WaterMark Butterfly Valve
Series 70B Supervised Open

10.71

1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 12"/50 – 300 mm

Maximum Working Pressure

- 300 psi/2068 kPa /20 bar.

Application

- Designed for fire protection services connected to potable water supplies.
- Features a weatherproof actuator housing Approved for indoor and outdoor use.

Optional Accessories

- Actuation hand wheel (2 – 12”/50 – 300 mm)

NOTE

- Exclusively for use with pipe and Victaulic products which feature ends formed with the Victaulic Original Groove System (OGS) groove profile (see section 7.0 for Reference Materials).

2.0 CERTIFICATION/LISTINGS

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

3.0 SPECIFICATIONS – MATERIAL

Body: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Body Coating: Blue epoxy

Disc: Ductile Iron conforming to ASTM A-536, Grade 65-45-12, with EPDM coating

Stems: 416 stainless steel

Stem Seal Cartridge: C36000 brass

Bearings: Stainless steel with TFE lining

Stem Seals: EPDM

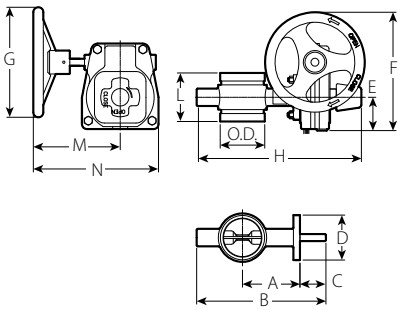
Stem Retaining Ring: Carbon steel

Actuator:

☐ 2 – 12"/50 – 300mm: Steel worm and cast iron quadrant gear, in a cast iron housing

4.0 DIMENSIONS

Series 70B



Size		Dimensions											Weight
Nominal inches DN	**Actual Outside Diameter** inches DN	**E to E** inches mm	**A** inches mm	**B** inches mm	**C** inches mm	**D** inches mm	**E** inches mm	**F** inches mm	**G** inches mm	**H** inches mm	**M** inches mm	**N** inches mm	**Approximate (Each)** Lbs. kg
2 DN50	2.375 60.3	3.25 83	3.88 98	8.88 225	2.00 51	3.50 89	2.50 64	7.50 191	4.50 114	11.63 295	5.50 140	8.50 216	17.9 8.1
2½	2.875 73.0	3.88 98	4.38 111	9.75 248	2.00 51	3.50 89	2.50 64	7.50 191	4.50 114	12.38 314	5.50 140	8.50 216	19.1 8.7
DN65	3.000 76.1	3.88 98	4.38 111	9.75 248	2.00 51	3.50 89	2.50 64	7.50 191	4.50 114	12.38 314	5.50 140	8.50 216	19.1 8.7
3 DN80	3.500 88.9	3.88 98	4.50 114	10.25 260	2.00 51	3.50 89	2.50 64	7.50 191	4.50 114	12.75 324	5.50 140	8.50 216	20.5 9.3
4 DN100	4.500 114.3	4.63 117	5.75 146	12.25 311	2.00 51	3.50 89	2.50 64	7.50 191	4.50 114	14.88 378	5.50 140	8.50 216	26.0 11.8
DN125	5.500 139.7	5.88 149	5.38 137	12.25 311	2.00 51	3.50 89	2.50 64	8.50 216	6.50 165	14.88 378	5.50 140	8.50 216	34.8 15.8
5	5.563 141.3	5.88 149	5.38 137	12.25 311	2.00 51	3.50 89	2.50 64	8.50 216	6.50 165	14.88 378	5.50 140	8.50 216	34.8 15.8
	6.500 165.1	5.88 149	7.13 181	14.88 378	2.00 51	3.50 89	2.50 64	8.50 216	6.50 165	17.50 445	5.50 140	8.50 216	40.5 18.4
6 DN150	6.625 168.3	5.88 149	7.13 181	14.88 378	2.00 51	3.50 89	2.50 64	8.50 216	6.50 165	17.50 445	5.50 140	8.50 216	40.5 18.4
8 DN200	8.625 219.1	5.25 133	7.88 200	17.75 451	2.88 73	5.00 127	3.25 83	11.00 279	8.13 206	20.88 530	7.50 191	11.63 295	62.7 28.4
10 DN250	10.750 273.0	6.25 159	9.75 248	21.75 552	3.00 76	5.00 127	3.25 83	11.00 279	8.13 206	24.75 629	7.50 191	11.63 295	84.7 38.4
12 DN300	12.750 323.9	6.50 165	10.75 273	23.88 606	2.88 73	5.00 127	3.25 83	11.00 279	8.13 206	26.88 683	7.50 191	11.63 295	111.1 50.4

