard)	LL-locking lever handles (1-1/4", 1-1/2", 2")
5-1"		LR -Locking round handles
6-1-1/4"	4- w/union ball valves	
7-1-1/2"		
8-2"		

Spill Resistant Vacuum Breaker Backflow Preventers SVB-4W Series

Spill Resistant Vacuum Breakers

The Apollo Series SVB-4W Spill Resistant Vacuum Breaker is designed to prevent contamination of the potable water supply due to back-siphonage. The SVB is ideally suited for continuous pressure, indoor applications where water spillage is undesirable. The device has a straight through flow path for minimal head loss. All components are easily accessible for easy repair and maintenance. All components are made of corrosion resistant materials for years of reliable service. Should be installed 6" above all downstream piping.

OPERATION

During normal flow conditions, the check valve remains open and the atmospheric vent seals in the bonnet assembly. As the line pressure falls to 1 psi, the spring loaded atmospheric vent opens and the check valve closes, breaking the vacuum and thereby preventing back-siphonage. Water is not allowed to spill at any time during operation.

FEATURES

- Corrosion Resistant
- In-Line Flow
- Integral Shut-Off Valves w/Stainless Steel Handles and Nuts
- Designed For Easy Maintenance
- Low Head Loss
- Economical
- Maximum Working Pressure 150 PSIG
- Operating Temperature Range 33˚F-180˚F
- ASSE 1056
- 5 year, domestic warranty

Sizes 1/4", 3/8", 1/2"

MATERIALS	
Body	PPO, Bronze
Springs	Stainless Steel
Seat Discs	Silicone Rubber
Valve Canopy	ABS Plastic
Float	Acetal
Fasteners	Stainless Steel
Ball Valve Handles	Stainless Steel

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

4W - 50 X - 02

Size
1-1/4"
2-3/8"
3-1/2"

Dual Check with Atmospheric Port DCAP Series

Dual Check with Atmospheric Port Backflow

PREVENTER

The Apollo DCAP Series Backflow Preventer is designed to protect residential and commercial water supply lines from back-siphonage or back-pressure of non-potable (non-hazardous) substances. It has an intermediate atmospheric vent to insure protection from backflow conditions. It consists of two independently acting and spring-loaded check valves in a corrosion resistant material.

OPERATION

During normal flow operation, the vent valve is closed, and the two check valves are open allowing flow of water through the unit. Each check valve is designed to hold at least 1 psi in the direction of flow. When a back-siphonage condition occurs, both check valves close and the atmospheric vent opens to permit air to enter the intermediate zone. In the event of back-pressure and if the second check valve is prevented from closing tightly, leakage will be vented to the atmosphere through the vent port.

Sizes 1/2", 3/4"

MATERIALS	
Body	Bronze
Springs	Stainless Steel
C.V. Seat Discs	EPDM
Seats	Glass-Filled PPO
Spring and Seat Retainer	Glass-Filled PPO
O-Rings	Nitrile/EPDM
Poppets	Glass-Filled PPO

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

FEATURES

- Corrosion resistant
- Low head loss
- Independently acting check valves
- Ease of repair and installation
- Economical
- Suitable for hot or cold water service
- Durable
- Maximum working pressure 175 psig
- ASSE 1012
- CSA
- Operating temperature range 33°F-210°F
- 5 year, domestic warranty

40 – 4 X X – X X M X

Union Inlet Connection	Inlet & Outlet Size	Union Outlet Connection	Option
A – FNPT H – Solder joint 2 – Female BSPP	3 – 1/2" 4 – 3/4"	A – FNPT B – MNPT F – Female BSPP H – Solder joint	C –Canadian (discharge port not threaded)

*** Post indicator with plate & nut option not available in 2-1/2" size.*

Dual Check Backflow Preventers DUC-4N Series

Dual Check Valve

The Apollo DUC-4N Series Dual Check Valve Backflow Preventer is designed to prevent cross-connections of non-potable water (non-hazardous) into safe drinking water systems. It is a compact and economical device that consists of two independently-acting, spring-loaded check valves in a corrosion-resistant material.

OPERATION

Each of the two spring-loaded check valves is designed to open at 1 psi differential in the direction of flow. The check valves will remain tightly closed until there is a demand for water downstream. If the downstream pressure of the device increases above the supply pressure or there is a reverse direction of flow, the check valves will close to prevent backflow. If the second check valve is prevented from closing tightly, the first check will close to provide protection from a backflow condition.

MATERIALS	
Body	Cast Bronze C84400
Union Tailpiece	Brass
Union Nut	Brass
Check Modules	Glass-Filled PPO (3/8"-1/2")
	Acetal (3/4"-1")
Springs	Stainless Steel
Seat Discs	Buna-N

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

FEATURES

- Low Head Loss
- Independently-acting Check Valves
- Compact and Lightweight
- Corrosion Resistant
- Replaceable Check Modules
- Industry Lay Lengths
- Lead-Free[1] option
- Available in Standard and Swivel Types
- Maximum Working Pressure 175 psi
- Operating Temperature Range 33°F-180°F
- ASSE1024
- CSA
- 5 year, domestic warranty

4N [X] – 3 [X] [X] – [X] [X] [X]

	Union Inlet Connection[1,2]	Inlet & Outlet Size	Outlet Connection[1,2]	Finish
4N - Standard 4NLF - Lead Free[1]	A– FNPT B– MNPT C– Female Meter Thread E– Male Meter Thread S– Female Meter Swivel 2– Female BSPP	2– 3/8" 3– 1/2" 4– 3/4" 5– 1" 6– 1-1/4" (Meter Thread sizing for 1" meter swivel)	A– FNPT B– MNPT C– Female Meter Thread E– Male Meter Thread F– Female BSPP	Blank - Satin Brass C - Satin Chrome

Notes:

1 For meter threads, order one size larger than meter size. (i.e.- 4N3S54A = 1" Female Meter Swivel Inlet (for connection to 3/4" meter) x 3/4" FNPT outlet

2 Not all inlet and outlet combinations are available. Please contact Conbraco Customer Service for availability.

Duel Check Backflow Preventer Valve DUC-4FP Series

Dual Check Valve

The Apollo DUC-4FP Series Dual Check Backflow Preventer for Residential Fire Sprinkler Systems prevents backflow by either backpressure or back-siphonage from a cross-connection between potable water lines and substances that are objectionable, but not health-hazards.

MATERIALS	
Body	Bronze
Union Tailpiece	Brass
Union Nut	Brass
Check Modules	Acetal/Nitrile/Stainless Steel
Spacer	Glass-Filled Noryl®
O-Ring	EPDM

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

FEATURES

- Low Pressure Loss
- Corrosion Resistant
- Replaceable Check Modules
- Pressure drop at 30 gpm is less than 6 psi
- Complies with NFPA Standard 13D
- 5 year, domestic warranty
- Maximum Supply Pressure 175 psi
- Temperature Range 33°F - 180°F
- ASSE 1024
- UL Classified
- CSA B64.6
- Made in the USA

4FP3 X - X X X

Inlet Connection[1]	Inlet Size	Outlet Connection[1]	Outlet Size
A - FNPT C - Female Meter Thread	5 - 1″ 6 - 1-1/4″ (Meter thread sizing for 1″ meter)	A - FNPT B - MNPT E - Male Meter Thread	5 - 1″ 6 - 1-1/4″ (Meter thread sizing for 1″ meter)

Example:
4FP3A55A = 1″ FNPT Inlet x 1″ FNPT outlet

Notes: *1 Not all inlet and outlet combinations are available. Please contact Conbraco Customer Service for availability.*

Duel Check Backflow Preventers DUC-40 Series

Duel Check Valve

The Apollo Series DUC-40 Dual Check Valve prevents backflow by either backpressure or back-siphonage resulting from a cross-connection between potable water lines and substances that are objectionable, but not health-hazards.

Sizes 1/2", 3/4", 1"

FEATURES

- In-line repairable
- Low pressure loss
- Corrosion resistant
- Compact and lightweight
- Independently-acting check valves
- ASSE 1024
- CSA B64.6
- Available in standard and swivel types
- MADE IN THE USA
- 5 year, domestic warranty

MATERIALS	
Body	Bronze
Caps	Brass
Springs	Stainless Steel
Seat Discs	EPDM

See Backflow Catalog for dimensions and flow curves

PERFORMANCE RATING

Maximum Operating Pressure 175 psi

Temperature Range 33° F - 180° F

APPROVALS

ASSE 1024 and CSA B64.6

40 – 3 [X] [X] – [X] [X] [X]

Inlet Connection[1,2]	Inlet Size & Outlet Size	Outlet Connection[1,2]	Options (can be combined)
A – FNPT C – Female Meter Thread E – Male Meter Thread S – Female Meter Swivel 2 – Female BSPP	3 – 1/2" 4 – 3/4" 5 – 1"	A – FNPT C – Female Meter Thread F – Female BSPP	TP- w/Test Ports Drilled, Tapped w/Plugs TC- w/3 1/8"x1/4" Test Cocks

Notes:

[1] For meter threads, order one size larger than meter size.

[2] Not all inlet and outlet combinations are available. Please contact Conbraco Customer Service for availability.

** Standard body not drilled & tapped for testcocks.*

Backflow Preventer CBBP Series

Carbonated Beverage Backflow Preventer

The Apollo CBBP Series Carbonated Beverage Backflow Preventer (CBBP) is designed to prevent the contamination of the potable water supply due to backflow when installed on water distribution lines serving beverage dispensing equipment. The device consists of two independently acting check valves biased to a normally closed position. A normally open atmospheric port is located between the check valves. During backflow conditions, the port vents gases and/or liquids. Additionally, the CBBP is equipped with a 100 mesh integral strainer screen at the inlet. All wetted areas of the device are non-toxic, corrosion resistant, and approved for use with potable water. The CBBP is suitable for supply pressures to 150 psig and water temperatures from 33˚ to 130˚ F.

OPERATION

Under static (non-flowing) conditions, the check valves remain in the closed position. When a valve is opened downstream (i.e. a drink is delivered from the beverage dispensing unit), the check valves open and permit the flow of water. Under backflow conditions, the diaphragm seat on the first check lifts and permits flow through the atmospheric port located between the two check valves. The strainer insures debris does not enter the carbonator.

FEATURES

- Compact Design
- Lowest head loss
- Atmospheric vent provides indication of problems
- Integral strainer for equipment protection
- Available in SAE & NPT connections
- Replaceable check assemblies
- Non-metallic body for corrosion resistance
- CSA Certified to ANSI/NSF-61
- ASSE1022
- 5 year, domestic warranty

Sizes 1/4", 3/8"

MATERIALS	
End cap	Acetal
Strainer	PVC/Stainless Steel
O-ring	Nitrile
Downstream	Nitrile/Stainless
Check Valve	Steel/Acetal
Upstream Check	EPDM/Stainless
Valve Body	Acetal

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

4C – 10 X – 0 X

Size	Inlet & Outlet Connection
1 - 1/4″ 2 - 3/8″	01 - FLARE (SAE) 02 - MNPT (3/8″ only)

Hose Connection Vacuum Breakers HBV Series

3/4" Hose Connection Vacuum Breakers

Apollo's HBV Hose Connection Vacuum Breakers are designed to prevent cross-connection caused by back-siphonage. They consist of a single check valve with atmospheric vacuum breaker vent. They feature a break-away set-screw for tamper-proof protection. They are not suitable for continuous pressure applications.

OPERATION

At no flow situations, the check disc seats against the diaphragm with the atmospheric vent open. This prevents back-siphonage or backflow of water. At flow conditions, the spring-loaded check disc opens, thus allowing flow of water through the device and at the same time the diaphragm seals the atmospheric vent.

INSTALLATION

It should only be installed in areas where spillage of water could not cause damage. For permanent installation, screw device directly into faucet, firmly hand tighten and turn set-screw in until head breaks off.

3/4"

Apollo International

Ordering No.	Model No.	Finish	Wt./Ea
38-314-AS	HBV234	Satin Brass	.17
38-314-CS	HBVC234	Satin Chrome	.17

38-314 shipped in 12 pcs./box

FEATURES

- Maximum Working Pressure 125 psig
- Maximum Temperature 180°F.
- ASSE1011
- CSA B64.2

Hose Connection Vacuum Breakers HBVAF2 Series

3/4" Anti-Freeze Hose Connection Vacuum Breakers

The Apollo Series HBVB Anti-Freeze Hose Connection Vacuum Breaker is especially designed to prevent back-siphonage on wall and yard hydrants. It features a break-away set-screw for tamper-proof protection and automatic drain for protection against freezing conditions when hose is removed. It is not suitable for continuous pressure applications.

OPERATION

The principle of operation is similar to the HCVB Series except it has an automatic draining feature. When the hose is removed, the internal mechanism opens to drain water inside the unit and the hose bibb to help prevent water from freezing inside the unit.

INSTALLATION

It should only be installed in areas where spillage of water could not cause damage. For permanent installation, screw device directly into faucet, firmly hand tighten and turn set-screw in until head breaks off.

3/4"

Apollo International

Ordering No.	Model No.	Finish	Wt./Ea
38-414-AS	HBVAF2	Satin Brass	.37

38-314 shipped in 12 pcs./box

FEATURES

- Maximum Working Pressure 125 psig
- Maximum Temperature 180°F.
- ASSE1011

Lab Faucet Duel Check HFDUC Series

3/4" Hose Connection Duel Check

The Apollo Series HBDUC is designed to provide an in-line testable hose connection that will prevent backflow due to back-siphonage or low head back-pressure. Each device consists of two independent checks, forced loaded in the closed position with an atmospheric vent between the checks. The device is threaded for hose connection at both the inlet and outlet with a break-away set screw on the inlet for tamper proof installations. These devices are not suitable for continuous pressure applications.

OPERATION

During initial pressurization, the inlet check shuttles forward to close the atmospheric vent. As flow is established, both the inlet and outlet check open to allow flow through the device. If a backflow condition is present, then both checks will close and the atmospheric vent opens to introduce air and break the siphon.

FEATURES

- Corrosion resistant body and checks
- Low Head loss
- Easy to install with break-away set screw
- Protects against back siphonage and low-head back pressure
- ASSE1052

Sizes 3/4"

MATERIALS	
Body	Brass
Seats	EPDM
Check components	Stainless steel
Check guide	Acetal

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions and flow curves

Ordering No.	Model No.	Wt./100
38-304-02	HBDUC34	46

Vacuum Breakers
LFDUC Series

Laboratory Faucet Duel Check Backflow Preventer

The Apollo Series LFDUC is designed to provide protection against back-siphonage wherever a hose is connected to a faucet. The device consists of two independently acting checks with an intermediate relief port or vent. It is suitable for supply pressure up to 150 psig and a temperature range of 33°F-180°F. Not suitable for constant pressure conditions.

OPERATION

During normal flow conditions, the two checks are held off their seats, supplying water downstream. The vent is held shut by supply pressure acting on the diaphragm. If the supply pressure should fall below atmospheric, the second check will close due to internal spring pressure and the vent will open to introduce air into the supply line and break the siphon.

NOTE: *This device should only be installed where spillage of water could not cause water damage.*

Sizes 1/4", 3/8"

Ordering No.	Model No.	Inlet	Outlet
38-502-01	LFDUCMF38	3/8" MNPSM*	3/8" FNPT
38-502-02	LFDUCFF38	3/8" FNPT	3/8" FNPT
38-502-03	LFDUCFM38	3/8" FNPT	3/8" MNPSM
38-502-CP2**	LFDUCFF14	1/4" FNPT	1/4" FNPT
38-502-CP3**	LFDUCFF38	3/8" FNPT	3/8" FNPT

**American National Standard straight pipe thread for free-fitting mechanical joints (male)*
***-CP2 and -CP3 are non-approved devices with a rough brass finish for continuous pressure applications*

See Backflow Catalog for dimensions and flow curves

FEATURES

- Corrosion resistant
- Forged brass body
- Suitable for hot or cold water service up to 212°F and 125 psi
- Polished (-CP2 and -CP3 are rough brass only)
- Easy to maintain
- Compact and lightweight
- ASSE1035

Vacuum Breakers FPV Series

Freeze Protection Valve

The Apollo Series FPV Freeze Protection Valve protects backflow preventers from freezing when installed in accordance with manufacturer's instructions. All internal parts of the Freeze Protection Valve are replaceable.

OPERATION

During flow conditions, the Freeze Protection Valve shall be drip-tight during above-freezing normal operating conditions. The Freeze Protection Valve shall be suitable for normal operating pressures of 20 to 175 psig.

FEATURES

- Installs easily on all backflow preventers
- Ease of repair with available repair kit
- 175 psig maximum operating pressure
- Corrosion resistant
- 1/4" male pipe thread inlet port
- Available with 1/8" male x 1/4" female Apollo® test cock
- Discharge port accommodates 5/8" I.D. hose
- Lead-Free[1] option
- Mechanical operating principle
- Nominal start to open temperature of 35°F
- Maximum temperature of 180°F
- Compact design
- Patented design
- IAPMO listed
- US patent #6,374,849
- 5 year, domestic warranty

MATERIALS	
Body	Bronze
Cap	Brass
Spring Guide	Brass
Spring	Stainless Steel
Cap O-Ring	Buna-N
Guide O-Ring	Buna-N
Thermal Element	Copper/Stainless Steel/EPDM

Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions

MODEL NUMBERS
Model 40-000-FPV1
Model 40-000-FPV2 – w/test cock
Model 40LF-000-FPV1
Model 40LF-000-FPV2F

40 [X] - 000 - FPV X

	Options
40 - Standard 40LF - Lead Free[1]	1 – w/1/8" NPT plug 2 – w/1/8" male x 1/4" female Apollo test cock 2F - SAE test cock R – Repair kit* for FPV1 and FPV2

** Repair kit includes: Thermal element, spring, spring guide, two O-rings (all internal parts)*

Backflow Preventer Accessories Test Kits

Test Kits

The Apollo Backflow Preventer Test Kits are compact, lightweight and portable testing devices. They come equipped with a gauge, hoses (with integral filters) and all required adapter fittings. Also included is a flexible or adjustable strap for hanging the gauge, laminated test procedures and a molded plastic carrying case with foam inserts.

Differential Pressure Gauge Test Kits

TK3

These are three-valve test kits used for testing all DCV, RPZ, PVB & SVB backflow preventers.

- Differential pressure type with a dual scale of 0-15 psid/0-100kPa differential pressure range with a ± 0.2 psig (Descending) accuracy. Maximum working pressure 200 psig.

TK5

This is a five-valve test kit used for testing all DCV, RPZ, PVB & SVB backflow preventers.

- The five valve test kit is similar to the three valve kit except it has two additional valves that make it possible to bleed lines without disconnecting hoses.

TK3

TK5

Ordering No.	Model No.	Application	Wt./Ea. (lbs.)
40-200-TKU	TK3	ALL DCV, RPZ, PVB & SVB	6.5
40-200-TK5U	TK5	ALL DCV, RPZ, PVB & SVB	6.5

Test Kit Fitting TKF Series

Brass fitting which installs onto Backflow Preventer Test Cocks by hand. No tools required. No Teflon® tape to deal with. Provides quicker testing. Sets of three fittings with o-rings for 1/4" SAE connections to the test kits. Packaged in a reclosable plastic bag.

Size	Ordering No.	Model No.	Backflow Application
1/4" SAE x 1/4" NPT	40-000-TFK	TFK14	1/4" - 2"
1/4" SAE x 1/2" NPT	40-001-TFK	TFK12	2-1/2" - 6"
1/4" SAE x 3/4" NPT	40-002-TFK	TFK34	8" - 12"
Set of all 3 sizes	40-003-TKF	TFKSET	1/4" - 12"

3/4" Hose Connection Pressure Gauge HCPG (W807800)Series

The Apollo Hose Connection Pressure Gauge is designed to measure water pressure through a 3/4" hose thread connection. It consists of an indicator needle to determine maximum pressure.

FEATURES

- 2-1/2" face dial
- 0-300 psig pressure range
- Swivel type 3/4" hose connection
- Adjustable indicator needle
- Temperature range 50°F-130°F
- Wt./100 46.0

Site Tube ST1 (40-200-ST)Series

Used in USC testing procedures. The kit allows for visual inspction during testing, provides an extension to the check valve body and offers quick connection with the 90° elbow. Provides means to static test double check backflow preventers.

Valve Setters

Apollo Valve 4An Setters are specifically designed to match the mounting dimensions of the 4An products. The three-piece configuration simplifies installation and eliminates the need for thrust blocks between the elbows. All hardware is stainless steel and the entire unit is FDA Epoxy coated inside and out. The mechanical joint connections are to AWWA C153 and the flanges are to ANSI B16.1 Class 125.

