SVI
SUN VALVE INC.

Concentric Resilient-Seated
Butterfly Valve

Series BFV10

Pressure Rating: Class125/150
PN6~PN25

Size: 2" ~ 48"

Working Temp: -40°C ~ 180°C

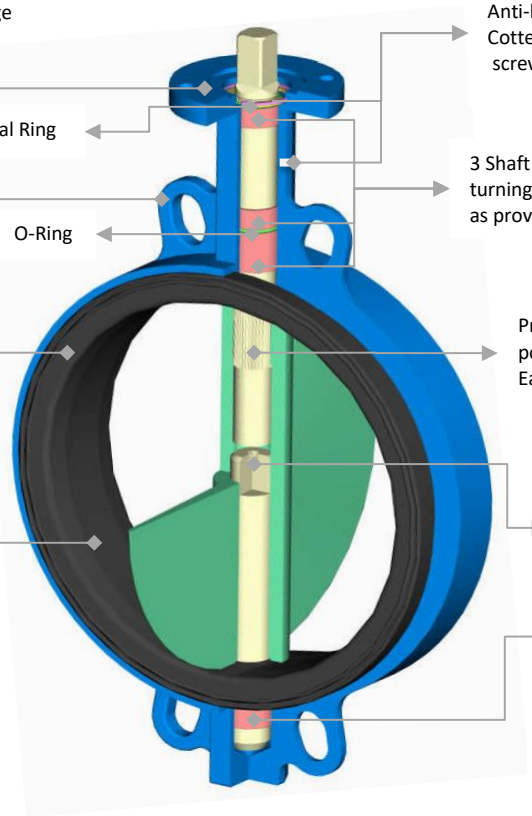
Applicable Medium: Potable Water, Fresh Water, Sewage, Sea Water, Air, Vapor, Food, Medicine, Oil, Gas, Natural Gas, Acids, Pulp&Paper, Beer . etc.

Industry: HVAC/ATC, Chemical/Petrochemical, Food & Beverage industry, Power and Utilities, Pulp and Paper, etc.

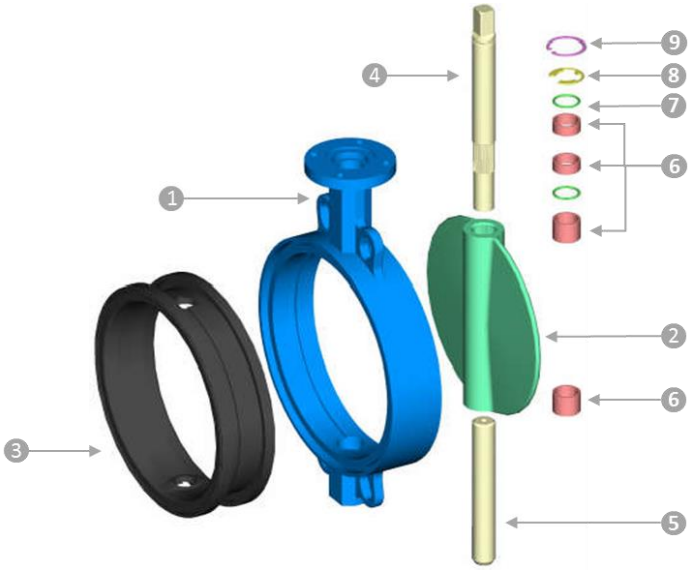
Cast Iron/Steel Butterfly Valve
Pressure Range: Class125/150
Size: 2” thru 48”

Design and Manufacturing Standards
Valve Design: API609
Flange Dimensions: ASME B16.1/B16.5/ASME B16.47
Face to Face Dimensions: API609/ASME B16.1
Tested In Accordance with: API 598/AWWA C504

Design Features



Construction

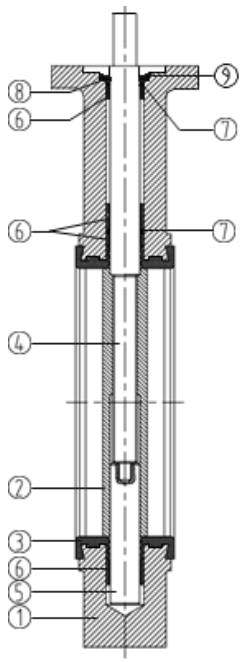


1. Body
2. Disc
3. Elastomer seat
4. Upper shaft
5. Lower shaft
6. Bearing
7. O-ring
8. Split pin
9. Retaining ring

Application

Pressure	Class 125		Class 150
Size	2”-12“	14”-48“	2"-12“
Max Pressure	2.0MPa	1.6MPa	2.0MPa

