

## Series 763 Stainless Steel Butterfly Valve

### PRODUCT DESCRIPTION

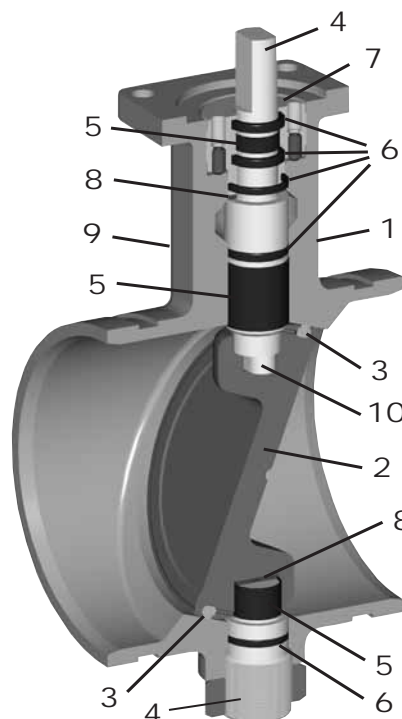


**Series 763  
with Gear Operator**

The Victaulic Series 763 stainless steel butterfly valves are designed for 300 psi (2065 kPa) service. The valve consists of a stainless steel body with an integrally cast neck to accommodate insulation requirements of up to two inches. The valve has an ISO 5211 top flange that will accept mounting of most major manual and power operators. This will improve insulation ability and allow room for actuation. The Series 763 also features available seat options that include EPDM, nitrile, fluoroelastomer, and lubricated nitrile (for air and gas service only). The disc is constructed of stainless steel and provides a bubble-tight shut-off at full rated pressure and temperature. The valve is bi-directional and is capable of bi-directional dead-end service.

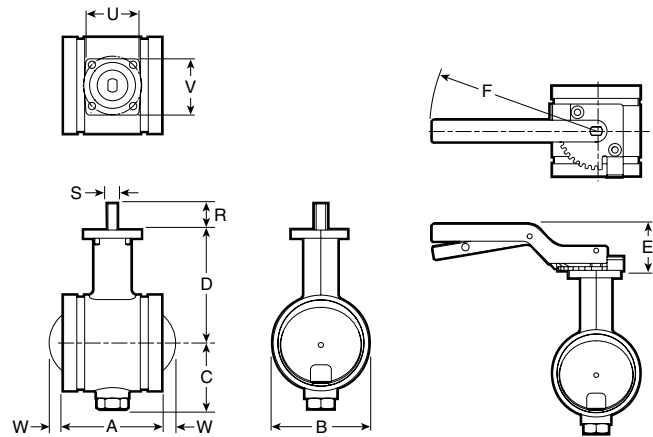
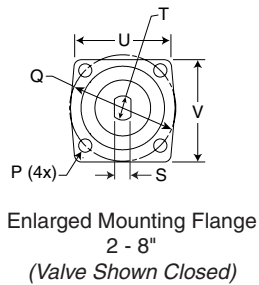
### FEATURES

- 1 Body** – Grade CF8M stainless steel, integrally cast with neck and ISO mounting flange
- 2 Disc** – Grade CF8M stainless steel
- 3 Seat Seal** – EPDM, nitrile, fluoroelastomer, or lubricated nitrile. Seat seals are available for a wide variety of services
- 4 Upper and Lower Stems** – Manufactured from 316 stainless steel
- 5 Bearings** – PTFE impregnated glass fabric with 316 stainless steel backing
- 6 Stem Seals** – Stem seals are furnished in same elastomer as seat seal
- 7 Retaining Gland** – 316 stainless steel gland houses a bearing and redundant stem seals
- 8 Upper and lower thrust bearings** – Maintains alignment between disc and body
- 9 Extended Neck** – Allows for up to 2" of insulation
- 10 Stem to Disc Drive** – a shaped connection ensures positive drive, eliminating chatter



