

FireLock® Butterfly Valve

SERIES 705W WITH WEATHERPROOF ACTUATOR

The Series 705W butterfly valve features an approved weatherproof actuator housing approved for indoor or outdoor use. It has a ductile iron body and disc with EPDM disc coating. The body is coated with a heat fused polyphenylene sulfide blend to meet FM requirements. Designed for fire protection services only. Series 705W valve is UL Listed and FM Approved for 300psi/2065 kPa service. The Series 705W is also LPCB approved for 20 Bar and VdS approved for 16 Bar service. Contact Victaulic for details of agency approvals.

WEATHERPROOF ACTUATOR

Pre-wired supervisory switches that monitor the valve in the fully open position for all sizes.

OPTIONAL SUPPLY-SIDE TAP

Series 705W valves are available with a ½" NPT supply side tap designed to allow direct water supply connection to Victaulic FireLock actuated fire protection valves. See separate drawings below. This is an optional feature and must be clearly noted on all orders.



MATERIAL SPECIFICATIONS

Body: Ductile iron conforming to ASTM A-536, coated with polyphenylene sulfide blend.

Disc: Ductile iron conforming to ASTM A-536, various grades, EPDM coated.

Disc Coating:

- **Grade "E" EPDM**
EPDM (Green color code). Temperature range -30°F to +230°F/-34°C to +110°C. Recommended for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

Stem Bearings: Teflon impregnated fiberglass with stainless steel backing.

Stem Bearing Nuts: Type 416 Stainless Steel.

Tap Plug: Carbon steel, plated.

O-Ring: EPDM

Bracket: Carbon steel, painted.

Actuator:

- 2½ – 8"/65 – 200mm: Bronze traveling nut on a steel lead screw, in a ductile iron housing.
- 10 – 12"/250 – 300mm: Steel worm and cast iron quadrant gear, in a cast iron housing.

JOB/OWNER

System No. _____

Location _____

CONTRACTOR

Submitted By _____

Date _____

ENGINEER

Spec Sect _____ Para _____

Approved _____

Date _____

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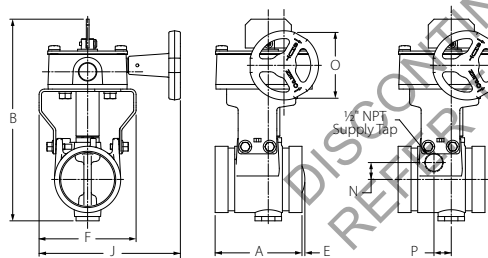
DIMENSIONS –   

Size		Dimensions – inches/millimeters								Aprx. Wgt. Each
Nominal Size inches mm	Actual Outside Diameter inches mm	End to End "A"	Hgt. "B"	"E"	"F"	"J"	"O"	"N" ‡	"P" ‡	lbs/kg
2½ 65	2.875 73.0	3.77 95.6	8.76 222.5	—	4.21 106.9	6.08 154.4	3.00 76.2	0.00 * 0.0 *	0.75 19.1	8.3 3.8
76.1 mm	3.000 76.1	3.77 95.6	8.76 222.5	—	4.21 106.9	6.08 154.4	3.00 76.2	0.00 * 0.0 *	0.75 19.1	8.3 3.8
3 80	3.500 88.9	3.77 95.6	9.40 238.8	0.08 2.0	4.21 106.9	6.08 154.4	3.00 76.2	0.00 * 0.0 *	0.75 19.1	8.9 4.0
4 100	4.500 114.3	4.63 117.6	10.84 275.3	0.07 1.8	6.01 152.7	6.98 177.3	3.00 76.2	0.73 18.5	1.13 28.7	14.9 6.8
139.7 mm	5.500 139.7	5.88 149.4	12.38 314.5	0.43 10.9	6.01 152.7	8.57 217.7	4.50 114.3	—	—	21.0 9.5
5 125	5.563 141.3	5.88 149.4	12.38 314.5	0.43 10.9	6.01 152.7	8.57 217.7	4.50 114.3	—	—	21.0 9.5
165.1 mm	6.500 165.1	5.88 149.4	13.41 340.6	1.00 25.4	7.51 190.8	9.32 236.7	4.50 114.3	1.60 40.6	1.88 47.8	26.5 12.0
6 150	6.625 168.3	5.88 149.4	13.41 340.6	1.00 25.4	7.51 190.8	9.32 236.7	4.50 114.3	1.60 40.6	1.88 47.8	26.5 12.0
8 200	8.625 219.1	5.33 135.4	16.50 419.1	1.27 32.3	9.65 245.1	10.98 278.9	6.30 160.0	0.00 * 0.0 *	0.68 17.3	43.0 19.5
10 250	10.750 273.0	6.40 162.6	19.14 486.2	1.72 43.7	12.20 309.9	16.19 411.2	9.00 228.6	—	—	80.0 36.3
12 300	12.750 323.9	6.50 165.1	21.54 547.1	2.66 67.6	14.25 362.0	17.22 437.4	9.00 228.6	—	—	102.0 46.3

