Engineering Specification

Job Name _____ Contractor _____

Job Location _____ Approval _____

Engineer _____ Contractor's P.O. No. _____

Approval _____ Representative _____

LEAD FREE*

MasterSeries® LF870V

Double Check Valve Assembly

2½" - 10"

FEBCO MasterSeries LF870V Double Check valve assembly is specifically designed to protect against possible backpressure and backsiphonage conditions for non-health hazard (pollutant) application in accordance with Local Governing Water Utility Code. This 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 iron components of the backflow preventer are coated with ArmorTek®, a patented three-part advanced epoxy system engineered to reduce microbial-induced corrosion (MIC) and protect exposed metal substrate. LF870V features Lead Free* construction to comply with low lead installation requirements. The Lead Free* assembly shall comply with state codes and standards, where applicable, requiring reduced lead content.

Features

- In-line serviceable assembly
- Horizontal N-pattern installations
- Vertical up Z-pattern installations
- No special tools required for servicing
- Captured modular spring assembly
- Reversible and replaceable discs
- Field replaceable seats
- Ductile iron valve body design
- Stainless steel check components
- ArmorTek coating technology to resist corrosion of internals
- Winterization feature with disc retainers and valve body drain ports
- Clapper check assembly
- Commonality between 1st and 2nd check components
- Captured O-ring design

Specification

The Double Check valve 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 non-health hazard (pollutant) applications. The assembly shall consist of a main line valve body composed of two (2) independently acting approved clapper style check modules with replaceable seats and disc rubbers. Servicing of both check modules shall not require any special tools and shall be 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 Classified/FM Approved inlet/outlet resilient seated shutoff valves and contain four (4) properly located resilient seated test cocks as specified by AWWA Standard C510. Iron components of the backflow preventer shall incorporate ArmorTek coating technology, delivering integrated protection against electrochemical corrosion and microbial-induced corrosion. The assembly shall be approved for horizontal and/or vertical-up installations while meeting the requirements of AWWA Standard C510 flow and pressure loss performance parameters. The assembly shall be FEBCO MasterSeries LF870V.

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.

Inquire with governing authorities for local installation requirements.

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

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Model/Option

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; NOT an approved assembly

Example Ordering Description

4" LF870V-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)

Assembly Flow Orientation

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

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

Materials

Main Valve Body: Ductile iron Grade 65-45-12
Coating: ArmorTek powder coating, applied to internal and external surfaces
Shutoff Valves: NRS resilient wedge gate valve AWWA C509 (Standard)
OSY resilient wedge gate valve AWWA C515 (UL Classified/FM Approved)
Check Seats: Stainless steel
Disc Holder: Stainless steel
Elastomer Disc: Silicone
Spring: Stainless steel
Clamp: AWWA C606