5.0 PERFORMANCE

Series 70B

The chart expresses the frictional resistance of Victaulic Series 70B Butterfly Valve in equivalent feet/meters of straight pipe.

Nominal Size mm inches	Outside Diameter mm inches	Equivalent Feet/m of pipe
2 50	2.375 60.3	6 1.8
2½ 65	2.875 73.0	6 1.8
76.1 mm	3.000 76.1	6 1.8
3 80	3.500 88.9	7 2.1
4 100	4.500 114.3	8 2.4
5 125	5.563 141.3	12 3.7
139.7 mm	5.500 139.7	12 3.7
6 150	6.625 168.3	14 4.2
165.1 mm	6.500 165.1	14 4.2
8 200	8.625 219.1	16 4.9
10 250	10.750 273.0	18 5.5
12 300	12.750 323.9	19 5.8

5.1 PERFORMANCE

Series 70B

C_V values for flow of water at +60°F/+16°C through a fully open valve are shown in the table below.
For additional details, contact Victaulic.

Formulas for C_v values

$$\Delta P = \frac{Q^2}{C_v^2}$$

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

Where:
Q = Flow (GPM)
ΔP = Pressure Drop (psi)
C_v = Flow Coefficient

Formulas for K_v values

$$\Delta P = \frac{Q^2}{K_v^2}$$

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

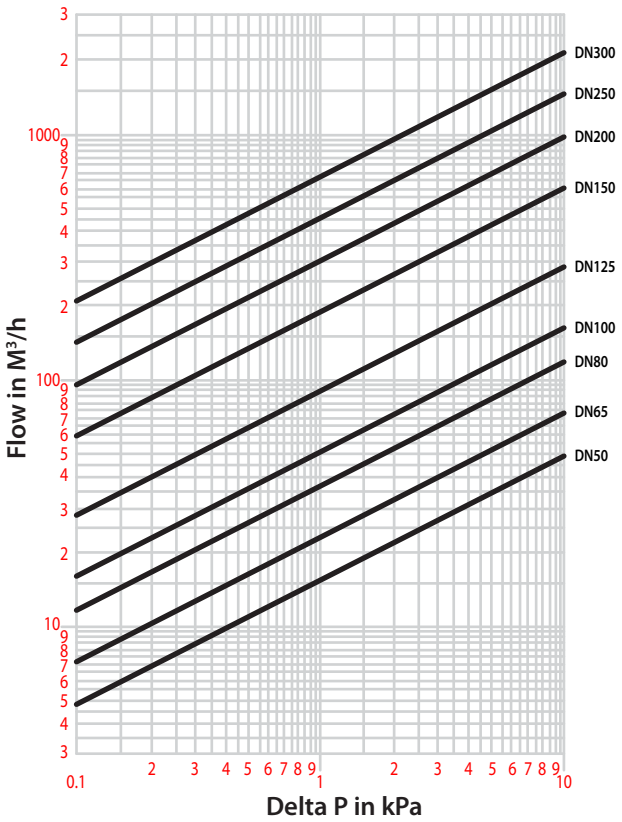
Where:
Q = Flow (m^3/hr)
ΔP = Pressure Drop (Bar)
K_v = Flow Coefficient

Valve Size		Full Open
Nominal Size inches mm	**Actual Outside Diameter** inches mm	**Flow Coefficient** C_v
2 50	2.375 60.3	170
2½ 65	2.875 73.0	260
76.1 mm	3.000 76.1	260
3 80	3.500 88.9	440
4 100	4.500 114.3	820
5 125	5.563 141.3	1200
139.7 mm	5.500 139.7	1200
6 150	6.625 168.3	1800
165.1 mm	6.500 165.1	1800
8 200	8.625 219.1	3400
10 250	10.750 273.0	5800
12 300	12.750 323.9	9000