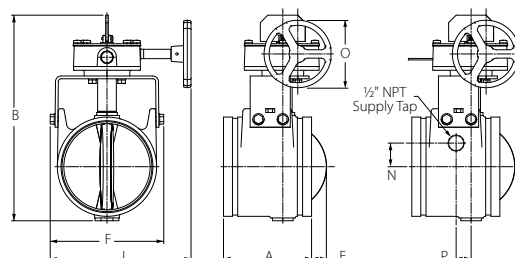
* On Centerline

‡ These dimensions apply only to a Series 705W Butterfly Valve with a ½-inch NPT, supply-side tap

1. To prevent rotation of valves, it is recommended that Series 705W be installed with Victaulic Style 07 Zero-Flex®, Style 005 FireLock, Style 009/009V FireLock EZ, or Style HP-70 Rigid Couplings. If Victaulic flexible couplings are used, additional support may be required.
2. Valve must not be installed with disc in full open position. Disc must be partly closed so that no part is protruding beyond end of valve body.
3. Victaulic grooved end butterfly valves are permitted for use with grooved end pipe (IPS) only. Not permitted for use with plain end (IPS) pipe.
4. Series 705W valves are designed for ambient weather conditions as opposed to submersible service.



2 ½ – 4-INCH/65 – 100-MM SIZES



5 – 12-INCH/125 – 300-MM SIZES

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DIMENSIONS –



Size		Dimensions – inches/millimeters								Aprx. Wgt. Each
Nominal Size inches mm	Actual Outside Diameter inches mm	End to End "A"	Hgt. "B"	"E"	"F"	"J"	"O"	"N" ‡	"P" ‡	lbs/kg
76.1 mm	3.000 76.1	3.77 95.6	8.76 222.5	—	4.21 106.9	6.08 154.4	4.50 114.3	0.00 * 0.0 *	0.75 19.1	8.3 3.8
3	3.500 88.9	3.77 95.6	9.40 238.8	0.08 2.0	4.21 106.9	6.08 154.4	4.50 114.3	0.00 * 0.0 *	0.75 19.1	8.9 4.0
4	4.500 114.3	4.63 117.6	10.84 275.3	0.07 1.8	6.01 152.7	6.98 177.3	4.50 114.3	0.73 18.5	1.13 28.7	14.9 6.8
139.7 mm	5.500 139.7	5.88 149.4	12.38 314.5	0.43 10.9	6.01 152.7	8.57 217.7	7.87 200	—	—	21.0 9.5
6	6.625 168.3	5.88 149.4	13.41 340.6	1.00 25.4	7.51 190.8	9.32 236.7	7.87 200	1.60 40.6	1.88 47.8	26.5 12.0
8	8.625 219.1	5.33 135.4	16.50 419.1	1.27 32.3	9.65 245.1	10.98 278.9	7.87 200	0.00 * 0.0 *	0.68 17.3	43.0 19.5
10	10.750 273.0	6.40 162.6	19.14 486.2	1.72 43.7	12.20 309.9	16.19 411.2	9.84 250	—	—	80.0 36.3
12	12.750 323.9	6.50 165.1	21.54 547.1	2.66 67.6	14.25 362.0	17.22 437.4	9.84 250	—	—	102.0 46.3

* On Centerline

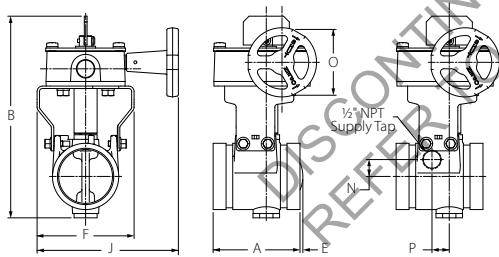
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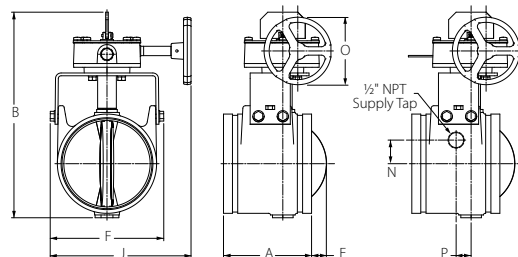
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3. Victaulic grooved end butterfly valves are permitted for use with grooved end pipe (IPS) only. Not permitted for use with plain end (IP) pipe.