## DIMENSIONS

### Series 763 Butterfly Valves

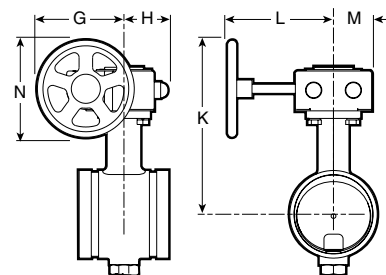


### Bare and with Lever Lock Handle

Valve Size		Dimensions – Inches/millimeters														Bare Valve Aprx. Wgt. Ea. Lbs./kg	Valve w/Lever Handle Aprx. Wgt. Ea. Lbs./kg
Nominal Diameter In./mm	Actual Outside Dia. In./mm	A	B	C	D	E	F	P	Q	R	S	T	U	V	Disc Protrusion W		
2 50	2.375 60,3	3.20 81	2.37 60	2.09 53	4.17 106	2.38 60	8.51 216	0.34 9	2.76 70	1.25 32	0.31 8	0.43 11	2.48 63	2.65 67	– –	3.5 1,6	4.7 2,1
2½ 65	2.875 73,0	3.77 96	3.00 76	2.47 63	4.38 111	2.38 60	8.51 216	0.34 9	2.76 70	1.25 31	0.31 8	0.43 11	2.48 63	2.65 67	– –	4.5 2,0	5.7 2,6
76,1 mm	3.000 76,1	3.77 96	3.00 76	2.47 63	4.38 111	2.38 60	8.51 216	0.34 9	2.76 70	1.25 31	0.31 8	0.43 11	2.48 63	2.65 67	– –	4.5 2,0	5.7 2,6
3 80	3.500 88,9	3.77 96	3.50 89	2.60 66	4.97 126	2.38 60	8.51 216	0.34 9	2.76 70	1.23 31	0.31 8	0.43 11	2.48 63	2.65 67	– –	5.0 2,3	6.2 2,8
4 100	4.500 114,3	4.64 118	4.52 115	3.14 80	5.33 135	2.38 60	8.51 216	0.34 9	2.76 70	1.23 31	0.43 11	0.63 16	2.47 63	2.65 67	– –	9.0 4,1	10.2 4,6
165,1 mm	6.500 165,1	5.88 149	6.64 169	4.76 121	7.25 184	1.37 35	12.01 305	0.43 11	4.02 102	1.37 35	0.50 13	0.75 19	3.51 89	3.85 98	– –	26.0 11,8	28.4 12,9
6 150	6.625 168,3	5.88 149	6.64 169	4.76 121	7.25 184	1.37 35	12.01 305	0.43 11	4.02 102	1.37 35	0.50 13	0.75 19	3.51 89	3.85 98	– –	26.0 11,8	28.4 12,9
8 200	8.625 219,1	5.32 135	9.75 248	5.73 145	8.57 218	1.37 35	12.01 305	0.43 11	4.02 102	1.37 35	0.75 19	1.00 25	3.40 86	3.85 98	1.24 32	41.0 18,6	43.4 19,7
10 250	10.750 273,0	6.40 163	12.10 307	7.05 179	10.09 256	– –	– –	0.53 13	4.92 125	2.13 54	– –	1.25 32	4.62 117	4.77 121	1.72 44	65.0 29,5	– –

## DIMENSIONS

### With Aluminum Gear Operator



Valve Size		Dimensions – Inches/millimeters						Aprx. Wgt. Ea. Lbs./kg
Nominal Diameter In./mm	Actual Outside Diameter In./mm	G	H	K	L	M	N	
2 50	2.375 60,3	2.64 92	1.75 44	7.00 178	4.29 109	1.58 40	3.94 100	7.4 3,4
2½ 65	2.875 73,0	2.64 92	1.75 44	7.18 182	4.29 109	1.58 40	3.94 100	8.4 3,8
76,1 mm	3.000 76,1	2.64 92	1.75 44	7.18 182	4.29 109	1.58 40	3.94 100	8.4 3,8
3 80	3.500 88,9	2.64 92	1.75 44	7.77 197	4.29 109	1.58 40	3.94 100	8.9 4,0
4 100	4.500 114,3	4.43 112	2.28 58	8.93 227	4.65 118	1.97 50	4.92 125	12.9 5,9
165,1 mm	6.500 165,1	6.30 160	3.25 82	12.62 320	7.75 197	2.87 73	7.87 200	33.2 15,1
6 150	6.625 168,3	6.30 160	3.25 82	12.62 320	7.75 197	2.87 73	7.87 200	33.2 15,1
8 200	8.625 219,1	6.30 160	3.25 82	13.95 354	7.75 197	2.87 73	7.87 200	48.2 21,9
10 250	10.750 273,0	6.30 160	3.25 82	15.47 393	7.75 197	2.87 73	7.87 200	74.0 33,6

### With Stainless Steel Gear Operator

Valve Size		Dimensions – Inches/millimeters						Aprx. Wgt. Ea. Lbs./kg
Nominal Diameter In./mm	Actual Outside Diameter In./mm	G	H	K	L	M	N	
2 50	2.375 60,3	3.93 100	2.80 71	7.28 185	5.13 130	2.22 56	3.94 100	6.4 2,0
2½ 65	2.875 73,0	3.93 100	2.80 71	7.49 190	5.13 130	2.22 56	3.94 100	7.4 3,4
76,1 mm	3.000 76,1	3.93 100	2.80 71	7.49 190	5.13 130	2.22 56	3.94 100	7.4 3,4
3 80	3.500 88,9	3.93 100	2.80 71	8.08 205	5.13 130	2.22 56	3.94 100	7.9 3,6
4 100	4.500 114,3	4.92 125	2.80 71	9.42 239	5.32 135	2.22 56	5.90 150	11.9 5,4
165,1 mm	6.500 165,1	6.59 167	3.54 90	12.92 328	9.00 229	2.97 75	8.46 215	32.2 14,6
6 150	6.625 168,3	6.59 167	3.54 90	12.92 328	9.00 229	2.97 75	8.46 215	32.2 14,6
8 200	8.625 219,1	6.59 167	3.54 90	14.24 362	9.00 229	2.97 75	8.46 215	47.2 21,4
10 250	10.750 273,0	9.33 237	4.02 102	17.76 451	8.03 204	3.70 94	12.40 315	80.4 36,6

## PERFORMANCE

### C<sub>V</sub> Values

C<sub>V</sub> values for flow of water at +60°F (+16°C) are shown in the table at below.

