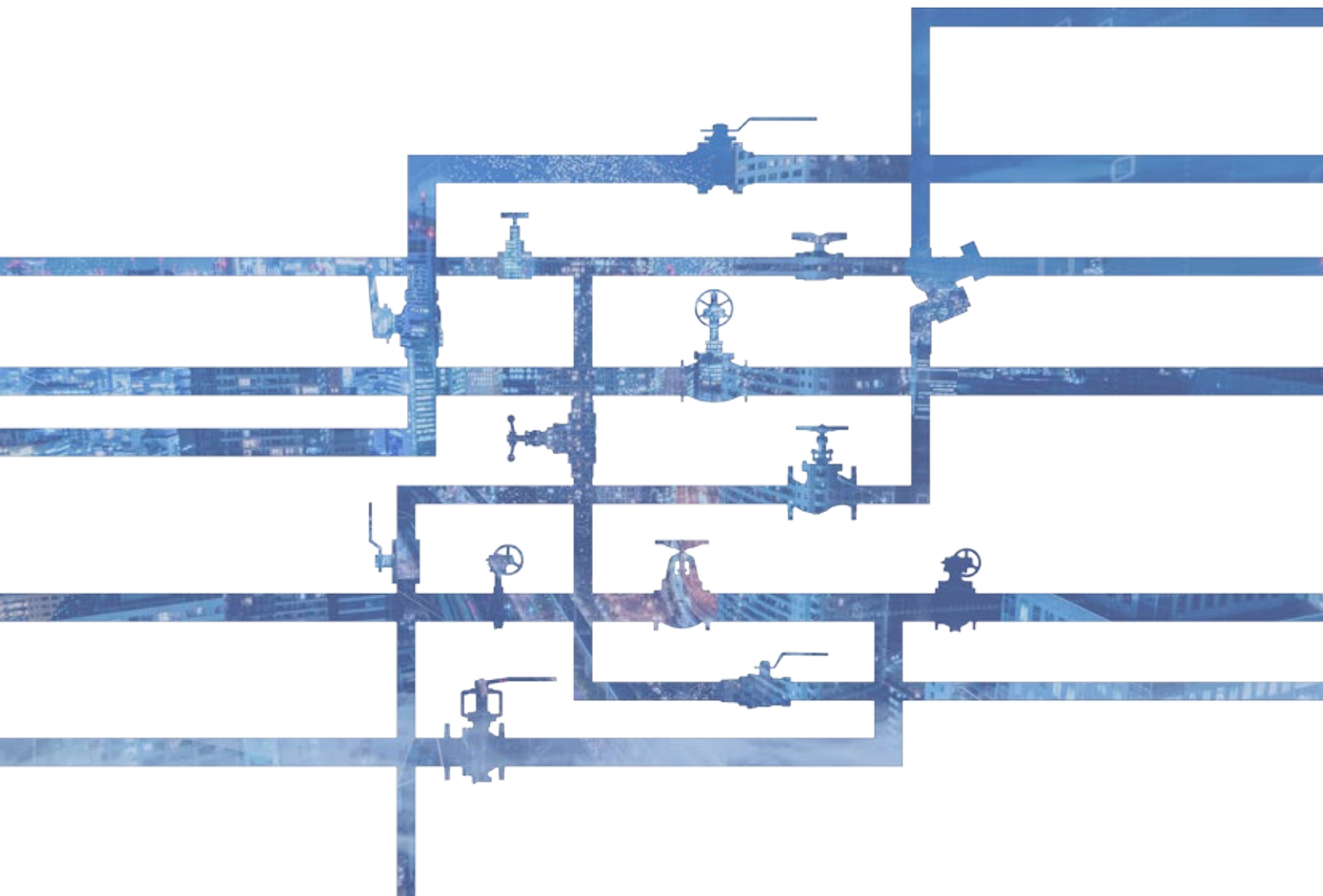


KITZ

GENERAL CATALOG

Butterfly Valves



INDEX

Title	Body Material	Type	Class	End Connection	Features	Size Range	Fig			Page		
Butterfly XJ Series	Al	Concentric	10K	Wafer	Long Neck (Dew Condensation Prevention)	11/2 ^B - 8 ^B 11/2 ^B - 12 ^B	10XJME G-10XJME	10XJMF G-10XJMF	BFV9 106			
					Short Neck	11/2 ^B - 6 ^B 11/2 ^B - 12 ^B	10XJSME G-10XJSME	BFV10 107				
					Long Neck (Dew Condensation Prevention)	11/2 ^B - 6 ^B 11/2 ^B - 8 ^B	10XJPE G-10XJPE					
					Short Neck	11/2 ^B - 6 ^B 11/2 ^B - 8 ^B	10XJSPE G-10XJSPE					
			10K/150		EN PN16	Long Neck (Dew Condensation Prevention)	11/2 ^B - 8 ^B 11/2 ^B - 12 ^B 2 ^B - 8 ^B 2 ^B - 8 ^B		10XJMEA G-10XJMEA PN16XJME G-PN16XJME	BFV11 108		
DJ/DJL Series			10K		Wafer		2 ^B - 6 ^B 2 ^B - 24 ^B 11/2 ^B - 6 ^B 11/2 ^B - 32 ^B	10DJ(E) G-10DJ(E) 10DJU(E) G-10DJU(E)	10DJM(E) G-10DJM(E)	BFV12 109		
						Long Neck (Dew Condensation Prevention)	2 ^B - 24 ^B	G-10DJKUE	BFV13 110			
						2 ^B - 24 ^B 11/2 ^B - 24 ^B	VG-10DJ(E) VG-10DJU(E)	VG-10DJM(E)				
						2 ^B - 6 ^B 2 ^B - 24 ^B 11/2 ^B - 6 ^B 11/2 ^B - 24 ^B	16DJ(E) G-16DJ(E) 16DJU(E) G-16DJU(E)	16DJM(E) G-16DJM(E)				
			16K	Long Neck (Dew Condensation Prevention)		2 ^B - 24 ^B	G-16DJKUE	BFV14 111				
						2 ^B - 24 ^B 11/2 ^B - 24 ^B	VG-16DJ(E) VG-16DJU(E)		VG-16DJM(E)			
						2 ^B - 6 ^B 2 ^B - 24 ^B	20DJUE G-20DJUE		20DJME G-20DJME			
						Long Neck (Dew Condensation Prevention)	2 ^B - 12 ^B		G-20DJKUE			
			20K	Long Neck (Dew Condensation Prevention)	26 ^B - 48 ^B 26 ^B - 40 ^B	G-10SAUE G-16SAUE	BFV15 112					
			SA Series		10K	Wafer & FE/FF		2 ^B - 8 ^B 10 ^B - 12 ^B	PN10EJMW G-PN10EJMW	PN10EJMQ G-PN10EJMQ	PN10EJMF G-PN10EJMF	BFV16 113
			EJ Series		16K							
DJ/DJL Series	DI (CI for 10DJ 14 ^B to 24 ^B)	Concentric	EN PN10	Wafer		2 ^B - 8 ^B 2 ^B - 24 ^B 2 ^B - 8 ^B 2 ^B - 24 ^B	PN16DJ(E) G-PN16DJ(E) PN16DJM(E) G-PN16DJM(E)	PN16DJU(E) G-PN16DJU(E)	BFV17 114			
					Semi Lugged	2 ^B - 8 ^B 2 ^B - 8 ^B	PN16DJSM(E) G-PN16DJSM(E)	BFV18 115				
						Lugged	2 ^B - 8 ^B 2 ^B - 24 ^B			PN16DJLM(E) G-PN16DJLM(E)		
					EN PN25		Wafer			2 ^B - 6 ^B 2 ^B - 12 ^B 2 ^B - 6 ^B 2 ^B - 12 ^B	PN25DJE G-PN25DJE PN25DJUE G-PN25DJUE	BFV19 116
			Lugged	2 ^B - 6 ^B 2 ^B - 12 ^B		PN25DJLE G-PN25DJLE			PN25DJLUE G-PN25DJLUE			
				EN PN16		Double Flanged		28 ^B - 48 ^B	G-PN16SFKBV13FUE	BFV20 117		
			DJ/DJL Series		Concentric	150	Wafer	2 ^B - 8 ^B 2 ^B - 24 ^B	150DJH(E) G-150DJH(E)	BFV21 118		
Lugged	2 ^B - 8 ^B 2 ^B - 24 ^B							150DJLH(E) G-150DJLH(E)				
	250						Wafer	2 ^B - 8 ^B 2 ^B - 12 ^B	250DJM(E) G-250DJM(E)		BFV22 119	
Lugged								14 ^B - 24 ^B	G-150DJM(E)			
						250	Lugged	2 ^B - 8 ^B 2 ^B - 12 ^B	250DJLM(E) G-250DJLM(E)	BFV23 120		
Wafer								14 ^B - 24 ^B	G-150DJLM(E)			
	200						Wafer	2 ^B - 8 ^B 2 ^B - 12 ^B	200DJA(E) G-200DJA(E)		BFV24 121	
Lugged								14 ^B - 24 ^B	G-150DJA(E)			
						200	Lugged	2 ^B - 8 ^B 2 ^B - 12 ^B	200DJLA(E) G-200DJLA(E)	BFV25 122		
Wafer								14 ^B - 24 ^B	G-150DJLA(E)			
	250						Wafer	2 ^B - 8 ^B 2 ^B - 12 ^B	250DJA(E) G-250DJA(E)		BFV26 123	
Lugged		2 ^B - 8 ^B 2 ^B - 12 ^B						250DJLA(E) G-250DJLA(E)				
	10K	FE/FF	4 ^B - 24 ^B	G-10DJFU(E) G-16DJFU(E)		BFV27 124						
16K												
DJF Series		10K	Wafer	FKM Seat		2 ^B - 6 ^B 2 ^B - 24 ^B	10FJUF G-10FJUF					

Title	Body Material	Type	Class	End Connection	Features	Size Range	Fig		Page
NFJ Series	DI (CI for 10DJ 14 ^B to 24 ^B)	Concentric	10K	Wafer	Nylon 11 Lined	2 ^B - 6 ^B 2 ^B - 12 ^B 2 ^B - 12 ^B	10NFJUE(W) G-10NFJUE(W) VG-10NFJUE(W)	10NFJNE(W) G-10NFJNE(W) VG-10NFJNE(W)	BFV20 117
LJ Series					PFA Lined	2 ^B - 6 ^B 2 ^B - 24 ^B	10LJF G-10LJF		
HDRJ Series (THROTTROL)			20K		High Rangeability, THROTTROL	2 ^B - 12 ^B	G-10HRDJUE G-20HRDJUE		BFV21 118
UB Series	SS	Double Eccentric	10K		PTFE Seat, Uni Direction	11/2 ^B - 6 ^B 11/2 ^B - 24 ^B	10UB GL-10UB	10UBM GL-10UBM	
			16K			11/2 ^B - 6 ^B 14 ^B - 24 ^B	16UB GL-16UB		BFV22 119
			20K			11/2 ^B - 6 ^B 14 ^B - 24 ^B	16UBM GL-16UBM		
			150			11/2 ^B - 12 ^B 2 ^B - 12 ^B	GL-20UB GL-20UBM		
			150			11/2 ^B - 6 ^B 11/2 ^B - 24 ^B	150UB GL-150UB	150UBM GL-150UBM	
HB Series	DI	Double Eccentric	10K	Wafer	RPTFE (C/F PTFE) Seat, Bi Direction	11/2 ^B - 6 ^B 11/2 ^B - 12 ^B	10UHB G-10UHB		BFV23 120
			20K			11/2 ^B - 12 ^B	G-20UHB		
			150			11/2 ^B - 6 ^B 11/2 ^B - 12 ^B	150UHB G-150UHB		
			10K			2 ^B - 6 ^B 2 ^B - 14 ^B	10SHB G-10SHB		
			16K			2 ^B - 6 ^B 2 ^B - 14 ^B	16SHB G-16SHB		BFV24 121
			150			2 ^B - 6 ^B 2 ^B - 14 ^B	150SHB G-150SHB		
CPD Series CPC Series CPT Series	SS or CS	Double Eccentric Triple Ecc	150 - 900	Wafer or Lugged or FE	API 609, PTFE or Rubber or Metal or Laminated	2 ^B - 24 ^B	(■-)□0□CPD□□□ (■-)□0□CPL□□□ (■-)□0□CPT□□□		BFV24 121
HBS	CS	Double Ecc	150	Lugged	RPTFE (C/F PTFE), Bi Direction, Dead End Service	21/2 ^B - 5 ^B 6 ^B - 12 ^B	150SCHBSL G-150SCHBSL		BFV25 122
			300		API 609, PTFE, Bi Direction, Dead End Service	2-1/2 ^B - 5 ^B 6 ^B - 8 ^B	300SCHBSL G-300SCHBSL		
GE	DI	Concentric		Grooved	Nylon Lined, Chlorine-Resistant Seat	2 ^B - 6 ^B 2 ^B - 12 ^B	300SGECE G-300SGECE		BFV26 123
DRAIN Series	DI	Concentric	7.5K	FE	Eccentric Valve for Swage	3 ^B - 12 ^B	G-7.5SVB G-10SVB		
			10K						
			7.5K		Butterfly Valve for Swage	8 ^B - 60 ^B	G-7.5SGBFS G-10SGBFS		
			10K						
DAMPER	CI	Concentric	10K	Wafer	Metal Seat	2 ^B - 12 ^B	10D GL-10D 10A GL-10A		BFV26 123
Mini Butterfly	BC SS		7.5K	TE	W-NBR Seat	1/2 ^B - 2 ^B	FV UV		

* (Abbreviation) FE: Flanged Ends, FF: Flat face Ends, TE: Threaded Ends

PRODUCT CODING

Butterfly Valves

(Note: Some products do not follow this coding system.)

G - 10 DJ L M E

1 2 3 4 5 6

1 Valve Operation

None Handwheel or Lever
G, G Ior VG Gear

2 Pressure Class

7.5 7.5K
10 10K
16 16K
20 20K
PN10 EN PN10
PN16 EN PN16
PN25 EN PN25
150 Class 150
200 Class 200
250 Class 250
300 Class 300

3 Series

XJ
DJ/DJK/DJL/DJF/SA
EJ
FJ
NFJ
LJ
HRDJ
SHB
UB
UHB
SVB/SGBFS
D/A
FV/UV

5 Disc Material

None Ductile Iron (Ni Plated)
304SS+Cr Plating for UB/UHB/SHB
U 304SS
M 316SS
H 316SS Including Stem
P 304SS+PPS
A Aluminum Bronze

6 Seat Material

None NBR
E EPDM
W White EPDM
F FKM
Q VMQ (Silicon Rubber)

4 End Connection

None Wafer
S Semi-Lugged
L Lugged
F Double Flanged

Butterfly Valves (CPD/CPT/CPC Series)

Please contact KITZ representative for details.

G - 10 U CPD L H M

1 2 3 4 5 6 7

1 Valve Operation

None Lever
G Gear
E Electric Actuator
Y, YS Pneumatic Actuator

2 Class

150, 300, 10-30K, PN10-40 For CPD
30K For CPC
150-2500, 10-40K, PN10-40 For CPT

3 Symbol of Shell Material

SC Carbon Steel
U Stainless Steel

4 Series

CPD CPD Series/ Double Eccentric
CPC CPC Series/ Double Eccentric
CPT CPT Series/ Tripple Eccentric

5 End Connection

None (or 924) ... Wafer
L (or 925) Lugged
F (or 926) Double Flanged

6 Seat Material

"For CPD/CPC Series of ④"
None (or ST) PTFE
H (ot FM) Metal
FS (or TF) PTFE + Metal
RN (or RS) NBR
RE (or RS) EPDM
RF (or RS) FKM
"For CPT Series of ④"
None (or TE) Laminate (Metal + Graphite or PTFE)
H (or TE) Metal

7 Shell Material

For U of ③
None CF8
M CF8M
For SC of ③
None WCB
BL LCB
CL LCC

<Other Information>

Production Size Up to 160^B (4000^A)
Standard API/JIS/ASME/DIN/AWWA/ISO/BS
Approval PED/CE
API 607 Fire Safe Shell MESC 77/300 "TAT"
API 609 Category A/B SIL III
OHSAS 18001 UL

Design Specification

Butterfly Valves

Series	Fig	Seat	Service Temp Range (EPDM: Not Frozen)	Continuous Service Temp (Not Frozen)	Valve Design	Face to Face Dimension	Coupling Flange	Remarks
XJ	10XJME 10XJMEA PN16XJME	EPDM	-20°C to +120°C	-20°C to +100°C		API609 Category A, EN558 Basic Series 20, ISO5752-20, JIS B2002(2032) 46 Series	JIS B2220/2239 10K ASME Class 150, JIS B2220/2239 10K *1 EN1092 PN16 *2	ISO 5211/*1 With Centering Sleeves
DJ/DJL	DJ/DJL DJE/DJLE	NBR EPDM	0°C to +70°C -20°C to +120°C	-10°C to +100°C	API609, MSS SP-67, EN593, JIS B2032	API609 Category A, MSS SP-67 W-1(2 ^B -14 ^B)W-2(16 ^B -24 ^B), EN558 Basic Series 20, ISO5752-20, JIS B2002(2032) 46 Series	ASME class 150/200/250, JIS B2220/2239 10K/16K/20K, EN1092 PN10/16/25, BS 10(AS 2129) Table D&E	ISO 5211 / 2 ^B to 12 ^B : Molded-in (Bonded) Seat, Other Sizes: Replaceable Seat
SA	SAUE	EPDM	-20°C to +120°C	0°C to +100°C		JIS B2002(2032) 46 Series, 1100A: KITZ Standard	JIS B2239 10K/16K	Flanged Ends
DJF	DJFU DJFUE	NBR EPDM*2	0°C to +70°C -20°C to +120°C	-10°C to +100°C	JIS B2032	JIS B2002(2032) 123 Series except 4 ^B of 10K/16K & 8 ^B /12 ^B /14 ^B /16 ^B of 16K	JIS B2220 10K/16K	*2 Dead End Service: 0°C to +90°C
FJ	FJUF	FKM	5°C to +90°C			JIS B2002(2032) 46 Series	JIS B2220 10K	ISO 5211
NFJ	NFJUE/W NFJNE/W	EPDM or W-NBR	0°C to +60°C 0°C to +40°C			JIS B2002(2032) 46 Series	JIS B2220 5K/10K	ISO 5211
EJ	EJMW EJMQ EJMF	W-NBR VMQ FKM	0°C to +80°C -10°C to +180°C 0°C to +130°C		EN593	API609, EN558 Basic Series 20, ISO5752-20, JIS B2002(2032) 46 Series	ASME Class 125/150, EN1092 PN10/16, BS 10(AS 2129) Table E	ISO 5211
LJ	LJF	PFA	-10°C to +150°C			API609 cat. A, EN558 Basic Series 20, ISO5752-20, JIS B2002(2032) 46 Series	JIS B2220/2239 10K (ASME Class 150: Option)	ISO 5211
UB	UB UB	PTFE C/F PTFE	-29°C to +160°C -29°C to +200°C		Wall Thickness ASME B16.34	Up to 6 ^B : ISO 5752 Short/ JIS B2002 46 Series, 8 ^B & Above: ISO 5752 Midium/ JIS B2002 47 Series	ASME Class 150, JIS B2220 10K/16K	Uni Direction, Double Offset
HB	SHB	C/F PTFE	-10°C to +200°C			JIS B2002(2032) 46 Series	ASME Class 150, JIS B2220 10K/16K/20K	Bi-Directional, Double Offset, ISO5211
	UHB	C/F PTFE	-29°C to +200°C				ASME Class 150, JIS B2220 5K/10K/16K/20K	
HRDJ	HJDJUE	EPDM	-20°C to +120°C	0°C to +100°C		JIS B2002(2032) 46 Series	JIS B2220 5K/10K/16K/20K	160:1 of Rangeability, Equal % Flow, Tight Shut Off, Preventing Erosion by Jet Flow
D/A	D/A	Metal	0°C to +230°C			KITZ Standard	JIS B2220 5K/10K	
FV/UV	FV/UV	304+W NBR	0°C to +70°C			KITZ Standard	-	
CPD	Metal or RTFE or NBR/EPDM				API609 Double Offset	API 609 Category B, ISO5752-13		Wafer, Lugged, Double Flanged
CPC (JIS 30K)	NBR or EPDM				API609 Double Offset	AWWA etc		CF8/CF8M, WCB/LCB/LCC
CPT	Laminate or Metal				API609 Triple Offset			
Drain	G-7.5/10SVB					JIS B2062		End Flange: JIS G5527
	G-7.5/10SGBFS					JWWA B138		End Flange: JWWA B138

Corrosion Resistant Levels for Disc and Seat Materials Against Fluid

Table below indicates applicable fluids represented against each disc/rubber seat material. Please refer to 'Cautions' in 'Product Selection' of 'Cautions for Handling' at the end of this material for other cautions. Also, contact KITZ representative for any other queries. Temperature and operational conditions may cause differences.

Fluid	Material	Wetted Part Materials (Disc or Body Material for UB/HB/FV/UV)				Seat Material			
		FCD450	SCS13A	SCS14A	C37771BE	NBR W-NBR	EPDM*	PTFE	PFA
Sulfurous Acid		×	○	○	×	△	△	◎	◎
Ammonia (Anhydrous Liquid)		○	◎	◎	×	△	○	◎	◎
Ammonia (Solution)		○	◎	◎	×	○	○	◎	◎
Ethane		○	○	○	—	◎	×	◎	◎
Ethyl Alcohol		○	◎	◎	○	○	◎	◎	◎
Hydrochloric Acid		×	×	×	×	△	○	◎	◎
Sea Water		×	○	○	△	◎	◎	◎	◎
Gasoline (Refined/Unleaded)		○	◎	◎	◎	△	×	◎	◎
Air		◎	◎	◎	◎	◎	◎	◎	◎
Mineral Oil		○	◎	◎	○	◎	×	◎	◎
Heavy Oil (A,B,C)		△	◎	◎	—	×	×	◎	◎
Acetic Acid (10%)		△	◎	◎	×	×	○	◎	◎
Oxygen (Cold)		○	◎	◎	◎	○	○	◎	◎
Lubricating Oil (Petroleum Base)		◎	◎	◎	○	◎	×	◎	◎
Vegitable Oil		△	◎	◎	—	◎	△	◎	◎
Steam (100°C)		◎	◎	◎	◎	×	○	◎	◎
Hydrogen Gas (Cold)		○	◎	◎	—	○	○	◎	◎
Petroleum Oil (Refined)		—	◎	◎	—	○	×	◎	◎
Soybean Oil		△	◎	◎	○	◎	△	◎	◎
Carbonic Acid		×	○	○	—	○	○	◎	◎
Calcium Carbonate		×	○	○	△	◎	◎	◎	◎
Natural Gas		◎	◎	◎	—	○	×	◎	◎
Animal Fat		◎	◎	◎	—	◎	×	◎	◎
Propane Gas		○	○	◎	—	◎	×	◎	◎
Water (Fresh ≤ 40°C)		△	◎	◎	◎	○	◎	◎	◎
Water (Hot ≤ 40-100°C)		△	◎	◎	◎	×	○	◎	◎
Methyl Alcohol		○	◎	◎	○	○	◎	◎	◎
Sulfuric Acid (7%)		×	△	○	—	○	○	◎	◎
Sulfuric Acid (20%)		×	×	×	△	×	○	◎	◎
Sulfuric Acid (≥ 50%)		×	×	×	×	×	○	◎	◎
Ammonium Sulfate		△	○	○	—	◎	◎	◎	◎
Products		DJ·DJL	DJ·DJL· UB·HRDJ	XJ·DJ· DJL·UV	FV	DJ·DJL FV·UV	XJ·DJ·DJL HRDJ	UB·SHB· UHB	LJ

◎=Excellent ○=Good △=Less Recommended ×=Not Recommended —=Contact KITZ representative for details

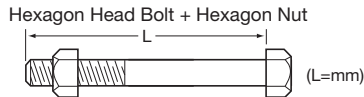
* EPDM is not applicable for oil.

Differential Pressure Control Allowance and Differential Pressure Control Ratio

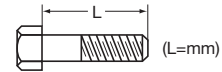
Structure	Nominal Diameter		Differential Pressure Control Allowance (kPa)		Differential Pressure Control Ratio
	NPS	DN	Fluid	Gas	
Rubber Sheet	2 ~ 8	50 ~ 200	200	100	0.30
	10 ~ 12	250 ~ 300	150	100	0.25
	14 ~ 24	350 ~ 600	100	50	0.20
PTFE Sheet (for UB Series)	2 ~ 24	50 ~ 600	300	200	0.30
Damper	2 ~ 24	50 ~ 300	—	30	0.10

[Note]

- In the event of using the product at service conditions exceeding values of table above, kindly contact KITZ representative.
- Differential Pressure is pressure differences between primary side pressure and secondary side pressure. ($\Delta P = p_1 - p_2$)
- Pressure difference is represented by the values of differences in pressure divided by pressure of primary side. (absolute pressure)



*Size 24 ~ 32" require Additional Hexagon Head Bolts.

