



**SEJIN VALVE**

RESILIENT SEATED

FOR **C** SERIES BUTTERFLY VALVES



*BUTTERFLY VALVES*  
*CHECK VALVES*  
*SLUICE VALVES*  
*FLAP VALVES*  
*CONE VALVES*  
*EXPANSION JOINT*  
*SLUICE GATE*



Company thinking first of human being and nature

[www.sjvalve.co.kr](http://www.sjvalve.co.kr)

Company thinking first of human being and nature



We are indeed pleased to take this opportunity to introduce SEJIN VALVE INDUSTRIAL CO.,LTD. and it's business activities to you. We are Proud of our clients recognition of its quality and high performance, as reflected in our valves going widely used in service water and in power plant and the others plants as well.

We believe that we owe our current achievement to our client's continuing encouragement and guidance, which we are deeply grateful. We believe firmly that 'SEJIN' has achieved customer's satisfaction by upholding the company policy such as the sincerity, the reliability and the faithfulness, through the continuing research and development activities.

In the future as well, customer's satisfaction will be the utmost virtue, which 'SEJIN' is going to pursue.

Taking this opportunity, we at 'SEJIN' pledge our devotion to our client and wish for mutual prosperity and happiness.

Yours very truly.

president *IL-GYUN KIM*



## CONTENTS

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History -----	4
Butterfly Valve For C Series Products -----	6
Advantage of Butterfly Valves -----	7
Series CRB -----	8
Series CHB -----	14
Series CTB -----	16
Series LO (Lever Operator) -----	18
Series GO (Gear Operator) -----	19
Operation Methods -----	20
Technical Data -----	21 - 29
Technological Know-How of SEJIN -----	31





# SEJIN VALVE

## FOR C-SERIES BUTTERFLY VALVES

### HISTORY

- 1999. 07 세진밸브 설립
  - 1999. 09 세진밸브공업(주)로 법인 전환
  - 1999. 11 ISO 9001 인증서 획득 (ABS)
  - 2000. 04 한국밸브공업협동조합 등록
  - 2000. 05 로이드 선급협회 품질검사 실시 (2100Kpa)
  - 2000. 05 한국전력공사 발전설비 제조업체 유자격자 등록 (접형밸브 120"이하 / R-Class)
  - 2000. 09 LNG용 초저온용 버터플라이 개발 (-196°C)
  - 2001. 04 선급검사실시 (ABS, LR, DNV, KR, NK, BV)
  - 2002. 08 ISO 9001 : 2000 인증서 획득 (ABS → KSA로 전환)
  - 2002. 09 KS 표시인증서 획득 (KSB2333 수도용 버터플라이밸브)  
KS 표시인증서 획득 (KSB2334 수도용 닥타일 슬루스밸브)
  - 2003. 01 KS 표시인증서 획득 (KSB2813 웨이퍼형 고무붙이 버터플라이밸브)
  - 2003. 05 한국수력원자력(주) 발전설비 제조업체 유자격자 등록 (접형밸브 120"이하 / 원자력 R-Class)
  - 2003. 07 Lloyd's TYPE 승인 획득
  - 2003. 12 소방안전 (FIRE SAFE) 인증서 획득
- 
- 1999. 07 Established SEJIN VALVE CO.
  - 1999. 09 Converted to Corporation, SEJIN VALVE, CO, LTD.
  - 1999. 10 Obtained Licence of Trading Business (The First Grade)
  - 1999. 11 Acquired ISO 9001 Certificate from ABS
  - 2000. 04 Subscription of a Member of Korea Valve Industry Corporation
  - 2000. 05 Performed Lloyd's Shipping Inspection of Butterfly Valve up to 1,800mm
  - 2000. 05 Registered as One of Supplying Vendors for Korea Electric Power Corporation (KEPCO), R-Class / 120" and smaller.
  - 2000. 09 Developed Valve for Ultralow Temperature for LNG (-196°C)
  - 2001. 04 Inspected by Classification Societies (ABS, NK, DNV, BV, KR, LR)
  - 2002. 08 Revised ISO Certificate in 2000 Year Edition (KSA)
  - 2002. 09 Acquired Certificate of KS (KSB 2333, 2334)
  - 2003. 01 Acquired Certificate of KS (KSB 2813)
  - 2003. 05 Registered as One of Supplying Vendors for Korea Hydro & Nuclear Power Corporation, NUCLEAR R-Class / 120" and smaller.
  - 2003. 07 Type Approval (Lloyd's)
  - 2003. 11 FIRE TEST CERTIFICATE (VALOSI INTERNATIONAL)

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Series CRB-30



with Worm Gear (DN 1050)

Series CHB-10



with Lever (DN 150)

Series CRB-20



with Worm Gear (DN 700)

# BUTTERFLY VALVES FOR C SERIES PRODUCTS

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products.  
And for quality improvement.

## Series CRB-30

with Worm Gear (DN 1050)

(Model No:CRB3E-42GO)



## Series CRB-30

with Worm Gear (DN 150)

(Model No:CRB3E-06GO)



## Series CRB-30

with Motor Actuator (DN 1000)

(Model No:CRB3E-40MO)



## Series CRB-10

with Hydraulic Actuator (DN 200)

(Model No:CRB1E-08HO)



## Series CHB-10

with Pneumatic Actuator (DN 100)

(Model No:CHB1A-06PO)



## Series CRB-10

with Motor Actuator (DN 100)

(Model No:CRB1A-04MO)



## Series CRB-20

with Worm Gear (DN 700)

(Model No:CRB2E-28GO)



## Series CHB-10

with Lever (DN 100)

(Model No:CHB1E-04LO)



## Series CTB-10

with Worm Gear (DN 600)

(Model No:CTB1E-24GO)





# ◀ ADVANTAGES OF BUTTERFLY VALVES WITH RESILIENT REPLACEABLE SEAT

## ECONOMICAL

SEJIN resilient seated butterfly valves are priced lower than rated plug, globe, ball, and gate valves comparatively. Lighter and smaller, butterfly valves are less expensive to install and maintain. SEJIN totally encasing seat design allows for use of economical body and shaft materials.

## REDUCED WEIGHT AND SPACE REQUIREMENTS

SEJIN butterfly valves are significantly lighter and more compact than all other types of valves.

Comparatively special retted plug, globe, ball, and gate valves weight to at least 4 times the amount of butterfly valves and be required approximately 5 times the amount of space between pipe flanges.

Butterfly valves do not require expensive installation equipment foundations, supports or expansion joints, nor do they require as many people to install and maintain.

## HIGH PERFORMANCE

Butterfly valves fully open or close in 90° travel. Therefore, they can operate at least three to five times faster than standard gate valves. The SEJIN Series CRB valve provides a thin disc profile for a much higher Cv and greater pressure recovery, resulting in lower pressure drops and a more energy-efficient valve. The thin disc profile ensures maximum performance and increased service life hygienic, corrosion or erosion applications.

## COMPLETE SEALING PROTECTION

SEJIN'S unique primary and secondary seat provides complete isolation of flowing media from the EPDM or Buna-N(Nitile) resilient seat protects all metal surfaces from the flowing media, thus extending the valves service life far longer than many metal seated valves.

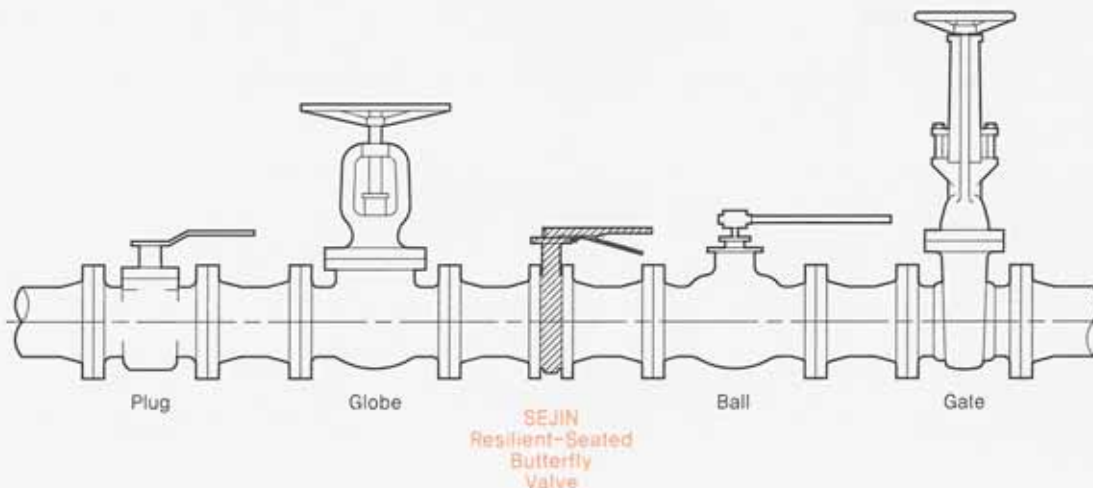
## COMPATIBILITY

A major design advantage of SEJIN valve product lines international compatibility with world standard flanges. All resilient seats for SEJIN valves are completely interchangeable.

Due to a modular concept of design, all SEJIN levers, manual gear operators, pneumatic and electric actuators are directly mounted to SEJIN valves.

## INSTALLATION / MAINTENANCE

SEJIN butterfly valve's simple design greatly facilitates installation. Butterfly valves can be operated in almost any position for the most efficient pipe layout. The SEJIN valve is specifically designed to seal with slip-on or weld-neck flanges, and no flange gaskets are required. Many SEJIN features minimize wear and maintenance requirements. No routine lubrication or field adjustment is needed.



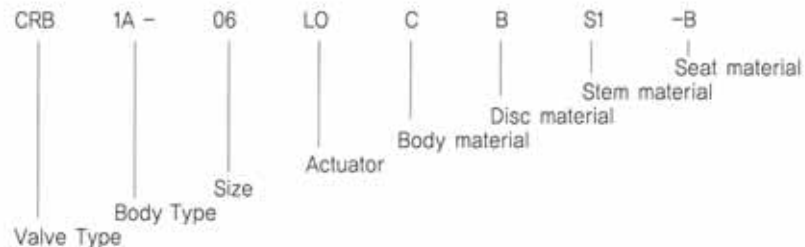
# BUTTERFLY VALVES WITH RESILIENT REPLACEABLE SEAT-SERIES CRB ▶

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products.  
And for quality improvement.

Realized according to API standard 609-MSS SP 67, ISO 5752, DIN 3202 K1, BS 5155.

## NUMBERING SYSTEM

The Following Example Describes a water Body Butterfly Valve with Bronze Disc, 304 stainless steel stem, BUNA-N seat and 10 Position LOCK lever Handle



## LEGEND

Body Type	Body	Disc	STEM	SEAT	ACTUATOR
1A-Wafer	C-Cast Iron	B-Aluminum Bronze	S1-410 S.S	B-Buna-n	LO-10 Position lever
2A-Lug	D-Ductile iron	S-18-8, 316 S.S	S2-304 S.S	E-EPDM	GO-Gear operator
3A-Flange	S-18-8, 316 S.S	R-Coated EPDM, Viton, Buna-N etc.	S3-316 S.S	V-Viton	MO-Motor operator
	B-Aluminum Bronze		S4-17-4 PH	N-Neoprene	PO-Pneumatic operator
			S5-MONEL	S-Silicone	HO-Hydraulic operator

## MAIN APPLICATIONS

- Potable water distribution
- Power plant
- Industrial and waste water
- Cooling and heating water (conditioning)
- Water transmission system
- Shipyards
- Fire fighting system
- Petrochemical industry
- Gas ...

Butterfly valves shall be CRB Series 10, 20, 30. The liner and seat shall be a one-piece, dovetail design, which fully encapsulates the body. Molded in the liner shall be double "O" ring seals to allow installation with all style ANSI, JIS, BSI, DIN flanges. No flange gaskets are required for installation. The shaft will be one piece stainless steel with self adjusting double "U" cup shaft seal. Valve shaft to be blow out proof with a corrosion resistant shaft retainer ring. No lubrication will be required. Field adjustment will not be required.

## Product Line Guide

Standard Features Common To All CRB Series Valves

- Body and shaft isolated from flow
- Bi-directional bubble tight shut-off
- One-piece shaft standard stainless steel
- Extended neck for insulation
- Secondary shaft seal and bushing
- Stainless steel nameplate

### Series CRB-1A Wafer Type

Sizes : 1½"–48" (40mm–1200mm)  
(with flange locating holes for ease of installation)

Rating : differential pressure in the closed position to 150 psi (1000kPa)

#### Applications:

- On-off or throttling on most services
- General all purposes

### Series CRB-2A Lug Type

Sizes : 1½"–48" (40mm–1200mm)  
(lug tapping to ANSI standards)

Rating : differential pressure in the closed position to 150psi (1000kPa)

Applications : On-off or throttling on most services  
When removal or downstream piping is necessary



### Series CRB-3A \*Double Flanged Type

Sizes : 1½"–48" (40mm–1200mm)

Rating : differential pressure in the closed position to 150psi (1000kPa)

\*Available upon request.

