

# IRRIGATION

Product Guide





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# **FEBCO** Backflow Products

FEBCO is an ISO 9001 certified manufacturer of high quality fluid control products. For over 75 years FEBCO has been committed to excellence and is recognized for establishing the industry standard in the design and manufacture of backflow prevention products for the irrigation market. From the innovative "Y" pattern design originated by FEBCO and known for its reliable performance to the latest FEBCO Master Series® models specifically designed to reduce overall installation, repair and maintenance costs, FEBCO delivers the quality, performance and affordability you demand in backflow prevention.



## ***A Tradition of Quality***

Hundreds of thousands of FEBCO valves have been installed in irrigation systems throughout the world – solid proof that FEBCO products are reliable and built to last. Before leaving the factory, each FEBCO valve is tested and verified to meet the stringent performance standards demanded by backflow prevention approval authorities. FEBCO products continue to perform trouble-free, year after year, job after job.

## ***Commitment to Safety***

Backflow Preventers are designed to keep chemicals and pollutants that come into contact with the pipes and sprinklers in irrigation systems from contaminating your drinking water. For decades FEBCO engineers have demonstrated an uncompromising commitment to public safety by producing high quality products that stand the test of time.

## ***History of Innovation***

Today's irrigation professionals demand durability, superior head loss performance, and the best value in every product they install. Through its long and intimate association with the irrigation industry, FEBCO is recognized as the pioneer in developing patented designs and product features to respond to these ever-changing demands.



## ***A Full Range of Products***

FEBCO offers a variety of backflow prevention products for irrigation systems large and small; all built with the same attention to quality and performance that FEBCO customers have come to expect.

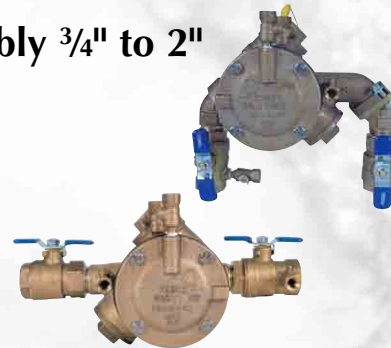
### **Model 765 Pressure Vacuum Breaker 1/2" to 2"**

- Simple to service
- Freeze resistant design
- Union end option



### **Models 825Y & 825YA Reduced Pressure Assembly 3/4" to 2"**

- Traditional "Y" pattern
- Compact "YA" design option
- Replaceable seats



### **Models 850 & 860 Double Check & Reduced Pressure Assemblies 1/2" to 2"**

- In-line design
- Top entry for easy access
- Union end option available



### **Models 870V & 880V Double Check & Reduced Pressure Assemblies 2 1/2" to 10"**

- Compact and patented "N-Shape" design
- Valve setter installation option
- Saves time and money
- Traditional in-line models also available (Models 850 & 860)



# General Information

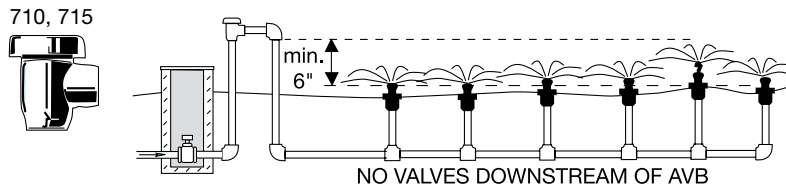
FEBCO has developed an extensive line of products for the irrigation market. Some of our innovations in this area include our patented freeze protected pressure vacuum breaker, patented 825YA backflow assembly hose connection vacuum breaker, as well as our through the wall irrigation shutoff valve. This product guide showcases our full line of products for irrigation applications.

## Backflow Installation and Freeze Protection Guidelines

### AVB . . . Atmospheric Vacuum Breaker

FEBCO Series 710, 715

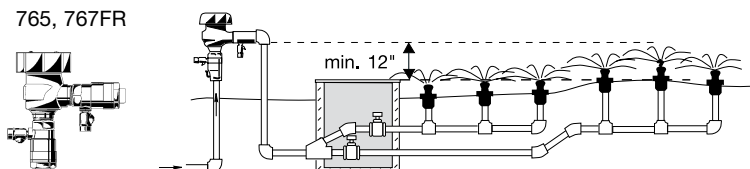
- One AVB required for each irrigation zone; no on/off valves allowed downstream of the AVB.
- Each AVB must be installed a minimum of 6" above the highest point of water in the zone it protects.
- No chemical or fertilizer can be introduced into an irrigation system protected with AVB's.
- No pumps or sources for backpressure on downstream side of an AVB.
- Anti-siphon, single zone.
- Can be only pressurized a maximum of a 12 hour period out of 24 hours.



### PVB . . . Pressure Vacuum Breaker

FEBCO Series 765, 767FR

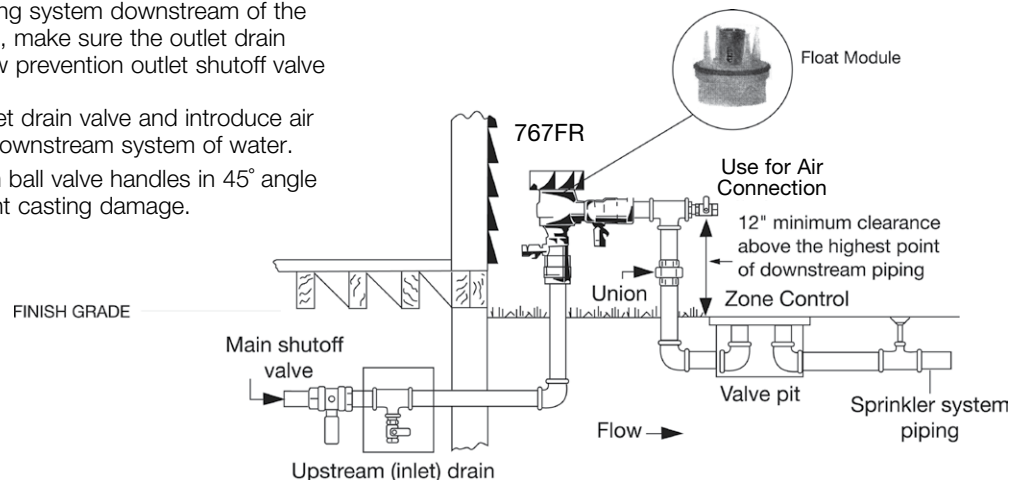
- One PVB required to protect the whole system; on/off valves can be located downstream of the PVB.
- PVB's must be installed a minimum of 12" above the highest point of water in the system.
- PVB's must be tested by a State-certified Backflow Assembly Tester\* annually or when moved/repaired.
- No chemical or fertilizer can be introduced into an irrigation system protected with PVB's.
- No pumps or source of backpressure on downstream side or after a PVB.
- Anti-siphon, multi-zone.
- Can be pressurized a full 24 hours.
- Freeze resistant with "FR" feature.



## Freeze Protection Guidelines

### Purging of a PVB Assembly with Pressurized Air

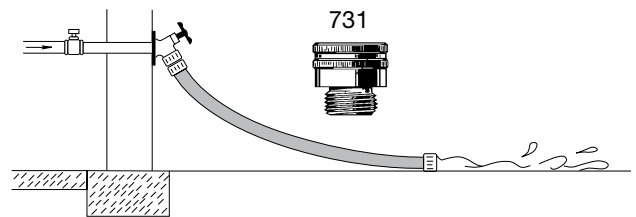
1. Close main shutoff valve.
2. Open upstream drain, test cocks and isolation ball valves to depressurize line.
3. Should you “blowout” the piping system downstream of the backflow prevention assembly, make sure the outlet drain valve is open and the backflow prevention outlet shutoff valve is closed.  
Connect an air line to the outlet drain valve and introduce air of adequate volume to clear downstream system of water.
4. Leave test cocks and isolation ball valve handles in 45° angle to drain ball valves and prevent casting damage.