Materials specification



NO.	Description	Material List
1	BODY	Ductile Iron GGG40
		Cast Iron (ASTM A126 Class B)
		ASTM A216 WCB
		ASTM A351 CF8M
		Bronze
2	DISC	Ductile Iron GGG40 + ENP
		Ductile Iron nylon coated
		ASTM A351 CF8M
		Aluminum-Bronze ASTM B148 C95800
3	SEAT	EPDM
		NBR
		PTFE
		FPM(Viton)
4	UPPER SHAFT	SS410
		SS316
		SS304
		ASTM A431(High Strength Stainless Steel)
		Aluminum Bronze
5	LOWER SHAFT	SS410
		SS316
		SS304
		ASTM A431(High Strength Stainless Steel)
		Aluminum Bronze
6	BUSHING	PTFE
7	O-RING	NBR
		PTFE
		FPM(Viton)
8	SPLIT PIN	Carbon Steel
		Stainless Steel
9	RETAINER RING	Carbon Steel
		Stainless Steel
Working Temperature: -40℃ - 210 ℃		

How to order

	OP	CT		BODY	DISC	SEAT	SHAFT	
BFV10	- 1	1	-	1	1	1	2	- SIZE

Butterfly Valve, Concentric Design, CLASS 125/150

OPERATOR
1. Lever handle; 2. Gear Operator; 3. Electric; 4. Pneumatic

CONNECTION TYPE
1. Wafer; 2 Full Lug; 3. Wafer Double Flanged
4. Double flanged; 5. Wafer type single flanged

BODY MATERAL
1. Cast Iron; 2. Ductile Iron; 3. WCB;
4. SS304; 5. SS316

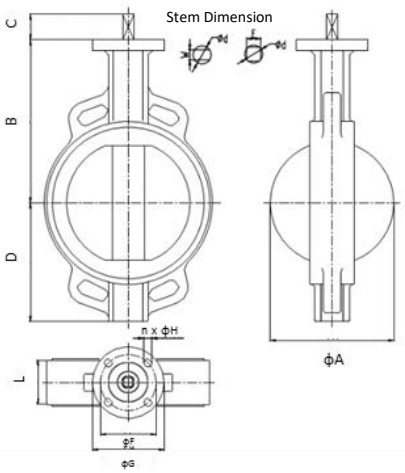
DISC MATERAL
1.Ductile Iron Nickle plated;
2. Ductile Iron nylon coated;
3. Ductile Iron EPDM coated;
4. Ductile Iron PTFE coated
5. Aluminum Bronze
6.CF8 (SS304); 7. CF8M (SS316)

SEAT MATERIAL
1. NBR; 2. EPDM; 3. PTFE; 4. VITTON

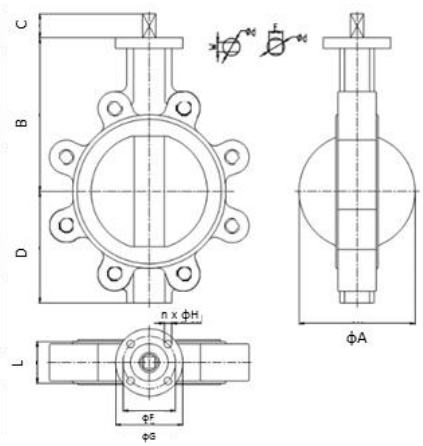
SHAFT MATERIAL
1. SS410; 2. SS304; 3. SS316; 4. ASTM A431

SIZE
2
2.5
3
4
5
6
8
10
12
14
16
18
20
24
26
28
30
32
36
40
42
44
48

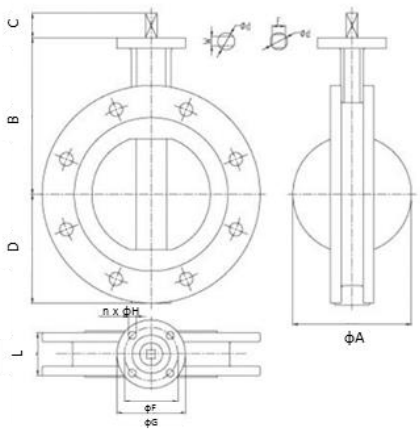
Dimensions



SEMI-LUG WAFER SHORT TYPE
SIZE 2" - 12"