The Apollo 4An Valve Setter is shown in a typical installation. It is shipped in three separate pieces along with four nuts and four bolts (for Center Brace). Mechanical Joint accessories such as those shown are for reference only and are not included with the 4An Valve Setter.

MATERIALS	
Setter Body	Ductile Iron, ASTM A536
Setter Center Brace	Hot Rolled Steel ASTM A36
Setter Bolts & Nuts	Stainless Steel
Setter & Brace Coating	Fusion-Bonded Epoxy FDA Compliant Internal and External

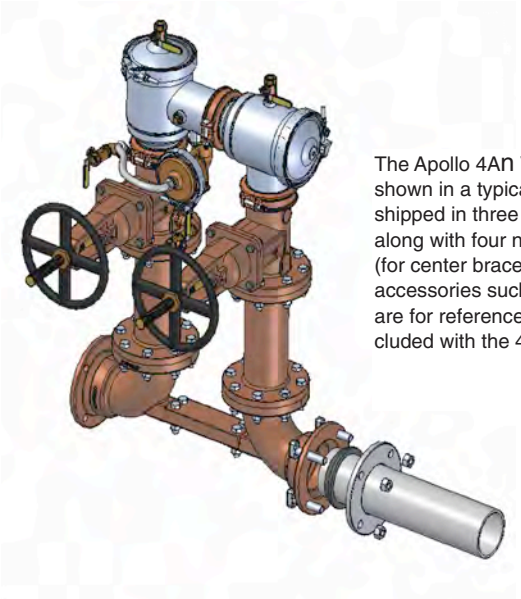
Contact local water authorities for installation/service requirements.

See Backflow Catalog for dimensions

4An - 00 X - X

Size	Options
9 - 2-1/2″*	F - Flange x Flange
0 - 3″	MJF - Mechanical Joint x Flange
A - 4″	MJ - Mechanical Joint x Mechanical Joint
C - 6″	
E - 8″	
G - 10″*	
H - 12″*	

** Flange x Flange only*



The Apollo 4An Valve Setter is shown in a typical installation. It is shipped in three separate pieces along with four nuts and four bolts (for center brace). Mechanical Joint accessories such as those shown are for reference only and are not included with the 4An Valve Setter.

Air Gap Drains for RP-40 & RP4A Series

The AGD4A Air Gap Drains are manufactured in the USA of lightweight ABS plastic. The versatile ABS plastic allows drainage piping to be attached to the internal NPT threads or to the outside with a coupling and the appropriate cement or using a flexible pipe coupling.

The Apollo Air Gap Drain (AGD) is designed to funnel minor relief valve discharges, due to line pressure fluctuations and /or minor check valve fouling, into the drainage system. Drain piping is easily attached to the drain's threaded bottom.

For installation with Conbraco's RP-40, RPDA-40, RP-4A, RPDA-4A, RP-4An, and RPDA-4An Series Reduced Pressure Principle backflow preventers.

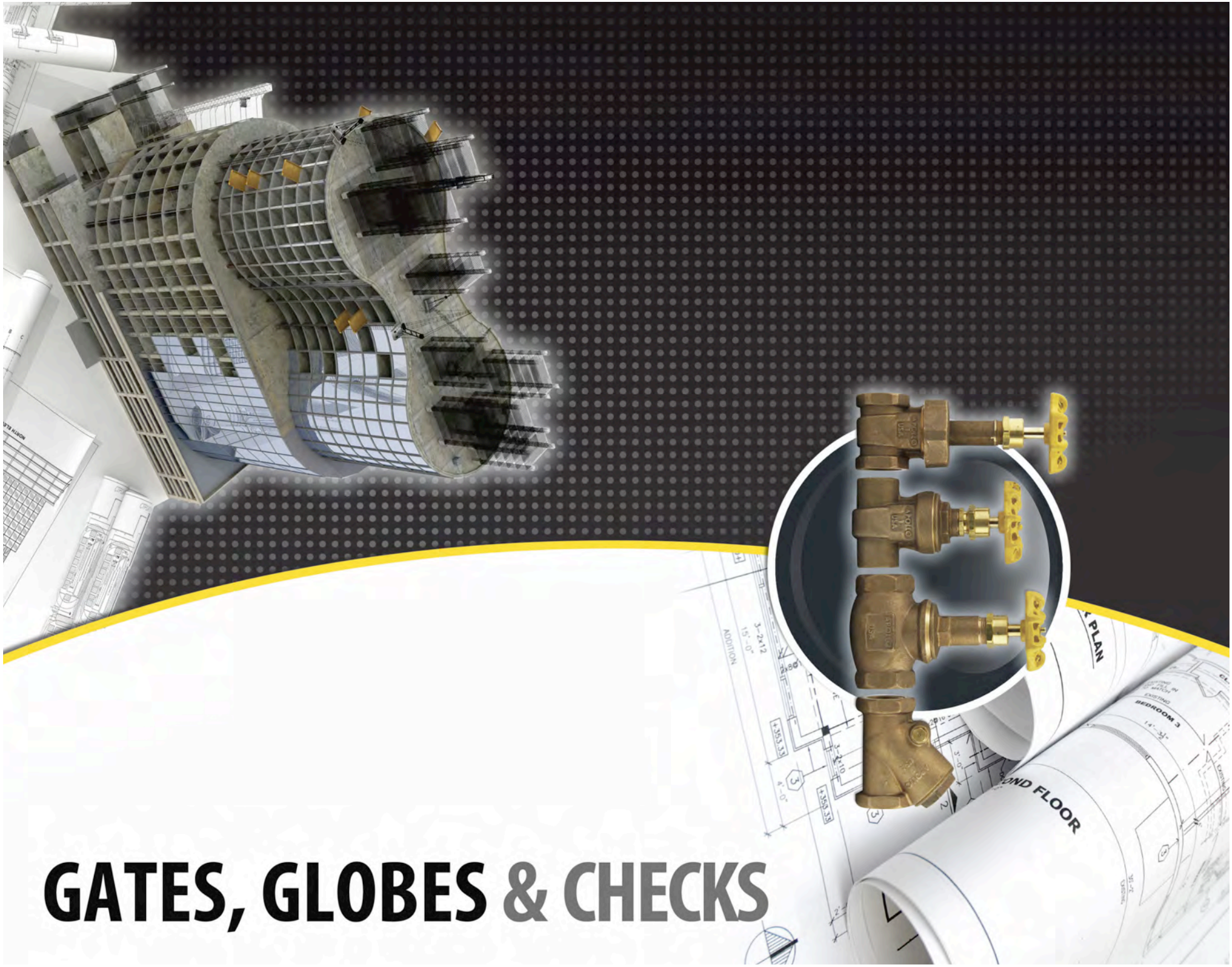
Note: *The AGD is NOT designed to collect the full discharge capacity of the relief valve.*

R.P. 4A Series	AGD4A Model No.
1/2", 3/4", 1"	AGD4A1
1-1/4" - 1-1/2"	AGD4A112
2"	AGD4A2
2-1/2"	AGD4A6
3"	AGD4A6
4"	AGD4A6
6"	AGD4A6
8"	AGD4A8
10"	AGD4A12IN
12"	AGD4A12IN
4AN Series	
2-1/2"	AGD4A6
3"	AGD4A6
4"	AGD4A6
6"	AGD4A6
8"	AGD4A8
10"	AGD4A12IN
12"	AGD4A12IN

The AGD4A Air Gap Drains are manufactured in the USA of lightweight ABS plastic. The versatile ABS plastic allows drainage piping to be attached to the internal NPT threads or to the outside with a coupling and the appropriate cement or using a flexible pipe coupling.

R.P. 40 Series	AGD Model No.	Order Code
1/4", 3/8", 1/2"	AGD4012	AGD4012
3/4" & 1"	AGD401	AGD401
1-1/4" & 2"	AGD2	40-200-X1
2-1/2" & 3"	AGD3	40-200-X2
4"	AGD3	40-200-X2
6"	AGD3	40-200-X2
8"	AGD4	40-200-X3
10"	AGD4	40-200-X3

See Backflow Catalog for dimensions and discharge rates



GATES, GLOBES & CHECKS

Class 125 Gate Valve
101T (30) Series

Solid Disc, Rising Stem, NPT

The Apollo Model 101 Gate valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Gate valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES
- Full Port
- Guided Solid Bronze Disc
- Adjustable Graphite Stem Packing
- Rising Stem
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- NPT Connections
- Screw-in Bonnet
- Rugged Malleable Iron Hand Wheel
- 100% machined and assembled in USA
- Backseat protection
- Lead Free[1] option

STANDARDS
MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

PERFORMANCE RATING
Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Packing		Grafoil®
Bonnet	ASTM B62	Bronze	Packing Nut	ASTM B16	Brass
Stem	ASTM B371	Sil-Bronze	Hand Wheel		Malleable Iron
Disc	ASTM B62	Bronze	Nameplate		Aluminum

Material Specifications-LF

Part	Name	Material	Part	Name	Material
Body	ASTM B584-C89836	Bronze	Packing		Grafoil®
Bonnet	ASTM B584-C89836	Bronze	Packing Nut	ASTM B16	Brass
Stem	ASTM B371	Sil-Bronze	Hand Wheel		Malleable Iron
Disc	ASTM B62	Bronze	Nameplate		Aluminum

Dimensions

Size	Height (open)	Length NPT)	Weight
1/4"	4.57	1.76	.80
3/8"	4.51	1.76	.77
1/2"	4.85	2.03	1.0
3/4"	5.71	2.07	1.30
1"	6.71	2.45	2.16
1-1/4"	8.10	2.63	3.2
1-1/2"	9.08	2.88	4.36
2"	11.28	3.06	7.01
2-1/2"	14.58	4.13	13.79
3"	19.07	4.48	17.7

Order Information

Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)	Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)
1/4"	101T	30-001-01	101T-LF	30LF-001-01	1 1/4"	101T	30-006-01	101T-LF	30LF-006-01
3/8"	101T	30-002-01	101T-LF	30LF-001-01	1 1/2"	101T	30-007-01	101T-LF	30LF-007-01
1/2"	101T	30-003-01	101T-LF	30LF-001-01	2	101T	30-008-01	101T-LF	30LF-008-01
3/4"	101T	30-004-01	101T-LF	30LF-001-01	2 1/2"	101T	30-009-01	101T-LF	30LF-009-01
1 "	101T	30-005-01	101T-LF	30LF-001-01	3"	101T	30-000-01	101T-LF	30LF-000-01

200 CWP Gate Valve
102S (30) Series

Solid Disc, Non Rising Stem, Solder

The Apollo Model 102 Gate Valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Gate Valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Full Port
- Guided Solid Bronze Disc
- Adjustable Graphite Stem Packing
- Non Rising Stem
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- Solder Connection
- Screw-in Bonnet
- Rugged Malleable Iron Hand Wheel
- 100% machined and assembled in USA
- Back seat protection
- Lead Free[1] option

STANDARDS

MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B16.18, "Cast Copper Alloy Solder Joint Pressure Fittings

PERFORMANCE RATING

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Packing		Grafoil®
Bonnet	ASTM B62	Bronze	Packing Nut	ASTM B16	Brass
Stem	ASTM B371	Sil-Bronze	Hand Wheel		Malleable Iron
Disc	ASTM B62	Bronze	Nameplate		Aluminum

Material Specifications-LF

Part	Name	Material	Part	Name	Material
Body	ASTM B584-C89836	Bronze	Packing		Grafoil®
Bonnet	ASTM B584-C89836	Bronze	Packing Nut	ASTM B16	Brass
Stem	ASTM B371	Sil-Bronze	Hand Wheel		Malleable Iron
Disc	ASTM B62	Bronze	Nameplate		Aluminum

Dimensions

Size	Height (open)	Length	Weight (Lbs.)
1/2"	3.56	1.88	.85
3/4"	4.05	2.43	1.19
1"	4.55	2.96	1.98
1-1/4"	5.14	3.14	2.8
1-1/2"	6.02	3.44	3.95
2"	7.09	4.11	5.88
2-1/2"	9.11	4.79	12.19
3"	12.61	5.43	16.84

Order Information

Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)	Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)
1/2"	102S	30-043-01	102S-LF	30LF-043-01	1 1/2"	102S	30-047-01	102S-LF	30LF-047-01
3/4"	102S	30-044-01	102S-LF	30LF-044-01	2"	102S	30-048-01	102S-LF	30LF-048-01
1"	102S	30-045-01	102 -LF	30LF-045-01	2 1/2"	102S	30-049-01	102S-LF	30LF-049-01
1 1/4"	102S	30-046-01	102S-LF	30LF-046-01	3	102S	30-040-01	102S-LF	30LF-040-01

Class 125 Gate Valve 102T (30) Series

Solid Disc, Non Rising Stem, NPT

The Apollo Model 102 Gate Valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Gate Valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Full Port
- Guided Solid Bronze Disc
- Adjustable Graphite Stem Packing
- Non Rising Stem
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- NPT Connection
- Screw-in Bonnet
- Rugged Malleable Iron Hand Wheel
- 100% machined and assembled in USA
- Back seat protection
- Lead Free[1] option

STANDARDS

MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Packing		Grafoil®
Bonnet	ASTM B62	Bronze	Packing Nut	ASTM B16	Brass
Stem	ASTM B371	Sil-Bronze	Hand Wheel		Malleable Iron
Disc	ASTM B62	Bronze	Nameplate		Aluminum

Material Specifications-LF

Part	Name	Material	Part	Name	Material
Body	ASTM B584-C89836	Bronze	Packing		Grafoil®
Bonnet	ASTM B584-C89836	Bronze	Packing Nut	ASTM B16	Brass
Stem	ASTM B371	Sil-Bronze	Hand Wheel		Malleable Iron
Disc	ASTM B62	Bronze	Nameplate		Aluminum

Dimensions

Size	Height (open)	Length(NPT)	Weight (Lbs.)
1/4"	3.29	1.76	0.74
3/8"	3.29	1.76	0.71
1/2"	3.56	2.03	0.85
3/4"	4.05	2.07	1.19
1"	4.55	2.45	1.98
1-1/4"	5.14	2.63	2.80
1-1/2"	6.02	2.88	3.95
2"	7.09	3.06	5.88
2-1/2"	9.11	4.13	12.19
3"	12.61	4.48	16.84

Order Information

Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)	Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)
1/4"	102T	30-031-01	102T-LF	30LF-031-01	1 1/4"	102T	30-036-01	102T-LF	30LF-036-01
3/8"	102T	30-032-01	102T-LF	30LF-032-01	1 1/2"	102T	30-037-01	102T-LF	30LF-037-01
1/2"	102T	30-033-01	102T-LF	30LF-033-01	2	102T	30-038-01	102T-LF	30LF-038-01
3/4"	102T	30-034-01	102T-LF	30LF-034-01	2 1/2"	102T	30-039-01	102T-LF	30LF-039-01
1 "	102T	30-035-01	102T-LF	30LF-035-01	3"	102T	30-030-01	102T-LF	30LF-030-01

Class 125 Gate Valve
103T (30) Series

Solid Disc, Rising Stem, Union Bonnet, NPT

The Apollo Model 103 Gate Valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Gate Valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES
- Guided Solid Bronze Discs
- Adjustable Graphite Stem Packing
- Rising Stem
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- NPT Connection
- Union Bonnet
- Rugged Malleable Iron Hand Wheel
- 100% machined and assembled in USA

STANDARDS

MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Packing		Grafoil®
Bonnet	ASTM B62	Bronze	Packing Nut	ASTM B16	Brass
Stem	ASTM B371	Bronze	Hand Wheel		Malleable Iron
Union Nut	ASTM B371/B62	Bronze	Nameplate		Aluminum
Disc	ASTM B62	Bronze			

Dimensions

Size	Height (open)	Length (NPT)	Weight (Lbs.)
1/4"	4.57	1.76	.90
3/8"	4.51	1.76	.86
1/2"	4.85	2.03	1.07
3/4"	5.71	2.07	1.43
1"	6.71	2.45	2.44
1-1/4"	8.10	2.63	3.71
1-1/2"	9.08	2.88	4.89
2"	11.28	3.06	7.53
2-1/2"	14.58	4..96	15.33
3"	19.07	4.48	19.56

Order Information

Size	Model	Item Number	Size	Model	Item Number
3/8"	103T	30-051-01	1 1/2"	103T	33-056-01
1/2"	103T	30-052-01	2"	103T	33-057-01
3/4"	103T	30-053-01	2 1/2"	103T	33-058-01
1"	103T	30-054-01	3"	103T	33-059-01
1 1/4 "	103T	30-055-01			

Class 150 Gate Valve
106T (30) Series

Non Rising Stem, NPT

The Apollo Model 102 Gate Valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Gate Valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Guided Solid Bronze Discs
- Adjustable Graphite Stem Packing
- Non Rising Stem
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- NPT Connection
- Screwed Bonnet
- Rugged Malleable Iron Hand Wheel
- 100% machined and assembled in US

STANDARDS

MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

PERFORMANCE RATING

Saturated Steam:
150 psi (10.4 Bar) to 366°F(185°C)

Cold Working Pressure:
300 psi (20.7 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Packing		Grafoil®
Bonnet	ASTM B62	Bronze	Packing Nut	ASTM B16	Brass
Stem	ASTM B371	Sil-Bronze	Hand Wheel		Malleable Iron
Disc	ASTM B62	Bronze	Nameplate		Aluminum

Dimensions

Size	Height (open)	Length(NPT)	Weight (Lbs.)
1/4"	3.29	1.76	.74
3/8"	3.29	1.76	.71
1/2"	3.56	2.03	.98
3/4"	4.05	2.07	1.21
1"	4.55	2.45	1.98
1-1/4"	5.14	2.63	2.8
1-1/2"	6.02	2.88	4.06
2"	7.09	3.06	5.88
2-1/2"	9.11	4.13	12.19
3"	12.61	4.48	16.90

Order Information

Size	Model	Item Number Thread (NPT)	Size	Model	Item Number Thread (NPT)
1/4"	106T	30-281-01	1-1/4"	106T	30-286-01
3/8"	106T	30-282-01	1-½"	106T	30-287-01
1/2"	106T	30-283-01	2"	106T	30-288-01
3/4"	106T	30-284-01	2-1/2"	106T	30-289-01
1"	106T	30-285-01	3"	106T	30-280-01

Class 150 Gate Valve
107T (30) Series

Solid Disc, Rising Stem, NPT

The Apollo Model 107 Gate Valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Gate Valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Guided Solid Bronze Discs
- Adjustable Graphite Stem Packing
- Rising Stem
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- NPT Connection
- Union Bonnet
- Rugged Malleable Iron Hand Wheel
- 100% machined and assembled in US

STANDARDS

MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

PERFORMANCE RATING

Saturated Steam:
150 psi (10.3 Bar) to 366°F(185°C)

Cold Working Pressure:
300psi (20.7 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Packing		Grafoil®
Bonnet	ASTM B62	Bronze	Packing Nut	ASTM B16	Brass
Stem	ASTM B371	Sil-Bronze	Hand Wheel		Malleable Iron
Union Nut	ASTM B371/B62	Bronze	Nameplate		Aluminum
Disc	ASTM B62	Bronze			

Dimensions

Size	Height (open)	Length (NPT)	Weight (Lbs.)
1/4"	4.57	1.76	.90
3/8"	4.51	1.76	.88
1/2"	4.85	2.03	1.07
3/4"	5.71	2.07	1.43
1"	6.71	2.45	2.50
1-1/4"	8.10	2.63	3.69
1-1/2"	9.13	2.88	5.01
2"	11.28	3.06	7.53
2-1/2"	14.58	4.13	15.33
3"	16.90	4.48	19.56

Order Information

Size	Model	Item Number Thread (NPT)	Size	Model	Item Number Thread (NPT)
1/4"	107T	30-201-01	1 1/4"	107T	30-206-01
3/8"	107T	30-202-01	1-1/2"	107T	30-207-01
1/2"	107T	30-203-01	2"	107T	30-208-01
3/4"	107T	30-204-01	2 1/2"	107T	30-209-01
1"	107T	30-205-01	3"	107T	30-200-01

Class 125 Gate Valve 610F (6GA) Series Apollo International

Non Rising Stem, Bolted Bonnet

The Apollo Model 610F flanged cast iron gate valve provides full flow capabilities. The Apollo Gate valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 125# & 150# Flanges
- Full Port
- Bronze Mounted Seat Rings
- Solid Wedge
- Adjustable Graphite Stem Packing
- Non-Rising Stem
- Flanged Connection
- Bolted Bonnet
- Rugged Ductile Iron Hand Wheel
- Back Seat Protection

STANDARDS

MSS SP-70, "Gray Iron Gate Valves Flanged and Threaded"

ASME B16.10, "Face-to-Face and End-to-End Dimensions of Valves."

