

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

MasterSeries® LF866

Reduced Pressure Zone Detector Backflow Prevention Assemblies (Type-II)

Size: 2½" - 10"

The FEBCO® MasterSeries® LF866 Reduced Pressure Zone Detector 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 Codes. This Backflow Assembly is primarily used on potable drinking water systems where Local Governing Codes mandate protection from non-potable quality water being pumped or siphoned back into the potable water system.

The ductile iron body is fused with ArmorTek™ coating technology to resist corrosion due to microbial induced corrosion (MIC) or exposed metal substrate. The LF866 features Lead Free construction to comply with low lead installation requirements. The Lead Free Reduced Pressure Zone Detector Assemblies shall comply with state codes and standards, where applicable, requiring reduced lead content.

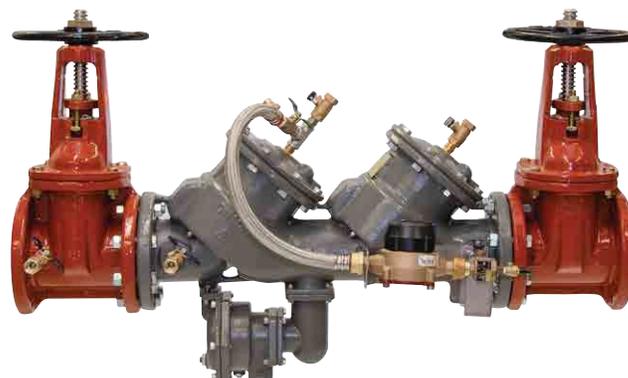
Features

Main Valve:

- Stainless steel relief valve seat and stainless steel check components for maximum performance and durability
- Inline serviceable assembly
- 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 internals
- Modular and repairable pressure differential relief valve
- Clapper check assembly
- Captured O-ring design

Auxiliary Bypass:

- Compact bypass design; remains in main valve assembly profile
- Inline serviceable ¾" check assembly
- No special tools required for servicing
- Field replaceable seat and disc
- Detect potential underground water leaks
- Detect unauthorized water usage



Model LF866-OSY

Specification

The FEBCO MasterSeries LF866 Reduced Pressure Zone Detector Assembly shall be installed on the potable water supply and at each point of cross-connection to protect against possible backpressure high hazard and backsiphonage conditions for (that is, toxic) 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 does not require any special tools and are accessed through independent top entry covers. This 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 auxiliary bypass line contains a ⅝" x ¾" Water Meter that complies with ANSI/AWWA Standard C700 coupled with an approved check assembly compliant to AWWA Standard C511. The bypass line is designed to detect leaks or unauthorized water usage of the water system while protecting against possible backpressure and backsiphonage conditions in high hazard (i.e., toxic) applications. The valve body shall utilize a coating system with built-in electrochemical 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.

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

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)
- CFM: Totalizing cubic ft/min $\frac{5}{8}$ " x $\frac{3}{4}$ " water meter
(ANSI/AWWA C700 Compliant)
- GPM: Totalizing gal/min $\frac{5}{8}$ " x $\frac{3}{4}$ " water meter
(ANSI/AWWA C700 Compliant)
- LG: Less shutoff valves (This is NOT an APPROVED ASSEMBLY.)

Example Ordering Descriptions

4" LF866V-OSY-GPM - Assembly fitted with OS&Y shutoff valves and gallons per minute water meter

4" LF866V-OSY-CFM - Assembly fitted with OS&Y shutoff valves and cubic feet per minute water meter

Assembly Flow Orientation

Horizontal ($2\frac{1}{2}$ " – 10") - Approved by FCCCHR-USC, ASSE, cULus, FM, IAPMO

Materials

All sizes ($2\frac{1}{2}$ " – 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: 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 (10" only)

Approvals – Standards

- Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
- ASSE 1047
- UL Classified** (US & Canada)
- FM Approved**
- IAPMO/cUPC



