

# Butterfly Valves



## **For any situation, condition, application, you can find the best with KITZ valves.**

The butterfly valve, in comparison to other ordinary valves, has structural advantages such as simple construction, compact and light weight, and being piping work friendly, as well as various functional advantages, such as suitability for automated operation by open/close with 90-degrees action and excellent fluid controllability, so that it is adopted in vast fields.

KITZ established a rich product lineup by preparing systematic series in accordance with application of butterfly valves in order to meet a wide variety of user needs. The KITZ butterfly valve series that realized a rich line-up = high quality = immediate delivery system meets inquiries from any type of piping line with excellent function and performance.

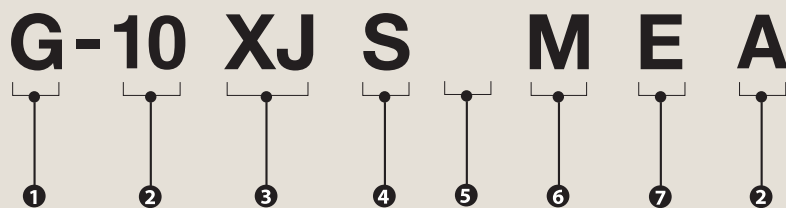
\* Please contact us for the delivery schedule of different products.

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\* The figures and images in this catalogue are the typical sizes of the products. The shape or structure of each products are different depending on its size. Please request the drawings for detail.

## Product Coding



### 1 Valve operation

- None ..... Lever
- G ..... Gear
- GL ..... Long gear
- VG ..... Vartical gear
- FA ..... Pneumatic actuator (Double action)
- FAS ..... Pneumatic actuator (Spring return action)
- EXS100/200 ..... Type EXS KELMO® electric actuator (Reversible type)
- EXD100/200 ..... Type EXD KELMO® electric actuator (Proportional control type)
- EXCN100/200 ..... Type EXCN KELMO® electric actuator (Proportional control type)

### 2 Class

- 150 ..... ASME 150 psi
- 200 ..... ASME 200 psi
- 250 ..... ASME 250 psi
- PN10 ..... EN PN10
- PN16 ..... EN PN16
- PN25 ..... EN PN25
- 10 ..... JIS 10K
- 10└─A ..... JIS 10K/ASME Class 150
- 16 ..... JIS 16K
- 20 ..... JIS 20K

### 3 Valve series

- XJ ..... Aluminum die-cast XJ Series
- DJ ..... Ductile iron DJ series
- UB ..... Stainless steel UB Series
- EJ ..... Ductile iron EJ series

### 4 Design

- None ..... Long neck
- S ..... Short neck

### 5 Connection

- None ..... Wafer
- L ..... Lugged

### 6 Disc material

- None ..... Ductile iron (Ni-plated)
- U ..... 304 stainless steel
- M ..... 316 stainless steel

### 7 Seat material

- None ..... NBR (Buna-N)
- E ..... EPDM
- W ..... W-NBR
- Q ..... VMQ
- F ..... FKM