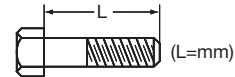


Hexagon Head Bolt + Hexagon Nut for XJ Series/DJ Series/HRDJ Series

(mm)

Flange		ASME Class 150/200/250				PN6			EN PN10			EN PN16			EN PN25			BS 10 Table E			JIS 10K			JIS 16K/20K			
NPS	DN	Size	L (inch/mm)	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L (16K)	L (20K)	Number	
1½	40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	M16	85	4	–	–	–	–	
2	50	5/8	4.25	108	4	M12	90	4	M16	105	4	M16	105	4	M16	110	4	5/8	95	4	M16	95	4	M16	95	100	8
2½	65	5/8	4.75	121	4	M12	90	4	M16	105	4	M16	105	4	M16	115	8	5/8	100	4	M16	105	4	M16	105	105	8
3	80	5/8	4.75	121	4	M16	100	4	M16	105	8	M16	105	8	M16	120	8	5/8	100	4	M16	105	8	M20	110	115	8
4	100	5/8	5.00	127	8	M16	110	4	M16	115	8	M16	115	8	M20	130	8	5/8	110	8	M16	110	8	M20	120	125	8
5	125	¾	5.25	133	8	M16	115	8	M16	115	8	M16	115	8	M24	140	8	5/8	115	8	M20	120	8	M22	125	140	8
6	150	¾	5.50	140	8	M16	115	8	M20	120	8	M20	120	8	M24	145	8	¾	115	8	M20	125	8	M22	130	140	12
8	200	¾	5.75	146	8	M16	125	8	M20	130	8	M20	130	12	M24	150	12	¾	125	8	M20	130	12	M22	140	150	12
10	250	7/8	6.50	165	12	M16	135	12	M20	140	12	M24	150	12	M27	170	12	¾	140	12	M22	150	12	M24	150	170	12
12	300	7/8	7.00	178	12	M20	150	12	M20	155	12	M24	160	12	M27	180	16	7/8	160	12	M22	160	16	M24	170	180	16
14	350	1	7.50	191	12	–	–	–	M20	155	16	M24	170	16	–	–	–	–	–	–	M22	160	16	–	180	190	16
16	400	1	8.50	216	16	–	–	–	–	–	–	M27	200	16	–	–	–	–	–	–	M24	190	16	–	210	230	16
18	450	1⅛	9.25	235	16	–	–	–	–	–	–	M27	210	20	–	–	–	–	–	–	M24	210	20	–	230	245	20
20	500	1⅛	10.25	260	20	–	–	–	–	–	–	M30	230	20	–	–	–	–	–	–	M24	220	20	–	250	260	20
22	550	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	M30	260	20	–	290	300	20
24	600	1¼	11.75	298	20	–	–	–	–	–	–	M33	270	20	–	–	–	–	–	–	M30	260	20	–	290	300	20
																						70*	8*		90*	100*	8*
26	650	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	M30	270	16	–	–	–	
																						65*	16*				
28	700	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	M30	270	16	–	–	–	
																						70*	16*				
30	750	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	M30	300	16	–	–	–	
																						70*	16*				
32	800	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	M30	300	20	–	–	–	
																						70*	16*				

Hexagon Head Bolts.

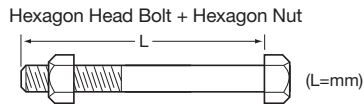


Lugged Type

Hexagon Head Bolt for DJL

(mm)

Flange		ASME Class 150/200/250				EN PN10			EN PN16			EN PN25			
NPS	DN	Size	L (inch/mm)	Number	Size	L	Number	Size	L	Number	Size	Steel		Ductile	Number
2	50	5/8	1.375	35	8	M16	38	8	M16	38	8	M16	40		8
2 1/2	65	5/8	1.500	38	8	M16	40	8	M16	40	8	M16	40		16
3	80	5/8	1.625	41	8	M16	40	16	M16	40	16	M16	45	40	16
4	100	5/8	1.875	48	16	M16	40	16	M16	40	16	M20	45	40	16
5	125	3/4	1.875	48	16	M16	40	16	M16	40	16	M24	50	45	16
6	150	3/4	2.000	51	16	M20	45	16	M20	45	16	M24	50	45	16
8	200	3/4	2.125	54	16	—	—	—	M20	45	24	M24	55	50	24
10	250	7/8	2.375	60	24	—	—	—	M24	53	24	M27	60	55	24
12	300	7/8	2.625	67	24	—	—	—	M24	60	24	M27	65	60	32
14	350	1	2.750	70	24	—	—	—	M24	60	32	—	—	—	—
16	400	1	3.000	76	32	—	—	—	M27	70	32	—	—	—	—
18	450	1 1/8	3.375	86	32	—	—	—	M27	75	40	—	—	—	—
20	500	1 1/8	3.500	89	40	—	—	—	M30	80	40	—	—	—	—
24	600	1 1/4	4.000	102	40	—	—	—	M33	90	40	—	—	—	—



Hexagon Head Bolt + Hexagon Nut for LJ Series

(mm)

Flange		JIS 10K			
DN	NPS	Size	L	B	Number
50	2	M16	90	38	4
65	2½	M16	105	38	4
80	3	M16	105	38	4
100	4	M16	105	38	8
125	5	M20	120	46	8
150	6	M20	130	52	8
200	8	M20	150	52	8
250	10	M22	160	56	12
300	12	M22	170	56	12

Hexagon Head Bolt + Hexagon Nut for UB Series

(mm)

Flange		JIS 5K				JIS 10K				JIS16K/20K				ASME Class 150				
DN	NPS	Size	L	B	Number	Size	L	B	Number	Size	L	B	Number	Size	Thread per inch	L	B	Number
40	1½	M12	80	30	4	M16	90	38	4	M16	95	38	4	1/2	11	90	38	4
50	2	M12	95	30	4	M16	100	38	4	M16	105	38	4	5/8	11	105	38	4
65	2½	M12	95	30	4	M16	110	38	4	M16	115	38	4	5/8	11	110	38	4
80	3	M16	100	38	4	M16	110	38	8	M20	130	46	8	5/8	11	115	38	4
100	4	M16	110	38	8	M16	115	38	8	M20	140	52	8	5/8	11	130	44	8
125	5	M16	120	38	8	M20	130	52	8	M22	140	56	8	3/4	10	140	52	8
150	6	M16	120	38	8	M20	130	52	8	M22	150	56	8	3/4	10	140	52	8
200	8	M20	140	52	8	M20	150	52	12	M22	170	56	12	3/4	10	160	52	8
250	10	M20	150	52	12	M22	160	56	12	M24	190	60	12	7/8	9	180	56	12
300	12	M20	160	52	12	M22	170	56	16	M24	200	60	16	7/8	9	190	56	12
350	14	M22	170	56	12	M22	180	56	16	M30×3	200	72	16	1	8	200	60	12
400	16	M22	180	56	16	M24	200	60	16	M30×3	220	85	16	1	8	220	79	16
450	18	M22	200	56	12	M24	210	73	16	M30×3	240	85	16	1 1/8	8	240	85	16
			60*	52.5*	8*		68*	54*	8*		80*	66*	8*					
500	20	M22	210	69	16	M24	220	73	16	M30×3	250	85	16	1 1/8	8	260	85	16
			50*	42.5*	8*		60*	54*	8*		70*	66*	8*					
550	22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
600	24	M24	240	73	16	M30	260	85	20	M36×3	290	97	20	1 1/4	8	300	91	16
			63*	54*	8*		78*	66*	8*		90*	78*	8*					

* Sizes apply to both hexagon bolt with nut and hexagon head bolt. (set bolt)

Hexagon Head Bolt + Hexagon Nut for D/A Type Damper

(mm)

Flange		JIS 5K				JIS 10K			
DN	NPS	Size	L	B	Number	Size	L	B	Number
50	2	M12	90	30	4	M16	100	38	4
65	2½	M12	100	30	4	M16	110	38	4
80	3	M16	110	38	8	M16	120	38	8
100	4	M16	120	38	8	M16	130	38	8
125	5	M16	130	38	8	M20	140	52	8
150	6	M16	140	38	8	M20	150	52	8
200	8	M20	150	52	12	M20	160	52	12
250	10	M20	170	52	12	M22	180	56	12
300	12	M20	180	52	16	M22	190	56	16

* Above bolt sizes are for UB Series and D/A Type Damper with gasket of 3mm.

Pipe

When butterfly valve is being opened, movement of disc may be interrupted by pipe internals, where butterfly valve is connected to welded pipe flange in illustration on the right. Use of pipes indicated in the table on the right is recommended. Valve-to-Flange centering must be done accurately when installing valve to pipeline.

Double Welding

Valve Series		XJ Series			DJ Series			UB Series			HB Series			D/A Damper			LJ Series		
DN	NPS	SGP	Schedule		SGP	Schedule		10S	Schedule		SGP	Schedule		SGP	Schedule		SGP	Schedule	
			20	40		20	40		20	40		20	40		20	40		40	40S
40	1 1/2	●	●	●	●	—	—	●	●	●	●	●	●	—	—	—	—	—	—
50	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
65	2 1/2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
80	3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
100	4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
125	5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
150	6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
200	8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
250	10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
300	12	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
350	14	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—
400	16	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—
450	18	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—
500	20	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—	—	—
550	22	—	—	—	—	●	●	—	—	—	—	—	—	—	—	—	—	—	—
600	24	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Welding/TS Flange

Valve Series		XJ Series				DJ Series				UB Series				HB Series				D/A Damper		
DN	NPS	SGP	Schedule		TS	SGP	Schedule		TS	10S	Schedule		TS	SGP	Schedule		TS	SGP	Schedule	
			20	40			20	40				20		40		20		40		20
40	1 1/2	●	●	●	●	●	—	●	●	●	●	●	●	●	●	●	●	—	—	—
50	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
65	2 1/2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
80	3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
100	4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
125	5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
150	6	●	●	●	×	●	●	●	×	●	●	●	×	●	●	●	●	●	●	●
200	8	●	●	●	×	●	●	●	×	●	●	●	×	●	●	●	×	●	●	●
250	10	●	●	●	●	●	●	●	●	●	●	●	×	●	●	●	●	●	×	●
300	12	●	●	●	●	●	●	●	●	●	●	●	×	●	●	●	●	●	●	×
350	14	—	—	—	—	●	●	●	●	—	—	—	—	—	—	—	—	—	—	●
400	16	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—	—	●
450	18	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—	—	●
500	20	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—	—	●
550	22	—	—	—	—	—	●	●	—	—	—	—	—	—	—	—	—	—	—	●
600	24	—	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	●

Sizes of Lined Steel Pipes

In case of connecting to vinyl chloride line steel pipes, size of flange must be larger than the minimum inside diameter in table below. When connecting to pulverulent polyethelene line pipes, no special care is required.

Unit: mm

Valve Series	Size	DN	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600
	NPS	1½	2	2½	3	4	5	6	8	10	12	14	16	18	20	22	24	
XJ Series		28	41	57	71	93	117	142	193	244	292	—	—	—	—	—	—	
DJ Series		28	32	52	75	92	118	145	195	244	292	332	379	427	473	513	566	
UB Series		—	33	57	71	88	118	140	190	239	281	327	373	424	471	—	567	
HB Series		30	44	56	77	97	123	146	200	245	295	—	—	—	—	—	—	
D/A Damper		—	36	53	69	86	119	139	190	240	288	—	—	—	—	—	—	

Note: When connecting a pipe with diameter smaller than the values in table above may cause interference of the pipe and disc.

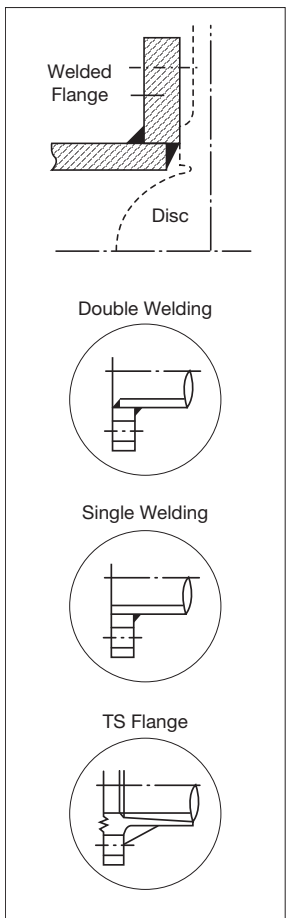
Indicator

- When insulating a valve with a gear unit, in order to display open degree outside of insulation material, optional component to extend the indicator is required.

Valve Series		G-10XJ	G-10DJ	G-16DJ	G-20DJ	GL-10/16/150 UB	G-10/16/150 HB	G-10HRDJ	G-10LJF
Size	NPS								
DN	1 1/2			—					—
50	2								
65	2 1/2								
80	3								
100	4								
125	5								
150	6								
200	8								
250	10								
300	12								
350	14								
400	16								
450	18								
500	20								
550	22								
600	24								

*1 Contact KITZ representative for products with material/paint/connection option for indicator mounting on G-10DJ Series. OS SET2CJ may be selected.

*2 Contact KITZ representative for products with material/paint/connection option for indicator mounting on G-10DJ Series. OS SET2 may be selected.

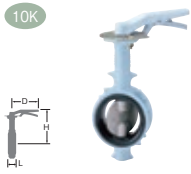
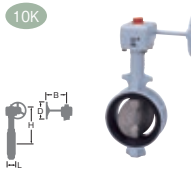
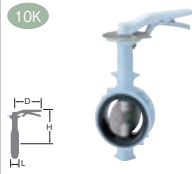
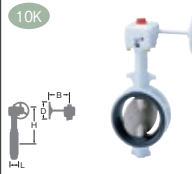


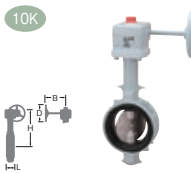
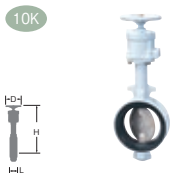
Type	XJ Series				XJ Series				XJ Series				XJ Series			
Butterfly Valve																
	10K				10K				10K				10K			
Fig	10XJME				G-10XJME				10XJMF				G-10XJMF			
End Connection	Wafer (JIS 5K/10K)				Wafer (JIS 5K/10K)				Wafer (JIS 5K/10K)				Wafer (JIS 5K/10K)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B	
11/2	40	33	172	180	33	175	80	122								
2	50	43	176	180	43	179	80	122	43	176	180	43	179	80	122	
21/2	65	46	185	180	46	188	80	122	46	185	180	46	188	80	122	
3	80	46	193	180	46	196	80	122	46	193	180	46	196	80	122	
4	100	52	204	180	52	223	110	135	52	204	180	52	223	110	135	
5	125	56	249	230	56	258	110	150	56	249	230	56	258	110	150	
6	150	56	261	230	56	270	110	150	56	261	230	56	270	110	150	
8	200	60	281	350	60	311	170	180	60	281	350	60	311	170	180	
10	250				68	405	170	180								
12	300				78	430	170	180								
Body	ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)			
Neck	304SS				304SS				304SS				304SS			
Stem/Bottom Stem	410SS				410SS				410SS				410SS			
Disc	CF8M				CF8M				CF8M				CF8M			
O ring	EPDM				EPDM				EPDM				EPDM			
Rubber Seat	EPDM				EPDM				FKM				FKM			
Features	Dew Condensation Prevention				Dew Condensation Prevention				Dew Condensation Prevention				Dew Condensation Prevention			
Service Temperature Range	-20°C~+120°C 1.0MPa (Not Frozen)/Continuous Service Temp. -20°C~+100°C				-20°C~+120°C 1.0MPa (Not Frozen)/Continuous Service Temp. -20°C~+100°C				0°C~+90°C 1.0MPa				0°C~+90°C 1.0MPa			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV28			

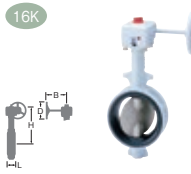
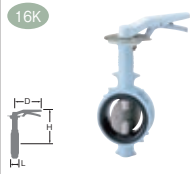
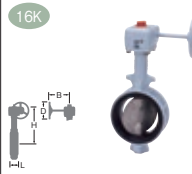
Type	XJ Series				XJ Series				XJ Series				XJ Series			
Butterfly Valve																
	10K				10K				10K				10K			
Fig	10XJSME				G-10XJSME				10XJPE				G-10XJPE			
End Connection	Wafer (JIS 5K/10K)				Wafer (JIS 5K/10K)				Wafer (JIS 5K/10K)				Wafer (JIS 5K/10K)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B	
11/2	40	33	137	180	33	140	80	122	33	172	180	33	175	80	122	
2	50	43	139	180	43	142	80	122	43	176	180	43	179	80	122	
21/2	65	46	147	180	46	150	80	122	46	185	180	46	188	80	122	
3	80	46	156	180	46	159	80	122	46	193	180	46	196	80	122	
4	100	52	167	180	52	186	110	135	52	204	180	52	223	110	135	
5	125	56	205	230	56	214	110	150	56	249	230	56	258	110	150	
6	150	56	217	230	56	226	110	150	56	261	230	56	270	110	150	
8	200				60	267	170	180				60	311	170	180	
10	250				68	317	170	180								
12	300				78	342	170	180								
Body	ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)			
Neck	304SS				304SS				304SS				304SS			
Stem/Bottom Stem	410SS				410SS				410SS				410SS			
Disc	CF8M				CF8M				CF8+PPS				CF8+PPS			
O ring	EPDM				EPDM				EPDM				EPDM			
Rubber Seat	EPDM				EPDM				EPDM				EPDM			
Features	Dew Condensation Prevention				Dew Condensation Prevention				Dew Condensation Prevention				Dew Condensation Prevention			
Service Temperature Range	-20°C~+120°C 1.0MPa (Not Frozen)/Continuous Service Temp. -20°C~+100°C				-20°C~+120°C 1.0MPa (Not Frozen)/Continuous Service Temp. -20°C~+100°C				-20°C~+120°C 1.0MPa (Not Frozen)/Continuous Service Temp. -20°C~+100°C				-20°C~+120°C 1.0MPa (Not Frozen)/Continuous Service Temp. -20°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV28			

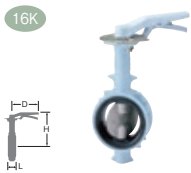
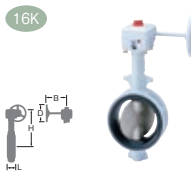
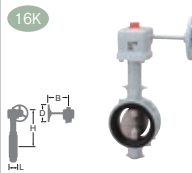
Type	XJ Series				XJ Series				XJ Series				XJ Series			
Butterfly Valve																
																
Fig	10XJSPE				G-10XJSPE				10XJMEA				G-10XJMEA			
End Connection	Wafer (JIS 5K/10K)				Wafer (JIS 5K/10K)				Wafer (5/10K,125/150)				Wafer (5/10K,125/150)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B	
11/2	40	33	137	180	33	140	80	122	33	172	180	33	175	80	122	
2	50	43	139	180	43	142	80	122	43	176	180	43	179	80	122	
2 1/2	65	46	147	180	46	150	80	122	46	185	180	46	188	80	122	
3	80	46	156	180	46	159	80	122	46	193	180	46	196	80	122	
4	100	52	167	180	52	186	110	135	52	204	180	52	223	110	135	
5	125	56	205	230	56	214	110	150	56	249	230	56	258	110	150	
6	150	56	217	230	56	226	110	150	56	261	230	56	270	110	150	
8	200				60	267	170	180	60	281	350	60	311	170	180	
10	250											68	405	170	180	
Body	ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)			
Neck	304SS				304SS				304SS				304SS			
Stem/Bottom Stem	410SS				410SS				410SS				410SS			
Disc	CF8+PPS				CF8+PPS				CF8M				CF8M			
O ring	EPDM				EPDM				EPDM				EPDM			
Rubber Seat	EPDM				EPDM				EPDM				EPDM			
Features									Dew Condensation Prevention				Dew Condensation Prevention			
Service Temperature Range	-20℃~+120℃ 1.0MPa (Not Frozen)/Continuous Service Temp. -20℃~+100℃				-20℃~+120℃ 1.0MPa (Not Frozen)/Continuous Service Temp. -20℃~+100℃				-20℃~+120℃ 1.0MPa (Not Frozen)/Continuous Service Temp. -20℃~+100℃				-20℃~+120℃ 1.0MPa (Not Frozen)/Continuous Service Temp. -20℃~+100℃			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV28			

Type	XJ Series				XJ Series				DJ Series			DJ Series			
Butterfly Valve	PN16 Long neck				PN16 Long neck				10K			10K			
															
Fig	PN16XJME				G-PN16XJME				10DJ(E)			G-10DJ(E)			
End Connection	Wafer (EN 1092 PN16)				Wafer (EN 1092 PN16)				Wafer (JIS 10K)			Wafer (JIS 10K)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B
2	50	43	176	180	43	179	80	122	43	189	180	43	194	80	122
2 1/2	65	46	185	180	46	188	80	122	46	199	180	46	202	80	122
3	80	46	193	180	46	212	80	122	46	217	180	46	236	110	135
4	100	52	204	180	52	223	110	135	52	227	180	52	246	110	135
5	125	56	249	230	56	258	110	150	56	265	230	56	274	110	150
6	150	56	261	230	56	270	110	150	56	277	230	56	286	110	150
8	200	60	281	350	60	311	170	180				60	325	170	180
10	250											68	381	250	250
12	300											78	406	250	250
14	350											78	445	310	220
16	400											102	500	310	220
18	450											114	524	310	220
20	500											127	589	360	350
24	600											154	637	360	350
Body	ADC12(ASTM B85-84-383.0)				ADC12(ASTM B85-84-383.0)				FCD450-10(ASTM A536)*			FCD450-10(ASTM A536)*			
Neck	304SS				304SS										
Stem/Bottom Stem	410SS				410SS				410SS			410SS			
Disc	CF8M				CF8M				DI+ENP			DI+ENP			
O ring	EPDM				EPDM				NBR (E: EPDM)			NBR (E: EPDM)			
Rubber Seat	EPDM				EPDM				NBR (E: EPDM)			NBR (E: EPDM)			
Features	Dew Condensation Prevention				Dew Condensation Prevention										
Service Temperature Range	-20℃~+120℃ 1.0MPa (Not Frozen)/Continuous Service Temp. -20℃~+100℃				-20℃~+120℃ 1.0MPa (Not Frozen)/Continuous Service Temp. -20℃~+100℃				NBR: 0℃~+70℃, EPDM: -20℃~+120℃(Not Frozen)/Continuous Service Temp. -20℃~+100℃			NBR: 0℃~+70℃, EPDM: -20℃~+120℃(Not Frozen)/Continuous Service Temp. -20℃~+100℃			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV28				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			
Remarks												*CI: 14 ^º & above			

Type	DJ Series				DJ Series				DJ Series				DJ Series			
Butterfly Valve																
Fig	10DJU(E)				G-10DJU(E)				10DJM(E)				G-10DJM(E)			
End Connection	Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)			
inch	mm	L	H	D	L	H	D	B	L	H	D		L	H	D	B
11/2	40	33	172	180	33	172	80	122	33	172	180		33	172	80	122
2	50	43	189	180	43	194	80	122	43	189	180		43	194	80	122
2 1/2	65	46	199	180	46	202	80	122	46	199	180		46	202	80	122
3	80	46	217	180	46	236	110	135	46	217	180		46	236	110	135
4	100	52	227	180	52	246	110	135	52	227	180		52	246	110	135
5	125	56	265	230	56	274	110	150	56	265	230		56	274	110	150
6	150	56	277	230	56	286	110	150	56	277	230		56	286	110	150
8	200				60	325	170	180					60	325	170	180
10	250				68	381	250	250					68	381	250	250
12	300				78	406	250	250					78	406	250	250
14	350				78	445	310	220					78	445	310	220
16	400				102	500	310	220					102	500	310	220
18	450				114	524	310	220					114	524	310	220
20	500				127	589	360	350					127	589	360	350
22	550				154	612	360	350					154	612	360	350
24	600				154	637	360	350					154	637	360	350
26	650				165	710	600	413					165	710	600	413
28	700				165	735	600	413					165	735	600	413
30	750				190	836	500	365					190	836	500	365
32	800				190	862	500	365					190	862	500	365
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)*				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)*			
Stem/Bottom Stem	410SS				410SS/420J2 for 14" & over				410SS				410SS/420J2 for 14" & over			
Disc	CF8				CF8				CF8M				CF8M			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Service Temperature Range	NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			
Remarks					*Cl: 14" & above								*Cl: 14" & above			