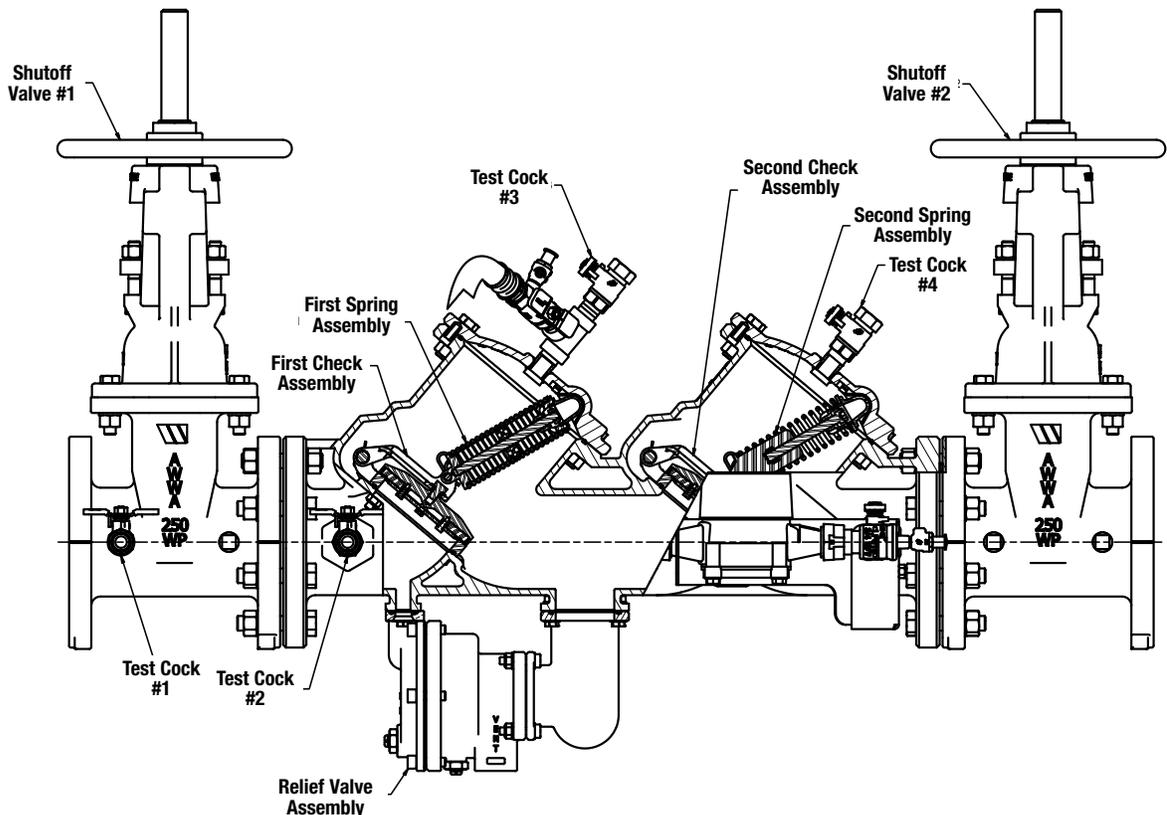
**Assembly configured with UL/FM Approved OS&Y RWgate valves. Less gate valve assemblies are not UL/FM approved configurations.

Standards

- AWWA Standard C511 Compliant
- End Connections: Compliant to ASME B16.1 Class 125 & AWWA Class D Flange