## Product Range

Series	Class	Operator	Product code	mm	15	20	25	32	40	50	65		
				inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2		
XJ	10K	Lever	10XJME						●	●	●		
		Gear	G-10XJME						●	●	●		
		Pneumatic actuator	FA-10XJME							●	●	●	
			FAS-10XJME							●	●	●	
		Electric actuator	EXS ■ -10XJME							●	●	●	
		Lever	10XJSME							●	●	●	
		Gear	G-10XJSME							●	●	●	
		Pneumatic actuator	FA-10XJSME								●	●	●
			FAS-10XJSME								●	●	●
	Electric actuator	EXS ■ -10XJSME							●	●	●		
	EN PN16	Lever	PN16XJME								●	●	
		Gear	G-PN16XJME								●	●	
	JIS10K/ASME 150	Lever	10XJMEA							●	●	●	
		Gear	G-10XJMEA							●	●	●	
DJ	ASME150/200/250	Lever	200/250DJ □□							●	●		
		Gear	G-150/200/250DJ □□ *1								●	●	
	EN PN16	Lever	PN16DJ □□								●	●	
		Gear	G-PN16DJ □□								●	●	
	EN PN25	Lever	PN25DJ □ E								●	●	
		Gear	G-PN25DJ □ E								●	●	
	10K	Lever	10DJ □□								●	●	
		Gear	G-10DJ □□									●	●
			VG-10DJ □□										●
	16K	Lever	16DJ □□								●	●	
		Gear	G-16DJ □□								●	●	
	20K	Lever	20DJ □ E								●	●	
		Gear	G-20DJUE								●	●	
	DJL	ASME150/200/250	Lever	150/200/250DJL □□							●	●	
Gear			G-150/200/250DJL □□								●	●	
EN PN16		Lever	PN16DJL □□								●	●	
		Gear	G-PN16DJL □□								●	●	
EN PN25		Lever	PN25DJL □ E								●	●	
		Gear	G-PN25DJL □ E								●	●	
EJ	EN PN10	Lever	PN10EJM □□							●	●		
UB	10K	Lever	10UB						●	●	●		
		Long gear	GL-10UB						●	●	●		
	16K	Long gear	GL-16UB								●	●	
		ASME150	Lever	150UB							●	●	
			Long gear	GL-150UB								●	●
HRDJ	10K	Gear	G-10HRDJUE							●	●		
		Electric actuator	EXCN ■ -10HRDJUE								●	●	
			EXD ■ -10HRDJUE									●	●
	20K	Gear	G-20HRDJUE								●	●	
		Electric actuator	EXCN ■ -20HRDJUE								●	●	
			EXD ■ -20HRDJUE									●	●
Damper	10K	Lever	10D							●	●		
		Long gear	GL-10D								●	●	
		Lever	10A								●	●	
		Long gear	GL-10A								●	●	
KITZ BUTTER	7.5K	Lever	FV	●	●	●	●	●	●	●			
		UV	●	●	●	●	●	●	●	●			

■ Power sources of actuator coding. Please refer to page 1.  
□ Disc and seat material coding. Please refer to page 1.

## Product Range

80	100	125	150	200	250	300	350	400	450	500	600	650	700	750	800	Page
3	4	5	6	8	10	12	14	16	18	20	24	26	28	30	32	
●	●	●	●													11
●	●	●	●	●	●	●										13
●	●	●	●	●	●	●										15
●	●	●	●	●	●	●										12
●	●	●	●	●	●	●										14
●	●	●	●	●	●	●										15
● <sup>*2</sup>	●	● <sup>*2</sup>	●													11
● <sup>*2</sup>	●	● <sup>*2</sup>	●	● <sup>*2</sup>												
● <sup>*3</sup>	● <sup>*3</sup>	●	●	● <sup>*3</sup>												
● <sup>*3</sup>	● <sup>*3</sup>	●	●	● <sup>*3</sup>	●											
●	●	●	●	●												18
●	●	●	●	●	●	●	●	●	●	●	●					19
●	●	●	●	●												18
●	●	●	●	●	●	●	●	●	●	●	●					20
●	●	●	●	●	●	●										18
●	●	●	●	●	●	●										20
●	●	●	●	●												19
●	●	●	●	●	●	●	●	●	●	●	●	● <sup>*4</sup>	● <sup>*4</sup>	● <sup>*4</sup>	● <sup>*4</sup>	20
●	●	●	●	●	●	●										21
●	●	●	●	●												19
●	●	●	●	●	●	●	●	●	●	●	●					20
●	●	●	●	●	●	●										19
●	●	●	●	●	●	●										20
●	●	●	●	●	●	●										21
●	●	●	●	●	●	●	●	●	●	●	●					22
●	●	●	●	●												22
●	●	●	●	●	●	●	●	●	●	●	●					23
●	●	●	●	●												22
●	●	●	●	●	●	●										23
●	●	●	●	●												26
●	●	●	●	●	●	●	●	●	●	●	●					27
●	●	●	●	●	●	●	●	●	●	●	●					
●	●	●	●	●	●	●										
●	●	●	●	●												
●	●	●	●	●	●	●										30
●	●	●	●	●	●	●										
●	●	●	●	●	●	●										
●	●	●	●	●	●	●										
●	●	●	●	●	●	●										
●	●	●	●	●	●	●										34
●	●	●	●	●	●	●										35
																36

\*1: 200 psi and 250 psi for size 2 to 12. 150 psi for size 14 to 24.  
 \*2: Centering sleeves are supplied for accurate centering with EN1092 PN16 flanges.  
 \*3: Centering sleeves are optionally available for accurate centering with ASME class 150 flanges.  
 \*4: EPDM only.

