

Butterfly Valve – Epoxy Series 7700



AE7721-3

Series 7700 butterfly valve with 10 position lever lock



AE7722-3

Series 7700 butterfly valve with gear operator

AE7721-3

Used in commercial grooved-end piping systems 2" through 12".

The uniqueness of the Series 7700 Gruvlok Butterfly Valve begins with the spherical bore of the disc seat area. This facilitates a constant DISC-TO-SEAT loading that maintains a leak tight seal regardless of disc position. The stem sealing force is constant through the full disc cycle and operating torques are kept low which increases valve life. The design provides a bubble tight seal from full vacuum to 300 psi when the valve is closed. The valve is rated for dead-end service to a full pressure rating of 300 psi. Manufactured without silicone Series 7700 available upon special request.

AE7722-3

The stem-to-disc connection provides zero backlash. The high strength, corrosion resistant, stainless steel stems are blow-out proof. Each stem

is fitted with a secondary seal that also provides a lifetime lubrication chamber.

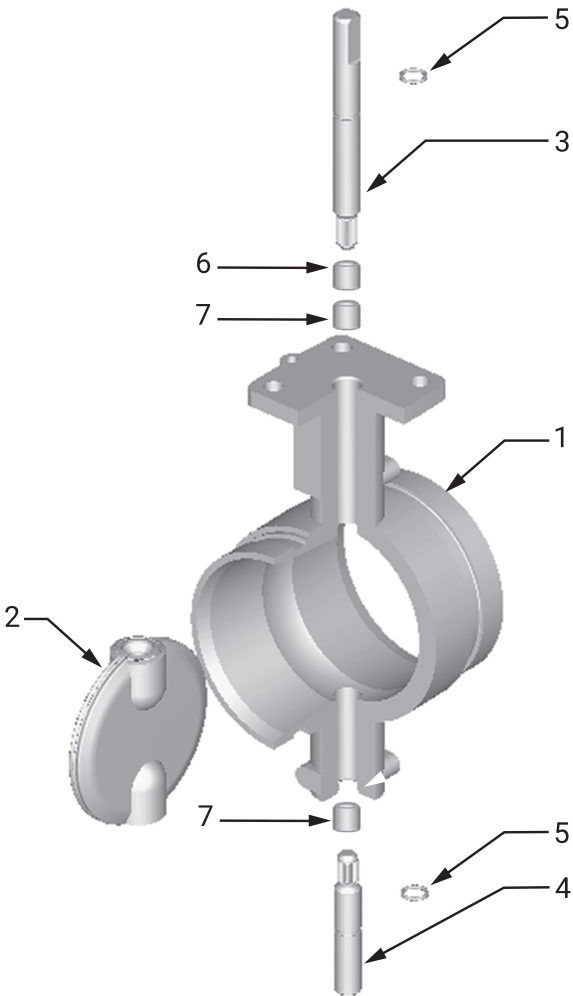
The Series 7700 valve is designed with the contractor in mind. The valve body is a rugged one-piece casting with an integral mounting base for gear operator or handle actuation, while providing room for a minimum of 2" of pipe insulation. The valve is designed and manufactured to meet or exceed the requirements of MSS SP-67.

For data on fire protection listings/ approvals, contact your ASC Engineered Solutions representative.



2" - 10" Series 7700
Certified to NSF/ANSI 61
(cold water) and Annex G
LEAD FREE

Butterfly Valve – Epoxy
Series 7700



Material Specifications

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

Body Coating
Epoxy

2. Disc
Ductile Iron conforming to ASTM A 536 Grades 65-45-12

Disc Encapsulation
Properties as specified in accordance with ASTM D 2000.

Grade E (EPDM): Service Temperature Range -40°F to +230°F (-40°C to +110°C)
Recommended for water service, dilute acids, alkalis, oil-free air and many chemical services.
Not For Use In Petroleum Services.

Grade T (Nitrile): Service Temperature Range -20°F to +180°F (-29°C to +82°C)
Recommended for petroleum products, air with oil vapors, vegetable oils and mineral oils.
Not For Use In Hot Water Services.

3, 4. UPPER AND LOWER SHAFT
Type 416 Stainless Steel

5. O-RINGS
Compatible with disc coating

6, 7. TOP AND BOTTOM BRONZE SLEEVE BUSHINGS
8", 10", & 12" Valve only

Gruvlok Butterfly Valve Series 7700 (Ordering Information)

Sample Part Number 8" AE7721-3 -->	8"	A	E	77	2	1 -	3	Special
	Size	Body Style	Body Coating	Series	Disc Coating	Operator	Stem	
	2" - 12"	A	E - Epoxy	77-77XX	1 - Nitrile (Grade T) 2 - EPDM (Grade E)	0 - None 1 - 10 Pos. L/Lock 2 - Gear Operator D - Infinite Pos. w/Memory Stop 4 - Short 10 Pos. L/lock Operator	3 - 416 S.S.	MWS - Manufactured without Silicone

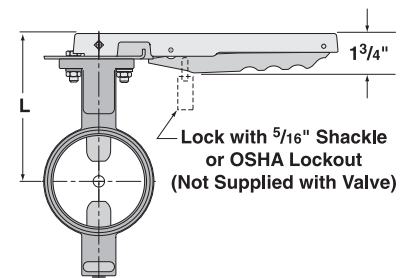
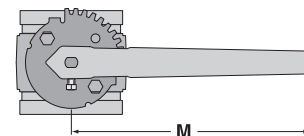
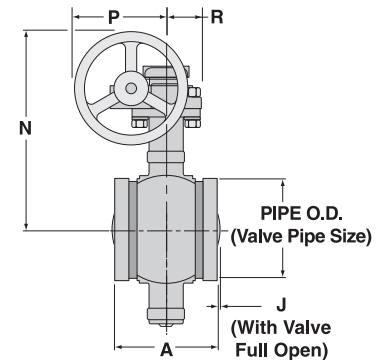
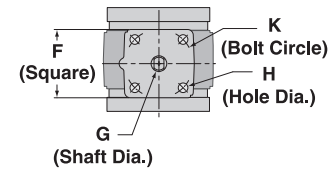
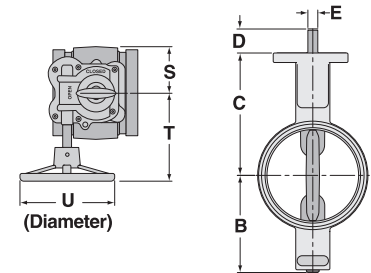
Note: For operator safety, hand levers on the 10" and 12" valves are not available. Hand levers on the 8" valve will be limited to 150 psi to ensure safe operation. 8" valves supplied with a hand wheel will carry the full 300 psi pressure rating..

