

Vic[®]-300 Butterfly Valves

PRODUCT DESCRIPTION



4" with
Gear Operator



3" with
2 Position Handle



4" with
Lever Lock Handle

Vic[®]-300 butterfly valves are designed for pressures ranging from vacuum to 300 PSI (2065 kPa). Vic-300 butterfly valves feature a narrow profile disc design with a smooth, coated inner body which combine for superior flow characteristics. This combination results in low break-away torque, reducing gear operator and actuator sizing and costs. Standard polyphenylene sulfide blend (PPS) coating accommodates

a wide variety of severe services (epoxy coating or full stainless body are available for severe services). The dual-seal disc provides bubble-tight sealing up to 300 PSI (2065 kPa) in both directions without added valve modifications or cost.

When using Victaulic butterfly valves with flange adapters consult Victaulic.

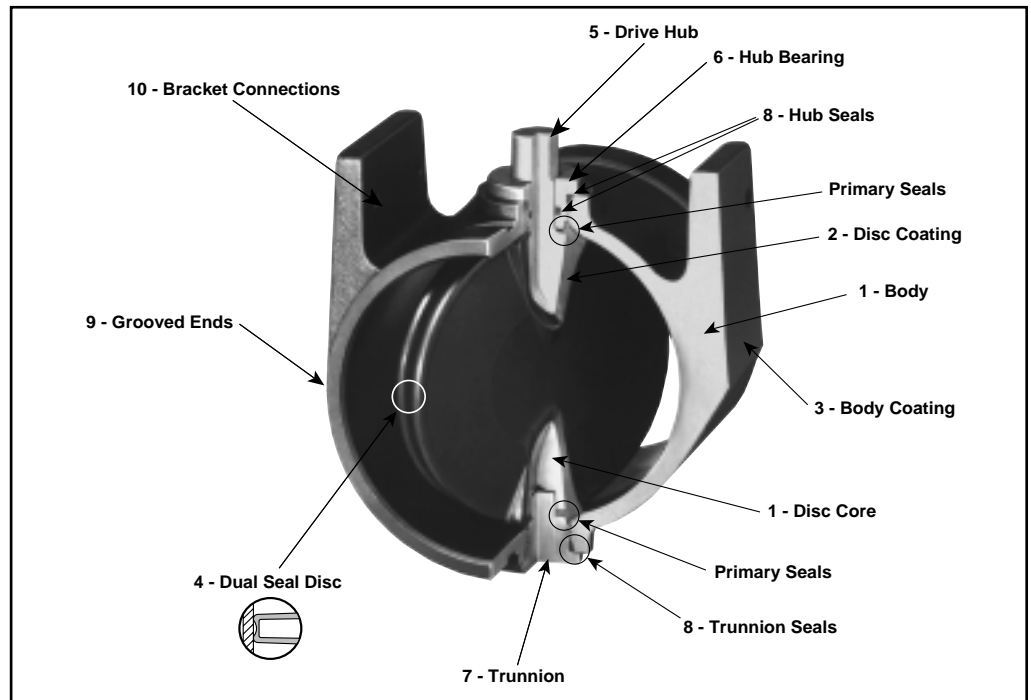
Available disc coatings include EPDM for water

service to +230°F (+110°C) and nitrile for oil services with the option of fluoroelastomer for corrosives and aromatics. The Vic-300 butterfly valve is available with manual handles, gear operators or automated in two-way and three-way configurations.

For fire protection services, see Series 708W butterfly valve; refer to Section 10.06.

FEATURES

- 1. Body and Disc Core** – Cast of rugged ductile iron for durability and strength.
- 2. Disc Coating** – Disc is encapsulated with various synthetic elastomers to accommodate varied service requirements.
- 3. Body Coating** – Polyphenylene sulfide blend is heat fused to the entire body. Epoxy coating is available.
- 4. Dual Seal Disc** – Two molded-in rings assure inner body wiping action and a back-up seal for flow in both directions providing bubble-tight shut-off to 300 PSI (2065 kPa).
- 5. Drive Hub** – Cast integrally with the disc to provide direct disc drive and allow positive location of the disc.



- 6. Hub Bearing** – Naval brass (316 stainless available) bearing provides positive hub alignment.
- 7. Trunnion** – Naval brass (316 stainless available) trunnion.