#### Applications:

- On-off or throttling on most services
- When removal or downstream piping is necessary

Handle/Series : LO

#### Features :

- Stamped steel multi-position lever lock handle
- Quarter-turn operation
- Bolt on throttle plate with disc position indicator
- Size range: 1½"–12" (40mm–300mm)

Gear Actuator/Series : GO

#### Features:

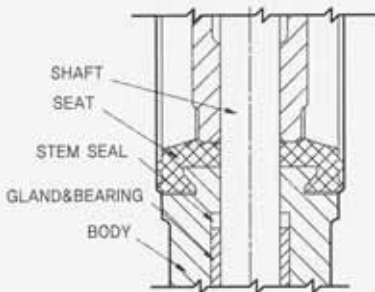
- Self locking worm gear
- High strength combined with low weight
- Built in adjustable travel stops
- Cast iron housings
- Complete weatherproof and lubricated for life
- Visual position indicator



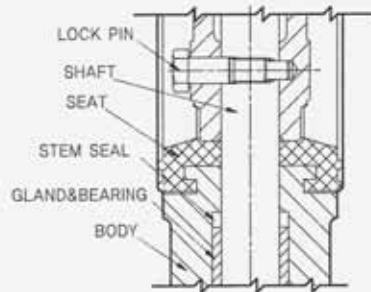


◀ THESE ARE THE FEATURES ON WHICH SEJIN BUTTERFLY VALVE IS SELECTED ALL AROUND WORLD

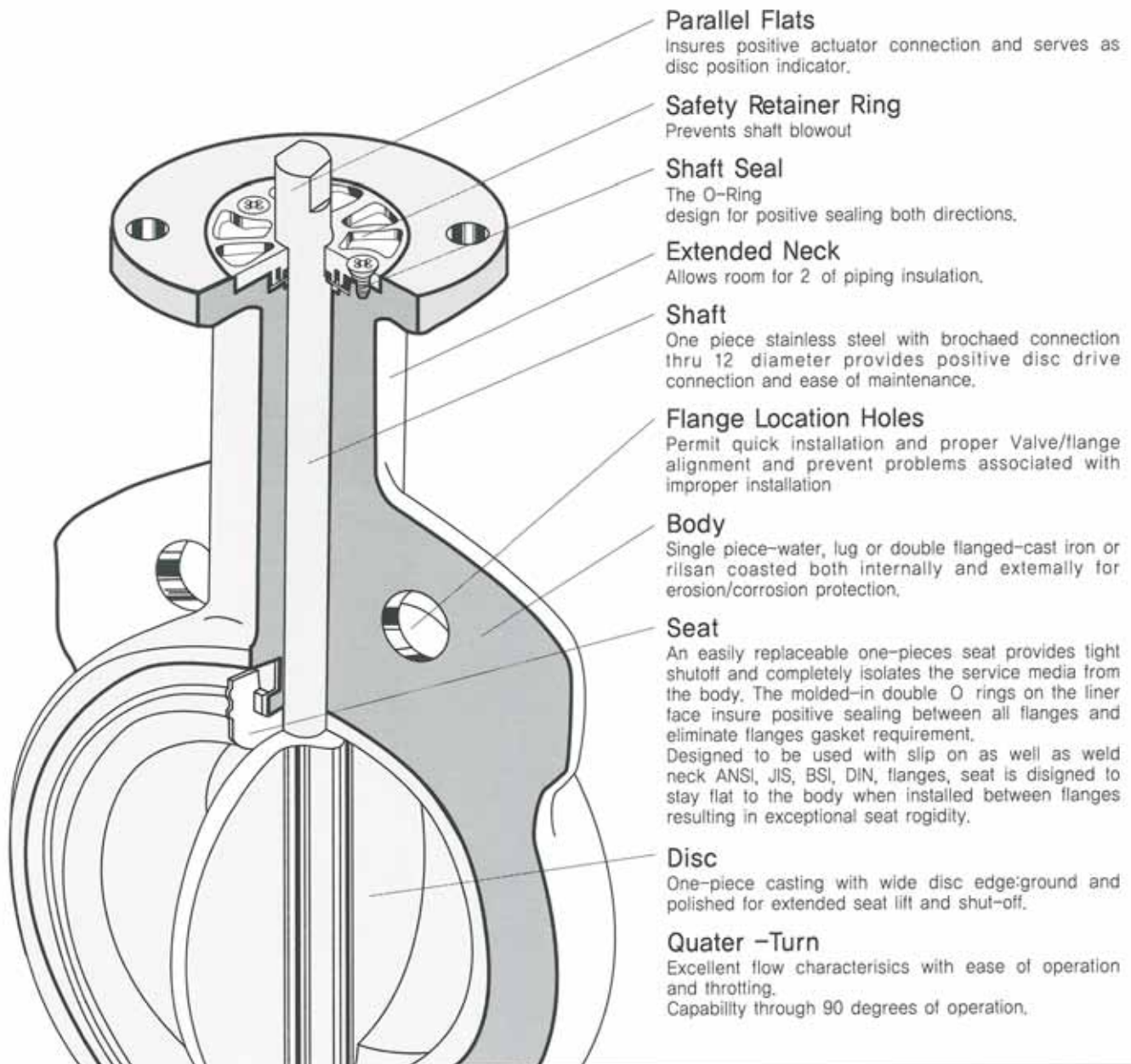
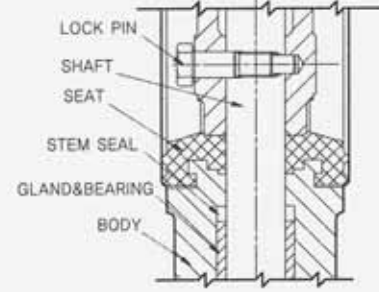
SEAT TYPE FOR 1/2"–12"



SEAT TYPE FOR 14"–22"



SEAT TYPE FOR 24"–48"



**Parallel Flats**

Insures positive actuator connection and serves as disc position indicator.

**Safety Retainer Ring**

Prevents shaft blowout

**Shaft Seal**

The O-Ring design for positive sealing both directions.

**Extended Neck**

Allows room for 2" of piping insulation.

**Shaft**

One piece stainless steel with broached connection thru 12" diameter provides positive disc drive connection and ease of maintenance.

**Flange Location Holes**

Permit quick installation and proper Valve/flange alignment and prevent problems associated with improper installation

**Body**

Single piece—water, lug or double flanged—cast iron or rislan coated both internally and externally for erosion/corrosion protection.

**Seat**

An easily replaceable one-pieces seat provides tight shutoff and completely isolates the service media from the body. The molded-in double O rings on the liner face insure positive sealing between all flanges and eliminate flanges gasket requirement. Designed to be used with slip on as well as weld neck ANSI, JIS, BSI, DIN, flanges, seat is designed to stay flat to the body when installed between flanges resulting in exceptional seat rigidity.

**Disc**

One-piece casting with wide disc edge:ground and polished for extended seat lift and shut-off.

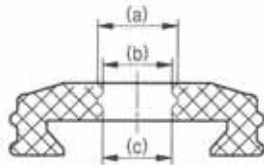
**Quarter -Turn**

Excellent flow characteristics with ease of operation and throttling. Capability through 90 degrees of operation.

# BUTTERFLY VALVE COMPONENT PARTS LISTS-SERIES CRB ▶

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## Primary Secondary Seal

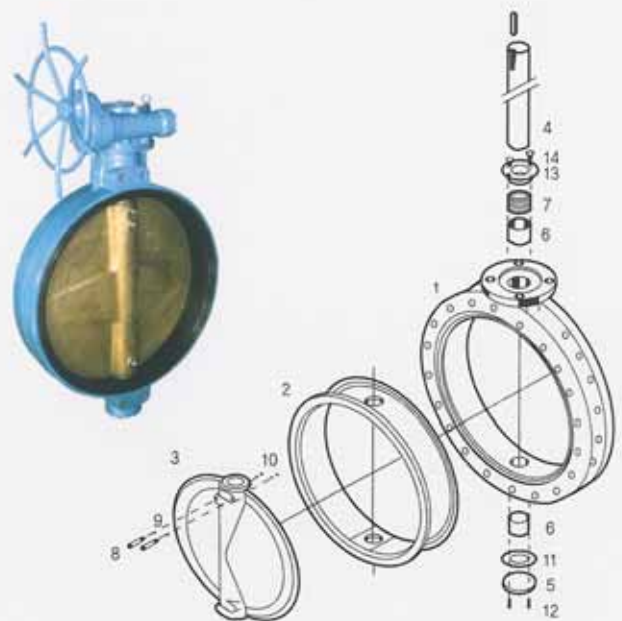


Primary and secondary seal shaft seals provide excellent protection from stem and pipeline leakage.

\*Primary Liner-Shaft Seal is a compression fit between the disc hub and the liner

\*\* Secondary Seal is achieved by an interference fit created by molding the liners shaft holed(a) smaller than the shaft diameter and enhanced by the unique molded in channel(b) and O ring (C). Secondary seal utilizes a 2-point-contact design.

This results in a triple stem seal without the need for an extra separate o-ring.



## Parts and Materials

Part And Materials For 1½ (40A)~12 (300)

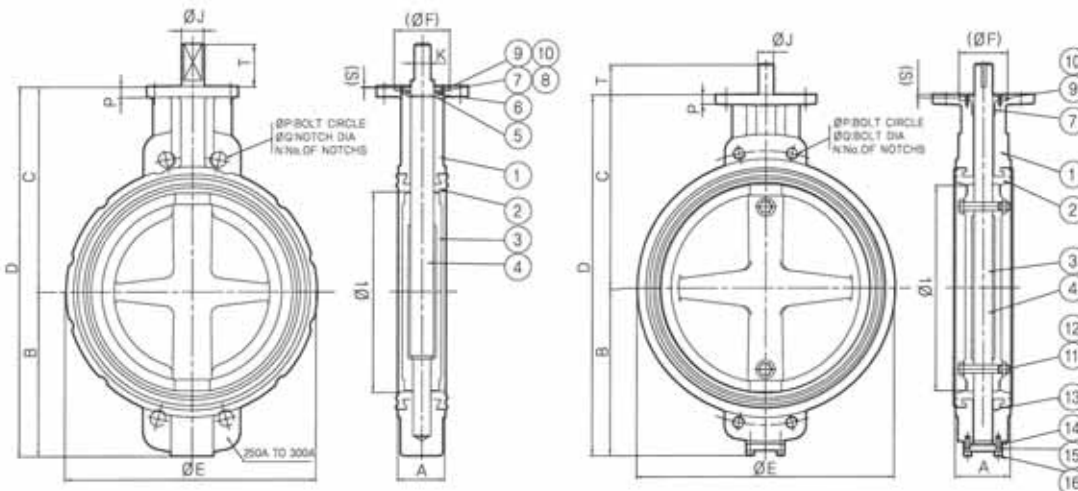
No.	PART NAME	MATERIALS
1	BODY	CAST IRON/DUCTILE IRON CAST STEEL/STAINLESS STEEL
2	SEAT	EPDM/NBR/VITON
3	DISC	ALUMINUM BRONZE STAINLESS STEEL ALLOY STEEL (DUPLEX)
4	STEM	STAINLESS STEEL (304,316,410,17-4PH)
5	C-CLIP	STEEL
6	STEM RETAINER	STEEL
7	O-RING	NBR
8	O-RING	NBR
9	SEAL GLAND	NYLON
10	SCREW	STEEL

Part And Materials For 14 (350A)~48" (1200A)

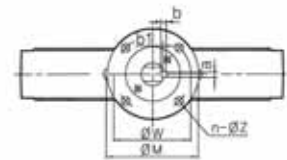
No.	PART NAME	MATERIALS
1	BODY	CAST IRON/DUCTILE IRON
2	SEAT	EPDM/NBR/VITON ALUMINUM BRONZE
3	DISC	STAINLESS STEEL ALLOY STEEL (DUPLEX)
4	STEM	ALLOY STEEL (304, 316, 410, 17-4 PH)
5	BOTTOM PLATE	SAME MATERIAL AS BODY
6	BEARING	SELF-LUBRICATION
7	PARKING	NBR
8	LOCK PIN	17-4 PH STAINLESS STEEL
9	O-RING	NBR
10	NUT	STAINLESS STEEL
11	GASKET	NBR
12	SCREW	STEEL
13	PACKING GLAND	STEEL
14	SCREW	STEEL
15	KEY	STEEL



# ◀ BUTTERFLY VALVE SERIES CRB-WAFER TYPE (CRB-10)



No.	PART NAME	QTY
1	BODY	1
2	SEAT	1
3	DISC	1
4	STEM	1
5	C-CLIP	1
6	STEM RETAINER	1
7	PACKING	1
8	O-RING	1
9	SEAL GLAND	1
10	SCREW	2
11	LOCK PIN	-
12	GASKET	-
13	BUSH	2
14	GASKET	1
15	END COVER	1
16	BOLT	4