Butterfly Valve – Epoxy Series 7700

Series 7700 Butterfly Valve Dimensions

Dimensions	Valve Size (ANSI/DN)								
	2	2½	3	4	5	6	8	10	12
In./mm	50	65	80	100	125	150	200	250	300
O.D.	2⅜	2⅞	3½	4½	5⅞	6⅝	8⅝	10¾	12¾
In./mm	60.3	73.0	88.9	114.3	141.3	168.3	219.1	273.1	323.9
A	3⅜	3⅜	3⅜	4⅝	5⅜	5⅜	5¼	6¼	6½
	81.0	96.8	96.8	117.3	147.6	147.6	133.4	158.8	165.1
B	3	3⅜	3⅜	4¼	5	5½	6⅝	8	9
	75.4	80.8	96.5	108.5	126.5	138.9	175.8	202.9	229.4
C	4⅜	4⅜	5⅜	5⅜	5⅞	6⅜	7¾	9½	10½
	105.9	111.3	129.0	136.7	149.4	161.8	196.9	240.3	266.7
D	1⅞	1⅞	1⅞	1⅞	1⅞	1⅞	1⅞	1⅞	1⅞
	26.9	26.9	26.9	26.9	26.9	26.9	41.1	41.1	41.1
E	7/16	7/16	7/16	7/16	7/16	7/16	¾	¾	¾
	11.1	11.1	11.1	11.1	11.1	11.1	19.1	19.1	19.1
F	3	3	3	3	3	3	5	5	5
	76.2	76.2	76.2	76.2	76.2	76.2	127.0	127.0	127.0
G	9/16	9/16	9/16	9/16	7/8	7/8	1	1¼	1¼
	14.3	14.3	14.3	14.3	22.2	22.2	25.4	31.8	31.8
H	7/16	7/16	7/16	7/16	7/16	7/16	½	½	½
	11.1	11.1	11.1	11.1	11.1	11.1	13.5	13.5	13.5
J	-	-	-	-	-	1/8	1⅜	1⅞	2¾
	-	-	-	-	-	3.3	34.8	47.0	70.1
K	3	3	3	3	3	3	5	5	5
	76.2	76.2	76.2	76.2	76.2	76.2	127.0	127.0	127.0
L	5⅝	5½	6¼	6½	7	7½	-	-	-
	135.1	140.5	158.2	165.9	178.6	191.0	-	-	-
M	10½	10½	10½	10½	10½	10½	-	-	-
	266.7	266.7	266.7	266.7	266.7	266.7	-	-	-
N	7⅞	8	8⅞	9	9½	10	14⅞	16⅝	20⅞
	198.0	203.3	221.1	228.7	241.4	253.9	379.2	422.7	525.3
P	4	4	4	4	4	4	8⅞	8⅞	11⅝
	102.1	102.1	102.1	102.1	102.1	102.1	204.5	204.5	295.4
R	1½	1½	1½	1½	1½	1½	2⅞	2⅞	2⅞
	38.2	38.2	38.2	38.2	38.2	38.2	58.5	58.5	65.5
S	2	2	2	2	2	2	2⅞	2⅞	3¼
	51.0	51.0	51.0	51.0	51.0	51.0	66.0	66.0	83.0
T	6⅝	6⅝	6⅝	6⅝	6⅝	6⅝	10⅞	10⅞	13⅞
	160.3	160.3	160.3	160.3	160.3	160.3	275.3	275.3	350.3
U	5	5	5	5	5	5	12	12	18
	127.0	127.0	127.0	127.0	127.0	127.0	304.8	304.8	457.2

Note: 3" or 5" handwheels may be included on valves sizes 2" – 4". Contact your ASC Engineered Solutions Rep. for additional information.



Butterfly Valve – Epoxy Performance Data Series 7700

Maximum Working Pressure Rating: 300 PSI
(Commercial Applications – Sizes 2" thru 12")

C_v Values

Valve Size	O.D.	Disc Position (degrees open)							
		25°	30°	40°	50°	60°	70°	80°	90°
In./mm	In./mm								
2	2.375	4	7	19	44	48	80	111	158
50	60.3	0.3	0.5	1.3	3.0	3.3	5.5	7.7	10.9
2½	2.875	9	14	34	78	84	142	196	280
65	73.0	0.6	1	2.3	5.4	5.8	9.8	13.5	19.3
3	3.500	14	20	50	112	128	215	285	400
80	88.9	1.0	1.4	3.4	7.7	8.8	14.8	19.7	27.6
4	4.500	29	41	100	239	250	420	582	826
100	114.3	2.0	2.8	6.9	16.5	17.2	29.0	40.1	57.0
5	5.563	62	76	182	415	445	780	1,100	1,480
125	141.3	4.3	5.2	12.5	28.6	30.7	53.8	75.8	102.0
6	6.625	96	141	325	755	809	1,370	1,920	2,678
150	168.3	6.6	9.7	22.4	52.1	55.8	94.5	132.4	184.6
8	8.625	172	252	592	1,365	1,460	2,430	3,410	4,819
200	219.1	11.9	17.4	40.8	94.1	100.7	167.5	235.1	332.3
10	10.750	230	328	792	1,825	1,962	3,260	4,590	6,431
250	273.1	15.9	22.6	54.6	125.8	135.3	224.8	316.5	443.4
12	12.75	418	604	1,440	3,350	3,590	5,980	8,750	11,947
300	323.9	28.8	41.6	99.3	231.0	247.5	412.3	603.3	823.7

Valve Weight And Torque Values

Valve Size	O.D.	*Approx. Wt. Ea.	Operating Pressure				
			50 PSIG	100 PSIG	150 PSIG	200 PSIG	300 PSIG
In./mm	In./mm	Lbs./Kg	†Breakaway Torque (In. - Lbs) / N-m				
2	2.375	5	72	90	100	120	200
50	60.3	2.3	8.1	10.2	11.3	13.6	22.6
2½	2.875	10	105	126	144	162	250
65	73.0	4.5	11.9	14.2	16.3	18.3	28.2
3	3.500	11	126	139	168	195	425
80	88.9	5.0	14.2	15.7	19.0	22	48.0
4	4.500	15	265	285	320	355	800
100	114.3	6.8	29.9	32.2	36.2	40.1	90.4
5	5.563	20	491	578	615	674	850
125	141.3	9.0	55.5	65.3	69.5	76.2	96.0
6	6.625	46	625	678	760	820	1,650
150	168.3	20.9	70.6	76.6	85.9	92.7	186.4
8	8.625	68	1,170	1,400	1,640	1,760	3,200
200	219.1	30.8	132.2	158.2	185.3	198.9	361.6
10	10.750	78	1,930	2,375	2,860	3,100	6,000
250	273.1	35.4	218.1	268.4	323.2	350.3	678.0
12	12.75	91	2,900	3,420	4,760	5,600	11,000
300	323.9	41.3	327.7	386.4	537.9	632.8	1,242.9