## Hose Connection Vacuum Breakers

### FEBCO Series 731

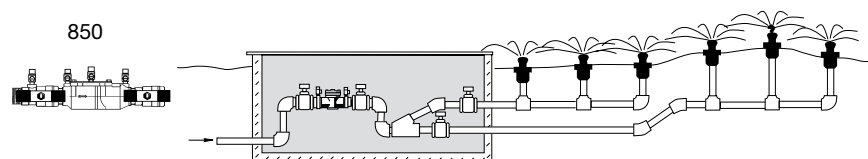
- Do not install HBVB on frost free hydrants.
- In cold climate, specify a Model 731 to permit manual draining or model 731FR with built-in freeze protection.



## DCVA Double Check Valve Assembly

### FEBCO Series 850, 850U

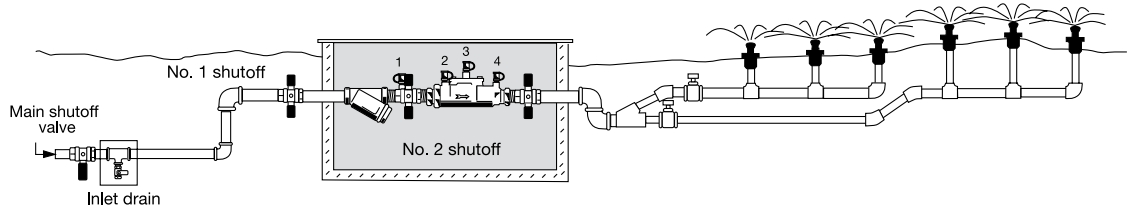
- One DCVA required to protect the whole system; on/off valves can be located downstream of the DCVA.
- Some water suppliers may allow the DCVA to be installed below ground; check for proper clearance on all sides of the assembly.
- DCVA must be tested by a State-certified Backflow Assembly Tester annually or when moved/repaired.
- DCVA are low hazard Backflow Assemblies subject to local code approval.
- No chemical or fertilizer can be introduced into an irrigation system protected with DCVA's.
- Anti-siphon, anti-backpressure, multi-zone.
- May be installed in hilly terrain.



## Freeze Protection Guidelines

### Purging of a DCVA Assembly with Pressurized Air

1. Close main shutoff valve.
2. With shutoff No. 1 and No. 2 open, depressurize line.
3. Open all Test Cocks.
4. Downstream line can be purged with pressurized air through Test Cock No. 4.
5. To purge upstream line, close No. 1 shutoff valve. Purging with air can now be done between Test Cock 1 and inlet drain.
6. When air purging is complete, open No. 1 shutoff to drain rest of DCVA device.
7. Leave Test Cocks open, turn shutoff handles to a 45° position.



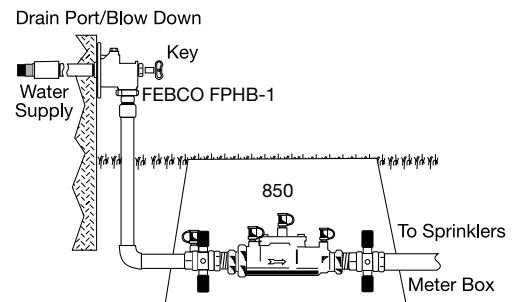
## Freeze Protection Guidelines Using FEBCO FPHB-1

Series FPHB-1 has been designed to provide a convenient means of shutting off the water supply when servicing or winterizing an irrigation system. When using the FPHB-1 the irrigation controller should be located in the garage or other accessible location to aid in system servicing.

### Purging of a DCVA Assembly with Pressurized air using the FPHB-1 Hydrant

*To Purge the system using the drain or blow down port of the FPHB-1 Hydrant*

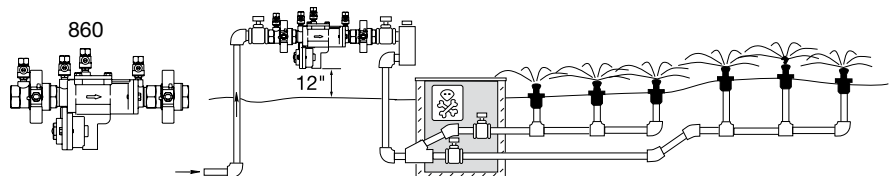
1. Using the hydrant "key", close the FPHB-1 completely.
2. Turn hydrant "key" counter clockwise 2 full turns from the closed position.
3. Connect the air supply to hydrant drain connection and purge the system.
4. Leave test cocks and isolation ball valve handles at 45° angle to prevent freezing.



## RPZ . . . Reduced Pressure Zone Assembly

### FEBCO Series 825Y, 825YA, 860

- One RPZ required to serve the whole system; on/off valves can be located downstream of the RPZ.
- RPZ's must be installed a minimum of 12" above ground level.
- RPZ's must be tested by a State-certified Backflow Assembly Tester annually or when moved/repared.
- In an RPZ equipped system, fertilizer and other agricultural chemicals may be introduced downstream or after the RPZ.
- Anti-siphon, anti-backpressure, multi-zone.
- May be installed in hilly terrain.

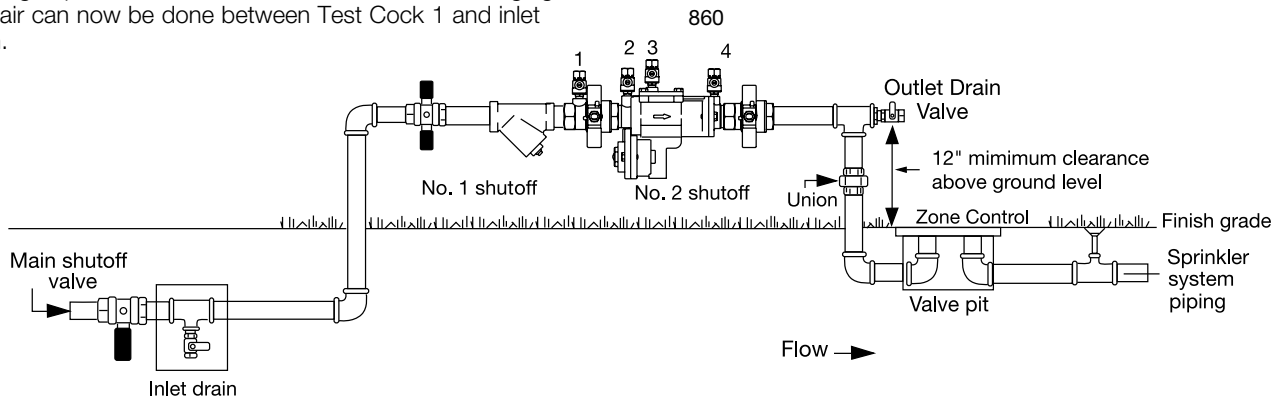




## Freeze Protection Guidelines

### Purging of a RPZ Assembly with Pressurized Air

1. Close main shutoff valve.
2. With shutoff No. 1 and No. 2 open, depressurize line.
3. Open all Test Cocks (relief valve will vent).
4. If you "blowout" the piping downstream of the backflow assembly using compressed air, connect the air supply to the outlet drain and close the outlet ball valve.
5. To purge upstream line, close No. 1 shutoff valve. Purging with air can now be done between Test Cock 1 and inlet drain.
6. When air purging is complete, open No. 1 shutoff to drain rest of RPZ device.
7. Leave Test Cocks open, turn shutoff handles to a 45° position.



## Freeze Protection Guidelines Using FEBCO FPHB-1

Series FPHB-1 has been designed to provide a convenient means of shutting off the water supply when servicing or winterizing an irrigation system. When using the FPHB-1 the irrigation controller should be located in the garage or other accessible location to aid in system servicing.

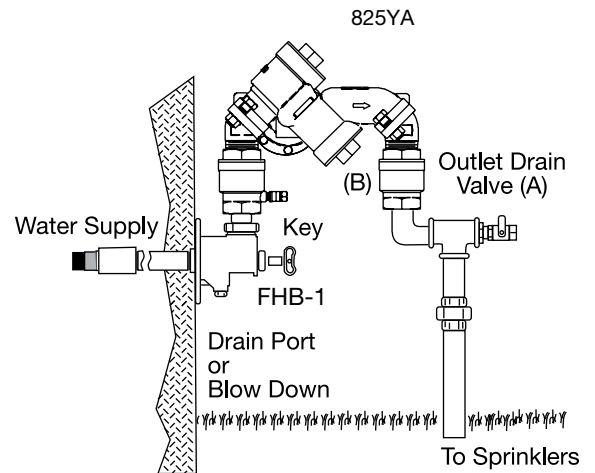
### Purging of an RPZ Assembly with Pressurized Air using the FPHB-1

*To purge the system using a drain valve downstream of the RPZ/FPHB-1.*

1. Using the hydrant "key", close the FPHB-1 Hydrant completely.
2. Open the FPHB-1 drain port and Backflow preventer test cocks (relief valve will vent).
3. Connect the air supply to the outlet drain valve (A) and close the outlet ball valve (B).
4. After the system has been purged, leave all test cocks and isolation ball valve handles in a 45° position.