## Valve Dimensions

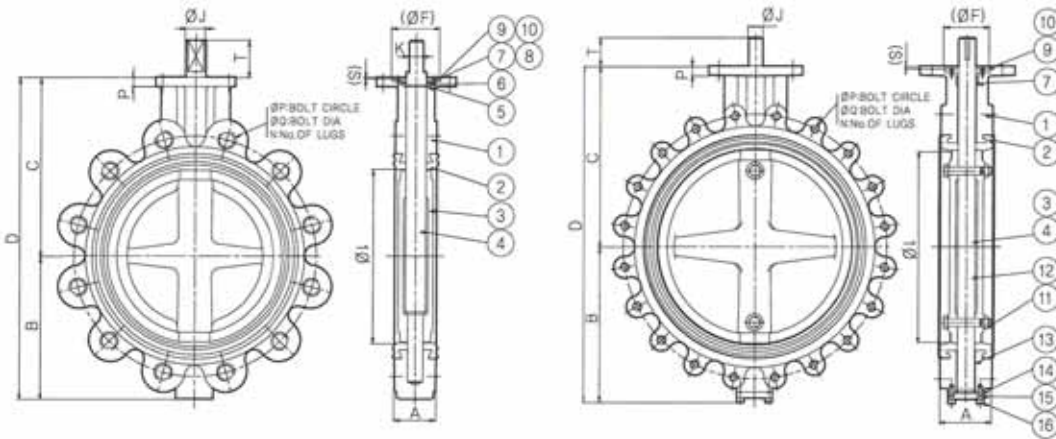
Valve size inch	mm	$\varnothing i$	FtoF A	B	C	D	$\varnothing E$	P	Stem				$\varnothing J$	Type	Top Flange to ISO 5211					Weight kg	
									T	key(axb)	b1	a(K)			$\varnothing M$	$\varnothing(F)$	(S)	$\varnothing(W)$	n		$\varnothing Z$
1½	40	40	33	50	100	150	80	10	32	6×6	3.5	6(9.5)	14	F07	90	55	3	70	4	9.5	2.8
2	50	50	43	55	120	175	92	10	32	6×6	3.5	6(9.5)	14	F07	90	55	3	70	4	9.5	3.2
2½	65	64	46	65	130	195	106	11	32	6×6	3.5	6(9.5)	14	F07	90	55	3	70	4	9.5	4.1
3	80	76	46	75	140	215	122	11	32	6×6	3.5	6(9.5)	16	F07	90	55	3	70	4	9.5	4.5
4	100	102	52	95	160	255	150	12	32	6×6	3.5	6(12.5)	16	F07	90	55	3	70	4	9.5	5.8
5	125	127	56	115	180	295	178	12	32	6×6	3.5	6(12.5)	19	F07	90	55	3	70	4	9.5	7.8
6	150	146	56	130	205	335	206	12	40	8×7	3.5	6(15.0)	19	F07	90	55	3	70	4	9.5	9.5
8	200	197	60	160	230	390	258	14	40	8×7	4.0	8(15.0)	2.2	F10	125	72	3	102	4	12	17.0
10	250	246	68	195	270	465	324	14	40	8×7	4.0	8(20.0)	2.2	F10	125	72	3	102	4	12	24.0
12	300	292	78	220	300	520	370	16	40	8×7	4.0	8(20.0)	2.8	F10	125	72	3	102	4	12	40.0

Valve size inch	mm	$\varnothing i$	FtoF A	B	C	D	$\varnothing E$	P	Stem				$\varnothing J$	Type	Top Flange to ISO 5211					Weight kg	
									T	key(axb)	b1	a(K)			$\varnothing M$	$\varnothing(F)$	(S)	$\varnothing(W)$	n		$\varnothing Z$
14	350	330	78	250	340	590	410	16	40	8×7	4.0	8	32	F10	125	72	3	102	4	12	55
18	400	380	102	300	370	670	418	20	50	12×8	5.0	12	38	F14	175	100	4	140	4	18	84
18	450	430	114	320	400	720	528	20	64	12×8	5.0	12	38	F14	175	130	4	140	4	18	97
20	500	482	127	360	440	800	578	20	64	14×9	5.5	14	45	F16	210	130	5	165	4	22	142
22	550	528	142	420	460	880	636	22	64	16×10	6.0	16	55	F16	210	130	5	165	4	22	175
24	600	575	154	450	500	950	680	22	100	16×10	6.0	16	55	F16	210	130	5	165	4	22	195
26	650	622	170	480	530	1010	750	24	100	16×10	6.0	16	55	F16	210	130	5	165	4	22	225
28	700	674	170	540	580	1120	828	24	100	18×11	7.0	18	65	F16	210	130	5	165	4	22	268
30	750	724	190	570	610	1180	880	28	100	20×12	7.5	20	70	F16	210	130	5	165	4	22	310
32	800	822	200	600	630	1230	925	28	120	22×14	9.0	22	80	F25	300	200	6	254	8	18	360
34	850	822	200	635	660	1296	970	28	120	22×14	9.0	22	80	F25	300	200	6	254	8	18	410
36	900	876	203	660	690	1350	1008	32	120	22×14	9.0	22	85	F25	300	200	6	254	8	18	480
38	950	925	203	670	725	1395	1075	32	120	22×14	9.0	22	85	F25	300	200	6	254	8	18	570
40	1000	975	216	700	750	1450	1110	32	120	28×16	10.0	28	95	F25	300	200	6	254	8	18	610
42	1050	1020	216	730	795	1525	1175	32	150	28×16	10.0	28	100	F25	300	200	6	254	8	18	820
44	1100	1075	254	750	815	1565	1210	32	150	28×16	10.0	28	110	F25	300	200	6	254	8	18	880
48	1200	1175	254	800	870	1670	1310	32	150	28×16	10.0	28	120	F30	350	230	6	298	8	22	920

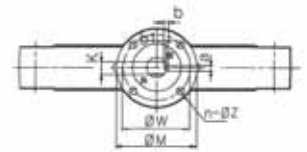


# BUTTERFLY VALVE SERIES CRB-LUG TYPE (CRB-20) ▶

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products.  
And for quality improvement.



No.	PART NAME	Q'TY
1	BODY	1
2	SEAT	1
3	DISC	1
4	STEM	1
5	C-CLIP	1
6	STEM RETAINER	1
7	PACKING	1
8	O-RING	1
9	SEAL GLAND	1
10	SCREW	2
11	LOCK PIN	-
12	GASKET	-
13	BUSH	2
14	GASKET	1
15	END COVER	1
16	BOLT	4

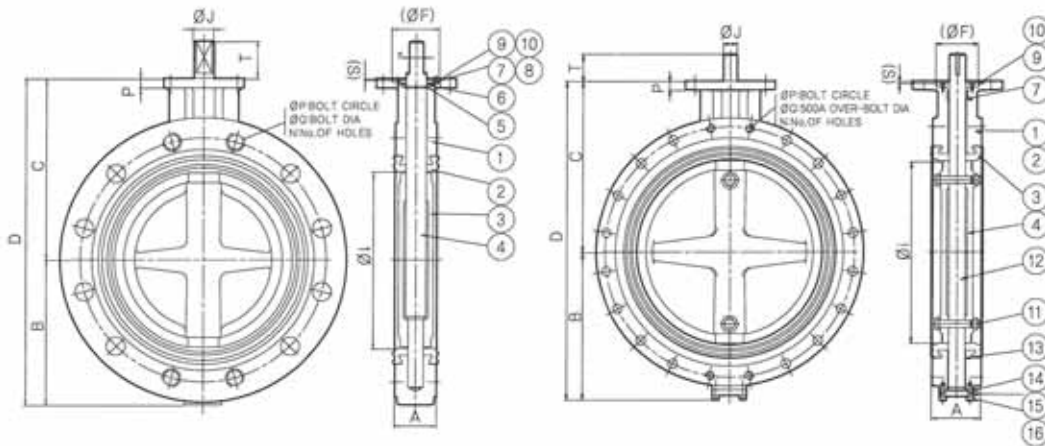


## Valve Dimensions

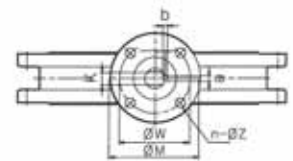
Valve size inch	mm	Øi	FtoF A	B	C	D	ØE	P	Stem				Top Flange to ISO 5211							Weight kg	
									T	key(axb)	b1	a(K)	ØJ	Type	ØM	Ø(F)	(S)	Ø(W)	n		ØZ
1½	40	40	33	50	100	150	80	10	32	6×6	3.5	6(9.5)	14	F07	90	55	3	70	4	9.5	3.2
2	50	50	43	55	120	175	92	10	32	6×6	3.5	6(9.5)	14	F07	90	55	3	70	4	9.5	3.9
2½	65	64	46	65	130	195	106	11	32	6×6	3.5	6(9.5)	14	F07	90	55	3	70	4	9.5	4.8
3	80	76	46	75	140	215	122	11	32	6×6	3.5	6(9.5)	16	F07	90	55	3	70	4	9.5	5.5
4	100	102	52	95	160	255	150	12	32	6×6	3.5	6(12.5)	18	F07	90	55	3	70	4	9.5	8.2
5	125	127	56	115	180	295	178	12	32	6×6	3.5	6(12.5)	19	F07	90	55	3	70	4	9.5	9.5
6	150	146	56	130	205	335	206	12	40	8×7	3.5	6(15.0)	19	F07	90	55	3	70	4	9.5	12.5
8	200	197	60	160	230	390	258	14	40	8×7	4.0	8(15.0)	22	F10	125	72	3	102	4	12	19.5
10	250	246	68	195	270	465	324	14	40	8×7	4.0	8(20.0)	22	F10	125	72	3	102	4	12	28.0
12	300	292	78	220	300	520	370	16	40	8×7	4.0	8(20.0)	28	F10	125	72	3	102	4	12	50.0

Valve size inch	mm	Øi	FtoF A	B	C	D	ØE	P	Stem				Top Flange to ISO 5211							Weight kg	
									T	key(axb)	b1	a(K)	ØJ	Type	ØM	Ø(F)	(S)	Ø(W)	n		ØZ
14	350	330	78	250	340	590	410	16	40	8×7	4.0	8	32	F10	125	72	3	102	4	12	64
18	400	380	102	300	370	670	418	20	50	12×8	5.0	12	38	F14	175	100	4	140	4	18	107
18	450	430	114	320	400	720	528	20	64	12×8	5.0	12	38	F14	175	130	4	140	4	18	115
20	500	482	127	360	440	800	578	20	64	14×9	5.5	14	45	F16	210	130	5	165	4	22	160
22	550	528	142	420	460	880	636	22	64	16×10	6.0	16	55	F16	210	130	5	165	4	22	205
24	600	575	154	450	500	950	680	22	100	16×10	6.0	16	55	F16	210	130	5	165	4	22	270
26	650	622	170	480	530	1010	750	24	100	16×10	6.0	16	55	F16	210	130	5	165	4	22	315
28	700	674	170	540	580	1120	828	24	100	18×11	7.0	18	65	F16	210	130	5	165	4	22	370
30	750	724	190	570	610	1180	880	28	100	20×12	7.5	20	70	F16	210	130	5	165	4	22	430
32	800	822	200	600	630	1230	925	28	120	22×14	9.0	22	80	F25	300	200	6	254	8	18	480
34	850	822	200	635	660	1296	970	28	120	22×14	9.0	22	80	F25	300	200	6	254	8	18	505
36	900	876	203	660	690	1350	1008	32	120	22×14	9.0	22	85	F25	300	200	6	254	8	18	540
38	950	925	203	670	725	1395	1075	32	120	22×14	9.0	22	85	F25	300	200	6	254	8	18	680
40	1000	975	216	700	750	1450	1110	32	120	28×16	10.0	28	95	F25	300	200	6	254	8	18	775
42	1050	1020	216	730	795	1525	1175	32	150	28×16	10.0	28	100	F25	300	200	6	254	8	18	990
44	1100	1075	254	750	815	1565	1210	32	150	28×16	10.0	28	110	F25	300	200	6	254	8	18	1230
48	1200	1175	254	800	870	1670	1310	32	150	28×16	10.0	28	120	F30	350	230	6	298	8	22	1250

# ◀ BUTTERFLY VALVE SERIES CRB-FLANGED TYPE (CRB-30)



No.	PART NAME	Q'TY
1	BODY	1
2	SEAT	1
3	DISC	1
4	STEM	1
5	C-CLIP	1
6	STEM RETAINER	1
7	PACKING	1
8	O-RING	1
9	SEAL GLAND	1
10	SCREW	2
11	LOCK PIN	-
12	GASKET	-
13	BUSH	2
14	GASKET	1
15	END COVER	1
16	BOLT	4



## Valve Dimensions

Valve size inch mm	Øi	FtoF A		B	C	D	ØE	P	Stem				Top Flange to ISO 5211						Weight kg			
		Short	Long						T	key(a x b)	b1	a(K)	ØJ	Type	ØM	Ø(F)	(S)	Ø(W)		n	ØZ	
1½	40	40	33	33	50	100	150	80	10	32	6×6	3.5	6(9.5)	14	F07	90	55	3	70	4	9.5	3.8
2	50	50	43	40	55	120	175	92	10	32	6×6	3.5	6(9.5)	14	F07	90	55	3	70	4	9.5	4.7
2½	65	64	46	40	65	130	195	106	11	32	6×6	3.5	6(9.5)	14	F07	90	55	3	70	4	9.5	5.8
3	80	76	46	60	75	140	215	122	11	32	6×6	3.5	6(9.5)	16	F07	90	55	3	70	4	9.5	6.6
4	100	102	52	60	95	160	255	150	12	32	6×6	3.5	6(12.5)	16	F07	90	55	3	70	4	9.5	10.0
5	125	127	56	100	115	180	295	178	12	32	6×6	3.5	6(12.5)	19	F07	90	55	3	70	4	9.5	11.5
6	150	146	56	100	130	205	335	208	12	40	6×6	3.5	6(15.0)	19	F07	90	55	3	70	4	9.5	15.0
8	200	197	60	100	160	230	390	258	14	40	8×7	4.0	8(15.0)	22	F10	125	72	3	102	4	12	23.0
10	250	246	68	110	195	270	465	324	14	40	8×7	4.0	8(20.0)	22	F10	125	72	3	102	4	12	34.0
12	300	292	78	110	220	300	520	370	16	40	8×7	4.0	8(20.0)	28	F10	125	72	3	102	4	12	60.0