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)
(2-1/2"-12") 100 psi (6.9 Bar) to 338°F (170°C) (14"-24")

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F (2-1/2"-12")
150 psi (10.3 Bar) at 100°F (14"-24")

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Body	Cast Iron (ASTM A126 CL-B)
Seat Rings	Cast Bronze (ASTM B62)
Wedge Face Rings	Cast Bronze (ASTM B62)
Wedge	Cast Iron (ASTM A126 CL-B)
Wedge Nut	Cast Bronze (ASTM B62)
Stem	Brass (ASTM B16)
Body Gasket	Graphite
Bolts	Carbon Steel (ASTM A307 B)
Nuts	Carbon Steel (ASTM A307 B
Bonnet	Cast Iron (ASTM A126 CL-B)
Gland Follower Bolts	Carbon Steel (ASTM A307 B)
Stuffing Box Gaskets	Graphite
Stuffing Box	Cast Iron (ASTM A126 CL-B)
Packing	Graphite
Gland Follower	Ductile Iron (ASTM A536 65-45-12)
Packing Gland	Cast Bronze (ASTM B584)
Handwheel	Cast Iron (ASTM A126 CL-B)
Nameplate	Aluminum
Washer	Carbon Steel (ASTM A307 B)
Handwheel Nut	Ductile Iron (ASTM A536 65-45-12)

Order Information

Size	Part Number
2"	6GA-108-B1
2-1/2"	6GA-109-B1
3"	6GA-100-B1
4"	6GA-10A-B1
5"	6GA-10B-B1
6"	6GA-10C-B1
8"	6GA-10E-B1
10"	6GA-10G-B1
12"	6GA-10H-B1
14"	6GA-10J-B1
16"	6GA-10K-B1
18"	6GA-10M-B1
20"	6GA-10N-B1
24"	6GA-10P-B1

Dimensions

Size	Height (open)	Length	Weight (Lbs.)
2"	14.57	7.00	36
2-1/2"	16.34	7.50	48
3"	18.90	8.00	59
4"	20.67	9.00	104
5"	24.61	10.00	150
6"	28.74	10.50	192
8"	32.48	11.50	260
10"	37.40	13.00	434
12"	43.31	14.00	606
14"	37.01	15.00	926
16"	42.52	16.00	1098
18"	46.46	17.00	1543
20"	54.33	18.00	1638
24"	57.48	20.00	2756

Class 250 Gate Valve 620F (6GA) Series Apollo International

Non Rising Stem, Bolted Bonnet

The Apollo Model 620F flanged cast iron gate valve provides full flow capabilities. The Apollo Gate valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 250# & 300# Flanges
- Full Port
- Bronze Mounted Seat Rings
- Solid Wedge
- Adjustable Graphite Stem Packing
- Non-Rising Stem
- Flanged Connection
- Bolted Bonnet
- Rugged Ductile Iron Hand Wheel
- Back Seat Protection

STANDARDS

MSS SP-70, "Gray Iron Gate Valves Flanged and Threaded"

ASME B16.10, "Face-to-Face and End-to-End Dimensions of Valves."

PERFORMANCE RATING

Saturated Steam:
250 psi (17.2 Bar) to 406°F(207°C)

Cold Working Pressure:
500 psi (34.5 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Body	Cast Iron (ASTM A126 CL-B)
Seat Rings	Cast Bronze (ASTM B62)
Wedge Face Rings	Cast Bronze (ASTM B62)
Wedge	Cast Iron (ASTM A126 CL-B)
Wedge Nut	Cast Bronze (ASTM B62)
Stem	Brass (ASTM B16)
Body Gasket	Graphite
Bolts	Carbon Steel (ASTM A307 B)
Nuts	Carbon Steel (ASTM A307 B)
Bonnet	Cast Iron (ASTM A126 CL-B)
Gland Follower Bolts	Carbon Steel (ASTM A307 B)
Stuffing Box Gaskets	Graphite
Stuffing Box	Cast Iron (ASTM A126 CL-B)
Packing	Graphite
Gland Follower	Ductile Iron (ASTM A536 65-45-12)
Packing Gland	Cast Bronze (ASTM B584)
Handwheel	Cast Iron (ASTM A126 CL-B)
Nameplate	Aluminum
Washer	Carbon Steel (ASTM A307 B)
Handwheel Nut	Ductile Iron (ASTM A536 65-45-12)

Order Information

Size	Part Number
2"	6GA-208-B1
2-1/2"	6GA-209-B1
3"	6GA-200-B1
4"	6GA-20A-B1
5"	6GA-20B-B1
6"	6GA-20C-B1
8"	6GA-20E-B1
10"	6GA-20G-B1
12"	6GA-20H-B1

Dimensions

Size	Height (open)	Length	Weight (Lbs.)
2"	11.28	8.50	42
2-1/2"	12.72	9.50	55
3"	13.31	11.00	66
4"	16.18	12.00	115
5"	19.80	15.00	161
6"	22.00	16.00	205
8"	25.59	16.50	278
10"	30.31	18.00	456
12"	33.90	19.75	633

Class 125 Gate Valve
611F (6GA) Series
Apollo International

Outside Screw & Yoke
Bolted Bonnet

The Apollo Model 611F flanged cast iron gate valve provides full flow capabilities. The Apollo Gate valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 125# & 150# Flanges
- Full Port
- Bronze Mounted Seat Rings
- Solid Wedge
- Adjustable Graphite Stem Packing
- Outside Screw & Yoke
- Flanged Connection
- Bolted Bonnet
- Rugged Ductile Iron Hand Wheel
- Back Seat Protection

STANDARDS

MSS SP-70, "Gray Iron Gate Valves Flanged and Threaded"

ASME B16.10, "Face-to-Face and End-to-End Dimensions of Valves."

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)
(2"-12") 100 psi (6.9 Bar) to 338°F (170°C) (14"-24")

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F (2"-12")
150 psi (10.3 Bar) at 100°F (14"-24")

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Body	Cast Iron (ASTM A126 CL-B)
Seat Rings	Cast Bronze (ASTM B62)
Wedge Face Rings	Cast Bronze (ASTM B62)
Wedge	Cast Iron (ASTM A126 CL-B)
Stem	Brass (ASTM B16)
Body Gasket	Graphite
Bolts	Carbon Steel (ASTM A307 B)
Nuts	Carbon Steel (ASTM A307 B)
Bonnet	Cast Iron (ASTM A126 CL-B)
Back Seat Bushing	Cast Bronze (ASTM B584)
Packing	Graphite
Packing Gland	Cast Bronze (ASTM B584)
Gland Follower Bolts	Carbon Steel (ASTM A307 B)
Gland Follower Nuts	Carbon Steel (ASTM A307 B)
Gland Follower	Ductile Iron (ASTM A536 65-45-12)
Yoke Bushing	Cast Bronze (ASTM B62)
Yoke Bushing Nut	Cast Iron (ASTM A126 CL-B)
Screw	Carbon Steel (ASTM A307 B)
Handwheel	Cast Iron (ASTM A126 CL-B)
Nameplate	Aluminum
Handwheel Nut	Ductile Iron (ASTM A536 65-45-12)
Yoke	Cast Iron (ASTM A126 CL-B)

Order Information

Size	Part Number
2"	6GA-118-B1
2-1/2"	6GA-119-B1
3"	6GA-110-B1
4"	6GA-11A-B1
5"	6GA-11B-B1
6"	6GA-11C-B1
8"	6GA-11E-B1
10"	6GA-11G-B1
12"	6GA-11H-B1
14"	6GA-11J-B1
16"	6GA-11K-B1
18"	6GA-11M-B1
20"	6GA-11N-B1
24"	6GA-11P-B1

Dimensions

Size	Height (open)	Length	Weight (Lbs.)
2"	14.96	7.00	38
2-1/2"	16.93	7.50	51
3"	19.09	8.00	62
4"	24.21	9.00	110
5"	27.56	10.00	154
6"	32.87	10.50	203
8"	39.76	11.50	284
10"	48.03	13.00	459
12"	56.50	14.00	637
14"	65.16	15.00	966
16"	71.85	16.00	1135
18"	79.53	17.00	1753
20"	90.16	18.00	2238
24"	132.28	20.00	3197

Class 250 Gate Valve
621F (6GA) Series
Apollo International

Outside Screw & Yoke
Bolted Bonnet

The Apollo Model 621F flanged cast iron gate valve provides full flow capabilities. The Apollo Gate valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 250# & 300# Flanges
- Full Port
- Bronze Mounted Seat Rings
- Solid Wedge
- Adjustable Graphite Stem Packing
- Outside Screw & Yoke
- Flanged Connection
- Bolted Bonnet
- Rugged Ductile Iron Hand Wheel
- Back Seat Protection

STANDARDS

MSS SP-70, "Gray Iron Gate Valves Flanged and Threaded"

ASME B16.10, "Face-to-Face and End-to-End Dimensions of Valves."

PERFORMANCE RATING

Saturated Steam:
250 psi (17.2 Bar) to 406°F(207°C)

Cold Working Pressure:
500 psi (34.5 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Body	Cast Iron (ASTM A126 CL-B)
Seat Rings	Cast Bronze (ASTM B62)
Wedge Face Rings	Cast Bronze (ASTM B62)
Wedge	Cast Iron (ASTM A126 CL-B)
Stem	Brass (ASTM B16)
Body Gasket	Graphite
Bolts	Carbon Steel (ASTM A307 B)
Nuts	Carbon Steel (ASTM A307 B)
Bonnet	Cast Iron (ASTM A126 CL-B)
Back Seat Bushing	Cast Bronze (ASTM B584)
Packing	Graphite
Packing Gland	Cast Bronze (ASTM B584)
Gland Follower Bolts	Carbon Steel (ASTM A307 B)
Gland Follower Nuts	Carbon Steel (ASTM A307 B)
Gland Follower	Ductile Iron (ASTM A536 65-45-12)
Yoke Bushing	Cast Bronze (ASTM B62)
Yoke Bushing Nut	Cast Iron (ASTM A126 CL-B)
Screw	Carbon Steel (ASTM A307 B)
Handwheel	Cast Iron (ASTM A126 CL-B)
Nameplate	Aluminum
Handwheel Nut	Ductile Iron (ASTM A536 65-45-12)
Yoke	Cast Iron (ASTM A126 CL-B)

Order Information

Size	Part Number
2"	6GA-218-B1
2-1/2"	6GA-219-B1
3"	6GA-210-B1
4"	6GA-21A-B1
5"	6GA-21B-B1
6"	6GA-21C-B1
8"	6GA-21E-B1
10"	6GA-21G-B1
12"	6GA-21H-B1

Dimensions

Size	Height (open)	Length	Weight (Lbs.)
2"	14.96	8.50	44
2-1/2"	16.93	9.50	57
3"	19.09	11.10	71
4"	24.21	12.00	121
5"	27.56	15.00	165
6"	32.87	15.87	216
8"	39.76	16.50	302
10"	48.03	18.00	481
12"	56.50	19.75	642

200 CWP Globe Valve 120S (33) Series

PTFE Disc, Threaded Bonnet, Solder

The Apollo Model 120 Globe valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Globe valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- 100% machined and assembled in USA
- Optimum Flow Capacity
- Adjustable Graphite Stem Packing
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- Solder Connection
- Screw-in Bonnet
- Rugged Malleable Iron Hand Wheel
- Back seat protection

STANDARDS

MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B16.18, "Cast Copper Alloy Solder Joint Pressure Fittings

MSS SP-104, "Wrought copper solder joint pressure fittings"

PERFORMANCE RATING

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

** Valves should be in open position to allow complete drainage during freezing conditions.*

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B584-C89836	Bronze	Disc		PTFE
Bonnet	ASTM B584-C89836	Bronze	Packing		Grafoil®
Stem	ASTM B371	Sil-Bronze Disc			

Dimensions

Size	Height (open)	Length (Solder)	(Lbs.)
1/2"	3.47	2.97	1.0
3/4"	4.75	3.83	1.9
1"	5.40	4.57	2.8
1-1/4"	7.80	5.95	7.3
1-1/2"	7.80	5.95	6.8
2"	8.43	7.18	10.6

Order Information

Size	Model	Item Number	Size	Model	Item Number
1/2"	120S	33-143-01	1 1/4"	120S	33-146-01
3/4"	120S	33-144-01	1 1/2 "	120S	33-147-01
1"	120S	33-145-01	2"	120S	33-148-01

Class 125 Globe Valve
120T (33) Series

PTFE Disc, Threaded Bonnet, NPT

The Apollo Model 120 Globe valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Globe valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES
- 100% machined and assembled in USA
- Optimum Flow Capacity
- Adjustable Graphite Stem Packing
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- NPT Connections
- Screw-in Bonnet
- Rugged Malleable Iron Hand Wheel
- Backseat protection

STANDARDS
MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

MSS SP-104, "Wrought copper solder joint pressure fittings"

PERFORMANCE RATING
Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

** Valves should be in open position to allow complete drainage during freezing conditions.*

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Packing		Grafoil®
Bonnet	ASTM B62	Bronze	Hand Wheel		Malleable Iron
Stem	ASTM B371	Sil-Bronze			
Disc		PTFE			

Dimensions

Size	Height (open)	Length (NPT)	Weight (Lbs.)
3/8"	3.37	2.39	1.0
1/2"	3.47	2.70	1.1
3/4"	4.75	3.20	1.9
1"	5.40	3.75	3.0
1-1/4"	7.78	4.74	7.3
1-1/2"	7.78	4.74	7.0
2"	8.43	5.72	10.7

Order Information

Size	Model	Item Number	Size	Model	Item Number
3/8"	120T	33-132-01	1 1/4 "	120T	33-136-01
1/2"	120T	33-133-01	1 1/2"	120T	33-137-01
3/4"	120T	33-134-01	2"	120T	33-138-01
1"	120T	33-135-01			

Class 125 Globe Valve 121T (33) Series

Bronze Seat, Threaded Bonnet, NPT

The Apollo Model 121 Globe valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Globe valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- 100% machined and assembled in USA
- Optimum Flow Capacity
- Adjustable Graphite Stem Packing
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- NPT Connections
- Screw-in Bonnet
- Rugged Malleable Iron Hand Wheel
- Back seat protection
- Lead Free[1] option

STANDARDS

MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

MSS SP-104, "Wrought copper solder joint pressure fittings"

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (16.8 Bar) at 100°F

** Valves should be in open position to allow complete drainage during freezing conditions.*

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Packing		Grafoil®
Bonnet	ASTM B62	Bronze	Hand Wheel		Malleable Iron
Stem	ASTM B371	Sil-Bronze			
Disc	ASTM B371/B505	Bronze			

Material Specifications-LF

Part	Name	Material	Part	Name	Material
Body	ASTM B584-C89836	Bronze	Packing		Grafoil®
Bonnet	ASTM B584-C89836	Bronze			
Stem	ASTM B371	Sil-Bronze			
Disc	ASTM B371/B505	Bronze			

Dimensions

Size	Height (open)	Length (Solder)	(Lbs.)
1/4"	3.46	2.39	1.0
3/8"	3.46	2.39	1.0
1/2"	3.56	2.70	1.1
3/4"	4.75	3.20	1.9
1"	5.40	3.75	3.0
1-1/4"	7.78	4.74	7.3
1-1/2"	7.78	4.74	7.0
2"	8.43	5.72	11.0

Order Information

Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)	Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)
1/4"	121T	33-161-01	121T -LF	33LF-161-01	1 "	121T	33-165-01	121T -LF	33LF-165-01
3/8"	121T	33-162-01	121T -LF	33LF-162-01	1 1/4"	121T	33-166-01	121T -LF	33LF-166-01
1/2"	121T	33-163-01	121T -LF	33LF-163-01	1-½"	121T	33-167-01		
3/4"	121T	33-164-01	121T -LF	33LF-164-01	2"	121T	33-168-01		

Class 150 Globe Valve 122T (33) Series

PTFE Seat, Union Bonnet, NPT

The Apollo Model 122 Globe valve provides a cost effective "made in the USA" alternative to globally sourced multi-turn valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Globe valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- 100% machined and assembled in USA
- Optimum Flow Capacity
- Adjustable Graphite Stem Packing
- Dezincification Resistant
- All Bronze Construction
- 100% Factory tested
- NPT Connections
- Union Bonnet
- Rugged Malleable Iron Hand Wheel
- Back seat protection

STANDARDS

MSS SP-80, "Bronze Gate, Globe, Angle & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

MSS SP-104, "Wrought copper solder joint pressure fittings"

PERFORMANCE RATING

Saturated Steam:
150 psi (10.3 Bar) to 366°F(185°C)

Cold Working Pressure:
300psi (20.7 Bar) at 100°F

** Valves should be in open position to allow complete drainage during freezing conditions.*

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Disc		PTFE
Bonnet	ASTM B62	Bronze	Packing		Grafoil®
Stem	ASTM B371	Sil-Bronze	Hand Wheel		Malleable Iron
Union Nut	ASTM B62/B371	Bronze			

Dimensions

Size	Height (open)	Length (NPT)	(Lbs.)
1/4"	4.23	2.39	1.4
3/8"	4.23	2.39	1.4
1/2"	4.31	2.70	1.4
3/4"	4.89	3.20	2.2
1"	5.40	3.75	3.5
1-1/4"	7.79	4.74	7.7
1-1/2"	7.79	4.74	7.4
2"	8.76	5.72	12.4
2-1/2"	10.07	6.60	18.8
3"	11.39	7.74	25.5

Order Information

Size	Model	Item Number Thread (NPT)	Size	Model	Item Number Thread (NPT)
1/4"	122T	33-221-01	1 1/4"	122T	33-226-01
3/8"	122T	33-222-01	1-1/2"	122T	33-227-01
1/2"	122T	33-223-01	2"	122T	33-228-01
3/4"	122T	33-224-01	2 1/2"	122T	33-229-01
1"	122T	33-225-01	3"	122T	33-220-01

Class 125 Globe Valve
711F (6GB) Series
Apollo International

Outside Screw & Yoke
Bolted Bonnet

The Apollo Model 711F Globe valve provides efficient throttling capabilities. The Apollo Globe valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 125# & 150# Flanges
- Full Port
- Bronze Mounted Seat Rings
- Positive Shut-off
- Throttling Capabilities
- Adjustable Graphite Stem Packing
- Outside Screw & Yoke
- Flanged Connection
- Bolted Bonnet
- Rugged Iron Hand Wheel
- Back Seat Protection

STANDARDS

MSS SP-85, "Gray Iron Globe & Angle Valves Flanged and Threaded Ends"

ASME B16.10, "Face-to-Face and End-to-End Dimensions of Valves."

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F (2"-12")

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Body	Cast Iron (ASTM A126 CL-B)
Guide Spindle	Brass (ASTM B16)
Seat Ring	Cast Bronze (ASTM B62)
Disc Seal Ring	Cast Bronze (ASTM B62)
Disc	Cast Iron (ASTM A126 CL-B)
Swivel Nut	Cast Brass (ASTM B584)
Stem	Brass (ASTM B16)
Bolts	Carbon Steel (ASTM A307 B)
Gland Follower Bolts	Carbon Steel (ASTM A307 B)
Body Gasket	Graphite
Bonnet	Cast Iron (ASTM A126 CL-B)
Packing	Graphite
Packing Gland	Cast Brass (ASTM B584)
Gland Follower	Ductile Iron (ASTM A536 65-45-12)
Gland Follower Nut	Carbon Steel (ASTM A307 B)
Yoke Bushing	Cast Bronze (ASTM B62)
Screw	Carbon Steel (ASTM A307 B)
Handwheel	Cast Iron (ASTM A126 CL-B)
Identification Plate	Aluminum
Washer	Carbon Steel (ASTM A307 B)
Nameplate	Aluminum
Handwheel Nut	Ductile Iron (ASTM A536 65-45-12)

Order Information

Size	Part Number
2"	6GB-118-B1
2-1/2"	6GB-119-B1
3"	6GB-110-B1
4"	6GB-11A-B1
5"	6GB-11B-B1
6"	6GB-11C-B1
8"	6GB-11E-B1
10"	6GB-11G-B1

Dimensions

Size	Height (open)	Length	Weight (Lbs.)
2"	11.61	8.00	36
2-1/2"	12.99	8.50	49
3"	14.37	9.50	64
4"	15.75	11.50	94
5"	17.72	13.00	137
6"	20.67	14.00	195
8"	23.43	19.50	315
10"	26.97	24.50	485

Class 250 Globe Valve
721F (6GB) Series
Apollo International

Outside Screw & Yoke
Bolted Bonnet

The Apollo Model 721F Globe valve provides efficient throttling capabilities. The Apollo Globe valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 250# & 300# Flanges
- Full Port
- Bronze Mounted Seat Rings
- Positive Shut-off
- Throttling Capabilities
- Adjustable Graphite Stem Packing
- Outside Screw & Yoke
- Flanged Connection
- Bolted Bonnet
- Rugged Iron Hand Wheel
- Back Seat Protection

STANDARDS

MSS SP-85, "Gray Iron Globe & Angle Valves Flanged and Threaded Ends"

ASME B16.10, "Face-to-Face and End-to-End Dimensions of Valves."

