

**Mounting Flange:**

ISO 5211 mounting flange accommodates direct mounting of all types of actuators, including; handles, gear operators, electric and pneumatic.

**O-Ring:**

Tertiary stem seal provides further assurance against stem leakage.

**Hub Seal:**

Smooth finished disc flats mate with seat flats to give a highly efficient primary seal that prevents leakage into the shaft area and minimizes torque.

**Disc:**

Precision profile provides bubble-tight shut-off, assures minimum torque and longer seat life. Maximum flow is achieved by eliminating the "through shaft" and external disc fasteners.



**Weather Seal:**

O-ring seals keep dust and moisture from entering the upper stem journal.

**Stem:**

Stub shaft design allows the disc to float within the flow-way increasing cycle life.

**Bushings:**

Stem bushings reduce torque and isolate the stem from the valve body, preventing seizure of the stem due to corrosion in the stem journal. (4 Bushings)

**Seat Face:**

Seat to flange seal eliminates the need for flange gaskets.

**Seat:**

Phenolic-backed seat is non-collapsible, stretch-resistant, blow-out proof and easily replaced in the field.

## Series 300 Butterfly Valves

- Available in sizes 2" to 12".
- Available in Wafer or Lug style body.
- Wafer body features four alignment holes.
- Pressure ratings for tight shut-off at temperatures up to the maximum limit of the seat material:  
2" to 12" — 200 psi, 125 psi for PTFE seat.
- Ideal for on-off or throttling services.
- Available with handles, manual gear operators, pneumatic, or electric actuators.
- Refer to Crane actuator bulletins for details of pneumatic Series 43000/48000 and Electric Series 44000 actuators.
- Designed to comply with MSS SP-67 and API 609. For valve dimensions, see table on page 5.
- Compatible with ANSI 125/150 flanges.
- Bi-directional dead-end capability to 200 psi available.
- Operators mounted perpendicular to pipe.

## Valve Seating Torques (In-Lbs.)

Valve Size	Standard Disc Differential Pressure				Undercut Diff. Press.
	50 PSI ΔP	100 PSI ΔP	150 PSI ΔP	200 PSI ΔP	75 PSI ΔP
2"	100	106	111	117	-
2 1/2"	150	163	176	189	-
3"	207	220	232	244	-
4"	290	323	357	390	-
5"	423	481	540	598	-
6"	599	691	783	875	-
8"	1,060	1,183	1,307	1,430	819
10"	1,671	1,872	2,074	2,275	909
12"	2,568	2,795	3,023	3,250	1,445

- All torques shown on the chart were derived from test data using water at 60°F. For torques using dry gases, multiply these numbers by 1.6. For torques involving other media, please consult the factory.
- There is no safety factor included in the numbers shown on this chart. For actuator sizing, Center Line recommends that these values be multiplied by 1.2 for single valve applications, and 1.5 for 3-way ("tee") applications.
- Under certain conditions, hydrodynamic torque can meet or exceed seating and unseating torques. When designing valve systems, hydrodynamic torque must be considered to help insure correct selection for the application.

## Seat Temperature Ratings

Material	Temperature Ratings °F
Buna-N	+10 to 180
Abrasive Resistant Buna-N	+10 to 180
Neoprene	+20 to 200
EPDM	-30 to 275
EPDM (18" & Above)	-30 to 225
EPDM, Food Grade	-30 to 225
Hypalon	0 to 275
Viton®	+10 to 275
High temp. Viton	+10 to 400
PTFE over Buna-N	+40 to 275

### Notes:

- Although elastomers have an effective operating temperature range, when used in valves these ranges may have to be modified. The temperature ranges shown in the table have been adjusted accordingly.
- **For Low Temperature:** While the seat materials selected for use in Center Line butterfly valves are capable of withstanding lower temperatures without damage, the durometer of the elastomer is changed. This “hardening” of the seat can increase the operating torque beyond the structural limits of the stem and/or the disc to stem connection.
- **For High Temperature:** When using High Temperature Viton, the operating pressure of the valve is reduced above 275°F.

