

## Engineering Specification

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_

Job Location \_\_\_\_\_

Approval \_\_\_\_\_

Engineer \_\_\_\_\_

Contractor's P.O. No. \_\_\_\_\_

Approval \_\_\_\_\_

Representative \_\_\_\_\_

# LEAD FREE<sup>\*</sup>

## MasterSeries® LF856

### Double Check Detector Assembly (Type II)

2½" - 10"

FEBCO MasterSeries LF856 Double Check Detector assembly is designed to protect drinking water supplies from dangerous cross-connections in accordance with national plumbing codes and water authority requirements for non-health hazard, non-potable service applications such as irrigation, fire line, or industrial processing. This backflow assembly is primarily used for protection of drinking water systems and fire sprinkler 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.

#### Features

##### Main Valve

- In-line serviceable assembly
- 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

##### Auxiliary Bypass

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

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



#### Specification

The Double Check Detector 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 independent top entry covers. This assembly shall be fitted with 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. The auxiliary bypass line shall contain a 5/8"x 3/4" 16 mm x 19 mm Water Meter that complies with ANSI/AWWA Standard C700 coupled with an approved check assembly. The bypass line shall be designed to detect leaks or unauthorized water usage of the water system while protecting against possible backpressure and backsiphonage conditions for non-health hazard (pollutant) application. Iron components of the backflow preventer shall incorporate ArmorTek coating technology, delivering integrated protection against electrochemical corrosion and microbial-induced corrosion. Flow and pressure loss performance parameters shall meet the requirements of AWWA Standard C510. The assembly shall be FEBCO MasterSeries LF856.

#### 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.

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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## Model/Option

- OSY: UL Classified/FM Approved OS&Y Gate Valves (ANSI/AWWA C515 Compliant)
- CFM: Totalizing Cubic Feet/Min 5/8" x 3/4" Water Meter (ANSI/AWWA C700 Compliant)
- GPM: Totalizing Gallons/Min 5/8"x 3/4" Water Meter (ANSI/AWWA C700 Compliant)
- LG: Less Shutoff Valves; NOT an approved assembly

### Example Ordering Descriptions

4" LF856-OSY-GPM - Valve Assembly fitted with OS&Y Shutoff Valves, Gallon Feet per Minute Water Meter

4" LF856-OSY-CFM - Valve Assembly fitted with OS&Y Shutoff Valves, Cubic Feet per Minute Water Meter

## Assembly Flow Orientation

Horizontal & Vertical Up (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: OS&Y resilient wedge gate valves AWWA C515 (UL Classified/FM Approved)
- Check Seats: Stainless steel
- Disc Holder: Stainless steel
- Elastomer Disc: Silicone
- Spring: Stainless steel
- Clamp: AWWA C606 (10" only)

