

# FireLock™ High Pressure Butterfly Valve

## Series 766 with Weatherproof Actuator – Supervised Closed

**victaulic®**  
10.83



### 1.0 PRODUCT DESCRIPTION

#### Available Sizes

- 2 – 8"/DN50 – DN200

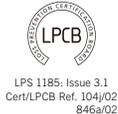
#### Maximum Working Pressure

- Rated up to 365 psi/2517 kPa/25 bar

#### Application

- High pressure butterfly valve with an approved weatherproof actuator housing for indoor or outdoor use.
- Designed for fire protection services only. Should not be installed where fluid flow is required as part of normal system operation.
- Actuation options: Hand wheel (2 – 8"/50 – 200mm).
- 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.

## 2.0 CERTIFICATION/LISTINGS (CONTINUED)

Size		Approval/Listing Service Pressures			
Nominal inches DN	Actual Outside Diameter inches mm	Series 766 Butterfly Valve			
		cULus psi kPa	FM psi kPa	VdS psi kPa	LPCB psi kPa
2 DN50	2.375 60.3	365 2517	365 2517	365 2517	365 2517
2½	2.875 73.0	365 2517	365 2517	–	365 2517
DN65	3.000 76.1	365 2517	365 2517	365 2517	365 2517
3 DN80	3.500 88.9	365 2517	365 2517	365 2517	365 2517
	4.250 108.0	365 2517	365 2517	–	365 2517
4 DN100	4.500 114.3	365 2517	365 2517	365 2517	365 2517
	5.250 133.0	365 2517	365 2517	–	365 2517
DN125	5.500 139.7	365 2517	365 2517	365 2517	365 2517
5	5.563 141.3	365 2517	365 2517	–	365 2517
	6.250 159.0	365 2517	365 2517	–	365 2517
	6.500 165.1	365 2517	365 2517	–	365 2517
6 DN150	6.625 168.3	365 2517	365 2517	365 2517	365 2517
8 DN200	8.625 219.1	365 2517	365 2517	365 2517	365 2517

## 3.0 SPECIFICATIONS – MATERIAL

**Body:** Ductile iron conforming to ASTM A536, Grade 65-45-12.

**End Face, 2 – 6"/DN50 – DN150:** Ductile iron conforming to ASTM A536, Grade 65-45-12

**Seal Retainer, 8"/DN200:** Ductile iron conforming to ASTM A536, Grade 65-45-12

**Coating:** Black alkyd enamel

**Disc:** Ductile iron conforming to ASTM A536, Grade 65-45-12, with electroless nickel coating conforming to ASTM B733

**Seat:**

**Victaulic Grade “T” Nitrile**

Nitrile (Orange stripe color code) For water related services, this gasket may be specified for temperatures rated up to +150°F/+66°C. NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES

**Stems:** 416 stainless steel conforming to ASTM A582

**Stem Seal Cartridge:** Brass

**Bearings:** Stainless steel with TFE lining

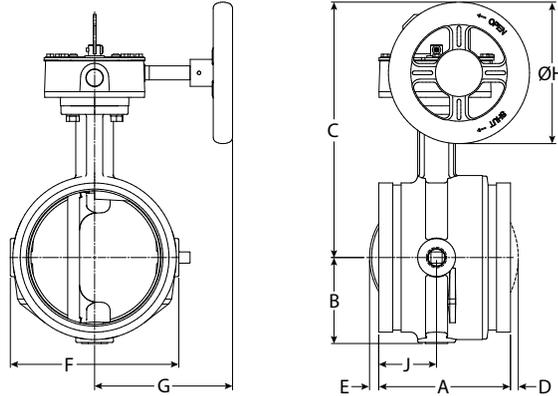
**Stem Seals:** Nitrile

**Stem Retaining Ring:** Carbon steel

**Actuator:**

- **2 – 8"/DN50 – DN200:** Bronze traveling nut on a steel lead screw, in a ductile iron housing

