

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

MasterSeries® LF880V

Reduced Pressure Zone Backflow Prevention Assemblies

Size: 2½" - 10"

The FEBCO® MasterSeries® LF880V Reduced Pressure Zone Assembly is specifically designed to protect against possible backpressure and backsiphonage conditions for high hazard (that is, toxic) application in accordance with Local Governing Water Utility Code. This Backflow Assembly is primarily used on potable drinking water systems where Local Governing Code mandates protection from non-potable quality water being pumped or siphoned back into the potable water system.

The ductile iron body is fused with ArmorTek™ technology to resist corrosion due to microbial induced corrosion (MIC) or exposed metal substrate. The LF880V features Lead Free* construction to comply with low lead installation requirements. The Lead Free* Reduced Pressure Zone Assemblies shall comply with state codes and standards, where applicable, requiring reduced lead content.

Features

- Stainless steel relief valve seat and stainless steel check components for maximum performance and durability
- Inline serviceable assembly
- Horizontal N-pattern or vertical up Z-pattern installation
- No special tools required for servicing
- Captured modular spring assembly
- Reversible and replaceable discs
- Field replaceable seats
- Ductile iron valve body design
- Utilizes advanced ArmorTek™ coating technology to resist corrosion of internal components
- Modular and repairable pressure differential relief valve
- Clapper check assembly
- Captured O-ring design

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.



Model 880V

Specification

The FEBCO MasterSeries LF880V Reduced Pressure Zone Assembly shall be installed on the potable water supply and at each point of cross-connection to protect against possible backpressure and backsiphonage conditions for high hazard (that is, toxic) applications. The assembly shall consist of a main line valve body composed of a pressure differential relief valve located in a zone between two (2) independently acting approved clapper style check modules with replaceable seats and disc rubbers. Servicing of the pressure differential relief valve and both check modules does not require any special tools; both check modules are accessed through independently top entry covers. This assembly shall be fitted with AWWA Compliant inlet/outlet resilient seated shutoff valves; when used on a Fire-Sprinkler application, the assembly shall be fitted with approved UL/FM inlet/outlet resilient seated shutoff valves and contain four (4) properly located resilient seated test cocks as specified by AWWA Standard C511. The valve body shall utilize a coating system with built in electro-chemical corrosion inhibitor and microbial inhibitor. Flow and pressure loss performance parameters shall meet the requirements of AWWA Standard C511.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

NOTICE

Inquire with governing authorities for local installation requirements.

FEBCO product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact FEBCO Technical Service. FEBCO reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on FEBCO products previously or subsequently sold.



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Options - Suffix

OSY: UL/FM Approved OS&Y gate valves (ANSI/AWWA C515 Compliant)

NRS: Non-rising stem gate valves (ANSI/AWWA C509 Compliant)

LG : Less shutoff valves (This is NOT an APPROVED ASSEMBLY)

Example Ordering Description

4" LF880V-OSY - Valve assembly fitted with OS&Y shutoff valves

Available Components

Wye Strainer: FDA Approved (ASME B16.1 Class 125 & AWWA Class D Flange)

Series 611 Valve Setter: MJ x MJ - Mechanical Joint x Mechanical Joint (AWWA C111/A21.11)
 MJ x FL - Mechanical Joint x Flange (AWWA C111/A21.11; ASME B16.1 Class 125/AWWA Class D Flange)
 FL x FL - Flange x Flange (ASME B16.1 Class 125 & AWWA Class D Flange)

Materials

Below is a general materials list of Model LF880V. All assemblies sizes 2½" to 10" are similar in materials and construction. Contact your local FEBCO representative if you require further information.