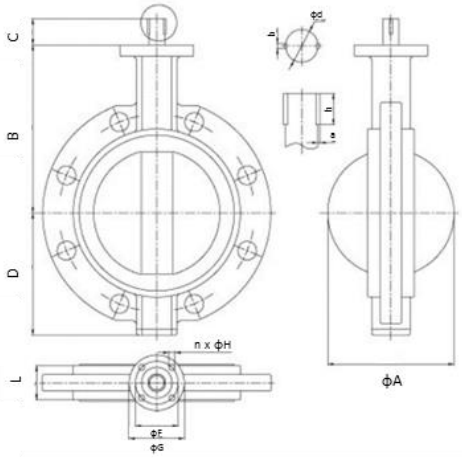
FULL LUG WAFER SHORT TYPE
SIZE 2" - 24"



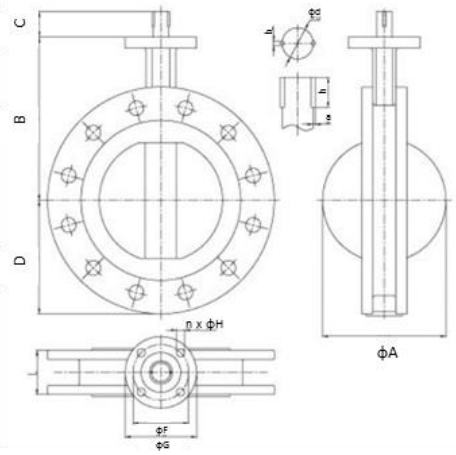
WAFER SHORT TYPE WITH FLANGE
SIZE 12" - 24"

Dimension(mm) for Size 2"-24"

NPS	A	B	C	D	E	F	G	n × ϕH	L	W	d
2"	52.6	142	19	73.5	11	70	90	4×ϕ10	43	10	12.6
2½"	64.4	155	19	80.5	11	70	90	4×ϕ10	46	10	12.6
3"	78.9	161	19	93	11	70	90	4×ϕ10	46	10	12.6
4"	104.1	180	19	110	11	70	90	4×ϕ10	52	12	15.77
5"	123.4	193	19	122.8	14	70	90	4×ϕ10	56	14	18.92
6"	155.96	205	19	139	14	70	90	4×ϕ10	56	14	18.92
8"	202.87	250	25	175	17	102	125	4×ϕ12	60	17	22.1
10"	250.88	282	40	208	22	102	125	4×ϕ12	68	22	28.45
12"	301.9	326	40	244	22	102	125	4×ϕ12	78	24	31.6
14"	334.01	358	40	270	22	102	125	4×ϕ12	78	24	31.6
16"	390.1	400	52	316	22	140	175	4×ϕ18	102	27	33.15
18"	441.1	422	52	341	27	140	175	4×ϕ18	114	27	38
20"	492.3	480	64	373	27	140	175	4×ϕ18	127	32	41.15
24"	593	562	70	459	36	165	210	4×ϕ23	154	36	50.65



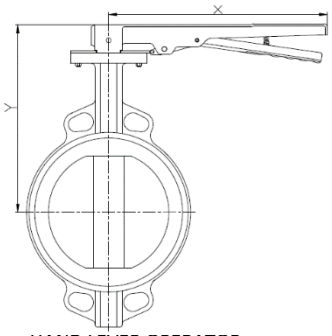
WAFER SHORT TYPE WITH SINGLE FLANGE
SIZE 28" - 48"



WAFER SHORT TYPE WITH DOUBLE FLANGE
SIZE 28" - 48"

