

# Flow Line 84/85



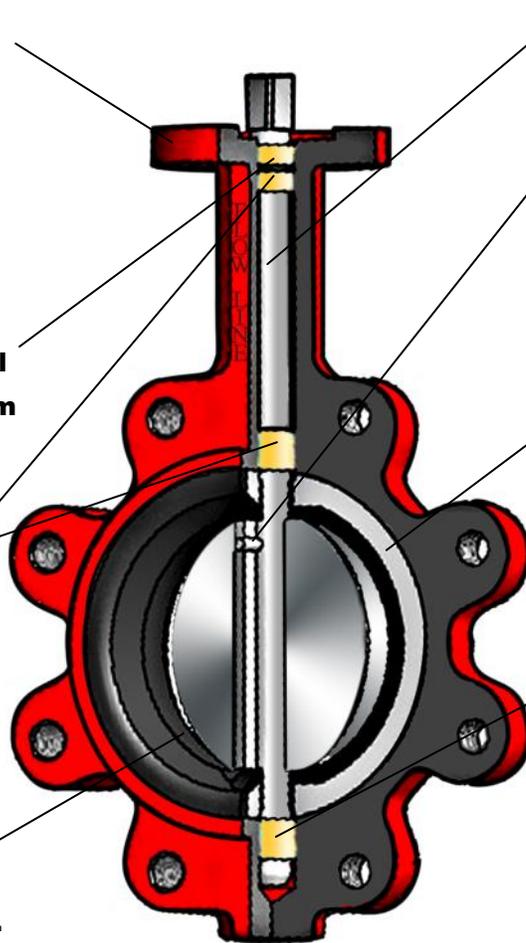
**Commercial Cartridge Seated  
Butterfly Valves**

**Sizes 2" - 24"**

# FEATURES

The **Series 84** Wafer Style and **Series 85** Lug Style valves are heavy duty cartridge seated general/commercial service butterfly valves. All valves in these series are ISO compatible, therefore providing versatility when automation is required. ANSI 125/150 slip-on, weld-neck, and screwed-end flanges can be used throughout the size range. All valves are rated to 250 psi and 175 psi for full bi-directional dead-end service without the need of a down stream flange. All Series 84/85 valves, regardless of the rated working pressure, are vacuum rated to 29" of Mercury.

- **American standard and ISO 5211 drillings with ISO shaft provides flexibility of mounting handles, gear operators, and actuation.**
- **Environmental shaft seal keeps contaminants from entering shaft bore.**
- **2 RTFE bearings widely spaced eliminates side loading and provides friction-free operation.**
- **An extra wide flange sealing face makes for easier valve installation.**



- **High strength single piece shaft**
- **Single, double, and/or triple 17-4 PH stainless steel taper pins positively lock the shaft into the disc.**
- **Phenolic backup ring is vulcanized to the elastomer, therefore eliminating movement within the seat.**
- **A third shaft bearing is provided to further eliminate side loading and provide for friction-free rotation of the disc/shaft.**

## RECOMMENDED SPECIFICATIONS

- Valve bodies are able to have an extended neck to allow for extra insulation.
- Valves are able to be installed between ANSI 125/150 flanges.
- Series 85 lug style valves are fully rated for bi-directional dead-end service without any notification.
- All valves have triple RTFE bearings to prevent seizing of the valve shafts.

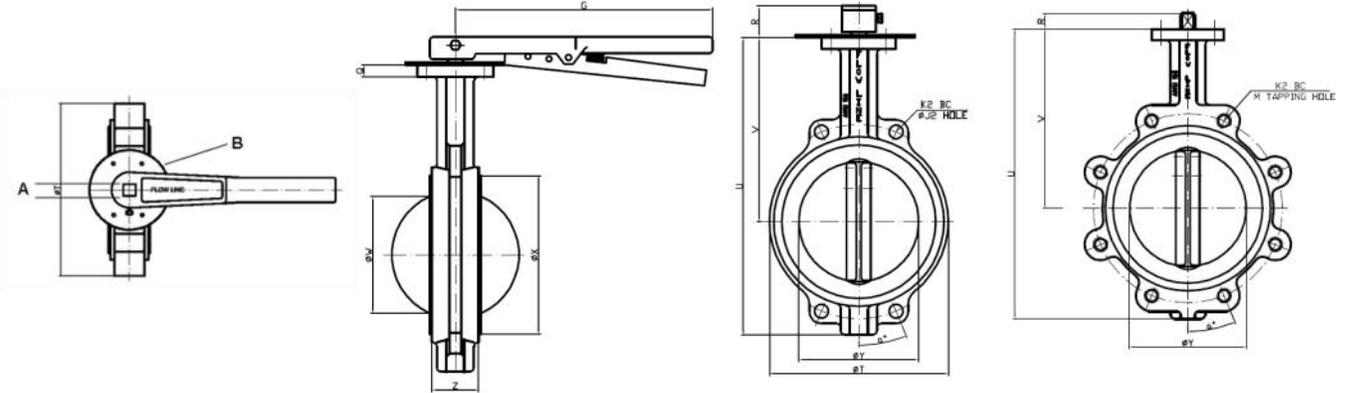
## COATINGS

Flow Line Series 84 and 85 butterfly valve bodies are polyester coated, as standard. Polyester is a significant upgrade to paint or two-part epoxy coatings. Our standard polyester coating offers outstanding protection against abrasion and corrosion. The Flow Line polyester coating is not affected by outdoor exposure and maintains excellent resistance to UV rays.