Main Valve Body: Ductile iron Grade 65-45-12

Relief Valve Body: Ductile iron Grade 65-45-12

Coating: Fusion epoxy coated internal and external AWWA C550-90

Shutoff Valves: NRS resilient wedge gate valve AWWA C509 (Standard)
 OSY resilient wedge gate valve AWWA C515 (UL/FM)

Check Seats: Stainless steel

Relief Valve Seat: Stainless steel

Disc Holder: Stainless steel

Elastomer Disc: Silicone

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 (FCCCHR-USC)
- ASSE 1013 Listed
- UL Classified** (US & Canada)
- FM Approved**
- IAPMO/cUPC
- AWWA Standard C511 Compliant
- End Connections: Compliant to ASME B16.1 Class 125 & AWWA Class D Flange

**Assembly configured with UL/FM Approved OS&Y RW gate valves. Less gate valve assemblies are not UL/FM approved configurations.



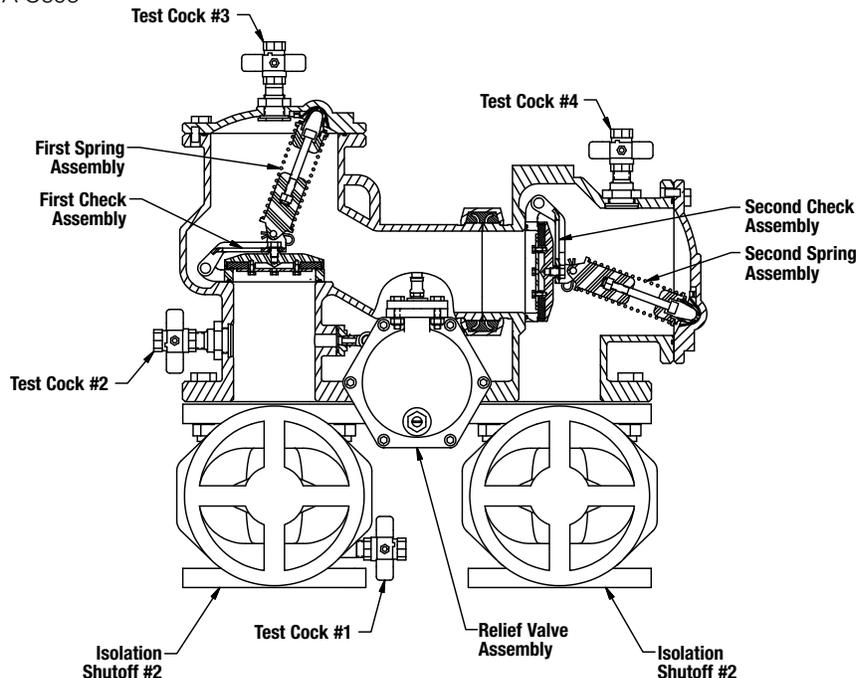
Assembly Flow Orientation

Horizontal (N-Pattern 2½" – 10") - Approved by FCCCHR-USC, ASSE, cULus, FM, IAPMO/cUPC

Vertical Up (Z-Pattern 2½" – 10") - Approved by FCCCHR-USC, ASSE, cULus, FM, IAPMO/cUPC

Pressure - Temperature

| | |
|------------------------------|---------------------------------------|
| Max. Working Pressure: | 175 psi (12.1 bar) |
| Min. Working Pressure: | 20 psi (1.4 bar) |
| Hydrostatic Test Pressure: | 350 psi (24.1 bar) |
| Hydrostatic Safety Pressure: | 700 psi (48.3 bar) |
| Temperature Range: | 33°F - 140°F (0.5°C- 60°C) continuous |