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)

C<sub>V</sub> = Flow Coefficient

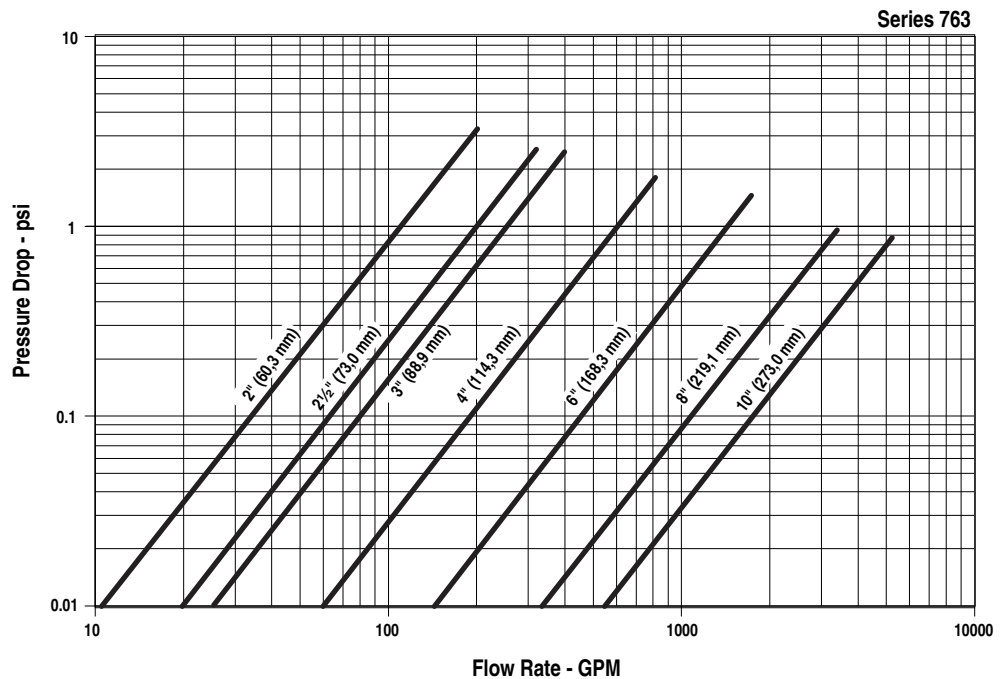
ΔP = Pressure Drop (PSI)

Valve Size		Series 763- C <sub>V</sub> Throttled						
Nominal Dia. In./mm	Actual Outside Dia. In./mm	Disc Position (Degrees open)						
		90° 	80° 	70° 	60° 	50° 	40° 	30° 
2 50	2.375 60,3	110	80	56	34	21	10	3
2½ 65	2.875 73,0	200	140	96	63	42	26	13
76,1 mm	3.000 76,1	200	140	96	63	42	26	13
3 80	3.500 88,9	250	200	140	98	65	38	17
4 100	4.500 114,3	600	530	330	190	110	67	43
165,1 mm	6.500 165,1	1400	970	620	400	240	136	68
6 150	6.625 168,3	1400	970	620	400	240	136	68
8 200	8.625 219,1	3400	2460	1400	890	560	340	196
10 250	10.750 273,0	5500	4359	2396	1525	922	577	346

### NOTICE

Victaulic recommends that when using butterfly valves for throttling service that the disc not be at less than 30 degrees open. For best results disc should be between 30 & 70 degrees open. For more specific details on throttling service please contact Victaulic.

### Flow Characteristics for Fully Opened Valve



### NOTICE

Victaulic recommends that, in keeping with good piping practices, flow velocities for water service be limited to 20 ft/sec. When higher flow velocities are necessary and/or for other flow media, please contact Victaulic.

## VALVE TORQUE REQUIREMENTS

Victaulic Series 763 valves have low torque requirements for operating the valve. This results in less manual effort, smaller gear operators or smaller, less expensive actuators to open and close the valve.

Valve Size		Torque Inch Pounds/Newton Meters				
Nominal Diameter In./mm	Actual Outside Diameter In./mm	Differential Pressure – PSI/Bar				
		50/3	100/7	150/10	200/14	300/20
2 50	2.375 60.3	80 9	84 10	88 10	92 11	100 12
2½ 65	2.875 73.0	105 12	112 13	119 14	126 15	140 16
76,1 mm	3.000 76,1	105 12	112 13	119 14	126 15	140 16
3 80	3.500 88,9	120 13	130 15	140 16	150 17	180 20
4 100	4.500 114,3	260 29	290 33	330 37	360 41	440 49
165,1 mm	6.500 165,1	840 95	890 101	940 106	990 112	1080 123
6 150	6.625 168,3	840 95	890 101	940 106	990 112	1080 123
8 200	8.625 219,1	1080 123	1160 131	1230 139	1300 147	1440 163
10 250	10.750 273,0	1920 217	2120 239	2310 261	2500 283	2880 326

**Source** – These torque values were derived from test data with non-lubricated valves in water at ambient temperatures with EPDM seals. For other material and service conditions, apply a suitable service factor.

**Torque Factors** – All torque values are for normal conditions (i.e. the valve is operated at least once a quarter, disc corrosion is expected to be minor, the media is clean and non-abrasive, and the chemical effects upon the elastomer are minor).

**Typical fluid torque factors commonly used in the industry are** – Water: 1.0; Lubricated service: 0.8; Dry gases: Lubricated nitrile “T” seat seals are recommended for dry gases wherever chemically appropriate. See material torque factor below.

**Material Torque Factors** – “E” = 1.0; “O” = 1.2; “T” = 0.8

**Cycling Factor** – Torque will typically increase as the valve is cycled. A factor of 1.5 should be applied for the first 5000 cycles and another 1.5 applied for all additional cycles. This higher number should be used if there is more than one cycle per hour.

**Actuation Factor** – There are no actuation safety factors applied. A factor consistent with the consequences of not actuating should be applied. A minimum factor of 1.2 is recommended for directly actuated valves and 1.5 for 3-way assemblies.