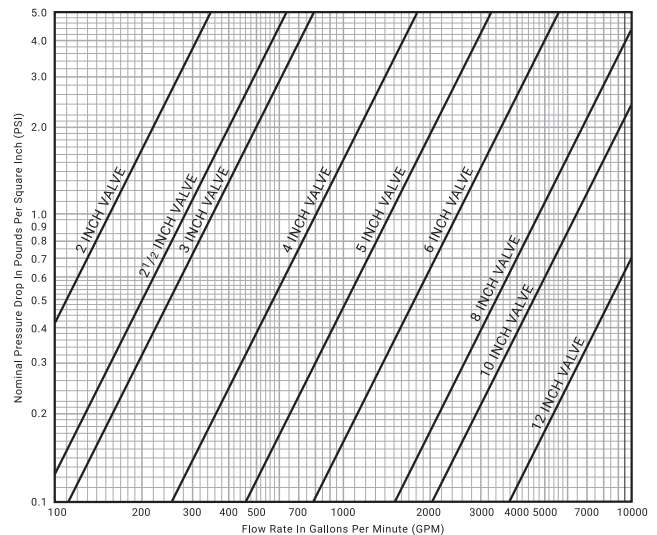
† These values are valid for water and lubricating fluid service only.
Contact ASC Engineered Solutions for information on torques for dry and non-lubricating fluid service.

*Weights may vary based on valve options selected.

Headloss Equivalent Length Of Pipe

Valve Size	O.D.	Equivalent Feet of Pipe* C=120			Max. Insulating Thickness
		Sch. 10	Sch. 30	Sch. 40	
In./mm	In./mm	Ft./m			In./mm
2	2.375	5.8	-	4.7	2
50	60.3	1.8	-	1.4	50
2½	2.875	5.1	-	3.7	2½
65	73.0	1.6	-	1.1	65
3	3.500	9.6	-	7.2	2
80	88.9	2.9	-	2.2	50
4	4.500	7.5	-	5.7	2½
100	114.3	2.3	-	1.7	65
5	5.563	7.0	-	5.6	2½
125	141.3	2.1	-	1.7	65
6	6.625	6.1	-	4.8	2½
150	168.3	1.9	-	1.5	65
8	8.625	6.3	5.7	-	2½
200	219.1	1.9	1.7	-	65
10	10.750	11.3	10.2	-	3
250	273.1	3.4	3.1	-	80
12	12.750	8.4	7.4	-	3½
300	323.9	2.6	2.3	-	90

*The equivalent feet of pipe is based on the Hazen and Williams formula and the flow rates typically used with each size valve.



Butterfly Valve Series 8000GR



Features

- Up to 150 psig (10.3 bar) WOG (non-shock) in Cast Iron
- Up to 200 psig (13.8 bar) WOG (non-shock) in Ductile Iron
- Outstanding flow characteristics
- Low torque operation
- Superior flow control
- Streamline profile disc
- Suitable for HVAC applications
- Vacuum service to 29.5" (750 mm) Hg
- End-of-line service capabilities

Fig. 8000GR Weight

Valve Size ANSI	O.D.	Weight	
		Valve Only	Valve with Gear Operator
In./DN(mm)	In./mm	Lbs./Kg.	Lbs./Kg.
14	14	354	397
350	355.6	160.6	180.1
16	16	428	538.5
400	406.4	194.1	244.3
18	18	524	679.0
450	457.2	237.7	308.0
20	20	704	858.0
500	508.0	319.3	389.2
24	24	1,027	1,324.5
600	609.6	465.8	600.8

Butterfly Valve Performance Data

Pressure Ratings:

150 PSIG (10.3 bar) WOG (non-shock)
 200 PSIG (13.8 bar) WOG (non-shock)
 Special order – available upon request.
 29.5" (750 mm) Hg Vacuum Service

Temperature Ratings

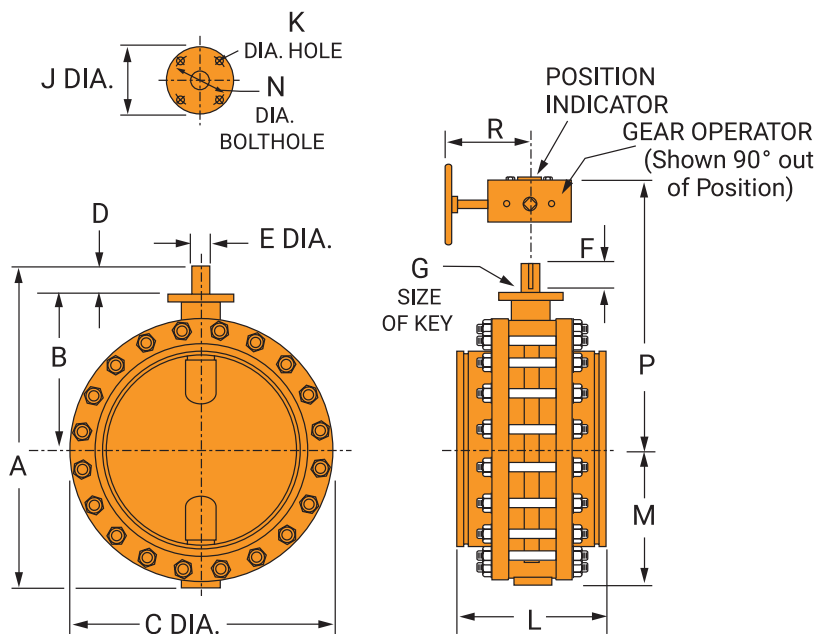
Grade E (EPDM):

-40°F to 230°F (-40°C to 110°C)
 (Service Temperature Range)
 Recommended for water service, dilute acids,
 alkaline, oil-free air and many chemical services.
 Not For Use In Petroleum Services.

Grade T (Nitrile):

-20°F to 180°F (Service Temperature Range)
 (-29°C to 82°C)
 Recommended for petroleum products, air
 with oil vapors, vegetable oils and mineral oils.
 Not For Use In Hot Water Services.