Valve size inch mm	Øi	FtoF A		B	C	D	ØE	P	Stem				Top Flange to ISO 5211						Weight kg			
		Short	Long						T	key(a x b)	b1	a	ØJ	Type	ØM	Ø(F)	(S)	Ø(W)		n	ØZ	
14	350	330	78	120	250	340	590	410	16	40	8×7	4.0	8	32	F10	125	72	3	102	4	12	70
16	400	380	102	130	300	370	670	418	20	50	12×8	5.0	12	38	F14	175	100	4	140	4	18	98
18	450	430	114	150	320	400	720	258	20	64	12×8	5.0	12	38	F14	175	100	4	140	4	18	146
20	500	482	127	160	360	440	800	578	20	64	14×9	5.5	14	45	F16	210	130	5	165	4	22	165
22	550	528	142	160	420	460	880	636	22	64	16×10	6.0	16	55	F16	210	130	5	165	4	22	205
24	600	575	154	170	450	500	950	680	22	100	16×10	6.0	16	55	F16	210	130	5	165	4	22	225
26	650	622	170	170	480	530	1010	750	24	100	16×10	6.0	16	55	F16	210	130	5	165	4	22	270
28	700	674	170	170	540	580	1120	828	24	100	18×11	7.0	18	65	F16	210	130	5	165	4	22	330
30	750	724	190	190	570	610	1180	880	28	100	20×12	7.5	20	70	F16	210	130	5	165	4	22	380
32	800	822	200	200	600	630	1230	925	28	120	22×14	9.0	22	80	F25	300	200	6	254	8	18	450
34	850	822	200	200	635	660	1295	970	28	120	22×14	9.0	22	80	F25	300	200	6	254	8	18	540
36	900	876	203	-	660	690	1350	1008	32	120	22×14	9.0	22	85	F25	300	200	6	254	8	18	620
38	950	925	203	-	670	725	1395	1075	32	120	22×14	9.0	22	85	F25	300	200	6	254	8	18	790
40	1000	975	216	-	700	750	1450	1110	32	120	28×16	10.0	28	95	F25	300	200	6	254	8	18	920
42	1050	1020	216	-	730	795	1525	1175	32	150	28×16	10.0	28	100	F25	300	200	6	254	8	18	1030
44	1100	1075	254	-	750	815	1565	1210	32	150	28×16	10.0	28	110	F25	300	200	6	254	8	18	1250
48	1200	1175	254	-	800	875	1670	1310	32	150	28×16	10.0	28	120	F30	350	230	6	298	8	22	1280



# BUTTERFLY VALVES WITH PHENOLIC BACKED CARTRIDGE RUBBER LINED-SERIES CHB ▶

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products.  
And for quality improvement.

## Applications;

- water transmission system
- Power plant – FGD System
- Shipyards
- Industrial and waste water
- Fire fighting system
- Cooling and heating water
- Oil rigs (offshore)

## Technical Data

Size range	2" (50A)~24" (600A)
Pressure Rating	20Bar (285psi)
Testing	seat(305psi)=full rating×1.1Body(415psi) = full rating× 1.5
Temperature range	-40°C PD + 200°C
Flange drilling	ANSI B16.5(CL150) PN(16,25)JIS B 2201(16K,20K)
Face to face dimension	ISO 5752, API 609, MSS SP-67, DIN 3202 K1, BS 5155
Body style	WAFER, LUG
Top flange mounting	ISO 5211
Actuator	Lever handle, Worm gear, Electric actuator, Pneumatic actuator

## Design features / Lugged type Water type

### Mounting flange

- The mounting flange is designed so that the ease of fitting any actuator to be guaranteed. With adaptor flange to ISO 5211 on request.

### Shaft bushings

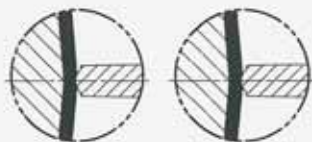
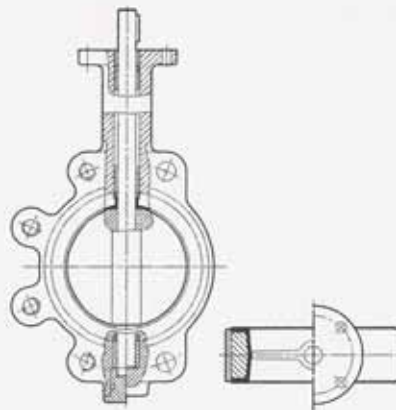
- The shaft is support in 3 positions by maintenance-free PTFE/Teflon or luberized bronze bushings. O-ring sealing provides on additional splash-proof sealing the outside.

### Body neck

- Long neck to accommodate insulation according to heating facilities regulations.

### Flange alignment

- Wafer type valves are provided with 4 alignment lugs by drilled holes to ensure concentricity of the valve and flanges and at the same time facilitate the assembly of valve.



### Disc edge profile

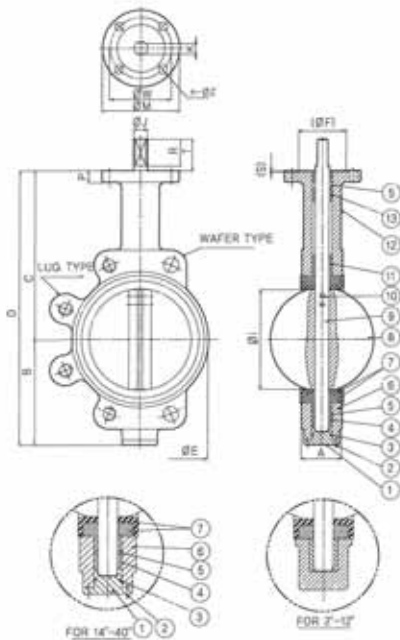
- The advantages of the disc that it has smooth coloured edges and streamlined flow design with obstructions held to a minimum. The smooth precision surface shall be ensured a bubble tight shut-off substantially, lowers the closing torque of the valve, and increase the expected life span of the disc and seat.

### Body liner/seat

- Rugged phenol-resin backing ring eliminates seat distortion even under maximum working pressure. The elastomeric seat is bonded to the phenolic backing ring
- Non-collapsible blow-out proof seat.
- BI-directional line flow
- Seat serve as its own flange gasket. Dry-back seat for maximum corrosion resistance.
- Line fluid is isolated from valve body, shaft, and external parts.
- Different elastomers to suit most service conditions.
- Seat design permit valve to be bolted between weld-neck flanges, special end-of-line type on request.
- Easily field replaceable. End Stem
- Axial bearing for all sizes DN 50-350 : Mono-directional-bearing through one contact point on stem end.
- DN 400-600 : Double acting bearing through a specially machined split bearing.



# ◀ BUTTERFLY VALVE SERIES CHB WAFER/LUG TYPE (CHB-10/20)



## Material List

PART	SPECIFICATION
1. Bottom Plate	Steel ASTM A
2. Bolts	Steel ASTM A 307 Gr.B
3. O-Ring	Nitrile(Buna -N)Rubber
4. BUSHING	Bronze, ASTM B 584 grade C83600
5. O-Ring(2)	Nitrile(Buna -N)Rubber
6. Body	Iron, ASTM A 126 CLB
7. Liner	EPDM Rubber with Phonolic Backing
8. Disc	Nitrile(Buna -N)Rubber with Phonolic Backing
	Al.Bronze, ASTM B 148 Alloy C95400
	Stainless Steel, ASTM A 351 grade CF8
	Duplex Alloys ASTM A 351 grade CD4M Cu
9. Stem	Stainless Steel, ASTM A 276 Type 410
10. Taper Pin(2)	Stainless Steel, ASTM A 276 Type 410
11. Bushing	Bronze, ASTM B 584 grade C83600
12. Nameplate	Aluminum
13. Bushing(2)	Brass, ASTM B 584 grade C83600
14. key	Steel Plat AISI 1045

## Valve Dimensions

Valve size inch	mm	ØI	A	B	C	D	ØE	P	Stem				Top Flange to ISO 5211						Wafer Weight kg	Lug Weight kg	
									T	R	K	ØJ	Type	ØM	Ø(F)	(S)	Ø(W)	n			ØZ
2	50	50	43	55	120	175	92	10	32	30	9.5	14	F07	90	55	3	70	4	9.5	2.7	3.9
2½	65	64	46	65	130	195	106	11	32	30	9.5	14	F07	90	55	3	70	4	9.5	3.2	4.8
3	80	76	46	75	140	215	122	11	32	30	9.5	14	F07	90	55	3	70	4	9.5	3.9	6.5
4	100	102	52	95	160	255	150	12	32	30	13.0	19	F07	90	55	3	70	4	9.5	5.0	7.5
5	125	127	56	115	180	295	178	12	32	30	13.0	19	F07	90	55	3	70	4	9.5	7.3	10.0
6	150	146	56	130	210	278	206	12	40	35	16.0	22	F07	90	55	3	70	4	9.5	7.7	12.0
8	200	197	60	160	245	390	264	14	40	35	16.0	22	F10	125	72	3	102	4	12	13.5	22.7
10	250	246	68	210	278	465	324	14	40	35	22.0	30	F10	125	72	3	102	4	12	21.0	27.0
12	300	292	78	245	323	520	370	16	40	35	22.0	30	F10	125	72	3	102	4	12	34.0	47.0
14	350	330	78	250	340	590	410	16	40	-	-	30	F10	125	72	3	102	4	12	46.0	65.0
16	400	380	102	300	370	670	468	20	50	-	-	38	F14	175	100	4	140	4	18	61.0	94.0
18	450	430	114	320	400	720	528	20	64	-	-	38	F14	175	100	4	140	4	18	78.0	117.0
20	500	482	127	360	440	800	578	20	64	-	-	55	F16	210	130	5	165	4	22	116.0	175.0
24	600	575	154	450	500	950	680	22	100	-	-	60	F16	210	130	5	165	4	22	196.0	289.0

## Anticipated Seating Unseating Torque Values-Nm (Fully Rated)

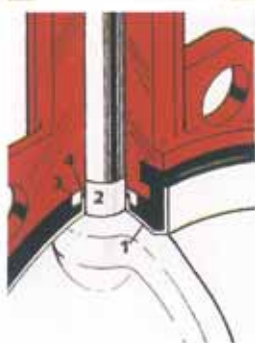
Valve size (mm)	Shut Off Pressure kg/cm <sup>2</sup> (PSI)						
	Normal Service			Valve size (mm)	Normal Service		
	10 (150)	16 (232)	20 (285)		10 (150)	16 (232)	20 (285)
50	14	16	20	250	286	325	365
65	16	23	28	300	430	490	555
80	22	30	37	350	680	710	740
100	38	48	58	400	1146	1250	1560
125	59	64	91	450	1616	1748	1980
150	94	105	136	500	1855	1905	2080
200	172	192	211	600	3423	3800	4300

# BUTTERFLY VALVE WITH TEFLON & RUBBER MOLDED DISCS & SEAT-SERIES CTB ▶

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products.  
And for quality improvement.

## Design for

- Chemical Plants
- Pharmaceutical Plants
- Pulp and Paper Mills
- Breweries
- Food and Beverage
- Processing Plants



## Technical Data

Size range	2" (50A)~24" (600A)
Pressure Rating	7Bar, 10 Bar
Temperature range	-40°C TO + 200°C
Flange drilling	ANSI B16.5(CL150), DIN 2501(PN10) BS 4504(PN10), JIS B2210(10K)
Face to face dimension	ISO 5752, API 609, MSS SP-67, DIN 3202 K1
Body style	WAFER, LUG(Two pieces)
Top flange mounting	ISO 5211
Actuator	Lever handle, Worm gear, Electric actuator, Pneumatic actuator



## UNIQUE 4-WAY SEAL

- 1 The primary seal is achieved by an interference fit between the seat flat and disc hub.
- 2 The secondary seal is an interference fit due to the stem diameter being larger than seat's stem hold diameter. Teflon is molded up the stem which eliminates line media contact with the stem or body material.
- 3 The third seal is a Teflon compression seat ring set in place around the interior resilient seat material. The compression seat ring is compressed against the secondary seal, therefore Teflon is compressed against Teflon.
- 4 The final seal is a back-up Viton O-ring around the stem behind the seat. The seat's elastomer support material is completely isolated from corrosive line media, thus valve failure is greatly reduced over traditional resilient backed Teflon molded butterfly valves.

