

# HYDRONIC & STEAM HEATING **PRODUCTS**



**FEED WATER REGULATORS**

**BALL VALVES**

**RELIEF VALVES**

**BACKFLOW PREVENTERS**

**IN-LINE CHECK VALVES**

**PIPELINE STRAINERS**

**BALANCING VALVES**

**PLUMBING SPECIALTIES**



**American Made Quality since 1928**







# 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, actuation and APOLLOXPRESS® products.

Conbraco's vertically integrated manufacturing ensures a consistency of production, testing, quality and availability. You can be assured that Conbraco flow control products will deliver long term reliability. All manufacturing facilities are ISO 9001:2008 certified.

The Conbraco line continues to expand with new products, designs and advanced materials to better serve the needs of our customers. Markets served include: chemical processing, pulp and paper, petroleum, residential and commercial plumbing and heating, OEM, irrigation, water works, and fire protection.



**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 this product shall contain no more than 0.25% lead by weighted average. Complies with CA AB1953, VT Act 193, MD HB372, LA HB471 and Federal Public Law 111-380. ANSI 3rd party approved and listed.

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

Conbraco Industries offers a wide range of Apollo® products for potable and non-potable applications. When the use of lead free valves is required by code, specification or legislation, it is the sole responsibility of our customers to ensure that only lead free Apollo® products are installed in systems intended for potable water service. Further information related to our product offering and the federal Reduction of Lead In Drinking Water Act is available at [www.apollovalves.com/lead\\_free](http://www.apollovalves.com/lead_free), or by contacting Conbraco Customer Service.

# HYDRONIC & STEAM HEATING PRODUCTS

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### HYDRONIC HEATING PRODUCTS

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| FF      | 35         | Feed Water Pressure Regulator .....               | 6  |
| FFB     | 35-BF      | Combination Backflow Preventer & PRV .....        | 6  |
| 58A     | 58A        | Balancing Valve .....                             | 6  |
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| FCT     | 35-403     | Multi-Orifice Control Valve .....                 | 7  |
| FC      | 35FC       | Flow Check Valve .....                            | 7  |
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### RELATED PRODUCTS

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| YBS       | 59-300    | Bronze Sweat End "Y" Strainer .....                      | 24    |
| YCT       | YCT       | Cast Iron Threaded Y-Strainer .....                      | 24    |
| 70-100    | 70-100    | Ball Valve .....   | 25    |
| 70-200    | 70-200    | Solder End Ball Valve .....                              | 25    |
| 77F       | 77F       | Full Port Threaded Brass Ball Valve .....                | 26    |
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### MISCELLANEOUS

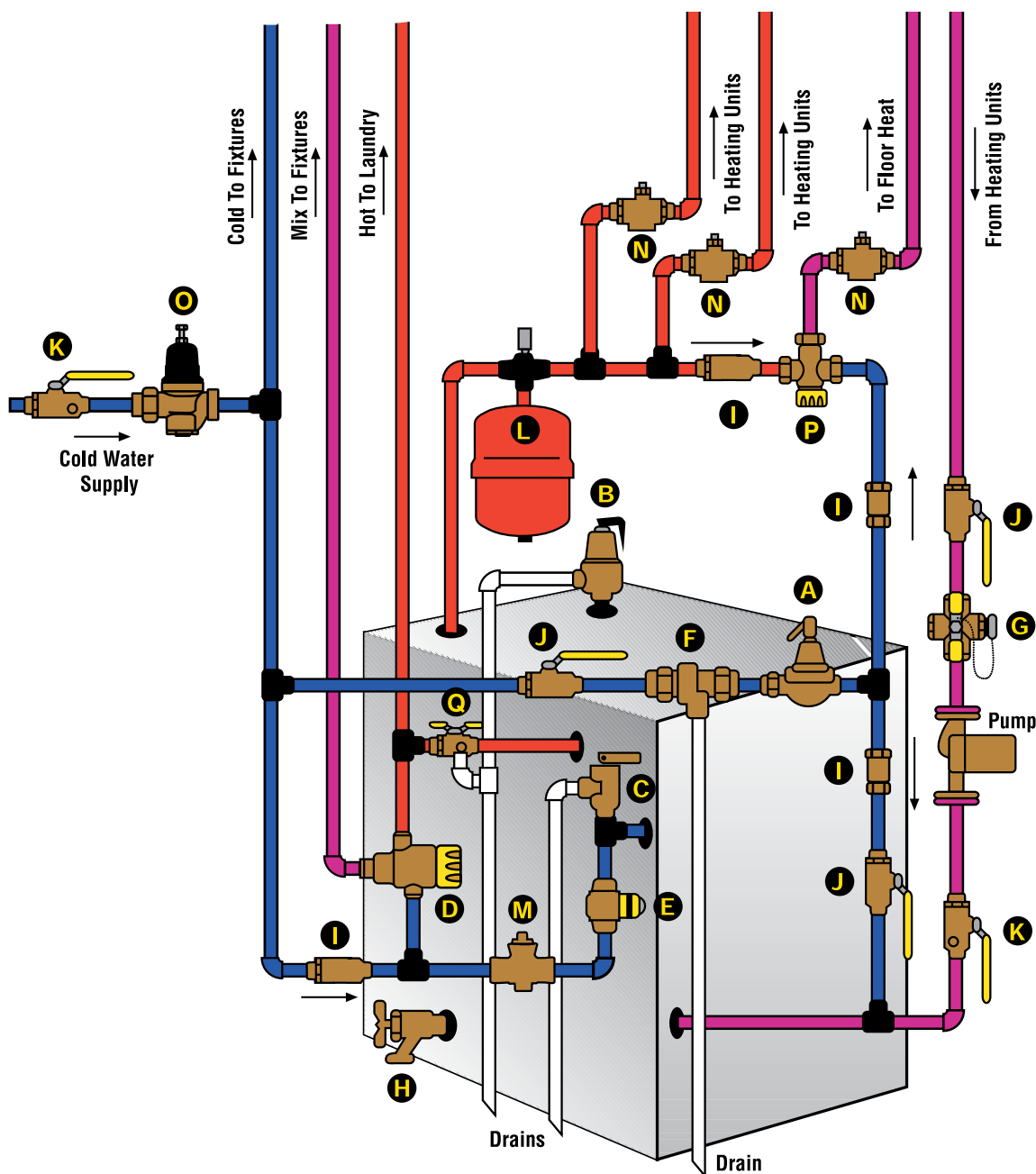
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for additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

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# HYDRONIC & STEAM HEATING PRODUCTS



- A Bronze Body Feed Water Regulator** – 35-703-01 (FFS12)
- B ASME Section IV Water Boiler Safety Relief Valve**  
– 10-102-05 (RVW10F)
- C Pressure Relief Valve (Tankless Coil)** – 17-401-04 (RVW1712150)
- D Thermostatic Mixing Valve** – 34A-200(MVA)
- E Flow Control Valve (Tankless Coil)** – 35-403-01 (FCT12)
- F Backflow Preventer** – 40-4A3-3AM (DCAP12)
- G Purge/Balancing Valve** – 78-668-01 (PBSS34)
- H Boiler Drain Valve** – 31-202-04 (BD9034)

- I Bronze Check Valve** – 61 Series (CVB)
- J Apollo® Ball Valve** – 70 Series
- K Apollo® Ball Valve – Stop and Drain** 95-204-01
- L Hydronic Expansion Tank** – 16-XT (EXT)
- M Balancing Valve** – 58-004-01 (BAV34)
- N All Bronze Hydronic Flow Check** – 35-FC Series (FC)
- O Bronze Body Water Pressure Reducing Valve** – 36E Series (PRE)
- P Hot Water Tempering Valve** – 34 Series (TV)
- Q Thermal Expansion Control Valve** – 78 RV Series (EXV)

# HYDRONIC & STEAM HEATING PRODUCTS

## Water Pressure Reducing Valves

### MODEL PRE

### LIGHT DUTY RESIDENTIAL & COMMERCIAL APPLICATION



Designed for light duty residential and commercial applications to protect water supplies from excessive pressure. Excellent flow performance at low pressure drop. The dezincification resistant bronze body and dielectric polymer cage provide maximum corrosion resistance. Designed for easy in-line servicing with simple cartridge removal. They meet ASSE 1003 and CSA B356 standards. They are listed with IAPMO and the city of Los Angeles.

#### FEATURES

- Balanced piston design
- Sealed cage for vault installations
- Built-in thermal expansion by-pass
- Integral stainless steel strainer
- Modular seat disc and strainer cartridge
- Control pressure ranges: 15-75 psi and 75-150 psi
- NPT, Solder, PEX, CPVC and Press and Push connections
- Maximum supply pressure: 400 psig
- Working temperature range: 33°F-180°F
- 100% manufactured in USA
- Lead Free option (36ELF)



### MODEL NUMBER MATRIX

| PRE                        | X | X                      | X         | X            |                |
|----------------------------|---|------------------------|-----------|--------------|----------------|
| UNION                      |   | PRESSURE SETTING (ADJ) | SIZE      | CONNECTION   | LEAD FREE      |
| Blank = Single Union x NPT |   | Blank = 15-75 psig     | 12 = 1/2" | Blank = FNPT | LF = Lead Free |
| D = Double Union           |   | H = 75-125 psig        | 34 = 3/4" | S = Solder   |                |
| T = No Union               |   |                        | 1 = 1"    | C = CPVC     |                |
|                            |   |                        |           | P = Push     |                |
|                            |   |                        |           | X = PEX      |                |
|                            |   |                        |           | PR = Press   |                |

### PART NUMBER MATRIX

| 36E               |       |                  |          |              |                 |                 |
|-------------------|-------|------------------|----------|--------------|-----------------|-----------------|
| 36ELF -           | 1     | X                | X        | X            | X               | X               |
|                   | STYLE | UNION            | SIZE     | OPTION       | PRESSURE        | CONNECTION      |
| 36E = Standard    |       | 0 = No Union NPT | 3 = 1/2" | 0 = Standard | 1 = 15-75 psig  | T = FNPT Thread |
| 36ELF = Lead Free |       | 1 = Single Union | 4 = 3/4" | B = Bronze   | 3 = 75-150 psig | S = Solder      |
|                   |       | 2 = Double Union | 5 = 1"   | Cap          |                 | C = CPVC        |
|                   |       |                  |          |              |                 | P = Push        |
|                   |       |                  |          |              |                 | X = PEX         |
|                   |       |                  |          |              |                 | PR = Press      |



# HYDRONIC & STEAM HEATING PRODUCTS

## Hydronic Heating Specialties

### MODEL FF



### ALL BRONZE FEED WATER PRESSURE REGULATORS

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

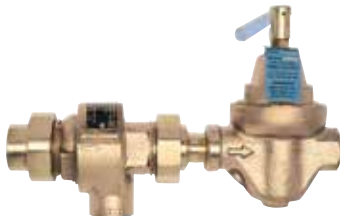
#### FEATURES

- No cage screws to rust
- Individually set at 15 psig - Adjustable 10 to 25 psig
- Temperatures to 210°F
- Heavy pattern bronze body and spring cover
- High capacity
- SS strainer, in-line, standard
- Choice of inlet connections

| Model Number | Part Number | Size (in.)            | Height (in.) | Length (in.) | Wt./100 (lbs.) |
|--------------|-------------|-----------------------|--------------|--------------|----------------|
| FF12         | 35-503-01   | 1/2 Union Threaded    | 5.25         | 4.31         | 255            |
| FFT12        | 35-603-01   | 1/2 Threaded          | 5.25         | 3.50         | 225            |
| FFS12        | 35-703-01   | 1/2 Solder Union      | 5.25         | 3.18         | 232            |
| FFPR12       | 35-803-01   | 1/2 Press Union x NPT | 5.25         | 4.53         | 232            |



### MODEL FFB



### ALL BRONZE COMBINATION DCAP BACKFLOW PREVENTER AND FEED WATER REGULATORS

Positive protection against backflow when supply pressure falls below system pressure. Assembly combines FWR feedwater regulator and DCAP dual check assembly backflow preventer.

#### FEATURES

- Purge lever/fast fill feature
- Designed for continuous pressure, hot or cold water service
- Built-in strainer
- Max pressure 175 psig
- Max temp 210°F
- Series 40-400 Backflow device is ASSE and CSA listed

| Model Number | Part Number  | Size (in.)             | Height (in.) | Length (in.) | Wt./100 (lbs.) |
|--------------|--------------|------------------------|--------------|--------------|----------------|
| FFB12        | 35-6A3-BF    | 1/2 Union NPT x NPT    | 5.25         | 8.50         | 450            |
| FFBS12       | 35-6H3-BF    | 1/2 Solder Union x NPT | 5.25         | 8.50         | 440            |
| FFB12C       | 35-6A3-BFC*  | 1/2 Union NPT x NPT    | 5.25         | 8.50         | 450            |
| FFBS12C      | 35-6H3-BFC*  | 1/2 Solder Union x NPT | 5.25         | 8.50         | 440            |
| FFBPR12      | 35-6A3-BF-PR | 1/2 Press Union x NPT  | 5.25         | 9.17         | 450            |



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



### MODEL 58A



### BALANCING VALVES

Apollo Model 58A balance provide two position hydronic circuit isolation capability and multi-turn throttling adjustment required for proportional balancing of hydronic systems. The valve has a unique needle valve adjustment, with integrated digital readout. Available in NPT, Solder and XPress connections.

#### FEATURES

- DZR Brass body
- P/T plugs
- Compatible with all flow meters
- Easy adjustment and setpoint indicator
- Reversible lever
- Isolated flow shut-off does not affect adjustments
- Connection options include: Thread (-T), Solder (-S), Press (-PR)

| Series Number | Size (in.) | Connection      | C <sub>v</sub> | Wt. (lbs.) |
|---------------|------------|-----------------|----------------|------------|
| 58A103 T      | 1/2        | NPT/SWEAT/PRESS | 1.79           | 1.1        |
| 58A104 T      | 3/4        | NPT/SWEAT/PRESS | 4.51           | 1.4        |
| 58A105 T      | 1          | NPT/SWEAT/PRESS | 8.18           | 1.8        |
| 58A106 T      | 1-1/4      | NPT/SWEAT/PRESS | 13.89          | 3.3        |
| 58A107 T      | 1-1/2      | NPT/SWEAT/PRESS | 23.9           | 4.3        |
| 58A108 T      | 2          | NPT/SWEAT/PRESS | 33.77          | 6.0        |

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# HYDRONIC & STEAM HEATING PRODUCTS

## Hydronic Heating Specialties

### MODEL 58B



### BALANCING VALVES

Apollo Model 58B balance valves proportionally balance hydronic systems. Flow measurement is achieved through an integrated venturi flow meter affixed to an Apollo LD-141 ductile iron butterfly valve. Available in Flanged Connections 2-1/2" – 12".

#### FEATURES

- P/T plugs
- Compatible with All Flow Meters
- Easy Adjustment and Setpoint Indicator
- Compatible with ANSI 125# & 150# Flanges
- Memory Stop feature
- Conforms to MSS SP-67 & API 609
- Meets performance requirements of AWWA C-504

| Series Number | Size (in.) | Connection | Cv    | Wt. (lbs.) |
|---------------|------------|------------|-------|------------|
| 58B109F       | 2-1/2      | FLANGED    | 194.5 | 57         |
| 58B100F       | 3          | FLANGED    | 194.5 | 63         |
| 58B10AF       | 4          | FLANGED    | 415   | 81         |
| 58B10BF       | 5          | FLANGED    | 585   | 92         |
| 58B10CF       | 6          | FLANGED    | 1170  | 107        |
| 58B10EF       | 8          | FLANGED    | 2240  | 156        |
| 58B10GF       | 10         | FLANGED    | 2921  | 200        |
| 58B10HF       | 12         | FLANGED    | 3977  | 250        |

### MODEL FCT



### 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

| Model Number | Part Number | Size (in.) | Height (in.) | Length (in.) | Wt./100 (lbs.) |
|--------------|-------------|------------|--------------|--------------|----------------|
| FCT12        | 35-403-01   | 1/2 Solder | 2.11         | 2.00         | 42.8           |

### MODEL FC



### 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
- Sweat, thread or press connections 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

| Model Number | Part Number | Size (in.) | Connection | Wt./100 (lbs.) |
|--------------|-------------|------------|------------|----------------|
| FC34         | 35-FC4-01   | 3/4        | NPT        | 233            |
| FC1          | 35-FC5-01   | 1          | NPT        | 261            |
| FC114        | 35-FC6-01   | 1-1/4      | NPT        | 502            |
| FC112        | 35-FC7-01   | 1-1/2      | NPT        | 867            |
| FC2          | 35-FC8-01   | 2          | NPT        | 1220           |
| FCS34        | 35-FC4-02   | 3/4        | Sweat      | 112            |
| FCS1         | 35-FC5-02   | 1          | Sweat      | 155            |
| FCPR34       | 35FC401PR   | 3/4        | Press      | 254            |
| FCPR1        | 35FC501PR   | 1          | Press      | 296            |



# HYDRONIC HEATING PRODUCTS

## Hydronic Heating Specialties

### MODEL BAV



### BALANCING VALVES

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

| Model Number | Part Number | Size (in.) | Cv | Wt./100 (lbs.) |
|--------------|-------------|------------|----|----------------|
| BAV12        | 58-003-01   | 1/2 Solder | 4  | 30.0           |
| BAV34        | 58-004-01   | 3/4 Solder | 14 | 53.4           |

### MODEL PBSS



### BRONZE PURGE, BALANCE & 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
- Zinc plated steel tee handle w/ vinyl grips
- 600 Psig CWP in open position
- Solder x Solder x Hose Connections

| Model Number | Part Number | Size (in.) | Wt./100 (lbs.) |
|--------------|-------------|------------|----------------|
| PBSS34       | 78-668-01   | 3/4        | 206            |
| PBSS1        | 78-668-02   | 1          | 359            |
|              | 78-671-01*  | 3/4        | 198            |

\* Available with screwdriver slotted stainless steel stem.