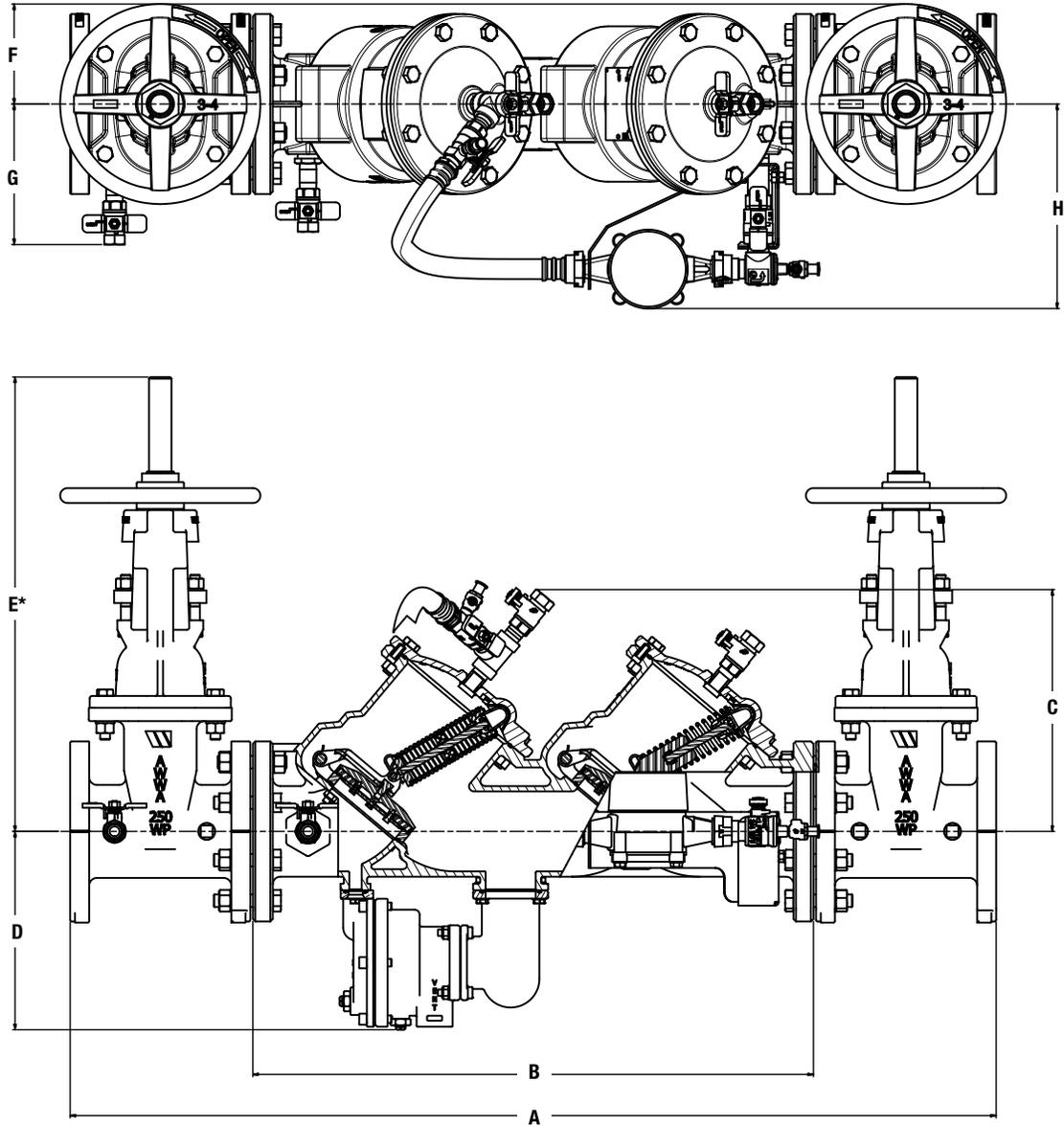
Pressure - Temperature

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

Below are the nominal dimensions and physical weights for Series LF866, 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 LF866 ASSEMBLIES

SIZE		DIMENSIONS										WEIGHT**							
in.	mm	A		B		C		D		E*		F		G		H		lb	kg
2½	40¾	1035	25½	648	12½	308	10	254	16¾	416	4½	114	7⅞	181	5⅞	150	218	99	
3	41⅞	1064	25¾	651	12⅞	308	10	254	22⅞	565	4½	114	7¾	187	6¼	159	245	111	
4	46¼	1175	28	711	12½	318	10⅞	257	23¼	591	5½	140	8⅞	206	7	178	324	147	
6	56	1422	34¾	883	15	384	11⅞	283	30⅞	765	6½	165	9⅞	251	9	229	520	236	
8	65	1651	41¾	1061	17⅞	434	12¼	311	37¼	959	7	178	11⅞	283	9½	241	835	379	
10	72¾	1845	46¾	1178	17⅞	434	12¾	314	48	1219	9	229	12¾	314	10½	267	1240	562	

Note:

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

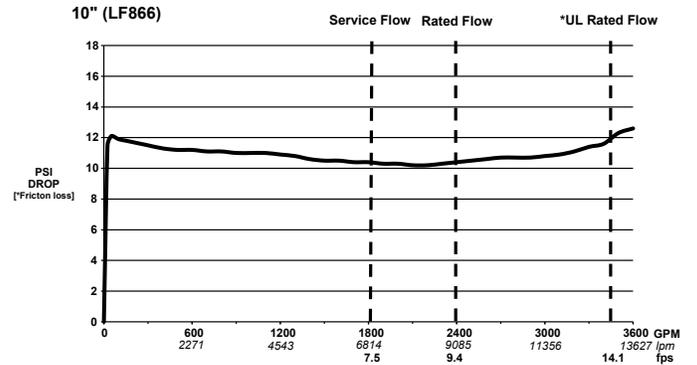
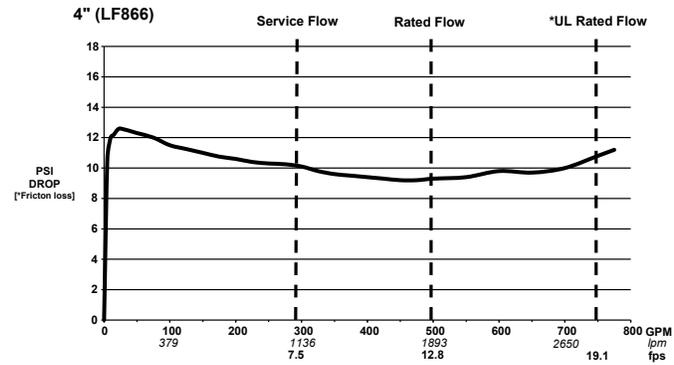
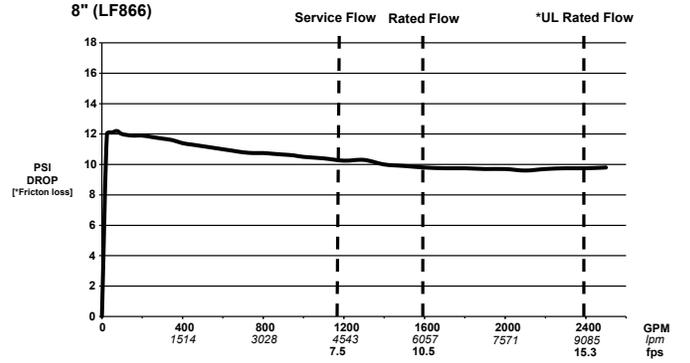
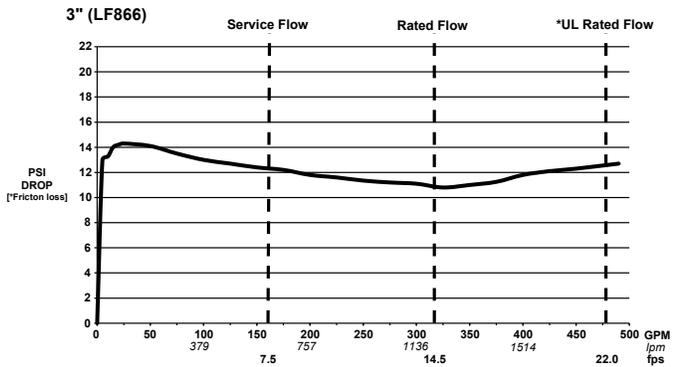
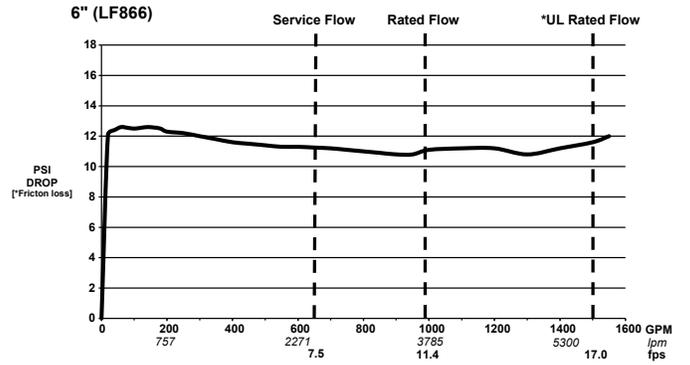
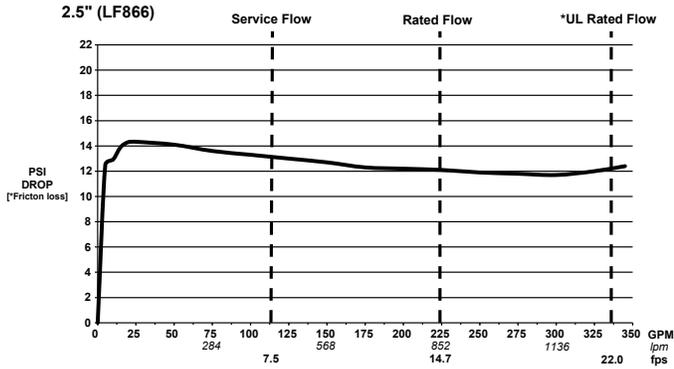
** Indicates weight of complete backflow assemblies with specified gate valves

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.



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