## PRESSURE RATINGS

For bi-directional bubble-tight shut off, disc in closed position :  
316 SS Disc/Stem & Teflon Molded Seat : 50mm-600mm 10 bar,  
2"-24" 150psi  
Teflon Molded Disc & Seat : 50mm-300mm 7 bar, 2"-24" 100psi  
Elastomer Coated Disc 50mm-300mm 7 bar, 2"-24" 100psi



## Body

- Cast Iron ASTM A126 Class B
- 316 Stainless Steel ASTM A351 CF8M
- Aluminium Bronze ASTM B148
- Ductile Iron ASTM A536

## Seat

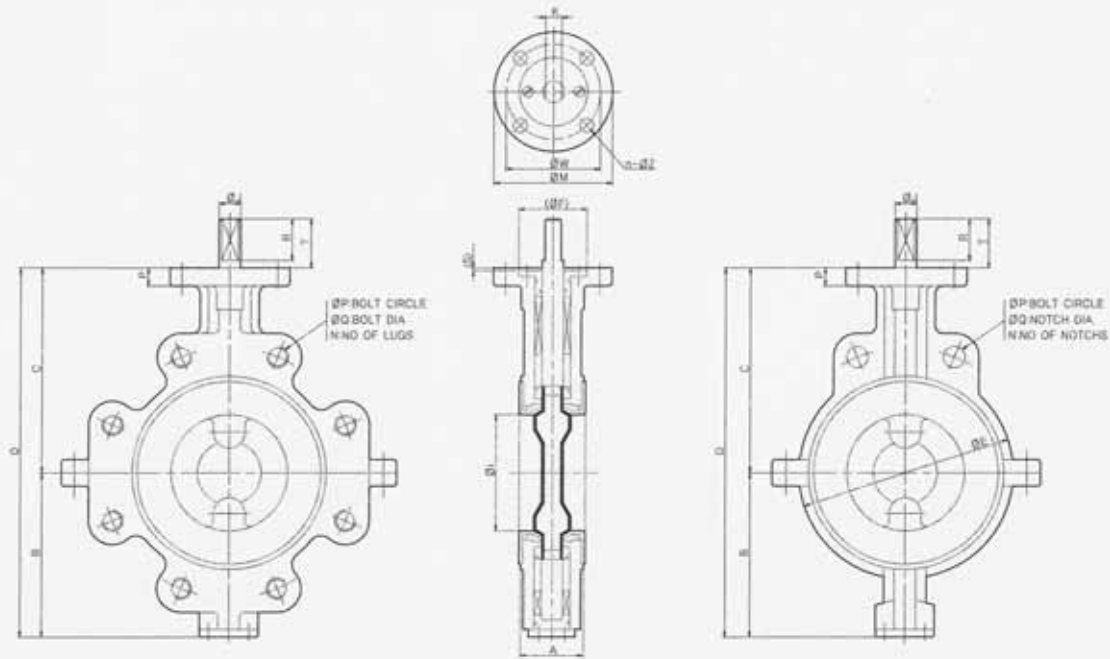
- Teflon-Molded EPDM
- EPDM      • Buna-N      • Viton

## Disc/Stem

- Teflon Molded 316 Stainless Steel  
ASTM A351 CF8M with PFA Molded
- EPDM Molded 316 Stainless Steel/316  
Stainless Steel ASTM A351 CF8M  
with EPDM Molded
- Nylon Coated Ductile Iron/316 Stainless  
Steel ASTM A536/ASTM A351 CF8M  
with NYLON Molded



# ◀ BUTTERFLY VALVE SERIES CTB WAFER/LUG TYPE (CTB-10/20)



## Valve Dimensions

Valve size inch	mm	Øi	A	B	C	D	ØE	P	Stem				Top Flange to ISO 5211						Waler Weight kg	Lug Weight kg	
									T	R	K	ØJ	Type	ØM	Ø(F)	(S)	ØW	n			ØZ
1½	50	50	43	55	120	175	92	10	32	30	9.5	14	F07	90	55	3	70	4	9.5	3.6	4.5
2	65	64	46	65	130	195	106	11	32	30	9.5	14	F07	90	55	3	70	4	9.5	5.0	6.2
2½	80	76	46	75	140	215	122	11	32	30	9.5	14	F07	90	55	3	70	4	9.5	6.0	7.5
3	100	102	52	95	160	255	150	12	32	30	13.0	19	F07	90	55	3	70	4	9.5	8.8	11.0
4	125	127	56	115	180	295	178	12	32	30	13.0	19	F07	90	55	3	70	4	9.5	11.0	13.8
5	150	146	56	130	210	278	206	12	40	35	16.0	22	F07	90	55	3	70	4	9.5	13.5	17.0
6	200	197	60	160	245	390	264	14	40	35	16.0	22	F10	125	72	3	102	4	12	20.6	26.0
8	250	246	68	210	278	465	324	14	40	35	22.0	30	F10	125	72	3	102	4	12	29.8	38.0
10	300	292	78	245	323	520	370	16	40	35	22.0	30	F10	125	72	3	102	4	12	52.0	66.0
12	350	330	78	250	340	590	410	16	40	-	-	30	F10	125	72	3	102	4	12	67.0	84.0a

## Flange Dimensions

Valve size inch	mm	JIS 5K			JIS 10K			JIS 16K			ANSI 150LB			BS 4504 PN6			BS 4504 PN10			BS 4504 PN16		
		ØP	N	ØQ	ØP	N	ØQ	ØP	N	ØQ	ØP	N	ØQ	ØP	N	ØQ	ØP	N	ØQ	ØP	N	ØQ
2	50	105	4	15	120	4	19	120	8	19	120.5	4	19	110	4	15	125	4	19	125	4	19
2½	65	130	4	15	140	4	19	140	8	19	139.5	4	19	130	4	15	145	4	19	145	4	19
3	80	145	4	19	150	8	19	160	8	23	152.5	4	19	150	4	19	160	8	19	160	8	19
4	100	165	8	19	175	8	19	185	8	23	190.5	8	19	170	4	19	180	8	19	180	8	19
5	125	200	8	19	210	8	23	225	8	25	216.5	8	22	200	8	19	210	8	19	210	8	19
6	150	230	8	19	240	8	23	260	12	25	241.5	8	22	225	8	19	240	8	23	240	8	23
8	200	280	8	23	290	12	23	305	12	25	298.5	8	22	280	8	19	295	8	23	295	12	23
10	250	345	12	23	355	12	25	380	12	27	362.0	12	25	335	12	19	350	12	23	355	12	28
12	300	390	12	23	400	16	25	430	16	27	432.0	12	25	395	12	23	400	12	23	410	12	28
14	350	435	12	25	415	16	25	480	16	33	476.0	12	28	448	12	23	460	16	23	470	13	28



# LEVER OPERATOR, SERIES LO (VALVE SIZES DN-40~300) ▶

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products.  
And for quality improvement.



## USE

General purpose manual operator for on/off or throttling duties

## SEJIN VALVE

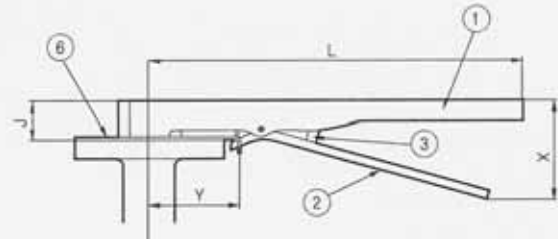
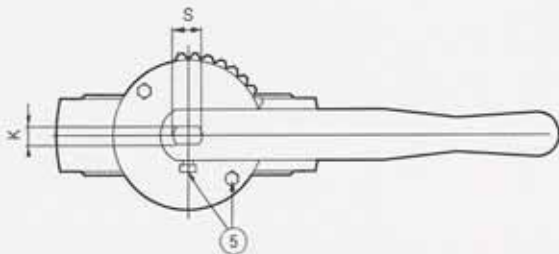
40 to 300mm (gear operators are recommended on 200 to 300mm valves over 5kg/cm<sup>2</sup> duty)

## FEATURES

- Quarter turn action, self locks into 10 position notchplate at 10° intervals
- Handle indicates valve position
- Can be mounted in any 90° quadrant

## OPTIONS

- Padlock Tag
- 2 position notchplate for full open or closed positions only
- Memory stops.
- Infinite position notchplate
- Limit Switches
- S/S construction



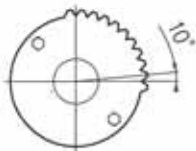
MODEL No.	VALVE RANGE	DIMENSIONS						WT. (kg)
		J mm	S.dia mm	K.flat mm	X mm	L mm	Y mm	
LO-3	40, 50, 65, 80	32	14.05	9.55	44	267	60	1
LO-6	100, 125, 150	32	19.05	14.55	44	267	60	1
LO-8	200	40	22.05	16.05	51	356	85	1.5
LO-12	250, 300	40	30.05	22.02	51	356	85	1.5

STANDARD MATERIALS		
1	HANDLE	TYPE = Plated Steel OTHERS = Stainless Steel, Ductile Iron
2	LEVER	TYPE A = Plated Steel OTHERS = Stainless Steel, Ductile Iron
3	PIN	TYPE A = 18.8 S/S ROLL PIN OTHERS PLATED STEEL
4	SPRING	18.8 S/S
5	SCREWS	TYPE A = Steel OTHERS = Stainless Steel
6	NOTCH PLATE	TYPE A = Plated Steel OTHERS = Stainless Steel

## 90° BOLT-ON MULTI-POSITION NOTCH PLATE

### MATERIAL

2mm Steel or stainless steel



### LOCATION

4 Fits between handle and valve top plate.  
SUPPLIED with two plated steel retaining bolts, nuts and washers.  
STANDARD SUPPLY in plated steel on DN 40~200 size valves.

40	Plated Steel STANDARD
50, 65, 80, 100, 125, 150	Plated Steel OPTIONAL 18.8 S/S OPTIONAL
200, 250, 300	Plated Steel STANDARD

# ◀ GEAR OPERATOR, SERIES GO (VALVE SIZES DN-40~1200)



## USE

General purpose manual operator for on/off or throttling duties.

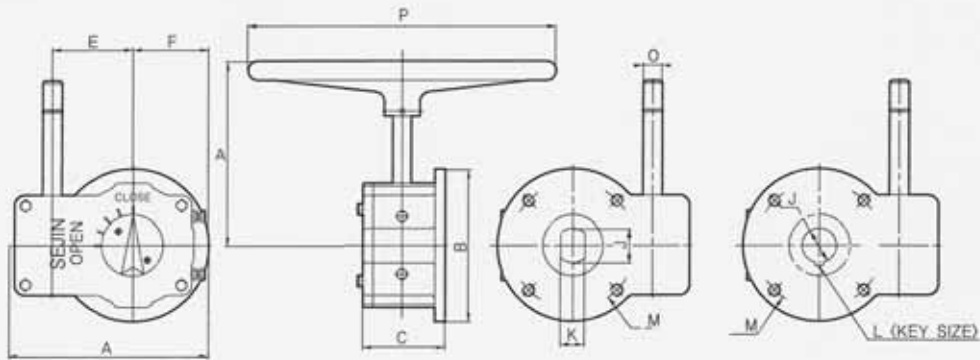
## FEATURES

Heavy duty, weatherproof type with position indicator, grease packed, self-locking, worm and segment gearing with adjustable travelstops.

## OPTIONS

- Limit switches
- Chainwheel
- Floor stands
- Padlock and chain
- Submerged duties

NOTE : See reverse side for dimensions and weights.



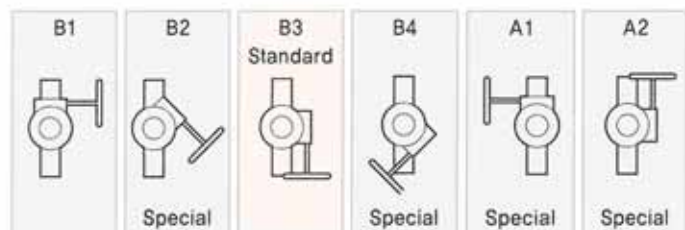
MODEL No.	A	B	C	D	E	F	Valve size			J	K	L	O	P	ØS	Ratio	WT. (kg)
							PCD	No. of Holes	N (Treads)								
GO-24	115	90	54	140	45	45	70	4	M8	14 19	9.5 14.5	-	16	150	4.0	24:1	4.0
GO-32	165	125	64	200	66	63	102	4	M10	22 30	16.0 22.0	10×8	19	203	5.0	32:1	7.2
GD-48	185	175	90	225	77	88	140	4	M16	38	-	14×9	25	305	5.0	48:1	16.0
GO-68	300	210	120	300	120	105	165	4	M20	55 60	-	16×10 16×10	28	457	6.3	68:1	32.0
GO-80	350	300	150	400	177	150	254	8	M16	60 75 80	-	16×10 20×12 20×12	32	700	6.3	80:1	56.0

## ORIENTATIONS

STANDARD = B3 Pdsition(input shaft @90° top pipe line)  
= Clockwise close valve

OPTIONAL = B1 Position (input shaft paralle to pipe line)  
providing handwheel clears pipe/flanges

For = A1/A2 Position(mirror reverse)  
lockwise opening-consult SEJIN



# OPERATION METHODS ▶

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products.  
And for quality improvement.

## Handlever

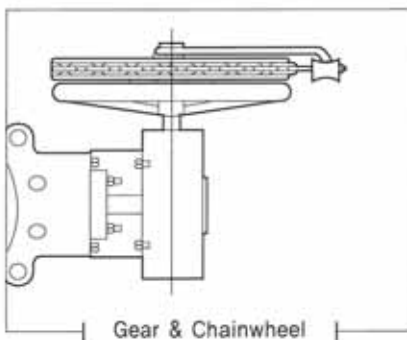
The lever operator incorporates a lockable spring loaded release arm allowing the valve to be set in intermediate positions for throttling service. A lever stop plate ensures perfect alignment between lever and disc in the closed position. Levers are fitted as standard on valves up to 12"



Handlever

## Gearbox

On larger valves requiring manual operation, a gearbox is mounted directly on to the valve top flange. The gearbox incorporates position indication and travel adjustment stops.



