

## MODEL SJ-300F RESILIENT SEATED BUTTERFLY VALVE



The Model SJ-300F Butterfly Valve is a grooved-end shut-off valve equipped with a weatherproof worm gear operator and supervisory switch and wiring.

The Model SJ-300F is FM approved for 300 psi (20 Bar, 2.0 MPa) WWP (water working pressure) service for indoor and outdoor use. Flow characteristics satisfy UL Specification 1091 and FM Approval Standard 1112.

When the Model SJ-300F Butterfly Valve is used in a fire protection pipeline, installation shall conform to NFPA 13 and NFPA 72.

The valve consists of an epoxy powder coated ductile iron body and EPDM rubber encapsulated dual-seal disc.



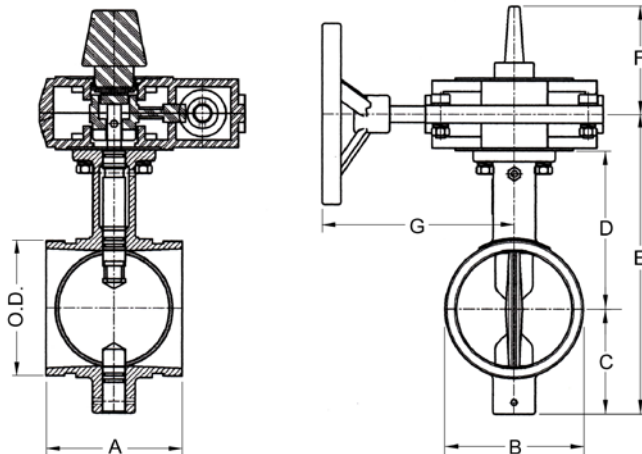
### Pressure-Temperature Rating

Nom. Rating	Working Pressure	Shell Test	Max. Service Temperature
CWP	300 psi @ 100°F 20 Bar @ 38°C	1500 psi 105Bar	EPDM: 230°F / 110°C Nitrile: 180°F / 82°C

\*Working pressure is based on connection with roll- or cut-grooved standard wall carbon steel pipe.

\*Seat test: 2 times the working pressure.

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Nominal Size	Pipe O.D.	Dimensions							Weight <sup>(2)</sup>
		A <sup>(1)</sup>	B	C	D	E	F	G	
mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in	mm in	Kgs Lbs
65 2½	73.0 2.875	97 3.81	80 3.15	68 2.68	111 4.37	210 8.27	92 3.62	163 6.42	8.8 17.9
76.1 mm	76.1 3.000	97 3.81	80 3.15	68 2.68	111 4.37	210 8.27	92 3.62	163 6.42	8.8 17.9
80 3	88.9 3.500	97 3.81	92 3.62	76 3.00	126 4.96	233 9.17	92 3.62	163 6.42	9.2 20.3
100 4	114.3 4.500	116 4.56	118 4.65	89 3.50	135 5.31	255 10.04	92 3.62	163 6.42	10.6 23.4
139.7mm	139.7 5.500	148 5.81	145 5.71	102 4.00	168 6.61	301 11.85	92 3.62	163 6.42	14.3 31.6
125 5	141.3 5.563	148 5.81	145 5.71	102 4.00	168 6.61	301 11.85	92 3.62	163 6.42	14.4 31.6
165.1 mm	165.1 6.500	148 5.81	172 6.77	114 4.50	184 7.25	329 12.95	92 3.62	163 6.42	16.1 35.5
150 6	168.3 6.625	148 5.81	172 6.77	114 4.50	184 7.25	329 12.95	92 3.62	163 6.42	16.1 35.5

(1) End to end dimensions conform to MSS SP-67.

(2) The weight includes the worm gear operator.

## Flow Data – C<sub>v</sub> Values

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 *Shurjoint*.

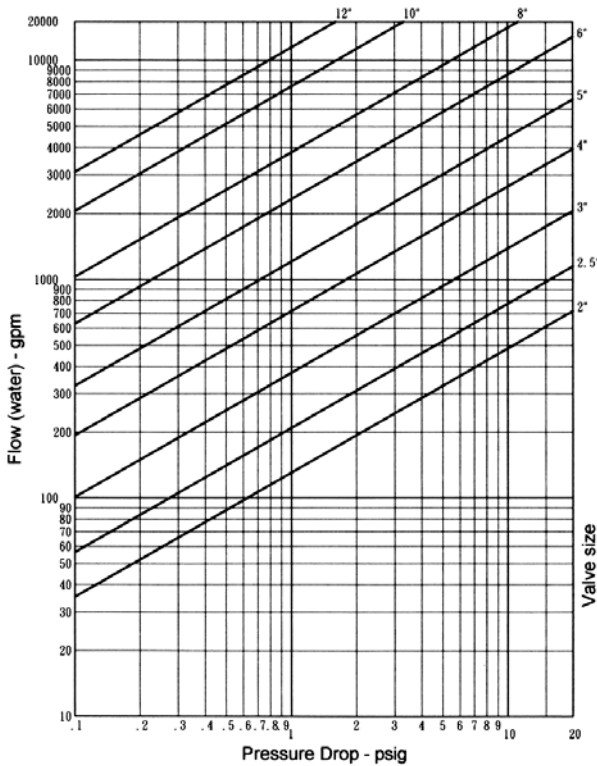
Formula for C<sub>v</sub> Values:

$$C_v = \frac{Q}{\sqrt{\Delta P}}$$

Where: C<sub>v</sub> = Flow coefficient  
 Q = Flow (GPM)  
 ΔP = Pressure drop (psi)

Model #SJ-300F C <sub>v</sub> (Fully Open)	
Nominal Size (in)	C <sub>v</sub> Values
2½	210
3	380
4	720
5	1150
6	2250

This chart should be used as a general guide.



