

# SDV 400 Series

*Resilient Hard Seated Butterfly Valves*



**SUNG DO VALVE CO., LTD.**

## ● 2" ~ 12" Lug Type Valve Construction and Features

### **Mounting Flange**

Designed for easy adaptation of: lever handles, worm gears, pneumatic and electric actuators.

### **Body**

One-piece design assures high strength. Wafer and lug style design accommodates ANSI, DIN, BS and JIS flanges. Long neck accommodates insulation.

### **Resilient Hard Seat**

By bonding the elastomer rubber to a phenolic backing ring complete support and stability of the seat is assured. Non-collapsible, stretch resistant, blow out proof, field replaceable

### **Seat O-Ring**

Two molded o-ring designed as one body with seat ensures tight sealing with no gaskets when connected with flange.

### **Secondary Sealing**

Accommodates tight sealing function both inside and outside of the valve, being applicable under the vacuum condition

### **Stem**

Two-piece of stem's design facilitates easy assembly and field maintenance without the use of special tools. Two-piece of systems makes disc feature being streamlined, minimizing fluid friction resistance and pressure loss.

### **Stem Bushing**

Low friction, lubricated bushing, absorbs side thrust load and reduces operating torque.

### **Flange Bolt Hole**

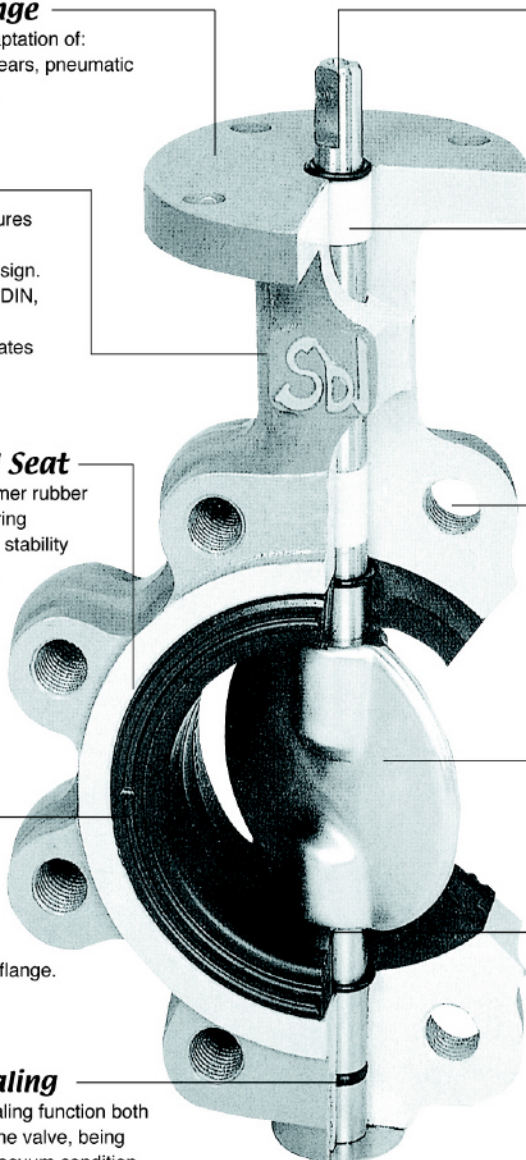
Design accommodates to connect standard flanges of ANSI, DIN, BS and JIS

### **Disc**

The disc is precision finished to close tolerance on the O.D. and the flats. Seating edge is a polished half ball for torque control.

### **Primary Sealing**

Tight contacting between disc flat hub and seat flat hub ensures excellent sealing at way disc positions. These "mate" with seat flats to give a highly efficient seal: prevents leakage into stem areas.



# Butterfly Valve

Series 400

## ● 2" ~ 12" Wafer Type Valve Construction and Features

### **Mounting Flange**

Designed for easy adaptation of:  
worm gears, pneumatic and electric actuators.

### **Body**

One-piece design assures high strength.  
Wafer and lug style design accommodates ANSI, DIN, BS and JIS flanges.  
Long neck accommodates insulation.

### **Resilient Hard Seat**

By bonding the elastomer rubber to a phenolic backing ring complete support and stability of the seat is assured.  
Non-collapsible, stretch resistant, blow out proof, field replaceable

### **Seat O-Ring**

Two molded o-ring designed as one body with seat ensures tight sealing with no gaskets when connected with flange.