4. Series 705W valves are designed for ambient weather conditions as opposed to submersible service.



76.1MM – 4-INCH/65 – 100-MM NOMINAL SIZES



139.7MM – 12-INCH/125 – 300-MM NOMINAL SIZES

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PERFORMANCE

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

Size			Size		
Nominal Size Inches mm	Actual Outside Diameter Inches mm	Equiv. Feet/m of Pipe	Nominal Size Inches mm	Actual Outside Diameter Inches mm	Equiv. Feet/m of Pipe
2½ 65	2.875 73.0	5 1.6	165.1 mm	6.500 165.1	8 2.5
76.1 mm	3.000 76.1	5 1.6	6 150	6.625 168.3	8 2.5
3 80	3.500 88.9	5 1.6	8 200	8.625 219.1	11 3.4
4 100	4.500 114.3	12 3.7	10 250	10.750 273.0	12 3.7
139.7 mm	5.500 139.7	12 3.7	12 300	12.750 323.9	14 4.3
5 125	5.563 141.3	12 3.7			

MAXIMUM WORKINGS PRESSURE RATINGS

Size		Maximum Working Pressure by Agency			
Nominal Size Inches mm	Actual Outside Diameter Inches mm	cULus PSI	FM PSI	LPCB BAR	Vds BAR
2½ 65	2.875 73.0	300	300	20	—
76.1 mm	3.000 76.1	300	300	20	16
3 80	3.500 88.9	300	300	20	16
4 100	4.500 114.3	300	300	20	16
139.7 mm	5.500 139.7	300	300	20	16
5 125	5.563 141.3	300	300	20	—
165.1	6.500 165.1	300	300	20	—
6 150	6.625 168.3	300	300	20	16
8 200	8.625 219.1	300	300	20	16
10 250	10.750 273.0	300	300	20	16
12 300	12.750 323.9	300	300	20	16

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PERFORMANCE

C_v 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_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

Size		C _v	Size		C _v	Size		C _v
Nominal Size Inches mm	Actual Outside Diameter Inches mm		Nominal Size Inches mm	Actual Outside Diameter Inches mm		Nominal Size Inches mm	Actual Outside Diameter Inches mm	
2½ 65	2.875 73.0	325	139.7 mm	5.500 139.7	1150	8 200	8.625 219.1	3400
76.1 mm	3.000 76.1	325	5 125	5.563 141.3	1150	10 250	10.750 273.0	5750
3 80	3.500 88.9	482	165.1 mm	6.500 165.1	1850	12 300	12.750 323.9	8300
4 100	4.500 114.3	600	6 150	6.625 168.3	1850			

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 (bar)

K_v = Flow Factor

Size		K _v	Size		K _v	Size		K _v
Nominal Size Inches mm	Actual Outside Diameter Inches mm		Nominal Size Inches mm	Actual Outside Diameter Inches mm		Nominal Size Inches mm	Actual Outside Diameter Inches mm	
2½ 65	2.875 73.0	280	139.7 mm	5.500 139.7	995	8 200	8.625 219.1	2940
76.1 mm	3.000 76.1	280	5 125	5.563 141.3	995	10 250	10.750 273.0	4975
3 80	3.500 88.9	415	165.1 mm	6.500 165.1	1600	12 300	12.750 323.9	7180
4 100	4.500 114.3	520	6 150	6.625 168.3	1600			

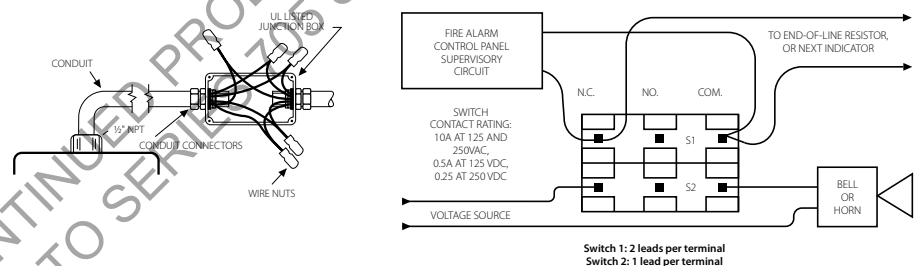
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SWITCH AND WIRING

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 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 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).

DISCONTINUED PRODUCT
REFER TO SERIES 705 SUBMITTAL 10.87

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WARRANTY

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

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 installation sheet included with the valve. Verify you have the latest revision by visiting our website at www.victaulic.com. Further reference can be found in the I-100 Victaulic Field Installation Handbook.

DISCONTINUED PRODUCT
REFER TO SERIES 705 SUBMITTAL 10.81



WCAS-7HFF85

For complete contact information, visit www.victaulic.com

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