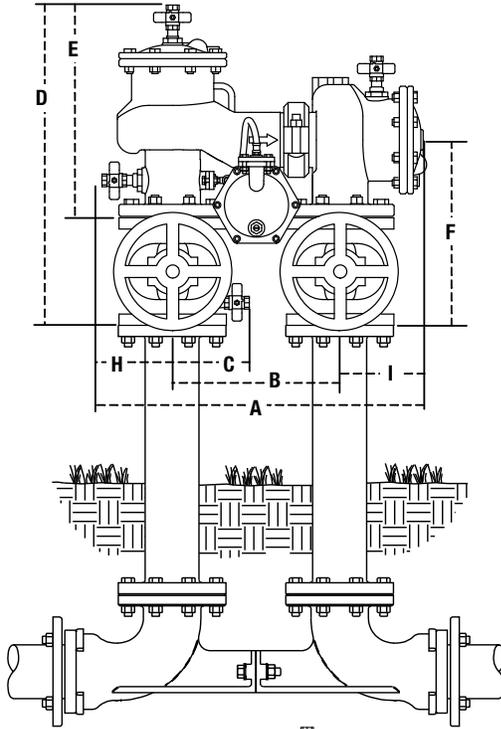


Dimensions – Weights

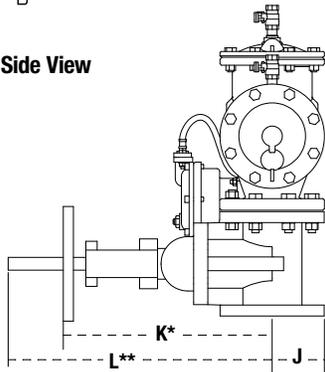
Size: 2½" - 10"

Below are the nominal dimensions and physical weights for Model LF880V, sizes 2½" to 10". Allowances must be made for normal manufacturing tolerances. Download installation instructions at watts.com, or contact your local FEBCO representative for more information.

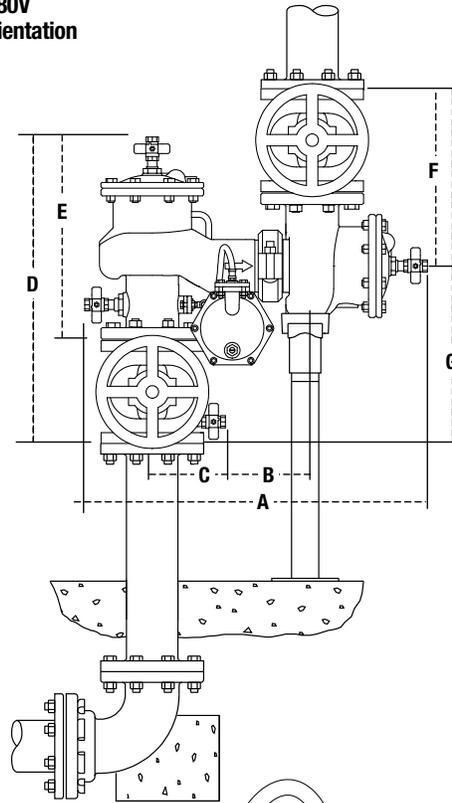
Model LF880V Standard Orientation (N-Pattern)



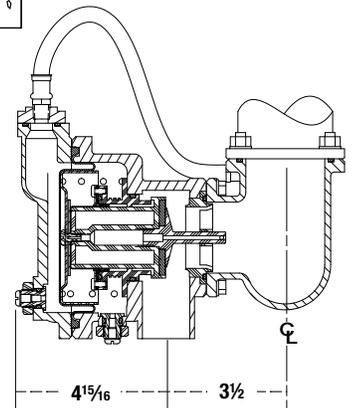
Gate Valve Side View



Model LF880V Vertical Orientation (Z-Pattern)



Relief Valve Detail Relief shipped on right side (shown) field reversible to left side.