### 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, hotels/motels, commercial laundries.
- 1 year warranty
- Made in USA

| 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   | 14.0            | 8.5              | 1 NPT      | 20.00 | 15.75 | 24.0           |



# HYDRONIC HEATING PRODUCTS

## Dual Check With Atmospheric Port

### MODEL DCAP

### DUAL CHECK WITH ATMOSPHERIC PORT BACKFLOW PREVENTER



Protects residential and commercial water supply lines from back-siphonage or back-pressure of non-potable substances. Suitable for hot or cold water service. Low head loss.

#### FEATURES

- Approved by **ASSE & CSA**
- Maximum working pressure: 175 psig
- Independently acting check valves
- Sizes 1/2" and 3/4"
- Corrosion resistant
- Economical
- Durable
- Easy to install, maintain and repair
- Operating temperature: 33°F to 210°F
- Designed, manufactured, assembled and tested in South Carolina, USA

#### PART NUMBER MATRIX

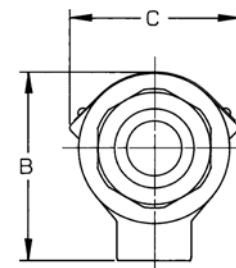
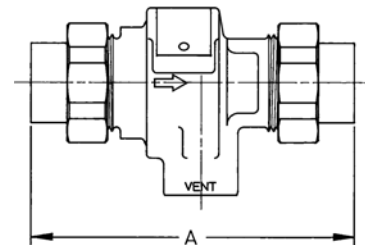
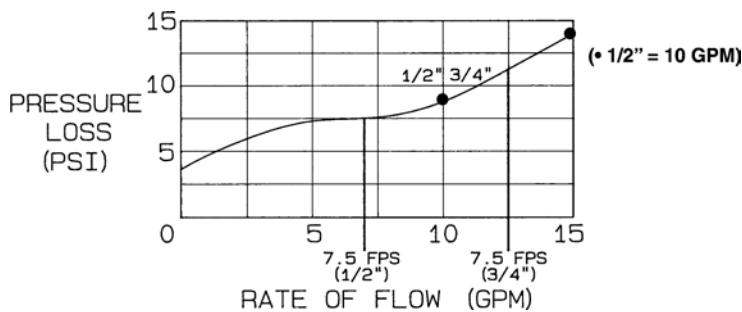
| 40 [X]                            | 4 X  | X - X                 | X  | M   | X |
|-----------------------------------|--|-----------------------|--|---|---|
|                                   | UNION INLET CONNECTION                                       | INLET AND OUTLET SIZE | UNION OUTLET CONNECTION  | OPTION  |   |
| 40 = Standard<br>40LF = Lead Free | A = FNPT<br>H = Solder joint<br>2 = Female BSPP<br>P = Press | 3 = 1/2"<br>4 = 3/4"  | A = FNPT<br>B = MNPT<br>F = Female BSPP<br>H = Solder joint<br>P = Press | C = Canadian<br>(discharge port not threaded) |   |

#### MODEL NUMBER MATRIX

| DCAP [X]   | X  | X                           |
|--|--|-----------------------------|
| INLET CONNECTION   | OUTLET CONNECTION  | INLET AND OUTLET SIZE (IN.) |
| F – FNPT<br>S – Solder joint<br>B – Female BSPP<br>P – Press (1/2" only) | F – FNPT<br>M – MNPT<br>S – Female BSPP<br>B – Solder joint<br>P – Press (1/2" only) | 12 = 1/2"<br>34 = 3/4"      |

#### FLOW CURVES

(\*) Rated flow as determined by USC's FCCC&HR and ASSE design performance standards.



| Dimensions (in.)<br>Size (in.) | Weights (lbs.)<br>1/2, 3/4 |
|--------------------------------|----------------------------|
| A                              | 5.00                       |
| B                              | 2.94                       |
| C                              | 2.62                       |
| Unit Weight                    | 1.90                       |

# HYDRONIC HEATING PRODUCTS

## Reduced Pressure Principle Devices

### MODEL RP 4A

### 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 testcocks are mounted at the top of the unit to assure easy access during repair and maintenance when unit is installed in tight places.

#### 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
- Threaded testcock protectors
- Internal sensing passage
- ASSE 1013 (other approvals pending)
- CSA B64.4
- Lead-Free option
- UL Classified (less shut-offs)
- USC FCCHR \*
- Standard with Apollo® full port ball valves with stainless steel handles
- Corrosion resistant
- Maximum working pressure 175 psig
- Operating temperature range 33°F-180°F
- Horizontal installation approvals on 1/2" through 2"
- Designed, manufactured, assembled and tested in South Carolina, USA
- 5 year, domestic warranty

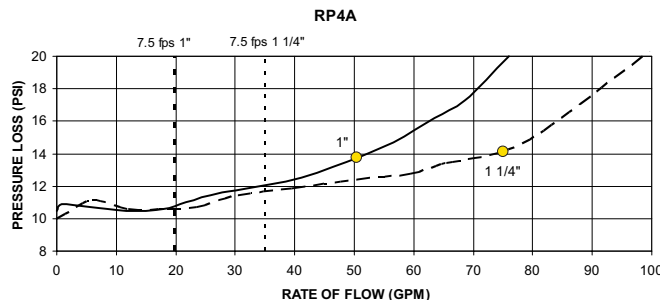
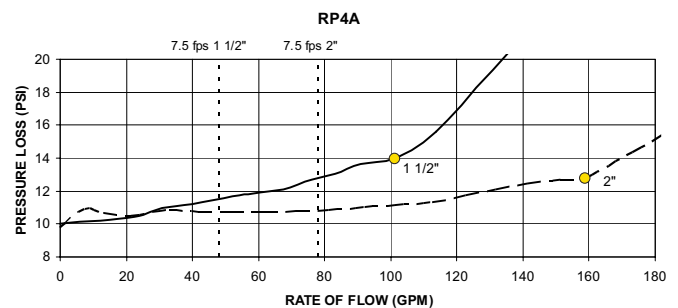
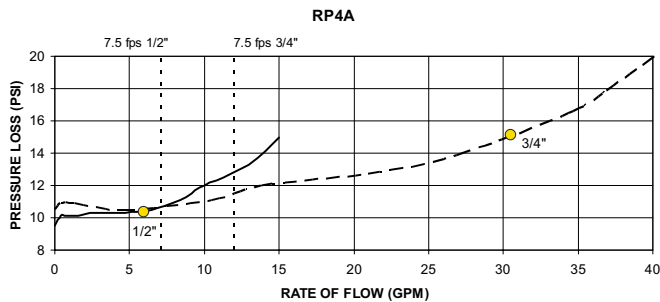
\* Contact factory for approval details

### PART NUMBER MATRIX

| 4A [X]                            | 2 X  | X  | T X   | X   |
|-----------------------------------|--|--|---|---|
|                                   | Y-STRAINER   | SIZE   | SHUT-OFF VALVES   | OPTIONS (CAN BE COMBINED)   |
| 4A = Standard<br>4ALF = Lead Free | 0 = Standard<br>1 = With Y-Strainer<br>(Shipped loose) | 3 = 1/2"<br>4 = 3/4"<br>5 = 1"<br>6 = 1-1/4"<br>7 = 1-1/2"<br>8 = 2" | 1 = Less ball valves<br>2 = w/ball valves (Standard)<br>4 = w/union ball valves | F = SAE threaded test cocks (standard 1/2, 3/4", 1")<br>L = Lever handle (3/4" & 1" only)<br>LL = Locking lever handles (1-1/4", 1-1/2", 2")*<br>LT = Locking tee handles (3/4" - 1")<br>PR = Press<br>P = Push |

### FLOW CURVES

(\*) Rated flow as determined by USC's FCCC&HR and ASSE design performance standards.

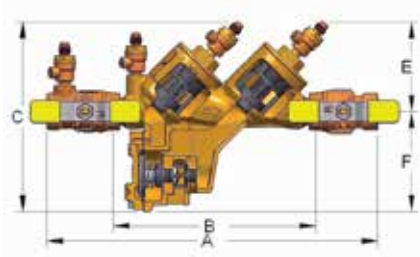


# HYDRONIC HEATING PRODUCTS

## Reduced Pressure Principle Devices

### MODEL RP 4A (CONT'D)

### REDUCED PRESSURE PRINCIPLE



| Dimensions                       |                            |                              |                            |                              |                         |                            |                               |                               |                               |                               |                         |                             |
|----------------------------------|----------------------------|------------------------------|----------------------------|------------------------------|-------------------------|----------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------|-----------------------------|
| Model No.<br>Factory No.<br>Size | RP4A12<br>4A 203 T<br>1/2" | RP4A12<br>4A 203 T<br>15 mm. | RP4A34<br>4A 204 T<br>3/4" | RP4A34<br>4A 204 T<br>20 mm. | RP4A1<br>4A 205 T<br>1" | RP4A1<br>4A 205 T<br>25mm. | RP4A114<br>4A 206 T<br>1-1/4" | RP4A114<br>4A 206 T<br>32 mm. | RP4A112<br>4A 207 T<br>1-1/2" | RP4A112<br>4A 207 T<br>40 mm. | RP4A2<br>4A 208 T<br>2" | RP4A2<br>4A 208 T<br>50 mm. |
| A                                | 11-1/8                     | 283                          | 12-3/4                     | 324                          | 14-5/8                  | 371                        | 18-5/8                        | 473                           | 18-3/4                        | 476                           | 21-1/8                  | 537                         |
| B                                | 7-3/8                      | 187                          | 8-1/2                      | 216                          | 9-1/2                   | 241                        | 11-3/4                        | 298                           | 11-5/8                        | 295                           | 12-3/4                  | 324                         |
| C                                | 7-1/8                      | 181                          | 7-3/8                      | 187                          | 8                       | 203                        | 9-7/8                         | 251                           | 9-7/8                         | 251                           | 11                      | 279                         |
| D                                | 2-7/8                      | 73                           | 3-1/8                      | 79                           | 3-1/4                   | 83                         | 5-1/8                         | 130                           | 5-1/8                         | 130                           | 5-7/8                   | 149                         |
| E                                | 3-1/4                      | 83                           | 3-1/2                      | 89                           | 4                       | 100                        | 4-1/2                         | 114                           | 4-1/2                         | 114                           | 5                       | 127                         |
| F                                | 3-7/8                      | 98                           | 3-7/8                      | 98                           | 4                       | 100                        | 5-3/8                         | 137                           | 5-3/8                         | 137                           | 6                       | 150                         |
| <b>WEIGHTS</b>                   | <b>lbs.</b>                | <b>kg.</b>                   | <b>lbs.</b>                | <b>kg.</b>                   | <b>lbs.</b>             | <b>kg.</b>                 | <b>lbs.</b>                   | <b>kg.</b>                    | <b>lbs.</b>                   | <b>kg.</b>                    | <b>lbs.</b>             | <b>kg.</b>                  |
| Net Wt.                          | 7.2                        | 3.3                          | 8.8                        | 4.0                          | 12.6                    | 5.7                        | 18.5                          | 8.4                           | 21.5                          | 9.8                           | 33.4                    | 15.1                        |

## Backflow Preventer Accessories

### MODEL AGD

### AIR GAP DRAIN



For installation with Conbraco's RP4A Series Reduced Pressure Principle backflow preventers.

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.

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

| Dimensions - in.(mm) – Weights - lbs.(kg) |                    |            |           |            |           |
|---|--------------------|------------|-----------|------------|-----------|
| R.P.<br>4A Series                         | AGD4A<br>Model No. | A          | B         | C          | Wt./Ea    |
| 1/2", 3/4", 1"                            | AGD4A1             | 6.5 (165)  | 3.4 (86)  | 1" NPT     | .10 (.05) |
| 1-1/4" - 1-1/2"                           | AGD4A112           | 8.5 (216)  | 4.1 (104) | 1-1/2" NPT | .20 (.10) |
| 2"  | AGD4A2             | 10.0 (254) | 5.3 (135) | 2" NPT     | .35 (.16) |



# HYDRONIC HEATING PRODUCTS

## ASME Section IV Hot Water Relief Valves

### MODEL RVW30



10-102



10-104



### MODEL NUMBER MATRIX

| RVW 10 [X]       | X                   | XX               |
|------------------|---------------------|------------------|
| INLET            | FINISH              | PRESSURE SETTING |
| Blank - 3/4" NPT | Blank - plain brass |                  |
| F - 3/4" FNPT    | C - satin chrome    |                  |
|                  | P - polished chrome |                  |

### 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.

#### FEATURES

- Brass or bronze body available with optional satin or polished chrome finish
- Maximum temperature service: 250°F
- Registered in all Canadian provinces and territories, CRN #0G8547.5C
- Stainless steel springs standard

| Model Number | Part Number | Size(in.) Inlet NPT | Size(in.) Outlet NPT | Certified Pressure Range psig | Height (in.) | Wt./100 (lbs.) | *Certified Capacity 30 psig |
|--------------|-------------|---------------------|----------------------|-------------------------------|--------------|----------------|-----------------------------|
| RVW10F       | 10102-05*   | 3/4 F               | 1 F                  | 20-60                         | 3.41         | 1.05           | 710,000                     |
| RVW10        | 10104-05*   | 3/4 M               | 1 F                  | 20-60                         | 3.82         | 1.18           | 710,000                     |

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

| SUFFIX KEY<br>Part Number<br>Pressure psig | Plain<br>Brass | Satin<br>Chrome | Polished<br>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 part number, i.e. 10-407-05: 3/4" FNPT x 3/4" FNPT at 30 psig with plain brass finish.

### MODEL RVW17



### 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 | Part Number | Size (in.)    | CSA Capacity Rating (BTU/Hr) | Wt./100 (lbs.) | *ASME Certified Discharge Capacities BTU/HR. |         |         |         |
|--------------|-------------|---------------|------------------------------|----------------|--|---------|---------|---------|
|              |             |               |                              |                | 75   | 100     | 125     | 150     |
| RVW1712      | 17-401      | 1/2 M x 1/2 F | 15,000                       | 57             | -  | -       | -       | -       |
| RVW1734      | 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 part number as follows: 75 psig - 01; 100 psig - 02; 125 psig - 03; 150 psig - 04; 160 psig - 05. For model numbers, add the desired pressure at the end of the number.

Example: RVW1712125 - 1/2" relief valve set at 125psig.

\* 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

# HYDRONIC HEATING PRODUCTS

## ASME Section IV Hot Water Relief Valves

### MODEL RVW60

### ASME SECTION IV HIGH CAPACITY RELIEF VALVES



High-capacity heating system 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. Protects against excessive water pressure due to failure of controls to regulate BTU input.

#### 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 Canadian provinces and territories CRN #OG8547.5C
- Made in USA
- 100% factory tested

| Model Number | Part Number | Size(in.) |            | Pressure Range psig | Wt./100 (lbs.) | Dimensions (in.) |       |      |
|--------------|-------------|-----------|------------|---------------------|----------------|------------------|-------|------|
|              |             | Inlet NPT | Outlet NPT |                     |                | A                | B     | C    |
| RVW6034      | 10-604      | 3/4F      | 3/4F       | 15-160              | 232            | 1.03             | 5.25  | 1.62 |
| RVW601       | 10-605      | 1F        | 1F         | 15-160              | 410            | 1.25             | 6.69  | 2.00 |
| RVW60114     | 10-606      | 1-1/4F    | 1-1/4F     | 15-160              | 795            | 1.25             | 8.37  | 2.47 |
| RVW60112     | 10-607      | 1-1/2F    | 1-1/2F     | 15-160              | 1100           | 2.00             | 10.75 | 2.75 |
| RVW602       | 10-608      | 2F        | 2F         | 15-160              | 2375           | 2.19             | 14.00 | 3.69 |
| RVW6134      | 10-614      | 3/4F      | 1 F        | 15-160              | 226            | 1.03             | 5.25  | 1.72 |
| RVW611       | 10-615      | 1 F       | 1-1/4F     | 15-160              | 390            | 1.25             | 6.69  | 2.00 |
| RVW61114     | 10-616      | 1-1/4F    | 1-1/2F     | 15-160              | 755            | 1.25             | 8.37  | 2.47 |
| RVW61112     | 10-617      | 1-1/2F    | 2F         | 15-160              | 1145           | 2.00             | 10.75 | 2.75 |
| RVW612       | 10-618      | 2F        | 2-1/2F     | 15-160              | 2315           | 2.19             | 14.00 | 3.66 |

| Pressure psig | Part No. Suffix | 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   |

#### STANDARD DISCHARGE PORT

| RVW 60 [X] | X |
|------------|---|
|------------|---|

| SIZE | PRESSURE SETTING |
|------|------------------|
|------|------------------|

Example: 10-608-05 = 2"x2" 10-600 set 30 psig

#### OVERSIZED DISCHARGE PORT (HIGH CAPACITY)

| RVW 61 [X] | X |
|------------|---|
|------------|---|

| SIZE | PRESSURE SETTING |
|------|------------------|
|------|------------------|

Example: 10-615-12 = 1"x1-1/4" 10-610 set 60 psig

| Pressure psig | Part No. Suffix | 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       |

Use Suffix No. to designate last two digits of Part No. for desired pressure. Other pressure settings available upon request.