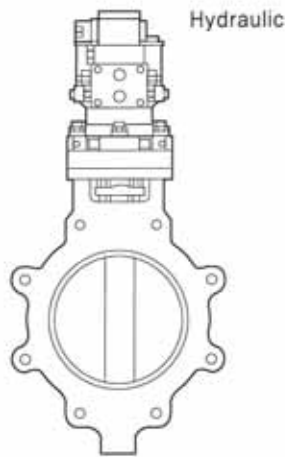
Gear & Chainwheel



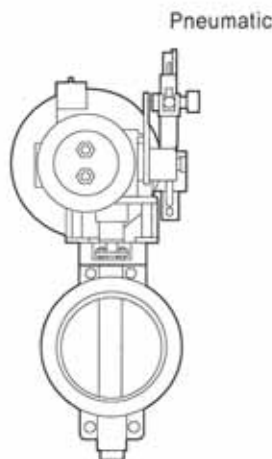
Gearbox

## Powered Operation - Control

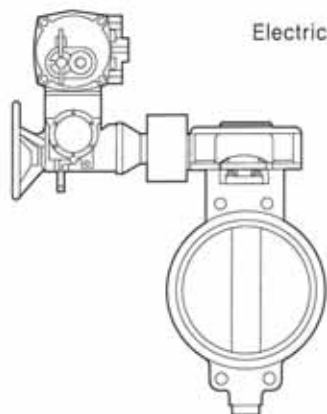
Pneumatic, electric or hydraulic actuators with ancillary equipment such as solenoid valves, limit switches, positioners etc., can be supplied.



Hydraulic



Pneumatic



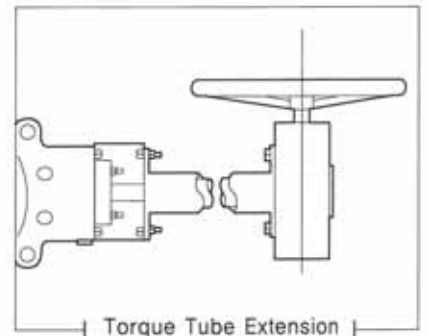
Electric

## I.S.O. Mounting Flange.

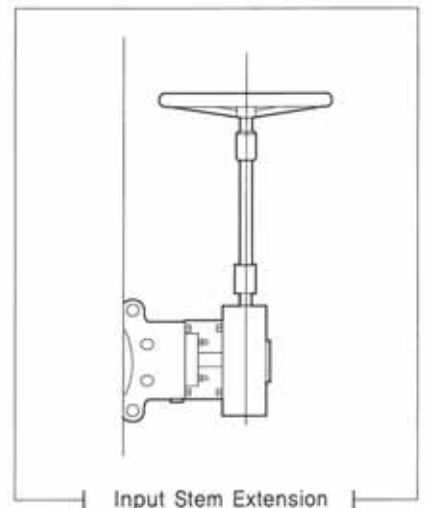
The operator mounting yoke may be adapted, by the addition of a mounting flange, to provide compatibility with I.S.O 5211.

## Extension

Extended stem operation and other adaptations are available as required.



Torque Tube Extension



Input Stem Extension

## Center Handle Gear

The handwheel is placed on top of the valve stem facing upwards to allow greater freedom of installation and reducing space requirements. A big benefit when using where space is limited, such as in buildings or on ship, can be obtained.



ANSI	B 16.5 B 16.34	Steel pipeline flanges Steel valves
MSS	SP-6 SP-25 SP-44 SP-55 SP-61 SP-67 narrow(C1-D1)	Standard finishes for pipe flanges Standard marking system for valves Steel pipeline flanges Quality standard for steel castings Pressure testing of steel valves Butterfly valves
API	598 609	Valve inspections and testing Butterfly valves Wafer and LUG type (face-to-face on valve)
ISO	7005 5208 5209 5211/1  5752 Tab.5 (20 series)	Meatallic flanges Industrial valves – pressure testing of valves General purpose industrial valves – marking Part-turn valve actuator attachment – top flange dimensions Face-to-face and centre-to-face dimensions
DIN	3202-K1 50049-2.2 50049-3.1B	Face-to-face dimensions Certificates on material tests (standard) Certificates on material tests (on request)
BS	5155 short	Butterfly valves for general purposes
AWWA	C504	Rubber Seated Butterfly valves
JIS	B2002 B2003	Face to Face dimensions valve Test

## INSPECTION AND TESTING ACCORDING AS ISO 5208, MSS SP61, AWWA C, 504, JIS B 2003 API 598 and BS 5155

The body test is performed at 1.5 time of the nominal pressure while the Seat Test at 1.1 time of the nominal pressure, using for both emulsified water at room temperature. While testing, no leakage shall be noticed from the stems, as for the Body test, not from upstream to downstream, as for the Seat Test. For the Pneumatic Test with disc closed the butterfly is covered with water and soap on that side where the visual control of the seal is performed, in order to show up a possible leak. SEJIN's valves are tested 100% before delivery.

## TORQUE REQUIREMENTS

	Torque plays an important part in the cost, operation and life span of butterfly valves. The following explains why.
<b>TORQUE CHARACTERISTICS</b>	Bearing friction, seal or seating friction, and fluid dynamic effects on the disc are primary factors in determining torque requirements for a butterfly valve. These are described below.
<b>BEARING FRICTION TORQUE</b>	Any unbalanced pressure across the butterfly valve disc places a direct load on the shaft bearings. The projected area of the disc decreases with valve opening, thus bearing friction varies from a maximum as the disc rotates from the closed to the fully open position.
<b>SEAT FRICTION TORQUE</b>	Seating friction is maximum during the first few degrees of opening (or the last few degrees of closing) and is the result of the valve disc edge action against the seat. The seating torque acts to oppose the rotation of the disc. The contact of the seat around the full periphery of the disc creates the bubble tight seal.
<b>FLUID DYNAMIC TORQUE</b>	From the dynamic standpoint, a butterfly valve disc is torque balanced only when totally closed or fully open. In all intermediate positions, a fluid dynamic torque is present because the fluid velocity over the disc surface is always higher on the trailing edge of the disc than on the leading edge. This torque acts in a valve "disc-closing" direction, tending to reach its highest point at about 70 degrees open.





## SELECTION OF BUTTERFLY VALVES (Flow Coefficient Cv)

Cv (pure number) is, in American units, the water flow rate in U.S. gallons per minute which passes through the valve giving a pressure drop of 1 psi at a temperature of 68°F. In metric units the same coefficient is called Kv and correspond to the flow rate in m<sup>3</sup>/h passing through the valve. The approximate corresponding formulas are :

$$Q = C_v \cdot \sqrt{\frac{\Delta p}{\gamma}}$$

where:

- Q = valve flow rate in gpm (USGPM)
- Δp = pounds per square inch (psi) pressure drop through the valve
- γ = specific gravity (for water at 68°F = 1)

$$Q = K_v \cdot \sqrt{\frac{\Delta p}{\gamma}}$$

where:

- Q = valve flow rate in m<sup>3</sup>/h
- Δp = Pressure drop through the valve in bar
- γ = specific gravity (for water at 20°C = 1)

The relation between Cv and Kv, expressed in the above mentioned unit of measure is as follows:

$$C_v = 1,16 K_v$$

### Flowrate Co-efficients Cv for Series CRB resilient seated butterfly valves.

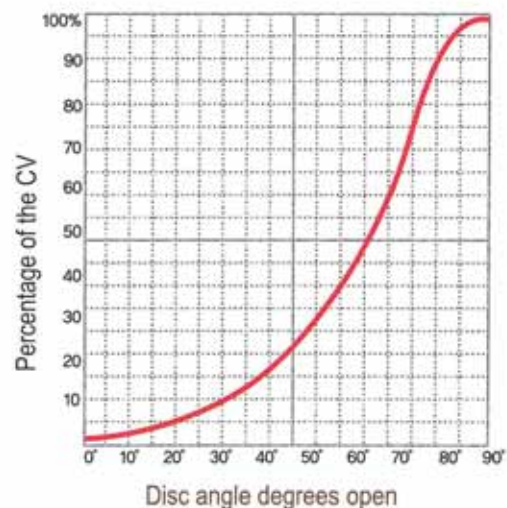
Flowrate Co - efficients - Cv Values.

Valve (inch)	Disc Opening (Degrees)								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
2	0.0	1.3	5	14	26	40	52	59	60
2½	0.0	1.4	6	21	44	74	107	138	151
3	0.7	1.5	8	29	67	115	175	234	262
4	1.7	15	48	107	196	318	463	589	647
5	3	32	99	206	362	579	832	1045	1141
6	4	47	145	295	510	810	1160	1450	1580
8	6	84	239	450	751	1190	1754	2385	2892
10	9	133	360	652	1064	1683	2524	3596	4593
12	12	192	509	899	1449	2283	3470	5085	6682
14	75	340	770	1400	2200	3400	5600	7900	10000
16	100	440	1000	1800	2800	4500	7400	10800	13000
18	130	570	1300	2300	3600	5800	9600	15000	18000
20	150	710	1600	2900	4600	7200	12000	18400	22000
24	220	1000	2300	4000	6400	10000	16500	25900	30000
30	340	1500	3600	6200	9900	16000	26000	42500	47000
36	500	2600	5200	9100	15000	23000	38000	65000	70000
40	870	2905	6270	11400	20148	30590	46310	59460	81580
42	950	3880	6720	12500	21800	31600	47530	63500	97300
44	1080	4750	8530	13800	22700	34500	49500	74300	105000
48	1230	5770	9030	14300	23500	37500	56300	89500	117000

Note:

Cv = The flow rate of water in U.S.gpm that will pass through a valve with a pressure drop of 1 psi @ 60° F

VLAVE CHARACTERISTICS



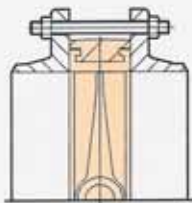
The graph at side gives the percentage of the Cv valve at any intermediate angle between 0° and 90°

# BOLTS FOR PIPING

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products.  
And for quality improvement.

## Wafer type valve

Wafer type valve  
Recommended stud  
length for tightening  
Wafer type valves  
between flanges



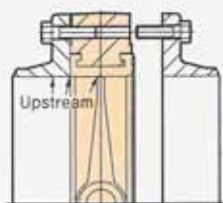
Stem		ANSI 150 Flanges		DIN PN 6 Flanges		DIN PN 10 Flanges		JIS 10K Flanges		Bolt Length	
Inch	mm	Bolt Size	Q'ty	Bolt Size	Q'ty	Bolt Size	Q'ty	Bolt Size	Q'ty	Machine	Stud
1.5"	40	1/2"-13 UNC	4	M12	4	M16	4	M16	4	90	115
2"	50	5/8"-11 UNC	4	M12	4	M16	4	M16	4	105	130
2.5"	65	5/8"-11 UNC	4	M12	4	M16	4	M16	4	115	140
3"	80	5/8"-11 UNC	4	M16	4	M16	8	M16	8	125	150
4"	100	5/8"-11 UNC	8	M12	4	M16	8	M16	8	125	150
5"	125	3/4"-10 UNC	8	M12	8	M16	8	M20	8	130	160
6"	150	3/4"-10 UNC	8	M12	8	M16	8	M20	8	135	165
8"	200	3/4"-10 UNC	8	M12	8	M16	8	M16	12	145	175
10"	250	7/8"-9 UNC	12	M16	12	M20	12	M22	16	160	190
12"	300	7/8"-9 UNC	12	M20	12	M20	12	M22	16	175	210
14"	350	1"-8 UNC	12	M20	12	M20	16	M22	16	185	225
16"	400	1"-8 UNC	16	M20	16	M22	16	M24	16	210	250
18"	450*	1 1/8"-8 UNC	12	M20	12(8)	M24	16(8)	M24	16(8)	235(65)	280(110)
20"	500*	1 1/8"-8 UNC	*16(8)	M20	12(8)	M24	16(8)	M24	16(8)	255(70)	300(115)
22"	550*	1 1/4"-8 UNC	*16(8)	-	0	-	-	M30	16(8)	290(75)	340(130)
24"	600*	1 1/4"-8 UNC	*16(8)	M24	16(8)	M27	16(8)	M30	20(8)	295(75)	345(130)

Stem		API Class 150						MSS Class 150								
Inch	mm	Bolt Size	Long		Short		Bolt Size	Long		Short		Bolt Size	Long		Short	
			Q'ty	Machine	Q'ty	Machine		Q'ty	Machine	Q'ty	Machine		Q'ty	Machine	Q'ty	Machine
26"	650	3/4"-10 UNC	28	290	310	16	65	95	1-1/4"-8 UNC	20	345	395	8	100	150	150
28"	700	3/4"-10 UNC	32	290	315	16	65	95	1-1/4"-8 UNC	24	355	405	8	95	145	145
30"	750	3/4"-10 UNC	36	290	315	16	65	95	1-1/4"-8 UNC	24	360	410	8	105	135	135
32"	800	3/4"-10 UNC	40	315	345	16	70	105	1-1/2"-8 UNC	24	405	465	8	105	160	160
34"	850	7/8"-9 UNC	32	335	370	16	80	115	1-1/2"-8 UNC	28	425	475	8	115	165	165
36"	900	7/8"-9 UNC	36	340	375	16	80	115	1-1/2"-8 UNC	28	435	495	8	115	170	170
40"	1000	1"-8 UNC	36	370	405	16	80	115	1-1/2"-8 UNC	32	450	510	8	115	170	170