**Combining Torque Factors** – When multiple torque factors apply, they are combined by multiplying them. Example: For an EPDM seal and a 5000 cycle factor the combined factor would be 1.0 X (1.5) = 1.5.

**Note** – Under certain high flow conditions, the hydrodynamic torque can exceed the seating torque. Large butterfly valves are not recommended for use in a free discharge condition, such as filling an empty line with fluid at the full rated pressure.

Contact Victaulic for other services.

## MATERIAL SPECIFICATIONS

**Body and Disc:** Grade CF8M stainless steel conforming to ASTM A351, A743 and A744.

**Stems and Hardware:** Type 316 stainless steel.

**Bearings:** PTFE impregnated glass fabric with 316 stainless steel backing and/or PEEK.

**Handle:**

- Sizes 2–4": Aluminum with black paint.
- Sizes 6 & 8": Ductile iron with black paint.
- **Optional:** 316 stainless steel

**Gear Operator:** Aluminum housing with ductile iron quadrant and steel worm gear.

- **Optional:** 300 Series stainless steel housing with aluminum bronze quadrant and steel worm gear.

**Disc Seal:** (specify choice)

- **Grade “E” EPDM**

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 and many chemical services. NOT RECOMMENDED FOR PETROLEUM SERVICES.

- **Grade “T” nitrile**

Temperature range for continuous service up to +180°F (+82°C). Recommended for petroleum products, vegetable and mineral oils within the specified temperature range. Not recommended for hot water services over +150°F (+66°C) or for hot dry air.

- **Grade “D” lubricated nitrile**

Temperature range for continuous service up to +180°F (+82°C). Recommended for non-lubricated and lubricated air and some gas services. (For listing of recommended gas services, please see Chemical Compatibility Chart in this submittal.) NOT RECOMMENDED FOR LIQUID SERVICES.

- **Optional: Grade “O” fluoroelastomer**

Temperature range for continuous service up to +300°F (+149°C). Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids and organic liquids to +300°F (+149°C).

\*Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service recommendations and for a listing of services which are not recommended.

## Series 763 Figure Numbering System

V - 040 - 3 3 3 1 03							
Type	Size		Pressure Rating	Body Material	Disc/Stem	Seat	Operator
	Act. In.	Fig. No.					
V	2" 2½" 76,1 mm 3" 4" 6" 165,1 mm 8" 10"	020 024 076 030 040 060 165 080 100	3 - 300 psi	3 - 316 stainless steel 9 - Special *	3 - 316 stainless steel/ 316 stainless steel 9 - Special*	1 - EPDM-"E" 2 - Nitrile-"T" 3 - Viton-"O" D - Lubricated Nitrile+ 9 - Special*	00 - Bare 01 - Infinite position lever with memory 02 - Two position lever 03 - Lever lock - 10 position S3 - Lever lock with stainless steel latch plate 04 - Lever lock with tamperproof device S4 - Lever lock with tamper proof device and stainless steel latch plate 20 - Gear operator 21 - Gear operator with memory stop 22 - Gear operator with chain wheel 23 - Gear operator with AWWA 2" square oper. nut 24 - Gear operator with memory stop and chain wheel 29 - Non-std. gear operator* 53 - Stainless steel lever lock - 10 position 54 - Stainless steel lever lock with tamperproof device 60 - Stainless steel gear operator 62 - Stainless steel gear operator with chainwheel 99 - Special*

## NOTES:

\* Details required with order.

+ For air and gas service only.

## CHEMICAL COMPATIBILITY GUIDE

## Series 763 Butterfly Valve

## ! WARNING

- This chemical compatibility chart should be used only as a guide.
- These recommendations are based on the chemical compatibility of the materials under laboratory conditions.
- This data is a compilation of published data from many sources. Many factors must be taken into consideration by the system designer, such as aeration, velocity, temperature, concentration, contaminants, and turbulence, which can effect acceptability for any given service. Unless otherwise listed, all data is for ambient conditions.
- DO NOT ASSUME A SERVICE SIMILAR TO THE ONE LISTED CAN BE ACCOMMODATED. Where possible, materials should be subjected to simulated service conditions to determine suitability. It should not be concluded that in instances where chemicals are listed as acceptable individually will necessarily be acceptable when combined.

Failure to follow these instructions may cause serious personal injury and/or property damage.

Ratings are based on service at ambient temperature unless otherwise listed.

Rating Code Key		
G =	Good	
Note	Where two grades are listed, either may be used.	
NR =	NOT RECOMMENDED	
— =	No Data	
	For services not listed contact Victaulic for recommendations.	

Chemical Composition	Rating Code	Seal Grade
ASTM #3 Oil	G	T
Acetaldehyde	G	E
Acetamide	G	T
Acetic Acid up to 10% 100°F (38°C)	G	E
Acetic Acid from 10-50% 100°F (38°C)	—	—
Acetic Acid, Glacial 100°F (38°C)	—	—
Acetic Anhydride	G	E

Chemical Composition	Rating Code	Seal Grade
Acetone	G	E
Acetonitrile	G	T
Acetophenone	G	E
Acetylene	—	—
Acrylic Resin	—	—
Acrylonitrile	NR	—
Adipic Acid	—	—
Air	G	D
Alkalis	—	—
Allyl Alcohol to 96%	G	E
Allyl Chloride	NR	—
Alum Sulfuric Acid	—	—
Alums	G	E/T
Aluminum Chloride	—	—
Aluminum Fluoride	—	—
Aluminum Hydroxide	G	E
Aluminum Nitrate	G	E/T
Aluminum Oxychloride	—	—
Aluminum Phosphate	—	—
Aluminum Salts	—	—