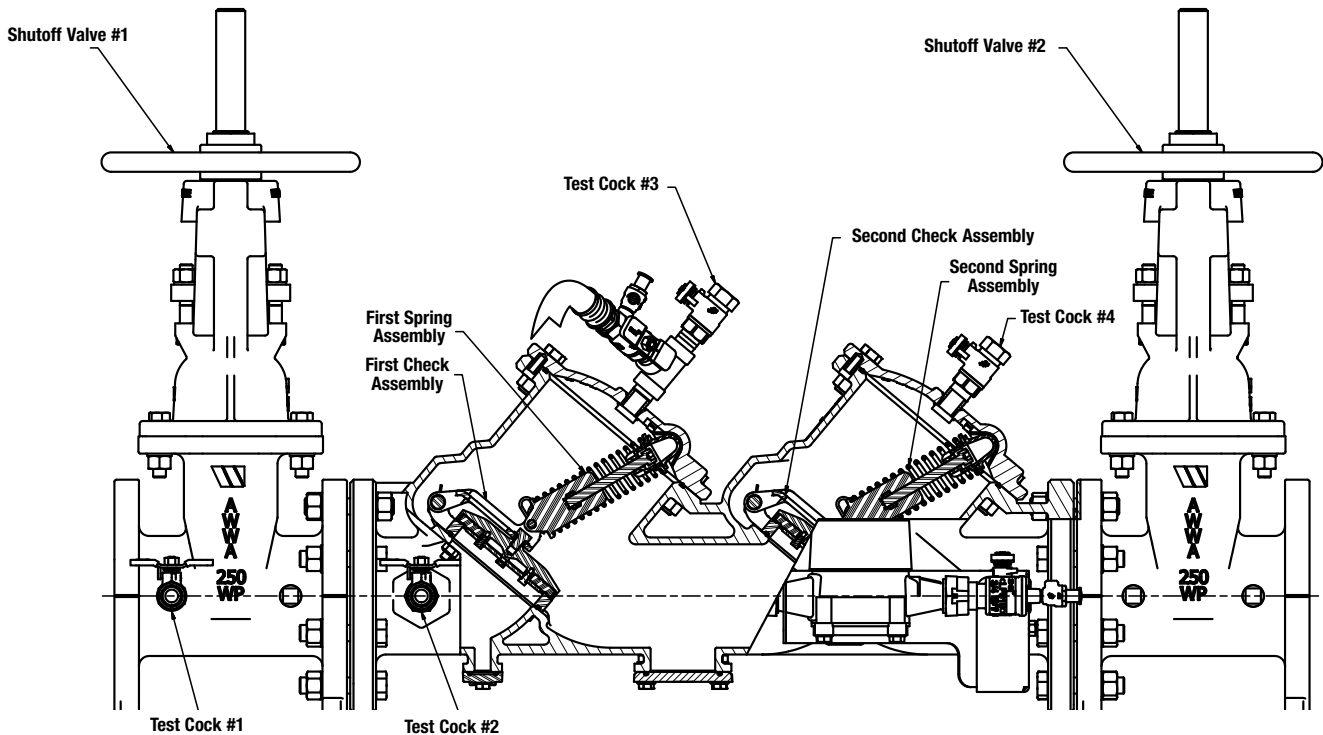
## Approvals

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
- ASSE 1048 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



## Pressure – Temperature

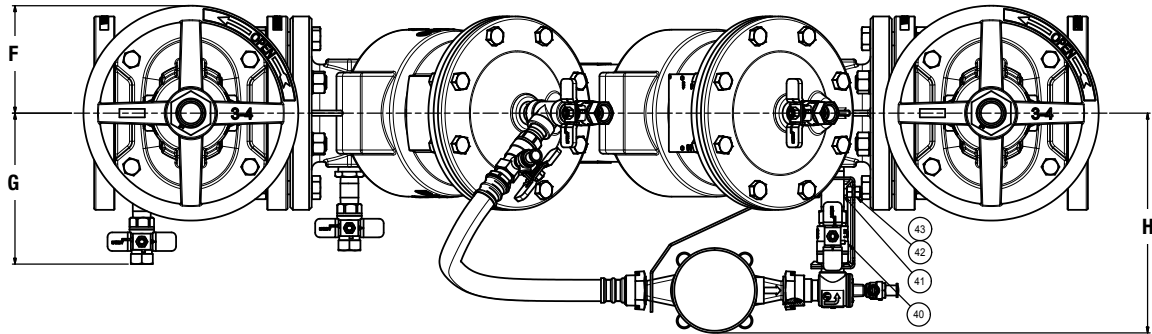
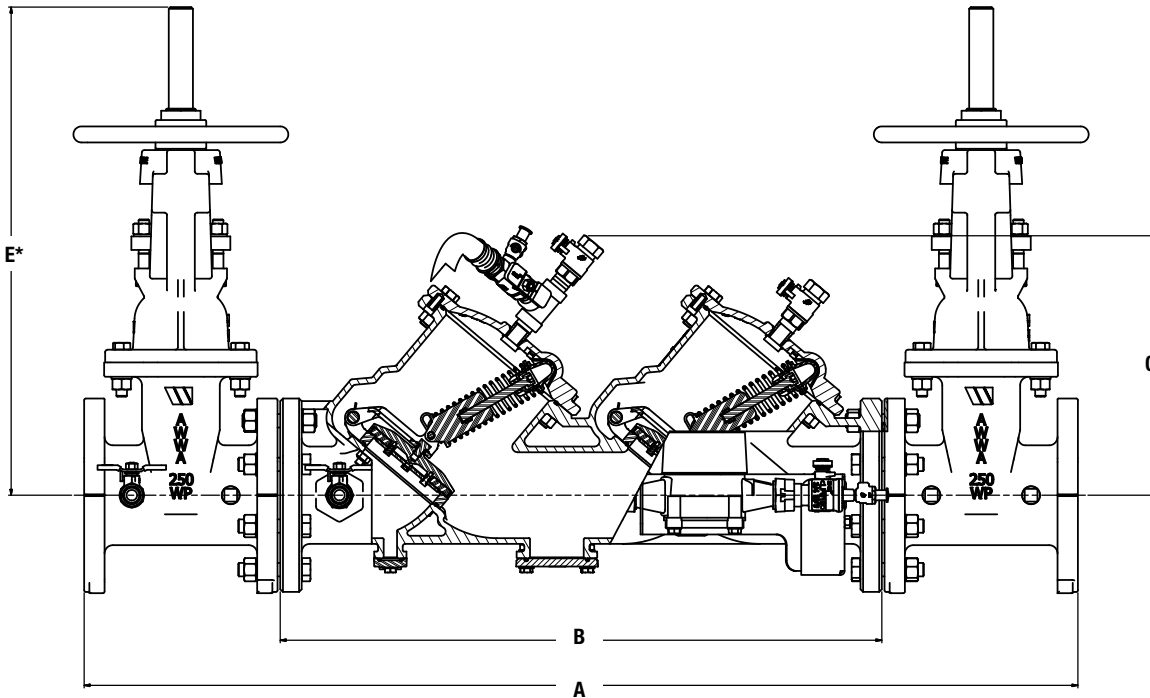
- Max. Working Pressure: 175 psi (12.1 bar)
- Min. Working Pressure: 10 psi (0.7 bar)
- Hydrostatic Test Pressure: 350 psi (24.1 bar)
- Hydrostatic Safety Pressure: 700 psi (48.3 bar)
- Temperature Range: 33°F – 140°F (0.5°C – 60°C) Continuous