Butterfly Valve Series 8000GR



Material Specifications

Body

Cast Iron - ASTM A126 CL.B, Epoxy Coated
Ductile Iron - ASTM A536, Epoxy Coated

Extension Body

Pipe - ASTM A53 Steel
Flange - ANSI B16.42 Forged Steel

Liner

Grade E (EPDM)
Grade T (Nitrile)

Note: Stem O-Ring material matches Liner

Disc

Stainless Steel - ASTM A351
Aluminum Bronze - ASTM B148 C95400
Nickel Plated Ductile Iron - ASTM A536 Grade 65-45-12

Drive Shaft

Stainless Steel - ASTM A 582 Type 416
Stainless Steel - ASTM A 276 Type 316

Bottom Shaft

Stainless Steel - ASTM A 582 Type 416
Stainless Steel - ASTM A 276 Type 316

Plug

Cast Iron - ASTM A 126 CL.B

Upper Bearing

Reinforced Nylon

Lower Bearing

Reinforced Nylon

Grounding Spring (14" - 20"

Stainless Steel 302

Grounding Ball (24" Only

AISI-1022

Tension Screw (24" Only

AISI-1020

Butterfly Valve Series 8000GR

Series 8000GR Butterfly Valves Dimensions

Valve Size ANSI	O.D.	A	B	C	D	E	F	G	J	K	L	M	N	P	R
In./DN(mm)	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm
14 350	14.0 355.6	27.1 687.3	13.5 342.9	21.0 533.4	2.0 50.8	1.6 41.4	1.5 38.1	0.4 9.7	6.5 165.1	5.3 133.4	13.1 331.7	11.6 293.6	5.3 133.4	17.3 438.2	13.4 340.4
16 400	16.0 406.4	29.4 747.8	14.8 374.7	23.5 596.9	2.0 50.8	1.6 41.4	1.5 38.1	0.4 9.7	6.5 165.1	5.3 133.4	14.1 357.1	12.7 322.3	5.3 133.4	18.8 476.3	13.4 340.4
18 450	18.0 457.2	32.1 816.1	15.5 393.7	25.0 635.0	3.0 76.2	2.1 54.1	2.4 60.3	0.5 12.7	9.5 241.3	7.5 190.5	15.1 382.5	13.6 346.2	7.5 190.5	19.6 498.6	12.6 320.0
20 500	20.0 508.0	34.9 886.0	16.8 425.5	27.5 698.5	3.0 76.2	2.1 54.1	2.4 60.3	0.5 12.7	9.5 241.3	7.5 190.5	16.1 407.9	15.1 384.3	7.5 190.5	20.9 530.4	12.6 320.0
24 600	24.0 609.6	40.5 1028.4	19.4 492.0	32.1 815.3	3.1 77.7	2.1 54.1	2.4 60.3	0.5 12.7	7.5 190.5	7.5 190.5	17.1 433.3	18.1 458.7	7.5 190.5	25.0 635.0	12.6 320.0

Series 8000GR Butterfly Valves (Ordering Information)

Sample Part Number 24" GD-82837 --->	24" Valve Size	G Body Style	D- Body	8 Series	2 Seat Material	8 Disc Material	3 Operator	7 Stem
	14"	G - Grooved	C - 150 PSI Service	8 - 8000	1 - Nitrile	0 - Nickel Plated Ductile Iron	0 - None	6 - 416 S.S. with RTFE Bearing
	16"		D - 200 PSI Service		2 - EPDM		2 - Gear Operator	
	18"					7 - 316 S.S.	3 - Pneumatic	7 - 316 S.S. with RTFE Bearing
	20"					8 - Bronze (Al-Brz.)	4 - Electric	
	24"						5 - Spring Return Pneumatic	
							6 - Square Nut (with Gear Operator)	
							7 - Chain Wheel (with Gear)	

Butterfly Valve Series 8000GR

Torque is the rotary effort required to operate a valve. This turning force in a butterfly valve is determined by three factors; the friction of the disc and seat due to interference for sealing, bearing friction, and fluid dynamic torque. Breakaway torque is the total of the torques resulting from bearing friction and disc /seat interference friction at a given pressure differential. This value is normally the highest required torque to operate a valve, and is used to size the actuator. Listed below are recommended sizing torques.

Note: These values include a safety factor and are for gases, including nonlubricating or dry gases, at 70 °F. Values for water and lubricating fluids would be reduced. Consult your ASC Engineered Solutions Sales Office for additional application information.

Actuator Sizing for General Service Application Series 8000GR Breakaway Torque

Line Pressure (PSI)/Bar	Valve Size (In.)				
	14	16	18	20	24
50 3.4	6,246 706	8,262 934	10,800 1,220	13,662 1,544	20,250 2,288
100 6.9	7,200 814	9,900 1,119	13,050 1,475	16,650 1,881	24,300 2,746
150 10.3	8,262 934	11,400 1,288	15,300 1,729	19,650 2,220	28,330 3,201

C_v VALUES (WATER @ 70°F SP. GR. = 1.00)

Valve Size In./mm	Disc Position (Degrees Open)							
	20°	30°	40°	50°	60°	70°	80°	90°
14 350	335	670	1,226	1,935	2,893	4,406	6,752	9,578
16 400	443	886	1,622	2,560	3,827	5,829	8,933	12,671
18 450	567	1,138	2,075	3,275	4,896	7,457	11,429	16,211
20 500	711	1,422	2,609	4,116	6,156	9,377	14,371	20,385
24 600	1,038	2,078	3,792	5,985	8,947	13,628	20,887	29,627

Fluid Dynamic Torque is the force exerted when a fluid passes over the surface of the butterfly valve disc. The magnitude of this force is dependent on valve size, disc opening and flow through the valve. Typically, fluid dynamic torque is a maximum at an approximate 75° disc opening. Generally, the effects of dynamic torque can be ignored when the velocity is less than 15 feet/second for liquids and 15,000 feet/minute for gases to minimize the effects of turbulence on the valve. For applications above these limits, consult engineering.

The formula for determining the velocity for liquids is:

$$V = 0.0022 \frac{Q}{A}$$

V = Velocity of liquid (feet/second)

Q = Flow (gallons/minute)

A = Area of upstream pipe (sq. ft.)
See "Area of Pipe" chart

The formula for determining the velocity of gases:

$$V_g = \frac{Q_f}{A}$$

V_g = Velocity of gas (feet/minute)

Q_f = Flow of gas @ flowing condition* (cubic feet/minute)

A = Area of upstream pipe (sq. ft.)
See "Area of Pipe" Chart

Area of Pipe

Pipe Size (Sch 40)	Area
In./mm	Sq. ft./Sq. cm
14 350	0.940 873.29
16 400	1.227 1,140
18 450	1.553 1,443
20 500	1.931 1,794
24 600	2.792 2,594

*Flowing condition means at temperature and pressure of gas stream in the valve

Butterfly Valves Fig. 70G



The Fig. 70G Butterfly Valve is designed for use with Gruvlok couplings, an ASC Engineered Solution, for fast and easy installation on grooved pipe. The valve body is fully rubber lined in EPDM or Nitrile material. A 316 Stainless Steel Disc is standard. The valve is supplied with a two position lockable handle.

Grooved ends conform to the requirements of AWWA C606.

Not intended for use in potable water systems.

Performance

Pressure Rating: 200 psi (13.8 bar) maximum working pressure.

The valve must not be installed with the disc in the fully open position. The disc must be partially closed so that no part is protruding past the end of the valve body during installation.

Material Specifications

Housing

Ductile iron conforming to ASTM A 536, Grade 65-45-12, painted.