Chemical Composition	Rating Code	Seal Grade
Aluminum Sulfate	G	E/T
Ammonia Liquid	G	E
Ammonium Alum	—	—
Ammonium Bifluoride	—	—
Ammonium Carbonate	—	—
Ammonium Chloride	G	T
Ammonium Fluoride	—	—
Ammonium Hydroxide	G	E
Ammonium Metaphosphate	—	—
Ammonium Nitrate	G	T
Ammonium Nitrite	—	—
Ammonium Persulfate, to 10%	—	—
Ammonium Phosphate	G	T
Ammonium Sulfamate	—	—
Ammonium Sulfate	G	E/T
Ammonium Sulfide	G	E
Ammonium Thiocyanate	G	E
Amyl Acetate	G	E
Amyl Alcohol	G	E
Amyl Borate	—	—

Chemical Composition	Rating Code	Seal Grade
Amyl Chloride	NR	—
Amyl Chloronaphthalene	—	—
Anderol	—	—
Anthraquinone	NR	—
Anthraquinone Sulfonic Acid	NR	—
Aniline	G	E
Aniline Dyes	—	—
Aniline Hydrochloride	—	—
Aniline Oil	—	—
Animal Fats	—	—
Antimony Chloride	—	—
Antimony Trichloride	—	—
Aroclor(s)	—	—
Arsenic Acid, to 75%	G	T
Arylsulfonic Acid	NR	—
Barium Carbonate	G	E
Barium Chloride	G	E/T
Barium Hydroxide	G	E/T
Barium Nitrate	—	—
Barium Sulfide	G	T

# CHEMICAL COMPATIBILITY GUIDE

**Series 763 Butterfly Valve** (see Rating Code Key on page 7.)

## ⚠ WARNING

- This chemical compatibility chart should be used only as a guide.
- These recommendations are based on the chemical compatibility of the materials under laboratory conditions.
- This data is a compilation of published data from many sources. Many factors must be taken into consideration by the system designer, such as aeration, velocity, temperature, concentration, contaminants, and turbulence, which can effect acceptability for any given service. Unless otherwise listed, all data is for ambient conditions.
- **DO NOT ASSUME A SERVICE SIMILAR TO THE ONE LISTED CAN BE ACCOMMODATED.** Where possible, materials should be subjected to simulated service conditions to determine suitability. It should not be concluded that in instances where chemicals are listed as acceptable individually will necessarily be acceptable when combined.

Failure to follow these instructions may cause serious personal injury and/or property damage.

Ratings are based on service at ambient temperature unless otherwise listed.

Chemical Composition	Rating Code	Seal Grade
Beer	–	–
Beet Sugar Liquors	–	–
Benzaldehyde	–	–
Benzene	G	O
Benzene Sulfonic (Aromatic Acid)	–	–
Benzine (see Petroleum Ether)	–	–
Benzoic Acid	G	E
Benzol	–	–
Benzyl Alcohol	G	E
Benzyl Benzoate	–	–
Black Sulfate Liquor	G	T
Blast Furnace Gas	–	–
Bleach, 12% Active Cl <sup>2</sup>	–	–
Borax	G	E
Bordeaux Mixture	–	–
Boric Acid	G	E/T
Bromine	NR	–
Bromine Water	NR	–
Butadiene	–	–
Butane Gas	–	–
Butanol (see Butyl Alcohol)	G	E/T
Butter	–	–
Butyl Acetate	–	–
Butyl Acetyl Ricinoleate	–	–
Butyl Alcohol	G	E/T
Butyl "Cellulosolve Adipate"	G	E/T
Butyl Phenol	–	–
Butyl Stearate	G	T
Butylene	G	T
Butylene Glycol	–	–
Butyne Diol	NR	–
Butyraldehyde	–	–
Cadmium Cyanide	–	–
Calcium Acetate	–	–
Calcium Bisulphate	–	–
Calcium Bisulphide	G	T
Calcium Bisulphite	G	T
Calcium Chloride	G	E/T
Calcium Fluorophosphate	–	–
Calcium Hydroxide (Lime)	G	E/T
Calcium Hypochlorite	–	–
Calcium Hypochloride	G	E
Calcium Nitrate	G	E/T
Calcium Sulfate	–	–
Calcium Sulfide	–	–
Caliche Liquors	–	–
Cane Sugar Liquors	–	–
Carbitol	–	–
Carbonic Acid, Phenol	G	O
Carbon Bisulphide	–	–
Carbon Dioxide, Dry	G	D
Carbon Dioxide, Wet	G	D
Carbon Disulphide	G	O
Carbon Monoxide	G	D
Carbon Tetrachloride	G	O
Castor Oil	–	–
Caustic Potash	G	E
Cellulosolve Acetate	–	–
Cellulosolve (Alcohol Ether)	–	–
Cellulose Acetate	–	–
Cellulose 220 (Tri-Aryl-Phosphate)	–	–
Cellulube Hydraulic Fluids	–	–