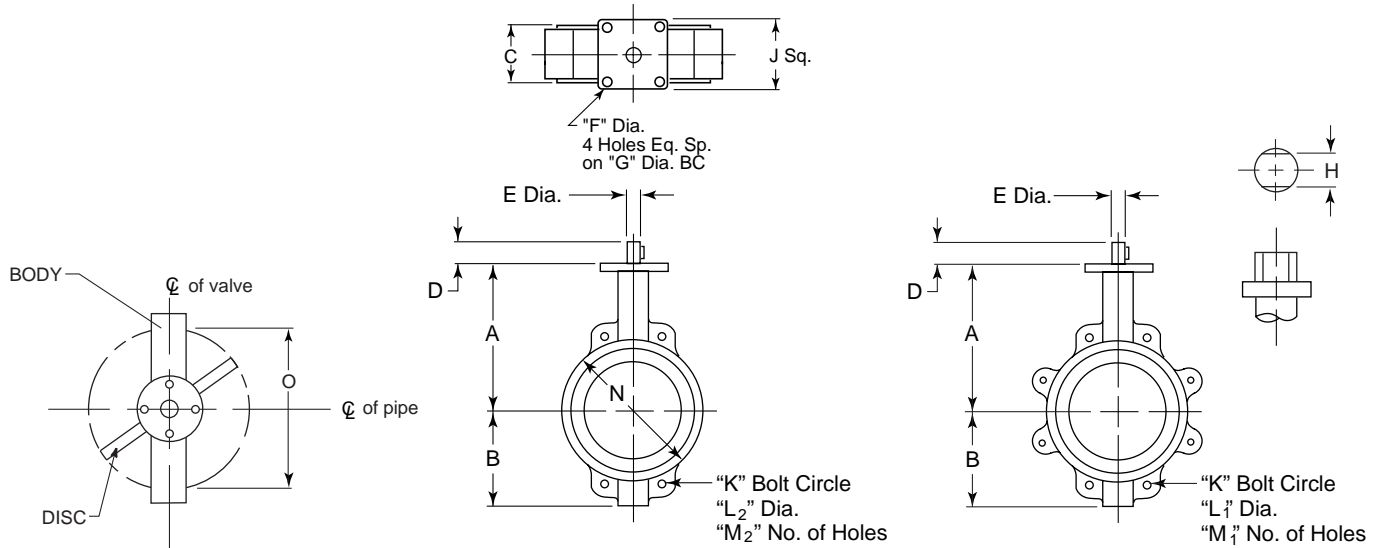
## C<sub>v</sub> Chart – based on water @70°F with a Specific Gravity of 1.

Size	Disc Position							
	20°	30°	40°	50°	60°	70°	80°	90°
2"	3	7	19	36	63	84	115	120
2 1/2"	4	10	24	47	78	113	182	194
3"	14	21	45	84	133	203	382	430
4"	30	52	100	165	270	420	703	830
5"	85	130	210	345	525	825	1350	1500
6"	165	225	360	570	820	1260	1875	1980
8"	210	300	480	780	320	2280	3780	3870
10"	405	575	850	1200	1900	3300	6100	6450
12"	550	750	1200	1875	2850	5025	9300	9800

Rate of flow through a valve depends upon the pressure drop. The most common method of presenting this information is by Cv. The Cv is the “valve coefficient of flow” and represents the flow of water in gallons per minute (GPM) with a 1 PSI pressure drop through the valve. The higher the Cv, the greater the flow and the better the control characteristics.

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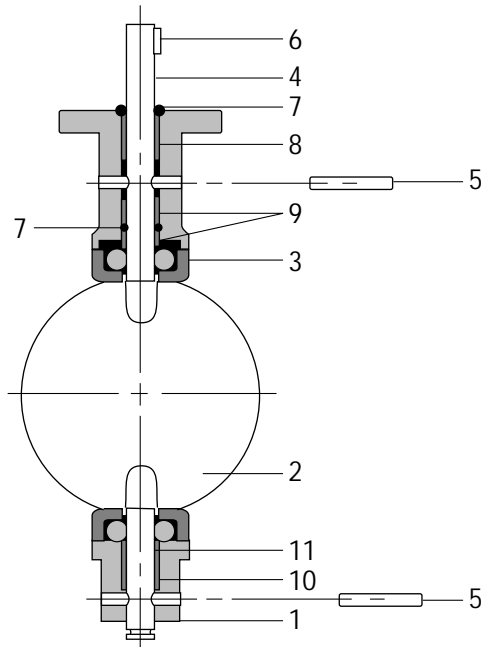
## Dimensions