BTU/HR at 10% overpressure National Board certified, ratings are 90% of actual.

# HYDRONIC HEATING PRODUCTS

## Mixing Valves "Point of Source"

### MODEL 34-200



### HYDRONIC TEMPERING VALVE

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

#### FEATURES

- Low temperature range 85°-120°F (-L1)
- High temperature range 120°-180°F (-01)
- Stainless steel spring
- Corrosion resistant bronze body
- Thermoplastic shuttle assembly
- Solder connections are standard
- In-line repairable
- Fingertip temperature control
- Made in USA - ARRA compliant

| Model Number | Size (in.) | Dimensions |       | Weight Lbs. |
|--------------|------------|------------|-------|-------------|
|              |            | Height     | Width |             |
| 34-203-01    | 1/2        | 4.45       | 3.75  | 1.4         |
| 34-204-01    | 3/4        | 4.47       | 4.00  | 1.46        |

### MODEL MVA



### THERMOSTATIC MIXING VALVES

34A Series are ASSE 1017 certified mixing valves designed for hot water distribution systems; or "point of source" applications. 34H Series 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 low or high temperature range options depending on application. Integrated check provides added protection of thermostat and cross connection control.

#### FEATURES

- Low 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
- Union fitting may be placed on any inlet or outlet
- Integrated inlet checks
- High flow capacity
- Broad temperature range
- Cold water failure protection
- CSA B125.01 (34A only)
- Calibrated max 120°F setpoint option avail.
- 20 mesh screens on both inlets

| Size (in.) | Connection         | Low Temp Model No. 85°-140° | Low Temp. Part No. 85°-140° | Cal. Max Temp 120° Model No. | Cal. Max Temp 120° Part No. | High Temp 120°-180° Model No. | High Temp* 120°-180° Part No. |
|------------|--------------------|-----------------------------|-----------------------------|------------------------------|-----------------------------|-------------------------------|-------------------------------|
| 1/2        | swt x swt x swt    | MVAS12                      | 34A-213-S                   | MVABS12                      | 34A-213-B5                  | MVAHS12                       | 34A-213-HS                    |
| 1/2        | fnp x fnp x fnp    | MVA12                       | 34A-213-T                   | MVAB12                       | 34A-213-BT                  | MVAH12                        | 34A-213-HT                    |
| 1/2        | CPVC x cpvc x cpvc | MVAC12                      | 34A-213-C                   | MVABC12                      | 34A-213-BC                  |                               |                               |
| 1/2        | pex x pex x pex    | MVAX12                      | 34A-213-X                   | MVABX12                      | 34A-213-BX                  | MVAHX12                       | 34A-213-HX                    |
| 1/2        | swt x swt x cpvc   | MVASC12                     | 34A-213-SC                  | MVABSC12                     | 34A-213-BSC                 |                               |                               |
| 1/2        | fnpt x fnpt x cpvc | MVATC12                     | 34A-213-TC                  | MVABTC12                     | 34A-213-BTC                 |                               |                               |
| 1/2        | pex x pex x cpvc   | MVAXC12                     | 34A-213-XC                  | MVABXC12                     | 34A-213-BXC                 |                               |                               |
| 1/2        | cpvc x cpvc x pex  | MVACX12                     | 34A-213-CX                  | MVABXC12                     | 34A-213-BCX                 |                               |                               |
| 1/2        | swt x swt x pex    |                             |                             |                              |                             | MVAHSX12                      | 34A-213-HSX                   |
| 1/2        | fnpt x fnpt x pex  |                             |                             |                              |                             | MVAHTX12                      | 34A-213-HTX                   |
| 3/4        | swt x swt x swt    | MVAS34                      | 34A-214-S                   | MVABS34                      | 34A-214-B5                  | MVAHS34                       | 34A-214-HS                    |
| 3/4        | fnp x fnp x fnp    | MVA34                       | 34A-214-T                   | MVAB34                       | 34A-214-BT                  | MVAH34                        | 34A-214-HT                    |
| 3/4        | CPVC x cpvc x cpvc | MVAC34                      | 34A-214-C                   | MVABC34                      | 34A-214-BC                  |                               |                               |
| 3/4        | pex x pex x pex    | MVAX34                      | 34A-214-X                   | MVABX34                      | 34A-214-BX                  | MVAHX34                       | 34A-214-HX                    |
| 3/4        | swt x swt x cpvc   | MVASC34                     | 34A-214-SC                  | MVABSC34                     | 34A-214-BSC                 |                               |                               |
| 3/4        | fnpt x fnpt x cpvc | MVATC34                     | 34A-214-TC                  | MVABTC34                     | 34A-214-BTC                 |                               |                               |
| 3/4        | pex x pex x cpvc   | MVAXC34                     | 34A-214-XC                  | MVABXC34                     | 34A-214-BXC                 |                               |                               |
| 3/4        | cpvc x cpvc x pex  | MVACX34                     | 34A-214-CX                  | MVABXC34                     | 34A-214-BCX                 |                               |                               |
| 3/4        | swt x swt x pex    |                             |                             |                              |                             | MVAHSX34                      | 34A-214-HSX                   |
| 3/4        | fnpt x fnpt x pex  |                             |                             |                              |                             | MVAHTX34                      | 34A-214-HTX                   |
| 1          | swt x swt x swt    | MVAS1                       | 34A-215-S                   | MVABS1                       | 34A-215-B5                  | MVAHS1                        | 34A-215-HS                    |
| 1          | fnp x fnp x fnp    | MVA1                        | 34A-215-T                   | MVAB1                        | 34A-215-BT                  | MVAH1                         | 34A-215-HT                    |
| 1          | CPVC x cpvc x cpvc | MVAC1                       | 34A-215-C                   | MVABC1                       | 34A-215-BC                  |                               |                               |
| 1          | pex x pex x pex    | MVAX1                       | 34A-215-X                   | MVABX1                       | 34A-215-BX                  | MVAHX1                        | 34A-215-HX                    |
| 1          | swt x swt x cpvc   | MVASC1                      | 34A-215-SC                  | MVABSC1                      | 34A-215-BSC                 |                               |                               |
| 1          | fnpt x fnpt x cpvc | MVATC1                      | 34A-215-TC                  | MVABTC1                      | 34A-215-BTC                 |                               |                               |
| 1          | pex x pex x cpvc   | MVAXC1                      | 34A-215-XC                  | MVABXC1                      | 34A-215-BXC                 |                               |                               |
| 1          | cpvc x cpvc x pex  | MVACX1                      | 34A-215-CX                  | MVABXC1                      | 34A-215-BCX                 |                               |                               |
| 1          | swt x swt x pex    |                             |                             |                              |                             | MVAHSX1                       | 34A-215-HSX                   |
| 1          | fnpt x fnpt x pex  |                             |                             |                              |                             | MVAHTX1                       | 34A-215-HTX                   |

\*High temperature versions are not ASSE 1017 certified.

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Customer Service (704) 841-6000





# HYDRONIC & STEAM HEATING PRODUCTS

## Mixing Valves "Point of Source"

### MODEL MVC



### 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"
- Low 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.) | Low Temp.*<br>Model No.<br>90°-140° F | Low Temp.*<br>Part No.<br>90°-140° F | High Temp.<br>Model No.<br>130°-180° F | High Temp.<br>Part No.<br>130°-180° F |
|------------|---------------------------------------|--------------------------------------|--|---------------------------------------|
| 3/4        | MVC34                                 | 34C-104-01                           | MVCH34                                 | 34C-104-H1                            |
| 1          | MVC1                                  | 34C-105-01                           | MVCH1                                  | 34C-105-H1                            |
| 1-1/4      | MVC114                                | 34C-106-01                           | MVCH114                                | 34C-106-H1                            |
| 1-1/2      | MVC112                                | 34C-107-01                           | MVCH112                                | 34C-107-H1                            |
| 2          | MVC2                                  | 34C-108-01                           | MVCH2                                  | 34C-108-H1                            |

\*ASSE 1017 Certified

## Plumbing Specialties

### MODEL CG



### COMPRESSION GAUGE COCKS

For draining expansion tanks, other liquid storage vessels.

#### FEATURES

- (CG) 26-100: rated up to 125 psig
- (CGH) 26-300: soft metal seat/stuffing box rated up to 250 psig
- (CGB) 26-310: stainless steel ball seat/stuffing box rated up to 250 psig

| Model Number | Size Number | Pipe Size (in.) | Wt./100 (lbs.) | Wheel Type  |
|--------------|-------------|-----------------|----------------|-------------|
| CG38         | 26-101-01   | 3/8             | 25.0           | ALUMINUM    |
| CGC38        | 26-102-01   | 3/8             | 30.0           | COMPOSITION |
| CG12         | 26-104-01   | 1/2             | 28.3           | ALUMINUM    |
| CGC12        | 26-105-01   | 1/2             | 30.0           | COMPOSITION |
| CGH38        | 26-301-01   | 3/8             | 39.0           | ALUMINUM    |
| CGHC38       | 26-302-01   | 3/8             | 40.0           | COMPOSITION |
| CGH12        | 26-304-01   | 1/2             | 40.0           | ALUMINUM    |
| CGHC12       | 26-305-01   | 1/2             | 44.0           | COMPOSITION |
| CGH34        | 26-307-01   | 3/4             | 49.0           | ALUMINUM    |
| CGHC34       | 26-308-01   | 3/4             | 51.7           | COMPOSITION |
| CGB38        | 26-311-01   | 3/8             | 39.0           | ALUMINUM    |
| CGB38        | 26-312-01   | 3/8             | 42.0           | COMPOSITION |
| CGB12        | 26-314-01   | 1/2             | 40.0           | ALUMINUM    |
| CGB12        | 26-315-01   | 1/2             | 44.0           | COMPOSITION |
| CGB34        | 26-317-01   | 3/4             | 50.0           | ALUMINUM    |
| CGBC34       | 26-318-01   | 3/4             | 50.0           | COMPOSITION |

\*26-100 series is not available with packing nut

Specify the following suffix for finish: 01 - Satin Brass; 28 - Polished Brass.

# HYDRONIC & STEAM HEATING PRODUCTS

## Plumbing Specialties

### 43-100 SERIES

#### STEAM GAUGE COCKS

Female fitting with male union for easy installation.

##### FEATURES

- Satin brass finish is standard
- Rated 100 WSP for standard bottom, 150 WSP for nut version



| Part Number | Description | Size (in.) | Wt./100 (lbs.) |
|-------------|-------------|------------|----------------|
| 43-101-01   | 100 SWP     | 1/4        | 45             |
| 43-101-04   | 150 SWP     | 1/4        | 45             |

### MODEL SGS

#### STEAM GAUGE SIPHON

The "pigtail" siphon is used to protect pressure gauges from excessive temperature. 1/4" heavy gauge seamless brass tubing.

##### FEATURES

- Chrome plate option
- Brass (-01)
- 180° loop or 90° loop
- Service rating: 250 psig saturated steam, 400 psig at 100°



27-401



27-402

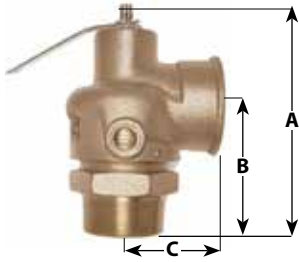
| Model Number | Part Number | Pipe Size (in.) | Wt./100 (lbs.) |
|--------------|-------------|-----------------|----------------|
| SGS180       | 27-401-01   | 1/4             | 44.0           |
| SGS90        | 27-402-01   | 1/4             | 40.0           |

# STEAM HEATING PRODUCTS

## ASME Section IV Low Pressure Steam Safety Valves

### MODEL RVS12

### LOW PRESSURE STEAM HEATING BOILER SAFETY VALVES



Use on medium and large commercial steam heating boilers. National Board capacity certified at 15 psig.

#### FEATURES

- PTFE coated O-Ring seat seal
- 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
- Lower pressure settings available

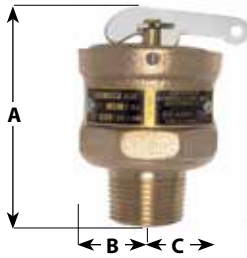
| Model Number | Part Number | Size(in.) Inlet NPT | Outlet NPT | Max. Pressure psig | Capacity* lbs./hr. | Wt./100 (lbs.) | Dimensions (in.) |      |      |
|--------------|-------------|---------------------|------------|--------------------|--------------------|----------------|------------------|------|------|
|              |             |                     |            |                    |                    |                | A                | B    | C    |
| RVS122       | 12-205-08   | 2                   | 2          | 15                 | 2500               | 514            | 6.00             | 3.75 | 2.62 |
| RVS12212     | 12-206-08   | 2-1/2               | 2-1/2      | 15                 | 3529               | 835            | 8.50             | 5.25 | 3.06 |
| RVS123       | 12-208-08   | 3                   | 3          | 15                 | 4100               | 1162           | 9.50             | 6.00 | 3.75 |

Note: For pressures other than 15 psi use the following suffix codes on the part number: 5 psig - 03; 6 psig - 04; 8 psig - 05; 10 psig - 06; 12 psig - 07; 15 psig - 08

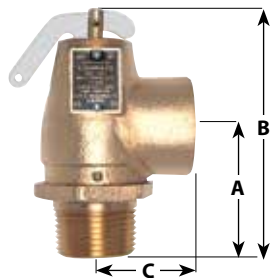
\*National Board Capacity Certified-(15 psi rating, 90% of actual capacity at 33% accumulation.)

### MODEL RVS13

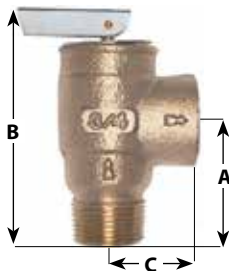
### LOW PRESSURE STEAM HEATING BOILER SAFETY VALVES



13-101



13-200



13-511



For use on small commercial steam heating boilers. National Board capacity-certified at 15 psig in accordance with ASME Section IV.

#### FEATURES

- Optional rough or polished chrome finish
- Flat seat, PTFE faced disc for positive seal
- Standard set pressure of 15 psig; capacities apply to valves set @ 15 psig
- Pressure setting below 15 available
- Positive drainage of condensate from seat area
- **RVS13T** is top outlet discharge
- Registered in all Canadian provinces and territories, CRN #0G8547.5C

| Model Number | Part Number | Size(in.) Inlet NPT | Outlet NPT | Max. Pressure psig | Capacity* lbs./hr. | Wt./100 (lbs.) | Dimensions (in.) |      |       |
|--------------|-------------|---------------------|------------|--------------------|--------------------|----------------|------------------|------|-------|
|              |             |                     |            |                    |                    |                | A                | B    | C     |
| RVS13T15     | 13-101-B15  | 3/4 M               | Top        | 15                 | 410                | 64             | 2.87             | 0.94 | 1.250 |
| RVS1334      | 13-211-B15  | 3/4 M               | 3/4 F      | 15                 | 475                | 107            | 1.81             | 3.69 | 1.437 |
| RVS131       | 13-202-B15  | 1 M                 | 1 F        | 15                 | 643                | 110            | 2.06             | 3.87 | 1.218 |
| RVS13114     | 13-213-B15  | 1-1/4 M             | 1-1/2 F    | 15                 | 1200               | 218            | 2.53             | 4.50 | 1.875 |
| RVS13112     | 13-214-B15  | 1-1/2 M             | 2 F        | 15                 | 1900               | 320            | 3.00             | 5.25 | 2.187 |
| RVS13L3415   | 13-511-B15  | 3/4 M               | 3/4 F      | 15                 | 407                | 62             | 1.69             | 3.25 | 1.187 |
| RVS13L34F15  | 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.)

Use key to designate last two digits of model number. Last two digits indicate pressure and finish.

#### Key to Suffix to Part Number

B = Plain  
P = Polished Chrome  
S = Satin Chrome

Two digit pressure setting from 05 PSIG to 15 PSIG.