## 4.0 DIMENSIONS



Size		Dimensions										Weight
Nominal inches DN	Outside Diameter inches mm	End to End										Approx. Each lb kg
		A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	F inches mm	G inches mm	H inches mm	J inches mm		
2 DN50	2.375 60.3	4.25 108	2.28 58	6.41 163	-	-	4.00 102	4.22 107	4.50 114	2.12 54	8.2 3.7	
2½	2.875 73.0	3.77 96	2.28 58	7.54 192	-	-	4.00 102	4.22 107	4.50 114	1.77 45	9.7 4.4	
DN65	3.000 76.1	3.77 96	2.28 58	7.54 192	-	-	4.00 102	4.22 107	4.50 114	1.77 45	9.7 4.4	
3 DN80	3.500 88.9	3.77 96	2.53 64	7.79 198	-	-	4.50 114	4.22 107	4.50 114	1.77 45	10.7 4.9	
	4.250 108.0	4.63 118	2.88 73	8.81 224	-	-	5.50 140	4.22 107	4.50 114	2.20 56	-	
4 DN100	4.500 114.3	4.63 118	2.88 73	8.81 224	-	-	5.50 140	4.22 107	4.50 114	2.20 56	14.0 6.4	
	5.250 133.0	5.88 149	3.35 85	10.88 276	-	-	6.56 167	6.19 157	6.30 160	2.58 66	-	
DN125	5.500 139.7	5.88 149	3.35 85	10.88 276	-	-	6.56 167	6.19 157	6.30 160	2.58 66	-	
5	5.563 141.3	5.88 149	3.35 85	10.88 276	-	-	6.56 167	6.19 157	6.30 160	2.58 66	25.4 11.5	
	6.250 159.0	5.88 149	3.84 98	11.38 289	-	0.41 10	7.52 191	6.19 157	6.30 160	2.58 66	-	
	6.500 165.1	5.88 149	3.84 98	11.38 289	-	0.41 10	7.52 191	6.19 157	6.30 160	2.58 66	28.7 13.0	
6 DN150	6.625 168.3	5.88 149	3.84 98	11.38 289	-	0.41 10	7.52 191	6.19 157	6.30 160	2.58 66	28.7 13.0	
8 DN200	8.625 219.1	5.33 135	5.07 129	12.63 321	0.80 20	1.47 37	10.00 254	6.19 157	6.30 160	2.33 59	43.0 19.5	

## 5.0 PERFORMANCE

The chart expresses the frictional resistance of Victaulic FireLock™ Series 766 High Pressure Butterfly Valve in equivalent feet/meters of straight pipe.

Size		Equivalent Feet/M of Pipe
Nominal inches mm	Actual Outside Diameter inches mm	
2 DN50	2.375 60.3	6 1.8
2½	2.875 73.0	6 1.8
DN65	3.000 76.1	6 1.8
3 DN80	3.500 88.9	7 2.1
	4.250 108.0	8 2.4
4 DN100	4.500 114.3	8 2.4
	5.250 133.0	12 3.7
DN125	5.500 139.7	12 3.7
5	5.563 141.3	12 3.7
	6.250 159.0	14 4.3
	6.500 165.1	14 4.2
6 DN150	6.625 168.3	14 4.2
8 DN200	8.625 219.1	16 4.9

## 5.1 PERFORMANCE

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

### Formulas for C<sub>v</sub> 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<sub>v</sub> = Flow Coefficient

### Formulas for K<sub>v</sub> Values:

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

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

#### Where:

Q = Flow (m<sup>3</sup>/hr)

ΔP = Pressure Drop (Bar)

K<sub>v</sub> = Flow Coefficient

Size		Flow Coefficient	
Nominal inches mm	Actual Outside Diameter inches mm	Full Open	
		C <sub>v</sub>	K <sub>v</sub>
2 DN50	2.375 60.3	170 147	
2½	2.875 73.0	260 225	
DN65	3.000 76.1	260 225	
3 DN80	3.500 88.9	440 380	
	4.250 108.0	820 710	
4 DN100	4.500 114.3	820 710	
	5.250 133.0	1200 1040	
DN125	5.500 139.7	1200 1040	
5	5.563 141.3	1200 1040	
	6.250 159.0	1800 1560	
	6.500 165.1	1800 1560	
6 DN150	6.625 168.3	1800 1560	
8 DN200	8.625 219.1	3400 2940	

## 6.0 NOTIFICATIONS

### WARNING



- Read and understand all instructions before attempting to install any Victaulic products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, and foot protection.

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

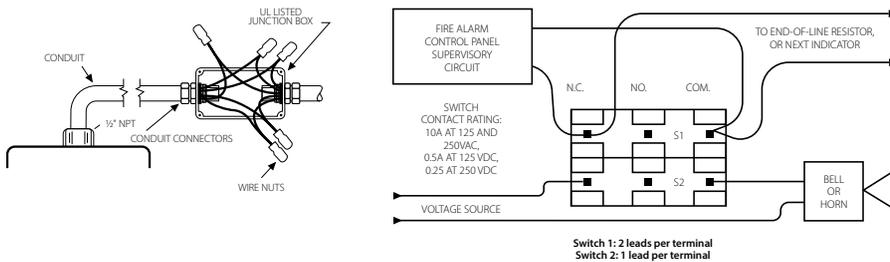
- These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.
- The installer shall understand the use of this product and why it was specified for the particular application.
- The installer shall understand common industry safety standards and potential consequences of improper product installation.
- It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.
- The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service.

Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

## 7.0 REFERENCE MATERIALS

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 “Closed” position.
4. One switch has two #18 MTW wires per terminal, which permit complete supervision of leads (refer to diagrams and notes below). The second switch has one #18 MTW 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 MTW 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



### NOTE

- 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 closed. When the valve is fully closed, 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

- [10.75: FireLock™ Butterfly Valve Series 707C with Weatherproof Actuator – Supervised Closed](#)
- [10.80: FireLock™ High Pressure Butterfly Valve Series 765 with Weatherproof Actuator – Supervised Open](#)
- [10.81: FireLock® Butterfly Valve Series 705 with Weatherproof Actuator - Supervised Open](#)
- [29.01: Victaulic Terms and Conditions of Sale](#)
- [I-100: Victaulic Field Installation Handbook](#)

### 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.

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### 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.

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