*To purge the system using the drain or blow down port of the FPHB-1 Hydrant*

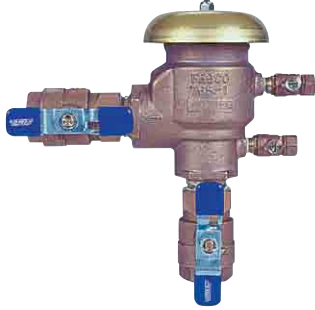
1. Using the hydrant "key", close the FPHB-1 hydrant completely.
2. Turn hydrant "key" counter clockwise 2 full turns from the closed position.
3. Connect the air supply to hydrant drain connection and purge the system.
4. Leave test cocks and isolation ball valve handles at 45° angle to prevent freezing.



# Series 765

## Pressure Vacuum Breakers

Size: 1/2" – 2" (15 – 50mm)



765



765U

The FEBCO Series 765 Pressure Vacuum Breakers are used to protect against health hazard and non-health hazard backsiphonage conditions in industrial plants, cooling towers laboratories, laundries, swimming pools and lawn sprinkler systems.

### Features

- All bronze body for durability. One check valve and an air opening port in one assembly
- Lightweight poppet seals air opening under minimum flow conditions
- Simple service procedures. All internal parts serviceable in line from the top of the unit
- Designed for minimum head loss
- Engineered plastic bonnet protect valve bodies from freeze damage
- Optional union end ball valves for easy removal and ultimate freeze protection
- End Connections - NPT ANSI/ASME B1.20.1

### Materials

Main Valve Body: Bronze  
Elastomers: Nitrile

### Pressure – Temperature

Max. Working Pressure: 150psi (10.3 bar)  
Hydrostatic Test Press: 300psi (20.7 bar)  
Temperature Range: 32°F to 140°F (0°C to 60°C)

### Models

- Union End Ball Valves
- Bronze Bonnet, 1 1/2" & 2" (40 & 50mm)

### Approvals – Standards

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.



## Freeze-Resistant Pressure Vacuum Breakers

Sizes: 1/2" – 2" (15 – 50mm)



Series 767FR is designed to prevent backsiphonage of contaminated water under continuous pressure into the potable water supply. Its superior design protects the valve body and internal components during sudden freeze conditions. Water inside the PVB freezes from the outside-inward.

As the ice forms and expands causing a buildup of pressure, the 767FR relieves the pressure through a unique relief valve built into the plastic float.

Test cocks are positioned at the lowest point of the valve for winterization draining. The 767FR is reusable with the relief valve designed to automatically reseal. It will not discharge through the relief valve during normal operation. (The built-in relief valve is not designed to provide freeze protection for the entire irrigation system.)

### Features

- Unique built-in relief valve relieves pressure caused by ice formation
- Replaceable plastic seat
- Easy maintenance of internal parts
- O-ring bonnet seal for less possibility of fouling
- Silicone seat disc for durability
- Test cocks positioned for easy testing and winterization
- Compact space saving design
- Standardly equipped with tee handle quarter turn ballvalve shutoffs 1/2" – 1" (15 – 25mm). The 1 1/4" – 2" (32 – 50mm) feature lever handles
- No special tools required for servicing
- Bronze body for durability

### Materials

Springs:	Stainless Steel
Bonnet:	Celcon®
Vent Disc:	Silicone Rubber
Disc Holder Float:	Polypropylene
Check Valve Disc:	Silicone Rubber
Check Valve Seat:	Noryl Plastic
Body:	Bronze

Celcon® is a registered trademark of Celanese Limited.

### Pressure - Temperature

Temperature Range:	33°F to 140° (0.5°C to 60°C)
Maximum Working Pressure:	150psi (10.3 bar)
Minimum Working Pressure:	15psi (103 kPa)

### Approvals

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California, Manual Section 10.



# Series 850

## Double Check Valve Assemblies

Size: ½" – 2" (15 – 50mm)



850

The FEBCO Series 850 Double Check Valve Assemblies are designed for non-health hazard applications. End Connections – NPT ANSI/ASME B1.20.1.

### Pressure – Temperature

Max. Working Pressure: 175psi (12.1 bar)  
Hydrostatic Test Press: 350psi (24.1 bar)  
Temperature Range: 32°F to 140°F (0°C to 60°C)

### Materials

Valve Body: Bronze  
Elastomers: Silicone  
Springs: Stainless Steel

### Models

- Wye - Strainer

### Approvals – Standards

- ANSI/AWWA Conformance (C510-92)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.



## Double Check Valve Assemblies with Union End Ball Valves

Size: ½" – 2" (15 – 50mm)



850U

The FEBCO Series 850U Double Check Valve Assemblies are designed for non-health hazard applications. End Connections – NPT ANSI/ASME B1.20.1.

### Pressure – Temperature

Max. Working Pressure: 175psi (12.1 bar)  
Hydrostatic Test Press: 350psi (24.1 bar)  
Temperature Range: 32°F to 140°F (0°C to 60°C)

### Materials

Valve Body: Bronze  
Elastomers: Silicone  
Springs: Stainless Steel

### Models

- Wye - Strainer

### Approvals – Standards

- ANSI/AWWA Conformance (C510-92)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.



1015



B64.5



# MasterSeries® 850

## Double Check Valve Assemblies

Size: 2½" – 10" (65 – 250mm)



**850 Double Check Assembly**

The FEBCO Master Series® 850 Double Check Valve Assemblies are designed for non-health hazard applications. End Connections – Flanged ANSI B16.1 Class 125

### Pressure – Temperature

Max. Working Pressure: 175psi (12.1 bar)  
Hydrostatic Test Press: 350psi (24.1 bar)  
Temperature Range: 32°F to 140°F (0°C to 60°C)

### Materials

Main Valve Body: Ductile iron Grade 65-45-12  
Coating: Fusion epoxy coated internal and external AWWA C550-90  
Shutoff Valves: NRS resilient wedge gate valves AWWA C509  
Trim: Bronze  
Elastomer Discs: EPDM  
Spring: Stainless steel  
Clamp: AWWA C606

### Approvals – Standards

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. - 2½" – 8" (65 – 200mm) (Horizontal & Vertical Up)
- ANSI/AWWA (C510) - 2½" – 8" (65 – 200mm) (Horizontal & Vertical Up), 10" (Horizontal)



1015

2½" – 8"  
(65 – 200mm)  
Horizontal &  
Vertical up  
10" (250mm)  
Horizontal



B64.5



CLASSIFIED  
UL  
US



Approved

2½" – 8" (65 – 200mm)  
Horizontal & Vertical up

\* Less gates not FM approved. Less gates not UL Classified unless installed with UL listed gate valves.

## Double Check Valve Assemblies

Size: 2½" – 10" (65 – 250mm)



**870V Standard Orientation**

The FEBCO MasterSeries® 870V Double Check Valve Assemblies are designed for non-health hazard applications. Standard orientation is inlet flow vertical up, outlet flow vertical down. Vertical orientation is inlet and outlet flow vertical up.

### Materials

Main Valve Body:	Ductile iron Grade 65-45-12
Coating:	Fusion epoxy coated internal and external AWWA C550-90
Shutoff Valves:	NRS and OS&Y resilient wedge gate valves AWWA C509
Trim:	Bronze
Elastomer Discs:	EPDM
Spring:	Stainless steel

### Pressure – Temperature

Max. Working Pressure:	175psi (12.1 bar)
Hydrostatic Test Press:	350psi (24.1 bar)
Temperature Range:	32°F to 140°F (0°C to 60°C)

### Approvals

- ANSI/AWWA (C510-89)

Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.