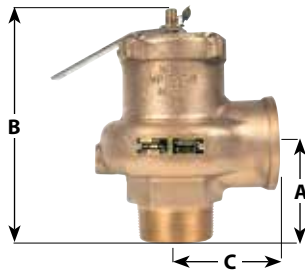


# STEAM HEATING PRODUCTS

## ASME Section IV Low Pressure Steam Safety Valves

### MODEL RVS14

### HIGH CAPACITY LOW PRESSURE STEAM BOILER SAFETY VALVES



National Board capacity-certified in accordance with ASME Section IV at 15 psig. For large commercial steam heating boilers where high capacity is critical. Capacities up to 6843 lbs./hr.

#### FEATURES

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

| Model Number | Part Number | Size (in.)    | *Capacity lbs./hr. | Wt./Each (lbs.) | Dimensions (in.) |      |      |
|--------------|-------------|---------------|--------------------|-----------------|------------------|------|------|
|              |             |               |                    |                 | A                | B    | C    |
| RVS14215     | 14-205-08   | 2 x 2         | 3150               | 8.4             | 3.00             | 7.12 | 3.12 |
| RVS1421215   | 14-206-08   | 2-1/2 x 2-1/2 | 4676               | 13.0            | 3.50             | 8.25 | 3.50 |
| RVS14315     | 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: To specify set pressure, use the following suffix codes on the part number: 5 psig - 03; 6 psig - 04; 8 psig - 05; 10 psig - 06; 12 psig - 07; 15 psig - 08 after the part number.

## Water Heater Products

### MODEL TP

### WATER HEATER T&P RELIEF VALVES



Automatic temperature and pressure 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, stainless steel spring
- Rated 210°F maximum
- CRN #0G0053.6C registered in all Canadian provinces and territories
- ASME capacity certified for 3/4" NPT only

| Model Number | Part Number | PSIG Set | Size (in.)    | Element Length (in.) | Wt./100 (lbs.) | CSA Capacity rating BTU/HR. |
|--------------|-------------|----------|---------------|----------------------|----------------|-----------------------------|
| TP112125     | 18C-401-27  | 125      | 1/2 M x 1/2 F | 1.5                  | 64.0           | 15,000                      |
| TP112        | 18C-401-28  | 150      | 1/2 M x 1/2 F | 1.5                  | 64.0           | 15,000                      |
| TP312125     | 18C-401-29  | 125      | 1/2 M x 1/2 F | 3                    | 64.0           | 15,000                      |
| TP312        | 18C-401-30  | 150      | 1/2 M x 1/2 F | 3                    | 64.0           | 15,000                      |
| TP134125     | 18C-402-27  | 125      | 3/4 M x 3/4 F | 1.5                  | 64.4           | 95,000                      |
| TP134        | 18C-402-28  | 150      | 3/4 M x 3/4 F | 1.5                  | 64.4           | 95,000                      |
| TP334125     | 18C-402-29  | 125      | 3/4 M x 3/4 F | 3                    | 64.4           | 105,000                     |
| TP334        | 18C-402-30  | 150      | 3/4 M x 3/4 F | 3                    | 64.4           | 105,000                     |
| TP834125     | 18C-402-36  | 125      | 3/4 M x 3/4 F | 8                    | 64.4           | 105,000                     |
| TP834        | 18C-402-37  | 150      | 3/4 M x 3/4 F | 8                    | 64.4           | 105,000                     |
| TP334175     | 18C-402-24  | 175      | 3/4 M x 3/4 F | 3                    | 64.4           | 105,000                     |
| TP334X125    | 18C-402X-38 | 125      | 3/4 M x 3/4 F | 3                    | 64.4           | 105,000                     |
| TP334X       | 18C-402X-39 | 150      | 3/4 M x 3/4 F | 3                    | 64.4           | 105,000                     |

# WATER HEATING PRODUCTS

## Water Heater Products

### MODEL EXV



### BRONZE WATER HEATER SHUT-OFF VALVES WITH THERMAL EXPANSION CONTROL VALVE

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

#### FEATURES

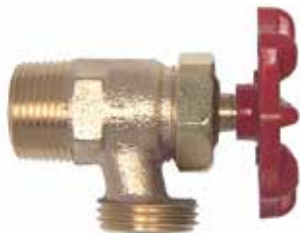
- Sweat, threaded and PEX connections available
- Corrosion-resistant all-bronze body
- Chrome-plated ball
- Stainless steel fasteners and springs
- Bubble-tight shut-off
- 210°F max
- Relief valve available with hose barb fitting, 1/2" pex fitting, compression fitting or 1/2" combination sweat/thread fitting which makes discharge piping assembly easy
- Expansion control valve taps into side of shut-off valve
- Listed with CSA B125.1 & B125.3
- Listed with IAPMO

#### PART NUMBER MATRIX

| 78               | -X          | -X           | -X                           | - RV |
|------------------|-------------|--------------|------------------------------|------|
| SERIES           | SIZE        | SET PRESSURE | RELIEF VALVE CONNECTION      |      |
| 78 = Standard    | 3 = 3/4 SWT | 0 = 125 psig | 4 = 3/8" Hose barb           |      |
| 78LF = Lead Free | 4 = 3/4 THD | 1 = 100 psig | 5 = 1/2" Pex                 |      |
|                  | 7 = 3/4 PEX | 2 = 80 psig  | 6 = 3/8" Compression fitting |      |
|                  |             |              | 7 = 1/2" NPT/SWT fitting     |      |

## Water Heater Drain Valves

### MODEL BD90



### 90° DRAIN VALVES

For deluxe water heaters and low pressure boilers.

#### FEATURES

- Pressure to 200 psig, temperatures to 250°F
- All cast bronze bodies
- Aluminum wheel handle
- 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

| Model Number | Part Number | Wt/100 (lbs.) | Shank Length (in.) | Inlet (in.)        |
|--------------|-------------|---------------|--------------------|--------------------|
| BD9034       | 31-202-04   | 43.00         | 5/8                | 3/4 MNPT           |
| BD90134      | 31-212-04   | 46.50         | 15/16              | 3/4 MNPT           |
| BD9012       | 31-501-04   | 31.00         | 5/8                | 1/2 MNPT/1/2 Sweat |

### MODEL BDQ



### APOLLO INTERNATIONAL™ BALL VALVE BIBB FAUCET

Features heavy pattern with large opening. Ideal for boiler and water heater drains, general liquid dispensing and drainage.

#### FEATURES

- Nickel plated finish; sizes 1/2" and 3/4"
- Pressure rating 200 psig liquid
- Maximum temperature 250°F

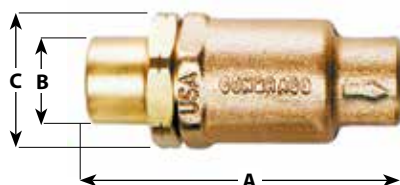
| Model Number | Part Number | Size (in.) | Inlet (in.)              | Outlet (in.)      | Wt./100 (lbs.) |
|--------------|-------------|------------|--------------------------|-------------------|----------------|
| BDQ12        | 35-301-03   | 1/2        | 1/2 swt/thread connector | 3/4-11.5 NHR hose | 38.4           |
| BDQ34        | 35-302-03   | 3/4        | 3/4 thread connector     | 3/4-11.5 NHR hose | 44.5           |



# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## In-Line Check Valves

### MODEL CVBES



### SOLDER END SOFT SEAT CHECK VALVES

All bronze with stainless steel springs and elastomeric seats for tighter shut-off. No radial alignment is needed. Exceptional resistance to corrosion.

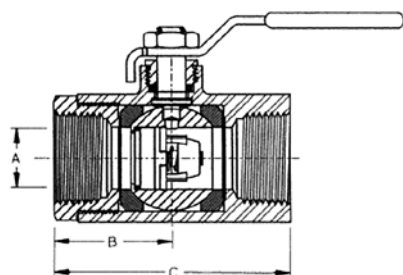
#### FEATURES

- 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
- Approximate opening pressure 1/2 psi
- Retainer is notched for easy identification
- Max Temperature 250°F
- Numerous options are available

| Model Number | Part Number | Size (in.) | Dimensions (in.) |      |      | Wt./100 (lbs.) |
|--------------|-------------|------------|------------------|------|------|----------------|
|              |             |            | A                | B    | C    |                |
| CVBES12      | 61-603-01   | 1/2        | 2.75             | 1.12 | 1.25 | 138            |
| CVBES34      | 61-604-01   | 3/4        | 3.68             | 1.20 | 1.62 | 175            |
| CVBES1       | 61-605-01   | 1          | 4.50             | 1.93 | 2.12 | 145            |
| CVBES114     | 61-606-01   | 1-1/4      | 6.11             | 2.13 | 2.38 | 330            |
| CVBES112     | 61-607-01   | 1-1/2      | 6.87             | 2.50 | 2.81 | 610            |
| CVBES2       | 61-608-01   | 2          | 7.46             | 3.38 | 3.75 | 1010           |

## Ball Valve With Integral Check

### 70-100-BC



### UNIDIRECTIONAL BALL VALVE WITH INTEGRAL CHECK

#### FEATURES

- Ideally suited for all water and air systems not to exceed 250 psig.
- This combination product offers a positive shut-off and a bubble-tight check capability where space savings is a must.
- Ideal for OEM use.
- FNPT threaded connections
- Lever handle standard
- Adjustable packing gland
- Rated 250 psig@ 200°F max

| Part Number | Size (in.) | Dimensions (in.) |       |       |       |       | Weight (lbs.) |
|-------------|------------|------------------|-------|-------|-------|-------|---------------|
|             |            | A                | B     | C     | D     | E     |               |
| 70-103-BC   | 1/2        | 0.420            | 1.110 | 2.220 | 1.800 | 3.870 | 0.64          |
| 70-104-BC   | 3/4        | 0.450            | 1.500 | 3.000 | 2.120 | 4.870 | 1.33          |
| 70-105-BC   | 1          | 0.590            | 1.680 | 3.370 | 2.250 | 4.870 | 1.77          |
| 70-106-BC   | 1-1/4      | 0.750            | 2.000 | 4.000 | 2.730 | 5.500 | 3.29          |
| 70-107-BC   | 1-1/2      | 1.020            | 2.140 | 4.310 | 3.090 | 8.000 | 4.63          |
| 70-108-BC   | 2          | 1.270            | 2.350 | 4.680 | 3.280 | 8.000 | 6.01          |

#### SUFFIX KEY

| Suffix | Option                 | Size (in.) |
|--------|------------------------|------------|
| 02     | Static Grounded        | -          |
| 04     | 2-1/4" Stem Extension  | 2-1/4      |
| 07     | Tee Handle             | -          |
| 08     | 90 degree Reverse Stem | -          |
| 10     | SS lever and Nut       | -          |
| 15     | Round Handle           | -          |
| 17     | Rough Chrome Plating   | -          |
| 27     | Latch Lock Lever       | -          |
| 32     | SS Tee Handle and Nut  | -          |
| 45     | Less Lever and Nut     | -          |



# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Gate, Globe & Check Valves

### 161S (125 SOLDER END) / 161T (125 NPT)



161S

161T

Meets MSS SP-80 standard  
ASTM B62 bronze materials  
MSS SP-139 lead free option (CWP only)

### CLASS 125 BRONZE DISC SWING CHECK

#### FEATURES

- Y-Pattern
- Metal Seat
- 200 CWP
- 125 SWP
- **Lead Free** option (NSF 61/NSF 372)

| 161S Part Number | 161T Part Number | Size (in.) | 161S Length | 161T Length | Height | 161S Wt./100 (lbs.) | 161T Wt./100 (lbs.) |
|------------------|------------------|------------|-------------|-------------|--------|---------------------|---------------------|
| —                | 61Y-191-01       | 1/4        | —           | 2.14        | 1.51   | —                   | 0.64                |
| —                | 61Y-192-01       | 3/8        | —           | 2.14        | 1.51   | —                   | 0.62                |
| 61Y-093-01       | 61Y-193-01       | 1/2        | 2.53        | 2.48        | 1.65   | 0.62                | 0.73                |
| 61Y-094-01       | 61Y-194-01       | 3/4        | 3.36        | 2.94        | 1.90   | 0.91                | 1.06                |
| 61Y-095-01       | 61Y-195-01       | 1          | 4.07        | 3.57        | 2.26   | 1.70                | 1.70                |
| 61Y-096-01       | 61Y-196-01       | 1-1/4      | 4.68        | 4.50        | 2.99   | 2.00                | 3.30                |
| 61Y-097-01       | 61Y-197-01       | 1-1/2      | 5.28        | 4.50        | 2.99   | 2.70                | 3.10                |
| 61Y-098-01       | 61Y-198-01       | 2          | 6.50        | 5.25        | 3.74   | 4.90                | 5.50                |
| 61Y-099-01       | 61Y-199-01       | 2-1/2      | 8.30        | 8.00        | 5.11   | 9.70                | 11.70               |
| 61Y-090-01       | 61Y-190-01       | 3          | 9.58        | 9.24        | 6.05   | 15.00               | 17.80               |

Height is measured from centerline to top of unit.

### 101S (125 SOLDER END) / 101T (125 NPT)



101S

101T

Meets MSS SP-80 standard  
ASTM B62 bronze materials  
MSS SP-139 lead free option (CWP only)

### CLASS 125 RISING STEM GATE VALVE

#### FEATURES

- Threaded Bonnet
- Solid Bronze Disc
- 200 CWP
- 125 SWP
- Max. Temp: 406°F
- **Lead Free** option (NSF 61/NSF 372)

| 101S Part Number | 101T Part Number | Size (in.) | 101S Length | 101T Length | Height | 101S Wt./100 (lbs.) | 101T Wt./100 (lbs.) |
|------------------|------------------|------------|-------------|-------------|--------|---------------------|---------------------|
| 30-001-01        | —                | 1/4        | 1.76        | —           | 4.57   | 0.80                | —                   |
| 30-002-01        | —                | 3/8        | 1.76        | —           | 4.51   | 0.77                | —                   |
| 30-003-01        | 30-083-01        | 1/2        | 2.03        | 1.88        | 4.85   | 1.00                | 1.00                |
| 30-004-01        | 30-084-01        | 3/4        | 2.07        | 2.43        | 5.71   | 1.30                | 1.30                |
| 30-005-01        | 30-085-01        | 1          | 2.45        | 2.96        | 6.71   | 2.16                | 2.20                |
| 30-006-01        | 30-086-01        | 1 1/4      | 2.63        | 3.14        | 8.10   | 3.20                | 3.20                |
| 30-007-01        | 30-087-01        | 1 1/2      | 2.88        | 3.44        | 9.08   | 4.36                | 4.40                |
| 30-008-01        | 30-088-01        | 2          | 3.06        | 4.11        | 11.28  | 7.01                | 7.00                |
| 30-009-01        | 30-089-01        | 2 1/2      | 4.13        | 4.79        | 14.58  | 13.79               | 13.80               |
| 30-000-01        | 30-080-01        | 3          | 4.48        | 5.43        | 19.07  | 17.70               | 17.70               |

Length is measured from end to end. Height is measured from centerline to top of wheel in full open position.

### 102S (125 SOLDER END) / 102T (125 NPT)



102S

102T

Meets MSS SP-80 standard  
ASTM B62 bronze materials  
MSS SP-139 lead free option (CWP only)

### CLASS 125 NON RISING STEM GATE VALVE

#### FEATURES

- Threaded Bonnet
- Solid Bronze Disc
- 200 CWP
- 125 SWP
- Max. Temp: 406°F
- **Lead Free** option (NSF 61/NSF 372)

| 102S Part Number | 102T Part Number | Size (in.) | 102S Length | 102T Length | Height | 102S Wt./100 (lbs.) | 102T Wt./100 (lbs.) |
|------------------|------------------|------------|-------------|-------------|--------|---------------------|---------------------|
| —                | 30-031-01        | 1/4        | —           | 1.76        | 3.29   | —                   | 0.74                |
| —                | 30-032-01        | 3/8        | —           | 1.76        | 3.29   | —                   | 0.71                |
| 30-043-01        | 30-033-01        | 1/2        | 1.88        | 2.03        | 3.56   | 0.85                | 0.85                |
| 30-044-01        | 30-034-01        | 3/4        | 2.43        | 2.07        | 4.05   | 1.19                | 1.19                |
| 30-045-01        | 30-035-01        | 1          | 2.96        | 2.45        | 4.55   | 1.98                | 1.98                |
| 30-046-01        | 30-036-01        | 1 1/4      | 3.14        | 2.63        | 5.14   | 2.80                | 2.80                |
| 30-047-01        | 30-037-01        | 1 1/2      | 3.44        | 2.88        | 6.02   | 3.95                | 3.95                |
| 30-048-01        | 30-038-01        | 2          | 4.11        | 3.06        | 7.09   | 5.88                | 5.88                |
| 30-049-01        | 30-039-01        | 2 1/2      | 4.79        | 4.13        | 9.11   | 12.19               | 12.19               |
| 30-040-01        | 30-030-01        | 3          | 5.43        | 4.48        | 12.61  | 16.84               | 16.84               |

Length is measured from end to end. Height is measured from centerline to top of wheel in full open position.

www.apollovalves.com

Customer Service (704) 841-6000

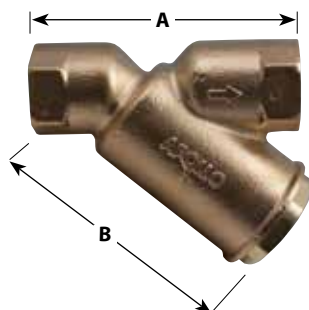


# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Pipeline Strainers

### MODEL YB

### BRONZE NPT "Y" STRAINERS



Rugged, dependable, protection against foreign particles. Corrosion-resistant bronze body and large area stainless steel screens. Operating pressures to 400 psig.

