



## Features / Design

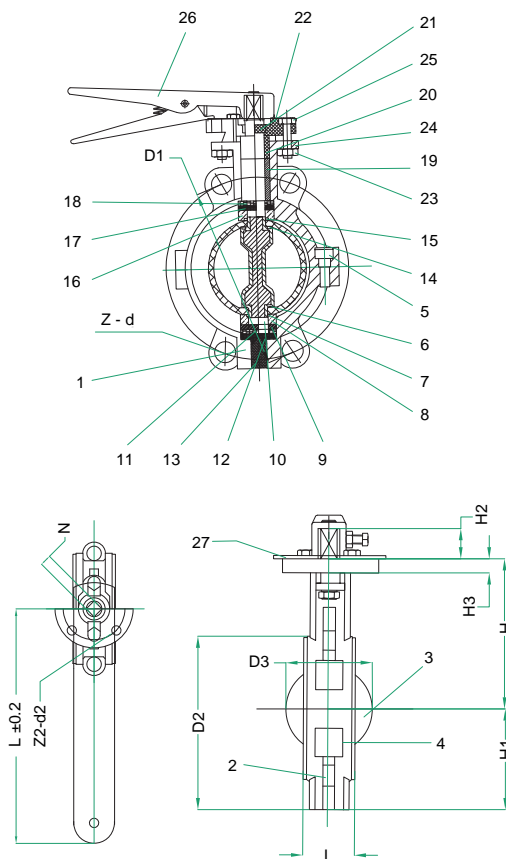
### Lined Valves - Series 9LS / Lined Butterfly Valve

- The lined butterfly valves bi-directional flow is possible at maximum operating pressure. Since valve port corresponds to the piping diameter, a high flow capacity is guaranteed. Easy maintenance, repeatable on-off, long life durability.
- The concentric design is commonly used in power generation, brewing, water & food industries and suitable for both gaseous and liquid service. Typically applied in chemical/petrochemical process, food & beverage, and pulp & paper, etc.
- Design & Manufacture Standard: GB/T 12238.
- Wafer / Lug (ANSI B16.5). Face Face: API 609.
- Lining Thickness: 3 to 5 mm.
- Inspection and Test Standard: GB/T 13927.
- Liner Inspection: Spark test 15 Kv.

## Material List

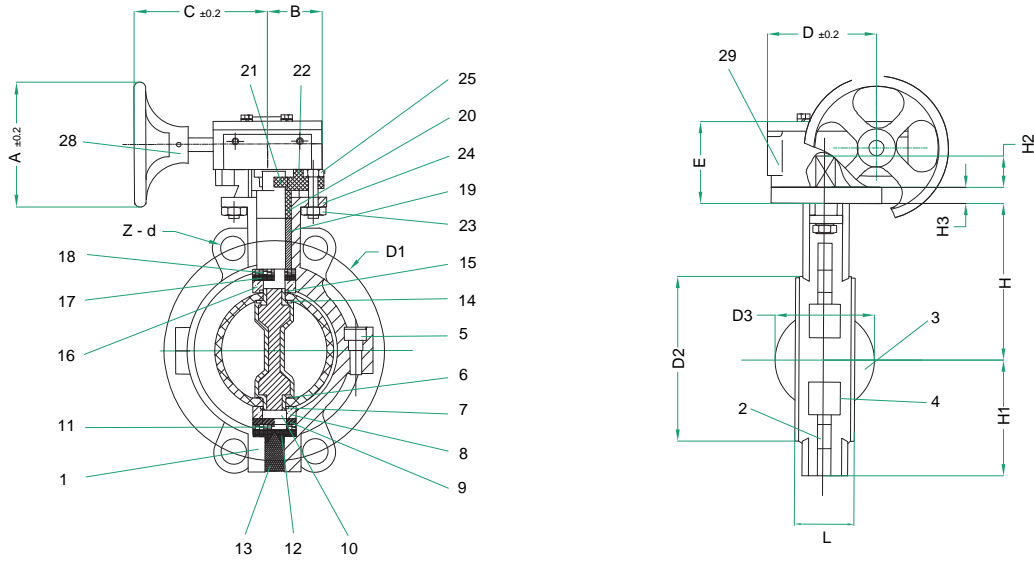
POS	DESCRIPTION	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT	PFA
3	DISC	ASTM A216 WCB + PFA
4	RUBBER RING	SILICA GEL
5	BOLT	ASTM A193 B8
6	O-RING	FPM
7	WEAR-RESISTANT INNER WASHER	PTFE
8	WEAR-RESISTANT OUTER WASHER	PTFE
9	GUIDE SLEEVE	BRASS
10	DISC SPRING	AISI 301
11	DISC SPRING	AISI 301
12	WASHER	ASTM A240 304
13	BOLT	ASTM A193 B8
14	O-RING	FPM
15	WEAR-RESISTANT INNER WASHER	PTFE
16	WEAR-RESISTANT OUTER WASHER	PTFE
17	GUIDE SLEEVE	BRASS
18	DISC SPRING	SPRING STEEL
19	DISC SPRING	ASTM A240 304
20	TUBE	ASTM A276 304
21	GUIDE RING	POM + 20% CARBON FIBRE
22	SLIP RING	PTFE
23	NUT	ASTM A194 B8
24	GLAND	ASTM A216 WCB
25	BOLT	ASTM A193 B8
26	HANDLE	AISI 301
27	HANDLE PLATE	AISI 301
28	WORM GEAR	COMPOSITE PARTS
29	HAND WHEEL	CARBON STEEL