### **Secondary Sealing**

Accommodates tight sealing function both inside and outside of the valve, being applicable under the vacuum condition.

### **One-Piece Stem**

Blow-out proof, ensures dependability and positive disc position.

### **Flange Bolt Hole**

Design accommodates to connect standard flanges of ANSI, DIN, BS and JIS

### **Taper Pin**

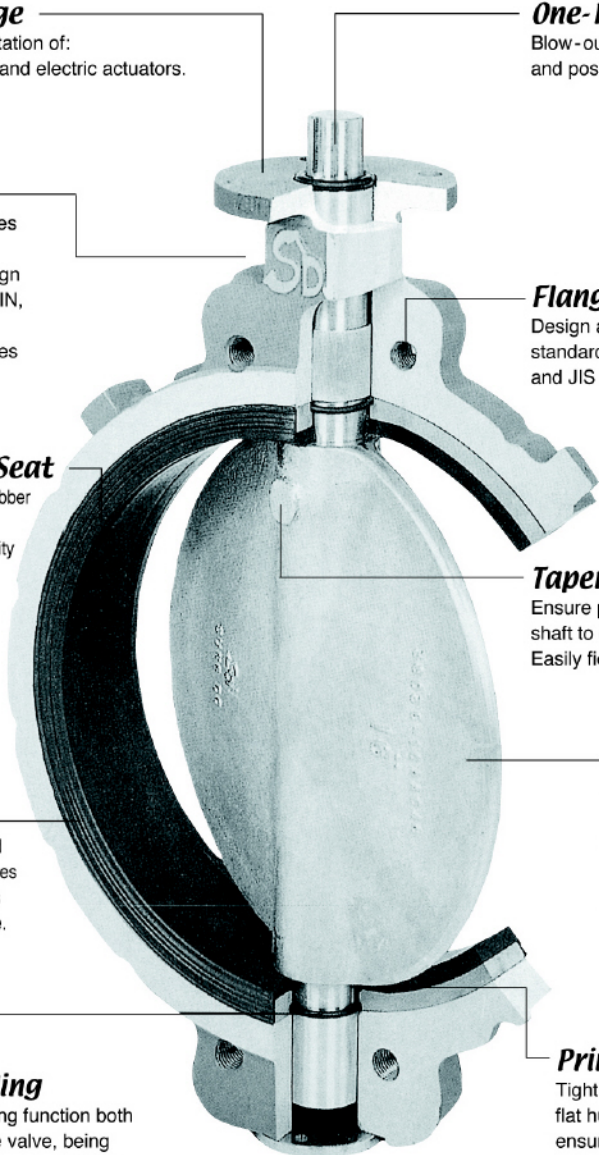
Ensure positive, vibration proof, shaft to disc connection.  
Easily field replaceable.

### **Disc**

The disc is precision finished to close tolerance on the O.D. and the flats.  
Seating edge is a polished half ball for torque control.

### **Primary Sealing**

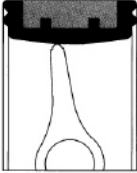
Tight contacting between disc flat hub and seat flat hub ensures excellent sealing at way disc positions  
These "mate" with seat flats to give a highly efficient seal: prevents leakage into stem areas.



## Construction

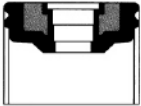
### 400 Series Seat Construction

**1**



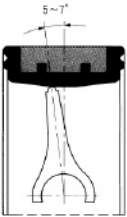
The new design of seat and disc used in the construction of SDV 400 Series valve ensures compression between the precision profile disc and seat. The rolling action of the disc coupled with the stability of the seat eliminates any tearing or bunching thus minimizing seat damage.

**2**




By bonding the elastomer material to the hard phenolic backing ring SDV 400 Series design ensures complete support and increased stability to the seat. This guarantees positive control against distortion, particularly in the stem seal area, eliminating all risks of leakage.

**3**



As the SDV 400 Series seat design only has a small volume of elastomer swelling is minimal, the torque reduced and longer life assured.

## Replaceable Seat



Where resilient seats are required for “bubble-tight” shut-off, center line provides the advantage of a soft seat which is vulcanized to a hard phenolic backing. Thus the non-collapsible seat does not require to bond the valve body. Replacement of the seat is simple, slide it out of the body and slip in a new one. A range of elastomers is available, which allows the valve to be adapted to a wide range of services. Moulded flats in the resilient seat (where stem passes through) compress against the Matching flats on the disc that provide the primary stem seal, eliminating leakage into the stem area. Back up is by built in secondary seal O rings.