#### FEATURES

- Sizes: 1/8" to 4"
- Self-aligning screen makes cleaning easy
- Small sizes ideal for O.E.M. applications
- Rated 400 psig at 150°F CWP
- Working pressure (non-shock) 125 psig at 350°F steam
- Press connection: Max. pressure = 250 psi
- Press connection: Max. temperature = 250°F
- New 59-400 Series M x F
- Optional tapped caps available (less plug, suffix -02)
- Optional mesh screens available upon request
- Sizes 1/8" to 1/2" available as UL® recognized component
- Made in USA
- 100% factory pressure tested
- Lead Free option

| Model Number               | Std. Part Number | PRESS Part Number | Size (in.) | Dimensions (in.) |           |       | (Suf-fix-02) | Screen Area         |         |               |
|----------------------------|------------------|-------------------|------------|------------------|-----------|-------|--------------|---------------------|---------|---------------|
|                            |                  |                   |            | A                | A (PRESS) | B     |              | (in. <sup>2</sup> ) | Wt./100 | PRESS Wt./100 |
| YB18                       | 59-000-01        | —                 | 1/8        | 2.00             | —         | 1.25  | 1/8 NPT      | 1.38                | 44.5    | —             |
| YB14                       | 59-001-01        | —                 | 1/4        | 2.00             | —         | 1.25  | 1/8 NPT      | 1.38                | 42.5    | —             |
| YB38                       | 59-002-01        | —                 | 3/8        | 2.69             | —         | 2.00  | 1/4 NPT      | 3.19                | 78.6    | —             |
| YB12                       | 59-003-01        | 59-003-01PR       | 1/2        | 2.69             | 4.75      | 2.00  | 1/4 NPT      | 3.19                | 75.1    | 100.0         |
| YB34                       | 59-004-01        | 59-004-01PR       | 3/4        | 3.87             | 6.1       | 3.25  | 1/2 NPT      | 8.18                | 174.0   | 200.0         |
| YB1                        | 59-005-01        | 59-005-01PR       | 1          | 4.75             | 7.25      | 4.00  | 3/4 NPT      | 12.9                | 276.0   | 300.0         |
| YB114                      | 59-006-01        | 59-006-01PR       | 1-1/4      | 5.12             | 7.62      | 4.25  | 3/4 NPT      | 16.2                | 358.0   | 380.0         |
| YB112                      | 59-007-01        | 59-007-01PR       | 1-1/2      | 5.75             | 8.25      | 5.00  | 1 NPT        | 22.8                | 541.0   | 570.0         |
| YB2                        | 59-008-01        | 59-008-01PR       | 2          | 6.75             | 10.39     | 6.00  | 1-1/4 NPT    | 32.7                | 747.0   | 770.0         |
| YB212                      | 59-009-01        | —                 | 2-1/2      | 7.94             | —         | 5.87  | 1-1/4 NPT    | 47.3                | 1130.0  | —             |
| YB3                        | 59-010-01        | —                 | 3          | 9.12             | —         | 6.87  | 1-1/2 NPT    | 64.8                | 1580.0  | —             |
| YB204                      | 59-011-01        | —                 | 4          | 11.94            | —         | 10.12 | 1-1/2 NPT    | 115.0               | 3070.0  | —             |
| YBM34                      | 59-404-01        | —                 | 3/4 M x F  | 4.87             | —         | 3.25  | 1/2 NPT      | 8.18                | 174     | —             |
| YBM1                       | 59-405-01        | —                 | 1 M x F    | 5.12             | —         | 4.00  | 3/4 NPT      | 12.9                | 276     | —             |
| <b>UL Listed Strainers</b> |                  |                   |            |                  |           |       |              |                     |         |               |
| YBUL18                     | 59-UL0-01        | —                 | 1/8        | 2.00             | —         | 1.25  | 1/8 NPT      | 1.38                | 44.5    | —             |
| YBUL14                     | 59-UL1-01        | —                 | 1/4        | 2.00             | —         | 1.75  | 1/8 NPT      | 1.38                | 42.5    | —             |
| YBUL38                     | 59-UL2-01        | —                 | 3/8        | 2.69             | —         | 2.00  | 1/4 NPT      | 3.19                | 78.6    | —             |
| YBUL12                     | 59-UL3-01        | —                 | 1/2        | 2.69             | —         | 2.00  | 1/4 NPT      | 3.19                | 75.1    | —             |

Note: Dimensions shown are subject to change.

| Model No.* Suffix | Part No. Suffix | Option                          |
|-------------------|-----------------|---------------------------------|
| Blank             | -01             | Solid Cap (Standard)            |
| N                 | -02             | Tapped Cap                      |
| K                 | -P2             | Tapped Cap with Plug            |
| NBV               | -06             | Strainer/Ball Valve Combination |
| 20                | -E1             | 20 MESH                         |
| 40                | -A1             | 40 MESH                         |
| 60                | -B1             | 60 MESH                         |
| 80                | -C1             | 80 MESH                         |
| 100               | -H1             | 100 MESH                        |

\* When using model numbers, enter suffix before size.

Example: YSBN112 = 1-1/2" strainer with tapped cap.

Note: Options can be combined on some sizes - Contact customer service.

| Standard Screen Size (in.) | Screen Opening   |
|----------------------------|------------------|
| 1/8 to 1/2                 | 50 Mesh          |
| 3/4 to 3                   | 20 Mesh          |
| 4                          | .125 Perforation |

59-005-01PR

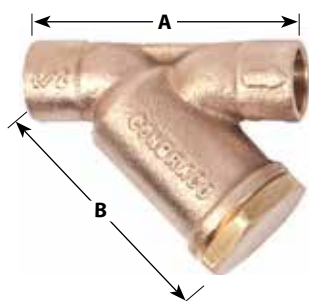


# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Pipeline Strainers

### MODEL YBS

### BRONZE SWEAT END "Y" STRAINERS



#### FEATURES

- Working pressure (non-shock)  
400 CWP - Cold Working Pressure
- Sizes: 1/2" to 2"
- Optional tapped caps available (suffix -02)

| Standard Screen Size (in.) | Screen Opening            |
|----------------------------|---------------------------|
| 1/2                        | 50 Mesh                   |
| 3/4 to 2                   | 20 Mesh                   |
| Part No. Suffix            | Option                    |
| -01                        | Solid cap (standard)      |
| -02                        | Tapped Cap                |
| -P2                        | Tapped cap with pipe plug |

| Model Number | Part Number | Size (in.) | Dimensions (in.) |      | Tapped Cap (Suffix-02) | Wt./100 | Screen Area (in. <sup>2</sup> ) |
|--------------|-------------|------------|------------------|------|------------------------|---------|---------------------------------|
|              |             |            | A                | B    |                        |         |                                 |
| YBS12        | 59-303-01   | 1/2        | 2.75             | 1.81 | 1/4 NPT                | 50      | 3.19                            |
| YBKS12       | 59-303-P2   | 1/2        |                  |      | 1/4 NPT                | 50      |                                 |
| YBS34        | 59-304-01   | 3/4        | 4.00             | 2.87 | 1/2 NPT                | 121     | 8.18                            |
| YB20KS34     | 59-304-P2   | 3/4        |                  |      | 1/2 NPT                | 121     |                                 |
| YBS1         | 59-305-01   | 1          | 4.75             | 3.56 | 3/4 NPT                | 189     | 12.90                           |
| YB20KS1      | 59-305-P2   | 1          |                  |      | 3/4 NPT                | 189     |                                 |
| YBS114       | 59-306-01   | 1-1/4      | 5.25             | 3.94 | 3/4 NPT                | 280     | 16.20                           |
| YB20KS114    | 59-306-P2   | 1-1/4      |                  |      | 3/4 NPT                | 280     |                                 |
| YBS112       | 59-307-01   | 1-1/2      | 6.00             | 4.62 | 1 NPT                  | 426     | 22.80                           |
| YBKS112      | 59-307-P2   | 1-1/2      |                  |      | 1 NPT                  | 426     |                                 |
| YBS2         | 59-308-01   | 2          | 7.25             | 5.00 | 1-1/4 NPT              | 627     | 32.70                           |
| YBKS2        | 59-308-P2   | 2          |                  |      | 1-1/4 NPT              | 627     |                                 |

### MODEL YCT APOLLO® INTERNATIONAL

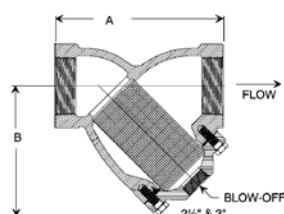
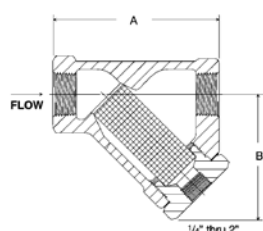
### CAST IRON THREADED Y-STRAINER

Install these hardworking strainers upstream in almost any application to protect valves, regulators, solenoids and meters from rust, dirt and pipe scale.

#### FEATURES

- 20 mesh screens standard to 2"; .045 perf  
2-1/2" to 3", others available
- Screen cap is tapped to install flush valve or plug
- Sizes: 1/4" to 3"
- Working Pressure (non-shock)  
250 psig @ 406°F. Steam  
400 psig @ 150°F. Water, Oil, Gas

| Part Number | Size (in.) | Dimensions (in.) |      | Blow-off NPT | Wt. (lbs.) | Screen Area (in. <sup>2</sup> ) |
|-------------|------------|------------------|------|--------------|------------|---------------------------------|
|             |            | A                | B    |              |            |                                 |
| 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                            |

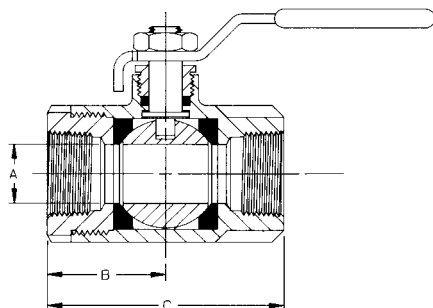


# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## General Purpose Standard Port Valves

### 70-100 SERIES

### STANDARD PORT THREADED BALL VALVE



The Apollo 70 series is the most widely used bronze ball valve in the industry. It features a blowout-proof stem, RPTFE seats and stuffing box ring, adjustable packing gland and chromium-plated ball.

#### FEATURES

- Rated 600 psig non-shock
- 150 psig for saturated steam
- US Made
- 100% factory tested
- Wide range of seat and handle options

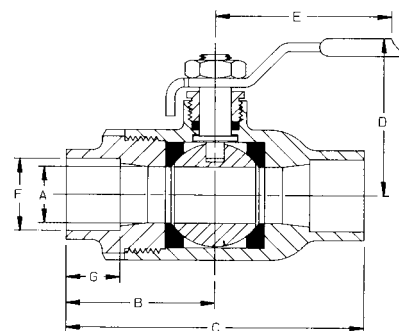
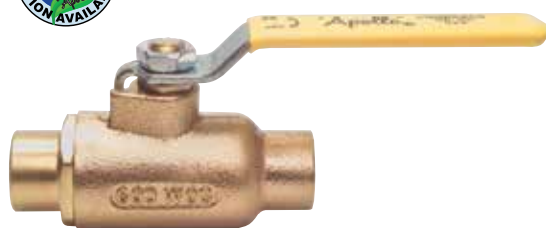
| Part Number | Size (in.) | Dimensions* (in.) |      |      | Carton Qty. |
|-------------|------------|-------------------|------|------|-------------|
|             |            | A                 | B    | C    |             |
| 70-101-01   | 1/4        | 0.37              | 1.03 | 2.06 | 10          |
| 70-102-01   | 3/8        | 0.37              | 1.03 | 2.06 | 10          |
| 70-103-01   | 1/2        | 0.50              | 1.12 | 2.25 | 10          |
| 70-104-01   | 3/4        | 0.68              | 1.50 | 3.00 | 10          |
| 70-105-01   | 1          | 0.87              | 1.68 | 3.37 | 10          |
| 70-106-01   | 1-1/4      | 1.00              | 2.00 | 4.00 | 5           |
| 70-107-01   | 1-1/2      | 1.25              | 2.18 | 4.37 | 5           |
| 70-108-01   | 2          | 1.50              | 2.34 | 4.68 | 2           |
| 70-109-01A  | 2-1/2      | 2.00              | 3.12 | 6.25 | 1           |
| 70-100-01   | 3          | 2.50              | 3.37 | 6.75 | 1           |
| 70-10A-01   | 4          | 3.12              | 3.68 | 7.37 | 1           |

\*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".

### 70-200 SERIES

### SOLDER END BALL VALVE



Reliable ball valves designed for soft-soldering into lines without the need for disassembly. Tested valve installs without disturbing seats and seals. Soldering temperature: 500°F or less.

#### FEATURES

- Vacuum service to 29" Hg
- Adjustable packing gland
- US Made
- RPTFE seats and stuffing box ring
- Rated 600 psig CWP, non-shock
- 150 psi for saturated steam
- 100% factory tested
- Wide range of seat and handle options

| Part 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 |

\*Based on 70-200-01 – Dimensions may vary with options.

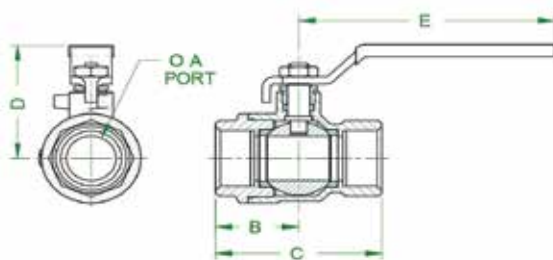


# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## International Economy Valves

### 77F SERIES

### FULL PORT THREADED BRASS BALL VALVE



The Apollo 77F-100 Series is a full port forged brass ball valve suitable for a wide range of plumbing and heating applications. These NPT threaded, 2-piece valves combine reliable operation with maximum economy. Valves include most pertinent agency approvals. Proudly Made in the USA.

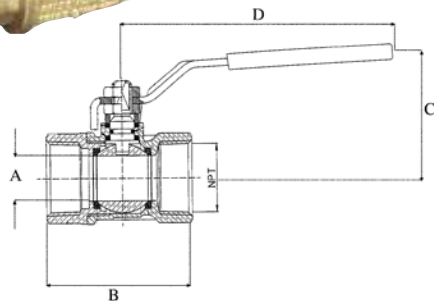
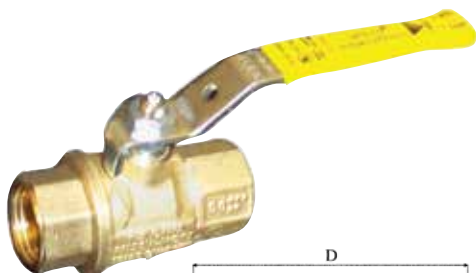
#### FEATURES

- Heavy Pattern Forged Design
- Full-Port Flow
- Superior RPTFE Seats and Packing
- Adjustable Stem Packing
- Blow-Out Proof Stem
- Corrosion Resistant Materials
- Silicone Free Assembly
- 100% Factory Tested
- Made in USA, ARRA Compliant
- Gas Approvals
- UL/FM Fire Protection
- Multi-Agency Approvals

| Part Number | Size (in.) | Dimensions (in.) |      |      |      |      | Wt. |
|-------------|------------|------------------|------|------|------|------|-----|
|             |            | A                | B    | C    | D    | E    |     |
| 77F10101    | 1/4        | 0.38             | 0.81 | 1.62 | 1.61 | 2.85 | 0.3 |
| 77F10201    | 3/8        | 0.38             | 0.85 | 1.70 | 1.61 | 2.85 | 0.3 |
| 77F10301    | 1/2        | 0.50             | 1.14 | 2.25 | 1.66 | 2.85 | 0.5 |
| 77F10401    | 3/4        | 0.75             | 1.26 | 2.51 | 1.91 | 3.86 | 0.8 |
| 77F10501    | 1          | 1.00             | 1.60 | 3.20 | 2.11 | 3.86 | 1.3 |
| 77F10601    | 1-1/4      | 1.25             | 1.73 | 3.46 | 2.44 | 4.75 | 2.1 |
| 77F10701    | 1-1/2      | 1.50             | 2.00 | 4.00 | 2.91 | 5.42 | 3.2 |
| 77F10801    | 2          | 2.00             | 2.37 | 4.47 | 3.69 | 7.77 | 5.6 |
| 77F20301    | 1/2        | 0.50             | 1.37 | 2.37 | 1.66 | 2.85 | 0.4 |
| 77F20401    | 3/4        | 0.75             | 1.72 | 3.13 | 1.91 | 3.86 | 0.9 |
| 77F20501    | 1          | 1.00             | 2.01 | 3.73 | 2.11 | 3.86 | 1.3 |
| 77F20601    | 1-1/4      | 1.25             | 2.07 | 3.97 | 2.44 | 4.75 | 2.0 |
| 77F20701    | 1-1/2      | 1.50             | 2.42 | 4.69 | 2.91 | 5.42 | 3.3 |
| 77F20801    | 2          | 2.00             | 2.91 | 5.82 | 3.69 | 7.77 | 5.6 |