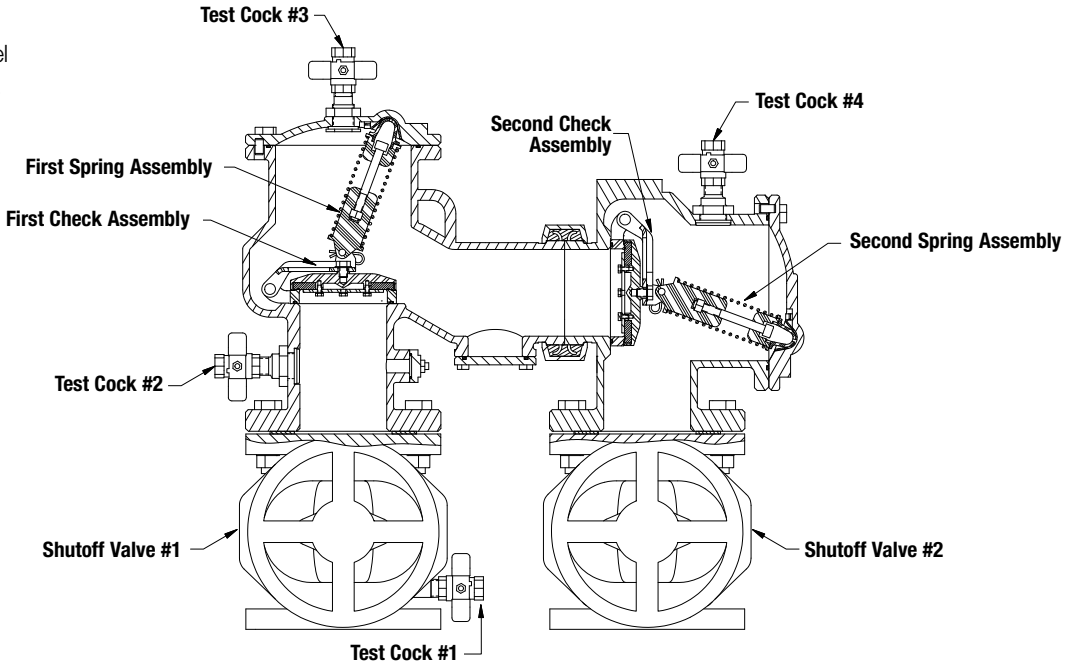
Approvals – Standards

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
- ASSE 1015 Listed
- UL Classified** (U.S. & Canada)
- FM Approved**
- IAPMO
- AWWA Standard C510 Compliant
- End Connections: Compliant to ASME B16.1 Class 125 & AWWA Class D Flange

1015

Pressure - Temperature

Max. Working Pressure: 175 psi (12.1 bar)
Min. Working Pressure: 10 psi (0.7 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

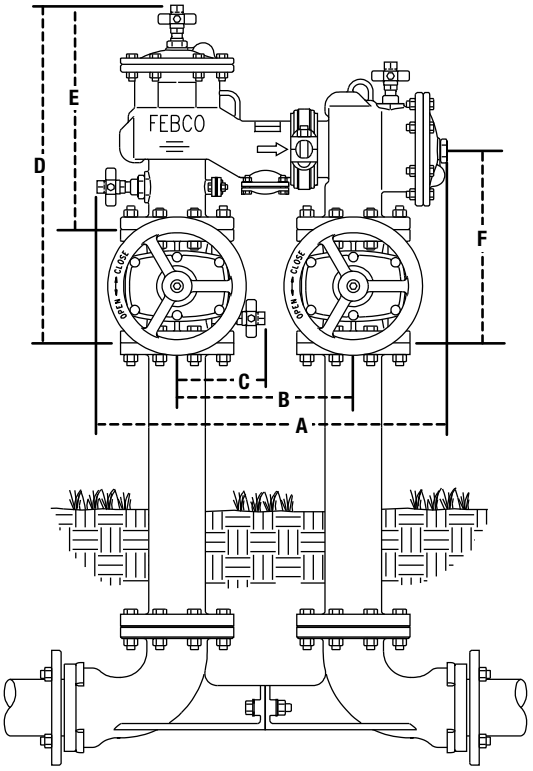


**Assembly configured with UL Classified/FM Approved OS&Y RW gate valves. Less gate valve assemblies are not UL Classified/FM Approved configurations.

Dimensions – Weights

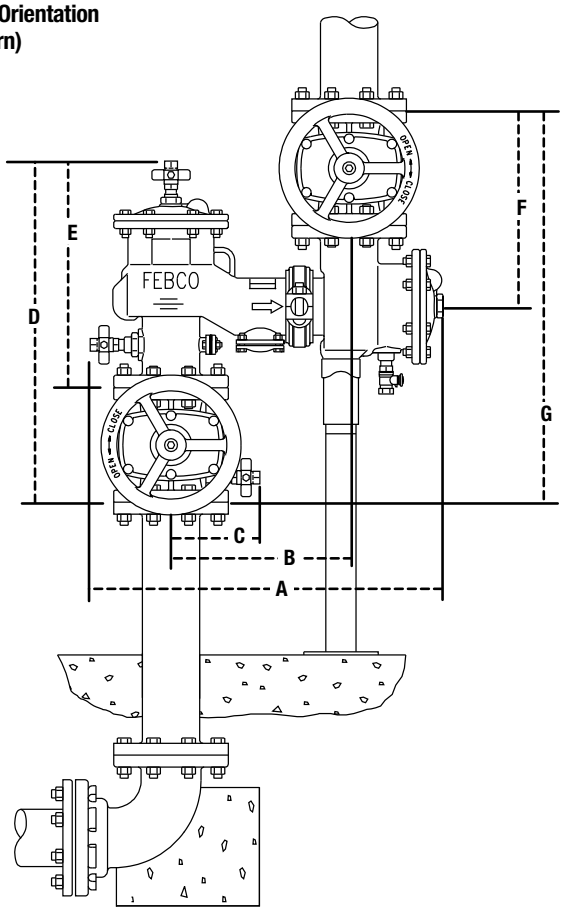
Below are the nominal dimensions and physical weights for LF870V, sizes 2½" to 10". Allowances must be made for normal manufacturing tolerances. Visit Watts.com to download the product manual, or speak with your local FEBCO representative for more information.