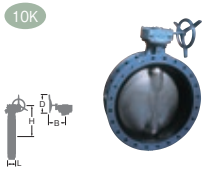
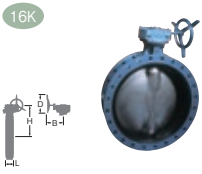
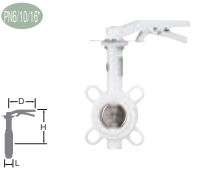
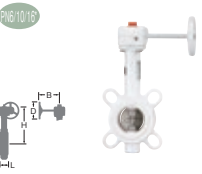
Type	DJK Series				DJ Series				DJ Series				DJ Series			
Butterfly Valve																
Fig	G-10DJKUE				VG-10DJ(E)				VG-10DJU(E)				VG-10DJM(E)			
End Connection	Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)			
inch	mm	L	H	D	B	L	H	D		L	H	D		L	H	D
11/2	40									33	251	110		33	251	110
2	50	43	220	110	135	43	270	110		43	270	110		43	270	110
2 1/2	65	46	228	110	135	46	278	110		46	278	110		46	278	110
3	80	46	248	110	135	46	285	110		46	285	110		46	285	110
4	100	52	258	110	135	52	295	110		52	295	110		52	295	110
5	125	56	286	110	150	56	325	170		56	325	170		56	325	170
6	150	56	298	110	150	56	337	170		56	337	170		56	337	170
8	200	60	409	170	180	60	404	200		60	404	200		60	404	200
10	250	68	477	250	250	68	461	310		68	461	310		68	461	310
12	300	78	502	250	250	78	486	310		78	486	310		78	486	310
14	350	78	571	310	220	78	569	360		78	569	360		78	569	360
16	400	102	626	310	220	102	624	360		102	624	360		102	624	360
18	450	114	650	310	220	114	648	360		114	648	360		114	648	360
20	500	127	745	360	350	127	741	500		127	741	500		127	741	500
24	600	154	793	360	350	154	789	500		154	789	500		154	789	500
Body	FCD450-10(ASTM A536)*				FCD450-10(ASTM A536)*				FCD450-10(ASTM A536)*				FCD450-10(ASTM A536)*			
Bracket/Stand	PP up to 6"/CF8 for 8" & above															
Stem/Bottom Stem	410SS/420J2 for 14" & over				410SS/420J2 for 14" & over				410SS/420J2 for 14" & over				410SS/420J2 for 14" & over			
Disc	CF8				DI+ENP				CF8				CF8M			
O ring	EPDM				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Rubber Seat	EPDM				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Service Temperature Range	NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			
Remarks	*Cl: 14" & above PP: Polypropylene				*Cl: 14" & above				*Cl: 14" & above				*Cl: 14" & above			

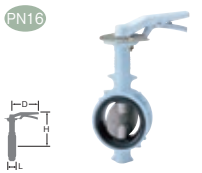
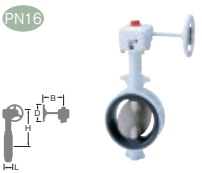
Type	DJ Series				DJ Series				DJ Series				DJ Series			
Butterfly Valve																
																
Fig	16DJ(E)				G-16DJ(E)				16DJU(E)				G-16DJU(E)			
End Connection	Wafer (JIS 16K)				Wafer (JIS 16K)				Wafer (JIS 16K)				Wafer (JIS 16K)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B	
2	50	43	191	180	43	194	80	122	43	191	180	43	194	80	122	
2 1/2	65	46	199	180	46	202	80	122	46	199	180	46	202	80	122	
3	80	46	217	180	46	236	110	135	46	217	180	46	236	110	135	
4	100	52	227	180	52	246	110	135	52	227	180	52	246	110	135	
5	125	56	265	230	56	274	110	150	56	265	230	56	274	110	150	
6	150	56	277	230	56	286	110	150	56	277	230	56	286	110	150	
8	200				60	325	170	180				60	325	170	180	
10	250				68	381	250	250				68	381	250	250	
12	300				78	406	250	250				78	406	250	250	
14	350				78	445	310	220				78	461	360	350	
16	400				102	500	310	220				102	516	360	350	
18	450				114	524	310	220				114	540	360	350	
20	500				127	589	360	350				127	623	500	400	
22	550											154	646	500	400	
24	600				154	637	360	350				154	671	500	400	
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Stem/Bottom Stem	410SS				410SS/420J2				410SS				410SS/420J2			
Disc	DI+ENP				DI+ENP				CF8				CF8			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Service Temperature Range	NBR: 0°C~+70°C, EPDM: -20°C ~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C ~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C ~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C ~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31			

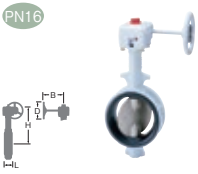
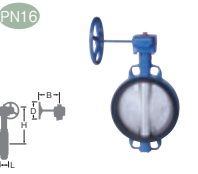
Type	DJ Series				DJ Series				DJK Series				DJ Series			
Butterfly Valve																
																
Fig	16DJM(E)				G-16DJM(E)				G-16DJKUE				VG-16DJ(E)			
End Connection	Wafer (JIS 16K)				Wafer (JIS 16K)				Wafer (JIS 16K)				Wafer (JIS 16K)			
inch	mm	L	H	D	L	H	D	B	L	H	D	B	L	H	D	
2	50	43	191	180	43	194	80	122	43	220	110	135	43	270	110	
2 1/2	65	46	199	180	46	202	80	122	46	228	110	135	46	278	110	
3	80	46	217	180	46	236	110	135	46	248	110	135	46	285	110	
4	100	52	227	180	52	246	110	135	52	258	110	135	52	295	110	
5	125	56	265	230	56	274	110	150	56	286	110	150	56	325	170	
6	150	56	277	230	56	286	110	150	56	298	110	150	56	337	170	
8	200				60	325	170	180	60	409	170	180	60	404	200	
10	250				68	381	250	250	68	477	250	250	68	461	310	
12	300				78	406	250	250	78	502	250	250	78	486	310	
14	350				78	461	360	350	78	587	310	220	78	569	360	
16	400				102	516	360	350	102	642	310	220	102	649	360	
18	450				114	540	360	350	114	666	310	220	114	673	360	
20	500				127	623	500	400	127	779	360	350	127	766	500	
22	550				154	646	500	400								
24	600				154	671	500	400	154	827	360	350	154	814	500	
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Bracket/Stand									PP up to 6"/CF8 for 8" & above							
Stem/Bottom Stem	410SS				410SS/420J2				410SS/420J2				410SS/420J2			
Disc	CF8M				CF8M				CF8				DI+ENP			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				EPDM				NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				EPDM				NBR (E: EPDM)			
Features									Dew Condensation Prevention							
Service Temperature Range	NBR: 0°C~+70°C, EPDM: -20°C ~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C ~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C ~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C ~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31			
Remarks									PP: Polypropylene							

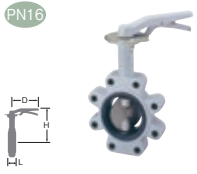
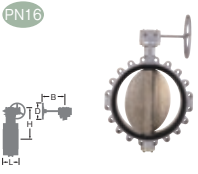
Type	DJ Series				DJ Series				DJ Series				DJ Series			
Butterfly Valve																
Fig	VG-16DJU(E)				VG-16DJM(E)				20DJUE				G-20DJUE			
End Connection	Wafer (JIS 16K)				Wafer (JIS 16K)				Wafer (JIS 20K)				Wafer (JIS 20K)			
inch	mm	L	H	D	L	H	D		L	H	D		L	H	D	B
2	50	43	270	110	43	270	110		43	191	180		43	194	80	122
2 1/2	65	46	278	110	46	278	110		46	199	180		46	202	80	122
3	80	46	285	110	46	285	110		46	217	180		46	236	110	135
4	100	52	295	110	52	295	110		52	227	180		52	246	110	135
5	125	56	325	170	56	325	170		56	265	230		56	274	110	150
6	150	56	337	170	56	337	170		56	277	230		56	286	110	150
8	200	60	404	200	60	404	200						60	325	170	180
10	250	68	461	310	68	461	310						68	381	250	250
12	300	78	486	310	78	486	310						78	406	250	250
14	350	78	569	360	78	569	360						78	445	310	220
16	400	102	649	360	102	649	360						102	500	310	220
18	450	114	673	360	114	673	360						114	540	360	350
20	500	127	766	500	127	766	500						127	589	500	350
22	550												154	646	500	400
24	600	154	814	500	154	814	500						154	671	500	400
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Stem/Bottom Stem	410SS/420J2				410SS/420J2				410SS/420J2				410SS/420J2			
Disc	CF8				CF8M				CF8				CF8			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				EPDM				EPDM			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				EPDM				EPDM			
Service Temperature Range	NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			

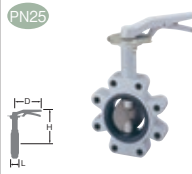
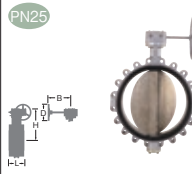
Type	DJ Series				DJ Series				DJK Series			
Butterfly Valve												
Fig	20DJME				G-20DJME				G-20DJKUE			
End Connection	Wafer (JIS 20K)				Wafer (JIS 20K)				Wafer (JIS 20K)			
inch	mm	L	H	D	L	H	D	B	L	H	D	B
2	50	43	191	180	43	194	80	122	43	220	110	135
2 1/2	65	46	199	180	46	202	80	122	46	228	110	135
3	80	46	217	180	46	236	110	135	46	248	110	135
4	100	52	227	180	52	246	110	135	52	258	110	135
5	125	56	265	230	56	274	110	150	56	286	110	150
6	150	56	277	230	56	286	110	150	56	298	110	150
8	200				60	325	170	180	60	409	170	180
10	250				68	381	250	250	68	477	250	250
12	300				78	406	250	250	78	502	250	250
14	350				78	445	310	220				
16	400				102	500	310	220				
18	450				114	540	360	350				
20	500				127	589	500	350				
22	550				154	646	500	400				
24	600				154	671	500	400				
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Bracket/Stand									PP up to 6"/CF8 for 8" & above			
Stem/Bottom Stem	410SS/420J2				410SS/420J2				410SS/420J2			
Disc	CF8M				CF8M				CF8			
O ring	EPDM				EPDM				EPDM			
Rubber Seat	EPDM				EPDM				EPDM			
Features									Dew Condensation Prevention			
Service Temperature Range	NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C				NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			
Remarks									PP: Polypropylene			

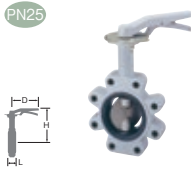
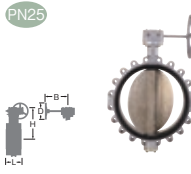
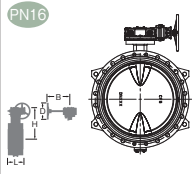
Type	SA Series					SA Series					EJ Series			EJ Series			
Butterfly Valve																	
Fig	G-10SAUE					G-16SAUE					PN10EJMW(Q)(F)			G-PN10EJMW(Q)(F)			
End Connection	Wafer (JIS 10K) & *					Wafer (JIS 16K) & *					Wafer (EN1092 PN6/10/16 *)			Wafer (EN1092 PN6/10/16 *)			
inch	mm	L	H	D	B	L	H	D	B		L	H	D	L	H	D	B
2	50										43	191	180				
2 1/2	65										46	199	180				
3	80										46	217	180				
4	100										52	227	180				
5	125										56	265	230				
6	150										56	277	230				
8	200										60	295	350				
10	250													68	381	250	250
12	300													78	406	250	250
26	650	165	670	500	410	165	670	500	410								
28	700	165	695	500	410	165	695	500	410								
30	750	190	757	500	410	190	757	500	410								
32	800	190	782	500	410	190	782	500	410								
36	900	203	832	500	410	203	832	500	410								
40	1000	216	902	500	410	216	902	500	410								
44	1100	216	940	500	410												
48	1200	254	1007	500	410												
54	1350	280	1133	500	410												
Body	FCD450-10(ASTM A536)					FCD450-10(ASTM A536)					DI (EN-GJS-450-10)			DI (EN-GJS-450-10)			
Stem/Bottom Stem	420J2					420J2					410SS			410SS			
Disc	CF8					CF8					CF8M			CF8M			
O ring	EPDM					EPDM					FKM			FKM			
Rubber Seat	NBR					NBR					W: W-NBR, Q: VMQ (Silicon rubber), F: FKM (Fluoro rubber)			W: W-NBR, Q: VMQ (Silicon rubber), F: FKM (Fluoro rubber)			
Standard/Approval											CE(SEP for 2 ^B & below)			CE			
Service Temperature Range	NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C					NBR: 0°C~+70°C, EPDM: -20°C~+120°C(Not Frozen)/Continuous Service Temp. -20°C~+100°C					Continuous Service: W-NBR: 0°C~+80°C, VMQ: -10°C~+180°C, FKM: 0°C~+130°C(Not Frozen)			Continuous Service: W-NBR: 0°C~+80°C, VMQ: -10°C~+180°C, FKM: 0°C~+130°C(Not Frozen)			
Reference Page											P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			
Remarks	* JIS B2239 10K FF & with U-section					* JIS B2239(1996) 16K FF & with U-section					*BS10/AS2129 Table E, ASME CL.125/150			*BS10/AS2129 Table E, ASME CL.125/150			

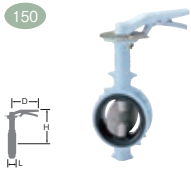
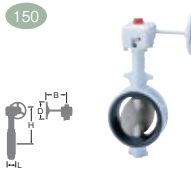
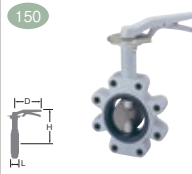
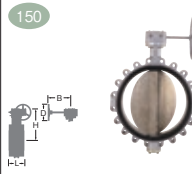
Type	DJ Series					DJ Series					DJ Series			DJ Series			
Butterfly Valve																	
Fig	PN16DJ(E)					G-PN16DJ(E)					PN16DJU(E)			G-PN16DJU(E)			
End Connection	Wafer (EN1092 PN16 *)					Wafer (EN1092 PN16 *)					Wafer (EN1092 PN16 *)			Wafer (EN1092 PN16 *)			
inch	mm	L	H	D	B	L	H	D	B		L	H	D	L	H	D	B
2	50	43	191	180		43	194	80	122		43	191	180	43	194	80	122
2 1/2	65	46	199	180		46	202	80	122		46	199	180	46	202	80	122
3	80	46	217	180		46	236	110	135		46	217	180	46	236	110	135
4	100	52	227	180		52	246	110	135		52	227	180	52	246	110	135
5	125	56	265	230		56	274	110	150		56	265	230	56	274	110	150
6	150	56	277	230		56	286	110	150		56	277	230	56	286	110	150
8	200	60	295	350		60	325	170	180		60	295	350	60	325	170	180
10	250					68	381	250	250					68	381	250	250
12	300					78	406	250	250					78	406	250	250
14	350					78	461	360	350					78	461	360	350
16	400					102	516	360	350					102	516	360	350
18	450					114	540	360	350					114	540	360	350
20	500					127	623	500	400					127	623	500	400
24	600					154	671	500	400					154	671	500	400
Body	FCD450-10(ASTM A536)					FCD450-10(ASTM A536)					FCD450-10(ASTM A536)			FCD450-10(ASTM A536)			
Stem/Bottom Stem	410SS					410SS/420J2					410SS			410SS/420J2			
Disc	DI+ENP					DI+ENP					CF8			CF8			
O ring	NBR (E: EPDM)					NBR (E: EPDM)					NBR (E: EPDM)			NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)					NBR (E: EPDM)					NBR (E: EPDM)			NBR (E: EPDM)			
Standard/Approval	CE, WRAS					CE, WRAS					CE, WRAS, EAC			CE, WRAS, EAC			
Service Condition	Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)					Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)					Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)			Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31					P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31					P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			
Remarks	CE(SEP for 2 ^B & below)					CE(SEP for 2 ^B & below)					CE(SEP for 2 ^B & below), WRAS Certified Valves: up to 12 ^B			CE(SEP for 2 ^B & below), WRAS Certified Valves: up to 12 ^B			

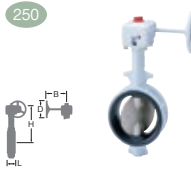
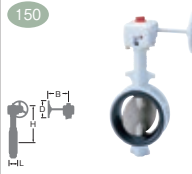
Type	DJ Series				DJ Series				DJL Series				DJL Series			
Butterfly Valve																
Fig	PN16DJM(E)				G-PN16DJM(E)				PN16DJSM(E)				G-PN16DJSM(E)			
End Connection	Wafer (EN1092 PN16)				Wafer (EN1092 PN16)				Semi Lugged (EN1092 PN16)				Semi Lugged (EN1092 PN16)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B	
2	50	43	191	180	43	194	80	122	43	191	180	43	194	80	122	
2 1/2	65	46	199	180	46	202	80	122	46	199	180	46	202	80	122	
3	80	46	217	180	46	236	110	135	46	217	180	46	236	110	135	
4	100	52	227	180	52	246	110	135	52	227	180	52	246	110	135	
5	125	56	265	230	56	274	110	150	56	265	230	56	274	110	150	
6	150	56	277	230	56	286	110	150	56	277	230	56	286	110	150	
8	200	60	295	350	60	325	170	180	60	295	350	60	325	170	180	
10	250				68	381	250	250								
12	300				78	406	250	250								
14	350				78	461	360	350								
16	400				102	516	360	350								
18	450				114	540	360	350								
20	500				127	623	500	400								
24	600				154	671	500	400								
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Stem/Bottom Stem	410SS				410SS/420J2				410SS				410SS			
Disc	CF8M				CF8M				CF8M				CF8M			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Standard/Approval	CE, WRAS, EAC				CE, WRAS, EAC				CE, WRAS, EAC				CE, WRAS, EAC			
Service Condition	Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)				Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)				Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)				Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			
Remarks	CE(SEP for 2 ^B & below), WRAS Certified Valves: up to 12 ^B				CE(SEP for 2 ^B & below), WRAS Certified Valves: up to 12 ^B				CE(SEP for 2 ^B & below), WRAS Certified Valves: up to 12 ^B				CE(SEP for 2 ^B & below), WRAS Certified Valves: up to 12 ^B			

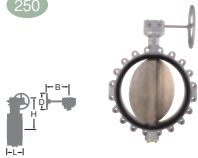
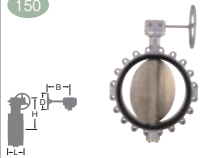
Type	DJL Series				DJL Series				DJ Series				DJ Series			
Butterfly Valve																
Fig	PN16DJLM(E)				G-PN16DJLM(E)				PN25DJE				G-PN25DJE			
End Connection	Lugged (EN1092 PN16)				Lugged (EN1092 PN16)				Wafer (EN1092 PN25)				Wafer (EN1092 PN25)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B	
2	50	43	191	180	43	194	80	122	43	191	180	43	194	80	122	
2 1/2	65	46	199	180	46	202	80	122	46	199	180	46	202	80	122	
3	80	46	217	180	46	236	110	135	46	217	180	46	236	110	135	
4	100	52	227	180	52	246	110	135	52	227	180	52	246	110	135	
5	125	56	265	230	56	274	110	150	56	265	230	56	274	110	150	
6	150	56	277	230	56	286	110	150	56	277	230	56	286	110	150	
8	200	60	295	350	60	325	170	180				60	325	250	250	
10	250				68	381	250	250				68	381	250	250	
12	300				78	406	250	250				78	406	250	250	
14	350				78	461	360	350								
16	400				102	516	360	350								
18	450				114	540	360	350								
20	500				127	623	500	400								
24	600				154	671	500	400								
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Stem/Bottom Stem	410SS				410SS/420J2				403SS/410SS/420J2				403SS/410SS/420J2			
Disc	CF8M				CF8M				DI+ENP				DI+ENP			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				EPDM				EPDM			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				EPDM				EPDM			
Standard/Approval	CE, WRAS, EAC				CE, WRAS, EAC											
Service Condition	Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)				Max. Service Pressure 1.6MPa. (Max. Operating Temp. for WRAS Certified Valves: up to 100°C)				Max. Service Pressure 2.5MPa				Max. Service Pressure 2.5MPa			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			
Remarks	CE(SEP for 2 ^B & below), WRAS Certified Valves: up to 12 ^B				CE(SEP for 2 ^B & below), WRAS Certified Valves: up to 12 ^B											

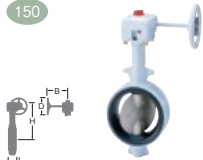
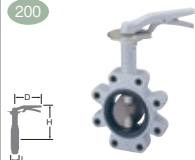
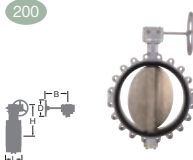
Type	DJ Series				DJ Series				DJL Series				DJL Series			
Butterfly Valve																
Fig	PN25DJUE				G-PN25DJUE				PN25DJLE				G-PN25DJLE			
End Connection	Wafer (EN1092 PN25)				Wafer (EN1092 PN25)				Lugged (EN1092 PN25)				Lugged (EN1092 PN25)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B	
2	50	43	191	180	43	194	80	122	43	191	180	43	194	80	122	
2 1/2	65	46	199	180	46	202	80	122	46	199	180	46	202	80	122	
3	80	46	217	180	46	236	110	135	46	217	180	46	236	110	135	
4	100	52	227	180	52	246	110	135	52	227	180	52	246	110	135	
5	125	56	265	230	56	274	110	150	56	265	230	56	274	110	150	
6	150	56	277	230	56	286	110	150	56	277	230	56	286	110	150	
8	200				60	325	250	250				60	325	250	250	
10	250				68	381	250	250				68	381	250	250	
12	300				78	406	250	250				78	406	250	250	
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Stem/Bottom Stem	403SS/410SS/420J2				403SS/410SS/420J2				403SS/410SS/420J2				403SS/410SS/420J2			
Disc	CF8				CF8				DI+ENP				DI+ENP			
O ring	EPDM				EPDM				EPDM				EPDM			
Rubber Seat	EPDM				EPDM				EPDM				EPDM			
Service Condition	Max. Service Pressure 2.5MPa				Max. Service Pressure 2.5MPa				Max. Service Pressure 2.5MPa				Max. Service Pressure 2.5MPa			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31			

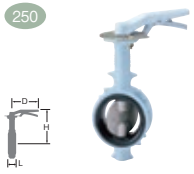
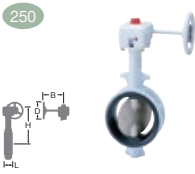
Type	DJL Series				DJL Series				DJ Series (BV13F(FSK))			
Butterfly Valve												
Fig	PN25DJLUE				G-PN25DJLUE				G-PN16SFKBV13FUE			
End Connection	Lugged (EN1092 PN25)				Lugged (EN1092 PN25)				Double flanged (EN1092-2 PN16)			
inch	mm	L	H	D	L	H	D	B	L	H	D	B
2	50	43	191	180	43	194	80	122				
2 1/2	65	46	199	180	46	202	80	122				
3	80	46	217	180	46	236	110	135				
4	100	52	227	180	52	246	110	135				
5	125	56	265	230	56	274	110	150				
6	150	56	277	230	56	286	110	150				
8	200				60	325	250	250				
10	250				68	381	250	250				
12	300				78	406	250	250				
26	650								292	TBA	400	402
28	700								292	TBA	400	402
30	750								318	TBA	400	402
32	800								318	TBA	400	402
36	900								330	TBA	400	448.5
40	1000								410	TBA	400	448.5
48	1200								470	TBA	450	496
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Stem/Bottom Stem	403SS/410SS/420J2				403SS/410SS/420J2				420SS			
Disc	CF8				CF8				304SS			
O ring	EPDM				EPDM				NBR			
Rubber Seat	EPDM				EPDM				EPDM			
Service Condition	Max. Service Pressure 2.5MPa				Max. Service Pressure 2.5MPa				Max. Service Pressure 1.6MPa, -15°C~120°C			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV31							