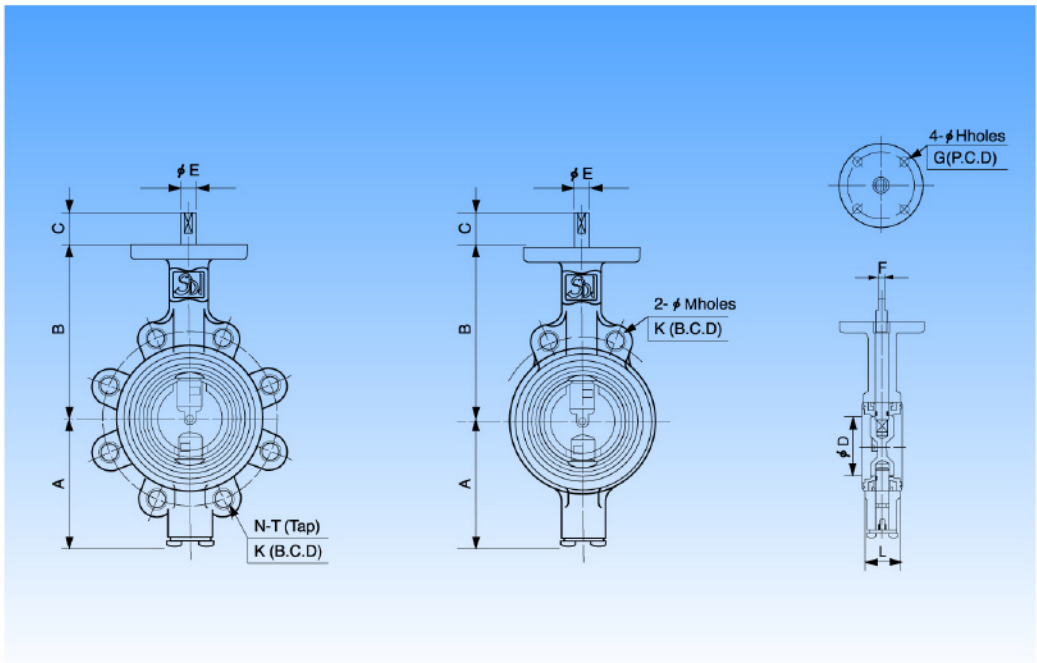
**Hard phenolic backing eliminates seat distortion**  
**Non-collapsible blow-out proof seat**  
**Bi-directional line flow**  
**Seat serves as its own flange gasket** Dry-back seat for maximum corrosion resistance  
**Flow media are isolated from valve body, shaft and external parts**  
**Accommodates schedule 40 and rubber lined pipe-no spacers required** (For schedule 80 consult sales office).  
**Different elastomers to suit service conditions**  
**Temperature range -51°...to +205°...**  
**Seat design permits valve to be bolted between slip-on or weld-neck flanges**

