

FireLock™ Butterfly Valve

Series 707C with Weatherproof Actuator – Supervised Closed



10.75



1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 8"/DN50 – DN200.

Pipe Material

- Carbon Steel, Schedule 10, Schedule 40. For use with alternative material please contact Victaulic.

Maximum Working Pressure

- cULus Listed, LPCB Listed, FM and VdS Approved for service up to 300 psi/2068 kPa/20 bar.

Application

- Butterfly valve with an approved weatherproof actuator housing for indoor or outdoor use.
- Designed for fire protection services only.
- Designed to be supervised closed. Valve is designed to be closed under normal system conditions.
- 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).

Available End Connections

- Victaulic Original Groove System (OGS) standard groove.

2.0 CERTIFICATION/LISTINGS



G410013



LPS 1185: Issue 3.1
Cert/LPCB Ref. 104j/01
846a/01



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

2.1 CERTIFICATION/LISTINGS

Series 707C

Size	Approval/Listing Service Pressures			
	Nominal inches DN	cULus psi kPa	FM psi kPa	Vds psi kPa
2 DN50	up to 300 2068	n/a	up to 300 2068	up to 300 2068
2½ DN65	up to 300 2068	up to 300 2068	n/a	up to 300 2068
3 DN80	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
108 mm 4 DN100	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
5.25 133mm DN125	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
5 6.25 159mm 165 mm	up to 300 2068	up to 300 2068	n/a	up to 300 2068
6 DN150	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
8 DN200	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068

3.0 SPECIFICATIONS – MATERIAL

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

End Face, 2 – 6"/DN50 – DN150: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Seal Retainer, 8"/DN200: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Body Coating: Black alkyd enamel

Disc: Ductile Iron conforming to ASTM A-536, Grade 65-45-12, with electroless nickel coating conforming to ASTM B-733

Seat: EPDM

Stems: 416 stainless steel conforming to ASTM A-582

Stem Seal Cartridge: C36000 brass

Bearings: Stainless steel with TFE lining

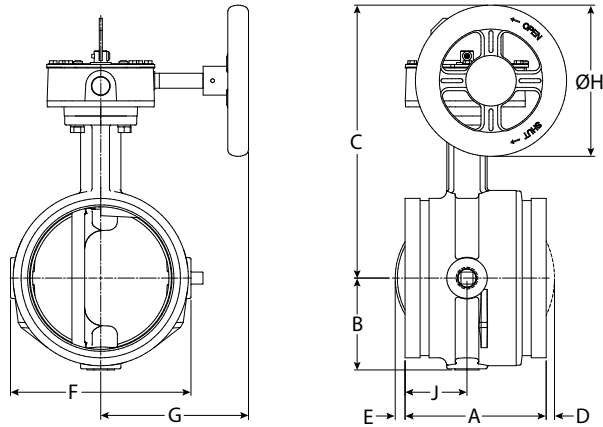
Stem Seals: EPDM

Stem Retaining Ring: Carbon steel

Actuator: 2 – 8"/DN50 – DN150: Brass or bronze traveling nut on a steel lead screw, in a ductile iron housing