\* Less gate not FM approved. Less gate not UL Classified unless installed with UL Listed gate valves.

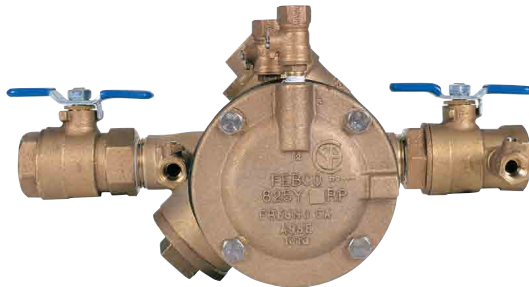
### Models

- Valve Setter with MJ x MJ, MJ x FL, or FL x FL ends
- UL/FM OS&Y RW Gate Valves
- Wye Strainer
- End Connections: Flanged ANSI B16.1 Class 125

# Series 825Y

## Reduced Pressure Zone Assemblies

Size: 3/4" – 2" (20 – 50mm)



825Y

The FEBCO Series 825Y Reduced Pressure Zone Assemblies are used to protect against high hazard (toxic) fluids in water services to industrial plants, hospitals, morgues, mortuaries, and chemical plants. They are also used in irrigation systems, boiler feed, water lines and other installations requiring maximum protection.

### Features

- Ultimate mechanical protection of potable water, against hazards of cross-connection contamination
- Meets all specifications of AWWA, ASSE, CSA and approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California
- Flow curve generated by the Foundation of Cross-Connection Control and Hydraulic Research at the University of Southern California
- Modular relief valve for ease of maintenance
- Simple Service procedures. All internal parts serviceable in line
- Low head loss
- Spring loaded "Y" type check valves
- Internal relief valve pressure sensing passages
- Replaceable seat rings on all sizes
- End connections – NPT ANSI/ASME B1.20.1

### Operation

In a flow condition the check valves are open with the pressure between the checks, called the zone, being maintained at least 5.0psi lower than the inlet pressure and the relief valve is maintained closed.

Should abnormal conditions arise under no flow or reversal of flow, the differential relief valve will open and discharge to maintain the zone at least 2psi lower than the supply.

When normal flow resumes, the zone's differential pressure will resume and the relief valve will close.

### Temperature – Pressure

Maximum working pressure:	175psi (12.1 bar)
Hydrostatic test pressure:	350psi (24.1 bar)
Temperature range:	32°F to 140°F (0°C to 60°C)

### Materials

Main valve body:	Bronze
Relief valve body:	Bronze
Elastomers:	Nitrile Seat Discs*
Diaphragms:	Nitrile, fabric reinforced
Springs:	Stainless Steel

\* Can be supplied with optional silicone seat disc.

### Approvals – Standards

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
- AWWA C511 Conformance



## Angle Pattern Reduced Pressure Zone Assemblies

Size: 3/4" – 2" (20 – 50mm)



825YA

The FEBCO Series 825YA Reduced Pressure Zone Assemblies are used to protect against toxic fluids in water services to industrial plants, hospitals, morgues, mortuaries, and chemical plants. They are also used in irrigation systems, boiler feeds, water lines and other installations requiring the highest level of mechanical protection. End connections – NPT ANSI/ASME B1.20.1

### Features

- Installation versatility simplifies new and retrofit installations
- Eliminates pipe elbows, nipples and unions from the installation
- Reduces installation time, labor costs and materials
- Compact design simplifies retrofit
- Integral flanged union connections allow assembly to be removed from the line for freeze protection or maintenance without the danger of spool substitution
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California
- Modular relief valve and check valve internal components for ease of maintenance
- Smaller, less costly protective enclosures can be used to provide freeze and vandalism protection due to compact size of valve
- Field tested design for reliability and performance
- Replaceable seat rings for longer valve life
- Low head loss for optimum performance

### Approvals – Standards

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.
- ANSI/AWWA C511 Conformance



### Materials

Main valve body:	Bronze
Relief valve body:	Bronze
Elastomers:	Nitrile Seat Discs
Diaphragms:	Nitrile, fabric reinforced
Springs:	Stainless Steel

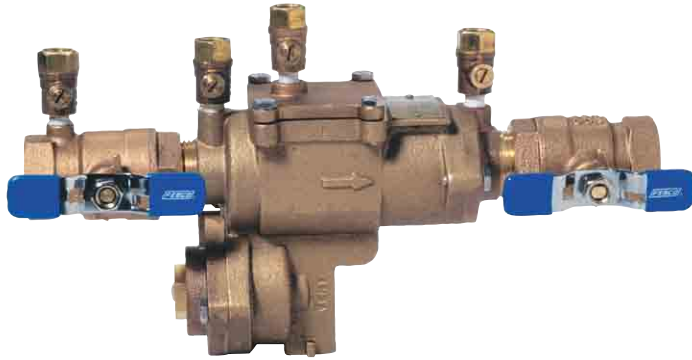
### Pressure – Temperature

Maximum working pressure:	175psi (12.1 bar)
Hydrostatic test pressure:	350psi (24.1 bar)
Temperature range:	32°F to 140°F (0°C to 60°C)

# Series 860

## Reduced Pressure Zone Assemblies

Size: ½" – 2" (15 – 50mm)



860

The FEBCO Series 860 Reduced Pressure Zone Assemblies are designed for use in health-hazard applications. End Connections – NPT ANSI/ASME B1.20.1

## Pressure – Temperature

Max. Working Pressure: 175psi (12.1 bar)  
Hydrostatic Test Press: 350psi (24.1 bar)  
Temperature Range: 32°F to 140°F (0°C to 60°C)

## Materials

Valve Body: Bronze  
Elastomers: Silicone  
Springs: Stainless Steel

## Models

- Wye - Strainer

## Approvals – Standards

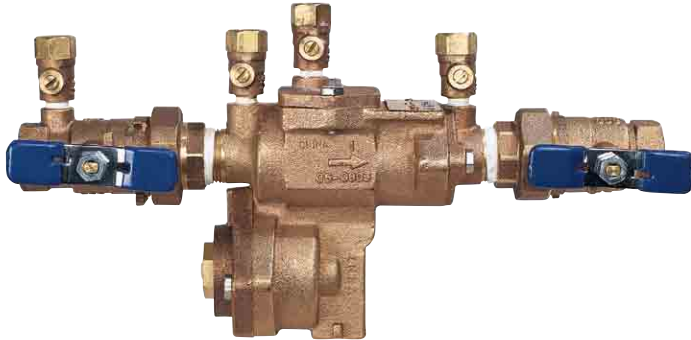
- ANSI/AWWA Conformance (C511)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.





## Reduced Pressure Zone Assemblies with Union End Ball Valves

Size: ½" – 2" (15 – 50mm)



**860U**

The FEBCO Series 860U Reduced Pressure Zone Assemblies are designed for and suitable for use in health hazard applications. End Connections – NPT ANSI/ASME B1.20.1.

### Pressure – Temperature

Maximum Working Pressure:	175psi (12.1 bar)
Hydrostatic Test Press:	350psi (24.1 bar)
Temperature Range:	32°F to 140°F (0°C to 60°C)

### Materials

Valve Body:	Bronze
Elastomers:	Silicone
Springs:	Stainless Steel

### Models

- Wye - Strainer

### Approvals – Standards

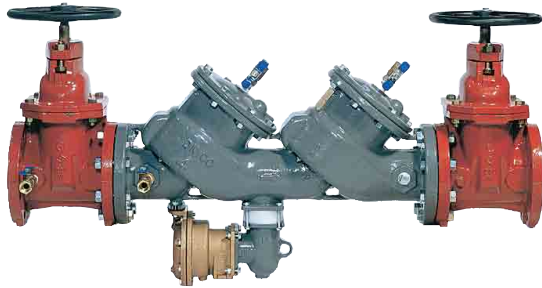
- ANSI/AWWA Conformance (C511)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.