- 8. Hub and Trunnion Seals** – O-ring seals (of the same material as the disc coating) provide a secondary shaft seal.
- 9. Grooved Ends** – Permits installation with two Victaulic grooved couplings.

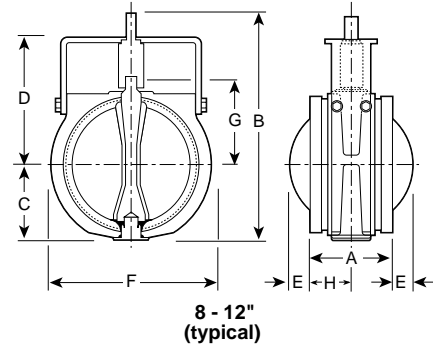
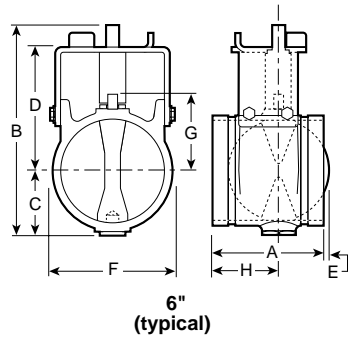
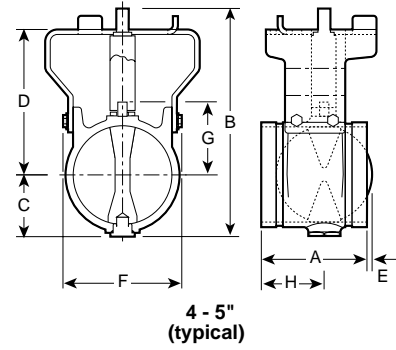
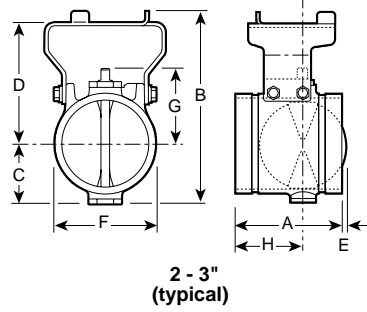
- 10. Bracket Connections (Vic-300/Series 608)** – Side-wing connection permits bracket design to accept varied manual or power actuators.

DIMENSIONS

Vic-300 Butterfly Valves



4" with Gear Operator



3" with 2 Position Handle



4" with Lever Lock Handle



2 - 8" with Locking Device

08.02-1A

SIZE Nominal Inches Actual mm	Dimensions – Inches/millimeters											Aprx. Wgt. Each Lbs. kg
	E - E A	Overall Height – B		C	D		E	F	G	H		
		Lever Lock/ Inf. Var. Handle	Gear Operator		Lever Lock/ Inf. Var. Handle	Gear Operator						
2 † 50	2.375 60.3	3.21 82	5.61 142	5.22 133	1.52 39	3.53 90	3.53 90	–	2.38 60	1.69 43	1.78 45	3.7 1.7
2½ 65	2.875 73.0	3.77 96	6.11 155	5.72 145	1.80 46	3.92 100	3.92 100	–	2.88 73	2.25 57	2.31 59	4.1 1.9
3 O.D. 76.1	3.000 76.1	3.77 96	6.11 155	5.72 145	1.80 46	3.92 100	3.92 100	–	3.02 77	2.25 57	2.31 59	4.8 2.2
3 † 80	3.500 88.9	3.77 96	6.75 171	6.36 162	2.14 54	4.22 107	4.22 107	0.08 2	3.50 89	2.59 66	2.31 59	4.8 2.2
4 † 100	4.500 114.3	4.63 118	9.03 229	9.25 235	2.71 69	5.15 131	5.28 134	0.07 2	5.88 149	3.19 81	2.79 71	10.5 4.8
5 125	5.563 141.3	5.88 149	9.94 253	10.17 258	3.12 79	5.67 144	5.80 147	0.43 11	5.88 149	3.70 94	3.92 100	14.0 6.4
5½ O.D. 139.7	5.500 139.7	5.88 149	9.94 253	10.17 258	3.12 79	5.67 144	5.80 147	0.43 11	5.88 149	3.70 94	3.92 100	14.0 6.4
6 † 150	6.625 168.3	5.88 149	10.89 277	12.05 306	3.61 92	6.15 156	6.94 176	1.00 25	7.50 191	4.16 106	3.96 101	19.0 8.6
6½ O.D. 165.1	6.500 165.1	5.88 149	10.89 277	12.05 306	3.61 92	6.15 156	6.94 176	1.00 25	7.50 191	4.16 106	3.96 101	19.0 8.6
8 † 200	8.625 219.1	5.33 135	14.53 369	14.44 367	5.00 127	7.93 201	7.93 201	1.28 33	10.20 259	5.50 140	2.67 68	41.0 18.6
10 † 250	10.750 273.0	6.40 163	17.20 437	16.67 423	5.94 151	8.68 221	8.68 221	1.72 44	12.20 310	6.69 170	3.20 81	59.0 26.6
12 † 300	12.750 323.9	6.50 165	19.64 499	19.11 485	7.07 180	10.00 254	10.00 254	2.63 67	14.25 362	8.00 203	3.25 83	85.0 38.6

