

# WaterMark Butterfly Valve

## Series 70B Supervised Open



---

### 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

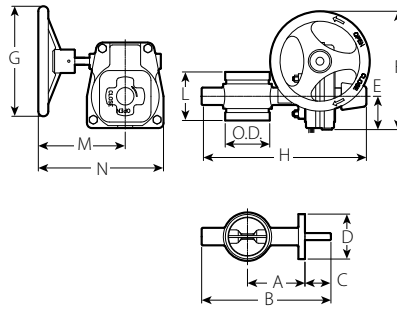
**Stem Retaining Ring:** Carbon steel

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

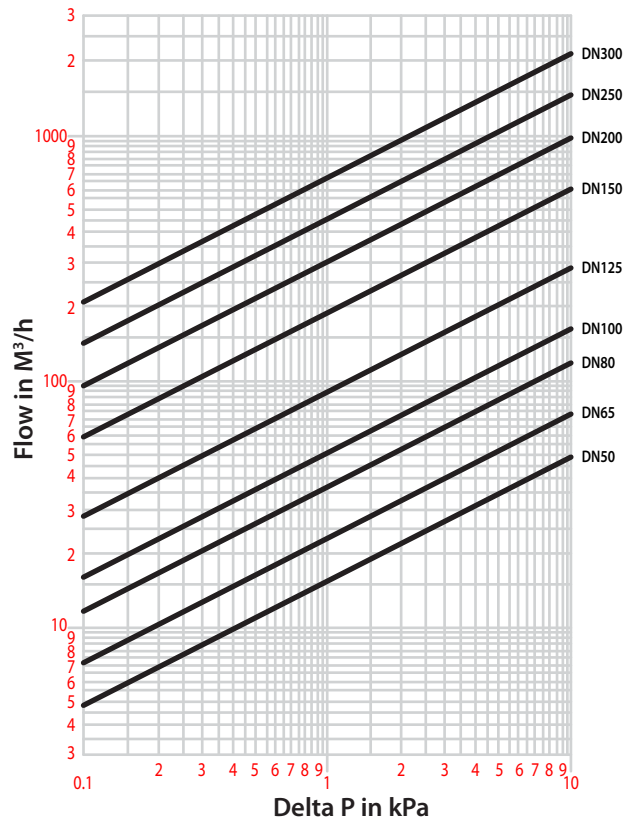
Q = Flow (m<sup>3</sup>/hr)  
 $\Delta P$  = Pressure Drop (Bar)  
 $K_v$  = Flow Coefficient

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

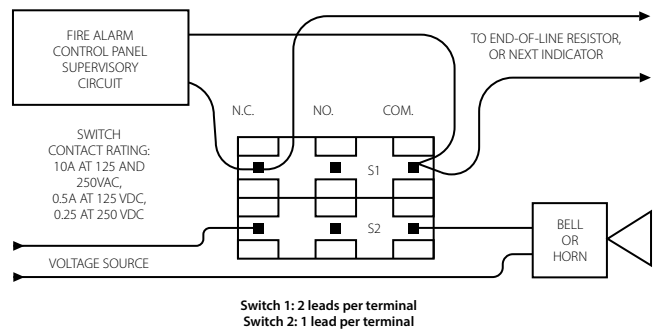
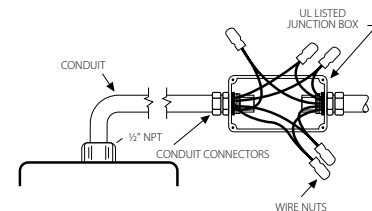
For connection to the supervisory circuit of a UL Listed alarm control panel

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



#### 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.

---

### User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

### Intellectual Property Rights

No statement contained herein concerning a possible or suggested use of any material, product, service, or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Victaulic or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service, or design in the infringement of any patent or other intellectual property right. The terms "Patented" or "Patent Pending" refer to design or utility patents or patent applications for articles and/or methods of use in the United States and/or other countries.

### Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

### Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at [www.victaulic.com](http://www.victaulic.com).

### Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

### Trademarks

*Victaulic* and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.