

FireLock™ Butterfly Valve

Series 705 with Weatherproof Actuator



1.0 PRODUCT DESCRIPTION

- Available Sizes: 2 – 12"/50 – 300 mm
- cULus Listed, LPCB Listed, FM and VdS Approved for service up to 300 psi/2068 kPa /20 bar.
- Designed for fire protection services only.
- Features a weatherproof actuator housing approved for indoor and outdoor use.
- Actuation options: Hand wheel (2 – 12"/50 – 300 mm)
- 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



G410001



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



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

2.1 CERTIFICATION/LISTINGS

Size		Series 705 Butterfly Valve			
Nominal inches DN	Actual Outside Diameter inches mm	cULus psi kPa	FM psi kPa	VdS psi kPa	LPCB psi kPa
2 DN50	2.375 60.3	300 2068	300 2068	300 2068	300 2068
2½	2.875 73.0	300 2068	300 2068	–	300 2068
DN65	3.000 76.1	300 2068	300 2068	300 2068	300 2068
3 DN80	3.500 88.9	300 2068	300 2068	300 2068	300 2068
4 DN100	4.500 114.3	300 2068	300 2068	300 2068	300 2068
DN125	5.500 139.7	300 2068	300 2068	–	300 2068
5	5.563 141.3	300 2068	300 2068	–	300 2068
	6.500 165.1	300 2068	300 2068	–	300 2068
6 DN150	6.625 168.3	300 2068	300 2068	300 2068	300 2068
8 DN200	8.625 219.1	300 2068	300 2068	300 2068	300 2068
10 DN250	10.750 273.0	300 2068	300 2068	–	300 2068
12 DN300	12.750 323.9	300 2068	300 2068	–	300 2068

3.0 SPECIFICATIONS – MATERIAL

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

End Face, 2 – 6”/50 – 150 mm: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Seal Retainer, 8 – 12”/200 – 300 mm: 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: Grade “E” 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

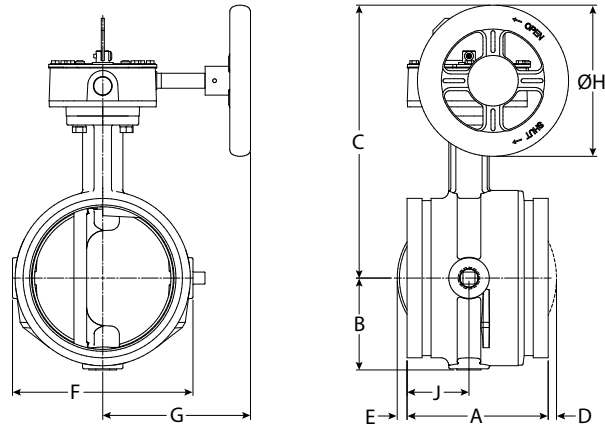
Actuator:

2 – 8”/50 – 200 mm: Brass or bronze traveling nut on a steel lead screw, in a ductile iron housing

10 – 12”/250 – 300 mm: Steel worm and cast iron quadrant gear, in a cast iron housing

4.0 DIMENSIONS

Series 705



Size		Dimensions									Weight
Nominal inches DN	Actual Outside Diameter 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	J inches mm	Approx. Each lb kg
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	14.0 6.4
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	25.4 11.5
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	25.4 11.5
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	28.7 13.0
	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
10 DN250	10.750 273.0	6.40 163	6.37 162	15.64 397	1.41 36	1.81 46	12.25 311	8.10 206	11.81 300	-	80.7 36.6
12 DN300	12.750 323.9	6.50 165	7.36 187	16.64 423	2.30 58	2.80 71	14.25 362	8.10 206	11.81 300	-	96.7 43.9

NOTE

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

5.0 PERFORMANCE

Series 705

The chart expresses the frictional resistance of Victaulic Series 705 Butterfly Valve in equivalent feet/meters of straight pipe.

Nominal Size inches DN	Actual Outside Diameter		Equivalent Feet/m of pipe
	inches	mm	
2 DN50	2.375	60.3	6.00 1.8
2½	2.875	73.0	6.00 1.8
DN65	3.000	76.1	6.00 1.8
3 DN80	3.500	88.9	7.00 2.1
	4.250	108.0	8.00 2.4
4 DN100	4.500	114.3	8.00 2.4
	5.250	133.0	12.00 3.7
DN125	5.500	139.7	12.00 3.7
5	5.563	141.3	12.00 3.7
	6.250	159.0	14.00 4.3
	6.500	165.1	14.00 4.3
6 DN150	6.625	168.3	14.00 4.3
8 DN200	8.625	219.1	16.00 4.9
10 DN250	10.750	273.0	18.00 5.5
12 DN300	12.750	323.9	19.00 5.8

5.1 PERFORMANCE

Series 705

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

Valve Size		Full Open
Nominal Size inches DN	Actual Outside Diameter inches mm	Flow Coefficient C _v K _v
2 DN50	2.375	170
	60.3	150
2½	2.875	260
	73.0	220
DN65	3.000	260
	76.1	220
3 DN80	3.500	440
	88.9	380
	4.250	820
	108.0	710
4 DN100	4.500	820
	114.3	710
	5.250	1200
	133.0	1040
DN125	5.500	1200
	139.7	1040
5	5.563	1200
	141.3	1040
	6.250	1800
	159.0	1560
	6.500	1800
	165.1	1560
6 DN150	6.625	1800
	168.3	1560
8 DN200	8.625	3400
	219.1	2940
10 DN250	10.750	5800
	273.0	5020
12 DN300	12.750	9000
	323.9	7790

6.0 NOTIFICATIONS

⚠ WARNING

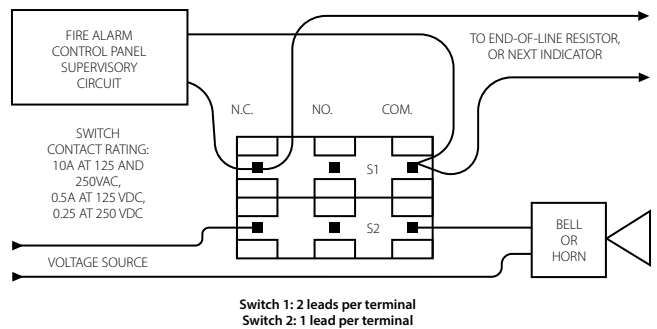
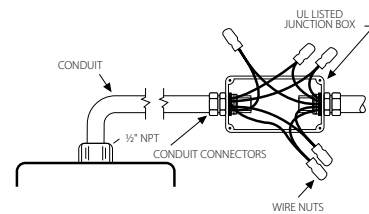
- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Wear safety glasses, hardhat, and foot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

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

7.0 REFERENCE MATERIALS

Switch and Wiring

- 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 “OPEN” 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.



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).

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 |

7.1 REFERENCE MATERIALS

[10.01: Regulatory Approval Reference Guide](#)

[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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