Standard Orientation (N-Pattern)

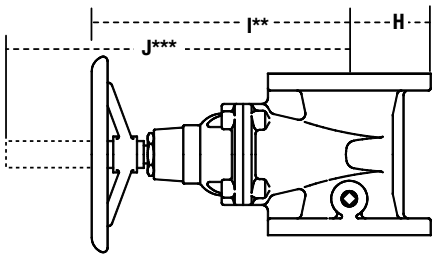


NOTE: LF870V is shipped in the standard (N-pattern) orientation.

Vertical Orientation (Z-Pattern)



Gate Valve Side View Clearance



SIZE	DIMENSIONS																			WEIGHT****			
	A		B		C		D		E		F		G		H		I**		J***		NRS		OSY	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb*	*kg*	*lb*	*kg*
2½	25¾	654	12½	318	6¼	159	24¼	616	16⅝	422	13⅝	346	27¼	692	3½	89	12⅝	321	16⅜	416	197	89	201	91
3	25¾	654	12½	318	6¼	159	24¼	629	16⅝	422	14⅛	359	28¼	718	3¾	95	12⅞	327	22¼	565	223	101	227	103
4	27⅞	708	14	356	7	178	26¾	680	17¾	451	15½	394	31	787	4½	114	14⅜	365	23¼	591	320	145	332	151
6	32¼	819	16	406	8	203	32¼	819	21⅝	548	18⅝	473	37¼	946	5½	140	18⅞	479	30⅛	765	492	223	512	232
8	37½	953	18½	470	9¼	235	36⅜	324	24⅞	632	20¾	527	41½	1054	6¾	172	23½	597	37¾	959	782	355	810	367
10	42⅛	1068	21	533	10⅞	264	40⅝	1032	27½	699	23 1⅛	601	47⅝	1202	8	203	27½	699	45¾	1162	-	-	1318	598

** Indicates nominal dimensions with NRS gate valves.

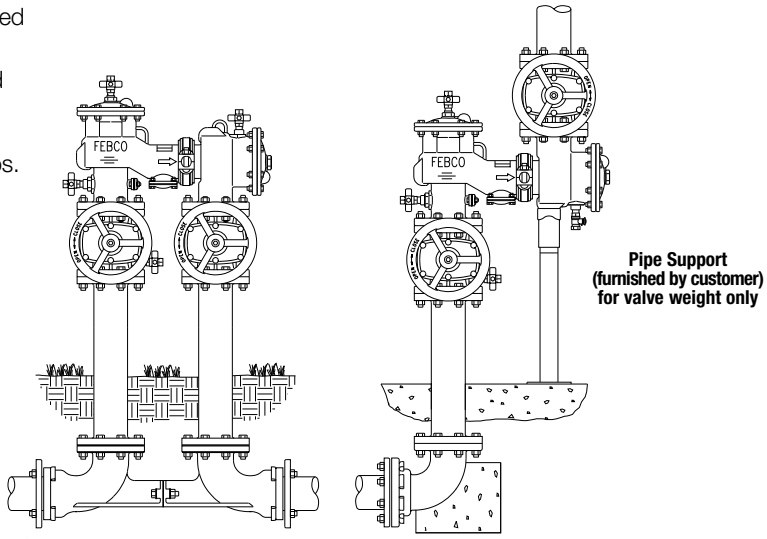
*** Indicates nominal dimensions with OSY gate valves (full open position).

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

Performance

Flow capacity chart identifies valve performance based upon rated water velocity of 20 fps.