† Stainless steel body also available. See Section 17.05 for details.

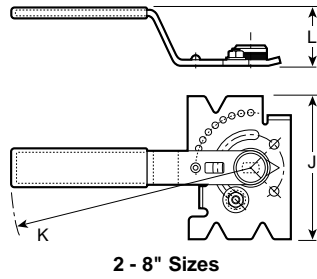
For 14 - 24" (355.6 - 609.6 mm) butterfly valves, refer to 08.03.

Large diameter 14 - 24" (355.6 - 609.6 mm) butterfly valves are available rated to 300 PSI (2065 kPa). Contact Victaulic for details.

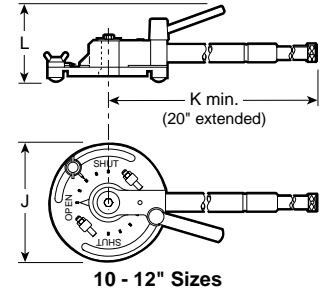
NOTE: Vic-300 valves in 6 - 12" (168.3 - 323.9 mm) sizes are not recommended for use in **dry** compressed air services. Contact Victaulic Engineering Services for recommendations.

DIMENSIONS

Lever Lock/ Infinitely Variable Handle



2 - 8" Sizes



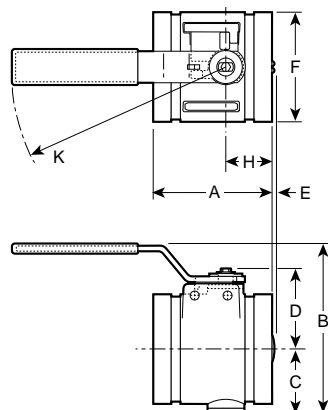
10 - 12" Sizes

08.02-2A

SIZE Nominal Inches Actual mm	Dimensions – Inches/millimeters			Aprx. Wgt. Ea Lbs./kg
	J	K	L	
2 60.3	4.20 107	7.13 181	1.70 43	1.5 0.7
2½ 73.0	4.20 107	7.13 181	1.70 43	1.5 0.7
3 88.9	4.20 107	7.13 181	1.70 43	1.5 0.7
4 114.3	6.88 175	10.50 267	2.50 64	1.5 0.7
5 141.3	6.88 175	10.50 267	2.50 64	1.5 0.7
6 168.3	7.10 180	12.00 305	2.50 64	1.5 0.7
8 219.1	8.88 225	16.00 406	2.50 64	4.5 2.0
10 273.0	7.13 181	11.66 296	4.57 116	12.0 5.4
12 323.9	7.13 181	11.66 296	4.57 116	12.0 5.4

NOTES: Handles for 2 - 8" (60.3 - 219.1 mm) valves come complete with hardware for both variations. 10 and 12" (273.0 and 323.9 mm) equipped with infinitely variable handle only.