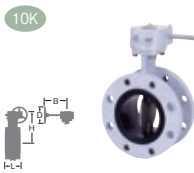
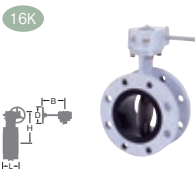
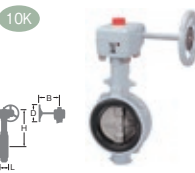
Type	DJ Series				DJ Series				DJL Series				DJL Series			
Butterfly Valve																
Fig	150DJH(E)				G-150DJH(E)				150DJLH(E)				G-150DJLH(E)			
End Connection	Wafer (ASME CL. 150)				Wafer (ASME CL. 150)				Lugged (ASME CL. 150)				Lugged (ASME CL. 150)			
inch	mm	L	H	D	L	H	D	B	L	H	D	B	L	H	D	B
2	50	42.9	191	180	42.9	194	80	121.5	42.9	191	180		42.9	194	80	121.5
2 1/2	65	46	199	180	46	202	80	121.5	46	199	180		46	202	80	121.5
3	80	46	217	180	46	236	110	135	46	217	180		46	236	110	135
4	100	52.3	227	180	52.3	246	110	135	52.3	227	180		52.3	246	110	135
5	125	55.6	265	230	55.6	274	110	150	55.6	265	230		55.6	274	110	150
6	150	55.6	277	230	55.6	286	110	150	55.6	277	230		55.6	286	110	150
8	200	60.5	295	350	60.5	325	170	180	60.5	295	350		60.5	325	170	180
10	250				68.3	381	170	180					68.3	381	170	180
12	300				77.7	406	170	180					77.7	406	170	180
14	350				77.7	445	310	220					77.7	445	310	220
16	400				101.6	500	310	220					101.6	500	310	220
18	450				114.3	524	310	220					114.3	524	310	220
20	500				127	589	500	360					127	589	500	360
24	600				153.9	637	500	360					153.9	637	500	360
Body	ASTM A536				ASTM A536				ASTM A536				ASTM A536			
Stem/Bottom Stem	316SS				316SS				316SS				316SS			
Disc	CF8M				CF8M				CF8M				CF8M			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Standard/Approval	NSF372				NSF372				NSF372				NSF372			
Service Condition	NBR: 0°C~+70°C 1.03MPa, EPDM: -20°C~+120°C 1.03MPa/Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.03MPa, EPDM: -20°C~+120°C 1.03MPa/Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.03MPa, EPDM: -20°C~+120°C 1.03MPa/Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.03MPa, EPDM: -20°C~+120°C 1.03MPa/Continuous Service Temp. 0°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			

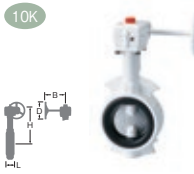
Type	DJ Series				DJ Series				DJ Series				DJL Series			
Butterfly Valve																
Fig	250DJM(E)				G-250DJM(E)				G-150DJM(E)				250DJL(E)			
End Connection	Wafer (ASME CL. 250)				Wafer (ASME CL. 250)				Wafer (ASME CL. 150)				Lugged (ASME CL. 250)			
inch	mm	L	H	D	L	H	D	B	L	H	D	B	L	H	D	B
2	50	42.9	191	180	42.9	194	80	122	42.9	194	80	122	42.9	191	180	
2 1/2	65	46	199	180	46	202	80	122	46	202	80	122	46	199	180	
3	80	46	217	180	46	236	110	135	46	236	110	135	46	217	180	
4	100	52.3	227	180	52.3	246	110	135	52.3	246	110	135	52.3	227	180	
5	125	55.6	265	230	55.6	274	110	150	55.6	274	110	150	55.6	265	230	
6	150	55.6	277	230	55.6	286	110	150	55.6	286	110	150	55.6	277	230	
8	200	60.5	295	350	60.5	325	170	180	60.5	325	170	180	60.5	295	350	
10	250				68.3	381	250	250	68.3	381	170	180				
12	300				77.7	406	250	250	77.7	406	170	180				
14	350								77.7	447	310	220				
16	400								101.6	502	310	220				
18	450								114.3	526	310	220				
20	500								127	587	500	360				
24	600								153.9	635	500	360				
Body	ASTM A536				ASTM A536				ASTM A536				ASTM A536			
Stem/Bottom Stem	329SS				329SS				329SS				329SS			
Disc	CF8M				CF8M				CF8M				CF8M			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Standard/Approval	NSF372				NSF372				NSF372				NSF372			
Service Condition	NBR: 0°C~+70°C 1.72 MPa, EPDM: -20°C~+120°C 1.72 MPa/Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.72 MPa, EPDM: -20°C~+120°C 1.72 MPa/Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.03MPa, EPDM: -20°C~+120°C 1.03MPa/Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.72 MPa, EPDM: -20°C~+120°C 1.72 MPa/Continuous Service Temp. 0°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			

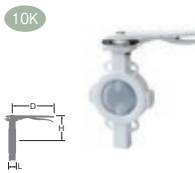
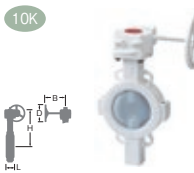
Type	DJL Series					DJL Series					DJ Series			DJ Series			
Butterfly Valve	250   NSF					150   NSF					200   NSF			200   NSF			
	Fig	G-250DJLM(E)					G-150DJLM(E)					200DJ(A)(E)			G-200DJ(A)(E)		
End Connection	Lugged (ASME CL. 250)					Lugged (ASME CL. 150)					Wafer (ASME CL. 200)			Wafer (ASME CL. 200)			
inch	mm	L	H	D	B	L	H	D	B	L	H	D	L	H	D	B	
2	50	42.9	194	80	122	42.9	194	80	122	42.9	191	180	42.9	194	80	121.5	
2 1/2	65	46	202	80	122	46	202	80	122	46	199	180	46	202	80	121.5	
3	80	46	236	110	135	46	236	110	135	46	217	180	46	236	110	135	
4	100	52.3	246	110	135	52.3	246	110	135	52.3	227	180	52.3	246	110	135	
5	125	55.6	274	110	150	55.6	274	110	150	55.6	265	230	55.6	274	110	150	
6	150	55.6	286	110	150	55.6	286	110	150	55.6	277	230	55.6	286	110	150	
8	200	60.5	325	170	180	60.5	325	170	180	60.5	295	350	60.5	325	170	180	
10	250	68.3	381	250	250	68.3	381	170	180				68.3	381	170	180	
12	300	77.7	406	250	250	77.7	406	170	180				77.7	406	170	180	
14	350					77.7	447	310	220								
16	400					101.6	502	310	220								
18	450					114.3	526	310	220								
20	500					127	587	500	360								
24	600					153.9	635	500	360								
Body	ASTM A536					ASTM A536					ASTM A536			ASTM A536			
Stem/Bottom Stem	329SS					329SS					410SS			410SS			
Disc	CF8M					CF8M					AI-BC			AI-BC			
O ring	NBR (E: EPDM)					NBR (E: EPDM)					NBR (E: EPDM)			NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)					NBR (E: EPDM)					NBR (E: EPDM)			NBR (E: EPDM)			
Standard/Approval	NSF372					NSF372					NSF372			NSF372			
Service Condition	NBR: 0°C~+70°C 1.72 MPa, EPDM: -20°C~+120°C 1.72 MPa/Continuous Service Temp. 0°C~+100°C					NBR: 0°C~+70°C 1.03MPa, EPDM: -20°C~+120°C 1.03MPa/Continuous Service Temp. 0°C~+100°C					NBR: 0°C~+70°C 1.38 MPa, EPDM: -20°C~+120°C 1.38 MPa/Continuous Service Temp. 0°C~+100°C			NBR: 0°C~+70°C 1.38 MPa, EPDM: -20°C~+120°C 1.38 MPa/Continuous Service Temp. 0°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31					P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31					P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			

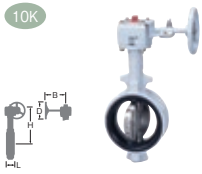
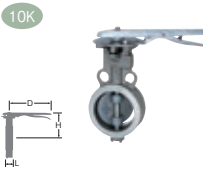
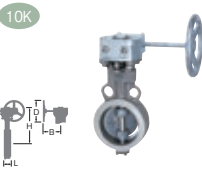
Type	DJ Series					DJL Series			DJL Series				DJL Series			
Butterfly Valve	150  NSF					200  NSF			200  NSF				150  NSF			
	G-150DJA(E)					200DJLA(E)			G-200DJLA(E)				G-150DJLA(E)			
End Connection		Wafer (ASME CL. 150)				Lugged (ASME CL. 200)			Lugged (ASME CL. 200)				Lugged (ASME CL. 150)			
inch	mm	L	H	D	B	L	H	D	L	H	D	B	L	H	D	B
2	50					42.9	191	180	42.9	194	80	121.5				
2 1/2	65					46	199	180	46	202	80	121.5				
3	80					46	217	180	46	236	110	135				
4	100					52.3	227	180	52.3	246	110	135				
5	125					55.6	265	230	55.6	274	110	150				
6	150					55.6	277	230	55.6	286	110	150				
8	200					60.5	295	350	60.5	325	170	180				
10	250								68.3	381	170	180				
12	300								77.7	406	170	180				
14	350	77.7	447	310	220								77.7	447	310	220
16	400	101.6	502	310	220								101.6	502	310	220
18	450	114.3	526	310	220								114.3	526	310	220
20	500	127	587	500	360								127	587	500	360
24	600	153.9	635	500	360								153.9	635	500	360
Body	ASTM A536					ASTM A536			ASTM A536				ASTM A536			
Stem/Bottom Stem	410SS/420SS					410SS			410SS				410SS/420SS			
Disc	AI-BC					AI-BC			AI-BC				AI-BC			
O ring	NBR (E: EPDM)					NBR (E: EPDM)			NBR (E: EPDM)				NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)					NBR (E: EPDM)			NBR (E: EPDM)				NBR (E: EPDM)			
Standard/Approval	NSF372					NSF372			NSF372				NSF372			
Service Condition	NBR: 0°C~+70°C 1.03MPa, EPDM: -20°C~+120°C 1.03MPa/Continuous Service Temp. 0°C~+100°C					NBR: 0°C~+70°C 1.38 MPa, EPDM: -20°C~+120°C 1.38 MPa/Continuous Service Temp. 0°C~+100°C			NBR: 0°C~+70°C 1.38 MPa, EPDM: -20°C~+120°C 1.38 MPa/Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.03MPa, EPDM: -20°C~+120°C 1.03MPa/Continuous Service Temp. 0°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31					P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			

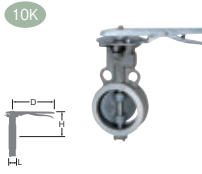
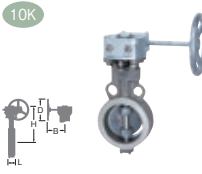
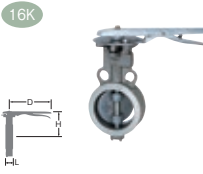
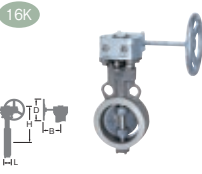
Type	DJ Series				DJ Series				DJL Series				DJL Series			
Butterfly Valve																
Fig	250DJ(A)(E)				G-250DJ(A)(E)				250DJL(A)(E)				G-250DJL(A)(E)			
End Connection	Wafer (ASME CL. 250)				Wafer (ASME CL. 250)				Lugged (ASME CL. 250)				Lugged (ASME CL. 250)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B	
2	50	42.9	191	180	42.9	194	80	121.5	42.9	191	180	42.9	194	80	121.5	
2 1/2	65	46	199	180	46	202	80	121.5	46	199	180	46	202	80	121.5	
3	80	46	217	180	46	236	110	135	46	217	180	46	236	110	135	
4	100	52.3	227	180	52.3	246	110	135	52.3	227	180	52.3	246	110	135	
5	125	55.6	265	230	55.6	274	110	150	55.6	265	230	55.6	274	110	150	
6	150	55.6	277	230	55.6	286	110	150	55.6	277	230	55.6	286	110	150	
8	200	60.5	295	350	60.5	325	170	180	60.5	295	350	60.5	325	170	180	
10	250				68.3	381	250	250				68.3	381	250	250	
12	300				77.7	406	250	250				77.7	406	250	250	
Body	ASTM A536				ASTM A536				ASTM A536				ASTM A536			
Stem/Bottom Stem	410SS				410SS				410SS				410SS			
Disc	AI-BC				AI-BC				AI-BC				AI-BC			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)				NBR (E: EPDM)			
Stem Bearing	Metal Backed PTFE & G/F PTFE				Metal Backed PTFE & G/F PTFE				Metal Backed PTFE & G/F PTFE				Metal Backed PTFE & G/F PTFE			
Standard/Approval	NSF372				NSF372				NSF372				NSF372			
Service Condition	NBR: 0°C~+70°C 1.72 MPa for CL 250, EPDM: -20°C~+120°C 1.72 MPa for CL 250 /Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.72 MPa for CL 250, EPDM: -20°C~+120°C 1.72 MPa for CL 250 /Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.72 MPa for CL 250, EPDM: -20°C~+120°C 1.72 MPa for CL 250 /Continuous Service Temp. 0°C~+100°C				NBR: 0°C~+70°C 1.72 MPa for CL 250, EPDM: -20°C~+120°C 1.72 MPa for CL 250 /Continuous Service Temp. 0°C~+100°C			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31			

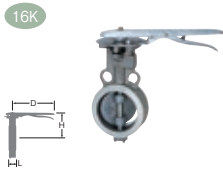
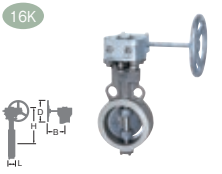
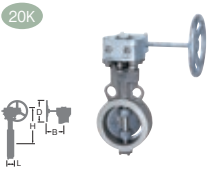
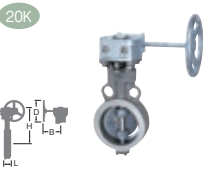
Type	DJF Series				DJF Series				FJ Series				FJ Series			
Butterfly Valve																
Fig	G-10DJFU(E)				G-16DJFU(E)				10FJUF				G-10FJUF			
End Connection	JIS B2239 10K FF				JIS B2239 16K FF				Wafer (JIS 10K)				Wafer (JIS 10K)			
inch	mm	L	H	D	B	L	H	D	B	L	H	D	L	H	D	B
2	50									43	176	180	43	179	80	122
2 1/2	65									46	184	180	46	187	80	122
3	80									46	194	180	46	213	110	135
4	100	100	214	110	150	100	214	110	150	52	204	180	52	223	110	135
5	125	100	239	110	150	100	244	170	180	56	249	230	56	258	110	150
6	150	100	252	110	150	100	257	170	180	56	261	230	56	270	110	150
8	200	100	288	170	180	152	389	170	180				60	311	170	180
10	250	110	369	170	180	110	389	310	280				68	381	250	250
12	300	110	394	170	180	178	414	310	280				78	406	250	250
14	350	120	445	310	220	190	461	360	310				78	437	250	250
16	400	130	500	310	220	216	516	360	310				102	500	310	220
18	450	150	524	310	220	150	539	360	310				114	524	310	220
20	500	160	589	360	350	160	623	500	410				127	589	360	350
22	550	170	613	360	350	170	647	500	410							
24	600	170	637	360	350	170	671	500	410				154	637	360	350
Body	FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Stem/Bottom Stem	410SS/420J2				410SS/420J2				410SS/403SS				410SS/403SS			
Disc	CF8				CF8				CF8				CF8			
O ring	NBR (E: EPDM)				NBR (E: EPDM)				FKM				FKM			
Rubber Seat	NBR (E: EPDM)				NBR (E: EPDM)				FKM				FKM			
Service Condition	NBR: 0°C~+70°C 1.0MPa for 10K/1.6MPa for 16K, EPDM: -20°C~+120°C 1.0MPa for 10K/1.6MPa for 16K				NBR: 0°C~+70°C 1.0MPa for 10K/1.6MPa for 16K, EPDM: -20°C~+120°C 1.0MPa for 10K/1.6MPa for 16K				5°C~+90°C 1.0MPa up to 12"/0.5MPa for 14" & above				5°C~+90°C 1.0MPa up to 12"/0.5MPa for 14" & above			
Reference Page	P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31				P-T Rating/Flow Characteristics/Pressure Loss : Page BFV31											

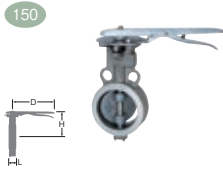
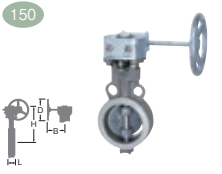
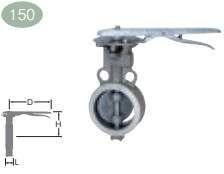
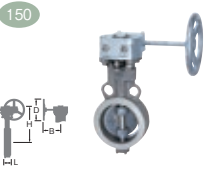
Type	NFJ Series				NFJ Series				NFJ Series				NFJ Series			
Butterfly Valve																
Fig	10NFJUE(W)				G-10NFJUE(W)				10NFJNE(W)				G-10NFJNE(W)			
End Connection	Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)			
inch	mm	L	H	D	L	H	D	B	L	H	D	L	H	D	B	
2	50	43	176	180	43	179	80	122	43	176	180	43	179	80	122	
2 1/2	65	46	184	180	46	187	80	122	46	184	180	46	187	80	122	
3	80	46	194	180	46	213	110	135	46	194	180	46	213	110	135	
4	100	52	204	180	52	223	110	135	52	204	180	52	223	110	135	
5	125	56	249	230	56	258	110	150	56	249	230	56	258	110	150	
6	150	56	261	230	56	270	110	150	56	261	230	56	270	110	150	
8	200				60	311	170	180				60	311	170	180	
10	250				68	381	250	250				68	381	250	250	
12	300				78	406	250	250				78	406	250	250	
Body	FCD450-10 + Nylon Lining				FCD450-10 + Nylon Lining				FCD450-10 + Nylon Lining				FCD450-10 + Nylon Lining			
Stem/Bottom Stem	410SS				410SS				410SS				410SS			
Disc	CF8				CF8				DI + Nylon Lining				DI + Nylon Lining			
O ring	EPDM (W: NBR)				EPDM (W: NBR)				EPDM (W: NBR)				EPDM (W: NBR)			
Rubber Seat	EPDM (W: W-NBR)				EPDM (W: W-NBR)				EPDM (W: W-NBR)				EPDM (W: W-NBR)			
Service Condition	CF8 Disc: 0°C~+60°C 1.0 MPa, FCD450-10+Nylon Lining: 0°C~+40°C 1.0 MPa				CF8 Disc: 0°C~+60°C 1.0 MPa, FCD450-10+Nylon Lining: 0°C~+40°C 1.0 MPa				CF8 Disc: 0°C~+60°C 1.0 MPa, FCD450-10+Nylon Lining: 0°C~+40°C 1.0 MPa				CF8 Disc: 0°C~+60°C 1.0 MPa, FCD450-10+Nylon Lining: 0°C~+40°C 1.0 MPa			

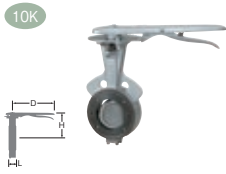
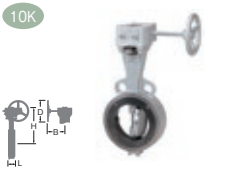
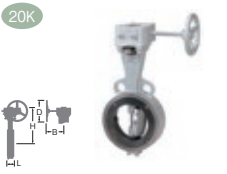
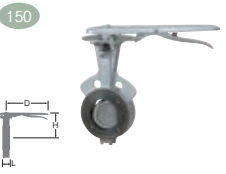
Type	NFJ Series				NFJ Series				LJ Series				LJ Series			
Butterfly Valve																
Fig	VG-10NFJUE(W)				VG-10NFJNE(W)				10LJF				G-10LJF			
End Connection	Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)			
inch	mm	L	H	D	L	H	D		L	H	D	L	H	D	B	
2	50	43	255	110	43	255	110		43	155	230	43	175	110	150	
2 1/2	65	46	263	110	46	263	110		46	171	280	46	188	110	150	
3	80	46	262	110	46	262	110		46	178	280	46	195	110	150	
4	100	52	272	110	52	272	110		52	182	280	52	200	110	150	
5	125	56	309	170	56	309	170		56	217	350	56	238	170	180	
6	150	56	321	170	56	321	170		56	230	350	56	253	170	180	
8	200	60	390	200	60	390	200					60	287	200	205	
10	250	68	461	310	68	461	310					68	357	310	280	
12	300	78	480	310	78	480	310					78	382	310	280	
14	350											78	444	360	350	
16	400											102	519	500	360	
18	450											114	542	500	360	
20	500											127	589	500	400	
24	600											154	639	500	400	
Body	FCD450-10 + Nylon Lining				FCD450-10 + Nylon Lining				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)			
Stem/Bottom Stem	410SS				410SS				420J2				420J2			
Disc	CF8				DI + Nylon Lining				CF8 + PFA				CF8 + PFA			
O ring	EPDM (W: NBR)				EPDM (W: NBR)				CF8 + PFA				FKM			
Rubber Seat	EPDM (W: W-NBR)				EPDM (W: W-NBR)				PFA				PFA			
Service Condition	CF8 Disc: 0°C~+60°C 1.0 MPa, FCD450-10+Nylon Lining: 0°C~+40°C 1.0 MPa				CF8 Disc: 0°C~+60°C 1.0 MPa, FCD450-10+Nylon Lining: 0°C~+40°C 1.0 MPa				-10°C~+150°C 1.0 MPa				-10°C~+150°C 1.0 MPa			
Reference Page									P-T Rating : Page BFV34				P-T Rating : Page BFV34			

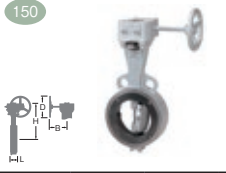
Type	HDRJ Series (Throttoll)					HDRJ Series (Throttoll)					UB Series			UB Series			
Butterfly Valve																	
	10K					20K					10K			10K			
Fig	G-10HRDJUE					G-20HRDJUE					10UB			GL-10UB			
End Connection	Wafer (JIS 10K)					Wafer (JIS 20K)					Wafer (JIS 10K)			Wafer (JIS 10K)			
inch	mm	L	H	D	B	L	H	D	B		L	H	D	L	H	D	B
11/2	40										33	183	230	33	202	110	150
2	50	43	210	110	135	43	210	110	135		43	176	230	43	192	140	150
2 1/2	65	46	218	110	135	46	218	110	135		46	185	230	46	202	140	150
3	80	46	236	110	135	46	236	110	135		46	207	280	46	226	170	195
4	100	52	246	110	135	52	246	110	135		52	221	280	52	240	170	195
5	125	56	274	110	150	56	274	110	150		56	240	350	56	261	200	204
6	150	56	286	110	150	56	286	110	150		56	263	350	56	283	200	204
8	200	60	325	170	180	60	325	170	180					71	348	310	280
10	250	68	393	310	280	68	393	310	280					76	416	360	310
12	300	78	418	310	280	78	418	310	280					83	443	360	310
14	350													92	474	500	358
16	400													102	573	500	360
18	450													114	607	500	360
20	500													127	623	500	360
24	600													154	757	500	377
Body	FCD450-10(ASTM A536)					FCD450-10(ASTM A536)					CF8			CF8			
Stem/Bottom Stem	630SS					630SS					304SS			304SS			
Disc	CF8					CF8					CF8+Cr Plating			CF8+Cr Plating			
Packing/O ring	EPDM					EPDM					PTFE			PTFE			
Rubber Seat/Seat Ring	EPDM					EPDM					PTFE			PTFE			
Service Condition	Refer to Page BFV40					Refer to Page BFV40					-29°C~+160°C 1.0 MPa			-29°C~+160°C 1.0 MPa			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV39 & 40					P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV39 & 40					P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36			P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36			
Remarks	Gear Operation with Locking Device					Gear Operation with Locking Device					Double Eccentric, Unidirectional			Double Eccentric, Unidirectional			