# MasterSeries® 860

## Reduced Pressure Zone Assemblies

Size: 2½" – 10" (65 – 250mm)



860

The FEBCO Master Series® 860 Reduced Pressure Zone Assemblies are designed for health hazard applications. End connections – Flanged ANSI B16.1 Class 125

## Pressure – Temperature

Max. Working Pressure: 175psi (12.1 bar)  
Hydrostatic Test Press: 350psi (24.1 bar)  
Temperature Range: 32°F to 140°F (0°C to 60°C)

## Materials

Main Valve Body: Ductile iron Grade 65-45-12  
Coating: Fusion epoxy coated internal and external  
AWWA C550-90  
Shutoff Valves: NRS and OS&Y resilient wedge gate  
valves AWWA C509  
Trim: Bronze Alloy C83600  
Elastomer Discs: EPDM  
Spring: Stainless steel  
Clamp: AWWA C606 (10" only, 250mm)

## Approvals – Standards

- ANSI/AWWA (C511-89) - 2½" – 10"
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. - 2½" – 8" (65 – 200mm)



1013  
2½" – 10"  
(65 – 250mm)



B64.4  
2½" – 8"  
(65 – 200mm)



2½" – 8"  
(65 – 200mm)



Approved  
2½" – 8"  
(65 – 200mm)

## Reduced Pressure Zone Assemblies

Size: 2½" – 10" (65 – 250mm)



880V Standard Orientation

The FEBCO MasterSeries® 880V Reduced Pressure Zone Assemblies are designed for use in health hazard applications. Standard orientation is inlet flow vertical up, outlet flow vertical down. Vertical orientation is inlet and outlet flow vertical up.

### Pressure – Temperature

Temperature Range: 32°F to 140°F (0°C to 60°C)  
Max. Working Pressure: 175psi (12.1 bar)  
Hydrostatic Test Press: 350psi (24.1 bar)

### Materials

Main Valve Body: Ductile iron Grade 65-45-12  
Coating: Fusion epoxy coated internal and external AWWA C550-90  
Shutoff Valves: NRS and OS&Y resilient wedge gate valves AWWA C509  
Trim: Bronze  
Elastomer Discs: EPDM  
Spring: Stainless steel

### Approvals – Standards

- ANSI/AWWA (C511-89)
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.



\* Less gate not FM approved. Less gate not UL Classified unless installed with UL Listed gate valves.

### Models

Valve Setter with MJ x MJ, MJ x FL, or FL x FL ends  
UL/FM OS&Y RW Gate Valves  
Relief Valve Air Gap Drain Funnel  
Wye Strainer  
End Connections: Flanged ANSI B16.1 Class 125

# Series 710, 715

## Atmospheric Vacuum Breakers

Size: ½" – 2" (15 – 50mm)



**710 1" – 2" (25 – 50mm)**



**715 ½" – ¾" (15 – 20mm)**

The FEBECO Series 710, 715 Atmospheric Vacuum Breakers are designed for use in multiple water applications such as:

- Hose bibbs
- Chemical vats
- Turf irrigation systems
- Laboratory sinks

### Features

- Meets all specifications of ASSE
- Documented flow curves established by The Twining Labs, Inc
- Simple service procedures
- Light weight plastic poppets
- Resilient rubber poppet discs designed for positive closure
- Cold water applications
- End Connections – NPT ANSI/ASME B1.20.1

### Materials

Valve Body:	Bronze
Elastomers:	Nitrile
Poppet:	Acetal/Polypropylene

### Pressure – Temperature

Max. Working Pressure:	150psi (10.3 bar)
Hydrostatic Test Press:	150psi (10.3 bar)
Temperature Range:	710: 32°F to 110°F (0° - 43°C) 715: 32°F to 180°F (0° - 82°C)

### Approvals – Standards



## Dual Check Backflow Preventers

Sizes 1/2" – 1" (15 – 25mm)



**510**

Series 510 Dual Check Backflow Preventers provide cost-effective backflow protection of the public water supply when used according to the local or state plumbing code requirements.

Available with an extensive combination of inlet/outlet sizes, types of thread, and end connections - including retrofit compression fittings and hose connections - the Series 510 can be installed in a variety of piping configurations, and in conjunction with a wide range of meter horns, copper setters, and meter boxes.

The straight line, poppet-type construction of the Series 510 minimizes pressure drop and provides smooth flow characteristics. It can be installed horizontally or vertically. It is not adversely affected by normal line pressure surges, will not cause water hammer, and operates without chatter or vibration.

### Features

- Low pressure drop
- Easy maintenance and service
- Wide selection of types, sizes and connections
- Chloramine resistance - for long life under the harshest water conditions
- Complete modularity - for easy maintenance
- Limit stops - to prevent damage from thermal expansion
- Center and edge guides - to ensure repeatable seating and minimize localized wear
- No exposed screws or threads - to eliminate corrosion potential and improve serviceability
- ASSE 1024 Certified

### Pressure – Temperature

Temperature Range: 33°F - 180°F, (0.5°C - 82.2°C)

Max. Working Pressure: 150psi (10 bar)

### Approvals



**1024**

### Materials

Body:	Bronze
Check Modules:	Acetyl resin and PPO
Discs:	Silicone
Seals:	Buna-N
Springs:	Stainless steel



# Series 731

## Hose Connection Vacuum Breakers

Size: ¾" (20mm) hose thread



731



731FR

Series 731 hose connection vacuum breakers are specially made to permit the attachment of portable hoses to hose thread faucets. Designed to prevent the flow of contaminated water back into the potable water supply, these devices require no plumbing changes, and screw directly onto a sill cock.

Series 731 can be used on a wide variety of installations, such as service sinks, swimming pools, photo developing tanks, laundry tubs, wash racks, dairy barns, marinas and general outside gardening uses.

### Features

- Brass body
- Stainless steel working parts for longevity
- Durable rubber diaphragm and disc for consistent positive seating

**Inlet Connection:** ¾" (20mm) standard female hose thread

**Outlet Connection:** ¾" (20mm) standard male hose thread

### Models

731 - Furnished with break-away set screw to provide a tamper-resistant installation. Standardly equipped to allow sill cock to be drained.

731FR - With freeze relief feature. Protects the 731FR from freeze damage.

#### IMPORTANT NOTE:

SERIES 731 is tested and certified under ANSI A112.1.3 (ASSE 1011), which precludes use under continuous pressure. This valve should only be used in areas where spillage of water will not cause damage.

### Pressure – Temperature

Maximum Temperature: 180°F (82°C)

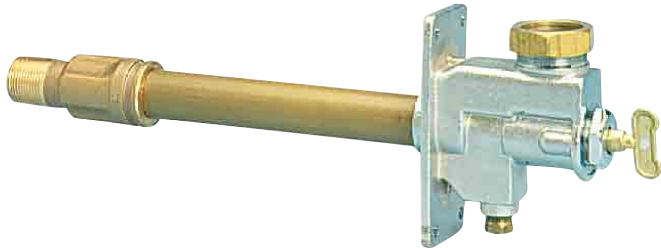
Maximum Working Pressure: 125psi (8.6 bar)

### Approvals



## Key Operated Wall Hydrants

Sizes: 3/4" – 1" (20 – 25mm)



**FPHB-1**

Series FPHB-1 Key Operated Wall Hydrants have been specifically designed to provide outside access to a building water supply for start-up, winterizing, and servicing of irrigation sprinkler systems. The FPHB-1 is located outside of the home reducing the time spent on service calls. There is no need to locate the inside shutoff valve or the drain connection. Deploying the FPHB-1 wall hydrant enables the irrigation contractor to winterize an irrigation system at anytime thereby protecting the contractors' warranty and the homeowners' investment.

When used in conjunction with the FEBCO Series 767 Pressure Vacuum Breaker or either a Series 825Y or 860 Reduced Pressure Zone Backflow Preventer, the installing contractor provides affordable freeze protection for both the irrigation system and the backflow preventer.

### Features

- Eliminates delays and multiple visits to gain interior access to irrigation equipment
- Standardizes location of supply shutoff valve and drain connection
- Access available anytime for winterizing
- Durable bronze valve body and shaft
- One piece valve plunger
- Tamper resistant key operated hydrant
- Exterior chrome finish
- Resilient seated shutoff
- Union connection for ease of installation of backflow preventer
- Manual drain port

### Materials

- Chrome plated bronze valve head.
- Brass shaft with threaded end.