Two-Position Handle



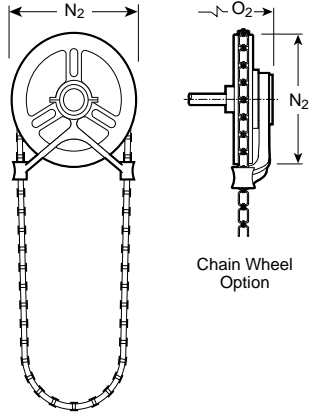
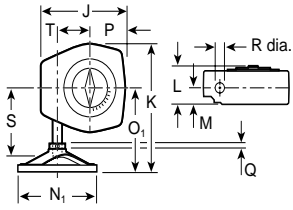
08.02-3A

SIZE Nominal Inches Actual mm	Dimensions – Inches/millimeters								Aprx. Wgt. Ea. Lbs. kg
	End to End A	Overall Hgt. B	C	D	E	F	H	K	
2 60.3	3.21 82	4.07 103	1.52 39	2.06 52	– –	2.38 60	1.43 36	6.56 167	2.2 1.0
2½ 73.0	3.77 96	5.30 135	1.80 46	2.40 61	– –	2.88 73	1.46 37	6.81 173	2.9 1.3
3 88.9	3.77 96	5.39 137	2.14 54	2.40 61	0.08 2	3.50 89	1.46 37	6.81 173	3.6 1.6

DIMENSIONS

Gear Operator

08.02-4B



SIZE Nom. In. Actual mm	Dimensions – Inches/millimeters													No. Turns to Close	Aprx. Wgt. Each Lbs./kg
	J	K	L	M	Handwheel		Chain Wheel		P	Q	R	S	T		
					N ₁	O ₁	N ₂	O ₂							
2 60.3	5.19 132	9.25 235	2.38 60	1.13 29	4.00 101.6	7.09 180	4.00 102	9.25 235	2.19 56	0.38 10	0.63 16	5.00 127	1.83 46	7	4.5 2.0
2½ 73.0	5.19 132	9.25 235	2.38 60	1.13 29	4.00 101.6	7.09 180	4.00 102	9.25 235	2.19 56	0.38 10	0.63 16	5.00 127	1.83 46	7	4.5 2.0
3 88.9	5.19 132	9.25 235	2.38 60	1.13 29	4.00 101.6	7.09 180	4.00 102	9.25 235	2.19 56	0.38 10	0.63 16	5.00 127	1.83 46	7	4.5 2.0
4 114.3	5.19 132	9.25 235	2.38 60	1.13 29	4.00 101.6	7.09 180	4.00 102	9.25 235	2.19 56	0.38 10	0.63 16	5.00 127	1.83 46	7	4.5 2.0
5 141.3	5.19 132	9.25 235	2.38 60	1.13 29	4.00 101.6	7.09 180	4.00 102	9.25 235	2.19 56	0.38 10	0.63 16	5.00 127	1.83 46	7	4.5 2.0
6 168.3	5.19 132	9.25 235	2.38 60	1.13 29	8.00 203	7.09 180	9.00 229	9.50 241	2.19 56	0.30 8	0.63 16	5.00 127	1.83 46	7	4.5 2.0
8 219.1	5.19 132	9.25 235	2.38 60	1.13 29	8.00 203	7.09 180	9.00 229	9.50 241	2.19 56	0.30 8	0.63 16	5.00 127	1.83 46	7	4.5 2.0
10 273.0	5.94 151	10.78 274	2.38 60	1.13 29	8.00 203	8.09 206	9.00 229	10.50 267	2.44 62	0.30 8	0.63 16	6.00 152	2.36 60	10	7.0 3.2
12 323.9	5.94 151	10.78 274	2.38 60	1.13 29	8.00 203	8.09 206	9.00 229	10.50 267	2.44 62	0.30 8	0.63 16	6.00 152	2.36 60	10	7.0 3.2

*Contact Victaulic for details.

Accessories

Chain wheel and Guide

Chain wheels are mounted to the gear operator handwheels. Sprocket rim and guide arms are made of cast aluminum. Chain is galvanized steel.

HOW TO ORDER:

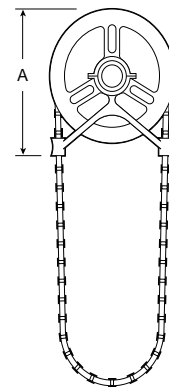
Specify type valve and operator by valve numbering system shown on back page.