## Valve Torque Requirements

These torque values were derived from test data with non-lubricated valves in water, non-pressurized at ambient temperatures with EPDM seals.

Model SJ-300F Butterfly Valve Torque Requirements		
Nominal Size	Pipe O.D	Torque
mm <i>in</i>	mm <i>in</i>	N-m <i>in-Lbs</i>
65 <i>2½</i>	73.0 <i>2.875</i>	14.70 <i>130</i>
65 <i>2½</i>	76.1 <i>3.000</i>	14.70 <i>130</i>
80 <i>3</i>	88.9 <i>3.500</i>	22.60 <i>200</i>
100 <i>4</i>	114.3 <i>4.500</i>	32.78 <i>290</i>
125 <i>5</i>	139.7 <i>5.500</i>	42.37 <i>375</i>
125 <i>5</i>	141.3 <i>5.563</i>	42.37 <i>375</i>
150 <i>6</i>	165.1 <i>6.500</i>	81.35 <i>720</i>
150 <i>6</i>	168.3 <i>6.625</i>	81.35 <i>720</i>

## Switch & Wiring

The supervisory switch is designed to supervise in the “open” position and contains two, single pole, double throw, pre-wired switches.

Switch 1 (S1) has two #18 AWG wires per terminal used for connection to supervisory circuit of a UL listed alarm control panel.

Normally closed: (2) Blue  
 Common: (2) Yellow

Switch 2 (S2) has one #18 AWG wire per terminal for connection to auxiliary devices which may be required by the authority having jurisdiction.

Normally closed: (1) Red  
 Normally open: (1) Black  
 Common: (1) White

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.

Besides, a #14 AWG ground lead (green) is provided.

The diagram shows a typical connection between the common terminal and the normally closed terminal. 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.

The connection of the alarm switch wiring shall be in accordance with NFPA 72 and the auxiliary switch per NFPA 70 (NEC).

## MATERIAL SPECIFICATIONS

### • Valve Body & Disc:

Ductile Iron to ASTM A536, Gr. 65-45-12 and or to ASTM A395 Gr. 65-45-15, min. tensile strength 448 MPa (65,000psi).

aromatic hydrocarbons.

Maximum Temperature Range: -29°F (-34°C) to +230°F (+110°C).

### • Valve Body Coating:

Epoxy powder coating, black color, for use in cold +86°F (+30°C) and hot +180°F (+82°C) potable water system.

### • Upper & Lower Shafts:

Stainless steel Type 410.

### • Disc Encapsulation:

- Grade “E” EPDM (Color code: Green stripe) certified under ANSI / NSF 61 for potable water use. Good for cold & hot water up to +230°F (+110°C). Also good for services for water with acid, water with chlorine, deionized water, seawater and waste water, dilute acids, oil-free air and many chemicals. **Not recommended for petroleum oils, minerals oils, solvents and**

### • Shaft Bearing:

Teflon.

### • Stem Seals:

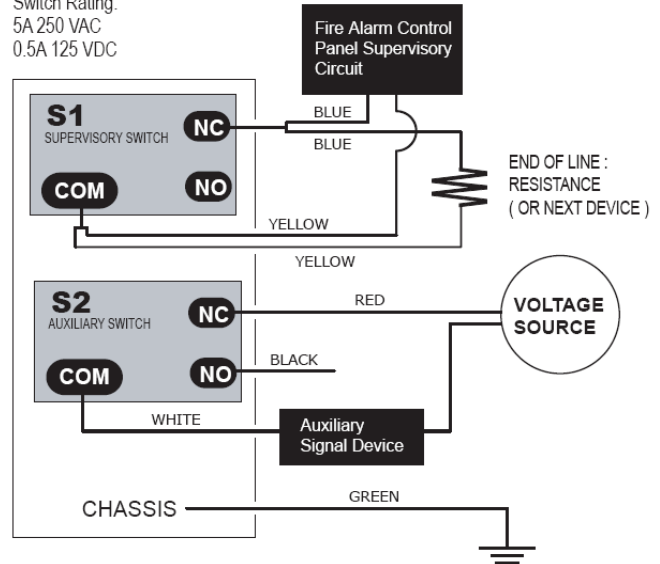
O-Ring, Nitrile.

### General Notes:

- Pressure ratings listed are CWP (cold water pressure) or maximum working pressure within the service temperature range of the gasket used in the coupling. This rating may occasionally differ from maximum working pressures listed and/or approved by cULus and/or FM as testing conditions and test pipes differ. For additional information contact **Shurjoint**.
- Maximum working pressures and end loads listed are total of internal and external pressures and loads based on Sch. 40 steel pipe with roll grooves to ANSI/AWWA C606-07 specifications. For information on other pipe schedules contact **Shurjoint**.
- For one time field test only the maximum joint working pressure may be increased 1½ times the figures shown.
- **Warning:** Piping systems must always be depressurized and drained before attempting disassembly and or removal of any components.
- **Shurjoint** reserves the right to change specifications, designs and or standard equipment without notice and without incurring any obligations.

## SWITCH WIRING DIAGRAM

Switch Rating:  
 5A 250 VAC  
 0.5A 125 VDC



Job Name:	System No.	Location:	
Contractor:	Approved:	Date:	
Engineer:	Approved:	Date:	

*Shurjoint product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Shurjoint Technical Service. Shurjoint reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligations to make such changes and modifications on Shurjoint products previously subsequently sold.*