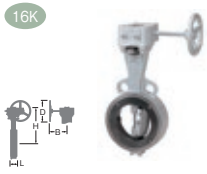
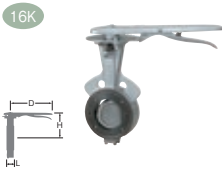
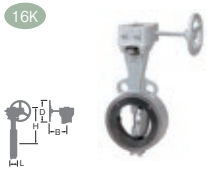
Type	UB Series					UB Series					UB Series			UB Series			
Butterfly Valve																	
	10K					10K					16K			16K			
Fig	10UBM					GL-10UBM					16UB			GL-16UB			
End Connection	Wafer (JIS 10K)					Wafer (JIS 10K)					Wafer (JIS 16K)			Wafer (JIS 16K)			
inch	mm	L	H	D		L	H	D	B		L	H	D	L	H	D	B
11/2	40	33	183	230		33	202	110	150		33	183	230				
2	50	43	176	230		43	192	140	150		43	176	230				
2 1/2	65	46	185	230		46	202	140	150		46	186	230				
3	80	46	207	280		46	226	170	195		46	207	280				
4	100	52	221	280		52	240	170	195		52	221	280				
5	125	56	240	350		56	261	200	204		56	241	350				
6	150	56	263	350		56	283	200	204		56	263	350				
8	200					71	348	310	280								
10	250					76	416	360	310								
12	300					83	443	360	310								
14	350					92	474	500	358					92	474	500	358
16	400					102	573	500	360					102	572	500	360
18	450					114	607	500	360					114	607	500	360
20	500					127	623	500	360					127	623	500	360
24	600					154	757	500	377					154	757	500	377
Body	CF8M					CF8M					CF8			CF8			
Stem/Bottom Stem	316SS					316SS					304SS			304SS			
Disc	CF8M+Cr Plating					CF8M+Cr Plating					CF8+Cr Plating			CF8+Cr Plating			
Packing	PTFE					PTFE					PTFE			PTFE			
Seat Ring	PTFE					PTFE					PTFE			PTFE			
Service Condition	-29°C~+160°C 1.0 MPa					-29°C~+160°C 1.0 MPa					-29°C~+160°C 2.0 MPa			-29°C~+160°C 1.4MPa			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36					P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36					P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36			P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36			
Remarks	Double Eccentric, Unidirectional					Double Eccentric, Unidirectional					Double Eccentric, Unidirectional			Double Eccentric, Unidirectional			

Type	UB Series				UB Series				UB Series				UB Series			
Butterfly Valve																
	16K				16K				20K				20K			
Fig	16UBM				GL-16UBM				GL-20UB				GL-20UBM			
End Connection	Wafer (JIS 16K)				Wafer (JIS 16K)				Wafer (JIS 20K)				Wafer (JIS 20K)			
inch	mm	L	H	D	L	H	D	B	L	H	D	B	L	H	D	B
11/2	40	33	183	230					33	202	110	150	43	192	140	150
2	50	43	176	230					43	192	140	150	43	192	140	150
21/2	65	46	186	230					46	202	140	150	46	202	140	150
3	80	46	207	280					46	226	170	195	46	226	170	195
4	100	52	221	280					52	240	170	195	52	240	170	195
5	125	56	241	350					56	261	200	204	56	261	200	204
6	150	56	263	350					56	283	200	204	56	283	200	204
8	200								71	348	310	280	71	348	310	280
10	250								76	416	360	310	76	416	360	310
12	300								83	443	360	310	83	443	360	310
14	350				92	474	500	358								
16	400				102	572	500	360								
18	450				114	607	500	360								
20	500				127	623	500	360								
24	600				154	757	500	377								
Body	CF8M				CF8M				CF8				CF8M			
Stem/Bottom Stem	329J1				329J1				304SS				329J1			
Disc	CF8M+Cr Plating				CF8M+Cr Plating				CF8+Cr Plating				CF8M+Cr Plating			
Packing	PTFE				PTFE				PTFE				PTFE			
Seat Ring	PTFE				PTFE				PTFE				PTFE			
Service Condition	-29°C~+160°C 2.0 MPa				-29°C~+160°C 1.4MPa				-29°C~+160°C 2.0 MPa				-29°C~+160°C 2.0 MPa			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36			
Remarks	Double Eccentric, Unidirectional				Double Eccentric, Unidirectional				Double Eccentric, Unidirectional				Double Eccentric, Unidirectional			

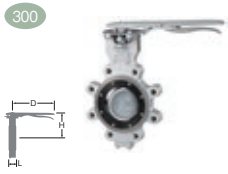
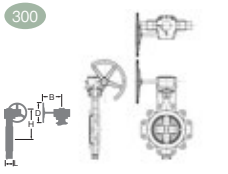
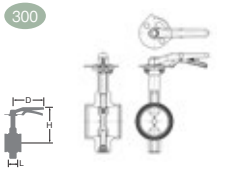
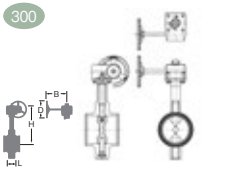
Type	UB Series				UB Series				UB Series				UB Series			
Butterfly Valve																
	150				150				150				150			
Fig	150UB				GL-150UB				150UBM				GL-150UBM			
End Connection	Wafer (ASME CL. 150)				Wafer (ASME CL. 150)				Wafer (ASME CL. 150)				Wafer (ASME CL. 150)			
inch	mm	L	H	D	L	H	D	B	L	H	D	B	L	H	D	B
11/2	40	33	183	230	33	202	110	150	33	183	230	150	33	202	110	150
2	50	43	176	230	43	192	140	150	43	176	230	150	43	192	140	150
21/2	65	46	186	230	46	202	140	150	46	186	230	150	46	202	140	150
3	80	46	207	280	46	226	170	195	46	207	280	195	46	226	170	195
4	100	52	221	280	52	240	170	195	52	221	280	195	52	240	170	195
5	125	56	241	350	56	261	200	204	56	241	350	204	56	261	200	204
6	150	56	263	350	56	283	200	204	56	263	350	204	56	283	200	204
8	200				71	348	310	280					71	348	310	280
10	250				76	416	360	310					76	416	360	310
12	300				83	443	360	310					83	443	360	310
14	350				92	476	500	358					92	476	500	358
16	400				102	572	500	360					102	572	500	360
18	450				114	607	500	360					114	607	500	360
20	500				127	623	500	360					127	623	500	360
24	600				154	757	500	377					154	757	500	377
Body	CF8				CF8				CF8M				CF8M			
Stem/Bottom Stem	304SS				304SS				329J1				329J1			
Disc	CF8+Cr Plating				CF8+Cr Plating				CF8M+Cr Plating				CF8M+Cr Plating			
Packing	PTFE				PTFE				PTFE				PTFE			
Seat Ring	PTFE				PTFE				PTFE				PTFE			
Service Condition	-29°C~+160°C 1.9 MPa				-29°C~+160°C 1.9 MPa up to 12 ⁹ /1.4MPa for 14 ⁹ & above				-29°C~+160°C 1.9 MPa				-29°C~+160°C 1.9 MPa up to 12 ⁹ /1.4MPa for 14 ⁹ & above			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV36			
Remarks	Double Eccentric, Unidirectional				Double Eccentric, Unidirectional				Double Eccentric, Unidirectional				Double Eccentric, Unidirectional			

Type	HB Series				HB Series				HB Series				HB Series		
Butterfly Valve															
															
Fig	10UHB				G-10UHB				G-20UHB				150UHB		
End Connection	Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 16K/20K)				Wafer (ASME CL. 150)		
inch	mm	L	H	D	L	H	D	B	L	H	D	B	L	H	D
11/2	40	33	183	230	33	202	110	150	33	202	110	150	33	183	230
2	50	43	190	230	43	209	110	150	43	209	110	150	43	190	230
21/2	65	46	203	230	46	222	110	150	46	222	110	150	46	203	230
3	80	46	223	280	46	240	110	150	46	240	110	150	46	223	280
4	100	52	237	280	52	254	110	150	52	254	110	150	52	237	280
5	125	56	258	350	56	280	170	180	56	280	170	180	56	258	350
6	150	56	275	350	56	297	170	180	56	297	170	180	56	275	350
8	200				60	324	200	205	60	324	200	205			
10	250				68	401	310	220	68	401	310	220			
12	300				78	429	310	220	78	429	310	220			
Body	CF8				CF8				CF8				CF8		
Stem/Bottom Stem	304SS				304SS				304SS				304SS		
Disc	CF8+Cr Plating				CF8+Cr Plating				CF8+Cr Plating				CF8+Cr Plating		
Packing	PTFE				PTFE				PTFE				PTFE		
Seat Ring	C/F PTFE				C/F PTFE				C/F PTFE				C/F PTFE		
Service Condition	-29°C~+200°C 1.4 MPa				-29°C~+200°C 1.4 MPa				-29°C~+200°C 2.0 MPa				-29°C~+200°C 1.9 MPa		
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38		
Remarks	Double Eccentric, Bidirectional				Double Eccentric, Bidirectional				Double Eccentric, Bidirectional				Double Eccentric, Bidirectional		

Type	HB Series				HB Series				HB Series				HB Series		
Butterfly Valve															
															
Fig	G-150UHB				10SHB				G-10SHB				16SHB		
End Connection	Wafer (ASME CL. 150)				Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 16K/20K)		
inch	mm	L	H	D	B	L	H	D	L	H	D	B	L	H	D
11/2	40	33	202	110	150										
2	50	43	209	110	150	43	190	230	43	209	110	150	43	190	230
21/2	65	46	222	110	150	46	203	230	46	222	110	150	46	203	230
3	80	46	240	110	150	46	223	280	46	240	110	150	46	223	280
4	100	52	254	110	150	52	237	280	52	254	110	150	52	237	280
5	125	56	280	170	180	56	258	350	56	280	170	180	56	258	350
6	150	56	297	170	180	56	275	350	56	297	170	180	56	275	350
8	200	60	324	200	205				60	324	200	205			
10	250	68	401	310	220				68	401	310	220			
12	300	78	429	310	220				78	429	310	220			
Body	CF8				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)				FCD450-10(ASTM A536)		
Stem/Bottom Stem	304SS				420J2				420J2				420J2		
Disc	CF8+Cr Plating				CF8+Cr Plating				CF8+Cr Plating				CF8+Cr Plating		
Packing	PTFE				PTFE				PTFE				PTFE		
Seat Ring	C/F PTFE				C/F PTFE				C/F PTFE				C/F PTFE		
Service Condition	-29°C~+200°C 1.9 MPa				-10°C~+200°C 1.4 MPa				-10°C~+200°C 1.4 MPa				-10°C~+200°C 2.0 MPa		
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38				P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38		
Remarks	Double Eccentric, Bidirectional				Double Eccentric, Bidirectional				Double Eccentric, Bidirectional				Double Eccentric, Bidirectional		

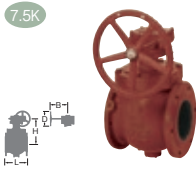
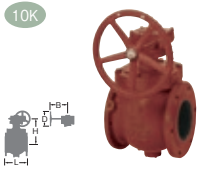
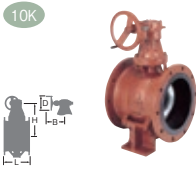
Type	HB Series						HB Series			HB Series			
Butterfly Valve													
Fig	G-16SHB						150SHB			G-150SHB			
End Connection	Wafer (JIS 16K/20K)						Wafer (ASME CL. 150)			Wafer (ASME CL. 150)			
inch	mm	L	H	D	B		L	H	D	L	H	D	B
2	50	43	209	110	150		43	190	230	43	209	110	150
2 1/2	65	46	222	110	150		46	203	230	46	222	110	150
3	80	46	240	110	150		46	223	280	46	240	110	150
4	100	52	254	110	150		52	237	280	52	254	110	150
5	125	56	280	170	180		56	258	350	56	280	170	180
6	150	56	297	170	180		56	275	350	56	297	170	180
8	200	60	324	200	205					60	324	200	205
10	250	68	401	310	220					68	401	310	220
12	300	78	429	310	220					78	429	310	220
Body	FCD450-10(ASTM A536)						FCD450-10(ASTM A536)			FCD450-10(ASTM A536)			
Stem/Bottom Stem	420J2						420J2			420J2			
Disc	CF8+Cr Plating						CF8+Cr Plating			CF8+Cr Plating			
Packing	PTFE						PTFE			PTFE			
Seat Ring	C/F PTFE						C/F PTFE			C/F PTFE			
Service Condition	-10°C~+200°C 2.0 MPa						-10°C~+200°C 1.9 MPa			-10°C~+200°C 1.9 MPa			
Reference Page	P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38						P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38			P-T Rating/Flow Characteristics/ Pressure Loss : Page BFV38			
Remarks	Double Eccentric, Bidirectional						Double Eccentric, Bidirectional			Double Eccentric, Bidirectional			

CP Series (Double/Triple Eccentric)		Type	HBS Series (Dead End)		HBS Series (Dead End)				
(Double/Triple Eccentric) Product Coding		Butterfly Valve	150		150				
G- 10 U CPD L H M ① ② ③ ④ ⑤ ⑥ ⑦									
①Valve Operation None: Lever G: Gear E: Electric Actuator YS: Pneumatic Actuator (Spring Return) Y: Pneumatic Actuator		Fig	150SCHBSL		G-150SCHBSL				
②Class 150, 300, 10-30K, PN10-40 for CPD Series 150-2500, 10-40K, PN10-40 for CPT Series		End Connection	Lugged (ASME CL. 150)			Lugged (ASME CL. 150)			
		inch	mm	L	H	D	L	H	D
		2	50						
		21/2	65	46	216	120			
		3	80	48	229	131			
		4	100	54	248	156			
		5	125	57	265	187			
		6	150				57	300	215
		8	200				64	366	267
		10	250				71	405	329
③Symbol of Shell Material SC: Carbon Steel U: Stainless Steel		12	300						
④Series CPD Series: Double Eccentric CPC Series: Double Eccentric (JIS 30K Rubber Seat) CPT Series: Tripple Eccentric		Body	WCB			WCB			
⑤End Connection None: Wafer L: Lugged F: Flanged		Stem/Bottom Stem	420J2			420J2			
⑥Seat Material *For CPD/CPC Series of ④* None (or ST) PTFE H (ot FM) Metal FS (or TF) PTFE + Metal RN (or RS) NBR RE (or RS) EPDM RF (or RS) FKM *For CPT Series of ④* None (or TE) Laminated (Metal + Graphite or PTFE)		Disc	CF8M+HCr			CF8M+HCr			
⑦Shell Material For U: None:CF8, M:CF8M For SC: None:WCB, CL:LCC, BL:LCB		Packing	PTFE			PTFE			
		Seat Ring	C/F PTFE			C/F PTFE			
		Service Condition	-29~204℃ 1.96 MPa			-29~204℃ 1.96 MPa			
		Reference Page							
		Remarks	Double Eccentric, Bidirectional, Dead End Service			Double Eccentric, Bidirectional, Dead End Service			

Type	HBS Series (Dead End)				HBS Series (Dead End)				GE Series (Dead End)				GE Series (Dead End)			
Butterfly Valve																
Fig	300SCHBSL				G-300SCHBSL				300SGECE				G-300SGECE			
End Connection	Lugged (ASME CL. 300)				Lugged (ASME CL. 300)				Grooved (AWWA C606-15)				Grooved (AWWA C606-15)			
inch	mm				L				L				L			
2	50								81				81			
2 1/2	65								96.8				96.8			
3	80								96.8				96.8			
4	100								115.8				115.8			
5	125								147.6				147.6			
6	150								147.6				147.6			
8	200				59				315				170			
10	250				73				379				310			
12	300				83				422				310			
					92				477				360			
Body	WCB				WCB				FCD450-10 + Nylon Lining				FCD450-10 + Nylon Lining			
Stem/Bottom Stem	420J2				420J2				410SS/420J2				410SS/420J2			
Disc	CF8M+HCr				CF8M+HCr				CF8+Cr Plating				CF8+Cr Plating			
Packing/O ring	PTFE				PTFE				FCD450-10 + EPDM*				FCD450-10 + EPDM*			
Seat Ring	G/F PTFE				G/F PTFE				EPDM				EPDM			
Standard/Approval									NSF61				NSF61			
Service Condition	-29°C~+100°C for Air Conditioning 5.1 MPa				-29°C~+100°C for Air Conditioning 5.1 MPa				-20°C~+110°C 2.1 MPa/Continuous Service Temp. 0°C~+100°C				-20°C~+110°C 2.1 MPa/Continuous Service Temp. 0°C~+100°C			
Reference Page	P-T Rating : API 609				P-T Rating : API 609											
Remarks	Double Eccentric, Bidirectional, Dead End Service				Double Eccentric, Bidirectional, Dead End Service				Dead End Service				Dead End Service			

* Chlorine Resistance

* Chlorine Resistance

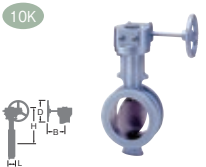
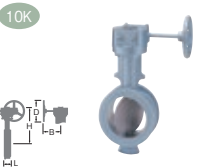
Type	DRAIN Series				DRAIN Series				DRAIN Series				DRAIN Series			
Butterfly Valve																
Fig	G-7.5SVB				G-10SVB				G-7.5SGBFS				G-10SGBFS			
End Connection	Flanged (JIS G5527 7.5K)				Flanged (JIS G5527 10K*)				Flanged (JWWA B138 7.5K)				Flanged (JWWA B138 10K)			
inch	mm				L				L				L			
3	75/80				240											
4	100				250											
5	125				260											
6	150				280											
8	200				300				300				300			
10	250				380				380				380			
12	300				400				400				400			
14	350								430				430			
16	400								470				470			
18	450								500				500			
20	500								530				530			
24	600								560				560			
28	700								610				610			
32	800								690				690			
36	900								740				740			
40	1000								770				770			
44	1100								800				800			
48	1200								820				820			
54	1350								850				850			
60	1500								900				900			
Body	FCD450-10				FCD450-10				FCD450-10				FCD450-10			
Stem/Bottom Stem	304SS				304SS				403SS				304SS			
Disc	CF8				CF8				DI+Cr Free Anti-rust Paint				CF8			
O-ring	CR (JIS K6353)				CR (JIS K6353)				CR (JIS K6353)				CR (JIS K6353)			
Seat Ring	304SS+CR Rubber (JIS K6353)				304SS+CR Rubber (JIS K6353)				304SS+CR Rubber (JIS K6353)				304SS+CR Rubber (JIS K6353)			
Rotation Direction	Counterclockwise to Open**				Counterclockwise to Open**				Counterclockwise to Open**				Counterclockwise to Open**			
Service Condition	Static Water Ambient Temp. 0.74MPa				Static Water Ambient Temp. 0.98MPa				Static Water Ambient Temp. 0.75MPa				Static Water Ambient Temp. 1.0MPa			
Remarks	Internal: Epoxy Resin Paint** External: Anti-rust Paint** Face to Face: JIS B2064 End Flange of 125A: JIS B2062				Internal: Epoxy Resin Paint** External: Anti-rust Paint** Face to Face: JIS B2064 End Flange of 125A: JIS B2062				Internal: Epoxy Resin Paint** External: Epoxy Resin Primer**				Internal: Epoxy Resin Paint** External: Epoxy Resin Primer**			

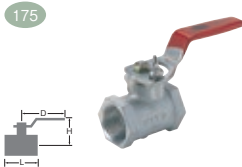
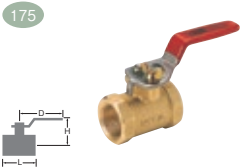
**Other Options: Available

*Flange Outside Dia.: KITZ STD

**Other Options: Available

**Other Options: Available

Type	Damper				Damper				Damper				Damper			
Butterfly Valve																
	10K				10K				10K				10K			
Fig	10D				GL-10D				10A				GL-10A			
End Connection	Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)				Wafer (JIS 10K)			
inch	mm	L	H	D	L	H	D	B	L	H	D		L	H	D	B
2	50	40	183	200	40	198	110	150	40	183	200		40	198	110	150
2 1/2	65	45	191	200	45	206	110	150	45	191	200		45	206	110	150
3	80	50	198	200	50	213	110	150	50	198	200		50	213	110	150
4	100	60	208	200	60	223	110	150	60	208	200		60	223	110	150
5	125	65	237	280	65	249	170	190	65	237	280		65	249	170	190
6	150	70	247	280	70	259	170	190	70	247	280		70	259	170	190
8	200	80	272	280	80	284	170	190	80	272	280		80	284	170	190
10	250	90	340	350	90	355	170	195	90	340	350		90	355	170	195
12	300	100	365	350	100	380	170	195	100	365	350		100	380	170	195
Body	FC250+HCr				FC250+HCr				FC250+HCr				FC250+HCr			
Stem/Bottom Stem	403SS				403SS				403SS				403SS			
Disc	430SS				430SS				430SS				430SS			
Packing	Flexible Graphite				Flexible Graphite				Flexible Graphite				Flexible Graphite			
Service Condition	0°C~+230°C 0.5 MPa				0°C~+230°C 0.5 MPa				0°C~+230°C 0.5 MPa				0°C~+230°C 0.5 MPa			
Reference Page	Flow Coefficient (Cv)/Flow Characteristics : Page BFV41				Flow Coefficient (Cv)/Flow Characteristics : Page BFV41				Flow Coefficient (Cv)/Flow Characteristics : Page BFV41				Flow Coefficient (Cv)/Flow Characteristics : Page BFV41			
Remarks	Max. Allowable Leakage: 3% of Normal Cv Value				Max. Allowable Leakage: 3% of Normal Cv Value				Max. Allowable Leakage: 2% of Normal Cv Value				Max. Allowable Leakage: 2% of Normal Cv Value			

Type	Special BUTTERFLY Series				Special BUTTERFLY Series			
Butterfly Valve								
	175				175			
Fig	UV				FV			
End Connection	BS21 (JIS B0203)				BS21 (JIS B0203)			
inch	mm	L	H	D	L	H	D	
1/2	15	43	45	85	47	45	85	
3/4	20	47	47	85	51	47	85	
1	25	56	50	85	58	50	85	
1 1/4	32	63	60	110	67	60	110	
1 1/2	40	69	64	110	73	64	110	
2	50	77	70	110	82	70	110	
Body	CF8				B283 C37700			
Stem/Bottom Stem	304SS				304SS			
Disc	304SS + W-NBR				304SS + W-NBR			
Packing/O ring	NBR				NBR			
Handle	430SS				430SS			
Service Condition	W.O.G. Non-shock 1.21MPa(175psi) (DO NOT USE against Flammable Gas or Toxic Gas.)				W.O.G. Non-shock 1.21MPa(175psi) (DO NOT USE against Flammable Gas or Toxic Gas.)			
Reference Page	Flow Rate/Pressure Loss/Cv : Page BFV42				Flow Rate/Pressure Loss/Cv : Page BFV42			
Remarks	Balancing Stop Handle Lever				Balancing Stop Handle Lever			

KITZ XJ Series Aluminum Butterfly Valves:
Featuring unique style for neck designs (U.S.P. No. 6676109) to accommodate various piping designs, piping positions and installation environments.

Specification

Class	JIS 10K	Class 150	PN16
Maximum Service Pressure	1 MPa	1 MPa	1.6 MPa (16 bar)
Service Temperature Range*1	-20°C to +120°C		
Continuous Service Temperature Range*2	-20°C to +100°C		
Face to Face Dimension	API609, BS EN558 Basic Series20 ISO 5752-20, JIS B 2002 46 Series		
Coupling Flanges	JIS B 2220/ 2239 10K	ASME Class 150 JIS B 2220/ 2239 10K	EN1092 PN16*3

*1 Condition: Unfrozen Fluid.

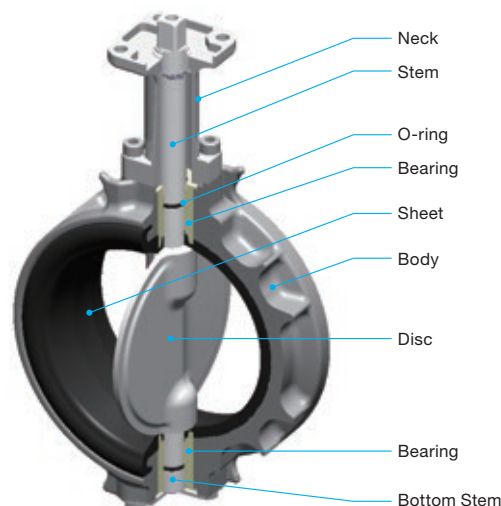
*2 Refer to P-T Rating.

*3 With Centering Sleeves.

Refer to Product Range Chart in Page BFV29 and Precautions in Page BFV43 for details.

Cv Value

Size		CV	Size		CV
DN	NPS		DN	NPS	
40	1 1/2	77	125	5	1100
50	2	99	150	6	1820
65	2 1/2	205	200	8	2780
80	3	372	250	10	4350
100	4	723	300	12	6860



Standard Material

Parts	Materials
Body	Aluminum Die-Cast/ASTM B85-84-383.0 equivalent
Neck	304 SS
Stem	SUS410/ASTM A276 Type 410 equivalent
Disc	A351 Gr. CF8M
O-ring	EPDM
Rubber seat	EPDM
Bottom stem	SUS410/ASTM A276 Type 410 equivalent
Bearing	Metal Backed PTFE (Size 10 ^B and 12 ^B) Polyphenylenesulfide (10XJMEA : Size 1 1/2 ^B to 8 ^B) Bronze : CAC401 (PN16XJME : Size 2 ^B to 8 ^B)

* Please refer to the drawing of deliverables for detail.