For 2" to 6" valves



NOTE: Material list as example, other materials and liners available. TFV lined ball check valves are available as per the needs of applications in additional sizes and other than standard materials. Please contact us.

For 8" to 12" valves



## Dimensions (inches)

SIZE	DN (in)	L (in)	D1 (in)	Z (in)	d (in)	D2 (in)	H (in)	H1 (in)	H2 (in)	H3 (in)	ISO 5211	Z2 (in)	d2 (in)	D3 (in)	N (in)	W (in)	A (in)	B (in)	C (in)	D (in)	E (in)	Torque (lb*in)	WEIGHT <sup>(1)</sup> (lb)	CV (USgpm)
2"	1.969	1.693	4.744	4	0.748	3.701	4.331	2.677	0.433	0.394	1.969	4	0.315	1.969	0.433	8.386	/	/	/	/	/	265.487	5.071	91.0
2-1/2"	2.559	1.811	5.492	4	0.748	4.331	4.921	3.071	0.433	0.394	1.969	4	0.315	2.480	0.433	*	/	/	/	/	/	398.230	7.716	203.0
3"	3.150	1.811	6.004	4	0.748	5.000	5.177	3.504	0.551	0.472	2.756	4	0.374	3.071	0.551	10.000	/	/	/	/	/	557.522	8.818	355.0
4"	3.937	2.047	7.500	8	0.748	5.906	5.925	4.154	0.551	0.472	2.756	4	0.374	3.858	0.551	10.000	/	/	/	/	/	1026.549	11.464	641.0
5"	4.921	2.205	8.504	8	0.866	7.008	6.693	4.764	0.669	0.472	2.756	4	0.374	4.843	0.669	*	/	/	/	/	/	1150.442	17.637	1034.0
6"	5.906	2.205	9.508	8	0.866	7.992	7.402	5.236	0.669	0.551	4.016	4	0.472	5.827	0.669	14.724	/	/	/	/	/	1637.168	20.944	1707.0
8"	7.874	2.362	11.752	8	0.866	10.157	9.252	6.929	0.866	0.551	4.016	4	0.472	7.795	0.866	/	9.843	2.756	8.465	4.724	2.756	2699.115	30.865	3021.0
10"	9.843	2.677	14.252	12	0.984	12.205	11.024	8.228	1.063	0.630	4.921	4	0.551	9.764	0.866	/	11.811	3.346	8.268	6.299	3.150	4070.796	52.911	3607.0
12"	11.811	3.071	17.008	12	0.984	14.370	11.811	9.252	1.142	0.630	4.921	4	0.551	11.732	1.063	/	*	*	*	*	*	5575.221	68.343	5287.0

**NOTES:**

- \* Please consult with manufacturer.
- (1) The weight is without lever (gear operator).



## How to Order

SERIES NUMBER	MATERIAL				ENDS	CLASS	SIZE	OPERATION						
	BODY	BALL	BODY LINER	SEAT										
9LS	2	WCB	2	WCB	P	PTFE	P	PTFE	W Wafer	0 ANSI 150#	02	2"	L	Manual Lever
	3	CF8M	3	316SS	F	FEP	F	FEP			02.5	2 1/2"	H	Handwheel
	4	CF8	4	304SS	A	PFA	A	PFA			03	3"	G	Gear Operator
	6	DI / CI			E	ETFE					04	4"	B	Bare Shaft
					K	KYNAR					05	5"	P	Pneumatic Actuator
											06	6"	E	Electric Actuator
											08	8"	X	Stem Extension w/Lever
											10	10"		
								12	12"					

### Example:

Water Type Lined Butterfly Valve, Body DI + PFA Liner, Disc 304 + PFA Liner, FEP Seat, Water ANSI Class 150# Size 6" with Lever.

**9LS64AFW006L**