\*\*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 LF856, sizes 2½" to 10". Allowances must be made for normal manufacturing tolerances. Visit [Watts.com](http://Watts.com) to download the product manual, or speak with your local FEBCO representative for more information.



SIZE	DIMENSIONS								WEIGHT***							
	A		B		C		E**		F		G		H		OSY	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
2½	40¾	1035	25½	648	10	254	16⅜	416	4½	114	7⅛	181	13⅜	340	245	111
3	41⅞	1064	25⅝	651	10	254	22⅛	565	4½	114	7⅞	187	13⅜	340	271	123
4	46¼	1175	28	711	10⅞	257	23¼	591	5½	140	8⅞	206	14	356	338	153
6	56	1422	34¾	883	12¾	324	30⅞	765	6½	165	9⅞	251	15	381	515	234
8	65	1651	41¼	1061	15⅝	397	37¾	959	7	178	11⅞	283	15¾	400	826	375
10	72⅝	1845	46⅞	1178	15⅝	397	48	1219	9	229	12⅞	314	15¾	400	1234	560

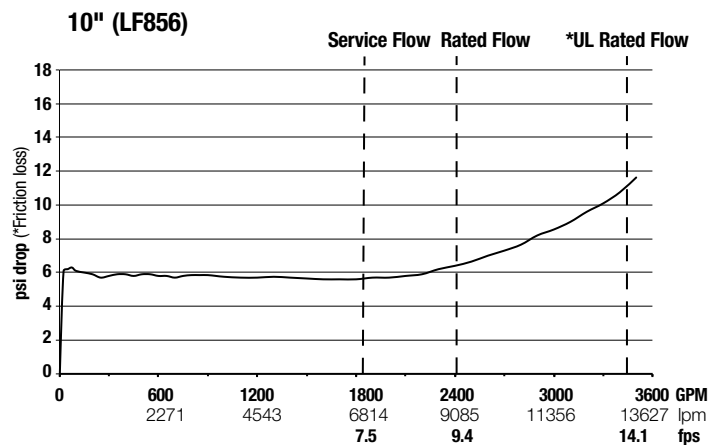
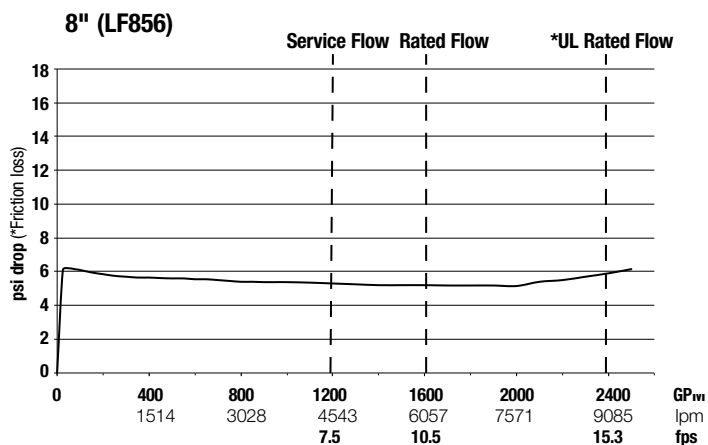
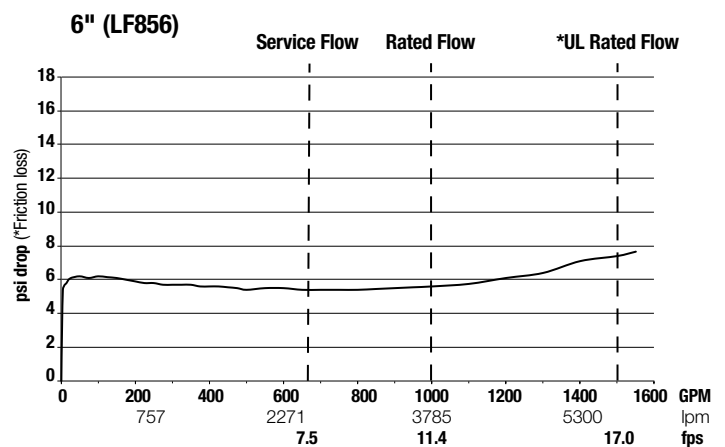
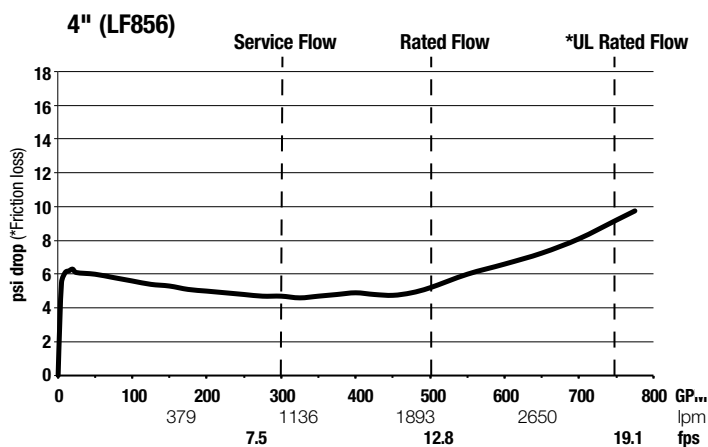
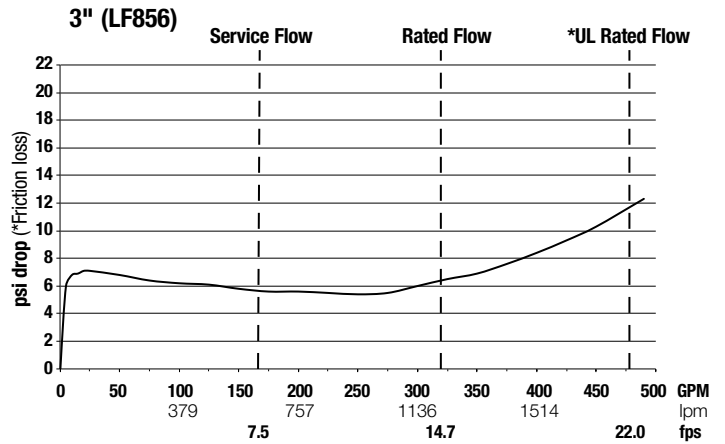
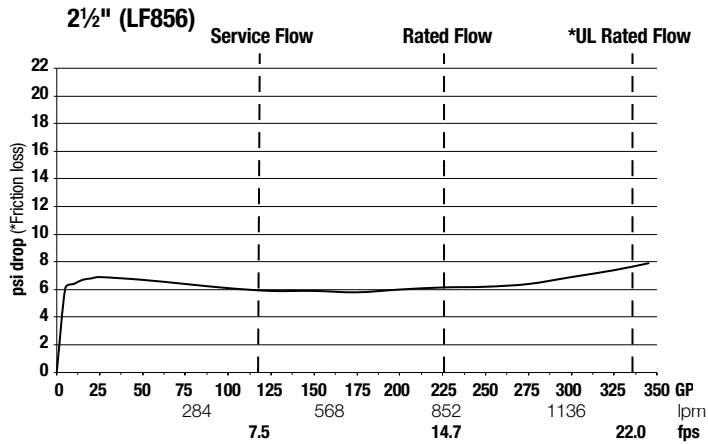
\*\* Indicates nominal dimensions with OSY gate valves (full open position).

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

## Performance

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

- Maximum service flow rate is determined by maximum rated velocity up to 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 up to 15 fps.



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