### Pressure – Temperature

Temperature Range: 33°F - 140°F (0.5°C - 60°C) continuous, 180°F (82°C) intermittent

Maximum Working Pressure: 175psi (12.1 bar)

# Series 601-P, 601-M

## Air Gap Drain for Use With MasterSeries® 860/860U

Size: 1/2" – 2" (15 – 50mm)



**601-P**



**601-M**

The air gap drain is designed to be installed under the 860 / 860U 1/2" – 2" (15 – 50mm) reduced pressure assemblies to catch moderate relief valve discharge due to pressure fluctuations and/or minor check valve fouling.

**Note:** The gap drain is not designed to catch the maximum discharge possible from the relief valve. The installation of FEBCO air gap with the drain line terminating above a floor drain will handle any normal discharge or nuisance spitting through the relief valve. However, floor drain size may need to be designed to prevent water damage caused by a catastrophic failure condition. Do not reduce the size of the drain line from the air gap fitting.

### Features

- Reduces amount of water splashing in area around reduced pressure assemblies
- Funnels moderate relief valve discharge into drain
- Designed to fit standard 2" pipe

### Materials

#### 601-P

Funnel: Corrosion resistant ABS  
Mounting Fasteners: Stainless Steel

#### 601-M

Funnel: ASTM A48  
Funnel Connectors: ASTM B26 Alloy 356  
Coating: Vitralon polyurethane, black

## Air Gap Drains for Use With 825Y, 825YD and 826YD Reduced Pressure Devices

AGD-Y: ¾" – 2" (20 – 50mm) / AGD-L: 2½" – 10" (65 – 250mm)



**AGD**

**Note:** The gap drain is not designed to catch the maximum discharge possible from the relief valve. The installation of FEBCO air gap with the drain line terminating above a floor drain will handle any normal discharge or nuisance spitting through the relief valve. However, floor drain size may need to be designed to prevent water damage caused by a catastrophic failure condition. Do not reduce the size of the drain line from the air gap fitting.

### Features

- Reduces amount of water splashing in area around reduced pressure assemblies
- Funnels minor relief valve discharge into drain
- Conforms to air gap installation requirements

### Materials

Funnel: Corrosion Resistant  
Mounting Fasteners: Stainless Steel

# Series 650A

## Wye Strainers

Size: ½" – 2" (15 – 50mm)



650A

The FEBCO Series 650A Wye Strainers are installed in water piping systems to protect expensive equipment (such as backflow preventers) from damage or failure that can be caused by foreign material in the pipeline.

### Features

- Unplugged, NPT blowoff connections are situated on cover
- Recessed screen seats assure accurate screen alignment
- Screens are 304 stainless steel

### Pressure – Temperature

Working Pressure: Non-Shock, 200psi @ 150°F (13.8 bar @ 65°C)

### Materials

Body:	Bronze ASTM B62
Cap/Cover:	Bronze ASTM B62
Gasket:	Non-asbestos
Screen:	20 Mesh

## Wye Strainers

Size: 2½" – 10" (65 – 250mm)



**758A**

The FEBCO Series 758A Wye strainers are installed in water piping systems to protect expensive equipment (such as backflow preventers) from damage or failure that can be caused by foreign material in the pipeline.

### Features

- Unplugged, NPT blowoff connections are situated on cover
- Recessed screen seats assure accurate screen alignment
- Screens are perforated 304 stainless steel

### Pressure – Temperature

Non-Shock, 200psi @ 150° (13.8 bar @ 60°C)

### Materials

Body: Cast Iron, ASTM A126-B

Cap/Cover: Carbon Steel, ASTM A36

Gasket: Non-asbestos

Screen: 2½" – 4" (65 – 100mm) (¼" Perf.) 6" – 10" (150 – 250mm) (⅛" Perf.)

# Series 611

## Valve Setter - Mechanical Joint by Mechanical Joint, Mechanical Joint by Flange, and Flange by Flange Used with MasterSeries® N-Shape Assemblies

Sizes: 3" – 10" (80 – 250mm)



611 MJxMJ



611 FLxMJ



611 FLxFL

The FEBCO 611 Series Mechanical Joint by Mechanical Joint, Mechanical Joint by Flange and Flange by Flange valve setters are constructed of fusion epoxy coated ductile iron. Valve setters are designed to augment the installation of the "N" series backflow prevention valves. Integral ductile iron support between elbows transfers thrust downstream, thus eliminating thrust block requirements between elbows. Mechanical joint restraint devices may be used at pipe connections, depending on local conditions.

### Features

- Corrosion resistant fusion epoxy coated.
- Eliminates the need for thrust blocks or other restraints at the point of installation.
- Flanges: ANSI AWWA C153 A21.53-88.

### Pressure – Temperature

Maximum Working Pressure: 175psi (12.1 bar)  
Temperature Range: 32° to 140° (0°C to 60°)

### Materials

Body: Ductile iron A536 GR 65-45-12  
Coating: Fusion epoxy coated internal and external AWWA C550  
Bolts & Nuts: Stainless steel

\*Mechanical joint accessories and gaskets are not included (except for center joint).



## Thermostatic Freeze Relief Kits

Sizes: 1/8" – 3/4" (3 – 20mm)



**FPTC-1**

Series FPTC-1 Thermostatic Freeze Relief Kits are designed to keep water from freezing in the backflow preventer, while avoiding discharges based on the air temperature dropping below freezing. Series FPTC-1 thermostatically measures the water temperature and opens at 35°F (1.6°C) and closes at 40°F (4.4°C).

### Features

- Compact
- Easy to Install
- Low Maintenance
- Controlled by Water Temperature vs. Air Temperature
- IAPMO Approved

### Materials

Body: Bronze  
Springs: Stainless Steel  
Internals: DZR Brass

### Pressure – Temperature

Working Temperature: 35°F (1.6°C)  
Maximum Pressure: 175psi (12.1 bar)

### Approvals



Note: Care should be given to ensure that discharged water will be adequately piped away from areas where slipping on ice could be a danger, such as roadways and pathways.

# Model TK-1

## Backflow Preventer Test Kit



TK-1

The FEBCO Model TK-1 Backflow Preventer Test Kit has been designed for simplified operation and rugged reliability in a compact package. Offering the latest in gauge technology, the FEBCO TK-1 provides dependable accuracy when testing pressure vacuum breakers, anti-spill vacuum breakers, reduced pressure backflow preventers or double check assemblies and is accurate to  $\pm 1\%$  of full scale.

### Features

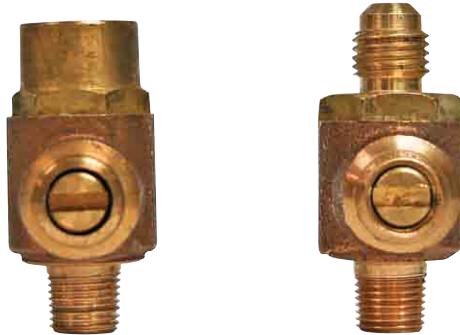
- Color-coded valves and hoses for simplified operation
- Top mounted drain/purge valves and conveniently located line pressure gauge for ease of use
- A large 4.5" anti-parallax dial which indicates descending measurement, accurate to  $\pm 1\%$  of full scale
- Conveniently located needle valves for easy access
- Lightweight needle valves encased in a chemical-resistant body for trouble-free operation
- Replaceable hose filters and valve stem seals for field repair
- Complete kit contains gauge with color-coded valves and hoses, hose adapters, shock cord for easy mounting, supply pressure gauge. All contained in a durable carrying case with room for tools

### Pressure – Temperature

Maximum working pressure:	200psi (13.8 bar)
Maximum working temperature:	200°F (93°C)

## Bronze, Full Port Test Cock

Sizes: 1/8" M x 1/4" F and 1/4" M x 1/4" F (3M x 8F and 8M x 8F mm)



**TC1**

The FEBCO Series TC1 is designed for the following applications:

- Test cock for backflow preventers
- Isolation valve for gauges
- Balancing Valve for gauges