PERFORMANCE RATING

Saturated Steam:
250 psi (17.2 Bar) to 406°F(207°C)

Cold Working Pressure:
500 psi (34.5 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Body	Cast Iron (ASTM A126 CL-B)
Seat Ring	Cast Bronze (ASTM B62)
Guide Spindle	Brass (ASTM B16)
Disc Seal Ring	Cast Bronze (ASTM B62)
Disc	Cast Iron (ASTM A126 CL-B)
Stem	Brass (ASTM B16)
Check Screw	Carbon Steel (ASTM A307 B)
Disc Cover	Carbon Steel (ASTM A307 B)
Bonnet Gasket	Graphite
Back Seat Bushing	Brass (ASTM B16)
Stud	Carbon Steel (ASTM A307 B)
Nut	Carbon Steel (ASTM A307 B)
Packing	Graphite
Packing Gland	Brass (ASTM B16)
Gland Follower	Ductile Iron (ASTM A536 65-45-12)
Square Head Bolt	Carbon Steel (ASTM A307 B)
Nut	Carbon Steel (ASTM A307 B)
Bonnet	Cast Iron (ASTM A126 CL-B)
Stem Nut	Brass (ASTM B16)
Screw	Carbon Steel (ASTM A307 B)
Handwheel	Cast Iron (ASTM A126 CL-B)
Washer	Carbon Steel (ASTM A307 B)
Nut	Carbon Steel (ASTM A307 B)

Order Information

Size	Part Number
2"	6GB-218-B1
2-1/2"	6GB-219-B1
3"	6GB-210-B1
4"	6GB-21A-B1
6"	6GB-21C-B1
8"	6GB-21E-B1

Dimensions

Size	Height (open)	Length	Weight (Lbs.)
2"	14.17	10.50	40.8
2-1/2"	15.75	11.50	52.9
3"	16.93	12.50	70.5
4"	18.90	14.00	99.2
6"	23.62	17.50	202.8
8"	27.56	21.00	332.9

200 CWP Swing Check
161S (61Y) Series

Bronze Disc, Solder

The Apollo Model 161 Swing Check provides a cost effective "made in the USA" alternative to globally sourced check valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Swing Check can be installed in both horizontal or vertical line with upward flow.

FEATURES

- Renewable Seat Disc
- Metal Seat
- Dezincification Resistant Bronze
- 100% Factory tested
- Solder Connections
- 100% machined and assembled in US
- Lead Free[1] option

STANDARDS

MSS SP-80, "Bronze Gate, Globe & Check Valves",

ASME B16.18, "Cast Copper Alloy Solder Joint Pressure Fittings

MSS SP-104, "Wrought copper solder joint pressure fittings"

PERFORMANCE RATING

125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

Temperature Range: -20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Pin		Stainless Steel
Cap	ASTM B62	Bronze	Seat	ASTM B62	Bronze
Hanger		Stainless Steel	Plug		Brass

Material Specifications-LF

Part	Name	Material	Part	Name	Material
Body	ASTM B584-C89836	Bronze	Pin		Stainless Steel
Cap	ASTM B584-C89836	Bronze	Seat	ASTM B584-C89836	Bronze
Hanger		Stainless Steel			

Dimensions

Size	Height (open)	Length (Solder)	(Lbs.)
1/2"	1.65	2.53	.62
3/4"	1.9	3.36	.91
1"	2.26	4.07	1.7
1-1/4"	2.99	5.28	3.2
1-1/2"	2.99	5.28	2.7
2"	3.74	6.50	4.9
2-1/2"	5.11	8.30	9.7
3"	6.05	9.58	15.0

Order Information

Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)	Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)
1/2"	161S	61Y-093-01	161S-LF	61YLF-093-01	1 1/2"	161S	61Y-097-01	161S-LF	61YLF-097-01
3/4"	161S	61Y-094-01	161S-LF	61YLF-094-01	2"	161S	61Y-098-01	161S-LF	61YLF-098-01
1"	161S	61Y-095-01	161S-LF	61YLF-095-01	2-½"	161S	61Y-099-01		
1 1/4"	161S	61Y-096-01	161S-LF	61YLF-096-01	3"	161S	61Y-090-01		

Class 125 Swing Check 161T (61Y) Series

Bronze Disc, NPT

The Apollo Model 161 Swing Check provides a cost effective "made in the USA" alternative to globally sourced check valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Swing Check can be installed in both horizontal or vertical line with upward flow.

FEATURES

- Renewable Seat Disc
- Metal Seat
- Dezincification Resistant Bronze
- 100% Factory tested
- NPT Connections
- 100% machined and assembled in USA
- Lead Free[1] option

STANDARDS

MSS SP-80, "Bronze Gate, Globe & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

Temperature Range: -20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Pin		Stainless Steel
Cap	ASTM B62	Bronze	Seat	ASTM B62	Bronze
Hanger		Stainless Steel	Plug		Brass

Material Specifications-LF

Part	Name	Material	Part	Name	Material
Body	ASTM B584-C89836	Bronze	Pin		Stainless Steel
Cap	ASTM B584-C89836	Bronze	Seat	ASTM B584-C89836	Bronze
Hanger		Stainless Steel	Plug		Brass

Dimensions

Size	Height (open)	Length (NPT)	(Lbs.)
1/4"	1.51	2.14	.64
3/8"	1.51	2.14	.62
1/2"	1.65	2.48	.73
3/4"	1.9	2.94	1.06
1"	2.26	3.57	1.7
1-1/4"	2.99	4.50	3.3
1-1/2"	2.99	4.50	3.1
2"	3.74	5.25	5.5
2-1/2"	5.11	8.00	11.7
3"	6.05	9.24	17.8

Order Information

Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)	Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)
1/4"	161T	61Y-191-01	161T -LF	61YLF-191-01	1-1/4"	161T	61Y-196-01	161T -LF	61YLF-196-01
3/8"	161T	61Y-192-01	161T -LF	61YLF-192-01	1-½"	161T	61Y-197-01	161T -LF	61YLF-197-01
1/2"	161T	61Y-193-01	161T -LF	61YLF-193-01	2"	161T	61Y-198-01	161T -LF	61YLF-198-01
3/4"	161T	61Y-194-01	161T -LF	61YLF-194-01	2 1/2"	161T	61Y-199-01		
1"	161T	61Y-195-01	161T -LF	61YLF-195-01	3"	161T	61Y-190-01		

Class 125 Swing Check 162T (61Y) Series

Viton Seat, NPT

The Apollo Model 162 Swing Check provides a cost effective "made in the USA" alternative to globally sourced check valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Swing Check can be installed in both horizontal or vertical line with upward flow.

FEATURES

- Renewable Seat Disc
- Soft Viton Seat
- Dezincification Resistant Bronze
- 100% Factory tested
- NPT Connections
- 100% machined and assembled in US

STANDARDS

MSS SP-80, "Bronze Gate, Globe, & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

PERFORMANCE RATING

Saturated Steam:
67 psi (4.6 Bar) to 300°F(149°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

Temperature Range: -20°F to 300°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Pin		Stainless Steel
Cap	ASTM B62	Bronze	Seat		Viton
Hanger		Stainless Steel	Plug		Brass

Dimensions

Size	Height (open)	Length (Solder)	(Lbs.)
1/4"	1.51	2.14	.64
3/8"	1.51	2.14	.62
1/2"	1.65	2.48	.73
3/4"	1.90	2.94	1.06
1"	2.26	3.57	1.70
1 1/4"	2.99	4.50	3.30
1 1/2"	2.99	4.50	3.10
2	3.74	5.25	5.40

Order Information

Size	Model	Item Number	Size	Model	Item Number
1/4"	162T	61Y-201-V1	1"	162T	61Y-205-V1
3/8"	162T	61Y-202-V1	1 1/4"	162T	61Y-206-V1
1/2"	162T	61Y-203-V1	1 1/2"	162T	61Y-207-V1
3/4"	162T	61Y-204-V1	2"	162T	61Y-208-V1

Class 150 Swing Check 163T (61Y) Series

PTFE Seat, NPT

The Apollo Model 163 Swing Check provides a cost effective "made in the USA" alternative to globally sourced check valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Swing Check can be installed in both horizontal or vertical line with upward flow.

FEATURES

- Renewable Seat Disc
- Soft PTFE Seat
- Dezincification Resistant Bronze
- 100% Factory tested
- NPT Connections
- 100% machined and assembled in USA
- Lead Free[1] option

STANDARDS

MSS SP-80, "Bronze Gate, Globe & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

PERFORMANCE RATING

Saturated Steam: 125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure: 200 psi (13.8 Bar) at 100°F

Temperature Range: -20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Pin		Stainless Steel
Cap	ASTM B62	Bronze	Seat		PTFE
Hanger		Stainless Steel	Plug		Brass

Material Specifications-LF

Part	Name	Material	Part	Name	Material
Body	ASTM B584-C89836	Bronze	Pin		Stainless Steel
Cap	ASTM B584-C89836	Bronze	Seat		PTFE
Hanger		Stainless Steel	Plug		Brass

Dimensions

Size	Height (open)	Length (NPT)	(Lbs.)
1/4"	1.51	2.14	.64
3/8"	1.51	2.14	.62
1/2"	1.65	2.48	.73
3/4"	1.9	2.94	1.06
1"	2.26	3.57	1.7
1-1/4"	2.99	4.50	3.3
1-1/2"	2.99	4.50	3.1
2"	3.74	5.25	5.4

Order Information

Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)	Size	Model	Item Number	Model-LF	Item Number-LF Thread (NPT)
1/4"	163T	61Y-201-T1	163T -LF	61YLF-201-T1	1"	163T	61Y-205-T1	163T -LF	61YLF-205-T1
3/8"	163T	61Y-202-T1	163T -LF	61YLF-202-T1	1-1/4"	163T	61Y-206-T1	163T -LF	61YLF-206-T1
1/2"	163T	61Y-203-T1	163T -LF	61YLF-203-T1	1-½"	163T	61Y-207-T1	163T -LF	61YLF-207-T1
3/4"	163T	61Y-204-T1	163T -LF	61YLF-204-T1	2"	163T	61Y-208-T1	163T -LF	61YLF-208-T1

Class 150 Swing Check 164T (61Y) Series

Bronze Seat, NPT

The Apollo Model 164 Swing Check provides a cost effective "made in the USA" alternative to globally sourced check valves. These valves are cast, machined, assembled, and tested in South Carolina. The Apollo Swing Check can be installed in both horizontal or vertical line with upward flow.

FEATURES

Renewable Seat Disc

Metal Seat

Dezincification Resistant Bronze

100% Factory tested

NPT Connections

100% machined and assembled in USA

STANDARDS

MSS SP-80, "Bronze Gate, Globe & Check Valves",

ASME B1.20.1, "Pipe Threads, General Purpose (Inch)"

PERFORMANCE RATING

Saturated Steam:
150 psi (10.4 Bar) to 366°F(185°C)

Cold Working Pressure:
300 psi (20.7Bar) at 100°F

Temperature Range: -20°F to 406°F

Material Specifications

Part	Name	Material	Part	Name	Material
Body	ASTM B62	Bronze	Pin		Stainless Steel
Cap	ASTM B62	Bronze	Seat	ASTM B62	Bronze
Hanger		Stainless Steel	Plug		Brass

Dimensions

Size	Height (open)	Length (Solder)	(Lbs.)
1/4"	1.51	2.14	.64
3/8"	1.51	2.14	.62
1/2"	1.65	2.48	.73
3/4"	1.90	2.94	1.06
1"	2.26	3.57	1.70
1 1/4"	2.99	4.50	3.40
1 1/2"	2.99	4.50	3.10
2	3.74	5.25	5.50
2 1/2"	5.11	8.00	11.70
3	6.05	9.24	17.80

Order Information

Size	Model	Item Number	Size	Model	Item Number
1/4"	164T	61Y-211-01	1-1/4"	164T	61Y-216-01
3/8"	164T	61Y-212-01	1-1/2"	164T	61Y-217-01
1/2"	164T	61Y-213-01	2"	164T	61Y-218-01
3/4"	164T	61Y-214-01	2-1/2"	164T	61Y-219-01
1"	164T	61Y-215-01	3"	164T	61Y-210-01

Class 125 Swing Check
910F (6SC) Series
Apollo International

Flanged Connection
Bolted Bonnet

The Apollo Model 910F Flanged Cast Iron Swing Check valve provides full flow capabilities. It provides reliable and economical protection against reverse flow. The Apollo Swing Check valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 125# & 150# Flanges
- Full Port
- Minimal Pressure Drop
- Flanged Connection
- Bolted Bonnet
- Integral Bronze Seat

STANDARDS

MSS SP-71, "Gray Iron Swing Check Valves Flanged and Threaded Ends"

ASME B16.10, "Face-to-Face and End-to-End Dimensions of Valves."

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)
(2"-12") 100 psi (6.9 Bar) to 338°F
(170°C) (14"-20")

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F (2"-12")
150 psi (10.3 Bar) at 100°F (14"-20")

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Bolts	Steel (ASTM A307 B)
Nameplate	Aluminum
Bonnet	Cast Iron (ASTM A126 CL-B)
Body Gasket	Graphite
Nuts	Steel (ASTM A307 B)
Side Plug	Brass (ASTM B16)
Gasket	Graphite
Hanger Pin	Brass (ASTM B16)
Hanger	Ductile Iron (ASTM A536 65-45-12)
Disc Ring	Cast Bronze (2"-6") Cast Iron (8"-20")
Disc	Cast Iron (ASTM A126 CL-B)
Washer	Steel (ASTM A307 B)
Split Pin	Stainless Steel (ASTM 420 S42000)
Seat Ring	Cast Bronze (2"-6") Cast Iron (8"-20")
Body	Cast Iron (ASTM A126 CL-B)
Disc Nut	Steel (ASTM A307 B)
Stud Bolt	Steel (ASTM A307 B

Order Information

Size	Part Number
2"	6SC-108-B1
2-1/2"	6SC-109-B1
3"	6SC-100-B1
4"	6SC-10A-B1
5"	6SC-10B-B1
6"	6GA-10C-B1
8"	6SC-10E-01
10"	6SC-10G-01
12"	6SC-10H-01
14"	6SC-10J-01
16"	6SC-10K-01
18"	6SC-10M-01
20"	6SC-10N-01

Dimensions

Size	Height	Length	Weight (Lbs.)
2"	4.41	8.00	26
2-1/2"	5.24	8.50	39
3"	5.67	9.50	47
4"	6.61	11.50	82
5"	7.80	13.00	124
6"	8.54	14.00	160
8"	10.28	19.50	271
10"	11.30	24.50	437
12"	12.56	27.50	644
14"	17.50	31.00	950
16"	23.45	36.00	1160
18"	27.50	36.00	1720
20"	29.25	40.00	2094

Class 125 Swing Check
910FLW (6SC) Series
Apollo International

Flanged Connection
Bolted Bonnet

The Apollo Model 910FLW Flanged Cast Iron Swing Check valve with lever and weight provides full flow capabilities. It provides reliable and economical protection against reverse flow. The Apollo Swing Check valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 125# & 150# Flanges
- Full Port
- Minimal Pressure Drop
- Flanged Connection
- Bolted Bonnet
- Integral Bronze Seat

STANDARDS

MSS SP-71, "Gray Iron Swing Check Valves Flanged and Threaded Ends"

ASME B1.1 "Unified Inch Screw Threads"

ASME B16.10, "Face-to-Face and End-to-End Dimensions of Valves."

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Bolts	Steel (ASTM A307 B)
Nameplate	Aluminum
Bonnet	Cast Iron (ASTM A126 CL-B)
Body Gasket	Graphite
Nuts	Steel (ASTM A307 B)
Side Plug	Brass (ASTM B16)
Gasket	Graphite
Hanger Pin	Brass (ASTM B16)
Hanger	Ductile Iron (ASTM A536 65-45-12)
Disc Ring	Cast Bronze (2"-6") Cast Iron (8"-20")
Disc	Cast Iron (ASTM A126 CL-B)
Washer	Steel (ASTM A307 B)
Split Pin	Stainless Steel (ASTM 420 S42000)
Seat Ring	Cast Bronze (2"-6") Cast Iron (8"-20")
Body	Cast Iron (ASTM A126 CL-B)
Disc Nut	Steel (ASTM A307 B)
Stud Bolt	Steel (ASTM A307 B

Order Information

Size	Part Number
2"	6SC-108-B1L
2-1/2"	6SC-109-B1L
3"	6SC-100-B1L
4"	6SC-10A-B1L
5"	6SC-10B-B1L
6"	6GA-11C-B1L
8"	6SC-10E-01L
10"	6SC-10G-01L
12"	6SC-10H-01L

Dimensions

Size	Height	Length	Weight (Lbs.)
2"	4.41	8.00	
2-1/2"	5.24	8.50	
3"	5.67	9.50	
4"	6.61	11.50	
5"	7.80	13.00	
6"	8.54	14.00	
8"	10.28	19.50	
10"	11.30	24.50	
12"	12.56	27.50	

Class 250 Swing Check
920F (6SC) Series
Apollo International

Flanged Connection
Bolted Bonnet

The Apollo Model 920F Flanged Cast Iron Swing Check valve provides full flow capabilities. It provides reliable and economical protection against reverse flow. The Apollo Swing Check valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 250# & 300# Flanges
- Full Port
- Minimal Pressure Drop
- Flanged Connection
- Bolted Bonnet
- Integral Seat

STANDARDS

MSS SP-71, "Gray Iron Swing Check Valves Flanged and Threaded Ends"

ASME B1.1 "Unified Inch Screw Threads"

ASME B16.10, "Face-to-Face and End-to-End Dimensions of Valves."

PERFORMANCE RATING

Saturated Steam:
250 psi (17.2 Bar) to 406°F(207°C)

Cold Working Pressure:
500 psi (34.5 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Bolts	Steel (ASTM A307 B)
Nameplate	Aluminum
Bonnet	Cast Iron (ASTM A126 CL-B)
Body Gasket	Graphite
Nuts	Steel (ASTM A307 B)
Side Plug	Brass (ASTM B16)
Gasket	Graphite
Hanger Pin	Brass (ASTM B16)
Hanger	Ductile Iron (ASTM A536 65-45-12)
Disc Ring	Cast Bronze (2"-6") Cast Iron (8"-20")
Disc	Cast Iron (ASTM A126 CL-B)
Washer	Steel (ASTM A307 B)
Split Pin	Stainless Steel (ASTM 420 S42000)
Seat Ring	Cast Bronze (2"-6") Cast Iron (8"-20")
Body	Cast Iron (ASTM A126 CL-B)
Disc Nut	Steel (ASTM A307 B)
Stud Bolt	Steel (ASTM A307 B

Order Information

Size	Part Number
2"	6SC-208-B1
2-1/2"	6SC-209-B1
3"	6SC-200-B1
4"	6SC-20A-B1
5"	6SC-20B-B1
6"	6GA-21C-B1
*8"	6SC-20E-01

* Cast iron seat & disc ring

Dimensions

Size	Height	Length	Weight (Lbs.)
2"	4.41	10.51	30
2-1/2"	5.24	11.50	44
3"	5.67	12.50	55
4"	6.61	14.00	90
5"	7.80	15.75	135
6"	8.54	17.50	172
8"	10.28	21.00	289

Class 125 Wafer Check
910WB (6WC) Series
Apollo International

Flanged Connection

The Apollo Model 910WB Cast Iron Wafer Check valve provides full flow capabilities. It provides reliable and economical protection against reverse flow. The Apollo Wafer Check valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 125# & 150# Flanges
- Full Port
- Minimal Pressure Drop
- Flanged Connection
- Light Weight
- Spring Assisted Closing for Quicker Response

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)
(2"-12") 100 psi (6.9 Bar) to 338°F
(170°C) (14"-24")

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F (2"-12")
150 psi (10.3 Bar) at 100°F (14"-24")

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Body	Cast Iron (ASTM A126 CL-B)
Seat Ring	Nitrile (Buna-N)
Disc	Aluminum Bronze
Spring	Stainless Steel 316
Stem	Stainless Steel 316
Screw	Carbon Steel
Pin	Stainless Steel 316

Order Information

Size	Part Number
2"	6WC-108-N1
2-1/2"	6WC-109-N1
3"	6WC-100-N1
4"	6WC-10A-N1
5"	6WC-10B-N1
6"	6WC-10C-N1
8"	6WC-10E-N1
10"	6WC-10G-N1
12"	6WC-10H-N1
14"	6WC-10J-N1
16"	6WC-10K-N1
18"	6WC-10M-N1
20"	6WC-10N-N1
24"	6WC-10P-N1

Dimensions

Size	Diameter	Length	Weight (Lbs.)
2"	4.00	2.12	5
2-1/2"	4.75	2.38	7
3"	5.25	2.62	10
4"	6.75	2.62	16
5"	7.50	3.25	25
6"	8.50	3.75	30
8"	11.00	5.00	78
10"	13.25	5.50	113
12"	16.00	7.12	157
14"	17.75	7.25	214
16"	20.00	7.50	259
18"	21.50	8.00	318
20"	23.75	8.38	410
24"	28.00	8.75	594

Class 125 Wafer Check
910WE (6WC) Series
Apollo International

Flanged Connection

The Apollo Model 910WE Cast Iron Wafer Check valve provides full flow capabilities. It provides reliable and economical protection against reverse flow. The Apollo Wafer Check valve can reliably be installed in most plumbing and heating systems (or building service piping).