Valve Size		Full Open
Nominal Size inches mm	**Actual Outside Diameter** inches mm	**Flow Coefficient** K_v
2 50	2.375 60.3	147
2½ 65	2.875 73.0	225
76.1 mm	3.000 76.1	225
3 80	3.500 88.9	380
4 100	4.500 114.3	710
5 125	5.563 141.3	1040
139.7 mm	5.500 139.7	1040
6 150	6.625 168.3	1560
165.1 mm	6.500 165.1	1560
8 200	8.625 219.1	2940
10 250	10.750 273.0	5020
12 300	12.750 323.9	7790

5.1 PERFORMANCE (CONTINUED)

Series 70B



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.

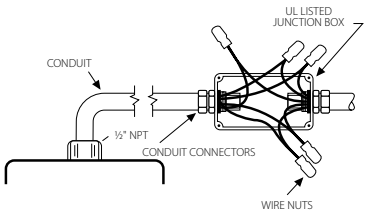
7.0 REFERENCE MATERIALS

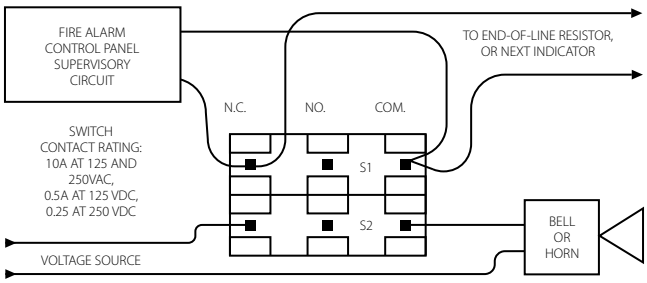
Switch and Wiring

1. The supervisory switch contains two single pole, double throw, pre-wired switches.
2. Switches are rated:
   10 amps @ 125 or 250 VAC/60 Hz
   0.50 amps @ 125 VDC
   0.25 amps @ 250 VDC
3. Switches supervise the valve in the “OPEN” position.
4. One switch has two #18 insulated wires per terminal, which permit complete supervision of leads (refer to diagrams and notes below). The second switch has one #18 insulated wire per terminal. This double circuit provides flexibility to operate two electrical devices at separate locations, such as an indicating light and an audible alarm, in the area that the valve is installed.
5. A #14 insulated ground lead (green) is provided.
   Switch #1 = S1
   For connection to the supervisory circuit of a UL Listed alarm control panel
   Switch #2 = S2
   Auxiliary switch that may be connected to auxiliary devices, per the authority having jurisdiction

S1
- Normally Closed: (2) Blue
- Common: (2) Yellow

S2
- Normally Closed: Blue with Orange Stripe
- Normally Open: Brown with Orange Stripe
- Common: Yellow with Orange Stripe





Switch 1: 2 leads per terminal
Switch 2: 1 lead per terminal

NOTES

- The above diagram shows a connection between the common terminal (yellow – S1 and yellow-with-orange stripe – S2) and the normally closed terminal (blue – S1 and blue-with-orange stripe – S2). In this example, the indicator light and alarm will stay on until the valve is fully open. When the valve is fully open, the indicator light and alarm will go out. Cap off any unused wires (e.g. brown with orange stripe).
- Only S1 (two leads per terminal) may be connected to the fire alarm control panel.
- The connection of the alarm switch wiring shall be in accordance with NFPA 72 and the auxiliary switch per NFPA 70 (NEC).

7.1 REFERENCE MATERIALS

10.01: Regulatory Approval Reference Guide

29.01: Terms and Conditions/Warranty

I-100: Field Installation Handbook

I-765/705: FireLock® Butterfly Valve with Weatherproof Actuator Installation and Wiring Instructions

NOTE

- Refer to publication I-765/705 Installation and Wiring Instructions when installing the Series 70B butterfly valve.