### 64 SERIES

### APOLLO® INTERNATIONAL FULL-PORT BRASS BALL VALVES



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

#### FEATURES

- Sizes 2-1/2", 3" and 4"
- Threaded (-100) and solder end (-200) connections
- Pressure rated to 600 psig CWP
- 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

| Optional Kits<br>Valve Size (in.) | Stem<br>Extensions | Balancing<br>Stops | Locking<br>Handles | Lever<br>Handles |
|-----------------------------------|--------------------|--------------------|--------------------|------------------|
| 2-1/2 and 3                       | 78-1505-01         | 78-1510-01         | -                  | 78-1650-01       |
| 4                                 | -                  | -                  | -                  | 78-1651-01       |

#### 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
- NSF61
- RoHS Compliant



| 64-100<br>Part No. | Size (in.) | Dimensions (in.) |      |      |       |      |
|--------------------|------------|------------------|------|------|-------|------|
|                    |            | A                | B    | C    | D     | Cv   |
| 64-109-01          | 2-1/2 NPT  | 2.56             | 5.59 | 5.02 | 8.07  | 629  |
| 64-100-01          | 3 NPT      | 3.15             | 6.45 | 5.45 | 8.07  | 1018 |
| 64-10A-01          | 4 NPT      | 3.94             | 7.60 | 6.34 | 10.23 | 1622 |

| 64-200<br>Part No. | Size (in.) | Dimensions (in.) |       |      |       |      |
|--------------------|------------|------------------|-------|------|-------|------|
|                    |            | A                | B     | C    | D     | Cv"  |
| 64-209-01          | 2-1/2      | 2.56             | 6.93  | 5.02 | 8.07  | 629  |
| 64-200-01          | 3          | 3.15             | 8.09  | 5.45 | 8.07  | 1018 |
| 64-20A-01          | 4          | 4.13             | 10.25 | 6.34 | 10.23 | 1622 |

Note: Specify -07 suffix for "T" handle, ie. 64-105-07. Available with threaded models only in 1/4"-1" sizes.  
\* Lever handle available on 1/2" - 4"

www.apollovalves.com

Customer Service (704) 841-6000



# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## APOLLOXPRESS® Full Port Bronze Ball Valve

### 77W, 77W-HC & 77V SERIES

### APOLLOXPRESS® FULL PORT BRONZE BALL VALVE

#### FEATURES

- Full Port
- Adjustable Stem Packing
- Fast, Easy, Economical Installation
- Blow-Out Proof Stem
- Corrosion Resistant Materials
- Made in the USA
- 100% Factory Tested
- Silicone Free
- Ridgid® Press Tool Compatible
- Lead Free option
- Leak Before Press® Technology
- Approvals:
  - MSS SP-110 Ball Valves
  - ANSI/NSF 61-8 Potable Water
  - Directive 2002/95/CE (RoHS) Compliant
- Performance Rating:
  - Maximum operating pressure 250 psi CWP
  - Body design pressure rating 600 psi CWP
  - Temperature range 0°F -250°F

### 77W-HC APOLLO-PRESS® HOSE CAP AND CHAIN BALL VALVE

The Apollo-Press™ Press x Hose Cap & Chain ball valves are 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. The 77W-HC is ideal for most plumbing and heating systems, including potable water.

#### APPROVED APPLICATIONS

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

| Suffix | Option                         |
|--------|--------------------------------|
| -01    | Standard                       |
| -04    | 2-1/4" Stem Extension          |
| -10    | Stainless Steel Handle and Nut |
| -A3    | Plain Grip                     |

(77W-140-HC SERIES) Stainless Steel Ball and Stem

### 77V PRESS END FORGED BRASS BALL VALVE

The APOLLOXPRESS® 77V Series press ball valve is ideal for installation in most plumbing and heating systems. Now with Leak Before Press® feature and 250 psig maximum working pressure.

| Part Number | Size (in.)* | Dimensions (in.) |        |       | Weight (lbs.) |
|-------------|-------------|------------------|--------|-------|---------------|
|             |             | A                | B      | C     |               |
| 77W-103-01  | 1/2         | 1.775            | 5.281  | 1.636 | 0.660         |
| 77W-104-01  | 3/4         | 1.972            | 6.555  | 1.800 | 1.060         |
| 77W-105-01  | 1           | 2.173            | 6.710  | 2.110 | 1.730         |
| 77W-106-01  | 1-1/4       | 3.090            | 9.410  | 2.740 | 4.420         |
| 77W-107-01  | 1-1/2       | 3.050            | 9.810  | 2.680 | 4.760         |
| 77W-108-01  | 2           | 3.435            | 10.510 | 3.815 | 6.440         |

| Part Number | Size (in.)* | Dimensions (in.) |      |      | Weight (lbs.) |
|-------------|-------------|------------------|------|------|---------------|
|             |             | A                | B    | C    |               |
| 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          |

| Part Number | Size (in.)* | Dimensions (in.) |      |      |      |      | Weight (lbs.) |
|-------------|-------------|------------------|------|------|------|------|---------------|
|             |             | A                | B    | C    | D    | E    |               |
| 77V10301    | 1/2"        | 0.50             | 1.57 | 2.89 | 1.66 | 2.85 | 0.4           |
| 77V10401    | 3/4"        | 0.75             | 1.90 | 3.63 | 1.91 | 3.86 | 0.9           |
| 77V10501    | 1"          | 1.00             | 2.20 | 3.88 | 2.11 | 3.86 | 1.2           |
| 77V10601    | 1-1/4"      | 1.25             | 2.23 | 4.22 | 2.44 | 4.75 | 2.3           |
| 77V10701    | 1-1/2"      | 1.50             | 2.84 | 5.45 | 2.91 | 5.42 | 3.4           |
| 77V10801    | 2"          | 2.00             | 3.40 | 6.57 | 3.69 | 7.77 | 6.0           |



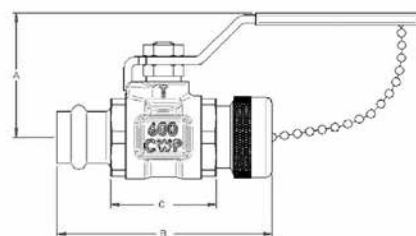
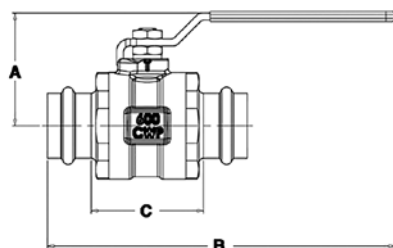
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77W-HC



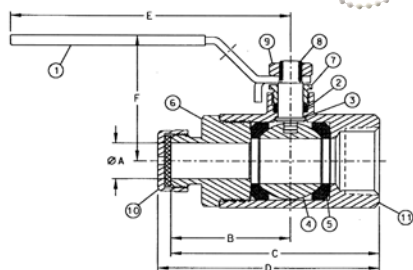
77V



# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Specialty Valves

### 70-HC SERIES



### CAP AND 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

| 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 |

### 70-10X-92 SERIES



### BALL VALVE WITH STANDARD BALANCING STOP PLATE

Designed for hydronic applications, this valve comes with a simple stop plate that fits over its standard lever handle. Also available with tee or round handles. Features a chromium-plated ball, RPTFE seats and stuffing box ring, a blowout-proof stem design and adjustable packing gland. Size: 1/4" to 3".

#### FEATURES

- Rated 600 psig CWP, non-shock
- MSS-SP110
- CRN: 0C10908.5C
- 150 psig for saturated steam

### 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. Size: 1/4" to 3".

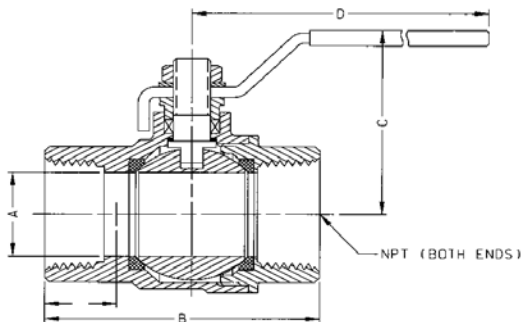
#### FEATURES

- Chromium-plated ball
- RPTFE seats
- Stuffing box ring
- Blowout-proof stem design
- Adjustable packing gland
- Contact customer service for exact handle dimensions
- Pressure Ratings:  
600 psig CWP Cold, Non-Shock  
150 psig Saturated Steam

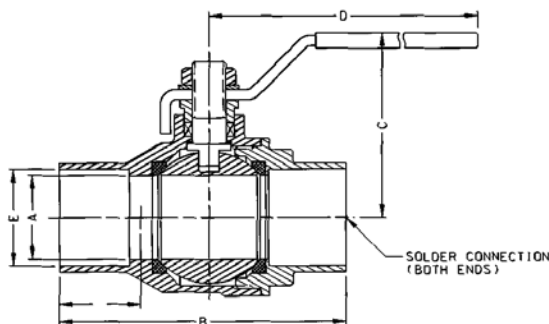
# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Two-Piece Full-Port Valves

### 94A SERIES



94A-100



94A-200

### 94A ECONOMY FULL-PORT SERIES BALL VALVES

94A Series Ball Valves from Apollo® International are built for reliability with minimum investment. These full-port ball valves with forged brass body are UL listed and CSA approved. Series 94A ball valves in sizes 1/4" through 4" offer a rated working pressure of 600 psig CWP.

#### FEATURES

- Adjustable stem packing nut
- MSS - SP110
- Silicone free

| Part No.     | Size (in.) | NPT   |       |       |       |       | Wt. (Lb.) | Carton QTY. |
|--------------|------------|-------|-------|-------|-------|-------|-----------|-------------|
|              |            | A     | B     | C     | D     | E     |           |             |
| 94A-101-01   | 1/4        | 0.395 | 1.746 | 1.278 | 3.543 | -     | 0.33      | 20          |
| 94A-102-01   | 3/8        | 0.407 | 1.756 | 1.278 | 3.543 | -     | 0.30      | 20          |
| 94A-103-01   | 1/2        | 0.583 | 2.047 | 1.921 | 3.543 | -     | 0.44      | 50          |
| 94A-104-01   | 3/4        | 0.748 | 2.362 | 2.087 | 3.780 | -     | 0.66      | 30          |
| 94A-105-01   | 1"         | 0.945 | 2.756 | 2.559 | 4.528 | -     | 1.10      | 20          |
| 94A-106-01   | 1-1/4      | 1.260 | 3.307 | 2.953 | 4.528 | -     | 1.57      | 12          |
| 94A-107-01   | 1-1/2      | 1.575 | 3.661 | 3.346 | 5.512 | -     | 2.40      | 9           |
| 94A-108-01   | 2          | 1.969 | 4.181 | 3.681 | 5.512 | -     | 3.37      | 6           |
| 94A-109-01   | 2-1/2      | 2.520 | 5.378 | 4.764 | 8.661 | -     | 7.60      | 3           |
| 94A-100-01   | 3          | 2.953 | 6.039 | 5.079 | 8.661 | -     | 9.36      | 2           |
| 94A-10A-01   | 4          | 3.945 | 7.386 | 5.868 | 9.606 | -     | 16.86     | 2           |
| <b>Sweat</b> |            |       |       |       |       |       |           |             |
| 94A-203-01   | 1/2        | 0.583 | 2.047 | 1.839 | 3.543 | 0.630 | 0.38      | 50          |
| 94A-204-01   | 3/4        | 0.748 | 2.748 | 1.996 | 3.780 | 0.878 | 0.64      | 30          |
| 94A-205-01   | 1          | 0.945 | 3.228 | 2.441 | 4.528 | 1.130 | 0.99      | 20          |
| 94A-206-01   | 1-1/4      | 1.260 | 3.819 | 2.854 | 4.528 | 1.378 | 1.40      | 12          |
| 94A-207-01   | 1-1/2      | 1.575 | 4.425 | 3.169 | 5.512 | 1.630 | 2.17      | 9           |
| 94A-208-01   | 2          | 1.969 | 5.315 | 3.449 | 5.512 | 2.130 | 2.97      | 6           |
| 94A-209-01   | 2-1/2      | 2.520 | 6.263 | 4.764 | 8.661 | 2.630 | 6.36      | 3           |
| 94A-200-01   | 3          | 2.953 | 7.150 | 5.079 | 8.661 | 3.130 | 8.32      | 2           |
| 94A-20A-01   | 4          | 3.945 | 7.386 | 5.868 | 9.606 | 4.130 | 15.78     | 2           |

| CSA listed (File # 226234)<br>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)<br>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 and NSF certified                                    |  |

### 95A SERIES



### APOLLO INTERNATIONAL FULL-PORT BRASS 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
- Competitive design

| 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          |



# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Purge & Drain Valves

### 95-200 SERIES

### APOLLO® BRONZE FULL-PORT SOLDER END STOP AND WASTE VALVE

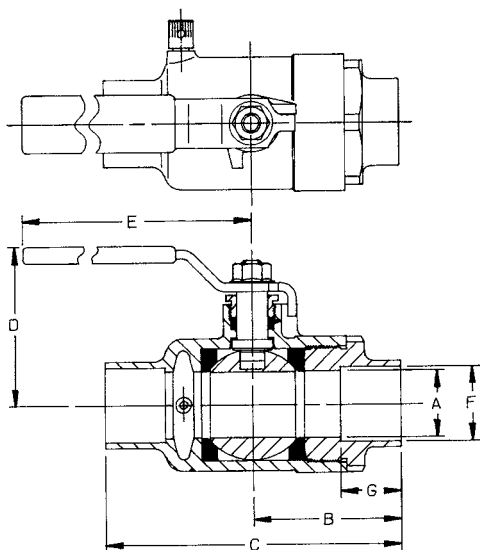


Perfect choice for hydronic and water systems where system draining is required. Replaces globe style stop and waste valves. Designed to be soft soldered into lines with no disassembly.

#### FEATURES

- Rated 400 psig CWP, non-shock
- Drain cap designed to prevent fluid loss
- Made in the USA
- Adjustable packing gland
- Many options available
- 100% factory tested

| Part Number | Size (in.) | Dimensions (in.) |      |      |      |      |      |      |
|-------------|------------|------------------|------|------|------|------|------|------|
|             |            | A                | B    | C    | D    | E    | F    | G    |
| 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 |
| 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 |      |      |



# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Gas/Fuel Shut-Off Valves

### GBVB SERIES

### CSA GAS SHUT-OFF BALL VALVES



GBVB Single Tap

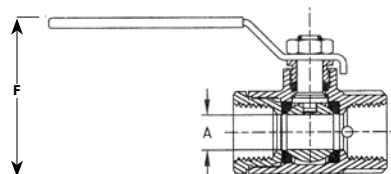
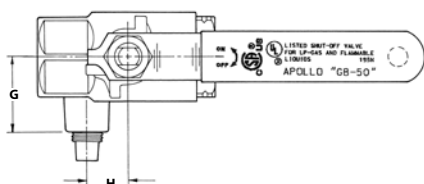


GBVBD Dual Tap

Designed for indoor "main burner" applications, with cast-in single or dual pilot tap for faster, simpler installation. Fully complies with ASME B16.44, ANSI Z21.15, CGA9.1, and CR91-002 standards. ASTM B584 bronze body, chrome-plated ball, brass stem, retainer and gland screws for corrosion resistance.