Always specify length of chain required.

For insulation and locking device, contact Victaulic for details.

08.02-5A

SIZE Nominal Inches Actual mm	Dimensions – Inches/millimeters			Aprx. Wgt. Ea. Lbs. kg
	Sprocket Size	Chain Wheel Size (Dia.)	A	
2 - 5 60.3 - 141.3	0	4.00 102	4.63 118	3.5 1.6
6, 8, 10, 12 168.3 - 323.9	2	9.00 229	10.5 267	10 4.5



Lever Lock with Locking Device



Lever Lock Bracket Insulation



PERFORMANCE

C_v Values

C_v values for flow of water at +60°F (+16°C) with various disc positions are shown in tables at right.

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

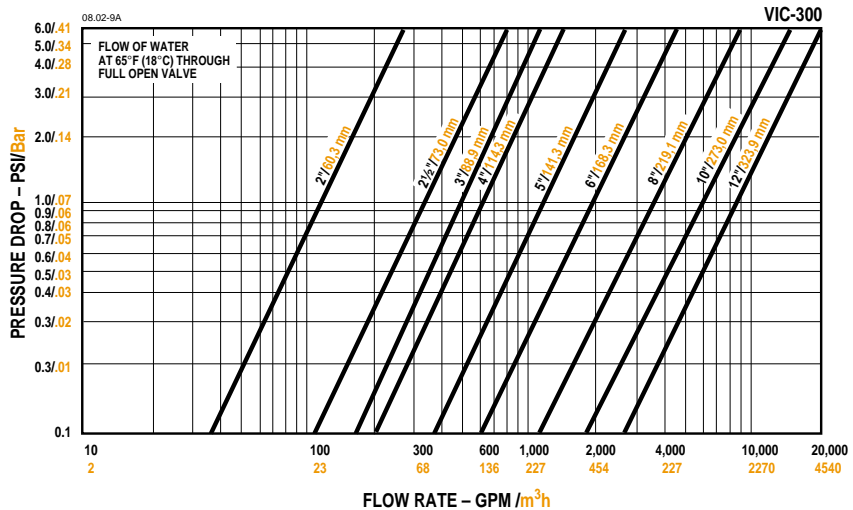
08.02-6B

SIZE Nominal In. Actual mm	C _v (Full Open)	SIZE Nominal In. Actual mm	C _v (Full Open)	SIZE Nominal In. Actual mm	C _v (Full Open)	SIZE Nominal In. Actual mm	C _v (Full Open)
2 60.3	115	3 88.9	482	5½ O.D. 139.7	1150	8 219.1	3400
2½ 73.0	325	4 114.3	600	6 168.3	1850	10 273.0	5750
3 O.D. 76.1	325	5 141.3	1150	6½ O.D. 165.1	1850	12 323.9	8300

08.02-7B

SIZE Nominal Inches Actual mm	FLOW COEFFICIENTS - C _v						
	Disc Position (Degrees open)						
	90°	70°	60°	50°	40°	30°	20°
2 60.3	115	80	40	17	10	5	1
2½ 73.0	325	160	84	48	27	10	2
3 O.D. 76.1	325	160	84	48	27	10	2
3 88.9	482	196	114	73	44	18	3
4 114.3	600	450	230	148	85	42	3
5 141.3	1150	560	330	210	120	60	15
5½ O.D. 139.7	1150	560	330	210	120	60	15
6 168.3	1850	960	600	380	240	130	45
6½ O.D. 165.1	1850	960	600	380	240	130	45
8 219.1	3400	1910	1170	780	470	260	104
10 273.0	5750	3220	1980	1320	800	440	180
12 323.9	8300	4650	2850	1900	1150	640	250

Flow Characteristics



VALVE TORQUE REQUIREMENTS

Victaulic Vic-300 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.

The torque data listed below is the highest required to operate the valve at the given pressures in wet service. These torque values are based on extensive testing by Victaulic. These values are for normal wet service only and may vary for dry services or for lubricating fluids. Contact Victaulic for other services.