Chemical Composition	Rating Code	Seal Grade
China Wood Oil, Tung Oil	G	T
Chloralhydrate	NR	–
Chloric Acid to 20%	–	–
Chlorine, Dry	–	–
Chlorine, Water	–	–
Chlorinated Paraffine (Chlorococane)	–	–
Chloroacetic Acid	–	–
Chloroacetone	–	–
Chlorobenzene	–	–
Chlorobromomethane	NR	–
Chloroform	G	O
Chlorosulphonic Acid	NR	–
Chrome Alum	–	–
Chrome Plating Solutions	–	–
Chromic Acid, to 25%	–	–
Citric Acid	G	E
Cocoonut Oil	–	–
Cod Liver Oil	–	–
Copper Chloride	G	T
Copper Cyanide	G	T
Copper Fluoride	–	–
Copper Nitrate	G	E/T
Copper Sulfate	G	E/T
Corn Oil	–	–
Cotton Seed Oil	–	–
Creosol, Cresylic Acid	–	–
Creosote, Coal Tar	–	–
Creosote, Wood	–	–
Cupric Fluoride	–	–
Cupric Sulfate	–	–
Cyclohexane (Alicyclic Hydrocarbon)	G	O
Cyclohexanol	–	–
Cyclohexanone	–	–
Deionized Water	G	E
Dextrin	G	T
Diacetone Alcohol	–	–
Dibutyl Phthalate	G	E
Dichloro Difloro Methane	–	–
Dicyclohexylamine	–	–
Diesel Oil	G	T
Diethyl Ether	–	–
Diethyl Sebacate	–	–
Diethylamine	G	T
Diethylene Glycol	–	–
Dimethylamine	–	–
Diethyl Phthalate	–	–
Dioxane	G	E
Dipentene (Terpene-Hydrocarbon)	–	–
Dipropylene Glycol	–	–
Dowtherm A	G	O
Dowtherm E	–	–
Dowtherm SR-1	–	–
Ethanolamine	–	–
Ethyl Acetoacetate	–	–
Ethyl Acrylate	–	–
Ethyl Alcohol	G	E/T
Ethyl Cellulose	–	–
Ethyl "Cellulosolve"	–	–
Ethyl Ether	–	–
Ethyl Formate	–	–
Ethyl Oxalate	–	–

Chemical Composition	Rating Code	Seal Grade
Ethyl Silicate	–	–
Ethylene Chlorohydrin	–	–
Ethylene Diamine	–	–
Ethylene Dichloride (Dichloroethane)	G	O
Ethylene Glycol	G	E/T
Ethylene Oxide	NR	–
Fatty Acids	–	–
Ferric Chloride, to 35%	–	–
Ferric Chloride, Saturated	–	–
Ferric Hydroxide	–	–
Ferric Nitrate	–	–
Ferric Sulfate	G	T
Ferrus Ammonium Sulfate to 30%	–	–
Fish Oils	–	–
Fluoboric Acid	G	E
Fluorine Gas, Wet	NR	–
Fluorosilicic Acid	–	–
Fly Ash	G	E
Foam	G	E
Fog Oil	–	–
Formaldehyde	G	E/T
Formamide	–	–
Formic Acid	G	E
Freon 11, 130° (54°C)	G	T
Freon 12, 130° (54°C)	G	T
Freon 21	NR	–
Freon 22, 130° (54°C)	–	–
Freon 113 130° (54°C)	G	T
Freon 114, 130° (54°C)	G	T
Freon 123	NR	–
Freon 134a, 176° (80°C)	–	–
Fructose	G	T
Fuel Oil	G	T
Fumaric Acid	G	E
Furan	NR	–
Furfuryl Alcohol	G	E
Gallic Acid	NR	–
Gasoline, Refined	G	T
Gasoline, Refined, Unleaded, #	–	–
Gelatin	–	–
Glucose	–	–
Glue	G	T/E
Glycerin	G	E/T
Glycerol	G	E/T
Glycol	G	E/T
Glycolic Acid	C	E
Grease	G	T
Green Sulfate Liquor	G	T
Halon 1301	–	–
Heptane	G	T
Hexaldehyde	–	–
Hexane	G	T
Hexanol Tertiary	G	T
Hexyl Alcohol	G	T
Hexylene Glycol	–	–
Hydrobromic Acid, to 40%	NR	–
Hydrochloric Acid, to 36%, 75°F (24°C)	NR	–
Hydrochloric Acid, to 36%, 158°F (70°C)	NR	–
Hydrocyanic Acid	G	E
Hydrofluoric Acid, to 75%, 75°F (24°C)	NR	–

Chemical Composition	Rating Code	Seal Grade
Hydrofluosilicic Acid	–	–
Hydrogen Gas, Cold	–	–
Hydrogen Gas, Hot	–	–
Hydrogen Peroxide, to 50%	–	–
Hydrogen Peroxide, to 90%	–	–
Hydrogen Phosphide	NR	–
Hydrogen Sulfide	G	E
Hydroquinone	G	T
Hydroxylamine Sulfate	–	–
Hypochlorous Acid, Dilute	–	–
Iso Octane, 100°F (38°C)	G	T
Isododecane	–	–
Isobutyl Alcohol	G	E
Isopropyl Acetate	G	E
Isopropyl Alcohol	G	E
Isopropyl Ether	G	T
JP-3	G	T
JP-4	G	T
JP-5, 6, 7, 8	G	T
Kerosene	G	T
Ketones	G	E
Lactic Acid	–	–
Lard	–	–
Lard Oil	–	–
Latex (1% Styrene & Butadiene)	G	O
Lauric Acid	G	T
Lauryl Chloride	NR	–
Lavender Oil	–	–
Lead Acetate	G	T
Lead Chloride	–	–
Lead Sulfamate	–	–
Lead Sulfate	–	–
Lime and H <sub>2</sub> O	G	E/T
Linoleic Acid	G	O
Linseed Oil	–	–
Lithium Bromide	–	–
Lithium Chloride	G	T
Lubricating Oil, Refined	G	T
Lubricating Oil, Sour	G	T
Lubricating Oil, to 150°F (66°C)	G	T
Lubricating Oil, 150°F to 180°F (66°C to 82°C)	–	–
Magnesium Ammonium Sulfate	–	–
Magnesium Chloride	–	–
Magnesium Hydroxide	G	E/T
Magnesium Nitrate	–	–
Magnesium Oxide	–	–
Magnesium Sulfate	G	E/T
Maleic Acid	G	T
Malic Acid	G	T
Mercuric Chloride	NR	–
Mercuric Cyanide	–	–
Mercurous Nitrate	G	E/T
Mercury	G	T
Methyl Acetate	–	–
Methyl Alcohol, Methanol	G	E/T
Methyl Cellosolve (Ether)	–	–
Methyl Chloride	–	–
Methyl Cyclopentane	–	–
Methyl Ethyl Ketone	–	–
Methyl Isobutyl Carbinol	–	–
Methyl Isobutyl Ketone	NR	–
Methylene Chloride	–	–