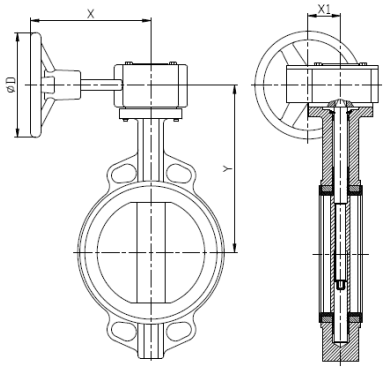
Dimension(mm) for Size 28”-48”												
NPS	A	B	C	D	F	G	n × ϕH	L	a	b	d	h
28”	694.9	624	82	528	254	300	8×ϕ18	165	5	16	55	63
30”	744.3	660	82	560	254	300	8×ϕ18	165	5	16	55	63
32”	795.6	672	82	600	254	300	8×ϕ18	190	5	16	55	63
36”	864	720	130	659	254	300	8×ϕ18	203	6	20	75	100
40”	964	800	130	726	254	300	8×ϕ18	216	7	22	85	125
48”	1160	951	150	868	298	380	8×ϕ23	254	8	28	105	140

OPERATOR DIMENSIONS



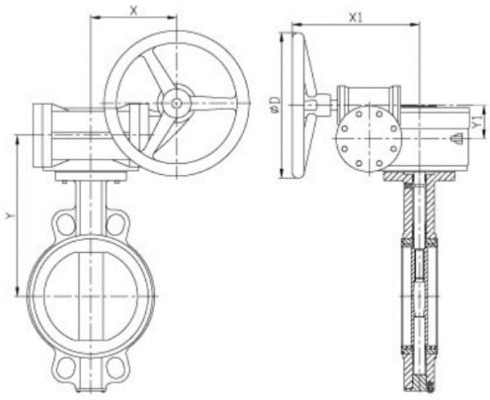
HAND LEVER OPERATOR

Dimension(mm) of Lever Operator									
NPS	2"	2½"	3"	4"	5"	6"	8"	10"	12"
X	165	165	165	165	249	249	354.5	354.5	354.5
Y	172	185	191	210	223	235	300	332	376



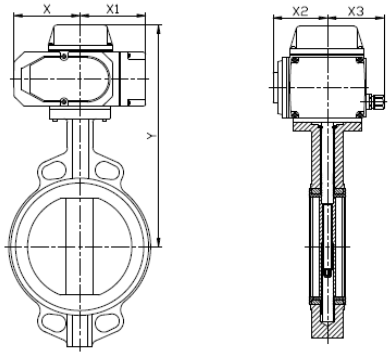
GEAR OPERATOR for Size 2”-12”

Dimension(mm) of Gear Operator 2” ~ 12”									
NPS	2"	2½"	3"	4"	5"	6"	8"	10"	12"
X	140	140	140	140	140	140	222	222	222
X1	45	45	45	45	45	45	76	76	76
Y	170	183	189	208	221	233	284	316	360
D	133	133	133	133	133	133	215	215	215



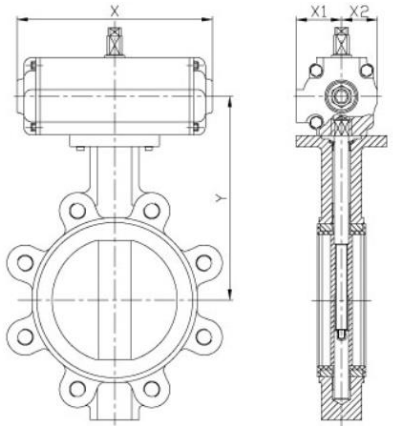
GEAR OPERATOR for Size 16”-48”

Dimension(mm) of Gear Operator 16” ~ 48”										
NPS	16"	18"	20"	24"	28"	30"	32"	36"	40"	48”
D	300	300	300	386	386	386	386	386	386	386
X	186	186	186	243	243	243	243	278	278	320
X1	270	270	270	350	350	350	350	450	450	490
Y	466	488	546	640	702	738	750	855	935	1076
Y1	66	66	66	95	95	95	95	126	126	126



WITH ELECTRIC ACTUATOR

Dimension(mm) of Electric Actuator									
NPS	2"	2½"	3"	4"	5"	6"	8"	10"	12"
X	98	98	98	98	98	98	121	121	121
X1	98	98	98	98	98	98	134	134	134
X2	71	71	71	71	71	71	95	95	95
X3	74	74	74	74	74	74	87	87	87
Y	268	281	287	306	319	331	398	430	474



WITH PNEUMATIC ACTUATOR

Dimension(mm) of Pneumatic Actuator													
NPS	2”	2½”	3”	4”	5”	6”	8”	10”	12”	16”	18”	20”	24”
X	196	196	196	234	234	250	297	345	345	572	572	572	672
X1	45	45	45	45	45	58.5	68	73	73	109	109	109	145
X2	35.5	35.5	35.5	35.5	35.5	47.5	55	64	64	109	109	109	145
Y	250	263	269	288	301	338	396	449	493	649	691	748	923

Note: The dimensions shown above can be changed without notice. Please check with SVI sales when purchase.