Body

Carbon steel, elastomer lined

Body Lining

Grade E (EPDM):

-40°F to 230°F (-40°C to 110°C)

(Service Temperature Range)

Recommended for water service, dilute acids, alkaline, oil-free air and many chemical services.

Not For Use In Petroleum Services.

Grade T (Nitrile):

-20°F to 180°F (Service Temperature Range)

(-29°C to 82°C)

Recommended for petroleum products, air with oil vapors, vegetable oils and mineral oils.

Not For Use In Hot Water Services.

Upper & Lower Stem

416 Stainless Steel

DISC

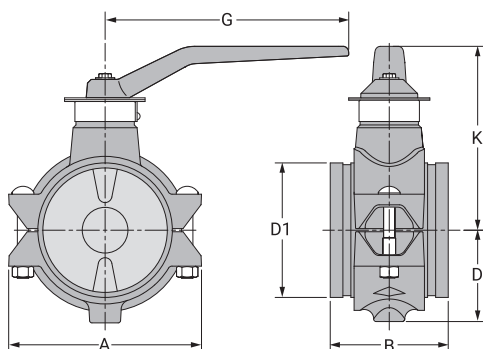
316 Stainless Steel

HOUSING BOLTS & NUTS

Heat treated, oval-neck track head bolts conforming to ASTM A-183 Grade 2 with a minimum tensile strength of 110,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or Grade B, or SAE J995 Grade.

2. Bolts and nuts are provided zinc electroplated.

Butterfly Valves Fig. 70G



Nominal Size	Nominal Dimensions						Approx. Wt. Ea.
	A	B	D	D1	K	G	
In./DN(mm)	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg.
2	4.06	3.19	1.87	2.37	2.37	5.5	3.50
50	103	81	48	60	60	140	1.6
3	5.62	3.81	2.75	3.50	3.50	7.00	7.00
80	143	97	70	89	89	178	3.2
4	7.00	4.56	3.50	4.50	4.50	9.00	12.00
100	178	116	88.9	114	114	229	5.5
6	9.5	5.81	4.50	6.63	6.63	12.00	30.00
150	241	148	114	168	168	305	13.6

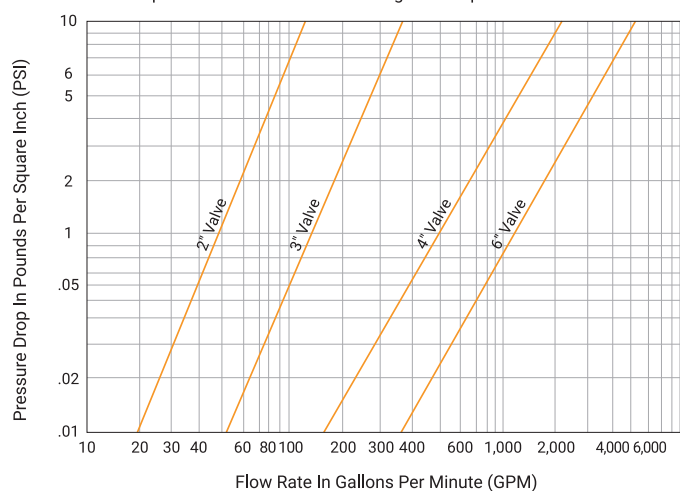
C_v Values

Size		Flow Coefficients – CV
Nominal Diameter	Actual Outside Diameter	
In./mm	In./mm	Full Open Valve
2	2.375	74
50	60.3	–
3	3.500	173
80	88.9	–
4	4.500	829
100	114.3	–
6	6.625	1287
150	168.3	–

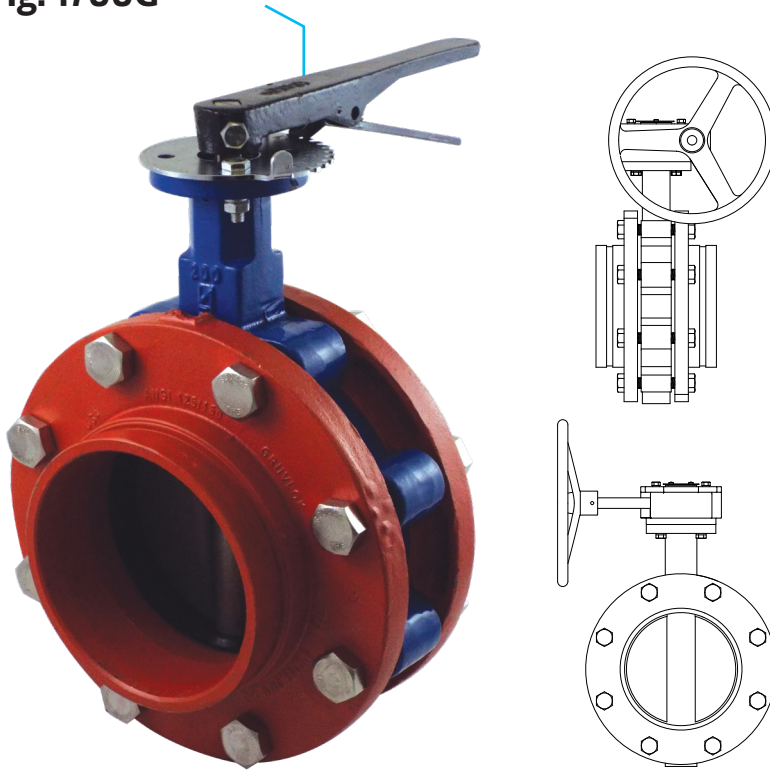
C_v values for flow of water are with a full open valve.

Flow Characteristics

The chart below expresses the flow of water through a full open valve.



Gruvlok® Butterfly Valve Fig. 1700G



Material Specifications

Housing

Ductile Iron conforming to ASTM A536, Grade 65-45-12

Coatings *

Flange Adapters: Rust inhibiting paint
(Color: Orange)

Valve: Fusion bonded epoxy
(Color: Blue)

Seat

EPDM -30°F to 275°F

Nitrile -20°F to 180°F

Operator

10 Position Lockable Lever Handle

Gear Operator

Bare Stem

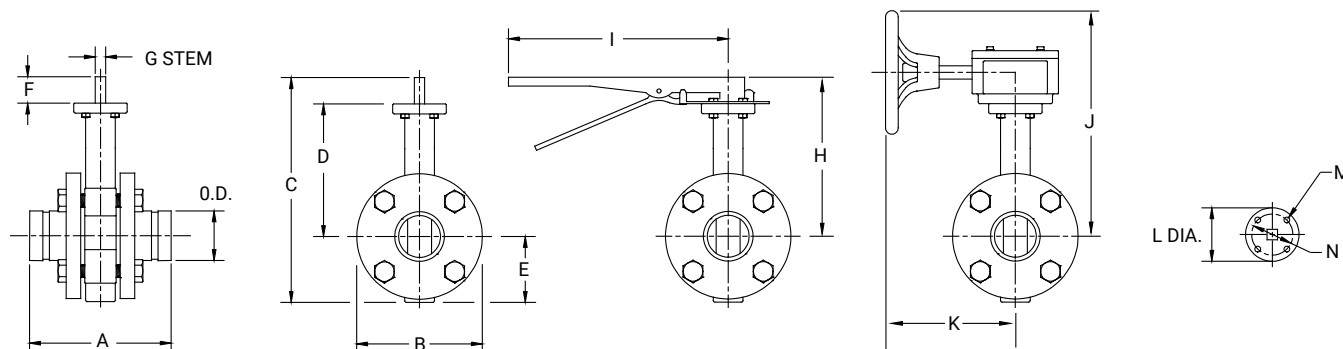
*For other coating requirements, contact an ASC Engineered Solutions™ Representative.