VALVE SIZE		A	B	C	D	E	F	G	H	J	K	L <sub>1</sub> *	L <sub>2</sub> *	M <sub>1</sub> *	M <sub>2</sub> *	N	O
2"	in.	6 3/8	3 1/4	1 3/4	1 1/4	1/2	3/8	2.76	0.39	2 3/4	4 3/4	5/8-11	1 1/16	4	4	4.	1.26
50	mm	161.93	82.55	44.45	31.75	12.70	9.53	70	10	69.85	120.65					101.60	32.0
2 1/2"	in.	6 7/8	3 3/4	1 7/8	1 1/4	1/2	3/8	2.76	0.39	2 3/4	5 1/2	5/8-11	1 1/16	4	4	4 3/4	1.83
65	mm	174.63	95.25	47.63	31.75	12.70	9.53	70	10	69.85	139.70	17.46				120.65	46.5
3"	in.	7 1/8	4	1 7/8	1 1/4	1/2	3/8	2.76	0.39	2 3/4	6	5/8-11	1 1/16	4	4	5 1/8	2.54
75	mm	180.98	101.60	47.63	31.75	12.70	9.53	70	10	69.85	152.40	17.46				130.18	64.5
4"	in.	7 7/8	4 7/8	2 1/8	1 1/4	5/8	3/8	2.76	0.47	2 3/4	7 1/2	5/8-11	1 1/16	8	4	6 3/4	3.54
100	mm	200.03	123.83	53.98	31.75	15.88	9.53	70	12	69.85	190.50	17.46				171.45	89.9
5"	in.	8 3/8	5 3/8	2 1/4	1 1/4	3/4	3/8	2.76	0.55	2 3/4	8 1/2	3/4-10	1 3/16	8	4	7 3/4	4.36
125	mm	212.73	136.53	57.15	20.64	19.05	9.53	70	14	69.85	215.90	20.64				196.85	110.7
6"	in.	8 7/8	5 7/8	2 1/4	1 1/4	3/4	3/8	2.76	0.55	2 3/4	9 1/2	3/4-10	1 3/16	8	4	8 5/8	5.72
150	mm	225.43	149.23	57.15	31.75	19.05	9.53	70	14	69.85	241.30	20.64				219.08	145.3
8"	in.	10 1/4	7 1/8	2 1/2	1 3/4	7/8	7/16	4.02	0.67	3 3/4	11 3/4	3/4-10	1 3/16	8	4	10 5/8	7.6
200	mm	260.35	180.98	63.50	44.45	22.23	11.11	102	17	95.33	298.45	20.64				268.29	193.0
10"	in.	11 1/2	8 1/4	2 3/4	1 3/4	1 1/8	7/16	4.02	0.87	3 3/4	14 1/4	7/8-9	1 5/16	12	4	13 1/16	9.5
250	mm	292.10	209.55	69.85	44.45	28.58	11.11	102	22	95.33	361.95	23.81				331.79	241.3
12"	in.	13 1/4	9 3/4	3 1/8	1 3/4	1 1/4	7/16	4.02	0.95	3 3/4	17	7/8-9	1 5/16	12	4	16 1/8	11.45
300	mm	336.55	247.65	79.38	44.45	31.75	11.11	102	24	95.33	431.80	23.81				409.58	290.8

## Weights

Valve Configuration		Size								
		2	2 1/2	3	4	5	6	8	10	12
Wafer	Lbs.	6	7	10	13	18	20	32	42	70
	Kg.	2.72	3.18	4.54	5.90	8.16	9.07	14.51	19.05	31.75
Lug	Lbs.	7	8	14	26	28	31	49	72	105
	Kg.	3.18	3.63	6.35	11.79	12.70	14.06	22.23	32.66	47.63