# Butterfly Valve

## Series 400

### ● Dimension

#### 2"~12" Valve Dimension



Unit:mm

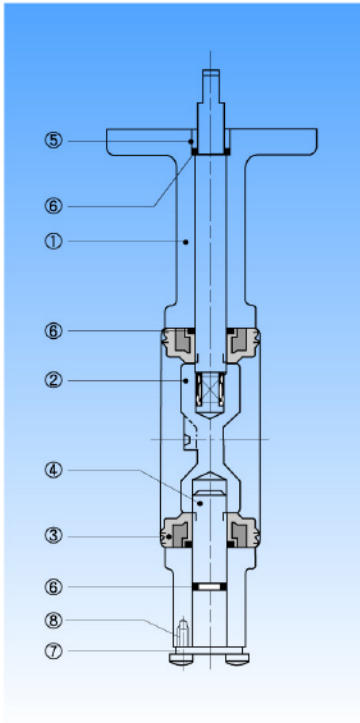
Size		A	B	C	D	G	H	L	ANSI#150				ANSI#300				JIS 10K				JIS 16K, 20K			
inch	mm								K	M	N	T	K	M	N	T	K	M	N	T	K	M	N	T
2"	50A	83	139	28	55	82.5	11	43	121	19	4	5/8"	127	19	8	5/8"	120	19	4	M16	120	19	8	M16
2.5"	65A	89	152	28	67	82.5	11	46	140	19	4	5/8"	149	22	8	3/4"	140	19	4	M16	140	19	8	M16
3"	80A	101	158	29	79	2.5	11	46	152	19	4	5/8"	168	22	8	3/4"	150	19	8	M16	160	23	8	M20
4"	100A	114	177	29	105	82.5	11	52	191	19	8	5/8"	200	22	8	3/4"	175	19	8	M16	185	23	8	M20
5"	125A	138	191	29	130	82.5	11	55	216	23	8	3/4"	235	22	8	3/4"	210	23	8	M20	225	25	8	M22
6"	150A	156	203	29	152	82.5	11	55	241	23	8	3/4"	270	22	12	3/4"	240	23	8	M20	260	25	12	M22
8"	200A	188	238	38	203	127	14	60	299	23	8	3/4"	330	25	12	7/8"	290	23	12	M20	305	25	12	M22
10"	250A	221	268	38	254	127	14	68	362	25	12	7/8"	387	28	16	1"	355	25	12	M22	380	27	12	M24
12"	300A	260	307	38	305	127	14	78	432	25	12	7/8"	451	32	16	1 1/8"	400	25	16	M22	430	27	16	M24

## ● Valve Specification and Material

### • Valve Specification

- Available In Size
  - 2" (50A) to 12" (300A)
- Pressure Rating
  - Max. 20kg·f/cm<sup>2</sup>(285psi)
- Body Style
  - Wafer and Lug style
- Body Flange Drilling
  - ANSI B16.5 CLASS 150, 300
  - JIS B 2210 10K, 16K, 20K
  - ISO 7502 PN10, 16, 20
  - BS 4504 PN10, 16, 20
- Valve Face to Face
  - ANSI B16. 10
  - API 609
  - ISO 5752
  - MSS SP-67
  - BS 5155
- Valve Operator
  - 2" (50A) to 6" (150A) : Level Handle
  - 2" (50A) to 12" (300A) : Worm Gear
  - 2" (50A) to 12" (300A) : Pneumatic and Electric Actuator
- Seat Temperature
  - NBR(BUNA-N) : -23°C~ 82°C (-10°F ~ 180°F)
  - EPDM : -46°C~ 121°C (-50°F ~ 250°F)
  - NEOPRENE : -29°C~ 99°C (-20°F ~ 210°F)
  - HYPALON : -29°C~ 135°C (-20°F ~ 210°F)
  - VITON : -23°C~ 205°C (-10°F ~ 400°F)
- Valve Seat and Shell Test
  - API 598 / ANSI B16.34
  - ANSI B16.104 FCI-70(Control Valve Only)
- Application
  - Power plant, oil field, pulp and paper, hydrocarbon processing, chemical and petrochemical processing and other general industries.

### • Bill of Materials



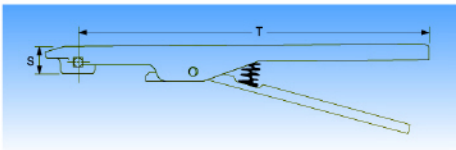
No	Item	Material	Specification	
			JIS	ASTM
1	Body	316 Stainless Steel	SCS14	A351-CF8M
		304 Stainless Steel	SCS13	A351-CF8
		Carbon Steel	SCPH2	A216-WCB
		Ductile Iron	FCD45	A536
		Cast Iron	FC20	A126-CL.B
2	Disc	316 Stainless Steel	SCS14	A351-CF8M
		304 Stainless Steel	SCS13	A351-CF8
		Aluminum Bronze	ALBC2	B148
		Bronze	BC6	B584
		Ductile Iron	FCD45+Ni Coat.	A536-Ni Coat.
3	Seat	VITON		
		HYPALON		
		NEOPRENE		
		BUNA-N(NBR)		
		EPDM		
4	Stem	630 Stainless Steel	SUS 630	A564-630
		316 Stainless Steel	SUS 316	A276-316
		304 Stainless Steel	SUS 304	A276-304
		410 Stainless Steel	SUS 410	A276-410
5	Bushing	PTFE or BRASS		
6	O-Ring	BUNA -N(NBR)		
7	Bottom Cover	CARBON STEEL		
8	Bolt	CARBON STEEL		