Our figure 1700G grooved end butterfly valve is offered in 2" through 12" sizes and is designed to be used in standard mechanical system applications up to 200 psi and temperatures ranging from -30°F to 275°F.

Features

- 316 Stainless Steel Disc
- 416 Stainless Steel Stem
- Pinless Disc & Stem Design
- Bi-directional
- Suitable for Dead End Service
- Seat design eliminates the need for flanged gaskets
- ISO 5211 Mounting Pad
- MSS SP-25 Markings
- MSS SP-67
- API 609
- EPDM seat -30°F to 275°F

Gruvlok® Butterfly Valve Fig. 1700G



Series 17 Butterfly Valve Dimension (inches)

Nominal Size*	O.D.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Weight
2	2.375	6.77	6	10.74	6.33	3.15	1.26	0.35	7.59	6.39	10.78	6.1	2.56	0.27	1.96	20.23
2 ½	2.875	6.87	7	11.65	6.89	3.5	1.26	0.35	8.15	10.5	11.34	6.1	2.56	0.27	1.96	24.64
3	3.5	6.93	7.5	12.12	7.12	3.74	1.26	0.35	8.38	10.5	11.57	6.1	2.56	0.27	1.96	27.97
4	4.5	7.65	9	13.62	7.87	4.49	1.26	0.43	9.13	10.5	12.32	6.1	3.54	0.39	2.76	44.43
5	5.563	7.78	10	14.64	8.38	5	1.26	0.55	9.64	10.5	12.83	6.1	3.54	0.39	2.76	58.79
6	6.625	7.8	11	15.63	8.89	5.48	1.26	0.55	10.15	10.5	13.34	6.1	3.54	0.39	2.76	71.03
8	8.625	8.49	13.5	18.89	10.23	6.89	1.77	0.67	12	14.21	17.86	8.74	4.92	0.47	4.01	99.22
10	10.75	9.5	16	21.26	11.49	8	1.77	0.86	13.26	19.64	19.17	8.74	4.92	0.47	4.01	169.04
12	12.75	10.15	19	22.8	13.26	7.77	1.77	0.86	15.03	19.64	20.94	8.38	5.51	0.47	4.01	244.25

Published weights for 2" through 8" sizes include lever operator. 10" and 12" size weights include gear operator.

Gruvlok® Butterfly Valve Fig. 1700G

Technical Information

Size	Gear Op			C _v									Torque			
	Output Lbs	Ratio	Gear Box	10°	20°	30°	40°	50°	60°	70°	80°	90°	50 psi	100 psi	150 psi	200 psi
2	1504	24:1	1 Stage	0.1	5	12	24	45	64	90	125	135	70	105	108	115
2-½	1504	24:1	1 Stage	0.2	8	20	37	65	98	144	204	220	100	150	136	152
3	1504	24:1	1 Stage	0.3	12	22	39	70	116	183	275	302	150	250	192	204
4	1504	24:1	1 Stage	0.5	17	36	78	139	230	364	546	600	230	260	328	352
5	1504	24:1	1 Stage	0.8	29	61	133	237	392	620	930	1022	350	530	512	548
6	1504	24:1	1 Stage	2	45	95	205	366	605	958	1437	1579	460	680	831	907
8	6195	30:1	1 Stage	3	89	188	408	727	1202	1903	2854	3136	740	1110	1527	1697
10	6195	30:1	1 Stage	4	151	320	694	1237	2947	3240	4859	5340	1330	1880	2530	2857
12	12620	50:1	1 Stage	5	234	495	1072	1911	3162	5005	7507	8250	2260	3150	3794	4338

Size (in)	Pressure Rating (psi)	Temperature Rating (°F)			
		EPDM		Buna N	
		Min	Max	Min	Max
2 - 8	200	-30	275	10	180

Published weights for 2" through 8" sizes include lever operator. 10" and 12" size weights include gear operator.

Large Diameter Butterfly Valve with Gear Operator Model B333



The Model B333 Large Diameter Butterfly Valve provides efficient control of fluid flow in piping systems. It is a grooved-end bubble tight shut-off valve with end-to-end dimensions that meet MSS SP-67, Table 4 and a mounting pad that meets ISO 5211 for the mounting of power actuators. The valve is capable of bidirectional fluid flow at working pressures to 300 psi (20 bar) and may be positioned in any orientation.

The 14 to 24 inch (DN350 to DN600) Model B333 Butterfly Valve is configured with a worm type gear operator and consists of an epoxy powder coated ductile iron body and EPDM or Nitrile (NBR) rubber encapsulation dual-seal disc. The body and disc construction provides for increased strength and durability. The disc seal and body coating are compatible with a variety of chemicals and temperature ranges. Contact your ASC Representative for specific recommendations on seal and coating selections.

Maximum Working Pressure: 300 psi (20 bar), non-shock cold water

Material Specifications

Valve Body & Disc

Ductile iron conforming to ASTM A536, Gr. 65-45-12 and/or to ASTM A395 Gr. 65-45-15

Stem Seals

O-Ring, EPDM

Body Coating

Epoxy powder coating, black color

Disc Encapsulation

Grade "E" EPDM, Grade "T" Nitrile (NBR)

Upper and Lower Shafts

Stainless steel conforming to ASTM A582, Type 410

Gear Operator Housing

Cast iron, conforming to ASTM A126-B

Set Screw

Cr-Mo Steel

Hex Nut

Carbon Steel

Spring Pin

Spring Steel

Seat Material:

- Grade "E" EPDM – For service temperatures from -30°F to 200°F (-34°C to 93°C). Recommended for water service, dilute acids, alkalis, oil-free air, and many chemical services.