Features

Choice of Two Neck Designs

Long neck type and short neck type are available for variety of applications.

Easy Valve-to-Flange Centering

Light weight in aluminum die-cast body (which is only one third of the weight of KITZ' conventional cast iron butterfly valves) eases valve-to-flange centering in installing valves to pipeline.

Wide Range of Service Applications

Austenitic stainless steel disc and EPDM* rubber seat is able to handle various types of line fluid without risk of corrosion.

* EPDM: Ethylene Propylene Diene Terpolymer

Stabilized Operating Torque

Pair of stem bearings assembled around top and bottom stems prevents stem galling and stabilizes valve operating torque for smooth and trouble-free disc rotation.

On-the-Spot Actuator Assembly

Actuator mounting pad of all neck types are designed to conform ISO 5211 requirements for direct on-site mounting of actuators.

Dew Condensation Prevention (Long Neck Type)

Long stainless steel neck blocks fluid heat transfer to the operating device of valves, therefore, insulation is not required on the operating devices. Dew condensation is also minimized for gear-operated valves used in cold water services.

Rust Prevention

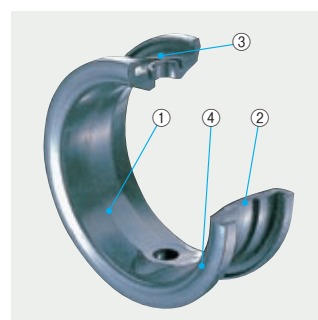
Main parts, such as stem, disc, neck and neck connector end plate and small parts, such as stopper plates, washers and bolts are all made of stainless steel for high-grade rust prevention.

S-shaped Spherical Disc for High Sealing Performance (Patented)

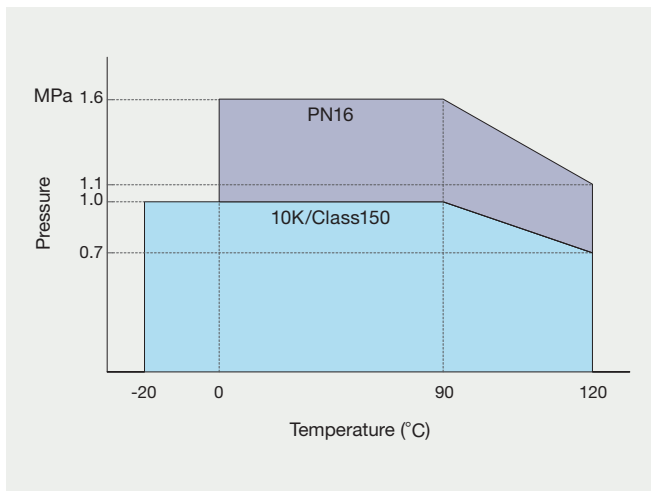
KITZ' original cross-section S-shaped disc with spherical surface makes evenly tight contact with rubber liners for excellent sealing performance with reduced operating torque. Complete 360° shut-off mechanism helps to extend service life of rubber liners. (Size ≥ 2inches)

Carefully designed KITZ' EPDM seats have unique features which ensures functional stability, sealing performance and long life;

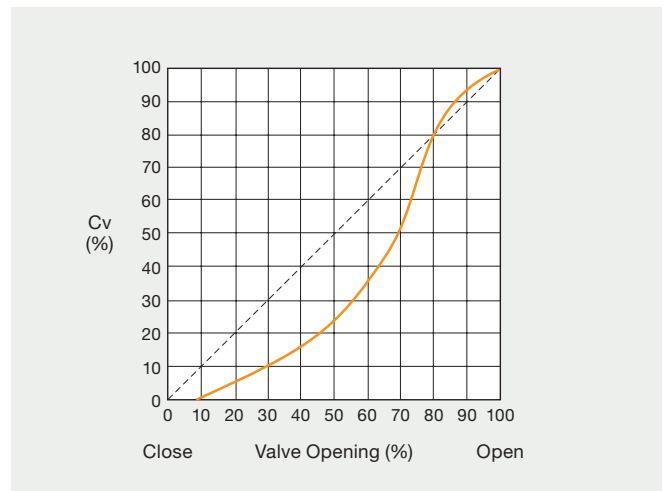
- Self-reinforced ribbing
 - Wide disc seating contact
 - Dual stem seal bearings
- ① Wide disc seating contact for high sealing performance.
 - ② Reinforced ribbing minimizes valve operating problems such as distortion, skidding, and exfoliation of rubber liners caused by line pressure load and friction with metal discs.
 - ③ Stem seal bearings are assembled on the top and bottom stems for stable sealing.
 - ④ Gasketless flange sealing contact for easy valve mounting.



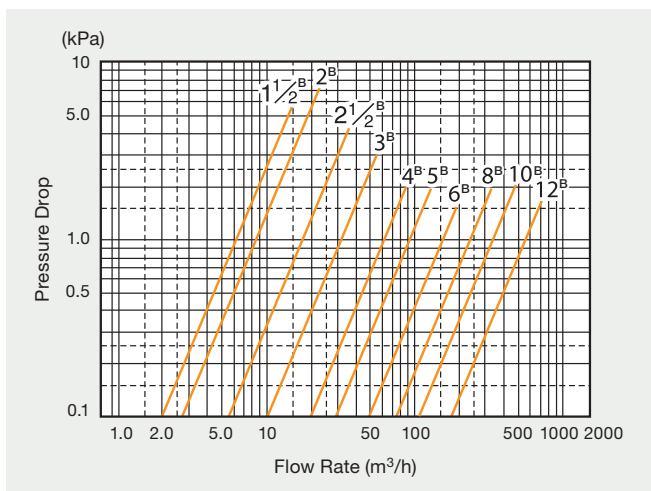
P-T Rating



Flow Characteristics



Pressure Loss



Long Neck Type

Dew Condensation
Prevented

■ Features

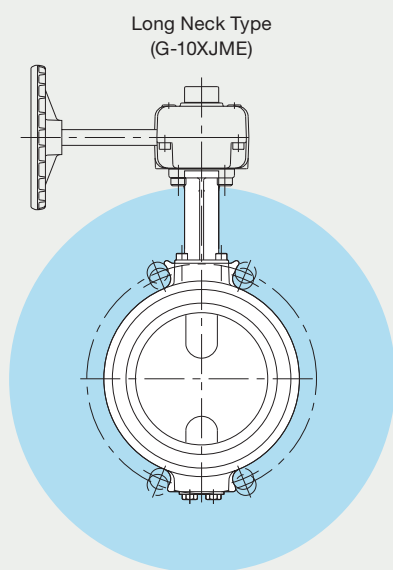
- Long stainless steel neck reduces conductivity of fluid heat and prevents dew condensation.
- Available in variety of valve body and neck design for insulation.
- Choice of actuators for automated valve operation.

■ Applications

- Building utilities.
- Piping networks for cold water, hot water, and other water supply.

■ Valve Insulation

Recommended area for insulation is shown below in blue.



Note: Not available in short neck type.

Short Neck Type

Compact
Design

■ Features

- Suitable for installation in limited space.
- Choice of actuators in automated valve operation.

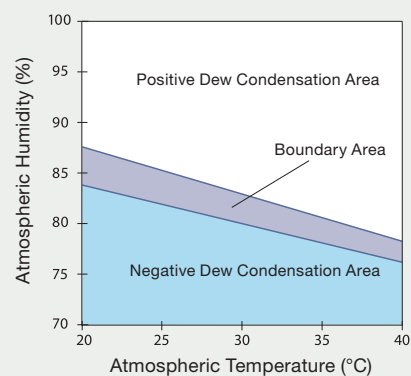
■ Applications

- Building utilities.
- Plant facilities.
- Water treatment facilities.
- Industrial machinery operation.

■ Dew Condensation Test

Samples of KITZ XJ Series butterfly valves equipped with long neck (KITZ Product Code: G-10XJMEA) were tested at KITZ laboratory under conditions in below 'Test Conditions'. Temperature in lower surface of gear box, ambient temperature and ambient humidity was measured as variable function. Dew condensation boundary is estimated to illustration in below chart.

G-10XJMEA Estimated Dew Condensation Boundary



Test Conditions

- Line Fluid : +5°C Cold Water
- Atmospheric Temperature Range : +20°C to +40°C
- Valve Insulation: 50mm glass wool (JIS A 9501) surrounding tested valve with gear box exposed to open air.

Note: Estimation shown above is a result of tests in summary carried out within test basin at constant temperature and humidity, and does not necessarily represent absolute values. Kindly note dew condensation prevention properties of tested valves may be affected by the changes in testing conditions, such as variation in degree of air transfer, line fluid temperature, atmospheric humidity or condition of insulation. Acceptance allowance of $\pm 5\%$ beyond boundary is recommended.

Through pursuit of functions required for butterfly valves, a variety of product range is available to comply with user's requirements.

Specification

Maximum Service Pressure			
ASME 150	1.03 MPa	10K	1.0 MPa
ASME 200	1.38 MPa	16K	1.6 MPa
ASME 250	1.72 MPa	20K	2.0 MPa
PN16	1.6 MPa		
PM25	2.5 MPa		

Service Temperature Range	
NBR (Buna-N) Seat	0°C to + 70°C
EPDM Seat	-20°C to + 120°C
Continuous Service Temperature Range	0°C to + 100°C

Applicable Standards	
Valve Design	API 609, MSS-SP 67, EN 593, JIS B 2032
Face to Face Dimensions	API 609 Category A, MSS-SP 67 W-1: Size 2 ^B to 14 ^B W-2: Size 16 ^B to 24 ^B EN 558 Basic Series 20, ISO 5752 20Series, JIS B 2002 46 Series

Features

Non-Peeling Seat-to-Body Construction

Molded-in (bonded) seat structure is employed for size 2^B to 12^B (DN50 to DN300). Larger size valves are provided with replaceable seat. This non-peeling, seat-to-body construction assures maintenance free application for high velocity fluid service*¹, vacuum service*² and handling surging fluid velocity. It also guarantees peel-free valve installation in pipeline.

*1 Maximum 4 meters/second for valves up to size 12^B (DN300) and 3 meters/second for sizes 14^B (DN350) and above.

*2 Vacuum service is optional for sizes 14^B and above. (Up to 30 Torr.)

Spherical Design for Discs and Seats

Rubber seats are spherically designed to contact with top and bottom stems. Widely designed rubber seats are protected from peeling or deformation for prolonged service life of the valve. Thinly streamlined metal disc is the result of elaborate laboratory studies ultimately minimize pressure loss.

Choice of Materials and Operating Devices

Choice among 4 disc and 2 seat materials, manual, pneumatic or electric valve operating devices makes service application highly versatile.

Integral ISO 5211 Actuator Mounting Flange

Any pneumatic or electric valve actuators provided with ISO 5211 valve mounting flanges can easily be mounted for actuation.

Low Operating Torque

Designed to low operating torque for extension of valve's service life and economic consideration in selection of valve's operating device.

Lightly-Designed for Operation Efficiency

For operation efficiency in piping, XJ Series is designed much lighter in weight than our conventional series.

Emission-Free Stem Sealing Mechanism

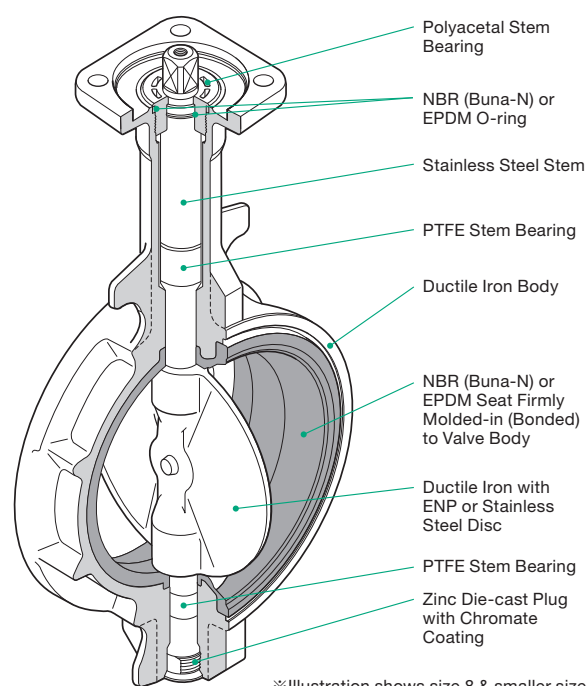
Prevention of external fluid leakage is maximized with a rubber O-ring around top stem, tight contact between spherically designed rubber seat and spherically designed disc at top & bottom ends.

Dew Condensation Prevention

Dew condensation prevention type is available optionally with heat insulating plate (Sizes 2^B to 6^B/DN50 to DN150) or stainless steel stand (Sizes 8^B to 24^B/DN200 to DN600).

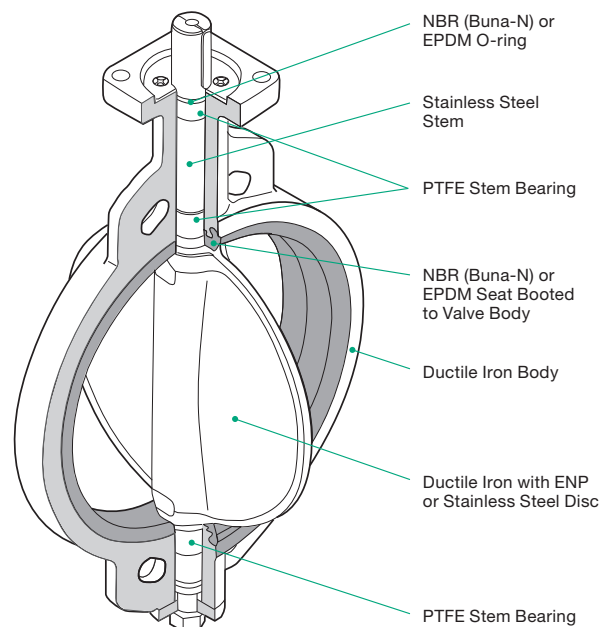
Coupling Flanges	
Wafer Type	ASME Class 150/200/250
	EN 1092 PN10: DN 50 to DN 350, PN16: All sizes PN25: DN 50 to DN 300
	BS 10 Table D/Table E
	JIS 10K/16K/20K
Lugged Type	ASME Class 150/200/250
	EN 1092 PN10: DN 50 to DN 150, PN16: All sizes PN25: DN 50 to DN 300

Molded-in (Bonded) Seat Structure (Size 2^B to 12^B)*¹



※Illustration shows size 8 & smaller sizes

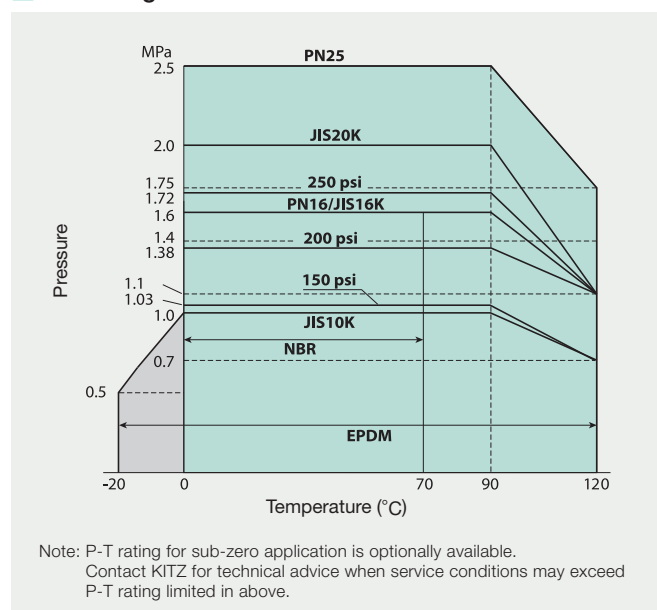
Replaceable Seat Structure (Size 14^B to 24^B)*²



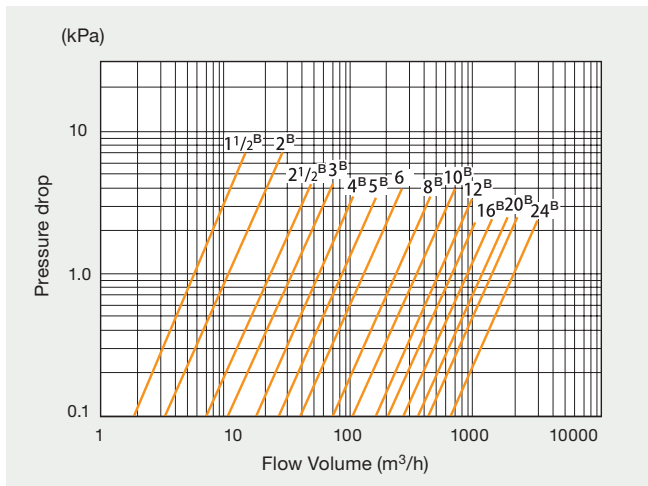
Flow Coefficient (Cv)

Size		Cv Value
DN	NPS	
40	1½	77
50	2	124
65	2½	270
80	3	397
100	4	671
125	5	1013
150	6	1532
200	8	2792
250	10	4025
300	12	6010
350	14	7525
400	16	10080
450	18	13120
500	20	15990
600	24	23690

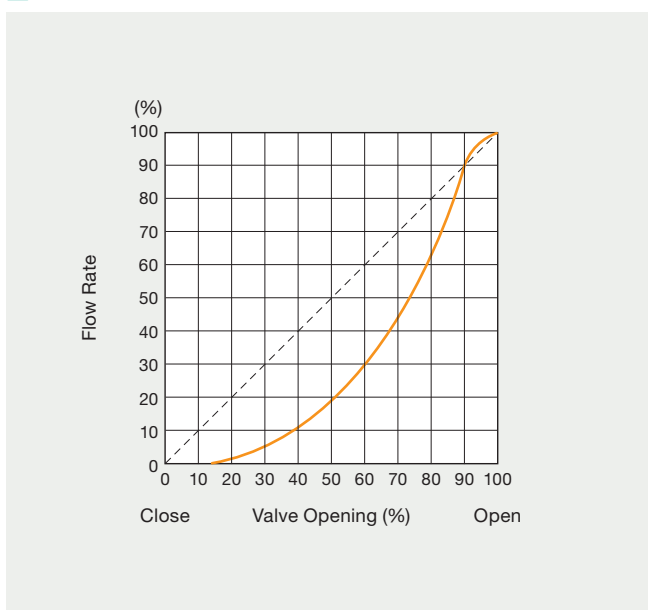
P-T Rating



Pressure Loss (for handling static clean water with valve fully open)



Flow Characteristics



Standard Materials

Parts	Material
Body	Ductile Iron Cast Iron (JIS 10K design Size 14 ^B to 24 ^B)
Stem Bottom Stem	410 SS/420 SS
Disc	Ductile Iron (Ni-plated)/304SS/316SS /Aluminum Bronze (See Explanation of Product Code)
Seat O-ring	NBR (Buna-N)/EPDM (See Explanation of Product Code)
Bearing	Polyacetal/Glass Filled PTFE/Metal Backed PTFE
Plug (Size 2 ^B to 8 ^B)	Zinc Die-cast (Chromate Coating)
Operator	Lever Aluminum Die-cast
	Gear Aluminum Die-cast (Size 2 ^B to 12 ^B) Cast-Iron (Size 14 ^B to 24 ^B)
	Vertical Gear Cast-Iron

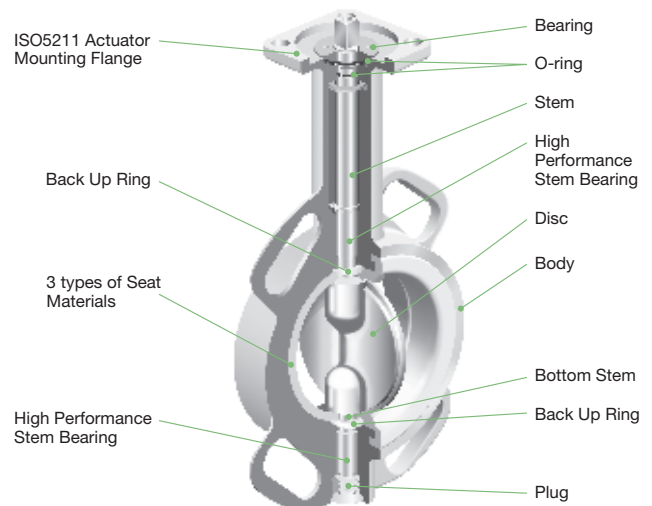
Line-up of Three Special Seat Materials available for variety of fluids.

Specification

Maximum Service Pressure	
PN10	10bar (1.0MPa)
Body Material	
Ductile Iron	EN-GJS-450-10, Equivalent to ASTM A536 Gr. 65-45-12, BS 2789 Gr. 40/10* ¹
*1 Obsolete Standard.	
Applicable Standards	
Valve Design	EN 593:2004
Coupling Flanges	
Wafer Type	EN1092 PN6, PN10, PN16 BS10 Table E ASME Class125, Class150

Cv Value

Size		Open Degree							
DN	NPS	20°	30°	40°	50°	60°	70°	80°	90°
50	2	8	17	29	42	56	75	86	88
65	2 1/2	16	36	60	88	122	172	219	246
80	3	21	45	75	113	165	248	345	415
100	4	3	65	109	172	274	446	689	886
125	5	47	95	160	255	406	655	997	1250
150	6	68	138	234	375	598	958	1430	1760
200	8	116	241	419	681	1080	1700	2470	2900
250	10	160	325	575	950	1510	2420	3460	4020
300	12	258	493	859	1410	2260	3610	5160	6010



Standard Materials

Parts	Materials
Body	Ductile Iron [EN-GJS-450-10]
Stem	Stainless Steel [AISI 410]
Disc	Stainless Steel [A351 Gr.CF8M]
Seat	W-NBR (White NBR) VMQ (Silicone Rubber) FKM (Fluoro Rubber)
O-ring	FKM
Bearing	Multi-layered Bearing*
Stem Bearing	Multi-layered Bearing*
Plug	Zinc Die-cast
Bottom Stem	Stainless Steel [AISI 410]

* Tetrafluoroethylene resin filled over layer, sintered bronze interlayer with steel backing.

Features

Three Types of Seat Material

Three (3) types of seat materials are as follows; VMQ (Silicone Rubber) can be used for wide range of temperature applications; W-NBR (White NBR) is suitable for use in food processing industry; and FKM (Fluoro Rubber) has properties such as strength and durability for use in variety of fluid application. W-NBR and VMQ meets the requirements of FDA*.

* All of the above listed materials are approved by FDA, and the seats are manufactured within maximum allowable limitations and restrictions.

Suitable for Various Flanges

Flanges in EN1092 PN16, PN10, PN16, BS10 Table E, ASME Class 125 and Class 150 are suitable in all sizes.

Integral ISO 5211 Actuator Mounting Flange

All actuators, pneumatic or electric, provided with ISO 5211 valve mounting flange can easily be mounted for valve actuation.

High Performance Stem Bearing having additional strength to withstand high temperature and high pressure

Stem Bearing in EJ Series is multi layered back material to provide high performance bearing surface capable of withstanding high pressure and temperature.

Backup Ring to maintain Stem Sealing

Backup ring around the stem maintains performance of stem sealing by the movement of stem/disc in sealing/seat of the valve.

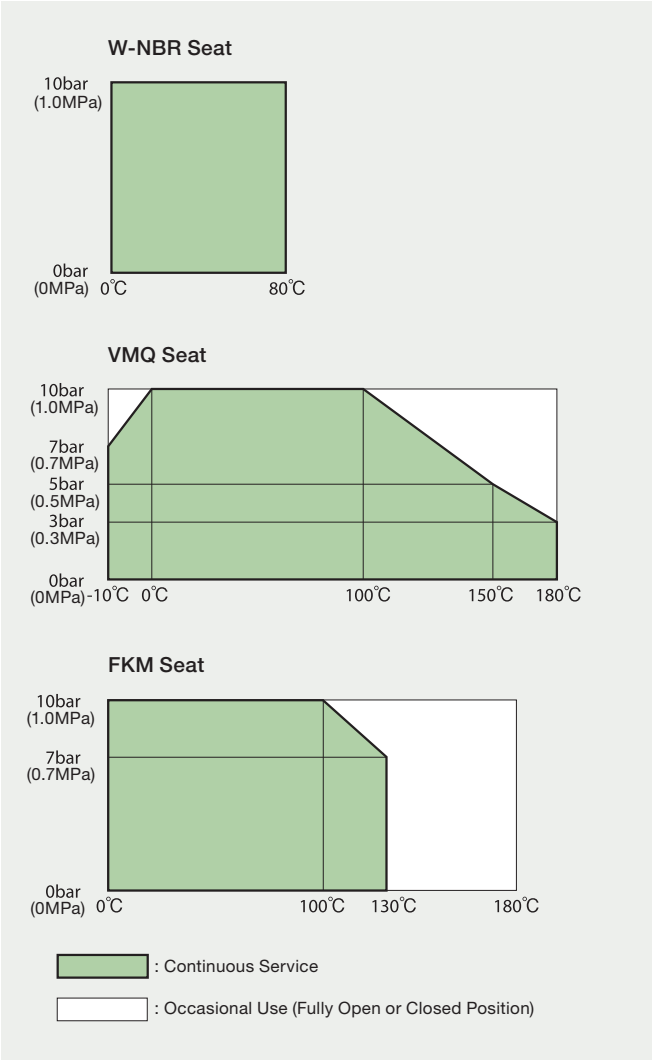
Stainless Steel Bearing Features

Embedded within stainless steel upper body bearing is multi-layered to provide smooth stem operation. Also, housed within stem is snap ring to provide protection and prevent blow out of the stem caused by internal pressure.