TORQUE VALUES

Valve Seating Torque unit: NM (Standard Disc, Max Differential Pressure)				
NPS	6bar	10bar	13bar	20bar
2	14	14	15	15
2½	14	14	17	20
3	19	19	22	40
4	33	33	34	50
5	46	46	48	70
6	72	72	73	95
8	145	145	155	220
10	230	230	236	320
12	320	320	330	421
14	560	570	790	
16	770	850	1180	
18	1210	1220	1520	
20	1420	1430	1930	
24	2820	2830	3670	
28	4860	4970		
30	5230	5280		
32	6500	6600		
36	7620	8010		
40	8540	10810		
44	9760	15110		
48	13700	21200		

Note:

All torque data shown on chart are for “wet” (water and other non-lubricating media) on-off service. For “dry” service (non-lubricating, dry gas media), to multiply values by 1.15. For “lubed” service (clean, non-abrasive media), to multiply values by 0.85. When sizing actuators for single valve applications, to multiply the above torques by 1.25. Under certain conditions, hydrodynamic torque could meet or exceed seating and unseating torques. When designing valve systems, please consider about hydrodynamic torques which would be values of above data multiplying 0.85.

KV VALUES

KV-VALUE-VALVE RATED FLOW COEFFICIENT (M^3 /H AT 1 BAR△P)

Size	Opening Angle								
NPS	10°	20°	30°	40°	50°	60°	70°	80°	90°
2		0.9	6.3	14	29	53	94	116	118
2½		2.5	11	28	50	92	168	245	258
3		5.3	22	50	90	157	282	460	510
4		9.8	40	90	158	268	485	823	926
5		16	70	150	263	430	766	1350	1500
6		84	113	230	395	640	1096	1850	2170
8		112	212	405	678	1084	1785	3045	3842
10	20	155	309	590	989	1590	2716	4765	5014
12	48	283	384	745	1253	2058	3742	6820	9230
14	125	314	660	1185	2005	3222	5196	9300	10790
16	162	413	863	1545	2622	4200	6772	12140	14081
18	198	512	1070	1915	3249	5216	8416	15150	17842
20	248	630	1325	2365	4015	6440	10400	18624	22030
24	356	905	1899	3408	5778	9273	14985	26758	31780
28	485	1236	2580	4640	7862	12628	20358	36482	43200
30	556	1586	3420	7280	12300	18624	29372	40050	49780
32	630	2012	5080	9700	15000	22205	34508	47580	55000

Note:

90° = fully open. Flow depressurization ratio is 1LBF/IN^2 .
CV of UK gpm = KV X 0.963
CV of US gpm = KV X 1.156

SEAT SELECTION GUIDE

Type of Material	Material Standard	Temperature Range	Applicable Medium
Nitrile Rubber	NBR	0°C ~ 90°C	Aliphatic Hydrocarbons (Fuel, Low Aromatic Oil, Gas), Sea Water, Compressed Air, Powder, Granular, Gas Supply
Ethylene-Propylene Rubber	EPDM	-20°C ~ 110°C	Water (Hot Water, Cold Water, Sea Water, Ozone Water, Swimming Pool Water, Industrial Water, Etc.), Weak Acid, Weak Salt Solutions, Alcohol, Ketone, Sour Gas, Sugar Juice
Special Ethylene-Propylene Rubber	Special EPDM	-10°C ~ 70°C	Potable Water, Foodstuff, Unchlorinated Drinking Water
Special Ethylene-Propylene Rubber	Special EPDM	-30°C ~ 120°C	HVAC, Chilled Water, Foodstuff, Sugar Juice
Viton	Viton	0°C ~ 200°C	Aliphatic, Aromatics, Halogen, Hydrocarbons, Hot Gas, Hot Water, Steam, Inorganic Acid, Alkali
Special Viton	Special Viton	0°C ~ 130°C	Concentrated Acid
PTFE	PTFE	10°C ~ 155°C	Acid, Alkali, Oil (Not Applicable for Low temperature Medium)