Note : 1. \* For pipe conveying oil, the flange needs 8 studs instead of 4  
2. Valve bodies in thread according to ANSI B 1, 1 type UNC up to 1" size for holes 1 1/3 and larger thread with be 8 UN

## LUG type valve

Recommended stud  
length for tightening  
Lug type valves  
between flanges



Stem		ANSI 150 Flanges		DIN PN 6 Flanges		DIN PN 10 Flanges		JIS 10K Flanges		Bolt Length	
Inch	mm	Bolt Size	Q'ty	Bolt Size	Q'ty	Bolt Size	Q'ty	Bolt Size	Q'ty	Machine	Stud
1.5"	40	1/2"-13 UNC	8	M12	8	M16	8	M16	8	30	55
2"	50	5/8"-11 UNC	8	M12	8	M16	8	M16	8	35	60
2.5"	65	5/8"-11 UNC	8	M12	8	M16	8	M16	8	40	65
3"	80	5/8"-11 UNC	8	M16	8	M16	8	M16	16	45	70
4"	100	5/8"-11 UNC	16	M12	16	M16	16	M16	16	45	70
5"	125	3/4"-10 UNC	16	M12	16	M16	16	M20	16	50	80
6"	150	3/4"-10 UNC	16	M12	16	M16	16	M20	16	50	80
8"	200	3/4"-10 UNC	16	M12	24	M16	24	M16	24	55	85
10"	250	7/8"-9 UNC	24	M16	24	M20	24	M22	24	60	95
12"	300	7/8"-9 UNC	24	M20	32	M20	32	M22	32	65	100
14"	350	1"-8 UNC	24	M20	32	M20	32	M22	32	70	110
16"	400	1"-8 UNC	32	M20	40	M22	40	M24	40	75	115
18"	450*	1 1/8"-8 UNC	24(8)	M20	32(8)	M24	32(8)	M24	32(8)	80(65)	125
20"	500*	1 1/8"-8 UNC	32(8)	M20	32(8)	M24	32(8)	M24	32(8)	85(70)	130
22"	550*	1 1/4"-8 UNC	32(8)	-	-	-	-	M30	32(8)	90(75)	140
24"	600*	1 1/4"-8 UNC	32(8)	M24	32(8)	M27	32(8)	M30	40(8)	95(75)	140

Stem		API Class 150						MSS Class 150								
Inch	mm	Bolt Size	Long		Short		Bolt Size	Long		Short		Bolt Size	Long		Short	
			Q'ty	Machine	Q'ty	Machine		Q'ty	Machine	Q'ty	Machine		Q'ty	Machine	Q'ty	Machine
26"	650	3/4"-10 UNC	64	70	100	8	65	100	1-1/4"-8 UNC	40	115	160	8	100	150	150
28"	700	3/4"-10 UNC	72	75	105	8	65	95	1-1/4"-8 UNC	48	115	265	8	95	145	145
30"	750	3/4"-10 UNC	80	75	105	8	65	95	1-1/4"-8 UNC	48	230	170	8	100	135	135
32"	800	3/4"-10 UNC	88	80	110	8	70	105	1-1/2"-8 UNC	48	135	190	8	100	160	160
34"	850	7/8"-9 UNC	72	85	120	8	80	115	1-1/2"-8 UNC	56	140	190	8	100	165	165
36"	900	7/8"-9 UNC	80	85	125	8	80	115	1-1/2"-8 UNC	56	145	200	8	115	170	170
40"	1000	1"-8 UNC	80	90	135	8	80	115	1-1/2"-8 UNC	64	145	200	8	115	170	170

Note : 1. \* For pipe conveying oil, the flange needs 8 studs instead of 4  
2. Valve bodies in thread according to ANSI B 1, 1 type UNC up to 1" size for holes 1 1/3 and larger thread with be 8 UN



Elastomer seats have been chosen to satisfy every service need. Application suggested derive from recommendation given by the elastomers manufacturers and are purely indicative. Since many factors influence corrosion and abrasion (type of fluid, concentration, temperature, turbulence, impurities ect.), the final choice is to be taken by the customer, based on characteristics and specific application.

COMMON

COMMON NAME	Composition (Chemical Type)	General application	Temperature limit		Other limit	Availability
<b>EPDM (EPT) (EPR)</b>	Ethylene-Propylene Diene monomer	Water-steam Sea water Brine Esters Ketone Alkalis Caustic Soda	-35°C +110°C	-30°F +230°F	Not recommended for hydrocarbons-oils-fats	On stock for immediate delivery
<b>BUNA N (Nitrile) (NBR)</b>	Nitrile Butadiene	Hydrocarbons Natural Gas Oils and fat Air Gasoline	-18°C +100°C	0°F +212°F	Not recommended for solvents-Benzene-Xylol	On stock for immediate delivery
<b>Neoprene</b>	Chloro Butadiene	Fats Oils Diluted mineral acids Alkalis	-18°C +90°C	0°F +194°F	Not recommended for solvents-Benzene-Xylol	On stock in limited quantities
<b>Hypalon</b>	Chlorosulfanated Polyethylene	Mineral acids Organic acids Oxidising substances Fats	-18°C +100°C	0°F +212°F	Not recommended for Nitric acid-Steam Ketones	On stock in limited quantities
<b>Viton</b>	Fluorocarbon polymer	Acids Oils Hydrocarbons	-10°C +160°C	14°F +320°F	Not recommended for Steam-Freon 22 Solvents-Ketones-Esters-Alkalis	On stock in limited quantities
<b>Natural rubber</b>	Latex (vegetable)	Abrasive products	-35°C +160°C	-30°F +320°F	Not recommended for Steam Oils-Hydrocarbons	On stock in limited quantities
<b>Silicone</b>	Organic silicone Polymer	Food & Beverage	-35°C +150°C	-22°F +300°F	Not recommended for Steam Solvents-Hydrocarbons	On stock in limited quantities

Note : 1. \* For pipe conveying oil, the flange needs 8 studs instead of 4

2. Valve bodies in thread according to ANSI B 1. 1 type UNC up to 1" size for holes 1 1/8 and larger thread will be 8 UN

# BUTTERFLY VALVES FOR C SERIES- INSTALLATION PROCEDURES ▶

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products,  
And for quality improvement.

## 1. Shipment & Storage

- 1-1, The seat, disc, stem, and bushing of the butterfly valve should be coated with silicone lubricant in general.
- 1-2 The disc should be positioned at 10° open.
- 1-3 The faces of each valve should be covered with cardboard, plywood, plastic, etc. to prevent damage to the seat face, disc edge, or butterfly valve interior.
- 1-4 Valves should be stored indoors with face protectors intact. Temperature should preferably be 4°C to 45°C.
- 1-5 When valves are stored for a long time, open and close the valves once per every 3 months.

## 2. Installation Considerations - Piping and Valve Orientation and Placement

### 2-1 Piping and Flange Compatibilities

The butterfly valves have been designed to be suitable for all types of ANSI 125/150 flanges, whether flat-faced, raised-face, slip-on, weld-neck, etc. ( Type C stub-end flanges conform to no standard for the flange face and are not recommended for use with resilient-seated butterfly valves). These valves have been engineered so that the critical disc chord dimension at the full open position will clear the adjacent inside diameter of most types of piping, including Schedule 40, lined pipe, heavy wall, etc. If in question, one should compare the minimum pipe I.D. with the published disc cord dimension at full open.

### 2-2 Valve Location and Orientation in Piping

#### A. Valve Location

Butterfly valves should be installed if possible a minimum of 6 pipe diameters from other line elements, i.e. elbows, pumps, valves, etc. Of course, 6 pipe diameters is not always practical, but it is important to achieve as much distance as possible. Where the butterfly valve is connected to a check valve or pump, use an expansion joint between them to ensure the disc does not interfere with the adjacent equipment.

#### B. Valve Orientation

- B-1. In general, Sejin recommends that the valve be installed with the stem in the vertical position and the actuator mounted vertically directly above the valve.; however there are those applications as discussed below where the stem should be horizontal. The valve should not be installed upside down.
- B-2. For slurries, sludge, mine tailings, pulp stock, dry cement, and any media with sediment or particles, Sejin recommends that the valve be installed with the stem in the horizontal position with the lower disc edge opening in the downstream direction.
- B-3. For valve orientation downstream of pump, bend, etc. see Fig.

## 3. Installation Procedure

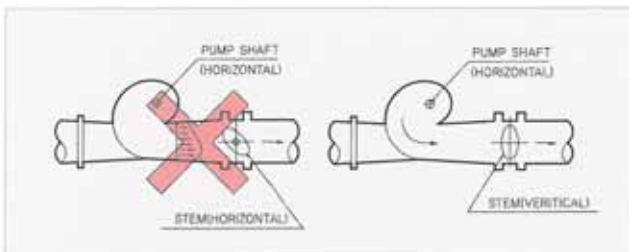
### 3-1. General Installation

- A. Make sure the pipeline and pipe flange faces are clean. Any foreign material such as pipe scale, metal chips, welding slag, welding rods, and so on, It can obstruct disc movement or damage the disc or seat.
- B. The elastomer seat had moulded o-rings on the face of the seat. As a result, no gaskets are required as these o-rings serve the function of a gasket.
- C. Align the piping and then spread the pipe flanges a distance apart so as to permit the valve body to be easily dropped between the flanges without contacting the pipe flanges.
- D. Check to see that the valve disc had been positioned to a partially open position, with the disc edge about 10mm from the face of the seat (approximately 10° open).

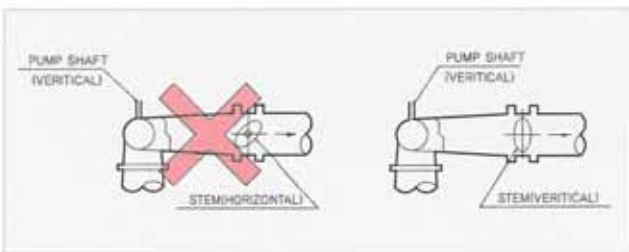


- E. Insert the valve between the flanges, taking care of damage the seat faces. Always pick the valve up by the locating holes or by using a nylon sling on the neck of the body. Never pick up the valve by the actuator or operator mounted on top of the valve.
- F. Place the valve between the flanges, centre it, and then span the valve body with all flange bolts, but do not tighten the bolts. Carefully open the disc to the full open position, making sure the disc does not hit the adjacent pipe I.D. Now systematically remove jack bolts or other flange spreaders, and hand-tighten the flange bolts. Very slowly close the valve disc to ensure disc edge clearance from the adjacent pipe flange I.D. Now open the disc to full open and tighten all flange bolts per specification. Finally repeat a full close to full open rotation of the disc to ensure proper clearances.

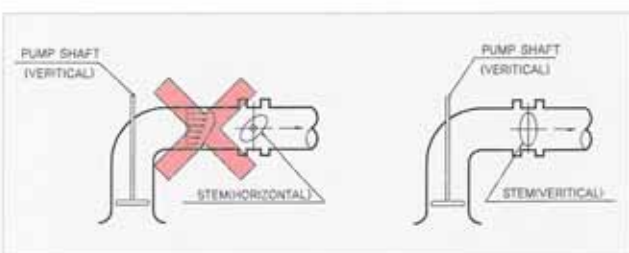
A. Butterfly valves located at the discharge of a pump should be orientated as follows :



i) For Centrifugal Pump—Pump shaft horizontal and stem vertical.



ii) Centrifugal Pump—Pump shaft vertical & stem vertical.

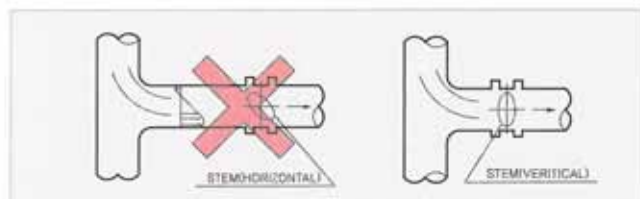


iii) For Centrifugal Pump—Pump shaft horizontal and stem vertical.