## ● CV-Value

Size		GPM@1 PSI@Various Disc Angles								
inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
2"	50	0.21	6.17	14.2	26.3	44.5	70.6	105	135	159
2.5"	65	0.3	9.06	20.9	38.6	85.3	140	158	215	266
3"	80	0.45	13.6	31.4	57.9	98	156	240	342	457
4"	100	0.8	23.9	55.1	102	173	274	423	625	880
5"	125	1.24	37.2	85.6	158	268	426	658	970	1320
6"	150	1.8	53.3	123	227	384	610	941	1420	2020
8"	200	3.14	94.3	217	401	679	1080	1660	2500	3540
10"	250	4.8	145	334	617	1040	1660	2560	3830	5580
12"	300	6.97	209	481	888	1500	2390	3690	5620	8080
14"	350	9.2	276	636	1175	1980	3160	4870	7280	10600
16"	400	12.3	369	848	1432	2280	4420	6830	10400	14950
18"	450	16.7	502	1153	2128	3585	5720	8810	13180	19180
20"	500	20.5	615	1414	2610	4407	7022	10842	16510	23730
24"	600	33	986	2003	3698	6232	9946	15357	22974	33450

## ● Manual Operator

### • Lever Handle

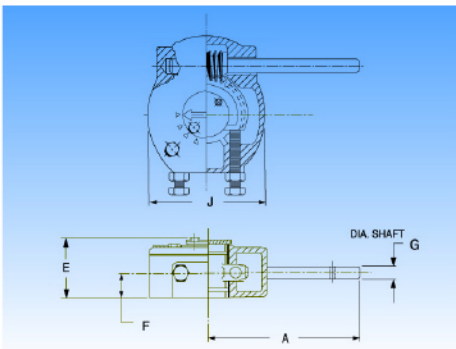


DIMENSIONS

Unit: mm

DIM.	VALVE SIZES	
	2", 2 1/2", 3"	4", 5", 6"
T	241	279
S	21	21

### • Worm Gear



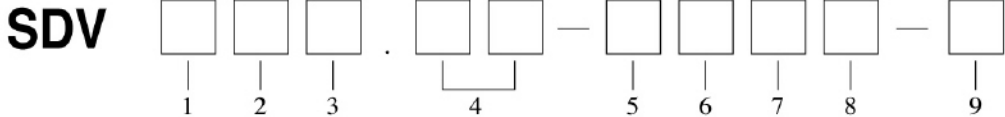
DIMENSIONS

Unit: mm

Valve Size	Ratio	Hand Wheel DIA	E	J	A	F	G
2"~6"	24:1	152	62	103	160	30	16
8"~12"	36:1	256	75	154	245	36	19
14"~16"	48:1	304	90	168	229	41	19
18"~20"	65:1	387	104	228	305	52	25
24"~28"	78:1	463	156	235	350	68	25

# SUNG-DO VALVE

## MODEL SELECTION TABLE



1. Valve Type	Code
Soft Seat	3
Hard Seat	4

2. Body Type	Code
Wafer	1
Lug	2
Other	S

3. Rating	Code
JIS 10K	0
JIS 16K	1
JIS 20K	2
ANSI 150LB	A
ANSI 250LB	B
ANSI 300LB	C
PN 10	P
PN 16	Q
Other	S

4. Valve Size	Code
2"	02
2.5"	2H
3"	03
4"	04
⋮	⋮
40"	40

5. Body Mat'l	Code
Cast Iron(A126)	1
Ductile Iron(A536)	2
Carbon Steel(WCB)	3
304 SS (CF8)	4
316 SS (CF8M)	5
WC 6	6
AL-Bronze (B148)	7
LCB	8
Special	S

6. Disc Mat'l	Code
304 SS (CF8)	1
316 SS (CF8M)	2
AL-Bronze (B148)	3
Ductile Iron	4
+Ni Plate(A536+Ni)	
Duplex	5
Hastelloy C	6
Alloy 20	7
Other	S

7. Seat Mat'l	Code
EPDM	1
NBR	2
Viton	3
Special	S

8. Stem Mat'l	Code
SUS 410	1
Duplex	2
SUS 304	3
SUS 316	4
SUS 630(17-4PH)	5
Hastelloy C	6
Monel	7
Other	S

9. Actuator	Code
Bare Shaft	O
Lever	L
Gear	G
Other	S



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