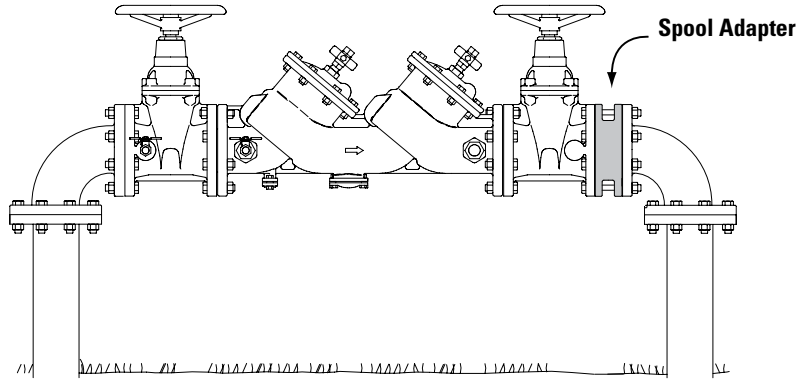
## Features

- Bronze body
- Full port design for low pressure drop
- PTFE stem packing seal, thrust washer and seat
- Quarter-turn open or close with slot for coin or screw driver to operate
- Ideal for throttling and balancing applications of non-abrasive fluids where flow is 20% to 100% of valve capacity
- Low operating torque

# Spool Adapters

## DuraCheck to MasterSeries® Spacer Spool Adapter Kit

Size: 4" – 8" (100 – 200mm)



The FEBCO DuraCheck to MasterSeries® Spacer Spool Adapters ease retrofit of the old style in-line FEBCO DuraCheck backflow preventers (Models 825YD, 805YD and 806YD in 4" – 8" (100mm - 200mm) with the new style in-line FEBCO MasterSeries® (Models 850, 860 and 856 in 4" – 8" (100mm - 200mm). This kit eliminates the need for expensive custom fabricated spools, and provides a quick and easy way to retrofit the valve. The adapter kit comes complete with the proper length spool, gasket, nuts, and studs to retrofit the longer DuraCheck Valves with the shorter in-line MasterSeries®. See the retrofit chart below. The gasket is to be used between the backflow preventer and the spool adapter. MasterSeries® 2½" and 3" (65, 80mm) units do not require a spacer spool adapter to retrofit.

### Features

- Easy retrofit
- Epoxy coated body
- Adapter Kit Includes: Spool, Gasket, Nuts and Studs
- End Details – Flanged ANSI B16.42, Class 150

### Materials

Main Valve Body:	Carbon Steel or Ductile Iron (ANSI B16.1)
Coating:	Epoxy coated internal and external, AWWA C550-90
Elastomers:	Gaskets
Trim:	Hex Nuts & Studs - plated steel

### Pressure – Temperature

Maximum Working Pressure:	175psi (12.1 bar)
Hydrostatic Test Press:	350psi (24.1 bar)
Temperature Range:	32°F to 140°F (0°C to 60°C)

## Bronze, Full Port Ball Valves

Size: ½" - 2" (15mm - 50mm)



622UF



622UFT

### Features

- The FEBCO Series 622F/FT/UF/UFT available with tapped outlet suitable for the installation of a pressure gauge or test cock. 622UF/UFT with Union Ends
- Tee handle standard on ½" through 1¼" sizes (15 – 32mm)
- Lever handle standard on 1½" through 2" sizes (40 – 50mm)
- Full port design for low pressure drop
- Pressure rated at 600psi (41.4 bar) WOG, (non-shock) ½"-2" (15 – 50mm) (DN15-DN50) and 125psi (86.2 bar) saturated steam
- Suitable for temperature from 0°F to +350°F (-18°C to 177°C) at 50psi (34.5 bar)
- PTFE stem packing seal, thrust washer and seat
- Plated carbon steel handle with vinyl insulator
- Quarter-turn open or close operation
- Ideal for throttling and balancing applications of non-abrasive fluids where minimum flow is 20% to 100% of valve capacity
- Low operating torque
- Adjustable stem packing gland
- Bottom loaded, pressure retaining stem

### Options

- 622F: Full Port Thread x Thread Ball Valve
- 622FT: Full Port Thread x Thread Ball Valve with Tapped Side Outlet
- 622 UF: Full Port Thread x Thread Ball Valve with (1) Union End
- 622 UFT: Full port Thread x Thread Ball Valve with (1) Union End with Tapped Side Outlet

# Series 623-BS

## 2-Piece, Full Port, Brass Ball Valves

Sizes: 1/4" – 3" (8 – 80mm)



623-BS

Series 623-BS 2-piece, full port, brass ball valves are used in commercial and industrial applications for a full range of liquids and gases. They feature a bottom-loaded blowout proof stem, virgin PTFE seats, thrust washer, and adjustable stem packing gland, stem packing nut, chrome plated brass ball, brass adapter, and steel handle.

### Features

- Certified to NSF/ANSI standard 61/8
- CSA approved 1/2" – 3" (15 – 80mm)
- UL/FM approved 1/2" – 2" (15 – 50mm)
- Metal-to-metal adapter body seal prevents adapter leaks
- Fluorocarbon elastomer stem O-ring prevents stem leaks
- Adjustable stem packing gland
- Virgin PTFE stem packing seal, thrust washer, and seats
- Bottom loaded blowout proof stem
- Machined chrome plated brass ball
- Valves comply to MSS-SP-110 standard

### Models

623-BS: 1/4" – 3" (8 – 80mm) with NPT threaded connections

### Pressure – Temperature

Temperature Range: -40°F to 400°F (-40°C to 204°C)

### Pressure Ratings

623-BS : 1/4" – 2" (8 – 50mm)

600psi (41 bar) WOG, non-shock  
150psi (10.3 bar) WSP

2 1/2" – 3" (65 – 80mm)

600psi (41 bar) WOG, non-shock  
125psi (8.6 bar) WSP

### Approvals

1/4" – 2" (8 - 80mm) 623-BS

Certified to NSF/ANSI standard 61/8

1/2" – 2" (15 – 50mm) 623-BS UL/FM approved



### Gas Approvals

1/2" – 2" (15 – 50mm)

ASME B16.33, CSA



1/2 psig, 5psig, and 125psig (14, 34 and 862 kPa)  
@ -40°F to 125°F (-40°C - 52°C)

2 1/2" – 3" (65 – 88mm)

ASME B16.38, CSA



1/2 psig, 5psig, and 125psig (14, 34 and 862 kPa)  
@ -40°F to 125°F (-40°C - 52°C)

## Brass Cross-Handle Gate Valves

Sizes  $\frac{3}{8}$ " - 3" (10 - 80mm)



**624-BS**

Series 624-BS Brass Cross-Handle Gate Valves are ideal for water, oil or compressed gas applications. This Series features threaded bonnet, non-rising stem, solid wedge disc and brass body.

### Features

- Threaded bonnet
- Non-rising stem
- Solid wedge disc
- Brass body
- $\frac{3}{8}$ " - 3" (10 - 80mm) threaded end connections

### Pressure — Temperature

- 200psi (13.8 bar) WOG non-shock to 180°F (82°C)



# Series PRV-1

## Water Pressure Reducing Valves\*

Sizes: ½" – 1" (15 – 25mm)



PRV-1

Series PRV-1 Water Pressure Reducing Valves are designed to reduce incoming water pressure to a sensible level to protect plumbing system components and reduce water consumption. This series is suitable for water supply pressures up to 400psi (27.6 bar) and may be adjusted from 25 – 75psi (172 – 517 kPa). The standard setting is 50psi (345 kPa). All parts are quickly and easily serviceable without removing the valve from the line. The standard bypass feature permits the flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main.

### Features

- Integral stainless steel strainer
- Thermoplastic seat & cage
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure\*\*
- Sealed spring cage on all models for waterworks pit installations

### Models

PRV-1 - NPT threaded female inlet x NPT female outlet

PRV-1-U - NPT threaded union inlet x NPT female outlet

PRV-1-DU - Double Union – NPT threaded union female inlet and outlet

### Materials

Body:	Bronze
Seat:	Thermoplastic
Cage:	Thermoplastic
Integral Strainer:	Stainless steel
Diaphragm:	Reinforced EPDM
Valve Disc:	Elastomer

### Pressure – Temperature

Temperature Range: 33°F – 180°F (0.5°C – 82°C)

Maximum Working Pressure: 400psi (27.6 bar)

Adjustable Reduced Pressure Range: 25 – 75psi (172 – 517 kPa)

Standard Reduced Pressure Setting: 50psi (345 kPa)



### Standards

Meets requirements of ASSE Standard 1003; (ANSI A112.26.2); and listed by IAPMO and City of Los Angeles.