FEATURES

- Compatible with ANSI 125# & 150# Flanges
- Full Port
- Minimal Pressure Drop
- Flanged Connection
- Light Weight
- Spring Assisted Closing for Quicker Response

PERFORMANCE RATING

Saturated Steam:
125 psi (8.6 Bar) to 353°F(178°C)

Cold Working Pressure:
200 psi (13.8 Bar) at 100°F

Temperature Range:
-20°F to 406°F

Material Specifications

Part	Material
Body	Cast Iron (ASTM A126 CL-B)
Seat Ring	EPDM
Disc	Aluminum Bronze
Spring	Stainless Steel 316
Stem	Stainless Steel 316
Screw	Carbon Steel
Pin	Stainless Steel 316

Order Information

Size	Part Number
2”	6WC-108-E1
2-1/2”	6WC-109-E1
3”	6WC-100-E1
4”	6WC-10A-E1
5”	6WC-10B-E1
6”	6WC-10C-E1
8”	6WC-10E-E1
10”	6WC-10G-E1
12”	6WC-10H-E1

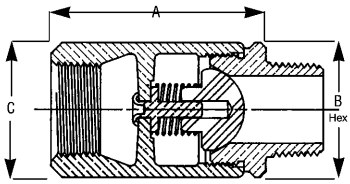
Dimensions

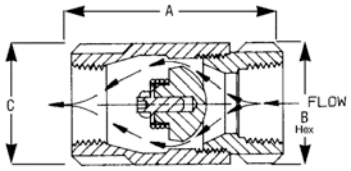
Size	Diameter	Length	Weight (Lbs.)
2”	4.00	2.12	5
2-1/2”	4.75	2.38	7
3”	5.25	2.62	10
4”	6.75	2.62	16
5”	7.50	3.25	25
6”	8.50	3.75	30
8”	11.00	5.00	78
10”	13.25	5.50	113
12”	16.00	7.12	157

In-Line Check Valves CVB (61-100 & 61-200) Series

Ball Cone® Check Valves

Patented design (U.S. Pat. No. 4,172,465) with reinforced RPTFE ball-cone check and stainless steel springs, these valves offer reliable protection against reverse flow and exceptional resistance to chemicals and corrosion. No radial alignment is needed.





FEATURES

- 1/2" psi opening pressure
- Bronze sizes from 1/4" to 3"
- Tight shut-off with liquid media
- 400 psig CWP
- 125 psig steam rating @ 350°F max
- Straight-through design minimizes velocity changes
- ASTM B584 Bronze
- American-made construction
- Numerous options are available
- 61LF Lead Free* option

6 X - X X X - XX

Type	Check	Spring Type	Size	Options
1- Bronze 2- Stainless Steel	1- Ball Cone (NPT-F x F) 2- Ball Cone (NPT-M x F) 5- Soft Seat (NPT-F x F) 6- Soft Seat (Sweat F x F) 9- Soft Seat Repair Kit (EPR only) 0- Ball Cone Repair Kit	0-.5 psig Cracking Pressure 2-.2 psig Cracking Pressure	1- 1/4" 2- 3/8" 3- 1/2" 4- 3/4" 5- 1" 6- 1-1/4" 7- 1-1/2" 8- 2" 9- 2-1/2" 0- 3"	01 - Standard 17 - Satin Chrome Plated 57 - Oxygen Cleaned A1 - Less Spring B1 - Nitrile Seat* P01 - BSPP Thread T01 - BSPT Thread E05 - 5 psig Opening Pressure* E10 - 10 psig Opening Pressure* V1 - Viton Seat*

**Available in 1/4" through 1" only. Soft seat only available through 1". (Note: Not all combinations are available. Contact Customer Service for verification.)*

Flow Rate (C_V) GPM=gallons per minute all at 1 psi pressure differential	
Size	**GPM**
1/4"	0.85
3/8"	1.21
1/2"	1.4
3/4"	3.53
1"	6
1-1/4"	44
1-1/2"	65
2"	81
2-1/2"	175
3"	265

Pressure Temperature Ratings	
Degree (F)	**PSIG**
-20 to 100	400
200	200
250	160
275	150
300	140
325	130
353	125

Bronze FNPT x FNPT	Bronze MNPT x FNPT	Size	Dimensions (in.) A	B	C	61 Series Wt./100	62 Series Wt./100
61-101-01	**61-201-01**	1/4	2.06	1.12	1.12	38.0	38.3
61-102-01	**61-202-01**	3/8	2.12	1.12	1.12	38.0	37.3
61-103-01	**61-203-01**	1/2	2.31	1.12	1.12	38.0	36.3
61-104-01	**61-204-01**	3/4	2.87	1.37	1.50	75.0	76.6
61-105-01	**61-205-01**	1	3.50	1.75	1.93	145.0	145.0
61-106-01	**61-206-01**	1 1/4	4.18	2.12	2.37	275.0	237.5
61-107-01	**61-207-01**	1 1/2	4.93	2.50	2.81	394.0	381.3
61-108-01	**61-208-01**	2	6.00	3.00	3.68	630.0	636.0
61-109-01	-	2 1/2	7.00	3.50	4.50	1400.0	-
61-100-01	-	3	8.12	4.12	5.31	1665.0	-

Precautionary Note: *Not recommended for use with reciprocating pumps and similar applications which may induce repetitious vibrations. Low flow rates which do not fully open the valve, may result in undesirable noise and premature valve failure. Upstream flow disturbances, which create turbulence, may also result in rapid wear. Therefore, it is recommended that a minimum of 10 diameters of straight pipe be provided between the check valve and any upstream flow disturbances such as pumps, control valves, elbows, etc.*

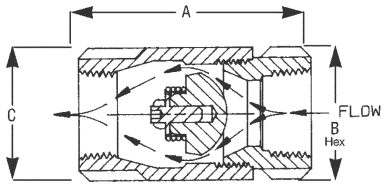
In-Line Check Valves
CVS 62-100 Series

Stainless Steel Ball Cone® Check Valves

The 62-100 Series is uniquely suited for applications in corrosive environments, including chemical processing, pulp and paper and other process industries. The rugged stainless steel body and RPTFE ball check provide reliable, patented protection against reverse flow.

FEATURES

- Female x Female Threaded 1/4" through 2"
- Unique design (U.S. Patent # 4,172,465)
- Longer life in severe environments
- Spring-loaded for fast seating action
- Center guided so that radial alignment is never needed
- Straight-through flow minimizes velocity change
- Rated 400 psig CWP non-shock
- RoHS Compliant



Part Number	Size (in.)	Dimensions (in.) A	B	C	Wt./100 (lbs.)
62-101-01	1/4	2.06	1.12	1.12	38
62-102-01	3/8	2.12	1.12	1.12	38
62-103-01	1/2	2.31	1.12	1.12	38
62-104-01	3/4	2.87	1.37	1.50	75
62-105-01	1	3.50	1.75	1.93	145
62-106-01	1-1/4	4.18	2.12	2.37	237
62-107-01	1-1/2	4.93	2.50	2.81	381
62-108-01	2	6.00	3.00	3.68	636

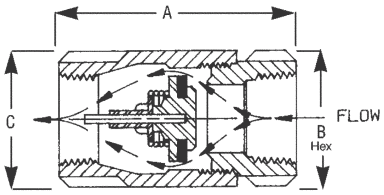
See page 151 for options

In-Line Soft Seat Check Valves CVBE & CVSE (61-500 & 62-500) Series

Fabricated with stainless steel springs and elastomeric seats for tighter shut-off. No radial alignment is needed. Exceptional resistance to chemicals and corrosion.

FEATURES

- Female NPT sizes: 1/4" to 2"
- Stainless steel sizes: 1/4" to 1"
- Bubble-tight shut-off, ideally suited for gaseous service
- NPT threaded; 400 psig CWP non-shock
- EPDM check disc
- SS check features Viton® check disc
- Straight-through design minimizes velocity changes
- Approximate opening pressure 1/2 psi
- Numerous options are available
- RoHS Compliant (62 Series)



Bronze FNPT x FNPT	SS FNPT x FNPT	Size(in.)	Dimensions (in.) A	B	C	61 Series Wt./100	62 Series Wt./100
61-501-01	**62-501-01**	1/4	2.312	1.125	1.125	38	38
61-502-01	**62-502-01**	3/8	2.312	1.125	1.125	38	38
61-503-01	**62-503-01**	1/2	2.312	1.125	1.125	38	38
61-504-01	**62-504-01**	3/4	2.875	1.375	1.500	75	75
61-505-01	**62-505-01**	1	3.500	1.750	1.937	145	150
61-506-01	–	1-1/4	4.187	2.125	2.375	275	–
61-507-01	–	1-1/2	4.937	2.500	2.812	394	–
61-508-01	–	2	6.000	3.000	3.687	630	–

Precautionary Note
Not recommended for use with reciprocating pumps and similar applications which may induce repetitious vibrations. Low flow rates which do not fully open the valve may result in undesirable noise and premature valve failure. Upstream flow disturbances, which create turbulence, may also result in rapid wear. Therefore, it is recommended that a minimum of 10 diameters of straight pipe be provided between the check valve and any upstream flow disturbances such as pumps, control valves, elbows, etc.

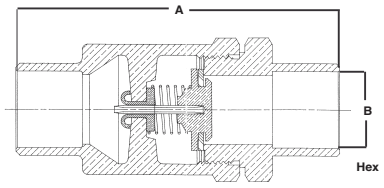
See page 151 for options

Solder End Soft Seat In-Line Check Valves CVBES (61-600) Series

All bronze with stainless steel springs and elastomeric seats for tighter shut-off. No radial alignment is needed. Exceptional resistance to corrosion.

FEATURES

- Sizes: 1/2" to 2"
- Bubble-tight shut-off, ideally suited for gaseous service
- Straight-through design minimizes velocity changes
- Solder end; 400 psig CWP non-shock
- Approximate opening pressure 1/2 psi
- Max Temperature 250°F
- Numerous options are available



Part Number	Size (in.)	Dimensions (in.) A	B	C	Wt./100 (lbs.)
61-603	1/2	2.72	.629	1.25	50
61-604	3/4	3.67	.881	1.65	86
61-605	1	4.48	1.13	2.10	171
61-606	1-1/4	6.11	1.38	2.38	275
61-607	1-1/2	6.87	1.63	2.81	394
61-608	2	7.46	2.13	3.75	630

See page 151 for options

Brass NPT "Mini" Check Valves CV (61-700) Series

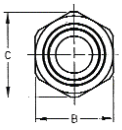
Ideally suited for all OEM applications where space is a premium. Excellent for use on water and air. Features a bubble-tight soft seat design witha very light loaded stainless steel spring. Rated at 250 psig WOG with a maximum temperature of 180°F.

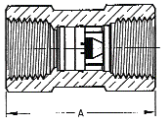
FEATURES

- Sizes: 1/4" to 1"
- FNPT x FNPT
- Check valve material acetyl silicone
- Low lead body-B16 brass
- Check opening pressure is .5 psi
- MSS-SP80 compliant

Flow Rate (C_V) GPM=gallons per minute all at 1 psi pressure differential Size	GPM
1/4"	0.78
3/8"	1.81
1/2"	5.13
3/4"	10.51
1	14.25

See page 151 for options





Dimensional Specifications

Number	Size (in.)	A	B	C	Wt./100
61-701-01	1/4	1.72	0.81	0.92	22
61-702-01	3/8	1.79	0.93	1.05	29
61-703-01	1/2	2.02	1.06	1.17	38
61-704-01	3/4	2.50	1.25	1.40	54
61-705-01	1	2.95	1.62	1.76	110

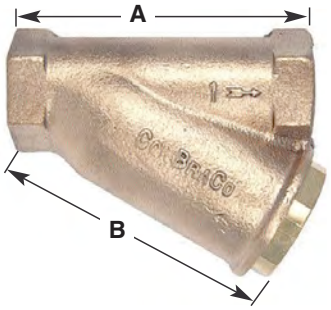
Materials of Construction

1	Body	Brass, ASTM B16
2	Check Assembly	Acetal/Brass/Silicone/Buna-N
3	Spring	Stainless Steel 302

STRAINERS

Bronze NPT "Y" Strainers
YB (59) Series

Lightweight, compact protection against foreign particles. Corrosion-resistant bronze body and stainless steel screens. Operating pressures to 400 psig.



Standard Screen Size (in.)	Screen Opening
1/8 to 1/2	50 Mesh
3/4 to 3	20 Mesh
4	.125 Perforation

Suffix	Option
-01	Plain Cap
-02	Tapped Cap
-P2	Tapped Cap with Plug
-06	Strainer/Ball Valve Combination

FEATURES

- Maximum protection capability against foreign particles in piping systems and process equipment
- Cast bronze body
- 304 Stainless Steel screen
- Sizes 1/4 " thru 1/2" comes standard with 50 mesh (0.009" wire)
- 59LF Lead-Free[1] option
- Sizes 3/4" thru 2" comes standard with 20 mesh (0.016" wire)
- Other screen sizes available (contact customer service)
- Operating pressure to 400 CWP/125 SWP
- Removable self-aligning screen
- 5 year, domestic warranty
- 400 Series is female x male NPT (3/4" & 1" only)

Suffix	Screen Options
-E1	20 MESH
-A1	40 MESH
-B1	60 MESH
-C1	80 MESH
-H1	100 MESH

Dimensions - in.(*mm*) – Weights - lbs.(*kg*)

Ordering No.	Model No.	Size	A	B	Cap Tapping Suffix-02	Wt./Ea
59-001-01	YB14	1/4 NPT	2 (50)	1-1/4 (32)	1/8 NPT	.42 (*.19*)
59-002-01	YB38	3/8 NPT	2-11/16 (68)	2 (50)	1/4 NPT	.79 (*.36*)
59-003-01	YB12	1/2 NPT	2-11/16 (68)	2 (50)	1/4 NPT	.75 (*.34*)
59-004-01	YB34	3/4 NPT	3-7/8 (98)	3-1/4 (83)	1/2 NPT	1.85 (*.84*)
59-005-01	YB1	1 NPT	4-3/4 (121)	4 (100)	3/4 NPT	2.76 (*1.25*)
59-006-01	YB114	1-1/4 NPT	5-1/8 (130)	4-1/4 (108)	3/4 NPT	3.58 (*1.62*)
59-007-01	YB112	1-1/2 NPT	5-3/4 (146)	5 (127)	1 NPT	5.41 (*2.45*)
59-008-01	YB2	2 NPT	6-3/4 (171)	6 (150)	1-1/4 NPT	7.47 (*3.39*)
59-404-01	YBM34	3/4 F x MNPT	5-3/8 (136)	3-1/4 (83)	1/2 NPT	2.0 (.9)
59-405-01	YBM1	1 F x MNPT	5-3/4 (146)	4 (100)	3/4 NPT	2.95 (1.3)
59LF-001-01	YB14LF	1/4 NPT	2 (50)	1-1/4 (32)	1/8 NPT	.42 (.19)
59LF-002-01	YB38LF	3/8 NPT	2-11/16 (68)	2 (50)	1/4 NPT	.79 (.36)
59LF-003-01	YB12LF	1/2 NPT	2-11/16 (68)	2 (50)	1/4 NPT	.75 (.34)
59LF-004-01	YB34LF	3/4 NPT	3-7/8 (98)	3-1/4 (83)	1/2 NPT	1.85 (.84)
59LF-005-01	YB1LF	1 NPT	1-3/4 (121)	4 (100)	3/4 NPT	2.76 (1.25)
59LF-006-01	YB114LF	1-1/4 NPT	5-1/8 (130)	4-1/4 (108)	3/4 NPT	3.58 (1.62)
59LF-007-01	YB112LF	1-1/2 NPT	5-3/4 (146)	5 (127)	1 NPT	5.41 (2.45)
59LF-008-01	YB2LF	2 NPT	6-3/4 (171)	6 (150)	1-1/4 NPT	7.47 (3.39)
59LF-404-01	YBM34LF	3/4 NPT x MNPT	5-3/8 (136)	3-1/4 (83)	1/2 NPT	2.0 (.9)
59LF-405-01	YBM1LF	1 NPT x MNPT	5-3/4 (146)	4 (100)	3/4 NPT	2.95 (1.3)

UL Listed Strainers

Model Number	Size (in.)	Dimensions (in.) A	B	(Suffix-02)	Wt./100	Screen Area (in.²)
59-UL0-01	1/8	2.00	1.25	1/8 NPT	44.5	1.38
59-UL1-01	1/4	2.00	1.75	1/8 NPT	42.5	1.38
59-UL2-01	3/8	2.69	2.00	1/4 NPT	78.6	3.19
59-UL3-01	1/2	2.69	2.00	1/4 NPT	75.1	3.19

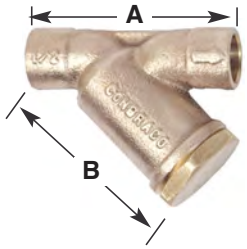
Note: Dimensions shown are subject to change.

Bronze Sweat End "Y" Strainers
YBS (59-300) Series

Designed with minimal wall thickness at solder ends to allow high strength joints. Sturdy and compact with corrosion-resistant bronze bodies, stainless steel screens.

FEATURES

- Operating pressures to 400 CWP/ 125 SWP
- Sizes: 1/2" to 2"
- Optional tapped caps available



Standard Screen Size (in.)	Screen Opening
1/2	50 Mesh
3/4 to 2	20 Mesh

Suffix	Option
-01	Solid cap (standard)
-02	Tapped Cap
-P2	Tapped cap with pipe plug

Order Number	Size (in.)	Dimensions (in.) A	B	Tapped Cap (Suffix-02)	Wt./100	Screen Area (in.²)
59-303-01	1/2	2.75	1.81	1/4 NPT	50	3.19
59-303-P2	1/2			1/4 NPT	50	
59-304-01	3/4	4.00	2.87	1/2 NPT	121	8.18
59-304-P2	3/4			1/2 NPT	121	
59-305-01	1	4.75	3.56	3/4 NPT	189	12.90
59-305-P2	1			3/4 NPT	189	
59-306-01	1-1/4	5.25	3.94	3/4 NPT	280	16.20
59-306-P2	1-1/4			3/4 NPT	280	
59-307-01	1-1/2	6.00	4.62	1 NPT	426	22.80
59-307-P2	1-1/2			1 NPT	426	
59-308-01	2	7.25	5.00	1-1/4 NPT	627	32.70
59-308-P2	2			1-1/4 NPT	627	

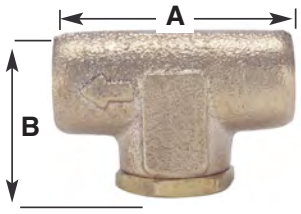
Pipeline Strainers
YVB-59V Series

"Mini" Strainer

The body of the 59-V is corrosion-resistant solid cast bronze, ASTM B-584. The removable clean-out cap is solid brass bar stock, ASTM B-16. Standard screens are made of 304 stainless steel, and are 50 mesh.