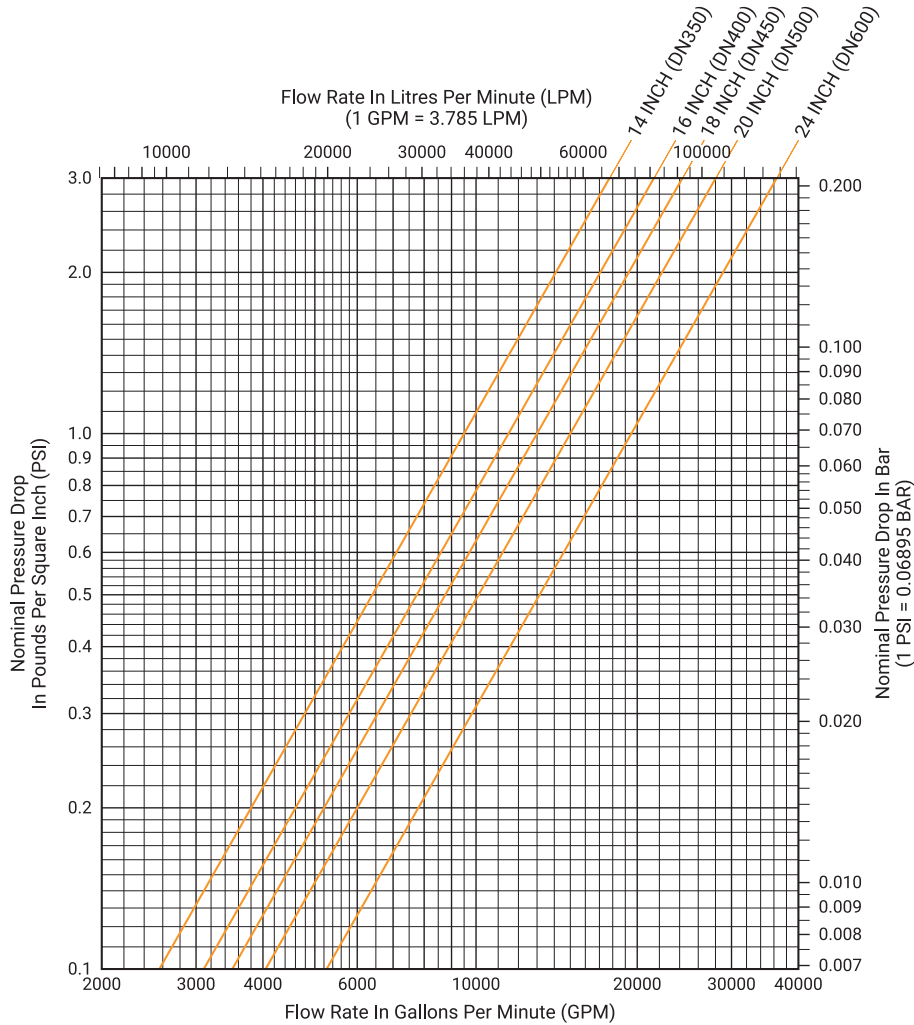
Note: Not recommended for use in petroleum services.

- Grade "T" Nitrile – For service temperatures from -20°F to 180°F (-29°C to 82°C). Recommended for petroleum products, air with oil vapors, vegetable oils, and mineral oils. They are not recommended for use in hot water services.

Note: Not recommended for use in hot water services.

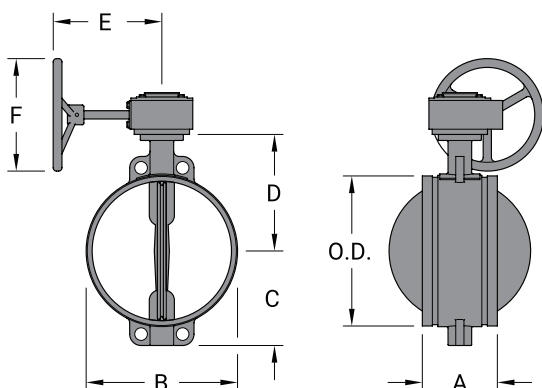
Contact an ASC Engineered Solutions Sales Representative for specific recommendations on seat material.

Large Diameter Butterfly Valve with Gear Operator Model B333



Note: For design purposes, a safety factor of 15% to 20% should be applied to the values in the above table.

Large Diameter Butterfly Valve with Gear Operator Model B333



B333 Large Diameter Butterfly Valve

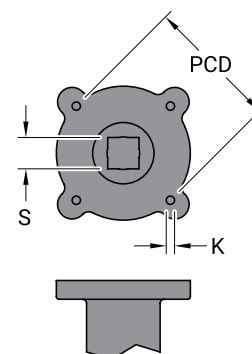
Valve Size	O.D.	Operating Torque	Dimensions						Approx. Wt. Ea.
			A	B	C	D	E	F	
In./mm	In./mm	In.-lb./Nm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg
14	14.000	3000	7.00	14.37	8.82	10.86	9.5	12.00	130.0
350	355.6	339	178	365	224	276	242	305	59
16	16.000	4000	7.00	16.38	9.76	11.89	9.5	12.00	147.4
400	406.4	452	178	416	248	302	242	305	67
18	18.000	5500	8.00	18.50	11.14	13.78	11.40	16.20	223.5
450	457.2	621.5	203	470	283	350	290	412	101.4
20	20.000	8000	8.50	20.75	12.36	15.08	11.40	16.20	292.6
500	508.0	904	216	527	314	383	290	412	133.0
24	24.000	9500	10.00	24.76	14.49	17.83	11.40	16.20	352.0
600	609.6	1073.5	254	629	368	463	290	412	160.0

These torque values were derived from test data with non-lubricated valves in water, non-pressurized at ambient temperatures. For information on alternative sizes, contact an ASC Engineered Solutions Sales Representative.

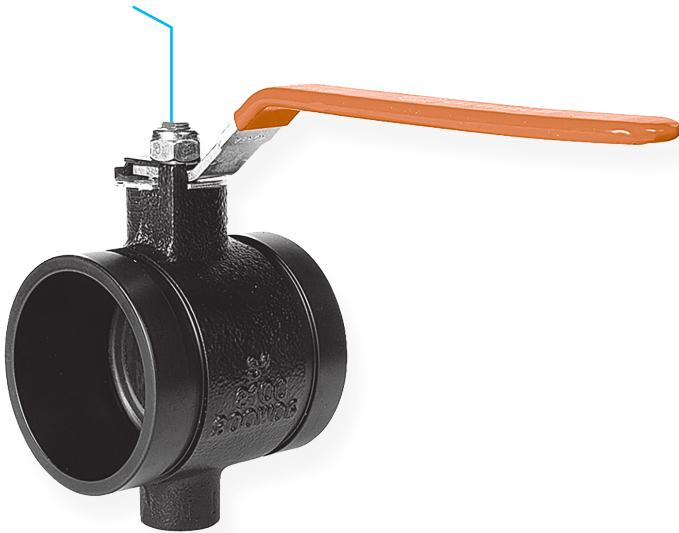
Note: The torque values are based on liquid applications. For dry or non-lubricating applications add a 25% service factor to the above values.