| SIZE | DIMENSIONS | | | | | | | | | | | | WEIGHT*** | | | | | | | | | | | | | | | |
|------|------------|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----------|------|----|-----|-----|-----|----|-----|-----|-----|-----|------|-----|-----|------|-----|
| | A | B | C | D | E | F | G | H | I | J | K* | L** | NRS | OSY | | | | | | | | | | | | | | |
| in. | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | in. | mm | lb | kg | lb | kg | | | | | | | | | | | | |
| 2½ | 25½ | 654 | 12½ | 318 | 6¼ | 159 | 24¼ | 616 | 16⅝ | 422 | 13⅜ | 346 | 27¼ | 692 | 5½ | 140 | 7¼ | 184 | 3½ | 89 | 12⅝ | 321 | 16⅝ | 416 | 221 | 100 | 225 | 102 |
| 3 | 25¾ | 654 | 12½ | 318 | 6¼ | 159 | 24¼ | 629 | 16⅝ | 422 | 14⅞ | 359 | 28¼ | 718 | 5½ | 140 | 7¼ | 184 | 3¾ | 95 | 12⅝ | 327 | 22¼ | 565 | 247 | 112 | 251 | 114 |
| 4 | 27⅞ | 708 | 14 | 356 | 7 | 178 | 26¼ | 680 | 17¾ | 451 | 15½ | 394 | 31 | 787 | 6 | 152 | 7¼ | 184 | 4½ | 114 | 14⅞ | 365 | 23¼ | 591 | 344 | 156 | 356 | 162 |
| 6 | 32¼ | 819 | 16 | 406 | 8 | 203 | 32¼ | 819 | 21⅝ | 548 | 18⅞ | 473 | 37¼ | 946 | 7½ | 191 | 9½ | 241 | 5½ | 140 | 18⅞ | 479 | 30⅞ | 765 | 517 | 235 | 537 | 244 |
| 8 | 37½ | 953 | 18½ | 470 | 9¼ | 235 | 36⅞ | 324 | 24⅞ | 632 | 20¾ | 527 | 41½ | 1054 | 8¾ | 222 | 10¼ | 260 | 6¾ | 172 | 23½ | 597 | 37¾ | 959 | 808 | 366 | 836 | 379 |
| 10 | 42⅞ | 1068 | 21 | 533 | 10⅞ | 264 | 40⅝ | 1032 | 27½ | 699 | 23⅞ | 601 | 47⅞ | 1202 | 9⅞ | 238 | 11⅞ | 298 | 8 | 203 | 27½ | 699 | 45¾ | 1162 | - | - | 1344 | 610 |

Notes:

* Indicates nominal dimensions with NRS gate valves

** Indicates nominal dimensions with OSY gate valves (full open position)

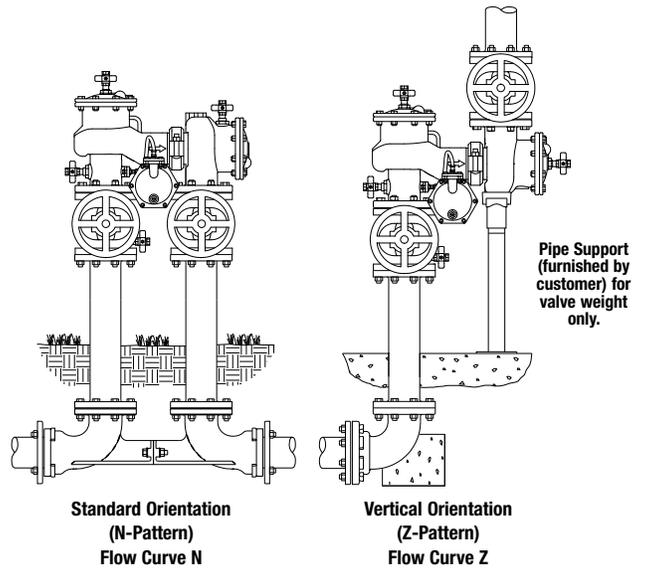
*** Indicates weight of complete backflow assemblies with specified gate valves

The gap drain is not designed to catch the maximum discharge possible from the relief valve. The installation of the 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.

Performance

The flow capacity chart identifies valve performance based upon rated water velocity up to 20fps.

