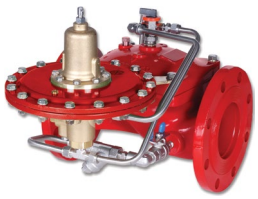
Victaulic® Level Control Valves
Series 866


866–460


866–465


866–466


866–480 866–482

1.0 PRODUCT DESCRIPTION

Available Sizes

- Globe Body: 1 ½ – 12" / DN40 – DN300
  - Grooved Ends: 2 – 8" / DN50 – DN200
  - Flanged: 1 ½ – 12" / DN40 – DN300
  - Threaded 2" / DN50

Maximum Working Pressure

- 250 psi / 17 Bar

Function

- **866–460:** Level Control Valve with Modulating Horizontal Float
- **866–465:** Level Control Valve with Bi-Level Electronic Float
- **866–466:** Level Control Valve with Bi-Level Vertical Float
- **866–480:** Level Control Valve with Modulating Altitude Pilot
- **866–482:** Level Control Valve with 3-Way Altitude Pilot

Application

- Level control for firewater reservoir

Maximum Operating Temperature by Material

- **Standard: Natural Rubber:** 122°F/50°C
- **Optional: Nitrile/NBR:** 176°F/80°C
- **Optional: EPDM:** 194°F/90°C

End Connections

- Grooved: (OGS) ANSI/AWWA C606
- Flanged: ANSI B16.42, B16.5, B16.24, ISO PN16
- Threaded: NPT or ISO-7-Rp

Codes and Requirements

- NFPA 20
- NFPA 25
- NFPA 13
- NFPA 22

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

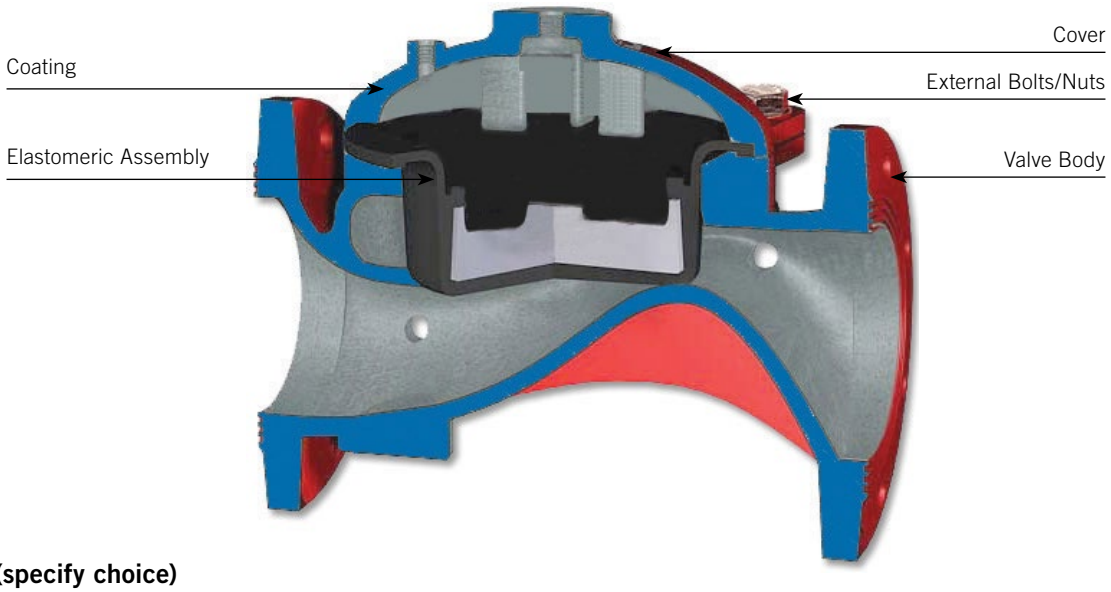
Spec Section		Paragraph	
Approved		Date	

2.0 CERTIFICATION/LISTINGS

- Product designed and manufactured in accordance with ISO-9001:2008.

3.0 SPECIFICATIONS – MATERIAL

Series 866 Body Style



Cover: (specify choice)

- ☐ Standard: Ductile Iron ASTM A536 65–45–12
- ☐ Optional: Cast Steel
  ASTM A216 Grade WCB (coated)
- ☐ Optional: Nickel Aluminum Bronze
  ASTM B148 C95800
- ☐ Optional: Stainless Steel 316
  ASTM A351 Grade CF8M

Valve Body: (specify choice)

- ☐ Standard: Ductile Iron ASTM A536 65–45–12
- ☐ Optional: Cast Steel
  ASTM A216 Grade WCB (coated)
- ☐ Optional: Nickel Aluminum Bronze
  ASTM B148 C95800
- ☐ Optional: Stainless Steel 316
  ASTM A351 Grade CF8M