Gear Operator Mounting Dimensions

Valve Size	PCD Dia.	Dimensions	
		Bolt Size K	S
In./mm	In./mm	In./mm	In./mm
14	4.90	M12	0.94
350	125		24.0
16	5.5	M16	1.44
400	140		36.6
18	5.50	M16	1.736
450	140		44.1
20	6.50	M20	2.04
500	165		52.0
24	6.50	M20	2.04
600	165		52.0



Low Profile Butterfly Valve Series 8100



The Series 8100 Low Profile Butterfly Valve has a rated working pressure of 300 psi (20.7 bar) and provides efficient control of fluid in piping systems. Flow can be from either direction and the valve may be positioned in any orientation. The ductile iron body is epoxy-coated to resist atmospheric corrosion. The disc is EPDM encapsulated ductile iron compatible with a variety of chemicals and temperature ranges.

Maximum Working Pressure: 300 psi (20.7 bar)

Material Specifications

Body

Ductile iron conforming to ASTM A536

Body Coating

Black Epoxy-Coated

Disc

Ductile iron conforming to ASTM A 536

Disc Seal:

- Grade "E" EPDM encapsulated rubber -20°F to 250°F (-29°C to 121°C) with intermittent service at 250°F (121°C) and continuous service at 225°F (107°C)
- Optional: Grade "T" Nitrile encapsulated rubber -20°F to 180°F (-29°C to 82°C)

Stem

Two-piece stainless steel, splines conforming to AISI 420

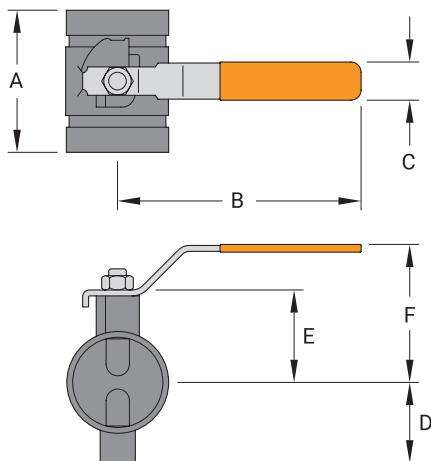
Stem Seal

EDPM O-rings, upper and lower stem

Handle

Zinc-plated carbon steel

Low Profile Butterfly Valve Series 8100



Valve Size	O.D.	Dimensions						Approx. Wt. Ea.
		A	B	C	D	E	F	
In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg
2	2.375	3.4	6.0	1.0	1.8	2.3	3.2	5.0
50	60.3	87.4	154.4	25.4	46.0	59.0	81.0	2.3
2½	2.875	3.8	6.0	1.0	2.1	2.4	3.6	7.0
65	73.0	96.8	154.4	25.4	52.3	92.9	91.9	3.2
3	3.5	3.8	8.4	1.0	2.6	2.7	4.3	8.0
80	88.9	96.8	214.4	25.4	66.5	98.1	108.0	3.6
4	4.5	4.6	8.4	1.0	3.3	3.3	4.9	12.0
100	114.3	117.9	214.4	25.4	84.1	84.1	125.5	5.4
5	5.563	5.2	12.3	1.3	3.9	3.9	5.8	-
125	141.3	132.4	311.2	31.8	99.0	99.0	147.6	-
6	6.625	5.3	12.3	1.3	4.4	4.4	7.0	19.0
150	168.3	133.4	311.2	31.8	113.3	113.3	177.8	8.6

PVC Butterfly Valve (Spline x Spline) Model B8200L



Material Specifications

Body

Ductile iron conforming to ASTM A536, Gr. 65-45-12

Body Coating

Black Epoxy-Coated

Disc

Ductile iron conforming to ASTM A 536, Grade 65-45-12

Disc Seal

Grade "T" Nitrile encapsulated rubber

Stem

Two-piece Type 316 Stainless Steel Splines

Stem Seal

EPDM O-rings, upper and lower stem

Handle

Zinc-plated carbon steel

Model B8200L Butterfly Valves are available in sizes 2 through 8 inch diameters. Precision machined grooves in the valve body provide easy alignment of the valve and compatible PVC couplings, allowing for the insertion of the spline to connect the Model B8200L Valve to the PVC piping system. Flow may enter the valve from either direction and valve can be orientated in any direction.

The valve efficiently controls the flow of fluid through the use of a 10-position lever lock plate that has full open, closed, and graduated intermediate locking positions. The lever handle may be pad-locked in any of the positions, including full open and closed to prevent tampering.

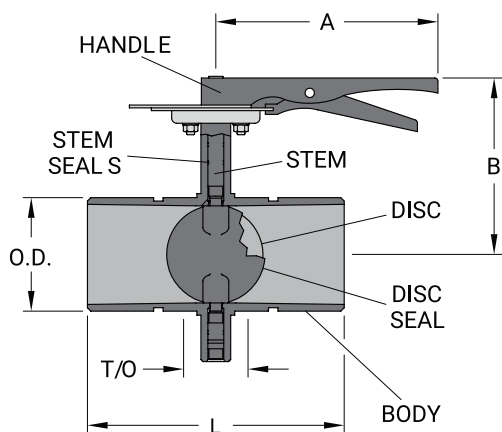
The valve body is constructed of ductile iron with a tough epoxy-coating. The disc is Nitrile coated ductile iron construction. The body and disc construction provide high strength and durability as well as compatibility with a wide variety of chemicals. Type 316 Stainless Steel Stems have EPDM O-rings as back-up seals.

Model B8200L Butterfly Valves have a rated working pressure of 320 psi (22 bar), which equals or exceeds the pressure rating of all components. The working temperature range of the valve is from 32°F to 140°F (0°C to 60°C).

Maximum Working Pressure: 320 psi (22 bar)

Working Temperature Range: 32°F to 140°F (0°C to 60°C)

PVC Butterfly Valve (Spline x Spline) Model B8200L



Valve Size	O.D.	Dimensions				Approx. Wt. Ea.
		A	B	L	T/O	
In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg
2	2.375	7.95	5.16	7.50	2.40	8.8
50	60.3	202.0	131.0	191.1	61.0	4.0
3	3.500	7.95	5.75	9.18	2.17	17.6
80	88.9	202.0	146.0	233.2	55.1	8.0
4	4.500	7.95	7.05	10.18	2.08	26.4
100	114.3	202.0	179.0	258.6	52.8	12.0
6	6.625	10.28	8.39	10.41	2.31	50.6
150	168.3	261.0	213.0	264.6	58.7	23.0
8	8.625	12.40	9.37	10.96	2.00	74.8
200	219.1	314.9	238.0	278.4	50.8	34.0

10" and 12" (250 and 300mm) are available upon request. Contact ASC Engineered Solutions Sales Representative.