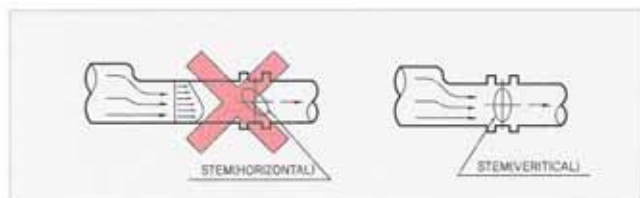
A. Butterfly valves located at the discharge of a pump should be orientated as follows :



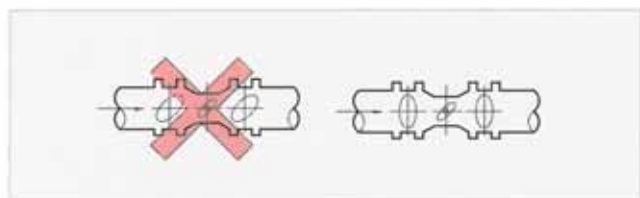
i) Bend



ii) Tee



iii) Pipe Reducer



C. Butterfly valves in combination for control/isolation applications should be as UP :

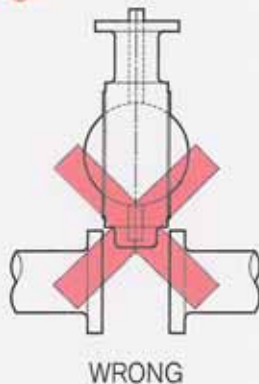
# BUTTERFLY VALVES FOR C SERIES-INSTALLATION PROCEDURES ▶

SEJIN VALVE for C series butterfly valves.  
Our company endeavor ceaselessly to develop new products.  
And for quality improvement.

3-2. Installation with Flange Welding – When butterfly valves are to be installed between ANSI welding type flanges, care should be taken to abide by the following procedure to ensure no damage will occur to the seat :

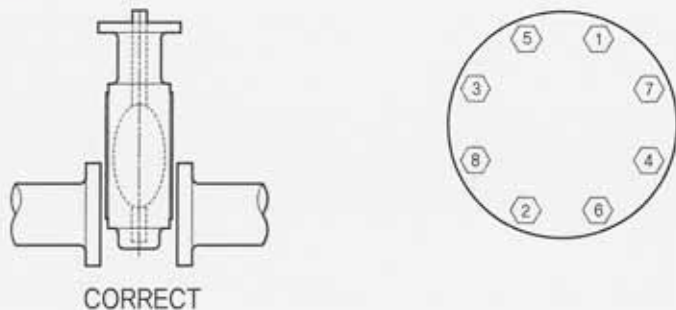
- A. Place the valve between the flanges with the flange bores and valve body bore aligned properly. The disc should be in the 10° open position.
- B. Span the body with the bolts.
- C. Take this assembly of flange–body–flange and align it properly to the pipe.
- D. Take weld the flanges to the pipe.
- E. When tack welding is complete, remove the bolts and the valve from the pipe flanges and complete the welding of the flanges. Be sure to let the pipe and flanges cool before installing the valve. NOTE : Never complete the welding process (after tacking) with the valve between the pipe flanges. This causes severe seat damage due to heat transfer.

Figure 1–Insert Butterfly Valve Between Flange



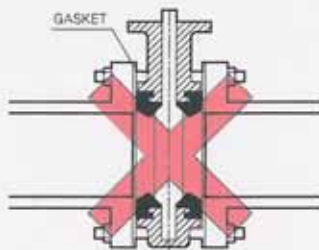
WRONG

Figure 2–Recommended Bolt Tightening Sequence



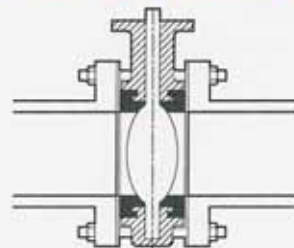
CORRECT

Figure 3–Initial Centering & Flanging of Valve



WRONG

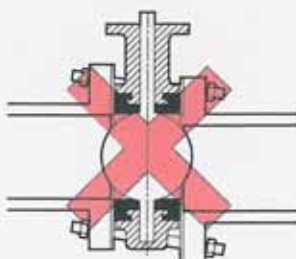
Disc in closed position :  
gaskets used : Results–Seat  
distorted and over-  
compressed causing high  
initial unseating torque  
problems



CORRECT

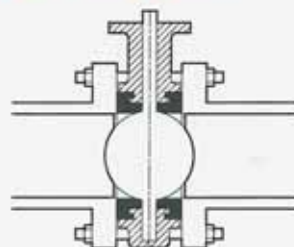
Bolts spanned, disc edge  
within body face-to-face.  
No disc edge damage, proper  
sealing allowed.

Figure 4–final Aligning of Flange Bolts



WRONG

Piping misaligned: Results–  
Disc O.D. strikes pipe I.D.,  
causing disc edge damage,  
increased torque & leakage.  
Seat face o-rings seal  
improperly w/out engagement.



CORRECT

Bolts spanned, disc edge  
Piping aligned properly when  
bolts tightened, disc in full  
open position : Result–disc  
clears adjacent pipe I.D., seat  
face seals properly, no  
excessive initial torque.



### Flow Rate Conversion Formulas

Conversion to m <sup>3</sup> /h		
	m <sup>3</sup> /h	Gas m <sup>3</sup> /h (at 15°C 1013mmbar)
Gas m <sup>3</sup> /h	-	xA
Gas m <sup>3</sup> /h (at 15°C 1013mmbar)	xB	-
kg/h	÷SG×0.001	×28.83÷MW
kℓ /h		xA
t/h	÷SG	×1000×23.83÷MW
ℓ /min	×0.001	×0.001×A
t/min	×0.001×60	×0.001×60×A
Lb/h	÷SG×60	×60×1000×123.63÷MW
CFH(ft <sup>3</sup> /h)	×0.4356÷SG×0.001	×0.4356×623.63÷MW
SCFH(Nft <sup>3</sup> /h)	×0.02832	×0.02832×A
BBL/h	×0.02832×B	×0.02832
BBL/min	×0.159	×0.159×A
GPM(gallon/min)	×0.159×60	×0.159×60×A
CFM(ft <sup>3</sup> /min)	×3.785×0.001×60	×3.785×0.001×60×A
SCFM	×0.02832×60	×0.02832×60×A
Nm <sup>3</sup> /h (at 15°C 1013mmbar)	×0.02832×60×B ×T1×1.033÷(P1×273)	×0.02832×60 ×288÷273

A=PX288÷(T,×1,033) P=kgf/m<sup>2</sup>A inlet Pressure  
 B=T,×1,033÷(P,×288) T1=K Fluid Temperature(°C)  
 SG=Specific Gravity MW=Molecular Weight

### Flow Rate Conversion Formulas

Pa	bar	kg/cm <sup>2</sup>	atm	mH <sub>2</sub> O	mHg	Lbf/in <sup>2</sup>
1	1×10 <sup>-5</sup>	1.0197×10 <sup>-5</sup>	9.869×10 <sup>-5</sup>	1.0197×10 <sup>-4</sup>	7.501×10 <sup>-6</sup>	1.450×10 <sup>-4</sup>
1×10 <sup>-5</sup>	1	1.0197	9.869×10 <sup>-1</sup>	1.0197×10	7.501×10 <sup>-1</sup>	1.450×10
9.80665×10 <sup>-4</sup>	9.80665×10 <sup>-1</sup>	1	9.678×10 <sup>-1</sup>	1.0000×10	7.356×10 <sup>-1</sup>	1.422×10
1.01325×10 <sup>-5</sup>	1.01325	1.0332	1	1.033×10	7.60×10 <sup>-1</sup>	1.470×10
9.80665×10 <sup>-2</sup>	9.806×10 <sup>-2</sup>	1.0000×10 <sup>-1</sup>	9.678×10 <sup>-2</sup>	1	7.355×10 <sup>-2</sup>	1.4222×10
1.3332×10 <sup>-5</sup>	1.3332	1.3595	1.3158	1.360×10	1	1.934×10
6.895×10 <sup>-3</sup>	6.895×10 <sup>-2</sup>	7.031×10 <sup>-2</sup>	6.805×10 <sup>-2</sup>	7.31×10 <sup>-1</sup>	5.71×10 <sup>-2</sup>	1

### Torque Conversion Ratios

oz in	Lb in	Lb ft	g cm	kg cm	kg m	mN m	cN m	N m
1	0.0625	0.005	72	0.072	0.0007	7.062	0.706	0.007
16	1	0.083	1152.1	1.152	0.0115	113	11.3	0.113
192	12	1	13826	13.83	0.138	1356	135.6	1.356
0.014	0.0009	0.00007	1	0.001	0.00001	0.098	0.01	0.0001
13.89	0.868	0.072	1000	1	0.01	98.07	9.807	0.098
1389	86.8	7.233	100000	100	1	9807	980.7	9.807
0.142	0.009	0.0007	10.2	0.01	0.0001	1	0.1	0.001
14.16	0.088	0.007	102	0.102	0.001	10	1	0.01
141.6	8.851	0.738	10197	10.20	0.102	1000	100	1

### Flow Rate Conversion Formulas

Conversion to m <sup>3</sup> /h	
kg/cm <sup>3</sup>	+1.033
BarG	×1.020+1.033
BarA	×1.020
mmH <sub>2</sub> O	×10.0001+1.033
mmAq	
mmHg-Tour	÷735.6
cmH <sub>2</sub> O-mAq	×0.001+1.033
cmHg	÷73.56
mH <sub>2</sub> O-mAq	×0.1+1.033
atm	×1.033
atg	+1.033
Pa	×0.0000102+1.033
KPaG	×0.0102+1.033
KPaA	×0.0102
MPaG	×10.20+1.033
MPaA	×10.20
Lb/in <sup>2</sup> A	×0.0703+1.033
Psi G	×0.0703
inHg	×25.40÷735.6

### Temperature Unit Conversion

Temperature Unit conversion Formulas

\*F = (°C1,×8)+32  
 \*C = (°F+32)×0.556

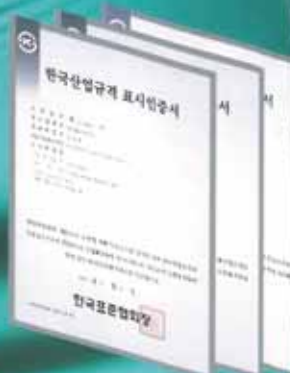
°C	*F° C-	-°F
-28.9	-20	-4.5
-26.1	-15	-5.0
-23.3	-10	14.0
-20.6	-5	23.0
-17.8	0	32.0
-15.0	5	41.0
-12.2	10	50.0
-9.4	15	59.0
-6.7	20	68.0
-3.9	25	77.0
-1.1	30	86.0
1.7	35	95.0
4.4	40	104.0
7.2	45	113.0
10.0	50	122.0
12.8	55	131.0
15.6	60	140.0
18.3	65	149.0
21.1	70	158.0
23.9	75	167.0
26.7	80	176.0
29.4	85	185.0
32.2	90	194.0
35.0	95	203.0
37.8	100	212.0
43.3	110	230.0
48.9	120	248.0
54.4	130	266.0
60.0	140	284.0
65.6	150	302.0
71.1	160	320.0
76.7	170	338.0
82.2	180	356.0
87.8	190	374.0
93.3	200	392.0
98.9	210	410.0
104.4	220	428.0
110.0	230	446.0
121.1	250	482.0
148.9	300	572.0
176.7	350	662.0
204.4	400	752.0
232.2	450	842.0
260.0	500	932.0
315.6	600	1112.0
317.0	700	1292.0

### Conversion To Specific Gravity G.

	condition	Specific Gravity G
kg/Nm <sup>3</sup>	0°C 1013mmbar	÷1.293
kg/Nm <sup>3</sup>	15°C 1013mmbar	÷1.225

# SV

FOR C SERIES BUTTERFLY VALVES

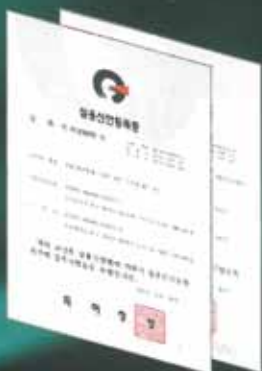




## TECHNOLOGICAL KNOW-HOW OF SEJIN

- 1\_ ISO 9001 인증서 / 9. 1999
- 2\_ 한국산업규격 인증서 - KS B 2333 / 9. 2002  
한국산업규격 인증서 - KS B 2334 / 9. 2002  
한국산업규격 인증서 - KS B 2813 / 3. 2003
- 3\_ 실용신안등록증 - Butterfly Valve / 1. 2003  
실용신안등록증 - Sluice Valve / 10. 2002
- 4\_ 한국수력원자력(주) - Butterfly Valve / 제조공급업체 인증서  
한국전력공사 - Butterfly Valve / 제조공급업체 인증서
- 5\_ Lloyd's TYPE 인증서 - Butterfly Valve / 7. 2003
- 6\_ FIRE SAFE 인증서 - Butterfly Valve / 12. 2003

- 1\_ ISO 9001 / KSA (Korean Standards Association) / Sep. 1999
- 2\_ KS (Korean Industrial Standards) / KS B 2333 / Sep. 2002  
KS (Korean Industrial Standards) / KS B 2334 / Sep. 2002  
KS (Korean Industrial Standards) / KS B 2813 / Mar. 2003
- 3\_ Practical Use Registration / Butterfly Valve / Jan. 2003  
Practical Use Registration / Sluice Valve / Oct. 2002
- 4\_ Registered as Supplying Vendors for Korea  
Hydro & Nuclear Power Corporation (Nuclear R-class)  
Registered as Supplying Vendors for Korea  
Electric Power Corporation (Kepeco R-class)
- 5\_ Lloyd's TYPE Approval Cer't for Butterfly Valves
- 6\_ FIRE SAFE TEST Cer't for Butterfly Valves



2



3



4



5

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Our company endeavor ceaselessly to develop new products and for quality improvement

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