4.0 DIMENSIONS

Series 707C



Size		Dimensions								
Nominal inches DN	Actual Outside Diameter inches mm	E to E A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	F inches mm	G inches mm	DIA H inches mm	J inches mm
2 DN50	2.375 60.3	4.25 108.0	2.28 57.9	6.41 162.8	-	-	4.00 101.6	4.22 107.2	4.50 114.3	2.12 53.8
2½	2.875 73.0	3.77 95.8	2.28 57.9	7.54 191.5	-	-	4.00 101.6	4.22 107.2	4.50 114.3	1.77 45.0
DN65	3.000 76.1	3.77 95.8	2.28 57.9	7.54 191.5	-	-	4.00 101.6	4.22 107.2	4.50 114.3	1.77 45.0
3 DN80	3.500 88.9	3.77 95.8	2.53 64.3	7.79 197.9	-	-	4.50 114.3	4.22 107.2	4.50 114.3	1.77 45.0
	4.250 108.0	4.63 117.6	2.88 73.2	8.81 223.8	-	-	5.50 139.7	4.22 107.2	4.50 114.3	2.20 55.9
4 DN100	4.500 114.3	4.63 117.6	2.88 73.2	8.81 223.8	-	-	5.50 139.7	4.22 107.2	4.50 114.3	2.20 55.9
	5.250 133.0	5.88 149.4	3.35 85.1	10.88 276.4	-	-	6.56 166.6	6.19 157.2	6.30 160.0	2.58 65.5
DN125	5.500 139.7	5.88 149.4	3.35 85.1	10.88 276.4	-	-	6.56 166.6	6.19 157.2	6.30 160.0	2.58 65.6
5	5.563 141.3	5.88 149.4	3.35 85.1	10.88 276.4	-	-	6.56 166.6	6.19 157.2	6.30 160.0	2.58 65.5
	6.250 159.0	5.88 149.4	3.84 97.5	11.38 289.1	-	0.41 10.4	7.52 191.0	6.19 157.2	6.30 160.0	2.58 65.5
	6.500 165.1	5.88 149.4	3.84 97.5	11.38 289.1	-	0.41 10.4	7.52 191.0	6.19 157.2	6.30 160.0	2.58 65.5
6 DN150	6.625 168.3	5.88 149.4	3.84 97.5	11.38 289.1	-	0.41 10.4	7.52 191.0	6.19 157.2	6.30 160.0	1.90 48.3
8 DN200	8.625 219.1	5.33 135.4	5.07 128.8	13.53 343.6	0.80 20.3	1.47 37.3	10.00 254.0	6.19 157.2	8.10 205.7	2.33 59.2

NOTE

- Optional ½"/15 mm tap available. Contact Victaulic for details.

5.0 PERFORMANCE

Series 707C

The chart expresses the frictional resistance of Victaulic Series 707C Butterfly Valve in equivalent feet/meters of straight pipe.

Size		Equivalent Feet/m of pipe
Nominal inches DN	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	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 4.2
	6.500 165.1	14 4.3
6 DN150	6.625 168.3	14 4.2
8 DN200	8.625 219.1	16 4.9

5.1 PERFORMANCE

Series 707C

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 (m³/hr)
 ΔP = Pressure Drop (Bar)
 K_v = Flow Coefficient

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

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

Switch and Wiring

- The supervisory switch contains two single pole, double throw, pre-wired switches.
- Switches are rated:
 - 10 amps @ 125 or 250 VAC/60 Hz
 - 0.50 amps @ 125 VDC
 - 0.25 amps @ 250 VDC
- Switches supervise the valve in the “Closed” position.
- 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.
- A #14 insulated ground lead (green) is provided.

Switch #1 = S1

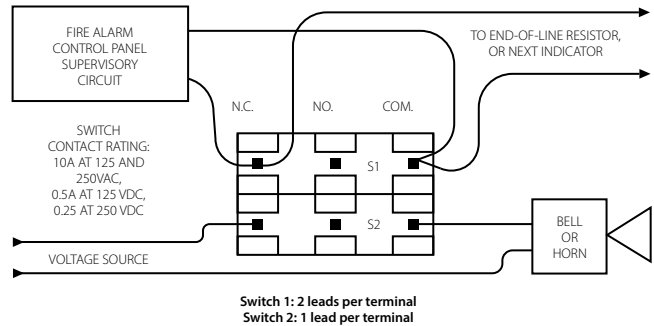
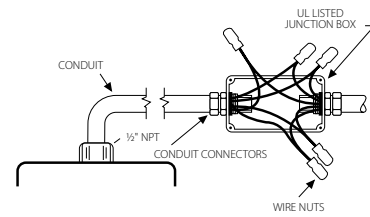
For connection to the supervisory circuit of a UL Listed alarm control panel

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 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

[10.01: Regulatory Approval Reference Guide](#)

[10.80: FireLock™ High Pressure Butterfly Valve Series 765 with Weatherproof Actuator \(Supervised Open\)](#)

[10.81: FireLock™ Butterfly Valve Series 705 with Weatherproof Actuator](#)

[10.83: FireLock™ High Pressure Butterfly Valve Series 766 FireLock® High Pressure Butterfly Valve Series 766 \(Supervised Closed\)](#)

[29.01: Terms and Conditions/Warranty](#)

[I-100: 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.

Warranty

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

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