Elastomeric Assembly: (specify choice)

- ☐ Standard: NR, Polyamide fabric reinforced Polyisoprene
- ☐ Optional: NBR, Polyamide fabric reinforced Nitrile (Buna -N)
- ☐ Optional: EPDM, Polyamide fabric reinforced Ethylene-Propylene

External Bolts/Nuts: Stainless Steel 316 ASTM A320 Grade B8F

Coating: (specify choice)

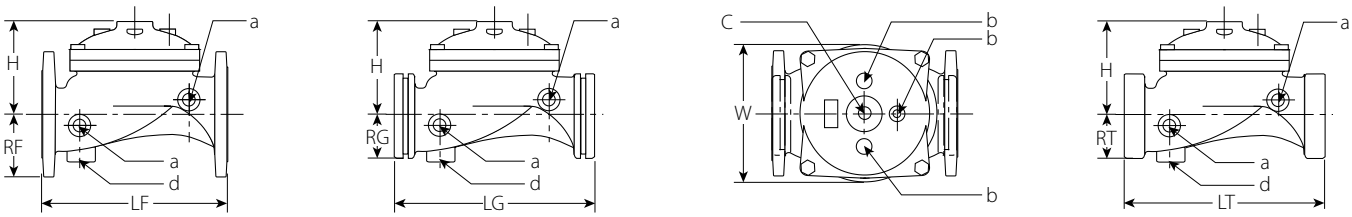
- ☐ Standard: Electrostatic Powder Coating Polyester
- ☐ Optional: High Build Epoxy Fusion-Bonded with UV Protection, Anti-Corrosion

NOTE:

- **Internal and External coating applied on Ductile Iron or Cast Steel castings only.**

4.0 DIMENSIONS

Series 866



Size		Flanged ANSI #150, ISO PN 16					Grooved ANSI/AWWA C606[1]				
		Dimensions				Weight[2]	Dimensions				Weight[2]
Nominal inches DN	Actual Outside Diameter inches mm	LF inches mm	W inches mm	H inches mm	RF inches mm	Approx. (Each) lb kg	LG inches mm	W inches mm	H inches mm	RG inches mm	Approx. (Each) lb kg
2 DN50	2.375 60.3	8.13 205	6.13 155	2.88 74	3.13 78	20.0 9.0	8.06 205	4.75 120	2.94 74	1.19 30	11.0 5.0
3 DN80	3.500 88.9	10.13 257	7.88 200	4.38 110	3.88 100	42.0 19.0	9.81 250	6.88 175	4.31 110	1.75 44.5	23.0 10.6
4 DN100	4.500 114.3	12.63 320	8.75 223	5.13 130	4.50 115	62.0 28.0	12.63 320	7.88 200	5.13 130	2.25 57	36.0 16.2
6 DN150	6.625 168.3	16.38 415	12.00 306	8.13 205	5.50 140	150.0 68.0	16.31 415	12.06 306	12.38 205	3.25 84.2	108.0 49.0
8 DN200	8.625 219.1	19.63 500	14.38 365	10.13 256	6.75 172	276.0 125.0	19.63 500	14.38 365	10.13 256	4.38 110	238.0 108.0
10 DN250	10.750 273.0	23.81 605	16.00 405	10.13 256	8.00 204	309.0 140.0	–	–	–	–	–
12 DN300	12.750 323.9	28.50 725	24.00 610	14.63 373	9.50 242	485.0 220.0	–	–	–	–	–

1 Threaded ISO-7-Rp or NPT(F) available in 2 inch/DN50 with same dimensions as Grooved.

2 Weight based on standard ASTM A536 65-45-12 Ductile Iron Body

Size		Ports - All End Connections				
		Dimensions				
Nominal inches DN	Actual Outside Diameter inches mm	a[3] inches mm	b[3] inches mm	c[3] inches mm	d[4] inches mm	Control Volume[5] gallons liters
2 DN50	2.375 60.3	0.50 15	0.25 8	0.50 15	0.75 20	0.03 0.12
3 DN80	3.500 88.9	0.50 15	0.25 8	0.50 15	1.50 40	0.08 0.29
4 DN100	4.500 114.3	0.50 15	0.25 8	0.50 15	2.00 50	0.18 0.67
6 DN150	6.625 168.3	0.50 15	0.25 8	0.50 15	2.00 50	0.51 1.94
8 DN200	8.625 219.1	0.50 15	0.25 8	0.50 15	2.00 50	1.02 3.86
10 DN250	10.750 273.0	0.50 13	0.25 6	0.50 13	2.00 51	1.02 3.86
12 DN300	12.750 323.9	0.50 13	0.38 6	0.50 13	2.00 51	3.65 13.8