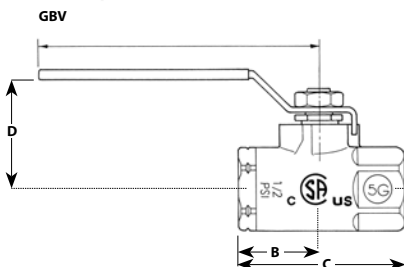
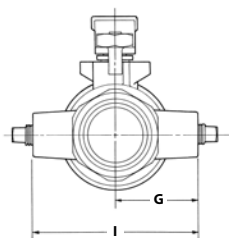
#### FEATURES

- For natural gas, manufactured and mixed gas, liquefied petroleum gases and LP gas-air mixtures
- Rated pressures of 1/2 and 5 psig
- CSA/ANSI Z21.15
- UL125, UL842
- High capacity
- Comes standard with a reversible plated steel lever handle. Options include a die-cast zinc "wing" handle and "tee" handle
- Standard connection is FNPT x FNPT
- ANSI Z21.15, CGA9.1
- ASME B16.44
- UL Guide YRBX
- UL Guide MHKZ
- UL Guide YRPV
- UL Guide YSDT



| Model No.<br>Single<br>Tapped | Part No.<br>Single<br>Tapped | Size<br>(in.) | Tapping | Dimensions(in.) |      |      |      |      |      |      |      |      | Capacity<br>BTU/hr. |
|-------------------------------|------------------------------|---------------|---------|-----------------|------|------|------|------|------|------|------|------|---------------------|
|                               |                              |               |         | A               | B    | C    | D    | E    | F    | G    | H    | I    |                     |
| GBVB12                        | 50GB301                      | 1/2           | 1/8     | 0.50            | 1.11 | 2.25 | 1.68 | 3.85 | 2.27 | 1.00 | 0.53 | -    | 693,000             |
| GBVB34                        | 50GB401                      | 3/4           | 1/8     | 0.75            | 1.26 | 2.67 | 1.93 | 3.85 | 2.72 | 1.12 | 0.75 | 2.24 | 1,258,000           |
| GBVB1                         | 50GB501                      | 1             | 1/8     | 1.00            | 1.65 | 3.42 | 2.19 | 4.78 | 3.18 | 1.53 | 0.94 | 3.06 | 3,144,000           |
| GBVB114                       | 50GB601                      | 1-1/4         | 1/8     | 1.25            | 1.87 | 3.86 | 2.37 | 4.78 | 3.56 | 1.62 | 1.15 | 3.24 | 6,441,000           |
| GBVB112                       | 50GB701                      | 1-1/2         | 1/8     | 1.50            | 2.05 | 4.22 | 2.81 | 5.40 | 4.21 | 1.81 | 1.31 | 3.62 | 7,745,000           |
| GBVB2                         | 50GB801                      | 2             | 1/8     | 2.00            | 2.48 | 5.02 | 3.18 | 5.40 | 4.93 | 2.18 | 1.68 | 4.36 | 14,741,000          |
| GBVBA1                        | 50GB5A1                      | 1             | 1/4     | 1.00            | 1.65 | 3.42 | 2.19 | 4.78 | 3.18 | 1.53 | 0.94 | 3.06 | 3,144,000           |
| GBVBA114                      | 50GB6A1                      | 1-1/4         | 1/4     | 1.25            | 1.87 | 3.86 | 2.37 | 4.78 | 3.56 | 1.62 | 1.15 | 3.24 | 6,441,000           |
| GBVBA112                      | 50GB7A1                      | 1-1/2         | 1/4     | 1.50            | 2.05 | 4.22 | 2.81 | 5.40 | 4.21 | 1.81 | 1.31 | 3.62 | 7,745,000           |
| GBVBA2                        | 50GB8A1                      | 2             | 1/4     | 2.00            | 2.48 | 5.02 | 3.18 | 5.40 | 4.93 | 2.18 | 1.68 | 4.36 | 14,741,000          |

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



| Model No.<br>Dual<br>Tapped | Part No.<br>Dual<br>Tapped | Size<br>(in.) | Tapping | Dimensions(in.) |      |      |      |      |      |      |      |      | Capacity<br>BTU/hr. |
|-----------------------------|----------------------------|---------------|---------|-----------------|------|------|------|------|------|------|------|------|---------------------|
|                             |                            |               |         | A               | B    | C    | D    | E    | F    | G    | H    | I    |                     |
| --                          | --                         | 1/2           | 1/8     | 0.50            | 1.11 | 2.25 | 1.68 | 3.85 | 2.27 | 1.00 | 0.53 | -    | 693,000             |
| GBVBD3/4                    | 50GB401A                   | 3/4           | 1/8     | 0.75            | 1.26 | 2.67 | 1.93 | 3.85 | 2.72 | 1.12 | 0.75 | 2.24 | 1,258,000           |
| GBVBD1                      | 50GB501A                   | 1             | 1/8     | 1.00            | 1.65 | 3.42 | 2.19 | 4.78 | 3.18 | 1.53 | 0.94 | 3.06 | 3,144,000           |
| GBVBD11/4                   | 50GB601A                   | 1-1/4         | 1/8     | 1.25            | 1.87 | 3.86 | 2.37 | 4.78 | 3.56 | 1.62 | 1.15 | 3.24 | 6,441,000           |
| GBVBD11/2                   | 50GB701A                   | 1-1/2         | 1/8     | 1.50            | 2.05 | 4.22 | 2.81 | 5.40 | 4.21 | 1.81 | 1.31 | 3.62 | 7,745,000           |
| GBVBD2                      | 50GB801A                   | 2             | 1/8     | 2.00            | 2.48 | 5.02 | 3.18 | 5.40 | 4.93 | 2.18 | 1.68 | 4.36 | 14,741,000          |
| GBVBDA1                     | 50GB5A1A                   | 1             | 1/4     | 1.00            | 1.65 | 3.42 | 2.19 | 4.78 | 3.18 | 1.53 | 0.94 | 3.06 | 3,144,000           |
| GBVBDA11/4                  | 50GB6A1A                   | 1-1/4         | 1/4     | 1.25            | 1.87 | 3.86 | 2.37 | 4.78 | 3.56 | 1.62 | 1.15 | 3.24 | 6,441,000           |
| GBVBDA11/2                  | 50GB7A1A                   | 1-1/2         | 1/4     | 1.50            | 2.05 | 4.22 | 2.81 | 5.40 | 4.21 | 1.81 | 1.31 | 3.62 | 7,745,000           |
| GBVBDA2                     | 50GB8A1A                   | 2             | 1/4     | 2.00            | 2.48 | 5.02 | 3.18 | 5.40 | 4.93 | 2.18 | 1.68 | 4.36 | 14,741,000          |

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

# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Gas/Fuel Shut-Off Valves

### GBV SERIES

### APOLLO INTERNATIONAL™ GAS APPLIANCE BALL VALVES

These gas appliance ball valves are designed for natural gas, manufactured and mixed gas, liquefied petroleum gases and LP gas-air mixture applications. They comply with the latest editions of these published standards:

#### FEATURES

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

| Model Number | Part Number | Size and End Connection (in.) |
|--------------|-------------|-------------------------------|
| GBVU12       | 51GF301A    | 1/2 FNPT x 1/2 FNPT           |
| GBVU34       | 51GF401A    | 3/4 FNPT x 3/4 FNPT           |



### GBV 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, PTFE seats. Rated for temperatures from 32°F to 125°F at pressures of 1/2 and 5 PSIG.

#### FEATURES

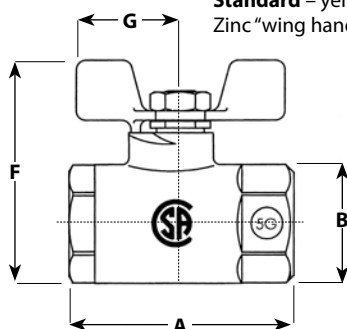
- Complies with ANSI Z21.15, CR91-002, and ASME 16.44
- Lever (-L1) or tee handle (-T1) options available
- Use with natural, manufactured, mixed and liquefied petroleum gases, LP gas-air mixtures
- Standard die-cast zinc "wing" handle, epoxy coated, for easy shut-off

| Model Number | Part Number | Size (in.) | Connection | BTU/Hr*   |
|--------------|-------------|------------|------------|-----------|
| GBV38        | 51GB201     | 3/8        | 3/8 NPT    | 318,700   |
| GBV12        | 51GB301     | 1/2        | 1/2 NPT    | 623,750   |
| GBV34        | 51GB401     | 3/4        | 3/4 NPT    | 1,265,000 |
| GBV1         | 51GB501     | 1          | 1 NPT      | 2,037,500 |

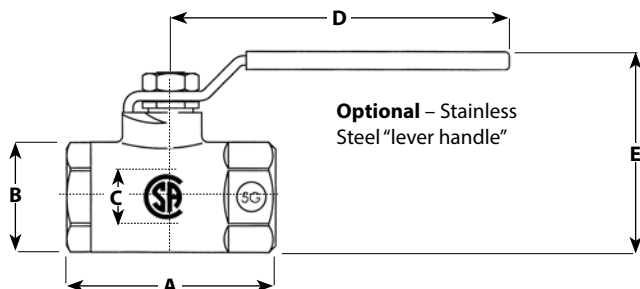
\* Capacity based on a gas having a heating value of 1000 Btu/cubic feet and an S.G. of 0.64 at a P.D. of 1" W.C.



**Standard** – yellow die-cast Zinc "wing handle."



**Optional** – Stainless Steel "lever handle"



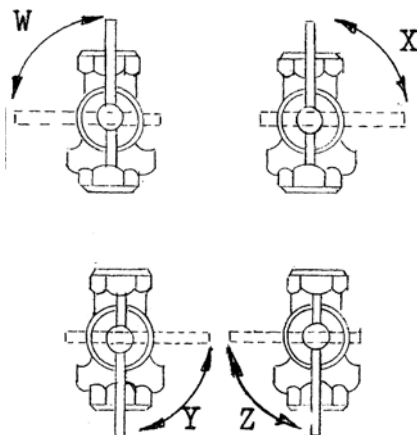
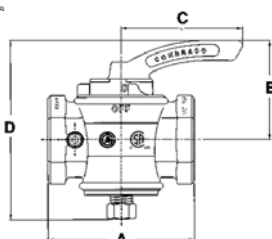
| Size (in.) | Dimensions (in.) |      |      |      |      |      |      |
|------------|------------------|------|------|------|------|------|------|
|            | A                | B    | C    | D    | E    | F    | G    |
| 3/8        | 2.04             | 1.06 | 0.38 | 3.85 | 2.24 | 2.20 | 0.81 |
| 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 |

# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Gas Cocks

### MODEL GCB

### MANUAL MAIN CONTROL VALVES



**CSA design certified** for 1/2 psig and temperatures from 32° to 125°F. Complies to ANSI Z 21.15.CGA 9.1-M97.

#### FEATURES

- Factory tested 100% at 10 psig
- Bronze construction, stainless steel springs
- Capacities to 7.8 million Btu/hour
- Equal female inlet/outlet

| Model Number | Part Number | Size (in.) | BTU/hr.   | Wt./100 (lbs.) | Dimensions |      |      |      |
|--------------|-------------|------------|-----------|----------------|------------|------|------|------|
|              |             |            |           |                | A          | B    | C    | D    |
| GCB*12       | 50-203      | 1/2        | 800,000   | 88             | 2.50       | 1.44 | 1.72 | 2.75 |
| GCB*34       | 50-303      | 3/4        | 1,310,000 | 156            | 2.94       | 1.69 | 2.06 | 3.50 |
| GCB*1        | 50-403      | 1          | 2,100,000 | 197            | 3.94       | 2.19 | 2.87 | 3.87 |
| GCB*114      | 50-503      | 1-1/4      | 3,250,000 | 300            | 3.66       | 2.75 | 3.16 | 4.69 |
| GCB*112      | 50-603      | 1-1/2      | 3,700,000 | 478            | 4.37       | 3.31 | 3.50 | 5.75 |
| GCB*2        | 50-703      | 2          | 7,300,000 | 845            | 5.44       | 3.72 | 4.50 | 6.75 |
| GCB*212      | 50-803      | 2-1/2      | 7,800,000 | 1000           | 5.87       | 3.72 | 4.50 | 6.75 |

\* Denotes handle position (see below)

Part No.  
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. Drilled & tapped on both sides with one plugged.

#### MODEL NUMBER

| GCB [X]      | X                  | X            |
|--------------|--------------------|--------------|
| TAPPING      | HANDLE ORIENTATION | SIZE (IN.)   |
| BLANK - 1/8" | W                  | 12 = 1/2"    |
| T - 1/4"     | X                  | 34 = 3/4"    |
| P - PLUG TAP | Y                  | 1 = 1"       |
|              | Z                  | 114 = 1-1/4" |
|              |                    | 112 = 1-1/2" |
|              |                    | 2 = 2"       |
|              |                    | 212 = 2-1/2" |

### MODEL GC

### GAS SERVICE COCKS



T-Handle with Stop



Lever Handle w/Stop

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.CGA 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

| Model Number | Part Number | Pipe Size (in.) | Wt./100 (lbs.) | Capacity (BTU/hr.) |
|--------------|-------------|-----------------|----------------|--------------------|
| GCT14        | 51-103-01   | 1/4             | 35             | 117,000            |
| GCT38        | 51-104-01   | 3/8             | 47             | 274,600            |
| GCT12        | 51-105-01   | 1/2             | 54             | 274,000            |
| GCT34        | 51-106-01   | 3/4             | 83             | 749,000            |
| GCL38        | 51-107-01   | 3/8             | 50             | 274,600            |
| GCL12        | 51-108-01   | 1/2             | 56             | 274,600            |
| GCL34        | 51-109-01   | 3/4             | 87             | 749,000            |



# RELATED HYDRONIC & STEAM HEATING PRODUCTS

## Gas Cocks

### MODEL GC2

### GAS GENERAL 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

- Nut and washer bottom with stop
- For operation up to 500°F



#### T-Head

| Model Number | Part Number | Size (in.) | Wt./100 (lbs.) |
|--------------|-------------|------------|----------------|
| GC2T14       | 52-101-01   | 1/4        | 32.0           |
| GC2T38       | 52-102-01   | 3/8        | 29.0           |
| GC2T12       | 52-103-01   | 1/2        | 45.0           |
| GC2T34       | 52-104-01   | 3/4        | 65.8           |
| GC2T1        | 52-105-01   | 1          | 92.9           |

#### Flat Head

| Model Number | Part Number | Size (in.) | Wt./100 (lbs.) |
|--------------|-------------|------------|----------------|
| GC2F14       | 52-201-01   | 1/4        | 30.0           |
| GC2F38       | 52-202-01   | 3/8        | 28.0           |
| GC2F12       | 52-203-01   | 1/2        | 43.0           |
| GC2F34       | 52-204-01   | 3/4        | 57.0           |
| GC2F1        | 52-205-01   | 1          | 90.6           |

#### Square Head

| Model Number | Part Number | Size (in.) | Wt./100 (lbs.) |
|--------------|-------------|------------|----------------|
| GC2S14       | 52-301-01   | 1/4        | 31.0           |
| GC2S38       | 52-302-01   | 3/8        | 28.0           |
| GC2S12       | 52-303-01   | 1/2        | 43.0           |
| GC2S34       | 52-304-01   | 3/4        | 62.7           |
| GC2S1        | 52-305-01   | 1          | 90.0           |

#### Lever Head

| Model Number | Part Number | Size (in.) | Wt./100 (lbs.) |
|--------------|-------------|------------|----------------|
| GC2L14       | 52-401-01   | 1/4        | 34.3           |
| GC2L38       | 52-402-01   | 3/8        | 31.0           |
| GC2L12       | 52-403-01   | 1/2        | 46.0           |
| GC2L34       | 52-404-01   | 3/4        | 66.7           |
| GC2L1        | 52-405-01   | 1          | 97.0           |

### MODEL GC3

### GAS COCKS

Available in male and female sizes: 1/8", 1/4" and 3/8".



| Model Number | Part Number | Male Size (in.) | Female Size (in.) | Wt./100 (lbs.) |
|--------------|-------------|-----------------|-------------------|----------------|
| GC318        | 53-299-01*  | 1/8             | 1/8               | 14.0           |
| GC314        | 53-300-01*  | 1/4             | 1/4               | 18.5           |
| GC338        | 53-301-01   | 3/8             | 3/8               | 45.0           |

\* Design certified by CSA to meet ANSI Z21.15.CGA 9.1 pressure requirements of 1/2 psig



# MISC. HYDRONIC & STEAM HEATING PRODUCTS

## Gas Cocks

### MODEL GCA

### GAS HOSE COCKS & APPLIANCE CONNECTOR VALVE

CSA design certified bronze gas valves with 56,500 Btu/hour capacity.



| Model Number | Part Number | Pipe Size (in.) | Outlet (in.) | Wt./100 (lbs.) |
|--------------|-------------|-----------------|--------------|----------------|
| GCA38FL      | 54-201-01   | 3/8             | 3/8 SAE      | 36.0           |
| GCA12FL38    | 54-202-01   | 1/2             | 3/8 SAE      | 33.4           |
| GCA12FL      | 54-203-01   | 1/2             | 1/2 SAE      | 35.0           |
| GCA34FL12    | 54-204-01   | 3/4             | 1/2 SAE      | 45.1           |
| GCA34FL58    | 54-206-01   | 3/4             | 5/8 SAE      | 50.0           |
| GCA12FL58    | 54-207-01   | 1/2             | 5/8 SAE      | 57.0           |
| GCA34FL38    | 54-208-01   | 3/4             | 3/8 SAE      | 44.0           |
| GCA34M12     | 54-209-01   | 3/4             | 1/2 MNPT     | 44.0           |

| Model Number | Part Number | Pipe Size (in.) | Outlet (in.) | Wt./100 (lbs.) |
|--------------|-------------|-----------------|--------------|----------------|
| GCA38        | 54-101-01   | 3/8             | 1/8 MNPT     | 41.0           |
| GCA12        | 54-102-01   | 1/2             | 1/8 MNPT     | 34.8           |
| GCA34        | 54-103-01   | 3/4             | 1/8 MNPT     | 40.0           |