**\* A water saving test program concluded that reducing the supply pressure from 80 – 50psi (551 – 346kPa) resulted in a water savings of 30%.**

**\*\* Bypass will not work if inlet pressure is above 150psi (10.34 bar).**

## Water Pressure Reducing Valves\*

Sizes: 1/4" – 2" (32 – 50mm)



**PRV-1-DU**

Series PRV-1 Water Pressure Reducing Valves are designed to reduce incoming water pressure to a sensible level to protect plumbing system components and reduce water consumption. This series is suitable for water supply pressures up to 300psi (21 bar) and may be adjusted from 25 – 75psi (172 – 517kPa). The standard setting is 50psi (345kPa). All parts are quickly and easily serviceable without removing the valve from the line. The standard bypass feature permits the flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main.

### Features

- Double union inlet & outlet connections
- Integral stainless steel strainer
- Thermoplastic seat & cage
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure\*\*
- Sealed spring cage on all models for waterworks pit installations

### Models

PRV-1	NPT threaded female inlet x NPT female outlet
PRV-1-U	NPT threaded union inlet x NPT female outlet
PRV-1-DU	Double Union – NPT threaded union female inlet and outlet

\* A water saving test program concluded that reducing the supply pressure from 80 – 50psi (551 – 346kPa) resulted in a water savings of 30%.

\*\* Bypass will not work if inlet pressure is above 150psi (10.34 bar).

### Materials

Body:	Bronze
Seat:	Thermoplastic
Cage:	Thermoplastic
Integral Strainer:	Stainless steel
Diaphragm:	Reinforced EPDM
Valve Disc:	Elastomer

### Pressure – Temperature

Temperature Range:	33°F – 180°F (0.5°C – 82°C)
Maximum Working Pressure:	300psi (21 bar)
Adjustable Reduced Pressure Range:	25 – 75psi (172 – 517 kpa)
Standard Reduced Pressure Setting:	50psi (345 kpa)

### Standards



Meets requirements of ASSE Standard 1003; (ANSI A112.26.2); CSA Standard B356; and listed by IAPMO. City of Los Angeles.

# Series PRV-2

## Water Pressure Reducing Valves\*

Sizes: ½" – 1" (15 – 25mm)



**PRV-2-U**

Series PRV-2 Water Pressure Reducing Valves are designed to reduce incoming water pressure to a sensible level to protect plumbing system components and reduce water consumption. This series is suitable for water supply pressures up to 400psi (27.6 bar) and may be adjusted from 25 to 75psi (172 – 517kPa). The standard setting is 50psi (345kPa). All parts are quickly and easily serviceable without removing the valve from the line. The standard bypass feature permits the flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main.

### Features

- Integral stainless steel strainer
- Thermoplastic seat
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure\*\*
- Sealed spring cage on all models for waterworks pit installations

### Models

- PRV-2 – NPT threaded female inlet x NPT female outlet  
PRV-2-U – NPT threaded union inlet x NPT female outlet  
PRV-2-DU – Double Union – NPT threaded union female inlet and outlet

\* A water saving test program concluded that reducing the supply pressure from 80 – 50psi (551 – 346kPa) resulted in a water savings of 30%.

\*\* Bypass will not work if inlet pressure is above 150psi (10.34 bar).

### Materials

Body:	Bronze
Seat:	Thermoplastic
Cage:	Bronze
Integral Strainer:	Stainless steel
Diaphragm:	Reinforced EPDM
Valve Disc:	Elastomer

### Pressure – Temperature

Temperature Range:	33°F – 180°F (0.5°C – 82°C)
Maximum Working Pressure:	400psi (27.6 bar)
Adjustable Reduced Pressure Range:	25 – 75psi (172 – 517kPa)
Standard Reduced Pressure Setting:	50psi (345kPa)

### Standards



Meets requirements of ASSE Standard 1003; (ANSI A112.26.2); listed by IAPMO and City of Los Angeles.

## Water Pressure Reducing Valves\*

Sizes: 1¼" – 2" (32 – 50mm)



Series PRV-2 Water Pressure Reducing Valves are designed to reduce incoming water pressure to a sensible level to protect plumbing system components and reduce water consumption. This series is suitable for water supply pressures up to 300psi (21 bar) and may be adjusted from 25 – 75psi (172 – 517 kPa). The standard setting is 50psi (345 kPa). All parts are quickly and easily serviceable without removing the valve from the line. The standard bypass feature permits the flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main.

### Features

- Bronze cage
- Double union inlet & outlet connections
- Integral stainless steel strainer
- Thermoplastic seat
- Bronze body construction
- Serviceable in line
- Bypass feature controls thermal expansion pressure\*\*
- Sealed spring cage on all models for waterworks pit installations

### Models

PRV-2	NPT threaded female inlet x NPT female outlet
PRV-2-U	NPT threaded union inlet x NPT female outlet
PRV-2-DU	Double Union – NPT threaded union female inlet and outlet

### Materials

Body:	Bronze
Seat:	Thermoplastic
Cage:	Bronze
Integral Strainer:	Stainless steel
Diaphragm:	Reinforced EPDM
Valve Disc:	Elastomer

### Pressure – Temperature

Temperature Range:	33°F – 180°F (0.5°C – 82°C)
Maximum Working Pressure:	300psi (21 bar)
Adjustable Reduced Pressure Range:	25 – 75psi (172 – 517kPa)
Standard Reduced Pressure Setting:	50psi (345kPa)

### Standards



Meets requirements of ASSE Standard 1003; (ANSI A112.26.2); CSA Standard B356; and listed by IAPMO and City of Los Angeles.

\* **A water saving test program concluded that reducing the supply pressure from 80 – 50psi (551 – 346kPa) resulted in a water savings of 30%.**

\*\* **Bypass will not work if inlet pressure is above 150psi (10.34 bar).**

# Series SA-1

## Mini Water Hammer Arrestors

Sizes: 3/8" – 1/2" (10– 15mm)



SA-1

## What is Water Hammer?

The noise from banging pipes is caused by shocks of high speed water flowing in the piping system when a fixture is suddenly closed. Sudden stoppage of the water (a non-compressible liquid) flowing at a given pressure and velocity causes a surge or spike of water and is called water hammer. When this occurs, a pressure wave travels back through the piping until it finds a point of relief.

Fast closing positive shutoff valves incorporated in the plumbing system contribute to creating water hammer which is not only annoying but damaging to pipes and appliances. Series SA-1 water hammer arrestors provide economical and effective single fixture protection from the destructive and annoying problem of water pressure shock. They are designed especially for use in light commercial or residential applications on lines up to 150psi (10.3 bar) working pressure. Utilizing piston style construction, factory charged and sealed, the Series SA-1 provides automatic, repetitive control of water hammer when properly installed.

## Features

- May be installed in concealed locations without access panels. They are factory air charged and are not rechargeable
- May be installed in new or existing plumbing systems vertically, horizontally or at any angle

## Pressure – Temperature

Temperature Range: 33°F to 180°F (0.5°C - 82°C)

Max. Working Pressure: 150psi (10.3 bar)

Air Preload: 60psi (4.2 bar)

## Models

SA-1: For installation on 1/2" (15mm) NPT for new or retrofit applications.

## Standards



Meets requirements of ASSE Standard 1010 and listed by IAPMO.



## Winter Protection for PVB, DC and RP

FEBCO makes it easy to bring backflow preventers in out of the cold during the winter season with the Union-End option for irrigation valves. You can completely eliminate the potential for twisted or warped internals caused by freezing temperatures and the time and expense needed for repair or replacement. With the Union-End option on Models 765, 850 and 860, there'll be no more spring surprises, just a backflow preventer that is ready to go back to work.



## Contact Us

For technical, repair, approval, and warranty information on FEBCO products contact your local FEBCO representative or visit [www.FEBCOonline.com](http://www.FEBCOonline.com).



A Watts Water Technologies Company



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