3 (a), (b), (c) are NPT Thread ports

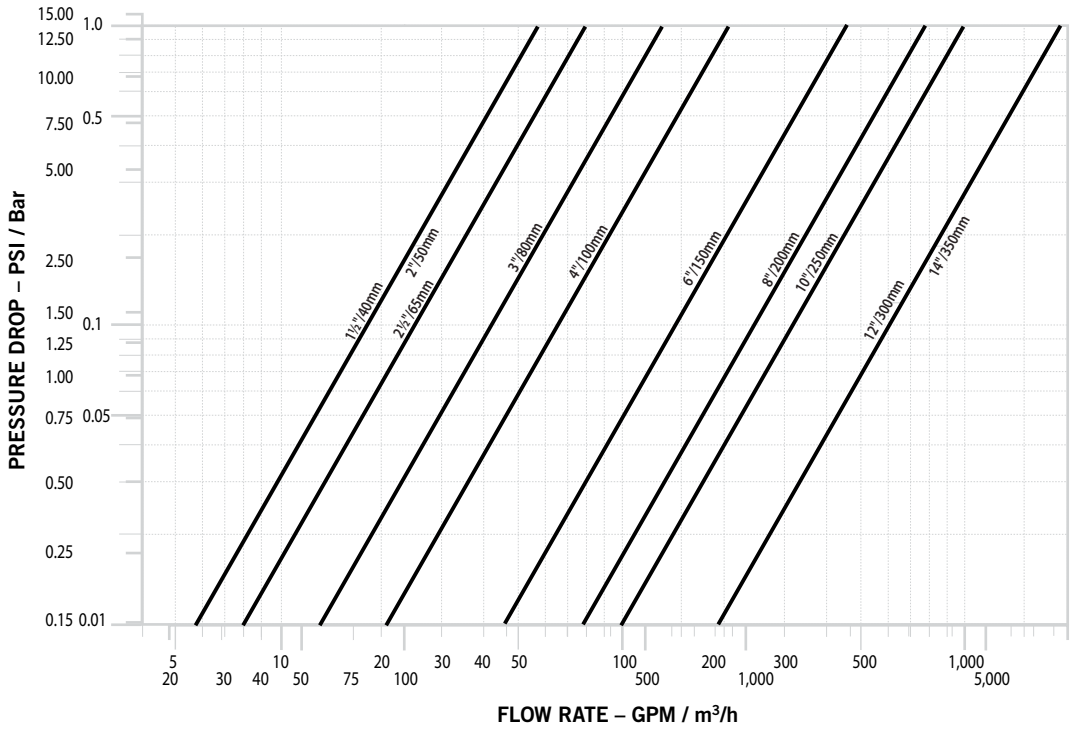
4 (d) is BSPT threaded optional drain port

5 (Control Volume) is Control Chamber Displacement Volume of Liquid pushed when valve opens

5.0 PERFORMANCE

Flow Chart

Series 866



5.1 PERFORMANCE

Series 866

Cv Values:

Cv values for flow of water at +60°F/+16°C through a fully open valve are shown in the table below.

Formulas for Cv and Kv values

$$\Delta P = \frac{Q^2}{C_v^2} \quad \text{or} \quad \Delta P = \frac{Q^2}{K_v^2}$$

$$Q = C_v \times \sqrt{\Delta P} \qquad Q = K_v \times \sqrt{\Delta P}$$

Where:

Flow Coefficient	C_v	K_v
Q (Flow)	GPM	m³/hr
ΔP (Pressure Drop)	psi	bar

Frictional Resistance

The chart below expresses the frictional resistance of Victaulic Series 866 Level Control Valves in equivalent feet of straight pipe.

Valve Size		Full Open	Equivalent Length of Pipe
Nominal Size inches DN	**Actual Outside Diameter** inches mm	**Flow Coefficient** C_v K_v	 feet meters
1 ½ DN40	1.900 48.3	66 57	30.0 9.1
2 DN50	2.375 60.3	66 57	30.0 9.1
2 ½	2.875 73.0	90 78	40.0 12.1
3 DN80	2.875 73.0	157 136	45.0 13.7
4 DN100	4.500 114.3	236 204	46.0 14.0
6 DN150	6.625 168.3	529 458	90.0 27.4
8 DN200	8.625 219.1	902 781	150.0 45.8
10 DN250	10.750 273.0	957 829	354.0 108.0
12 DN300	12.750 323.9	2231 1932	187.0 57.0
14 DN350	14.000 355.6	2231 1932	187.0 57.0

6.0 NOTIFICATIONS

⚠ WARNING

- **Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.**
- **Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.**
- **Wear safety glasses, hardhat, and foot protection.**

Failure to follow these instructions could result in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

10.64: Victaulic® Firelock™ Rigid Coupling Style 009N

I-100: Field Installation Handbook

I-009N: Field Installation and Maintenance Style 009N

29.01: Terms and Conditions