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



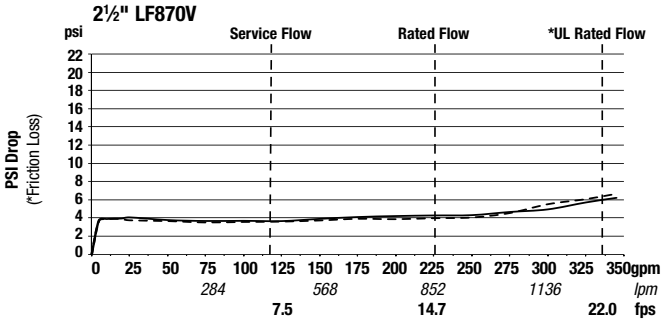
Standard orientation (N Pattern) Flow Curve N

Vertical orientation (Z Pattern) Flow Curve Z

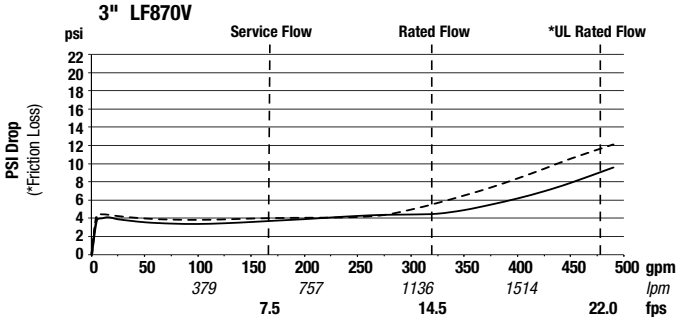
Capacity

N-Pattern Z-Pattern

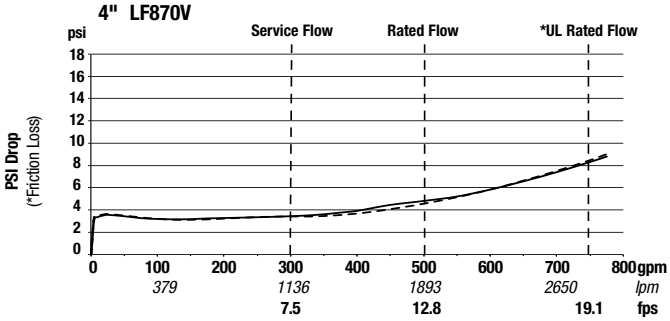
2½" LF870V



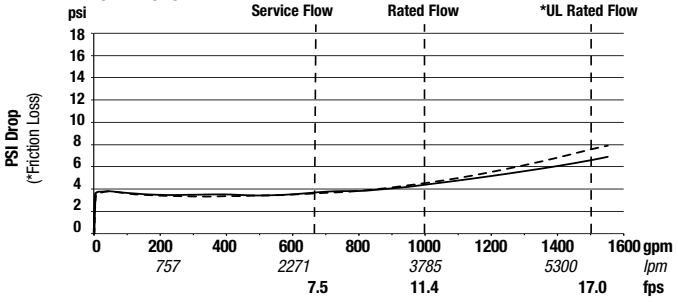
3" LF870V



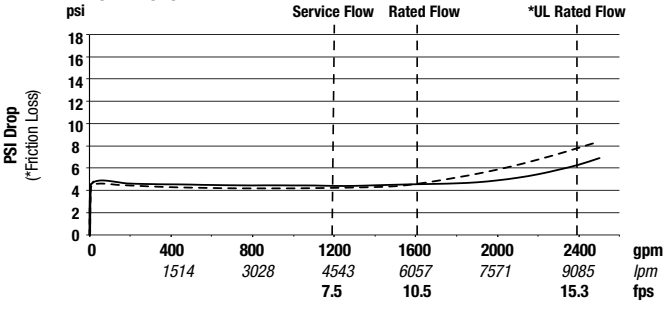
4" LF870V



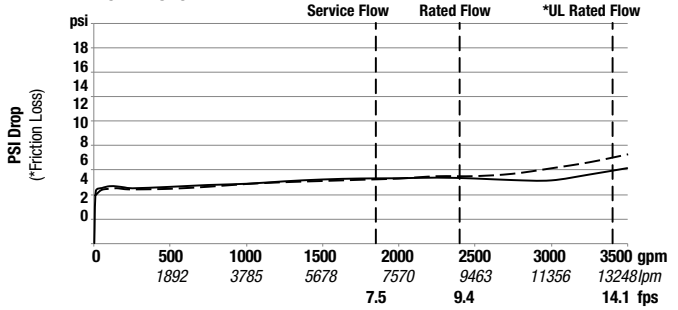
6" LF870V



8" LF870V



10" LF870V



The 6" curves (N-standard orientation) include the FEBCO valve setter Series 611.

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