# CHEMICAL COMPATIBILITY GUIDE

**Series 763 Butterfly Valve** (see Rating Code Key on page 7.)

## ⚠ WARNING

- This chemical compatibility chart should be used only as a guide.
- These recommendations are based on the chemical compatibility of the materials under laboratory conditions.
- This data is a compilation of published data from many sources. Many factors must be taken into consideration by the system designer, such as aeration, velocity, temperature, concentration, contaminants, and turbulence, which can effect acceptability for any given service. Unless otherwise listed, all data is for ambient conditions.
- **DO NOT ASSUME A SERVICE SIMILAR TO THE ONE LISTED CAN BE ACCOMMODATED.** Where possible, materials should be subjected to simulated service conditions to determine suitability. It should not be concluded that in instances where chemicals are listed as acceptable individually will necessarily be acceptable when combined.

Failure to follow these instructions may cause serious personal injury and/or property damage.

Ratings are based on service at ambient temperature unless otherwise listed.

Chemical Composition	Rating Code	Seal Grade	Chemical Composition	Rating Code	Seal Grade	Chemical Composition	Rating Code	Seal Grade	Chemical Composition	Rating Code	Seal Grade
Methylene Dichloride 100°F (38°C)	–	–	Polybutene	–	–	Soap Solutions	G	E/T	Sulfuric Acid, 50-95%, 150°F (66°C)	–	–
MIL-L7808	–	–	Polyvinyl Acetate, Solid (In Liquid State is 50% solution of Methanol or 60% solution of H <sub>2</sub> O)	–	–	Soda Ash, Sodium Carbonate	G	E/T	Sulfuric Acid, Fuming	–	–
MIL-05606	–	–	Potassium Alum	–	–	Sodium Acetate	G	E	Sulfuric Acid, Oleum	–	–
MIL-08515	–	–	Potassium Bicarbonate	G	E/T	Sodium Alum	–	–	Sulfurous Acid	–	–
Milk	–	–	Potassium Bichromate	G	T/E	Sodium Benzoate	–	–	Tall Oil	–	–
Mineral Oils	G	T	Potassium Borate	G	E	Sodium Bicarbonate	G	E/T	Tannic Acid, All Conc.	–	–
Naptha, 160°F (71°C)	G	O	Potassium Bromate	G	E	Sodium Bisulfate	–	–	Tanning Liquors (50 g. alum. solution, 50 g. dichromate solution)	G	T
Napthalene	NR	–	Potassium Bromide	G	E/T	Sodium Bisulfite (Black Liquor)	G	E/T	Tartaric Acid	G	E
Napthenic Acid	–	–	Potassium Carbonate	G	E/T	Sodium Bromide	G	E/T	Terpineol	–	–
Natural Gas	–	–	Potassium Chlorate	G	E	Sodium Carbonate	–	–	Tertiary Butyl Alcohol	–	–
Nevoll	–	–	Potassium Chloride	G	T	Sodium Chlorate	G	E	Tetrabutyl Titanate	–	–
Nickel Acetate to 10%, 100°F (38°C)	–	–	Potassium Chromate	G	T	Sodium Chloride	–	–	Tetrachloroethylene	G	O
Nickel Ammonium Sulfate	–	–	Potassium Cyanide	–	–	Sodium Cyanide	G	E/T	Tetrahydrofuran	NR	–
Nickel Chloride	G	E/T	Potassium Dichromate	G	E	Sodium Dichromate, to 20%	G	E/T	Tetralin	NR	–
Nickel Nitrate	–	–	Potassium Ferricyanide	G	E	Sodium Ferricyanide	G	E/T	Thionyl Chloride	–	–
Nickel Plating Solution 125°F (52°C)	–	–	Potassium Ferrocyanide	G	E	Sodium Ferrocyanide	G	E/T	Terpineol	–	–
Nickel Sulfate	–	–	Potassium Fluoride	G	E	Sodium Fluoride	G	E/T	Thiophene	NR	–
Nicotine	–	–	Potassium Hydroxide	G	E	Sodium Hydro Sulfide	–	–	Titanium Tetrachloride	–	–
Nicotine Acid	–	–	Potassium Iodide	–	–	Sodium Hydroxide to 50%	G	E	Toluene, 30%	G	T
Nitric Acid to 10%, 75°F (24°C)	G	E	Potassium Nitrate	–	–	Sodium Hypochlorite, to 20%	G	E	Transmission Fluid, Type A	–	–