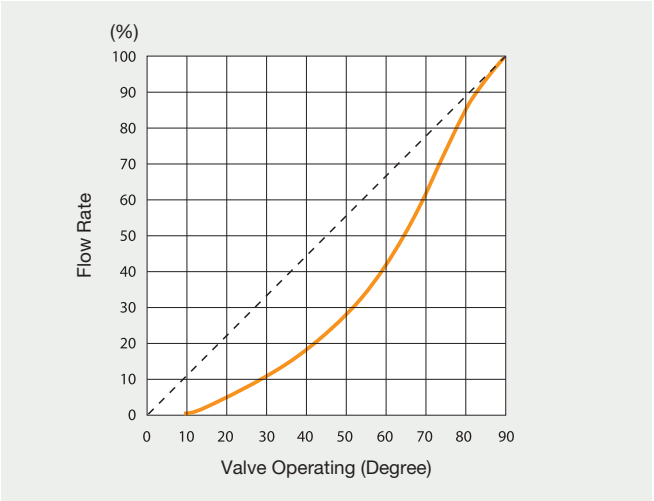
Polished Disc

Polished disc is standard for VMQ and is optional for W-NBR seats for use in food and pharmaceutical industries.

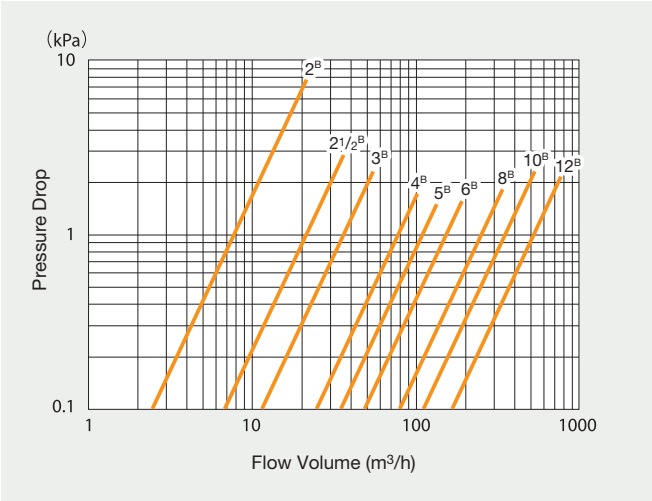
P-T Rating



Flow Characteristics



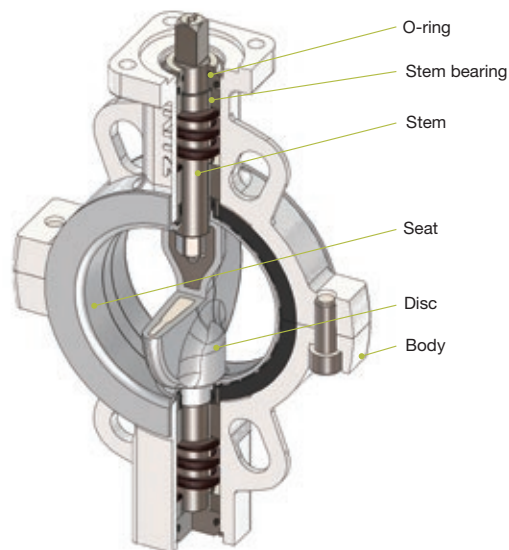
Pressure Loss



PFA Lined Butterfly Valves applicable to high corrosive fluids.

Specification

Size	50 to 300mm (2 ^B to 12 ^B)
Product Code	10LJF
Maximum Service Pressure	1.0MPa
Service Temperature Range	-10 to +150°C Note: Refer to Pressure-Temperature Ratings.
Coupling Flanges	JIS2220 / 2239 10K Note: JIS5K and ASME Class 150 are optional.
Automatic Operation	Please contact us



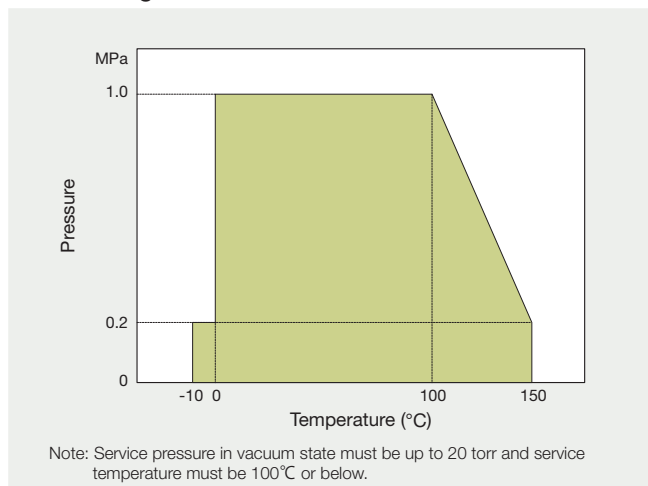
Standard Materials

Parts	Materials
Body	FCD450-10
Disc	SCS13A+PFA
Seat Liner	PFA
Back Up Rubber	FKM

Features

- Various fluids are applicable for PFA-lined internal wetted parts.
- High-grade PFA prevents troubles from corrosive fluid permeation.
- Sealing mechanism with coil spring realizes high sealing performance.
- Original stem sealing design prevents external fluid leakage.
- Easy maintenance with easily disassembled stem and disc.
- Top flange in accordance with ISO 5211.
- Blowout-proof stem.

P-T Rating



LJ Series is designated as Strategic Materials in the Foreign Trade Law. In order to export, export license issued by the exporting country is required. Kindly contact KITZ representative for details.

CAUTION

- Note 1: Be careful not to damage PFA seat when handling this product.
 Note 2: Do not store this product in place exposed to direct sunlight.
 Note 3: Installation of gaskets between valve and flanges is not required with accurate centering of each pair of upstream/downstream pipes. Flange and pipe bores must be cleaned thoroughly to remove wetted spatters and foreign objects that may have been left inside.
 Note 4: When necessary, install solid PFA gaskets having minimum of 3mm in thickness. (Rubber materials are not allowed.)

With Double Eccentric Kinematics and all Stainless Steel Body and Trim guarantees high performance corrosion resistant services for application of KITZ UB Series Butterfly Valves to Chemical Industries.

Specification

Maximum Service Pressure

10UB	1.4 MPa	20UB (size 1 1/2" to 12")	2.0 MPa
16UB (size 14" to 24")	1.4 MPa	150UB	1.9 MPa

Service Temperature Range

PTFE Seat	-29°C to + 160°C
Carbon Filled PTFE Seat	-29°C to + 200°C

Wall Thickness

ASME B 16.34 Class 150

Face to Face Dimensions

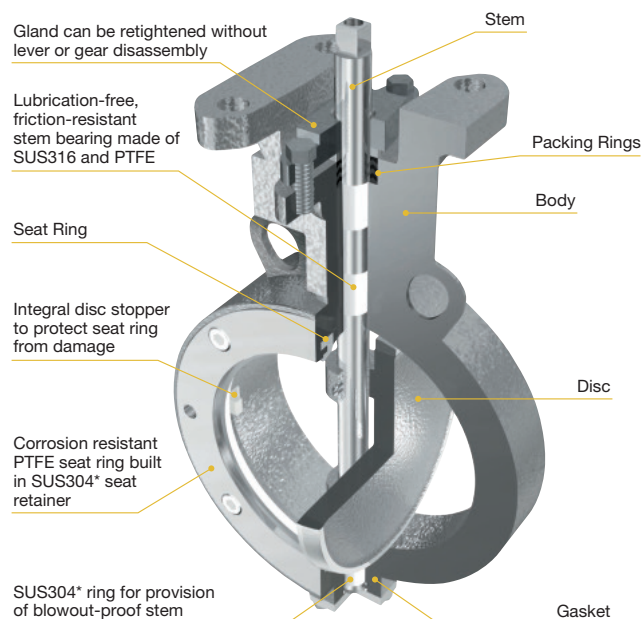
6" and smaller	ISO 5752 Short
8" and larger	ISO 5752 Medium

Coupling Flanges

10UB	JIS 10K
16UB	JIS 16K
20UB	JIS 20K
150UB	ASME Class 150

Standard Materials

Parts	ASTM Materials	JIS Materials
Body	A351 Gr.CF8 ^{*1}	SCS13A ^{*1}
Stem	304SS	
Disc	A351 Gr.CF8 ^{*1}	SCS13A ^{*1}
Gland	A351 Gr.CF8 ^{*1}	SCS13A ^{*1}
Seat Ring	PTFE ^{*2}	
Seat Retainer	304SS	
Gland Packing	PTFE	
Gasket	PTFE	



^{*1}SCS14A or SUS316 is available as an option

Parts	ASTM Materials	JIS Materials
Set Bolt	Stainless Steel	
Taper Pin	316SS	
Stem Bearing	METAL BACKED PTFE	
Gland Bolts	Stainless Steel	
Thrust Washer	PTFE	
End Plate	A351 Gr.CF8	SCS13A
End Plate Bolts	304SS	

^{*1} CF8M(316)/ SCS14A(SUS316) is available as an option.

^{*2} Carbon Filled PTFE seat rings are optionally available.

Features

Double Eccentric Kinematics

Valve stem is designed in eccentric to both center of seat ring (by X) and to center of the valve body (by Y), which makes clearance 'C' between seat ring and disc seat surface to its fully open position (Fig. 1). Disc seating surface is spherically machined and contacts with PTFE seat tightly through 360° for leakage-free service. These functions minimize friction wear of seat ring and reduce valve operating torque considerably.

Durable Seat Rings

Seat rings are made of PTFE with stainless steel supporter. Furthermore, double eccentric kinematics relieve seat ring from damage or wear which is rather usual problem in conventional butterfly valves. This allows service life twice as long as rubber seated butterfly valves.

Retightening of Gland Packing

Room between gland and lever or gear allows retightening of gland bolt without trouble to disassemble lever or gear during plant operation is another feature of KITZ UB Series Butterfly Valves (Fig. 2).

Fig.1

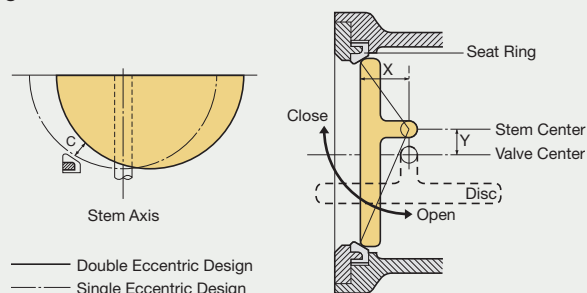
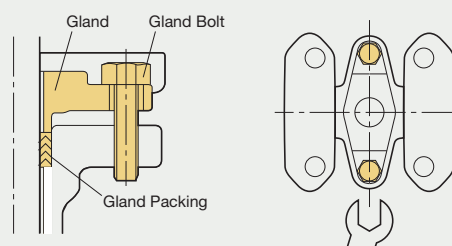


Fig.2



Flow Coefficient (Cv)

Size		Cv Value
DN	NPS	
40	1½	30
50	2	83
65	2½	175
80	3	255
100	4	460
125	5	722
150	6	1180
200	8	2240
250	10	3660
300	12	5640
350	14	7060
400	16	9390
450	18	12300
500	20	15300
600	24	22900



CAUTION

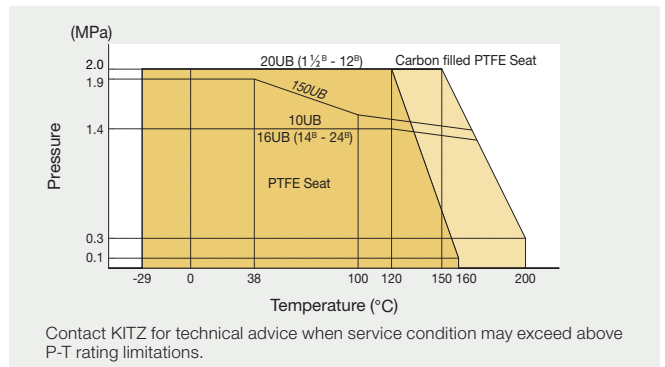
When installing valves between pipes, be sure to use gaskets* specified below:

*Non-asbestos joint sheet or PTFE sheet

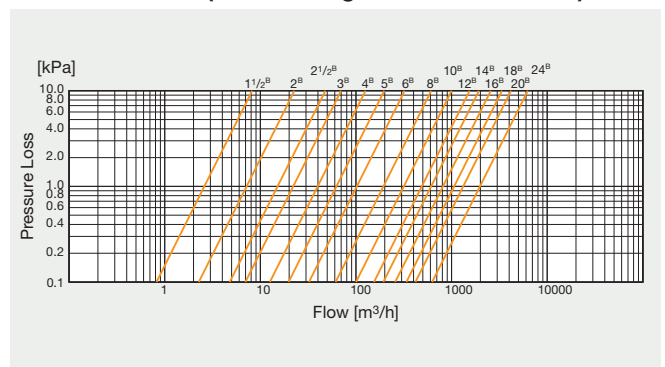
unit: mm

Size		I/D		O/D	Thickness
DN	NPS	Min.	Max.	Min.	Min.
40	1½	48	57	73	3
50	2	60	61	90	3
65	2½	73	77	115	3
80	3	88	90	126	3
100	4	108	116	146	3
125	5	136	143	181	3
150	6	162	170	211	3
200	8	213	220	257	3
250	10	266	275	322	3
300	12	312	326	367	3
350	14	342	359	410	3
400	16	389	410	470	3
450	18	444	460	530	3
500	20	493	513	580	3
600	24	594	615	688	3

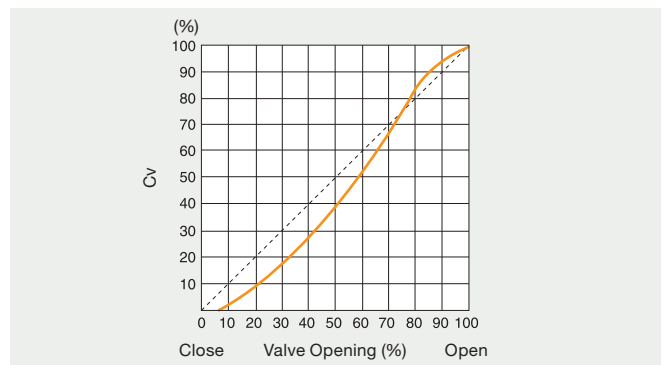
P-T Rating



Pressure Loss (for Handling Static Clean Water)



Flow Characteristics



CAUTION

- Following gaskets should be used for installation of UB Series Butterfly Valves to pipelines.
[Type of Gasket]
 - Non-Asbestos Joint Gasket Sheet
 - Reinforced PTFE Gasket (Joint Gasket, Spiral Wound Gasket or Metal Gasket cannot be used.)
- [Shape of Gasket]
 - Full Face Gasket
 - Ring Gasket (for Full Face Flanges and Flat Face Flanges)
- [Dimensions of Gasket]
Dimensions of gasket should comply with JIS B2404 and ASME B16.21 (minimum gasket thickness is 3mm).
- UB Series Butterfly Valves cannot be used with lapped loose flanges (lap joints + stub ends, stainless steel pipe joints with flanged pipe ends).
- UB Series Butterfly Valves may not be used with some large flat face flanges.
JIS 5K RF Flanges: Not Applicable
JIS 10K RF Flanges: Applicable, but be sure to align center of flanges and the valve
JIS 16K RF Flanges: Applicable
Class 150 RF Flanges: Applicable, but be sure to align center of flanges and the valve.
- UB Series Butterfly Valves cannot be used with rubber lining pipes.
- UB is unidirectional valves. Valve must be installed according to an arrow provided on the side of operator mounting flange.
This arrow must point from higher pressure side to lower pressure side when valve is in closed position.
- When retightening the packing, do not cover the gland with insulation material.
- Retighten gland bolts before operating the valves.; Check handle torque while retightening the bolts in order to avoid over tightening and difficult to operate. Gland bolts should tightened alternately with even force. Make sure to retighten gland bolts, if leakage is observed from the gland section due to stress relaxation.

Original Seat Configuration and Materials for Stable Sealing Performance

Double Eccentric Structure and RPTFE Seat

■ Specification

Valve Nominal Size	
SHB	50 ^A ~ 300 ^A
UHB	40 ^A ~ 300 ^A

Applicable Flange	
5UHB	JIS 5K
10SHB · 10UHB	JIS 10K
16SHB	JIS 16K (JIS 20K)
150SHB · 150UHB	ASME Class150

Maximum Allowable Pressure	
5UHB	0.7MPa
10SHB · 10UHB	1.4MPa
16SHB	2.0MPa
150SHB · 150UHB	1.72MPa

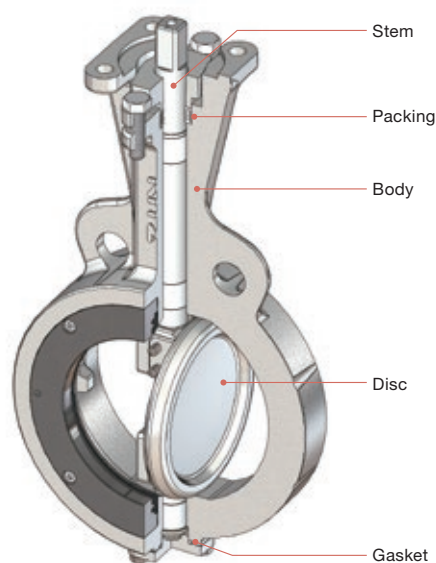
Service Temperature Range	
SHB	-10 ~ +200°C
UHB	-29 ~ +200°C

Face to Face Dimensions	
JJIS B 2002 46 series	

Flow Direction	
Bidirectional flow	
* Recommended flow direction: Flow pressure from retainer side	

Applicable Gaskets (commercially available gaskets)	
Joint seats (Minimum thickness 1.5 mm) Spiral wound gaskets / Envelope gaskets	

Automatic Valves	
Contact KITZ Corporation for details.	



* Illustration above shows the structure of Size 4^B

■ Standard Materials

Parts	Material	
	SHB	UHB
Body	FCD450-10	SUS13A/A351 Gr.CF8
Stem	SUS420J2	SUS304N2
Disc	SCS13A+Cr Plated	
Gland	SCS13A	
Seat Ring	RPTFE (Carbon Fiber-filled PTFE)	
Seat Retainer	S45C	SUS304
Stem Bearing	PTFE (Metal Backed)	
Gland Packing	PTFE	
Gasket	PTFE	

Features

■ RPTFE Seat Rings for Various Types of Fluids

Chemical resistant RPTFE is adopted as seat material which allows to be used with fluids that cannot be handled with rubber seats. (Refer to table 'Corrosion Resistant Level of Materials in Disc and Seat against Fluid' in Page BFV5.)

■ Double Eccentric Structure for Stable Sealing Performance

Double eccentric structure minimizes contact between disc and seat during operation and provide stable sealing performance with less wear of the seats over long period of time. (Fig. 1)

■ Easy Retightening of Packing

Retightening of packing is possible without removing operating device. (Fig. 2)

Fig.1
Structural Drawing of Double Eccentric Butterfly Valve

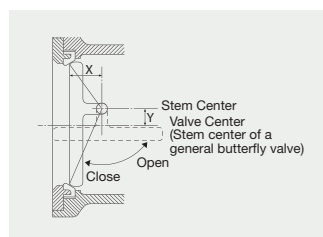
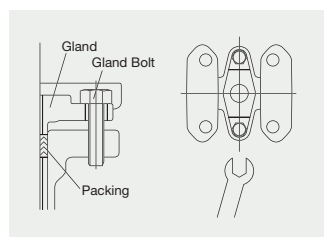


Fig.2
Retightening of Gland Bolts



■ Original Seat Configuration for High Durability (Patented)

■ Bidirectional Flow

Applicable to both direct and reverse flow control, however, flow pressure from retainer side is recommended.

■ Applicable to Commercially Available Pipe Gaskets

Joint seats (minimum thickness 1.5mm), spiral wound gaskets and PTFE envelope gaskets conforming applicable standards can be used.

■ Top Flange Dimension According to ISO 5211

Cv

Nominal Size		Rated CV Value
A	B	
50	2	64
65	2 1/2	112
80	3	199
100	4	371
125	5	569
150	6	838
200	8	1669
250	10	3088
300	12	4502

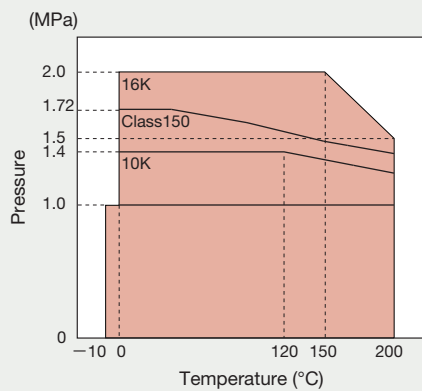
CAUTION

- HB Series Butterfly Valves must be installed in accordance with arrow direction indicated on the body.
- When HB Series Butterfly Valves are used for bidirectional service, align flow direction with an arrow indicating flow direction from higher pressure side to lower pressure side.
- HB Series Butterfly Valves can be used with joint seals (minimum thickness 1.5mm) , spiral wound gaskets and PTFE envelope gaskets conforming applicable standards.
- HB Series Butterfly Valves cannot be used with stub ends (lap joints, stainless steel pipe joints with flanged pipe end).
- HB Series Butterfly Valves adopt gland structure. Retighten gland bolts before operating the valve. Check handle torque while retightening bolts in order to avoid over-tightening and difficult to operate. Tightening gland bolts alternately with even force. Retighten gland bolts if leakage from the gland section due to stress relaxation is observed.
- Do not cover the gland with insulation material. Keep gland uncovered to retighten.

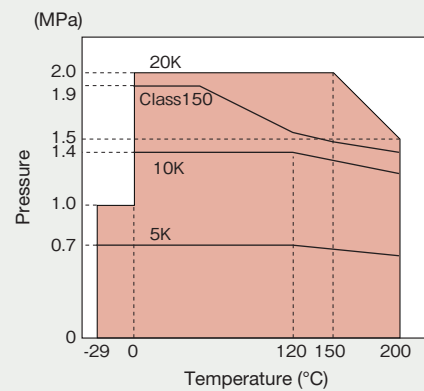
High Pressure (Upstream)
Side when Valve at Fully
Closed Position

Low Pressure (Downstream)
Side when Valve at Fully
Closed Position

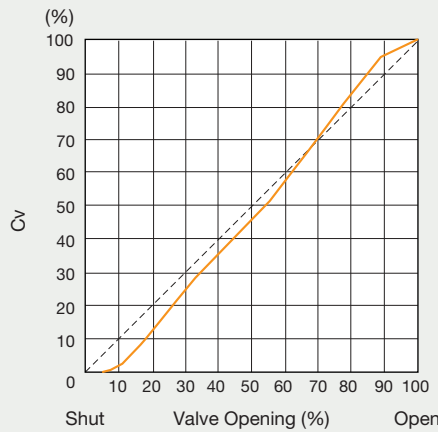
P-T Rating (SHB Series)



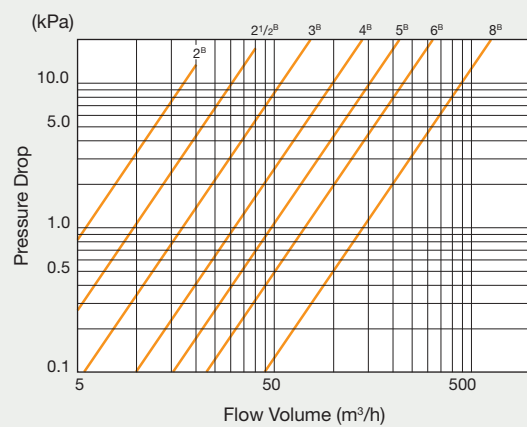
P-T Rating (UHB Series)



Flow Characteristics



Pressure Loss



THROTTROL is designed to handle extremely low fluid volume, while it completely shuts off the line flow.