FEATURES

- 50 mesh screen standard or 100 (-H1) mesh
- WORKING PRESSURE (non-shock): 400 CWP 125 SWP
- Cv Factor 1.42 GPM

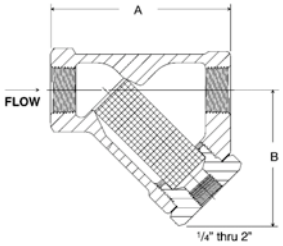


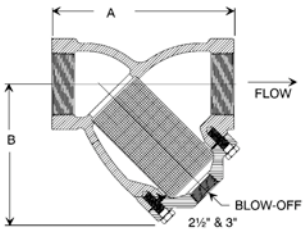
Model Number	Size (in.)	Dimensions (in.) A	B	Wt./100 (lbs.)	Screen Mesh
59V-001-01	1/4	2.00	1.31	29.7	50
59V-001-H1	1/4	2.00	1.31	29.7	100

YCT Series Apollo® International YCT Series

Cast Iron Pipe Threaded Y-Strainer

Install these hardworking strainers upstream in almost any application to protect valves, regulators, solenoids and meters from rust, dirt and pipe scale.





Part Number	Size (in.)	Dimensions (in.) A	B	Blow-off NPT	Wt. (lbs.)	Screen Area (in.²)
YCT01M20	1/4	3.19	2.37	1/4	1.25	2.8
YCT02M20	3/8	3.19	2.37	1/4	1.25	2.8
YCT03M20	1/2	3.19	2.37	1/4	1.50	2.8
YCT04M20	3/4	3.75	3.37	3/8	2.25	4.7
YCT05M20	1	4.00	3.50	1/2	3.00	7.0
YCT06M20	1-1/4	5.00	4.12	3/4	5.25	12.1
YCT07M20	1-1/2	5.75	4.69	3/4	6.50	16.4
YCT08M20	2	7.00	5.44	1	11.13	23.1
YCT09P045	2-1/2	9.25	5.68	1	23.50	55.0
YCT00P045	3	10.00	7.00	1	33.00	78.4

FEATURES

- 20 mesh screens standard to 2"; .045 perf 2-1/2" to 3", others available
- Graphite gasketed cover for easy screen replacement
- Screen cover is NPT tapped for customer supplied plug or blow-off valve
- Sizes: 1/4" to 3"
- Working Pressure (non-shock) 250 psig @ 406°F. Steam 400 psig @ 150°F. Water, Oil, Gas

Pipeline Strainers YCS/YCSW Series

Apollo International Carbon Steel Threaded and Socket Weld "Y" Strainers

Sturdy and compact with carbon steel bodies, and stainless steel screens.

Size (In.)	Threaded NPT	Socket Weld	Blow-Off A	B	NPT	Screen Wt/lbs	Area in.²
1/2	612023A1	612123A1	3.38	2.75	3/8	1.5	5.4
3/4	612024A1	612124A1	4.44	3.63	3/8	2.5	8.7
1	612025A1	612125A1	4.88	3.75	1/2	4.25	12.7
1-1/4	612026A1	612126A1	5.38	4.38	3/4	7	18.1
1-1/2	612027A1	612127A1	6.38	5.13	3/4	8.85	25.3
2	612028A1	612128A1	7.50	6.00	1	12.5	39.2

FEATURES

- Body is ASTM A216 carbon steel Grade WCB
- 20 mesh screen standard, others available
- Copper Gasket 1/2" to 1-1/2", 304 SS/Graphite on 2"
- Working pressure" 600 psig @ 839°F steam 1480 psig @ 100°F water, oil, & gas
- Screen cover is NPT tapped for customer supplied plug or blow-off valve

Pipeline Strainers
YSS Series
(612)

Stainless Steel Threaded "Y" Strainers

Sturdy and compact with corrosion-resistant stainless steel bodies and stainless steel screens.

FEATURES

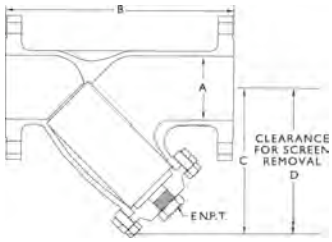
- Body is ASTM A351 stainless steel Grade CF8M
- 20 mesh screen standard, others available
- Gasket 304 SS/Graphite on 1/2" to 1", (not available in 1-1/4" size)
- Working pressure"
  600 psig @ 1124°F steam
  1440 psig @ 100°F water, oil, & gas
- Screen cover is NPT tapped for customer supplied plug or blow-off valve

Size (In.)	Threaded NPT	A	B	Blow-Off NPT	Wt/lbs	Screen Area in.²
1/2	612033A1	3.38	2.75	3/8	1.5	5.4
3/4	612034A1	4.44	3.63	3/8	2.5	8.7
1	612035A1	4.88	3.75	1/2	4.25	12.7

Iron Pipe Flanged Y-Strainers 125YF

FEATURES

- Iron strainers are complete with Flat Face flanges in accordance with ASME B16.1.
- Strainer body meets applicable ASME Standard.
- One piece cast body.
- Strainers equipped with bolted cover flange utilizing a flat gasket seal.
- Low pressure drop.
- Upper and lower machined seats.
- 304 SS perforated screens are standard.
- Drain/Blow-off connection furnished with plug as standard.
- Generous screen area and properly proportioned straining chamber to minimize initial pressure drop while maximizing time between cleanings.
- Compact end to end dimension.
- Optional Epoxy coating is FDA approved.



Upper Pressure Limits (Non-Shock)			
Apollo Model	**Body Material**	**M.A.W.P. PSIG (Bars)**	**Ends**
125YF (up to 12" size)	A126-B Cast iron	200 (13.79)	FF
125YF Sizes 14" and up)	A126-B Cast iron	150 (10.34)	FF
Body Material		**Lower Limit °F (°C)**	
A126-B, A395		-20 (-28.9)	

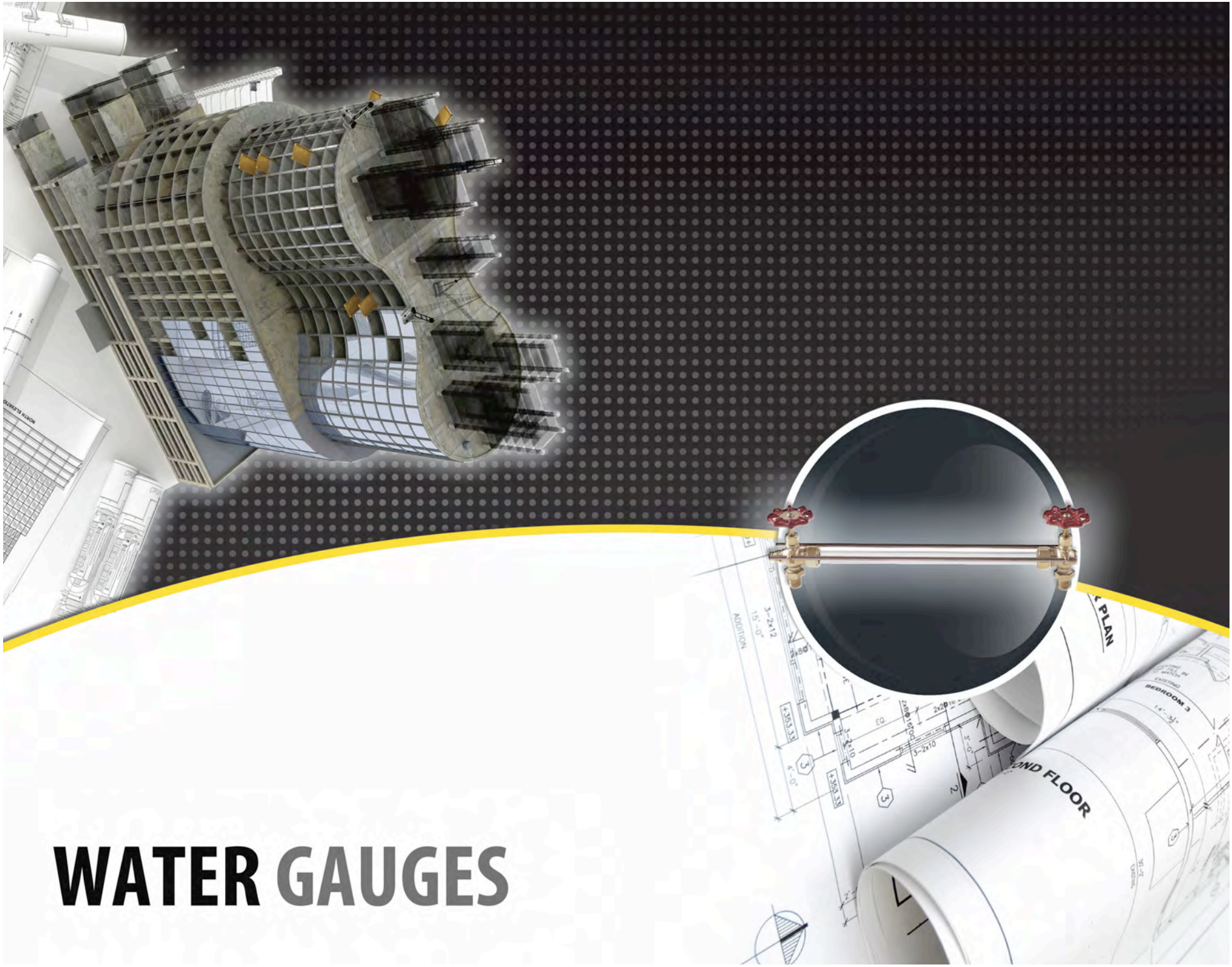
Parts List and Standard Materials	
Part	**Cast Iron**
Apollo Model	**125YF**
Body	A126-B
Cover	A126-B
Screen [1]	304 SS
Plug [2]	A126-B
Gasket [1]	Graphite
Bolt/Stud [2]	A307-B
Nut [2]	A563

Notes:
1. Recommended Spares.
2 Materials of equivalent strength may be substituted at manufacturer's option.

XXXX F - XX - XXXX X - X

Part	Valve Type Connection/Size	Screen Type	Coating
125Y (Flat Face)	Flanged 2"= 02 Flanged 2.5"= 25 Flanged 3"= 03 Flanged 4"= 04 Flanged 5"= 05 Flanged 6"= 06 Flanged 8"= 08 Flanged 10"= 10 Flanged 12"= 12 Flanged 14"= 14 Flanged 16"= 16	20 Mesh= M20 40 Mesh= M40 60 Mesh= M60 80 Mesh= M80 100 Mesh= M100 .045 Perf= P045 .062 Perf= P062 .125 Perf= P125 .250 Perf= P250	Blank =Painted finish (standard) E =Epoxy Coating, FDA Approved Notes: *All mesh screens are reinforced with a perforated liner. Standard Screens 2" - 3": .045 Perf 4" - Larger: .125 Perf

		Dimensional Data (In/mm)					
		A	B	C	D	E	Weight (H/Kg)
Standard Model	**Size**	**125YF**	**125YF**	**125YF**	**125YF**	**125YF**	**Y125**
125YF02P045	2"	2.00	8.88	6.00	8.50	1/2	22
	50	51	226	152	216	15	10
125YF25P045	21/2"	2.50	10.75	8.00	11.25	1	35
	65	64	273	203	286	25	16
125YF03P045	3"	3.00	11.50	8.75	12.25	1	43
	80	76	292	222	311	25	20
125YF04P125	4"	4.00	13.88	9.50	13.38	11/4	75
	100	102	353	241	340	32	34
125YF05P125	5"	5.00	16.38	11.50	16.13	11/4	115
	125	127	416	292	410	32	52
125YF06P125	6"	6.00	18.50	12.63	17.69	11/2	154
	150	152	470	321	449	40	70
125YF08P125	8"	8.00	21.38	16.38	23.00	11/2	243
	200	203	543	416	584	40	110
125YF10P125	10"	10.00	26.00	19.00	26.70	2	390
	250	254	660	483	678	50	177
125YF12P125	12"	12.00	30.00	22.00	31.00	2	650
	300	305	762	559	787	50	295
125YF14P125	14"	14.00	37.38	29.00	41.00	2	815
	350	356	949	737	1041	50	370
125YF16P125	16"	16.00	42.50	33.00	46.00	2	1224
	400	406	1080	838	1168	50	555



WATER GAUGES

Water Gauges & Accessories 20-100 & 20-150 Series

Standard Pattern Bronze Water Gauges

Use for all types of liquid level verification; available with 3/8" or 1/2" NPT male pipe connections. Aluminum or plastic composition hand wheels; EPDM gauge glass gaskets standard. Other glass gaskets available. Automatic ball checks help prevent the loss of fluids should the glass be broken.

FEATURES

- Ball checks standard on **20-150** models
- Equipped with two copper guard rods
- Standard 1/4" needle drain valve in lower arm
- Rated: 125 psig @ 350°F, 300 psig @ 100°F (See note!)
- CRN Registered

Part Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)	Wheel Type
20-101	3/8	5/8 x 10	145	ALUMINUM
20-102	3/8	5/8 x 10	145	COMPOSITION
20-104	1/2	5/8 x 12	160	ALUMINUM
20-105	1/2	5/8 x 12	160	COMPOSITION
20-150*	1/2	5/8 x 12	160	ALUMINUM
20-151*	1/2	5/8 x 12	160	COMPOSITION

*Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets. * Automatic ball valves*

Water Gauges & Accessories 20-200/20-150/25-200 Series

Standard Pattern Bronze Water Gauges

All standard 20 Series features but with a heavier valve body pattern for higher service ratings.

FEATURES

- Available with 3/8", 1/2" and 3/4" MNPT fittings
- Ball checks standard on **20-250** models
- Polished finish on **25-200** valves
- Rated: 200 psig @ 400°F, 400 psig @ 100°F (See note!)
- CRN Registered 0F6616.5C

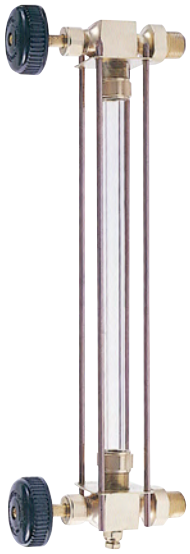
Part Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)	Wheel Type
20-201	3/8	5/8 x 10	185	ALUMINUM
20-202	3/8	5/8 x 10	189	COMPOSITION
20-204	1/2	5/8 x 12	205	ALUMINUM
20-205	1/2	5/8 x 12	205	COMPOSITION
20-207	3/4	3/4 x 16	270	ALUMINUM
20-208	3/4	3/4 x 16	270	COMPOSITION
20-250*	1/2	5/8 x 12	195	ALUMINUM
20-251*	1/2	5/8 x 12	200	COMPOSITION
20-253*	3/4	3/4 x 16	355	ALUMINUM
20-254*	3/4	3/4 x 16	360	COMPOSITION
25-201	3/8	5/8 x 10	180	ALUMINUM
25-202	3/8	5/8 x 10	185	COMPOSITION
25-204	1/2	5/8 x 12	190	ALUMINUM
25-205	1/2	5/8 x 12	190	COMPOSITION
25-207	3/4	3/4 x 16	290	ALUMINUM
25-208	3/4	3/4 x 16	295	COMPOSITION

Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.
** Automatic ball valves*

Water Gauges & Accessories 20-300/20-350/25-400/25-500 Series

Square Pattern Bronze Water Gauges

Available with 1/2" (ASTM B-16 brass bar stock) or 3/4" (B-584 cast bronze) NPT male pipe connections. Four guard rods and EPDM gauge glass gaskets standard. Other glass gaskets available. Automatic ball checks help prevent the loss of fluids should the glass be broken.



FEATURES

- Standard 1/4" needle drain valve in lower arm
- Pet cock or Apollo® ball valve drain on request
- Polished finish on 25-400 and 25-500
- Ball checks standard on 20-350 and 25-500
- Rated: 200 psig @ 400°F, 400 psig @ 100°F except for 25-400 (See note!)
- 25-400 Rated=125 psig@350°F, 300 psig@100°F (See note!)
- CRN Registered

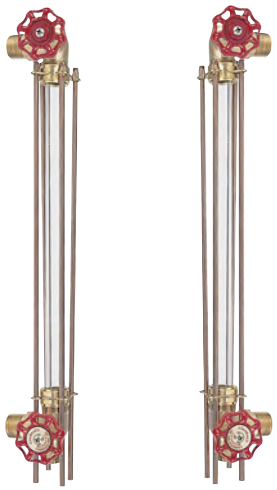
Part Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)	Wheel Type
20-304	1/2	5/8 x 12	260	ALUMINUM
20-305	1/2	5/8 x 12	270	COMPOSITION
20-307	3/4	3/4 x 16	345	ALUMINUM
20-308	3/4	3/4 x 16	365	COMPOSITION
20-350*	1/2	5/8 x 12	265	ALUMINUM
20-351*	1/2	5/8 x 12	265	COMPOSITION
20-353*	3/4	3/4 x 16	360	ALUMINUM
20-354*	3/4	3/4 x 16	365	COMPOSITION
25-404	1/2	5/8 x 12	285	ALUMINUM
25-405	1/2	5/8 x 12	285	COMPOSITION
25-407	3/4	3/4 x 16	350	ALUMINUM
25-408	3/4	3/4 x 16	350	COMPOSITION
25-501*	1/2	5/8 x 12	290	ALUMINUM
25-502*	1/2	5/8 x 12	290	COMPOSITION
25-504*	3/4	3/4 x 16	355	ALUMINUM
25-505*	3/4	3/4 x 16	355	COMPOSITION

*Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets. * Automatic ball valves*

Water Gauges & Accessories 20-400/20-410 Series

Side Mounted Handwheel Water Gauges

Side-mounted handwheels allow water gauge operation in hard-to-reach places; with all the 20 Series design features.



FEATURES

- Ideal for concealed jacketed type boilers
- No guard rod brackets: 20-405, 20-406, 20-410
- Brackets and guard rods standard: 20-407, 20-408
- EPDM standard gauge glass gasket
- Compact - requires minimum space
- Standard 1/4" needle drain valve
- Rated: 125 psig @ 350°F, 300 psig @ 100°F (See note!)
- 1-1/4" Extended shank length; 20-410
- CRN Registered

Part Number	Side	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)	Shank Length (in.)	Wheel Type
20-405-00	RH	1/2	5/8 x 12	165	.69	ALUMINUM
20-406-00	LH	1/2	5/8 x 12	165	.69	ALUMINUM
20-407-00	RH	1/2	5/8 x 12	170	.69	ALUMINUM
20-408-00	LH	1/2	5/8 x 12	170	.69	ALUMINUM
20-410-00	LH	1/2	5/8 x 12	180	1.25	ALUMINUM

Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.

20-700/20-710 Series

Simple Expansion Tank Gauges

Available with 3/8" or 1/2" MNPT connections; EPDM gauge glass gaskets and 1/4" needle drain valve in lower arm are both standard.

FEATURES

- 20-710 has plug in top arm to insert glass straight through
- 1/4" pet cock or Apollo® ball valve optional
- Ball checks on request (20-704 only)
- Rated: 125 psig @ 350°F, 300 psig @ 100°F (See note!)
- CRN Registered

Model Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)
20-703-00	3/8	5/8 x 10	120
20-704-00	1/2	5/8 x 12	135

Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.
** Not for use on boiler systems*

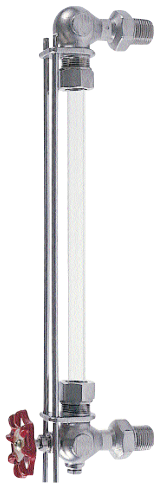
Water Gauges & Accessories 23-600 Series

Stainless Steel Expansion Tank Gauges

Holds all 316 stainless steel-compatible liquids. In lower arm: shut-off valve and stainless steel drain valve.

FEATURES

- Two stainless steel guard rods
- Rated: 250 psig at 406°F: maximum working pressure (See note!)
- Standard PTFE reinforced gauge glass gaskets
- High pressure glass standard
- CRN Registered



Model Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)	Wheel Type
23-651-00	1/2	5/8 x 12	225	ALUMINUM
23-654-00	3/4	5/8 x 12	225	COMPOSITION

Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.
** Not for use on boiler systems*

20-600/20-800 Series

Bronze Expansion Tank Gauges

Bottom arm shut-off valve prevents water leaks during gauge glass changes.