TEST	RESULT
Salty Fog Test	No change in excess of 2000 hours
Outdoor Weathering (UV Rays)	No noticeable change in excess of 12 months
50% Sulfuric Acid Test	No change for 48 hours

# ENGINEERING

## DIMENSIONS



Size	Z	ØY	ØX	ØW	V	U	ØT		R	Q	G	A	B		JOINT FLANGE DRILLING				WEIGHT		
							Wafer	Lug					K2	#Holes wafer   lug	ØJ2	a°	Wafer	Lug			
2"	1.69	2.07	3.00	1.26	6.34	9.49	4.65	4.65	0.98	0.51	9.5	0.551	2.76	F0	4.75	4	4	5/8"	45°	8	11
2.5"	1.78	2.53	3.50	1.81	6.89	10.39	5.39	5.39	0.98	0.51	9.5	0.551	2.76	F0	5.5	4	4	5/8"	45°	9	12
3"	1.78	3.10	4.09	2.52	7.13	10.87	5.63	7.01	0.98	0.51	9.5	0.551	2.76	F0	6	4	4	5/8"	45°	10	13
4"	2.05	4.09	5.31	3.54	7.87	12.36	6.14	8.11	0.98	0.51	9.5	0.551	2.76	F0	7.5	4	8	5/8"	22.5°	13	22
5"	2.19	4.85	6.26	4.37	8.39	13.39	7.48	9.37	1.18	0.51	11	0.670	2.76	F0	8.5	4	8	3/4"	22.5°	18	26
6"	2.19	6.13	7.42	5.71	8.90	14.37	8.35	10.5	1.18	0.51	11	0.670	2.76	F0	9.5	4	8	3/4"	22.5°	20	34
8"	2.39	7.97	9.38	7.56	10.24	17.13	10.55	13	1.18	0.51	11	0.866	4.02	F1	11.7	4	8	3/4"	22.5°	34	45
10"	2.68	9.86	11.51	9.53	11.50	19.49	12.80	15.5	1.26	0.51	15	0.866	4.02	F1	14.2	4	12	7/8"	15°	48	64
12"	3.03	11.8	13.54	11.5	13.27	22.80	15.87	18.2	1.26	0.79	15	0.866	4.02	F1	17	4	12	7/8"	15°	77	93

## TORQUE

Size	50 psi	200 psi	Size	50 psi	200 psi
2"	83	112	10"	1656	2253
2.5"	120	163	12"	2813	3825
3"	188	255	14"	5078	6118
4"	281	420	16"	6746	8126
5"	438	595	18"	7844	9961
6"	563	765	20"	9938	12332
8"	938	1275	24"	18375	23715

## CV VALUES

Size	50°	90°	Size	50°	90°
2"	36	153	10"	1188	6386
2.5"	47	299	12"	1857	9702
3"	83	426	14"	2277	10395
4"	164	822	16"	2871	13365
5"	342	1485	18"	3762	17820
6"	564	1960	20"	4752	22770
8"	772	3831	24"	6534	32497

## APPLICABLE STANDARDS

■ ANSI B16.1	Conforms to ANSI Class 125 flange drilling.
■ ANSI B16.5	Conforms to ANSI Class 150 flange drilling.
■ ANSI B16.42	Conforms to ANSI Class 150 flange drilling, body wall thickness, and pressure temperature ratings.
■ ANSI B16.104	Exceeds Class VI shutoff requirements.
■ API 609	Butterfly Valve Category A
■ AWWA C504	Diameter of stainless steel shaft exceeds AWWA Class 75B standards. Body wall thickness exceeds the AWWA Class 150B standard for butterfly valves.
■ MSS SP-25	Markings and identification conform to the requirements.
■ MSS SP-67	Butterfly Valves
■ ISO 5211	Actuator Mounting

## MATERIALS OF CONSTRUCTION

<b>Disc</b>	<b>Seat</b>
■ Electroless Nickel Plated Ductile Iron ASTM A-536 (65-45-12)	■ Buna N-FDA Food Grade 0° to +180°
■ Aluminum Bronze ASTM B-148 (954)	■ EPDM FDA Food Grade -30° to +275°
■ 316 Stainless Steel ASTM A-251 (CF8M)	■ Viton® - FDA Food Grade 0° to +375°
<b>Body</b>	<b>Stem</b>
■ Cast Iron ASTM A-126 Class B	■ 416 Stainless Steel ASTM A-582 Type 416
■ Ductile Iron ASTM A-536 (65-45-12)	
■ Ductile Iron ASTM A-395	

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# INSTALLATION, MAINTENANCE, AND ASSEMBLY

## Actuation



## Installation

To install, simply close the valve, position it between the flanges, and assemble the valve to the flanges with studs or cap screws. Do not use flange gaskets. Flow Line Series 84/85 butterfly valves can be installed with the disc closed. Before hand-tightening the flange bolts, fully open the disc to ensure disc OD clearance with pipe ID. Hand-tighten the flange bolts and close the valve to check for valve disc and pipe clearance. If contact is made, reposition as necessary and tighten all flange bolts to proper torque specification.

## Maintenance and Repair

No regular maintenance or lubrication is required. Factory assembly procedures provide adequate lubrication for the life of the valve. To replace any component, remove the valve from the line by fully closing valve disc. Spread the flanges, remove all bolts, and then remove the valve from line.

## Testing

All Flow Line Series 84/85 butterfly valves are bi-directionally tested to 130% of rated working pressure. Test certification is available upon request at time of order.

## Warranty

All products manufactured by Flow Line Valve and Controls, LLC. are warranted against defects in material and workmanship for a period of 2 years following the date of purchase.

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