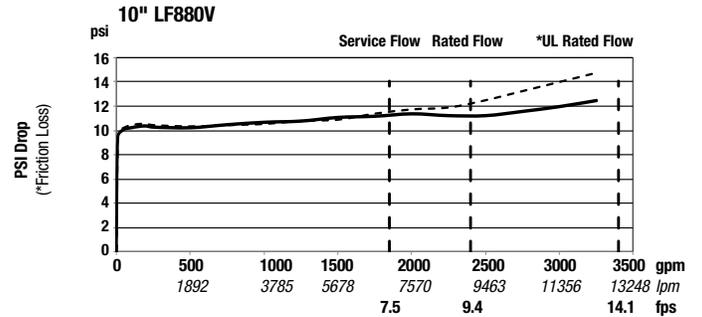
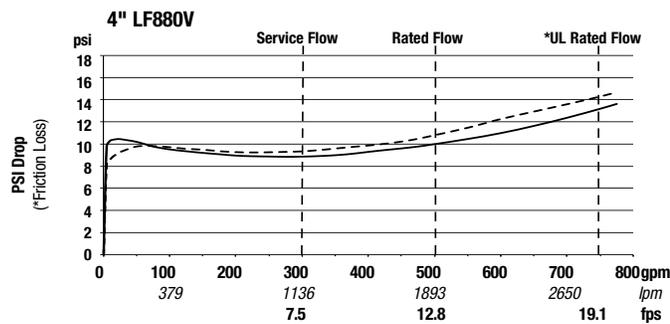
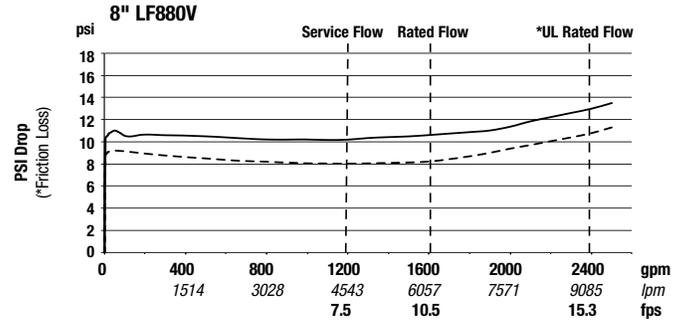
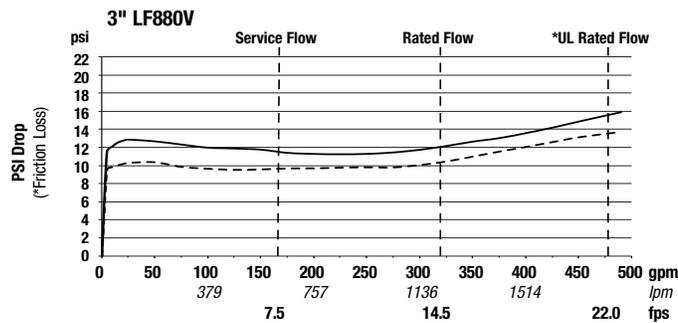
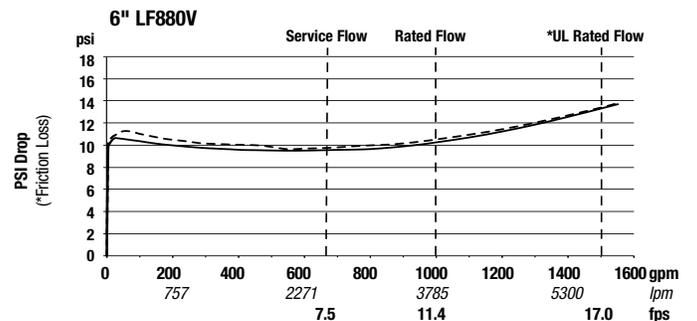
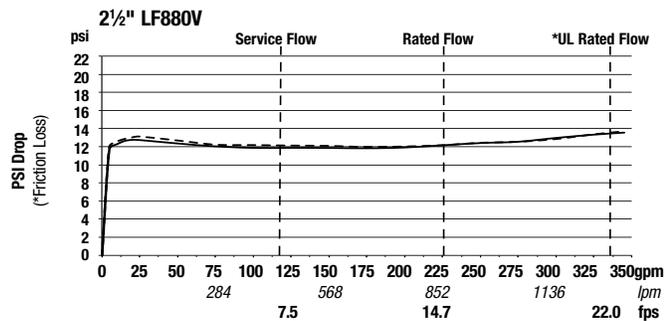
- Maximum service flow rate is determined by maximum rated velocity of 7.5fps.
- AWWA Manual M-22 (Appendix C) recommends that the maximum water velocity in the services be not more than 10fps.
- UL flow rate is determined by typically rated velocity of 15 ft/sec.



Capacity

N-Pattern

Z-Pattern



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