FEATURES

- EPDM standard gauge glass gasket
- 20-800 models: 1/4" NPT pipe thread in upper arm for pressure gauge standard
- Rated: 200 psig @ 400°F, 400 psig @ 100°F (See note!)
- CRN Registered

Part Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)	Wheel Type
20-604-00*	1/2	5/8 x 12	155	ALUMINUM
20-605-00*	1/2	5/8 x 12	175	COMPOSITION
20-804-00*	1/2	5/8 x 12	160	ALUMINUM
20-805-00*	1/2	5/8 x 12	160	COMPOSITION

**Automatic model*
***Note:** Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.*
** Not for use on boiler systems*

Water Gauges & Accessories 24-600/24-650 Series

Chain Lever Water Gauges

Lever on standard 12-foot chain allows operator to open and close valves that would be beyond reach. Valve stems operate on quarter-turns.

FEATURES

- Rated 250 psig @ 400°F, 500 psig @ 100°F (See note!)
- Use on large boilers with inconvenient columns
- Automatic and non-automatic models
- Furnished with 12 feet of chain and 5/16" diameter full-blow valve with safety handle
- High pressure glass standard with the 24 series
- CRN Registered
- Standard PTFE reinforced gauge glass gasket

Part Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)
24-601-00	1/2	5/8 x 12	515
24-602-00	3/4	3/4 x 16	580
24-651-00*	1/2	5/8 x 12	515
24-652-00*	3/4	3/4 x 16	580

** ASME Automatic ball check model*

Note: *Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.*

Water Gauges & Accessories 20-600/25-600 Series

Chain Lever Water Gauges

Lever on standard 12-foot chain allows operator to open and close valves that would be beyond reach. Valve stems operate on quarter-turns.

FEATURES

- Quick opening, non-automatic
- Service rating: 250 psig @ 400°F, 500 psig @ 100°F (See note!)
- EPDM standard gauge glass gasket
- Standard 1/4" needle drain valve
- Furnished with 12 feet of chain
- H-2485 pull handle is standard
- CRN Registered

Part Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)
25-601-00#	1/2	5/8 x 12	335
25-602-00#	3/4	3/4 x 16	350
20-601-00##	1/2	5/8 x 12	370
20-602-00##	3/4	3/4 x 16	435

#Polished Finish
Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.
##Ball valve not included. Includes 1/4" needle drain.

Water Gauges & Accessories 24-300/24-350 Series

Heavy Pattern Bronze Liquid Level Gauges

Automatic and non-automatic direct reading gauges in shank pipe sizes 1/2" and 3/4".

FEATURES

- Heavy pattern bronze valve body
- Guard rod bracket to accommodate four guard rods
- PTFE reinforced gauge glass gasket and stem packing are standard
- Rated 250 psig @ 400°F, 500 psig @ 100°F (See note!)
- Automatic - conforms to ASME power boiler code requirements for automatic water gauges; ball checks in upper and lower arms
- High pressure gauge glass and gaskets are standard
- CRN Registered
- Bronze ball valve drains are standard

	Part Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)	Wheel Type
Non-Automatic	**24-301-00**	1/2	5/8 x 12	425	ALUMINUM
	24-302-00	1/2	5/8 x 12	425	COMPOSITION
	24-304-00	3/4	3/4 x 16	490	ALUMINUM
	24-305-00	3/4	3/4 x 16	490	COMPOSITION
ASME Automatic	**24-350-00****	1/2	5/8 x 12	425	ALUMINUM
	24-351-00**	1/2	5/8 x 12	425	COMPOSITION
	24-353-00**	3/4	3/4 x 16	490	ALUMINUM
	24-354-00**	3/4	3/4 x 16	490	COMPOSITION

Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.
*** ASME listed automatic ball check valves*

Rough Bronze Water Gauges with Extended Shank
21 Series

Available with 3/8" or 1/2" MNPT connections; EPDM gauge glass gaskets and 1/4" needle drain valve in lower arm are both standard.

FEATURES

- 1-3/4" standard shank length
- 21-100 rated 125 psig @ 350°F, 300 psig @ 100°F
- 21-200 rated 200 psig @ 400°F, 400 psig @ 100°F (See note!)
- CRN Registered
- Equipped with two copper-plated steel guard rods

Part Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)	Wheel Type
21-104	1/2	5/8 x 12	185	ALUMINUM
21-105	1/2	5/8 x 12	197	COMPOSITION
21-150*	1/2	5/8 x 12	195	ALUMINUM
21-151*	1/2	5/8 x 12	207	COMPOSITION
21-204	1/2	5/8 x 12	215	ALUMINUM
21-205	1/2	5/8 x 12	219	COMPOSITION
21-250*	1/2	5/8 x 12	215	ALUMINUM
21-251*	1/2	5/8 x 12	215	COMPOSITION

** Automatic Model*
Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.

Water Gauges & Accessories 23-400 & 23-450 Series

Stainless Steel Liquid Level Gauges

Ideal for handling alcohol solvents, acetic acid and ketones. Automatic models conform to ASME requirements; aluminum and composition handwheels.

FEATURES

- PTFE reinforced gauge glass gaskets, stem packings
- Chemical resistant PTFE seat
- 5/16" diameter full-flow, all SS drain ball valves with safety handle
- Guard rod bracket to accommodate four SS guard rods
- Rated 500 psig @ 450°F (See note!)
- High pressure gauge glass standard
- CRN Registered

	Part Number	Pipe Size (in.)	Glass O.D. & Length	Wt./100 (lbs.)	Wheel Type
Non-Automatic	**23-401-00**	1/2	5/8 x 12	385	ALUMINUM
	23-402-00	1/2	5/8 x 12	385	COMPOSITION
	23-404-00	3/4	3/4 x 16	450	ALUMINUM
	23-405-00	3/4	3/4 x 16	450	COMPOSITION
ASME Automatic	**23-450-00****	1/2	5/8 x 12	390	ALUMINUM
	23-451-00**	1/2	5/8 x 12	390	COMPOSITION
	23-453-00**	3/4	3/4 x 16	455	ALUMINUM
	23-454-00**	3/4	3/4 x 16	455	COMPOSITION

Note: Service ratings are subject to pressure/temperature ratings of gauge glass and glass gaskets.
*** ASME listed automatic ball check valves*

Water Gauges & Accessories Glass Protector

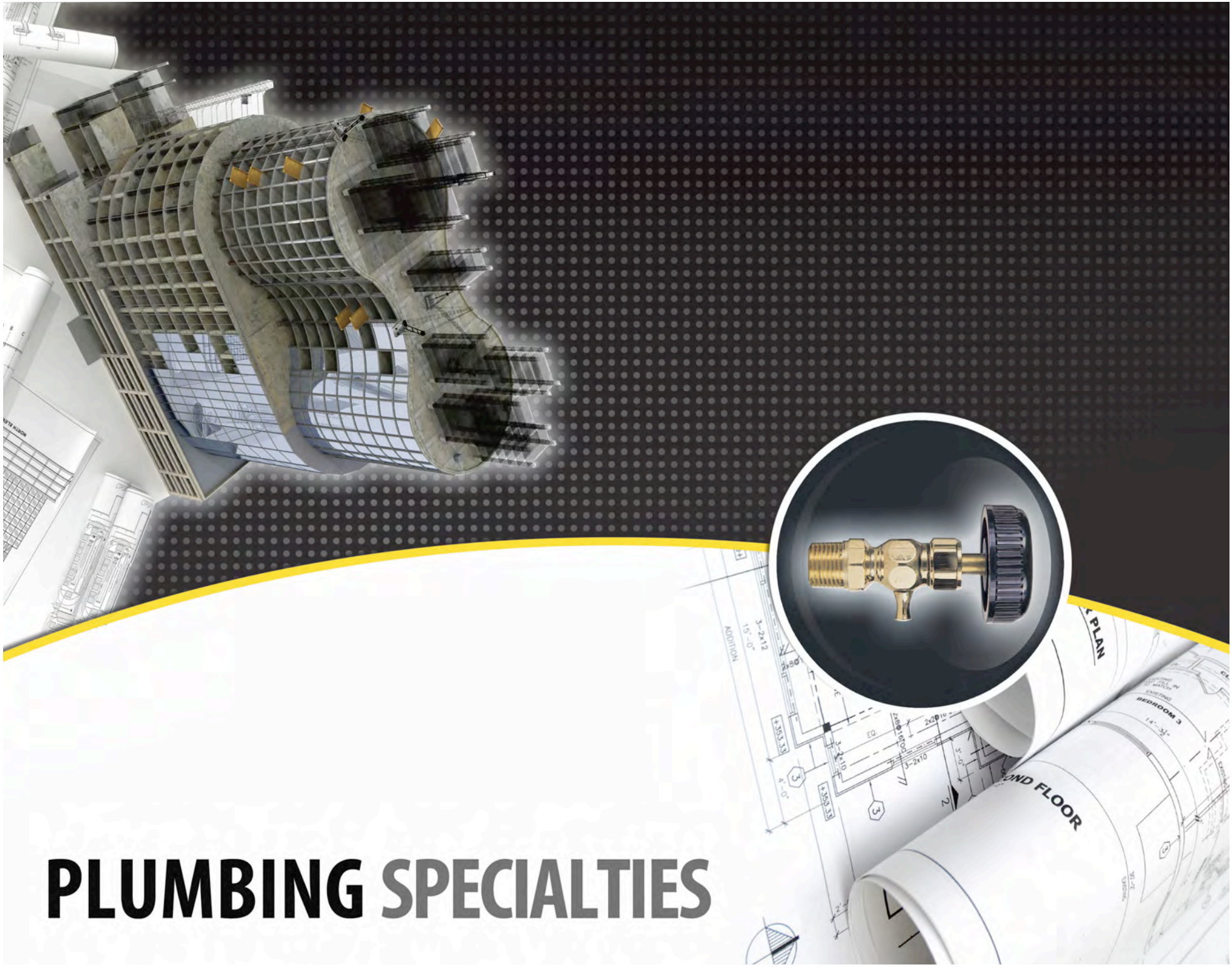
Tubular Gauge Glass Protector

Reduces risk of injury and damage from glass failure; maximum length: 50".

***Note:** Water gauge part number and centerline length are required when ordering. Priced according to length and application.*

FEATURES

- Heavy duty brass tube
- No. I-2733* 5/8" Glass Protector
- No. I-2734* 3/4" Glass Protector
- Made to fit most water gauges
- Not available on 23-400, 23-650, 24-300, 24-350, 24-600 models
- CRN Registered



PLUMBING SPECIALTIES

Plumbing Specialties CG/CGH 26-100/26-300 Series

Compression Gauge Cocks

For draining expansion tanks, other liquid storage vessels. For condensate only.

26-300

FEATURES

- 26-100: rated up to 125 psig
- 26-300: soft metal seat/stuffing box rated up to 250 psig at 400°F
- 26-310: stainless steel ball seat/stuffing box rated up to 250 psig at 400°F

Model Number	Pipe Size (in.)	Wt./100 (lbs.)	Wheel Type
26-101	3/8	25.0	ALUMINUM
26-102	3/8	30.0	COMPOSITION
26-104	1/2	28.3	ALUMINUM
26-105	1/2	30.0	COMPOSITION
26-301	3/8	39.0	ALUMINUM
26-302	3/8	40.0	COMPOSITION
26-304	1/2	40.0	ALUMINUM
26-305	1/2	44.0	COMPOSITION
26-307	3/4	49.0	ALUMINUM
26-308	3/4	51.7	COMPOSITION
26-311	3/8	39.0	ALUMINUM
26-312	3/8	42.0	COMPOSITION
26-314	1/2	40.0	ALUMINUM
26-315	1/2	44.0	COMPOSITION
26-317	3/4	50.0	ALUMINUM
26-318	3/4	50.0	COMPOSITION
26-704	1/2	78.0	ALUMINUM
26-705	1/2	82.0	COMPOSITION
26-707	3/4	88.0	ALUMINUM
26-708	3/4	105.0	COMPOSITION

**26-100 series is not available with packing nut*
Specify the following suffix for finish: 01 - Satin Brass; 28 - Polished Brass.

Lever Operated Compression Cock 26-500 Series

For draining expansion tanks or other liquid storage vessels where the drain port is beyond reach. Spring loaded lever provides positive closure to 250 psig at 300°F.

FEATURES

- Bronze body B584 UNS C84400
- Stainless steel closure spring
- PTFE soft seat
- Graphite stem packing
- Zinc plated "S" hook on lever
- Optional 6 foot chain

Part Number	Pipe Size (in.)	Wt./100 (lbs.)	
26-504-01	1/2	110	
26-504-02	1/2	112	6' chain
26-507-01	3/4	115	
26-504-02	3/4	117	6' chain

Plumbing Specialties SGS-27-400 Series

Steam Gauge Siphon

90˚ and 180˚ configurations, made from 1/4" heavy gauge seamless brass tubing.

27-401

27-402

FEATURES

- Brass (-01)
- Chrome plate (-03)
- Bright dip finish (04)
- 27-401 is 180˚ loop, 27-402 is 90˚ loop
- Service rating: 250 psig saturated steam, 400 psig at 100˚

Part Number	Pipe Size (in.)	Wt./100 (lbs.)
27-401-01	1/4	44.0
27-402-01	1/4	40.0

Plumbing Specialties HB 35-200 Series

Compression Bibb Faucet

Features heavy pattern with large opening.

FEATURES

- Rough brass finish; sizes 1/2" and 3/4"
- Both models have 3/4" hose connection

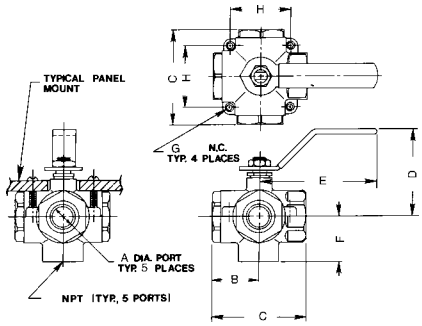
Part Number	Pipe Size (in.)	Wt./100 (lbs.)
35-201-01	1/2	58.3
35-202-01	3/4	57.0

5-Port Tank Selector
78-124/78-125 Series

Unique ball design allows for higher flow capacities. Five port construction allows access to four tanks using only one valve.

FEATURES

- Five NPT connections
- Bronze ball valve with stainless steel Lever and Nut
- PTFE seats and RPTFE stem packing
- Stem packing adjustable for wear
- Non-lubricated
- 50 psig pressure rating
- Operation: four selected inlets feed one common outlet
- Pointer on handle indicates the selected inlet
- Easy mounting design



Part Number	Size (in.)	Dimensions (in.) A	B	C	D	E	F	G	H	Wt./100 (lbs.)
78-124-01	1/2	0.50	1.26	2.52	2.27	3.53	1.12	10-24	1.40	106
78-125-01A	3/4	0.75	1.56	3.12	2.93	3.87	1.53	1/4-20	1.98	264

Air Cocks
41 Series

Air Cocks (for air use only)

An economical way to shut-off air lines. Nut bottom available for pressures to 200 psig with 1/8" port. Many handle configurations. Spring bottom with 5/32" port standard..

FEATURES

- Spring bottom cocks tested at 80 psig air
- Standard parts are satin brass
- Some part numbers are available in polished brass or satin chrome. Contact customer service
- Maximum temperature is 500˚F

Type	Satin Brass
Standard Spring Bottom	-01
Nut Bottom	-04


tee handle round shoulder


tee handle hexagon shoulder


lever handle round shoulder


lever handle hexagon shoulder


tee handle double male thread


lever handle double male thread


tee handle bibb nose


lever handle bibb nose

Part Number	Size (in.)	Wt./100 (lbs.)
	TEE HANDLE ROUND SHOULDER	
41-060	1/8	12.8
41-070	1/4	13.0
	TEE HANDLE HEXAGON SHOULDER	
41-080	3/8	17.0
41-090	1/2	20.0
	LEVER HANDLE ROUND SHOULDER	
41-120	1/8	13.1
41-130	1/4	14.2
	LEVER HANDLE HEXAGON SHOULDER	
41-140	3/8	17.0
41-150	1/2	22.9
	TEE HANDLE DOUBLE MALE THREAD	
41-180	1/8	14.0
41-190	1/4	17.9
41-203	3/8	20.0
41-210	1/2	33.1
	LEVER HANDLE DOUBLE MALE THREAD	
41-220	1/8	14.0
41-230	1/4	18.5
41-240	3/8	19.1
41-251	1/2	31.3
	TEE HANDLE BIBB NOSE	
41-260	1/8	14.5
41-270	1/4	16.3
41-280	3/8	33.3
41-330	1/2	36.0
	LEVER HANDLE BIBB NOSE	
41-290	1/8	16.5
41-300	1/4	15.0
41-310	3/8	32.1
41-320	1/2	36.0

Air Cocks
41 Series

Air Cocks (for air use only) **Continued**

tee handle
double female

tee handle
male & female

lever handle
double female

lever handle
male & female

tee handle male &
female hex shoulder

lever handle male &
female hex shoulder

tee handle double
female hex shoulder

lever handle double
female hex shoulder

tee handle straight
nose hex shoulder

lever handle straight
nose hex shoulder

Type	Satin Brass
Standard Spring Bottom	-01
Nut Bottom	-04

Model Number	Size (in.)	Wt./100 (lbs.)
TEE HANDLE DOUBLE FEMALE		
41-370	1/8	13.0
41-380	1/4	14.0
41-390	3/8	26.0
41-391	1/2	27.0
TEE HANDLE MALE & FEMALE		
41-400	1/8	13.0
41-410	1/4	14.0
41-420	3/8	21.0
41-421	1/2	26.0
LEVER HANDLE DOUBLE FEMALE		
41-430	1/8	14.8
41-440	1/4	13.0
41-450	3/8	23.0
41-451	1/2	27.0
LEVER HANDLE MALE & FEMALE		
41-460	1/8	15.2
41-470	1/4	15.0
41-480	3/8	23.0
41-481	1/2	27.0
TEE HANDLE MALE & FEMALE HEX SHOULDER		
41-490	1/8	17.0
41-500	1/4	15.0
41-510	3/8	23.0
41-511	1/2	25.0
LEVER HANDLE MALE & FEMALE HEX SHOULDER		
41-520	1/8	14.0
41-530	1/4	15.0
41-540	3/8	22.1
41-541	1/2	27.0
TEE HANDLE DOUBLE FEMALE HEX SHOULDER		
41-550	1/8	17.0
41-560	1/4	17.0
41-570	3/8	25.0
41-571	1/2	28.3
LEVER HANDLE DOUBLE FEMALE HEX SHOULDER		
41-580	1/8	15.0
41-590	1/4	18.2
41-600	3/8	24.0
41-601	1/2	28.8
TEE HANDLE STRAIGHT NOSE HEX SHOULDER		
41-630	1/8	15.7
41-640	1/4	15.0
LEVER HANDLE STRAIGHT NOSE HEX SHOULDER		
41-650	1/8	14.0
41-660	1/4	15.0

Air Cocks 41 Series Heavy Pattern

Heavy and Extra Heavy Pattern Air and Steam Cocks

Heavy and extra heavy patterns for higher pressure applications.

FEATURES

- Rated for air pressure up to 250 psig with nut version
- Extra heavy pattern rated for 150 SWP - nut bottom only

Type	Satin Brass
Nut Bottom	-04

Part Number	Size (in.)	Wt./100 (lbs.)
	HEAVY PATTERN TEE HANDLE DOUBLE FEMALE	
41-102	1/4	28.00
	LEVER HANDLE DOUBLE FEMALE	
41-103	1/4	27.00
	EXTRA HEAVY PATTERN TEE HANDLE DOUBLE FEMALE	
41-200	1/8	32.00
41-202	1/4	32.00
	TEE HANDLE DOUBLE FEMALE HEXAGON SHOULDER	
41-222	1/4	38.00
	TEE HANDLE MALE AND FEMALE	
41-250	1/4	20.00

Drain Cocks 42-100 Series

Rough brass construction; rated for 25 psig.

FEATURES

- Sizes: 1/8", 1/4", 3/8" and 1/2"

Type	Satin Brass
Standard Spring Bottom	-01

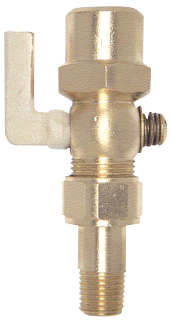
Part Number	Size (in.)	Orientation (in.)	Wt./100 (lbs.)
42-101	1/8	3/16	20.4
42-102	1/4	1/4	15.0
42-103	3/8	3/8	35.0
42-104	1/2	3/8	38.0

Steam Gauge Cocks
43-100 Series

Female fitting with male union for easy installation.