### MODEL GCR

### GAS COCK WITH THROTTLE ADJUSTMENT DESIGN CERTIFIED BY CSA

#### FEATURES

- Designed to meet ANSI Z21.15.CGA9.1-M97 pressure requirements of 1/2 psig
- Thread size: 1/4" male x 1/4" female



| Model Number | Part Number | Size (in.)    | Wt./100 (lbs.) |
|--------------|-------------|---------------|----------------|
| GCR14        | 55-302-01   | 1/4 M x 1/4 F | 33             |



### MODEL GCP

### PILOT COCKS

Wide variety of **CSA design** certified pilot cocks. Designed to meet ANSI Z21.15.CGA 9.1-M97 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

| Model Number | Part Number | Thread Size                            | Wt./100 (lbs.) |
|--------------|-------------|--|----------------|
| GCP          | 56-111-01   | 1/8 NPT x 1/4 Tube Plain               | 15.0           |
| GCP T        | 56-112-01   | 1/8 NPT x 1/4 Tube Throttle Adjust.    | 14.0           |
| GCP F        | 56-221-01   | 1/8 NPT x 1/8 FNPT Plain               | 16.1           |
| GCP FT       | 56-222-01   | 1/8 NPT x 1/8 FNPT Throttle Adjust.    | 16.1           |
| GCP S        | 56-302-01*  | 1/8 NPT x 1/4 Tube                     | 08.0           |
| GCP RH       | 56-601-01   | 1/8 NPT x 1/4 Tube Right Hand          | 17.0           |
| GCP RHT      | 56-602-01   | 1/8 NPT x 1/4 Tube RH Throttle Adjust  | 17.0           |
| GCP LH       | 56-603-01   | 1/8 NPT x 1/4 Tube Left Hand.          | 17.0           |
| GCP LHT      | 56-604-01   | 1/8 NPT x 1/4 Tube LH Throttle Adjust. | 17.0           |

\*Not CSA Certified

# MISC. HYDRONIC & STEAM HEATING PRODUCTS

## Water Gauges & Accessories

### 20-100 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.

#### 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. Many more models and options to choose from including ASME, automatic, chain wheel and stainless steel models. Request brochure PHBRWGA or visit our website for further information.*

## Plumbing Specialties

### MODEL RAV

### RADIATOR AIR VALVE



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

# HELPFUL FORMULAS & CONVERSION DATA

## Helpful Formulas

### Basic Heat Transfer Calculation

$$q \left( \frac{\text{Btu}}{\text{hr}} \right) = \dot{m} \, c_p \, \Delta t$$

$$\frac{\text{Btu}}{\text{hr}} = \left| \frac{\text{lb}}{\text{hr}} \right| \left| \frac{\text{Btu}}{\text{lb. } ^\circ\text{F}} \right| \left| \frac{^\circ\text{F}}{1} \right|$$

$$q \left( \frac{\text{Btu}}{\text{hr}} \right) = Q \, 500 \, c_p \, \Delta t$$

$$q \frac{\text{Btu}}{\text{hr}} = \left| \frac{Q \text{ Gal}}{\text{min}} \right| \left| \frac{60 \text{ min}}{\text{hr}} \right| \left| \frac{8.34 \text{ lb}}{\text{Gal}} \right| \left| \frac{\text{Btu}}{\text{lb. } ^\circ\text{F}} \right| \left| \frac{^\circ\text{F}}{1} \right|$$

q = heat transfer (Btu/hr.)

Q = flow rate (gpm)

$c_p$  = specific heat of fluid

$\Delta t$  = change in fluid temperature  $^\circ\text{F}$

### Flow Rate Calculation based on $C_v$

$$Q = C_v \sqrt{\frac{\Delta P}{SG}}$$

Q = flow rate (gpm)

$C_v$  = device flow coefficient

$\Delta P$  = change in fluid pressure across the device (psi)

SG = Specific Gravity of fluid

### System Curve (Circulator performance)

$$\left( \frac{Q_2}{Q_1} \right)^2 = \left( \frac{h_2}{h_1} \right)$$

$$\left( \frac{Q_2}{Q_1} \right)^3 = \left( \frac{P_2}{P_1} \right)$$

Q = flow rate at known or new condition (gpm)

h = change in fluid head (pressure) (psi or feet head)

P = work to move fluid (pumping horsepower)

### Pressure vs. Head Conversion

$$\frac{\text{Area}}{\rho}$$

$$\left| \frac{\text{Ft}^3}{62.4 \text{ lb.}} \right| \left| \frac{144 \text{ in}^2}{1 \text{ Ft}^2} \right| = 2.31 \frac{\text{ft}}{\text{psi}}$$

Relationship of Water Pressure in Feet to PSI

$\rho$  = fluid density (lb/ft<sup>3</sup>)

*Head incorporates velocity and static pressure and is typically used for expressing pressure (and pump energy) on pump curves in hydronic systems*

### Power Curve (Circulator performance)

$$P_{HP} = \frac{Q \times h}{3960 \times \eta_p}$$

$P_{HP}$  = pumping horsepower (work to move fluid)

Q = flow rate at operating condition (gpm)

h = fluid head (feet head)

$\eta_p$  = pump efficiency at operating point

## Useful Conversion Factors & Data

### Energy:

1 Watt hour = 3.413 btu      1 Kilowatt hour = 3,413 btu

1 Therm = 100,000 btu      1MMBtu = 1,000,000 btu

### Power and Heat Flow:

1 Kilowatt = 3,413 btu/hr      1 Ton = 12,000 btu/hr

1 Horsepower = 0.746 kilowatt = 2546 btu/hr

### Temperature:

$^\circ\text{C} = (^\circ\text{F} - 32)/1.8$

$^\circ\text{F} = (^\circ\text{C} \times 1.8) + 32$

### Weight and Volume:

1 Gal water = 8.34 lbs

1 Cubic foot water = 62.4 lbs

1 Cubic foot water = 7.482 gal

### Steam Conversion Factors:

Boiler horsepower (BHP) x 34.5 = lb. of steam water per hr. (lb/hr)

Boiler horsepower (BHP) x 0.069 = Gal of water per minute (gpm)

### Making or Melting Ice:

Latent Heat of *Fusion* – Requires 143.5 btu per lb. at 32 $^\circ\text{F}$

### Heating or Cooling Liquid Water:

Sensible Heat – Requires 1 btu per lb. per  $^\circ\text{F}$

### Vaporizing Water (Steam):

Latent Heat of *Vaporization* – Requires 970 btu per lb. at 14.7 psia

### Heat from Combustion:

Natural Gas (Typical) – 1000 btu per cubic foot

Propane – 2550 per cubic foot

No. 2 Fuel Oil – 138,000 btu per gallon

# TERMS, CONDITIONS & WARRANTY INFORMATION

## General Pipe Size and Heat Transfer Capacity for HVAC

| Friction        | 0.85 ft/100  | 4.5 ft/100   | Heat Transfer Capacity |               |               |       |
|-----------------|--------------|--------------|------------------------|---------------|---------------|-------|
| Steel Pipe Size | Min Flow GPM | Max Flow GPM | Btu/Hr 20° Δt          | Btu/Hr 50° Δt | Btu/Hr 12° Δt | Tons  |
| ½"              | 0.75         | 2            | 20,000                 | 50,000        | 12,000        | 1.00  |
| ¾"              | 1.5          | 4.25         | 42,500                 | 106,250       | 25,500        | 2     |
| 1"              | 4            | 8.5          | 85,000                 | 212,500       | 51,000        | 4.25  |
| 1¼"             | 7            | 17           | 170,000                | 425,000       | 102,000       | 8.5   |
| 1½"             | 10.5         | 26           | 260,000                | 650,000       | 156,000       | 13    |
| 2"              | 20           | 50           | 500,000                | 1,250,000     | 300,000       | 25    |
| 3"              | 60           | 145          | 1,450,000              | 3,625,000     | 870,000       | 72.5  |
| 4"              | 120          | 300          | 3,000,000              | 7,500,000     | 1,800,000     | 150   |
| 5"              | 220          | 525          | 5,250,000              | 13,125,000    | 3,150,000     | 262.5 |
| 6"              | 350          | 850          | 8,500,000              | 21,250,000    | 5,100,000     | 425   |
| 8"              | 700          | 1800         | 18,000,000             | 45,000,000    | 10,800,000    | 900   |
| 10"             | 1300         | 3300         | 33,000,000             | 82,500,000    | 19,800,000    | 1650  |
| 12"             | 2100         | 5250         | 52,500,000             | 131,250,000   | 31,500,000    | 2625  |

## WARRANTY AND 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.

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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.

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\* It is the end user's responsibility to confirm that items intended for use satisfy local codes and standards.





# INTERNATIONAL SALES & REGIONAL MANAGERS

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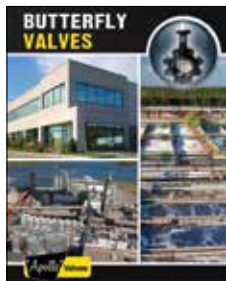
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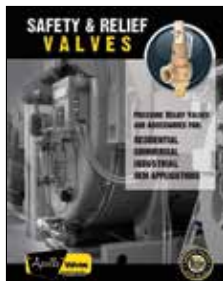
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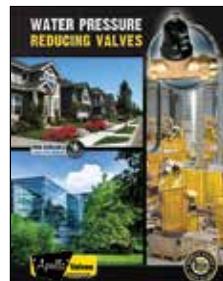
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| Pegler Yorkshire Mid East   | Middle East/India                   | peter.pydubai@gmail.com       | 971-4-454-2353   | 971-4-454-2352 |
|   | Europe/Africa/Israel                | Contact Customer Service      | 1-704-841-6000   | 1-704-841-6021 |

current as of 6/4/13



for additional information, submittal sheets and manuals, visit [www.apollovalves.com](http://www.apollovalves.com)

**Customer Service (704) 841-6000**



**SALES & CUSTOMER SERVICE:**  
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|                 | Spirit Group                        | FL (except Panhandle)                                   | info@spiritgroupinc.com       | 407-291-6035 | 407-299-0378 |
|                 | Tim Morales & Associates, Inc.      | AL/FL Panhandle   | sales@timmorales.com          | 251-602-8333 | 251-602-8339 |
|                 | White Wolf Group                    | GA  | info@whitewolfgroupinc.com    | 800-401-4870 | 888-908-9372 |
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|                 | Layden Company                      | NY-Upstate/PA-East/DE/NJ-South                          | joejr@laydencompany.com       | 610-363-6657 | 877-529-3361 |
|                 | Urell, Inc.                         | MA/New England States                                   | apollo@urell.com              | 617-923-9500 | 617-926-9414 |
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|                 | Marshall-Rodeno Heartland           | NE/IA (Except River Counties)                           | dnaylor@marshallrodeno.com    | 303-575-6701 | 303-575-6706 |
|                 | Midwest Spec                        | Northern OH, Western PA, WV                             | glsales@mwspec.com            | 330-538-0406 | 330-538-0410 |
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|                 | 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 |
| SOUTH CENTRAL   | <b>SOUTH CENTRAL REGION REPS</b>    |   |                               |              |              |
|                 | Marathon Flow Control               | TX, OK, KS except Northeast, LA                         | sales@marathonflowcontrol.com | 214-201-0100 | 214-201-0104 |
|                 | NSC Marketing Group Inc.            | OK  | nsc_tulsa@sbcglobal.net       | 918-627-5340 | 918-664-1408 |
|                 | PEPCO Sales & Marketing             | TX  | is@pepcosales.com             | 972-823-8700 | 972-823-8717 |
|                 | Southern Marketing Group            | MS/TN-West/AR/Bowie Cty.-TX                             | SMG49@bellsouth.net           | 901-547-0042 | 901-547-0035 |
| WESTERN         | <b>WESTERN REGION REPS</b>          |   |                               |              |              |
|                 | Elmco Duddy                         | CA - South  | tduddy@elmcoduddy.com         | 626-333-9942 | 626-855-4811 |
|                 | Gordon & Associates                 | WA, OR, AK, Northern counties ID, HI                    | laura@gordonandassoc.com      | 360-566-1470 | 360-566-1478 |
|                 | HC Fletcher                         | CA - North  | apollosales@hcfletcher.com    | 800-432-7047 | 949-660-9072 |
|                 | Marshall-Rodeno Associated          | ID-SE, NV-NE, UT, CO, MT, NM                            | dnaylor@marshallrodeno.com    | 303-575-6701 | 303-575-6706 |
|                 | Romatec                             | CA - North PVF (Non AB 1953)                            | apollo@romatec.com            | 877-530-3530 | 661-588-3534 |
|                 | Southwest Valves                    | CA (Waterworks)   | c.burell@southwestvalve.com   | 559-261-2703 | 559-261-2711 |
|                 | Southwestern Industrial Sales Co.   | AZ, Nevada (except NE)                                  | sales@sw-ind.com              | 480-458-5838 | 480-458-5843 |
| CANADA          | <b>CANADA REPS</b>                  |   |                               |              |              |
|                 | Barclay Sales Ltd.                  | British Columbia  | jblair@barclaysales.com       | 604-945-1010 | 604-945-3030 |
|                 | Conbraco Industries, Canada         | 178 Pennsylvania Ave., Unit 1, Concord, Ontario L4K 4B1 | conbraco.canada@conbraco.com  | 905-761-6161 | 905-761-6666 |
|                 | D & M Mechanical Sales              | Ontario/East  | don@dandmsales.ca             | 613-384-7084 | 613-384-3407 |
|                 | Dynamic Agencies, Ltd.              | Saskatchewan  | doug.dynamicage@sasktel.net   | 306-343-1901 | 306-343-1901 |
|                 | J. Levandier Sales, Inc.            | NS, NB, PE & NL   | vickie@jlevandiersales.com    | 506-858-1615 | 506-858-1084 |
|                 | Kern Industries, Ltd.               | Alberta-North   | colin@kernind.com             | 780-451-2056 | 780-454-6687 |
|                 | Kern Industries Calgary, Ltd.       | Alberta-South   | laura.wood@kernindustries.ca  | 403-730-7791 | 403-239-8179 |
|                 | Key to the North Sales Agency, Inc. | Ontario-North   | office@keytothenorth.net      | 705-867-1401 | 705-867-1606 |
|                 | Task Controls, Inc.                 | Ontario   | infotoronto@taskcontrols.com  | 416-291-3004 | 416-754-3481 |
|                 | Tom Beggs Agencies Ltd.             | Manitoba/NW Ontario                                     | tba@mts.net                   | 204-953-1900 | 204-774-6915 |
|                 | Ventes Techniques Nimatec, Inc.     | Quebec  | nimatec@nimatec.com           | 450-691-9427 | 450-691-4949 |
| IRRIGATION ONLY | <b>IRRIGATION REPS</b>              |   |                               |              |              |
|                 | Active Sales Northwest, Inc.        | OR, WA, Western ID                                      | stevek@activesalesnw.com      | 541-726-0320 | 541-726-1148 |
|                 | Biz Sales Company                   | OH, KY, MI, IN, parts of PA, WV, WI                     | dzavelson@bizpvf.com          | 216-595-2888 | 216-595-2899 |
|                 | Fourmation Sales                    | MN/ND/SD/WI-West  | dean@fourmationsales.com      | 763-262-4700 | 763-262-4740 |
|                 | Hall Marketing                      | AL, LA  | hallmarketing@bellsouth.net   | 228-547-4637 | 228-832-6666 |
|                 | J&J Midwest Sales                   | NE, IA, MO, KS  | john@jandjmidwestsales.com    | 314-422-8419 |              |
|                 | John Hart                           | FL  | jhart@lascofittings.com       | 772-595-7773 |              |
|                 | Larry Perkins                       | TX - Southern   | lperkins@lascofittings.com    | 936-443-1096 |              |
|                 | Marel Enterprises                   | New England, NY, DE, MD, VA, DC, parts of PA & WV       | marelenterprise@gmail.com     | 631-271-1718 | 631-427-8558 |
|                 | Marsh & Moore                       | GA  | jaustin@marshmoore.com        | 352-321-7499 | 904-827-8795 |
|                 | Marshall-Rodeno Associated          | CO/WY/MT/ID-SE/UT/NV-NE                                 | dnaylor@marshallrodeno.com    | 303-575-6701 | 303-575-6706 |
|                 | NSC Marketing Group Inc.            | OK  | nsc_tulsa@sbcglobal.net       | 918-627-5340 | 918-664-1408 |
|                 | Pro Marketing, Inc.                 | NC/SC/TN-East   | sales@promarketinginc.net     | 864-578-4334 | 864-578-4889 |
|                 | Sherman Dobbs                       | TX - Northern   | sdobbs@lascofittings.com      | 469-442-8510 | 972-417-9733 |
|                 | Southern Marketing Group            | MS/TN-West/AR/Bowie Cty.-TX                             | SMG49@bellsouth.net           | 901-547-0042 | 901-547-0035 |
|                 | Spec Management Group               | CA  | msmarch4@cox.net              | 949-481-4225 | 949-487-0990 |
|                 | Tim Morales & Associates, Inc.      | AL  | sales@timmorales.com          | 251-602-8333 | 251-602-8339 |
|                 | VPC Sales                           | AZ  | chudson@vpcsales.com          | 661-257-3923 | 661-257-3928 |