Nitric Acid, 10-50%, 75°F (24°C)	G	O	Potassium Perborate	–	–	Sodium Metaphosphate	G	T	Triacetin	–	–
Nitric Acid, 50-86%, 75°F (24°C)	–	–	Potassium Perchlorate	–	–	Sodium Nitrate	G	E	Trichloroethane	–	–
Nitric Acid, Red Fuming	–	–	Potassium Permanganate, Saturated to 10%	G	E	Sodium Nitrite	G	T	Trichloroethylene, to 200°F (93°)	G	O
Nitrocellulose	–	–	Potassium Persulfate	–	–	Sodium Perborate	–	–	Tricresyl Phosphate	–	–
Nitroethane	–	–	Potassium Phosphate	–	–	Sodium Peroxide	–	–	Triethanolamine	–	–
Nitrogen	G	D	Potassium Silicate	–	–	Sodium Phosphate, Dibasic	–	–	Trisodium Phosphate	G	E
Nitromethane	G	E	Potassium Sulfate	–	–	Sodium Phosphate, Monobasic	–	–	Tung Oil	G	T
Nitrous Oxide	G	E	Potassium Thiosulfate	–	–	Sodium Phosphate, Tribasic	–	–	Turbo Oil #15 Diester Lubricant	–	–
Octyl Alcohol	–	–	Prestone	–	–	Sodium Silicate	–	–	Turpentine	–	–
Ogisogric Acid, to 75%, 150°F (66°C)	–	–	Propanol	–	–	Sodium Sulfate	–	–	Urea	–	–
Oil, Crude Sour	G	T	Propargyl Alcohol	–	–	Sodium Sulfide	–	–	Vegetable Oils	–	–
Oil, Motor	G	T	Propyl Acetate	–	–	Sodium Sulfite Solution, to 20%	G	T	Vinegar	–	–
Orthodichlorobenzene	–	–	Propyl Alcohol	G	T	Sodium Thiosulfate, "Hypo"	G	T	Vinyl Acetate	–	–
OS-45 Silicate Ester Fluid	–	–	Propylene Dichloride	–	–	Sohovis 47	–	–	Vi-Pex	–	–
OS-45-1	–	–	Propylene Glycol	–	–	Sohovis 78	–	–	Water, to 150°F (66°C)	G	E/T
Oxalic Acid	–	–	Pydraul F - 9 and 150	NR	–	Solvasol #1	–	–	Water, to 200°F (93°C)	G	E
Oxygen, Cold †	–	–	Pyranol 1467	–	–	Solvasol #2	–	–	Water, to 230°F (110°C)	G	E
Palmitic Acid	G	T	Pyranol 1476	–	–	Solvasol #3	–	–	Water, Acid Mine	G	E/T
Peanut Oil	–	–	Pyroguard "C"	–	–	Solvasol #73	–	–	Water, Bromine	–	–
Pentane	G	T	Pyroguard "D"	–	–	Solvasol #74	NR	–	Water, Chlorine	–	–
Perchloroethylene	G	O	Pyroguard 55	–	–	Soybean Oil	–	–	Water, Deionized	G	E
Perchloric Acid	NR	–	Pyrrole	–	–	Spindle Oil	–	–	Water, Seawater	–	–
Petroleum Ether (see Benzene)	G	O	Rapeseed Oil	–	–	Stannic Chloride	–	–	Water, Waste	G	E/T
Petroleum Oils	G	T	Ref. Fuel (70 ISO Octane, 30 Toluene)	–	–	Stannous Chloride, to 15%	G	T	Whiskey	–	–
Phenol (Carbolic Acid)	G	O	Rosin Oil	G	T	Starch	G	T	White Liquor	G	E
Phenylhydrazine	–	–	Salicylic Acid	G	E	Steam	NR	–	Wood Oil	–	–
Phenylhydrazine Hydrochloride	–	–	Secondary Butyl Alcohol	G	T	Stearic Acid	G	T	Xylene	–	–
Phosphate Ester	G	E	Sewage	G	E/T	Stoddard Solvent	G	T	Zinc Chloride, to 50%	–	–
Phosphoric Acid, to 50% and 70°F	–	–	Silver Cyanide	–	–	Styrene	G	O	Zinc Nitrate	G	E
Phosphoric Acid, to 85% and 200°F	–	–	Silver Nitrate	G	E	Sucrose Solutions	–	–	Zinc Sulfate	G	E/T
Photographic Solutions	G	T	Silver Plating Solution	–	–	Sulfonic Acid	–	–			
Phthalic Anhydride	G	E	Silver Sulfate	–	–	Sulphite Acid Liquor	–	–			
Picric Acid, Molten	–	–	Skydrol, 200°F (93°C)	–	–	Sulfur	G	E			
Plating Solutions (gold, brass, cadmium, copper, lead, silver, nickel, tin, zinc)	–	–	Skydrol 500 Phosphate Ester	–	–	Sulfur Chloride	–	–			
						Sulfur Dioxide, Dry	–	–			
						Sulfur Dioxide, Liquid	–	–			
						Sulfur Trioxide, Dry	–	–			
						Sulfuric Acid, to 25%, 150°F (66°C)	–	–			
						Sulfuric Acid, 25-50%, 200°F (93°C)	–	–			

This product shall be manufactured by Victaulic or to Victaulic specifications. All products shall 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.