FEATURES

- Satin brass finish is standard
- Rated 100 SWP for standard bottom,150 SWP for nut version



Part Number	Description	Size (in.)	Wt./100 (lbs.)
43-101-01	100 SWP	1/4 FNPT	45
43-101-04	150 SWP	1/4 FNPT	45

Air Cocks
44-100 Series

Hose End Cocks

Interior diameter hose sizes: 3/8" to 7/16"

FEATURES

- 3/16" port; rated 25 psig
- Available in polished brass or satin brass finish

Part Number	Size (in.)	Wt./100 (lbs.)
44-101	1/8	19
44-102	1/4	22
44-103	3/8	23
44-104	1/2	25

Designate (-05) suffix for polished brass; (-01) suffix for satin brass.

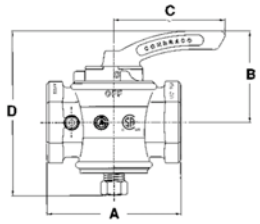
Gas Cocks
GCB 50 Series

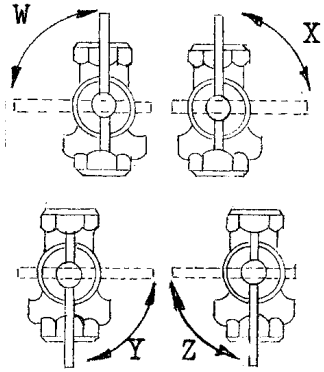
Manual Main Control Valves

CSA design certified for 1/2 psig and temperatures from 32° to 125°F. Complies to ANSI Z 21.15, CSA 9.1

FEATURES

- Factory tested 100% at 10 psig
- Bronze construction, stainless steel springs
- Capacities to 7.8 million BTU/hour
- Equal female inlet/outlet
- Bosses on both sides are drilled and tapped. Only one side is plugged





Part Number	Size (in.)	BTU/hr.	Wt./100 (lbs.)	Dimensions A	B	C	D
50-203*	1/2	800,000	88	2.50	1.44	1.72	2.75
50-303	3/4	1,310,000	156	2.94	1.69	2.06	3.50
50-403	1	2,100,000	197	3.94	2.19	2.87	3.87
50-503	1-1/4	3,250,000	300	3.66	2.75	3.16	4.69
50-603	1-1/2	3,700,000	478	4.37	3.31	3.50	5.75
50-703	2	7,300,000	845	5.44	3.72	4.50	6.75
50-803	2-1/2	7,800,000	1000	5.87	3.72	4.50	6.75

** 1/2" size is not CSA certified*

Handle Suffix Position

Size Pilot (in.)	W	X	Y	Z
1/8 NPT	01	02	03	04
1/4 NPT	05	06	07	08

All main burner valves furnished with 1/8" NPT pilot tapping. Valves 1" and larger can be furnished with 1/4" NPT pilot tapping.

Gas Cocks
GC- 51 Series

Gas Service Cocks

Tee or lever handle cocks; **CSA design certified.** In sizes 1/4" to 3/4".

FEATURES

- Capacities: 117,000 to 749,000 BTU/hour
- Designed to meet ANSI Z21.15, CSA 9.1 requirements of 1/2 psig at temperatures from 32° F to 125°F
- Accepted for use in City of New York Department of Buildings MEA 45-90-M

	Part Number	Pipe Size (in.)	Wt./100 (lbs.)	Capacity (BTU/hr.)
T-Handle w/Stop	51-103-01	1/4	35	117,000
	51-104-01	3/8	47	274,600
	51-105-01	1/2	54	274,000
	51-106-01	3/4	83	749,000
Lever Handle w/Stop	51-107-01	3/8	50	274,600
	51-108-01	1/2	56	274,600
	51-109-01	3/4	87	749,000

Gas Cocks
GC-52 Series

Gas Service Cocks

Available with tee head, flat head, square head or lever head in sizes from 1/4" to 1". Wrench operated and tested at 125 psig.

FEATURES

- Capacities: 117,000 to 749,000 BTU/hour
- Designed to meet ANSI Z21.15.CSA 9.1 requirements of 1/2 psig at temperatures from 32° F to 125°F
- Accepted for use in City of New York Department of Buildings MEA 45-90-M

	Part Number	Size (in.)	Wt./100 (lbs.)
T-Head	52-101-01	1/4	32.0
	52-102-01	3/8	29.0
	52-103-01	1/2	45.0
	52-104-01	3/4	65.8
	52-105-01	1	92.9
Flat Head	52-201-01	1/4	30.0
	52-202-01	3/8	28.0
	52-203-01	1/2	43.0
	52-204-01	3/4	57.0
	52-205-01	1	90.6

Part Number	Size (in.)	Wt./100 (lbs.)	
52-301-01	1/4	31.0	Square Head
52-302-01	3/8	28.0	
52-303-01	1/2	43.0	
52-304-01	3/4	62.7	
52-305-01	1	90.0	
52-401-01	1/4	34.3	Lever Head
52-402-01	3/8	31.0	
52-403-01	1/2	46.0	
52-404-01	3/4	66.7	
52-405-01	1	97.0	

Gas Cocks
GC3- 53 Series

Gas Cocks

Available in male and female sizes: 1/8", 1/4" and 3/8".

FEATURES

- Capacities: 117,000 to 749,000 BTU/hour
- 200 CWP
- Designed to meet ANSI Z21.15.CSA 9.1 requirements of 1/2 psig at temperatures from 32° F to 125°F
- Accepted for use in City of New York Department of Buildings MEA 45-90-M

Part Number	Male Size (in.)	Female Size (in.)	Wt./100 (lbs.)
53-299-01*	1/8	1/8	14.0
53-300-01*	1/4	1/4	18.5
53-301-01	3/8	3/8	45.0

** Design certified by CSA to meet ANSI Z21.15.CSA 9.1 pressure requirements of 1/2 psig*

Gas Cocks
GCA-54 Series

Gas Hose Cocks & Appliance Connector Valves

54-100

54-200

FEATURES

- CSA design certified bronze gas valves with 56,500BTU/hour capacity.
- Designed to meet ANSI Z21.15 CSA 9.1 pressure requirements of 1/2 psi

Part Number	Pipe Size (in.)	Outlet (in.)	Wt./100 (lbs.)
54-101-01	3/8	1/8 MNPT	41.0
54-102-01	1/2	1/8 MNPT	34.8
54-103-01	3/4	1/8 MNPT	40.0

Part Number	Pipe Size (in.)	Outlet (in.)	Wt./100 (lbs.)
54-201-01	3/8	3/8 SAE	36.0
54-202-01	1/2	3/8 SAE	33.4
54-203-01	1/2	1/2 SAE	35.0
54-204-01	3/4	1/2 SAE	45.1
54-206-01	3/4	5/8 SAE	50.0
54-207-01	1/2	5/8 SAE	57.0
54-208-01	3/4	3/8 SAE	44.0
54-209-01	3/4	1/2 MNPT	44.0

Gas Cocks
GCR-55-302 Series

Gas Cock with Throttle Adjustment Design Certified by CSA

FEATURES

- Designed to meet ANSI Z21.15.CSA 9.1 pressure requirements of 1/2 psig
- Thread size: 1/4" male x 1/4" female

Part Number	Size (in.)	Wt./100 (lbs.)
55-302-01	1/4 M x 1/4 F	33

Gas Cocks
GCP-56 Series

Pilot Cocks

Wide variety of CSA design certified pilot cocks. Designed to meet ANSI Z21.15.CSA 9.1 pressure requirements of 1/2 psig at temperatures from 32˚ to 125˚ F.

56-111-01

56-112-01

56-221-01

56-302-01

56-602-01

Part Number	Thread Size	Wt./100 (lbs.)
56-111-01	1/8 NPT x 1/4 Tube Plain	15.0
56-112-01	1/8 NPT x 1/4 Tube Throttle Adjust.	14.0
56-221-01	1/8 NPT x 1/8 FNPT Plain	16.1
56-222-01	1/8 NPT x 1/8 FNPT Throttle Adjust.	16.1
56-302-01*	1/8 NPT x 1/4 Tube	08.0
56-601-01	1/8 NPT x 1/4 Tube Right Hand	17.0
56-602-01	1/8 NPT x 1/4 Tube RH Throttle Adjust	17.0
56-603-01	1/8 NPT x 1/4 Tube Left Hand.	17.0
56-604-01	1/8 NPT x 1/4 Tube LH Throttle Adjust.	17.0

** Not CSA Certified*

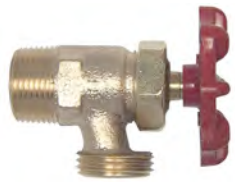
Water Heater Drain Valves BD90 31-200/31-500 Series

90° Drain Valves

For deluxe water heaters and low pressure boilers.

FEATURES

- Pressure to 200 psig, temperatures to 250°F
- All cast bronze bodies
- Red aluminum wheel handle - standard (-04)
- Optional plain finish handle (-04P)
- 31-200 Series heavy pattern, 3/4" MNPT inlet
- 31-500 Series standard pattern, 1/2" MNPT inlet with I.D. of NPT thread machined for 1/2"copper pipe



Part Number	Wt/100 (lbs.)	Shank Length (in.)	Inlet (in.)
31-202-04	43.00	5/8	3/4 MNPT
31-212-04	46.50	15/16	3/4 MNPT
31-501-04	31.00	5/8	1/2 MNPT/1/2 Sweat

Water Heater Drain Valves BDT 31-400 Series

Combination Tee & Drain Valves

Permits supplying and draining of water through a single tank tapping and meets CSA requirements.

FEATURES

- All cast bronze bodies
- Two wheel options
- No handle: screwdriver slot stem
- Pressure to 200 psig; temperatures to 250˚ F
- 3/4" FNPT inlet x 3/4" male hose end x 3/4" FNPT side outlet

Part Number	Wt/100 (lbs.)	Handle
31-401-04	62.00	Aluminum Wheel - Red
31-401-04P	62.00	Aluminum Wheel - Plain
31-401-13	62.00	Slotted Stem

Water Heater Drain Valves BD 31-600/31-700 Series

Angled Body Water Heater Drain Valves

All drains are equipped with Conbraco packing seal assuring easy turning stem and leak proof drain. Various shank lengths available. Meets CSA requirements.

31-600
Male NPT

31-700
Female NPT

FEATURES

- All cast bronze bodies
- Drains are furnished with zinc plated steel, burnished aluminum or composition wheels
- Pressure rating 200 psig
- Maximum temperature 250˚ F
- 31-600: 3/4" MNPT inlet
- 31-700: 1/2" or 3/4" FNPT inlet

Handle Suffix Key	
Suffix*	
-04	Aluminum Wheel - Red
-04P	Aluminum Wheel - Plain
-13	Slotted Stem

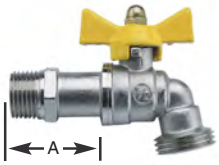
** Not all variations available in all sizes. Contact customer service.*

Part Number	Wt/100 (lbs.)	Shank Length (in.)	Inlet (in.)
31-600	27.3	5/8"	3/4" MNPT
31-601	36.0	3/4"	3/4" MNPT
31-602	35.0	1"	3/4" MNPT
31-604	43.0	1-1/4"	3/4" MNPT
31-606	49.5	1-1/2"	3/4" MNPT
31-607	48.0	1-3/4"	3/4" MNPT
31-608	52.0	2	3/4" MNPT
31-609	52.0	2-1/4"	3/4" MNPT
31-610	57.2	2-1/2"	3/4" MNPT
31-611	60.0	2-3/4"	3/4" MNPT
31-612	66.3	3"	3/4" MNPT
31-700 Series			
31-700	39.0		1/2" FNPT
31-701	37.0		3/4" FNPT

Water Heater Drain Valves BD (35-300) Series

Ball Valve Bibb Faucet

Features heavy pattern with large opening. Ideal for boiler and water heater drains, general liquid dispensing and drainage.



FEATURES

- Chrome plated finish; sizes 1/2" and 3/4"
- Pressure rating 200 psig liquid
- Maximum temperature 250°F

Part Number	Size (in.)	A (in.)	Inlet (in.)	Outlet (in.)	Wt./100 (lbs.)
35-301-03	1/2	1-1/2	1/2 sweat/thrd connector	0.75-11.5 NHR hose	38.4
35-302-03	3/4	1-3/4	3/4 thrd connector	0.75-11.5 NHR hose	44.5

Terms and Condition of Sale

Payment: 2% 10th prox. Net 30 days.
All prices F.O.B. shipping point with freight allowed on shipments of 750 pounds and/or $5,000 net minimum to all shipping points within the United States excluding Alaska and Hawaii. No freight allowed on Air Freight or Parcel Post shipments. Claims for shortages must be made within 10 days of receipt of material. Our responsibility ends when a receipt is furnished us by the carrier.
No Invoice Rendered For Less Than $50.00.
No freight will be allowed on Air Freight, Air Express, Parcel Post or U.P.S. shipments.
All Conbraco products may be combined to make sufficient weight for full freight allowance.
Phone order quoted prices are subject to correction. Prices and designs are subject to change without notice.
Orders for material or special design or specification are made to customer's order and are not subject to cancellation or return.
All goods returned to us will not be accepted unless a full explanation has been made and our written authorized permission obtained in advance. All goods returned – if accepted – will be credited at invoice price, less 30% for service and rehandling charges, plus shipping expenses.
We reserve the right to adjust orders to box quantities.

Warranty & Limitations of Liability

Conbraco Industries, Inc. warrants, to its initial purchaser only, that its products which are delivered to this initial purchaser will be of the kind described in the order or price list and will be free of defects in workmanship or material for a period of FIVE years from the date of delivery to you, our initial purchaser. This warranty applies to Apollo brand product with "Made in the USA" markings only.

Should any failure to conform to this warranty appear within FIVE years after the date of the initial delivery to our initial purchaser, Conbraco will, upon written notification thereof and substantiation that the goods have been stored, installed, maintained and operated in accordance with Conbraco's recommendations and standard industry practice, correct such defects by suitable repair or replacement at Conbraco's own expense.

APOLLO INTERNATIONAL PRODUCTS: Conbraco Industries, Inc. warrants its International products, to its initial purchaser only, that its international products which are delivered to this initial purchaser will be of the kind described in the order or price list and will be free of defects in workmanship or material for a period of TWO years from the date of delivery to you, our initial purchaser.

THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, WHETHER EXPRESSED OR IMPLIED, EXCEPT THE WARRANTY OF TITLE AND AGAINST PATENT INFRINGEMENT. Correction of non-conformities, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of Conbraco to our initial purchaser, with respect to the goods, whether based on contract, negligence, strict tort or otherwise. It is the intention of Conbraco Industries, Inc. that no warranty of any kind, whether expressed or implied shall pass through our initial purchaser to any other person or corporation.

LIMITATION OF LIABILITY: Conbraco Industries, inc. SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES SUCH AS, BUT NOT LIMITED TO, DAMAGES OR TO LOSS OF OTHER PROPERTY OR EQUIPMENT, LOSS OF PROFITS OR REVENUE, COST OF CAPITAL, COST OF PURCHASED OR REPLACEMENT GOODS, OR CLAIMS OF CUSTOMERS OF OUR INITIAL PURCHASER. THE REMEDIES OF OUR INITIAL PURCHASER, AND ALL OTHERS, SET FORTH HEREIN, ARE EXCLUSIVE, AND THE LIABILITY OF CONBRACO WITH RESPECT TO SAME SHALL NOT, EXCEPT AS EXPRESSLY PROVIDED HEREIN, EXCEED THE PRICE OF THE GOODS UPON WHICH SUCH LIABILITY IS BASED.

* It is the end user's responsibility to confirm that items intended for use satisfy local codes and standards.

"Apollo" Valves
manufactured in the USA by CONBRACO Industries

SALES & CUSTOMER SERVICE:

Phone: (704) 841-6000
Fax: (704) 841-6020
www.apollovalves.com

			email	phone	fax
SOUTHEAST REGION	Spirit Group	FL (except Pan Handle)	info@spiritgroupinc.com	407-291-6035	407-299-0378
	Spotswood Associates	GA/AL	dlewis@spotswoodassociates.com	770-447-1227	770-263-6899
	Pro Marketing, Inc.	NC/SC/TN-East	sales@promarketinginc.net	864-578-4334	864-578-4889
	Mid South Marketing, Inc.	VA/MD/Washington, D.C./WV-East	midsouth7@aol.com	804-213-3801	804-213-3802
SOUTHERN REGION	Southern Marketing Group	MS/TN-West/AR/Bowie Cty.-TX	SMG49@bellsouth.net	901-547-0042	901-547-0035
	Marathon Flow Control	TX, OK (Commercial & Ind'l)	sales@marathonflowcontrol.com	855-483-5029	855-483-5030
	BWC Inc.	LA (Commercial Products)	chuck@bwcassoc.com	504-734-0229	504-734-3711
MIDWESTERN REGION	New Tech Marketing	Northern-IL/WI-East/IN/MI-UP/IA-River Counties	sales@new-techmarketing.com	630-378-4300	630-378-0343
	New Tech Marketing	MO/Southern IL/Northeast Kansas	ntm112@aol.com	618-394-0329	618-394-0427
	V.E. Sales Co., Inc.	MI (Except Upper Peninsula)	tomv@vesalesinc.com	586-774-7760	586-774-1490
	FourMation Sales	MN/ND/SD/WI-West	ryan@fourmationsales.com	763-420-6900	763-420-6993
	Marshall-Rodeno Heartland	NE/IA (Except River Counties)	trodeno@marshallrodeno.com	303-575-6701	303-575-6706
	Midwest Spec	KY/OH/PA-West/WV-West	glsales@mwspec.com	330-538-0406	330-538-0410
WESTERN REGION	Spec Management Group	HI	msmarch4@cox.net	949-481-4225	949-487-0990
	Specified Process Equipment Co.	CA - North	jd@specifiedprocess.com	707-747-3466	707-747-4957
	Elmco Duddy	CA - South	tduddy@elmcoduddy.com	626-333-9942	626-855-4811
	Marshall-Rodeno Associated	CO/WY/MT/ID-SE/UT/NV-NE/NM/El Paso-TX	trodeno@marshallrodeno.com	303-575-6701	303-575-6706
	Gordon & Associates	WA, OR, AK, Northern counties ID	laura@gordonandassoc.com	360-566-1470	360-566-1478
	Southwestern Industrial Sales Co.	AZ/Nevada-SW	eduardop@sw-ind.com	480-458-5838	480-458-5843
	Southwest Valves	CA (Waterworks and Fire Protection)	d.burell@southwestvalve.com	559-261-2703	559-261-2711
NORTHEAST REGION	Urell, Inc.	MA/New England States	apollo@urell.com	617-923-9500	617-926-9414
	Conroy & Griese Sales, Inc.	NY-East/NJ-North	iezzi52@aol.com	856-663-4440	856-663-6644
	Layden Company	NY-Upstate/PA-East/DE/NJ-South	joejr@laydencompany.com	610-363-6657	877-529-3361
	Keith Engle & Associates	OEM accounts	keith.engle@verizon.net	610-827-9560	610-827-9561
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	Formation Sales	MN/ND/SD/WI-West	dean@formationsales.com	763-262-4700	763-262-4740
	Jim Benton & Associates	AL, FL Panhandle	jim@bentonandassoc.com	205-664-1221	205-664-1277
	J&J Midwest Sales	NE, IA, MO, KS	info@jjsls.com	815-806-0202	815-806-0303
	Marel Enterprises	New England, NY, DE, MD, VA, DC, parts of PA & WV	marelenterprise@gmail.com	631-271-1718	631-427-8558
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	D & M Mechanical Sales	Ontario/East	don@dandmsales.ca	613-384-7084	613-384-3407
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	Tom Beggs Agencies Ltd.	Manitoba/NW Ontario	tba@mts.net	204-953-1900	204-774-6915
	Task Controls, Inc.	Ontario	infotoronto@taskcontrols.com	416-291-3004	416-754-3481
	Agences J. Pierre Sylvain, Inc.	Quebec	agencespsylvain@golden.net	450-655-9588	450-641-2737
	Kern Industries, Ltd.	Alberta-North	kernind@telusplanet.net	780-451-2056	780-454-6687
	Kern Industries Calgary, Ltd.	Alberta-South	marty.yucytus@kernindustries.ca	403-730-7791	403-239-8179
	J. Levandier Sales, Inc.	Nova Scotia, New Brunswick, Prince Edward Island & Newfoundland	service@jlevandiersales.ca	506-858-1615	506-858-1084
	Key to the North Sales Agency, Inc.	Ontario-North	hmehes@keytothenorth.ca	705-524-6714	705-566-0148
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		Asia Pacific/India	jonathan.yap@conbraco.com	65-9626-9241	65-6753-0131
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