08.02-8B

SIZE Nominal Inches Actual mm	Torque Inch Pounds/Newton Meters				
	*Differential Pressure – PSI/Bar				
	50/3	100/7	150/10	200/14	300/21
2 60.3	30 3.4	30 3.4	50 5.7	60 6.8	70 7.9
2½ 73.0	50 5.7	60 6.8	80 9.0	95 10.7	120 13.6
3 O.D. 76.1	50 5.7	60 6.8	80 9.0	95 10.7	120 13.6
3 88.9	70 7.9	90 10.2	110 12.4	130 14.7	170 19.2
4 114.3	150 17.0	250 28.3	250 28.3	350 39.5	500 56.5
5 141.3	300 33.9	350 39.5	350 39.5	450 50.8	550 62.1
6 168.3	500 56.5	600 67.8	700 79.1	800 90.4	950 107.3
6½ O.D. 165.7	500 56.5	600 67.8	700 79.1	800 90.4	950 107.3
8 219.1	1100 124	1150 130	1200 136	1250 141	1400 158
10 273.0	1550 175	1675 189	1800 203	1925 217	2150 243
12 323.9	1900 215	2000 226	2175 246	2350 266	2700 305

MATERIAL SPECIFICATIONS

Body: Ductile iron conforming to ASTM A-395, grade 65-45-15, and ASTM A-536, grade 65-45-12

Body Coating: PPS–Polyphenylene sulfide blend, UL classified in accordance with ANSI/NSF 61 for cold +86°F (+30°C) and hot +180°F (+82°C) potable water service.

Optional: Epoxy

Disc: Ductile iron conforming to ASTM A-395, grade 65-45-15, and ASTM A-536, grade 65-45-12

Disc Coating: (specify choice)

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.

Grade “T” nitrile
Nitrile (Orange color code). Temperature range –20°F to +180°F (–29°C to +82°C). Recommended for petroleum products, air with oil vapors, 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 over +140°F (+60°C).

Optional: Grade “O” fluoroelastomer
Fluoroelastomer (Blue color code). Temperature range for continuous service up to +300°F (+149°C). Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons 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.

NOTE: When connecting Vic-300 butterfly valves to Style 741 or Style 743 Vic-Flange® adapters, please contact Victaulic.

Drive Hub Adapter: Hot rolled steel, black enamel coated

Upper Bearing/Lower Trunnion Seals: Same as Disc Coating

Upper Bearing/Lower Trunnion: Naval brass

Optional: Type 316 stainless steel

Operator Bracket: Hot rolled steel, black enamel coated

Bracket Bolts/Washers: Cold rolled steel, zinc plated

Operator: (specify choice)

2 - 3" (60.3 - 88.9 mm) Two-position detent manual handle: Hot rolled steel, black enamel coated

Manual lever lock/infinitely variable handle: Ductile iron conforming to ASTM A-395, grade 65-45-15, and ASTM A-536, grade 65-45-12 (other parts cold rolled steel, zinc electroplated) includes memory stop.

Manual gear operator with handwheel

Optional: Memory stop

Optional: Chain wheel

Electric actuator §
Pneumatic actuator §

§ Sizing of actuator is dependent on service. Contact Victaulic for details.

Vic-300 Butterfly Valve Numbering System

V - 040 - 3 7 4 2 11

Type	Size	Pressure Rating	Body	Disc/Trim	Bracket	Operator
V	030 040 060 080 100 120	3 - 300 PSI	3 - Epoxy coated iron 5 - PPS coated iron 7 - 316 Stainless Steel 9 - Special*	1 - Buna/Bronze 2 - EPDM/Bronze 3 - Viton/Stainless Steel 4 - Buna/Stainless Steel 5 - EPDM/Stainless Steel 9 - Special*	0 - No Bracket (2) 2 - Standard 3 - Standard with insulation 4 - UL/FM 9 - Special*	00 - Bare 11 - Handle with memory stop 15 - 2 position detent handle (sizes 2", 2½" & 3" only) 20 - Gear operator 21 - Gear operator with memory stop 22 - Gear operator with chain wheel 23 - Gear operator with AWWA square oper. nut 24 - Gear operator with memory stop and chain wheel 29 - Non-std. gear operator* VV - Pneumatic* WW - Electric* YY - Hydraulic* LD - 10 position handle with tamper-proof Locking Device

NOTES:

(2) Used with 2 position detent handle only
* Details required