- \*L<sub>1</sub> and \*M<sub>1</sub> refer to Lug style valves, L<sub>2</sub> and M<sub>2</sub> refer to Wafer Style.
- "C" dimension is listed with elastomer in the relaxed condition. Approximately 1/8" total compression is required for proper sealing with pipe flanges.
- Valves are designed for installation between ANSI B16.1 Class 125 (Iron) and B16.5 Class 150 (Steel) flanges. Gaskets are not needed, and should not be used since the seat face seals against the mating flange.
- If the valve is to be installed between plastic or fiberglass flanges, flange rings, or Van Stone style flanges, consult your Center Line agent or the factory for additional information.
- Center Line recommends that a blind flange be used on end of line applications.
- "O" dimension is disc chord dimension.
- Consult factory for dimension to 2 1/2" and 5" PTFE seated valves.

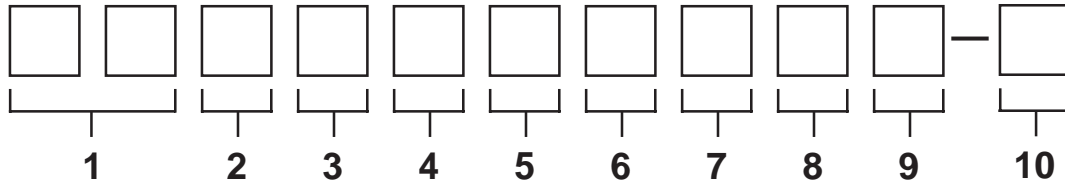


## Bill of Materials

Item	Description	Materials	Optional Materials
1	Body	Cast Iron	Ductile Iron
2	Disc	Ductile Iron <sup>1</sup>	Aluminum Bronze, 316 Stainless Steel, Monel
3	Seat	Buna-N or EPDM	Neoprene, Hypalon, Viton, PTFE
4	Upper Shaft	416 Stainless Steel	316 Stainless Steel, Monel
5	Retaining Pin	Carbon Steel	316 Stainless Steel
6	Key	Carbon Steel	No Option Available
7	O-Ring	Buna-N	No Option Available
8	Bushing	PTFE	Luberized Bronze
9	Bushing	PTFE	Luberized Bronze
10	Bushing	PTFE	Luberized Bronze
11	Lower Shaft	416 Stainless Steel	316 Stainless Steel, Monel

<sup>1</sup>ENP plated for 2" - 12" valves

## CENTER LINE FIGURE NUMBER SYSTEM



1. Size	Code
2"	02
2.5"	25
3"	03
To	
12"	12

2. Series/Style	Code
300-Wafer (2"-12")	A
300-Lug (2"-12")	B
300-Lug/Deadend (2"-12")	C

3. Body	Code
Cast Iron	1
Ductile Iron (A536)	2
Carbon Steel	3
Stainless Steel	4

4. Pressure	Code
200 PSI	0
125 PSI (PTFE/BUNA seat)	8

5. Disc	Code
Ductile Iron-ENP	2
316 SS	4
Ductile Iron	5
Aluminum Bronze	6
Monel	7

6. Shaft	Code
416 SS	1
316 SS	4
(Std. w/316 SS Disc only)	
Monel 400	7

7. Bushing	Code
Bronze	0
PTFE	3

8. Seat/Liner	Code
Buna	1
Abrasion Resistant Buna	2
Black Neoprene	3
White Neoprene	4
EPDM	5
Low Temp Viton (275° F)	6
Hypalon	7
Perox. Cured Buna	8
White Buna	B
Potable Water EPDM	D
PTFE/Buna	L
High Temp Viton (400° F)	P
EPDM Food Grade	V
White Buna Food Grade	W

Handle	2
Handle/Infinite Adjustment	3
Lockable	
Handle/Infinite Adjustment	4
Gear/Handwheel	5
Pneumatic, Double Acting	6
Pneumatic, Spring Return, Fail Closed	7
Pneumatic, Spring Return, Fail Open	8
Electric Actuator	9
Gear w/Balanced Stop Handwheel	G
Gear/Chainwheel	U
No Operator	X

10. Other	Code
For Domestic US Products only	D