Specification

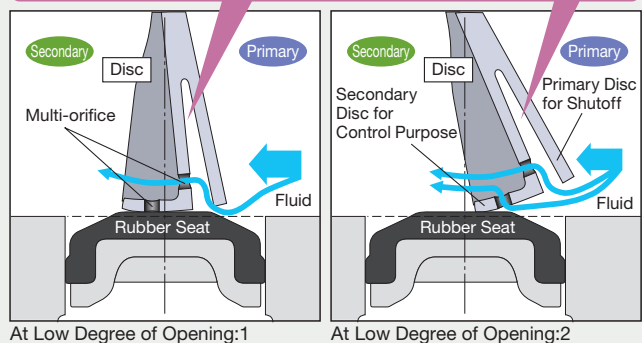
Maximum Service Pressure	1.0 MPa
Service Temperature Range EPDM	-20°C to +120°C
Continuous Service Temperature Range	0 ~ +100°C Note: Refer to Pressure-Temperature Ratings in next page.
Rangeability	160: 1
Flow Characteristics	Equal Percentage Flow Characteristics
Sealing Features	Tight Shutoff
Face to Face Dimensions	JIS B 2032 Series Number 46
Coupling Flange	JIS 5K/10K/16K/20K

Features

Excellent Flow Volume Control Performance with 160:1 Rangeability

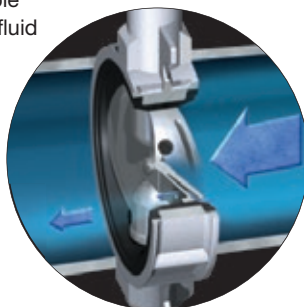
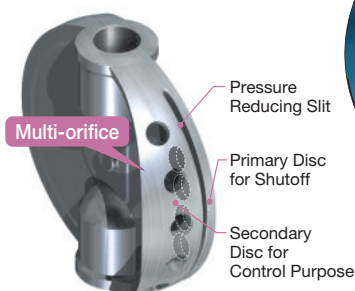
- Tight shut/high rangeability is realized with combining disc section for full-shutoff and disc section for low-operating control of the disc. Also, cavitation is suppressed by installing pressure chamber to improve anti-noise multi orifice.
- Installing multi hall at disc section for low operating control and fin section realizes flow volume characteristics to close ideal equal percent characteristics for flow volume control.

Pressure Reducing Slit and Multi-orifice Reduces Flow Velocity, and Minimize Cavitation and Noise

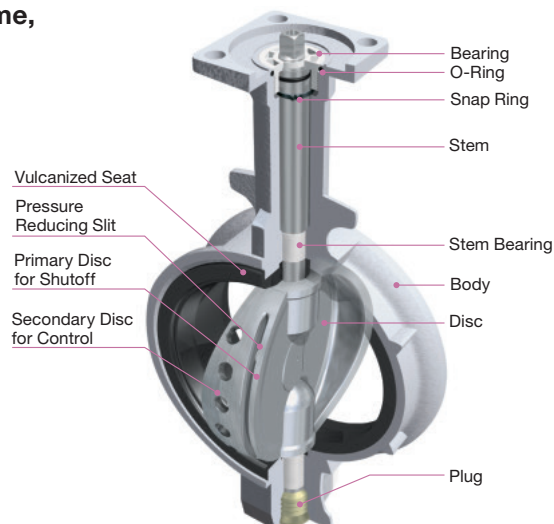


Prevention of Erosion by Jet Flow

- Vulcanized bonded seat is suitable for controlling high flow velocity fluid to reduce erosion due to jet flow.



Fluid flows only through orifices at low degree of opening.

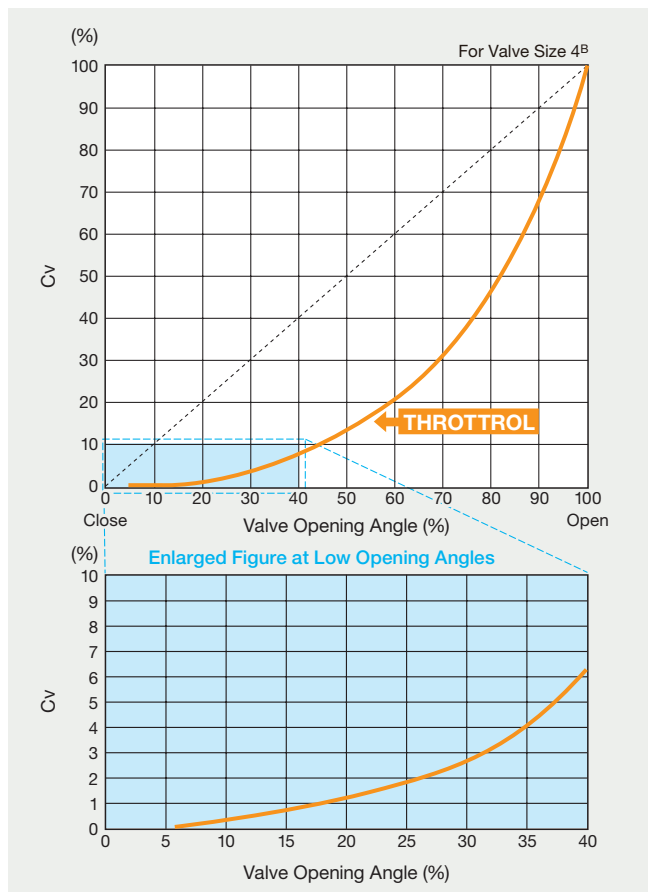


Standard Materials

Parts	Materials
Body	FCD450-10
Stem	SUS630
Disc	A351 Gr. CF8 / SCS13A
Seat	EPDM
O-ring	EPDM
Bearing	POM (2 ^B to 8 ^B)
Plug	Chromated ZDC
Bottom Stem	SUS403 (2 ^B to 4 ^B) SUS420J2 (10 ^B to 12 ^B)

* Please refer to the drawing of deliverables for details.

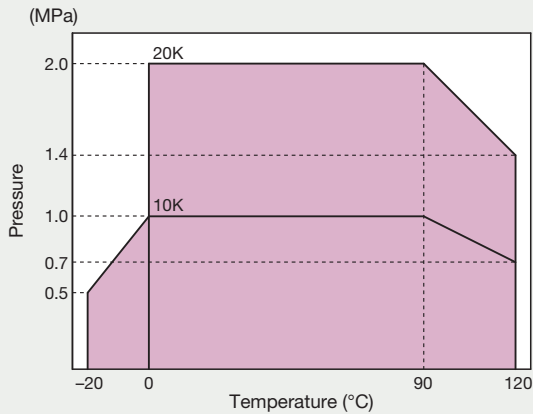
Flow Characteristic Curve



Cv

Nominal Size		Valve Opening Angle (%)										
A	B	5	10	20	30	40	50	60	70	80	90	100
50	2	0.2	0.7	1.8	4.0	7.5	14.3	23.9	35.9	49.3	62.6	74.2
65	2½	0.3	1.0	2.0	4.6	10.0	24.6	44.0	68.9	99.2	132.8	167.0
80	3	0.3	1.6	4.5	10.0	25.3	47.0	71.9	106.4	149.5	201.9	258.5
100	4	0.4	1.9	6.0	13.3	29.4	55.3	94.2	149.6	225.4	325.6	454.2
125	5	0.5	4.3	9.8	29.0	75.0	128.2	208.2	308.9	429.2	566.4	713.9
150	6	2.5	12.0	29.0	77.0	141.2	209.8	289.5	290.2	528.3	726.8	1015.7
200	8	5.3	18.8	45.9	138.2	244.5	382.5	553.7	827.7	1175.3	1618.6	1986.6
250	10	7.8	32.1	131.4	306.5	496.2	744.3	1080.0	1488.7	1955.7	2452.0	2919.0
300	12	12.4	51.1	208.4	487.4	789.1	1183.7	1717.5	2367.4	3110.1	3899.3	4642.0

P-T Rating of Seats



- Note 1 : Contact KITZ for technical advice when service conditions may exceed above PT-Rating range. Take appropriate measures to prevent valves from freezing.
- Note 2 : Valve can continuously be used at temperature range of 0°C to 100°C.
- Note 3 : EPDM Seats are not suitable for oil service.
- Note 4 : Contact KITZ when valves are used in hot water supply system.

CAUTION

- THROTTROL is a unidirectional valve. THROTTROL must be installed with the direction of flow in accordance with to an arrow marked on the body during installation.
- THROTTROL cannot be used with rubber lining pipes. THROTTROL is constructed to seal flanges by pressing rubber seat with compressive force exerted by the flange, where compressive force becomes too large or too small if rubber lining is applied to flange joint surface, thereby causing an increase in operating torque of the valve, deterioration of sealing member or external leakage.

Suitable for High Temperature Service

■ Specification

Maximum Service Pressure	
	0.5 MPa
Service Temperature Range	
	0°C to +230°C
Maximum Allowable Leakage	
	3% of Normal Cv Values (D Type) 2% of Normal Cv Values (A Type)
Coupling Flange	
	JIS 5K/10K



Features

Type D

■ For High Temperature

Type D Damper enables flow volume control of high temperature fluid up to 230°C by metal disc and metals seat (hard chrome coating).

Type A

■ For High Temperature Fluid

Angle bar of Type A Damper is shaped in oval to have the disc contact with inner surface of the body with certain angle when the valve is closed. Therefore, valve can be used for the same application of Type D Damper with even less leakage volume than Type D.

■ Flow Coefficient (Cv)

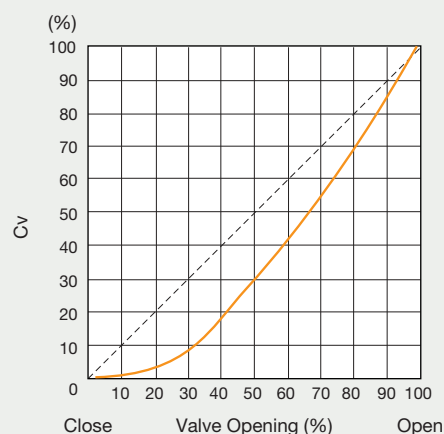
Size		Cv
A	B	
50	2	104
65	2 1/2	174
80	3	348
100	4	557
125	5	905
150	6	1183
200	8	2575
250	10	4037
300	12	6264

■ Standard Materials

Parts	Materials
Body	FC250+HCr
Stem	403SS
Disc	SUS430
Gland	C3604
Gland Packing	Flexible Graphite
Dics Nut	304SS
Disc Bolt	304SS
Index Plate	Carbon Steel
Set Bolt	Carbon Steel
Bottom Stem	403SS

* Please refer to the drawing of deliverables for details.
Gasket is required to pipe this product.

■ Flow Characteristics



KITZ BUTTER Series

KITZ Threaded Compact Butterfly Valves

Compact Butterfly Valves for Threaded Piping Connection

Specification

Size
1/2 ^B ~ 2 ^B
Product Code
FV • UV
Connection Type
Threaded Type (JIS B 0203)
Maximum Pressure
1.21 MPa
Service Temperature Range
0°C to +70°C
Face to Face Dimensions
KITZ Standard

Features

Clean Design with Pocketless to prevent standing fluid

Full-port structure prevents fluid in pocket in ball valves and rubber seat is adopted to clear Food Sanitation Act.

Threaded Type is the first in Butterfly Valve

Screw-in type for simple pipe connection enables adoption to various small sizes of piping used in vast range of application.

Compact/Light Weight Design

Compact design with weight approximately 1/4, dimension between faces to approx. 2/3 and height of valve to approx. 3/4 compared to same size ball valves. (Compared to KITZ products)

W-NBR Seat with High Sealing Characteristics

By adopting W-NBR with high elasticity for seat to improve sealing characteristics is ideal for fluid line such as air/gas where high sealing is required.

Self Cleaning Feature for Sealing Section

Equipped with self cleaning feature to remove dirt at sealing section during open/close with elastic effect.

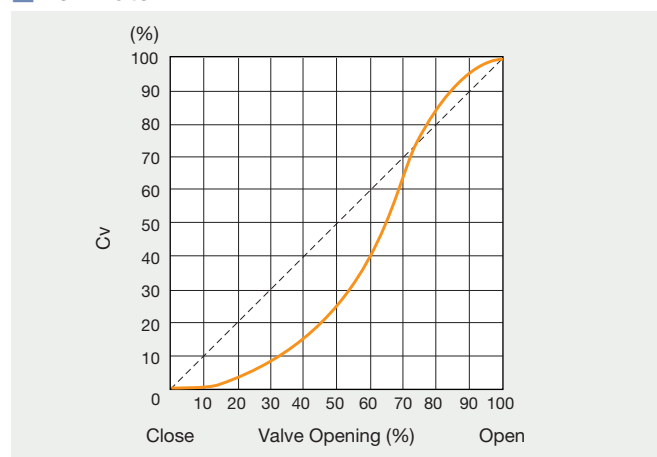
Flow Volume Control Capability

Butter Series is equipped with balancing stop mechanism fixed at intermediate opening degree and is capable of stable flow volume control with help of opening scale.

Accurate Lost-Wax Casting

Stainless steel body products employ accurate lost-wax casting to configure clean and dust-free piping line with smooth surface.

Flow Rate



Standard Materials

Parts	Materials	
	FV	UV
Body	C3771BE	SCS13A
Stem	SUS304	
Disc	SUS304+W-NBR	
Gland	C3771BD	SUS304
O-ring	NBR	

* Please refer to the drawing of deliverables for details

W-NBR No.NF81W Test Results

Test Item	Test Result	Criteria
Material Test	Lead	Applicable (7.00ppm)
	Cadmium	Applicable (not detected [0.2ppm or less])
Dissolution Test	Potassium Permanganate Consumption	Applicable (2.4ppm)
	Heavy Metal	Applicable
Vaporization Residue	Water	Applicable (0 ppm)
	4% Acetic Acid	Applicable (1.5 ppm)
	n-heptane	Applicable (16.5 ppm)
	20% Ethanol	Applicable (1.5 ppm)

Cv

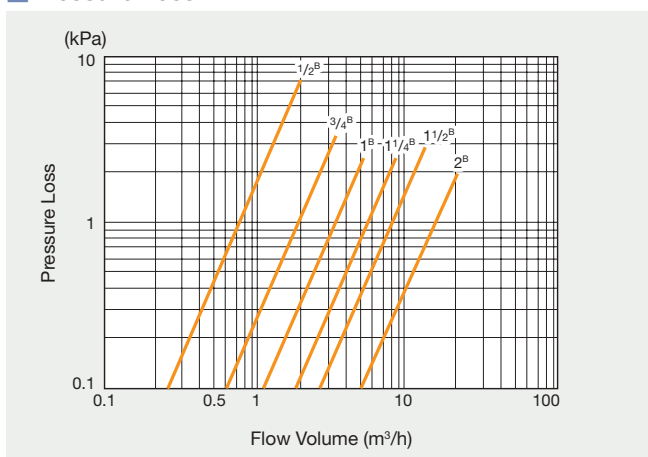
Size		Cv
A	B	
15	1/2	8.7
20	3/4	21
25	1	39
32	1 1/4	66
40	1 1/2	94
50	2	176



CAUTION

This product is not applicable for combustible gas or toxic gas.

Pressure Loss



Precautions for Trouble-free Operation of KITZ Butterfly Valves

Valve Selection

- Make sure to select a valve with design specification which are appropriate in fluid type, pressure and temperature conditions expected.
- Lubricants are applied to discs and rubber seats to protect its surfaces.
Oil-free treated types are also available. Contact KITZ or its local distributors for details.
- Consult KITZ or its local distributors for services with fine particles.

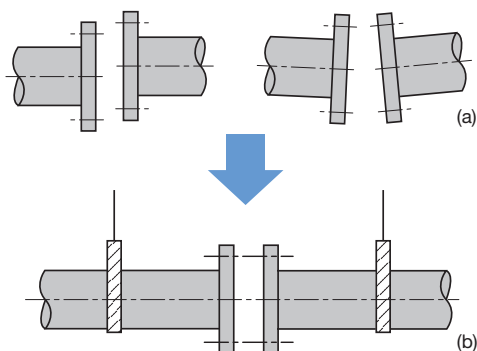
Storage and Handling

- Valves must be stored in clean, dry, corrosion-free environment with no direct exposure to the sunlight. Valves should be left open 10° to prevent permanent distortion of resilient seats. Refrain from overloading valves and actuators by storing in piles or placing other objects.

Mounting to Pipelines

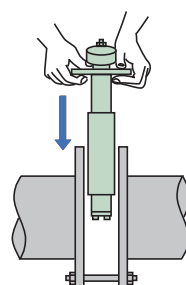
- Valves must be mounted to flanges only after flanges have been welded to pipes and cooled down to ambient temperature. Otherwise, welding heat may affect quality of resilient seats.
- Edges of welded flanges must be machined to achieve smooth surface finish not to damage resilient seats during valve installation. Flange faces must be free of damage or deformation and must be cleaned to remove rust and any foreign objects to prevent leakage through the valve and flange connections. Gaskets are not required to install KITZ XJ Series Butterfly Valves.
- Flanges and pipe bores must be cleaned thoroughly to remove welding spatters, scales and foreign objects which may have been left inside.
- Accurate centering of each pair of upstream and downstream pipe is essential for trouble-free operation of the valve mounted in between. Incorrect centering shown in Fig. 1 must be avoided.

Fig.1



- When mounting a butterfly valve, set jack bolts under the pipe to provide support at consistent height and adjust flange-to-flange distance to allow 6 to 10 mm of space on each side of the body. Remember to have a valve 10° open from fully closed position (Fig. 2).
- Set two (2) bolts into lower mounting guides of a valve and mount carefully in order to avoid flange faces to damage resilient seats.
- Next, set another two bolts into upper mounting guides of the valve, ensuring correct centering between pipes and the valve.
- Try opening the valve to check if there is no obstructing contact between the valve disc and flanges.
- Remove jack bolts, set all bolts around the body tighten the bolts alternately and diagonally until the flanges come into contact with the valve body (Fig. 3). Refer to table shown below for recommended torque values.

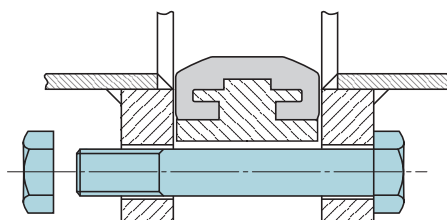
Fig.2



Recommended Torque Values

DN	N · m (kgf·m)
40	49 (5)
50	
65	
80	
100	
125	88 (9)
150	
200	
250	
300	118 (12)

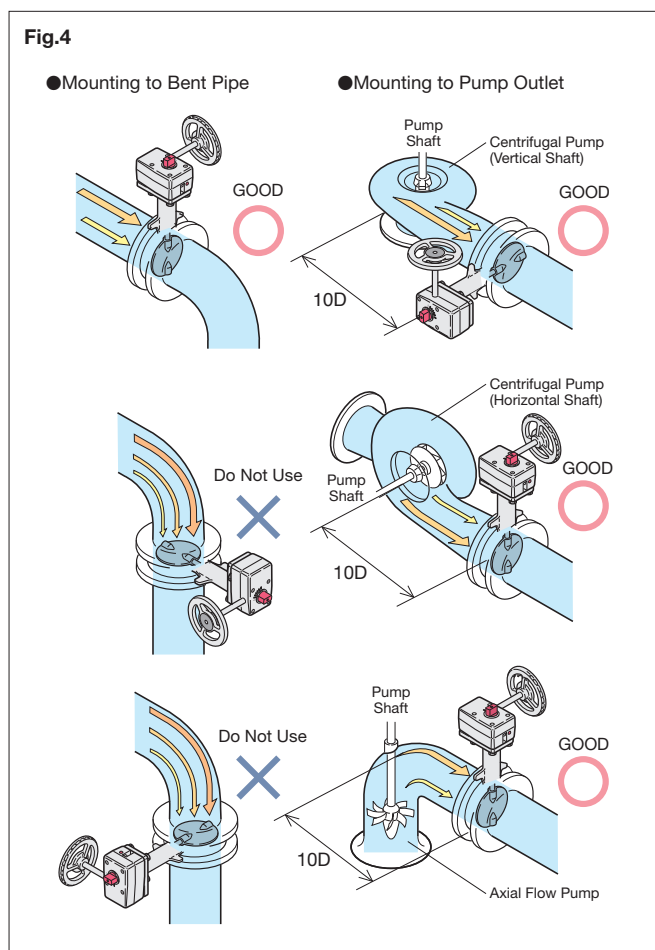
Fig.3



- For mounting actuated valves, provide valve supports to prevent bending valve necks and reduce valve and pipe vibration.
- Do not step on the valve neck or valve lever/handwheel.
- Do not mount butterfly valves directly to check valves or pumps; this may create damages caused by disc contacts.
- Do not mount valves to the downstream side of elbows, reducers or regulating valves where fluid velocity changes. It is recommended for valves to be installed with distance of approximately 10 times the nominal size.

- Consider the effects to discs in fluid velocity or pressure changes to the piping when mounting valves. Please refer to illustrations in Fig. 4.
- Contact KITZ or one of its local distributors for details.

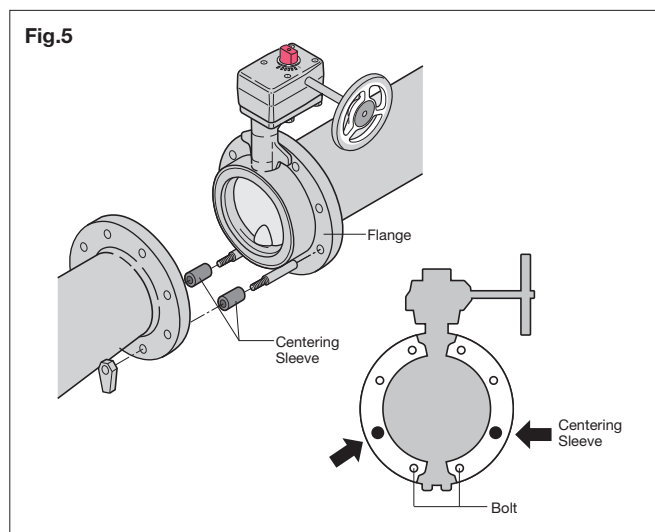
Fig.4



Note:

For accurate centering, use of centering sleeve is required for valves equipped with sleeves as shown in Fig. 5. Kindly refer Page 3 for applicable sizes.

Fig.5



Valve Operation

- Valves equipped with manual operators, such as levers, handles and gears, must be **MANUALLY OPERATED ONLY**. Application of excessive external force to operate valves may result malfunctioning of the valve and its operators.
- Make sure to full open the valve before conducting loop test of piping system at a line pressure higher than the nominal pressure of tested valves. Never use closed valves in place of blind flanges.
- When valve needs to be removed from pipe for maintenance or any other reasons, make sure to thoroughly relieve line pressure beforehand. Loosening piping bolts under line pressure is dangerous. Any residual fluid left inside pipeline must be drained completely.
- Users should contact KITZ representative or its local distributors for technical advice when valves need to continuously pressured while left open at 30° or less.
- Do not use position indicators to operate valves or overload position indicators. These action may damage the indicators.
- Make sure to use blind flanges when butterfly valves are mounted at the end of pipeline.
- Standard actuators are referenced in this catalogue for actuated valve operation. Contact KITZ representative or its local distributors for information on mounting optional actuators.
- Contact KITZ for service or pump outlets.
- Avoid touching gear operators and actuator stopper bolts accidentally.
- Following Periodic Inspection is recommended
 - Check valve opening
 - Check for loosened bolts and leakage at each connection
 - Check for vibration and noise
- Refer to operation manual for other precautions. Also refer to actuator catalog and operation manual for actuated valves.

WARNING

To prevent stem blow-out, do not disassemble neck while a valve is pressurized. Do not dismantle valve operating device, since it may cause valve disc to rotate which may result in valve malfunction.

Disclaimer

- KITZ will not take any responsibilities for damages caused by result of natural disasters, accidents or fire which KITZ is not liable for, conduct of a third party, intentional act, misuse or used under abnormal conditions by a customer.
- KITZ will not take any responsibilities for damages arise from negligence or prohibitions, cautions, installation and usage beyond specification range mentioned in the catalogs and operation manuals.
- KITZ will not take any responsibility for damages caused by product modification not entrusted by KITZ or usage under load applied from other devices.