## Corrosion resistance level of materials of disc and seat against fluid

This table shows applicability of representative fluids against each disc/rubber seat material. Please refer to the Cautions for Product Selection of the Cautions for Handling at the end of this material for other cautions. Also, contact us for any questions because temperature and operational condition may cause some differences.

Fluid	Material	Materials of wetted part (disc or body material for UB/FV/UV)				Seat material		
		FCD450	SCS13A	SCS14A	C37771BE	NBR W-NBR	EPDM*	PTFE
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

- ◎ = Excellent      \* EPDM is not applicable for oil.  
 ○ = Good  
 △ = Less recommended  
 × = Not recommended  
 — = Contact us for details

## Allowance of differential pressure control and ratio of differential pressure control

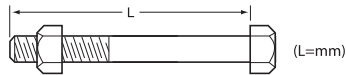
Structure	Nominal diameter	Allowance of differential pressure control (kPa)		Ratio of different pressure
		Fluid	Gas	
Rubber sheet	50 ~ 200 <sup>A</sup>	200	100	0.30
	250 · 300 <sup>A</sup>	150	100	0.25
	350 ~ 600 <sup>A</sup>	100	50	0.20
PTFE sheet (for UB series)	50 ~ 600 <sup>A</sup>	300	200	0.30
Damper	50 ~ 300 <sup>A</sup>	—	30	0.10

[Notice]

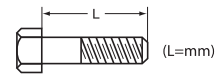
- Contact us in the event of using at condition exceeding the values in this table.
- Control pressure difference is a pressure difference between valve primary side pressure and secondary side pressure. ( $\Delta p = p_1 - p_2$ )
- The pressure difference is presented by the value that the difference of pressure divided by the pressure at the primary side (absolute pressure).

# Bolt/Nut

Hexagon head bolt + Hexagon nut



\*Size 24~32" requires additional hexagon head bolts.



Hexagon head bolt + Hexagon nut for XJ series/DJ series/HRDJ series

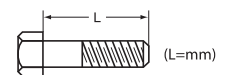
Flange		ASME Class 150/200/250			PN6			EN PN10			EN PN16			EN PN25			BS 10 Table E			JIS 10K			JIS 16K/20K				
inch	mm	Size	L (inch/mm)	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L(16K)	L(20K)	Number	
1 1/2	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	M16	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
2 1/2	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	3/4	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	3/4	5.50	140	8	M16	115	8	M20	120	8	M20	120	8	M24	145	8	3/4	115	8	M20	125	8	M22	130	140	12
8	200	3/4	5.75	146	8	M16	125	8	M20	130	8	M20	130	12	M24	150	12	3/4	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	3/4	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	M30X3	180	190	16
16	400	1	8.50	216	16	—	—	—	—	—	—	M27	200	16	—	—	—	—	—	—	M24	190	16	M30X3	210	230	16
18	450	1 1/8	9.25	235	16	—	—	—	—	—	—	M27	210	20	—	—	—	—	—	—	M24	210	20	M30X3	230	245	20
20	500	1 1/8	10.25	260	20	—	—	—	—	—	—	M30	230	20	—	—	—	—	—	—	M24	220	20	M30X3	250	260	20
22	550	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	M30	260	20	M36X3	290	300	20
24	600	1 1/4	11.75	298	20	—	—	—	—	—	—	M33	270	20	—	—	—	—	—	—	M30	260	20	M36X3	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	16	—	—	—	—
																						70*	16*	—	—	—	—

## Lugged type

Hexagon head bolt for DJL

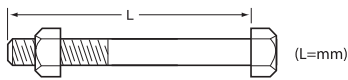
Flange		ASME Class 150/200/250			EN PN10			EN PN16			EN PN25				
inch	mm	Size	L (inch/mm)	Number	Size	L	Number	Size	L	Number	Size	Steel	Ductile	Number	
2	50	5/8	1.375	35	8	M16	38	8	M16	38	8	M16	40	8	
2 1/2	65	5/8	1.500	38	8	M16	40	8	M16	40	8	M16	40	16	
3	80	5/8	1.625	41	8	M16	40	16	M16	40	16	M16	45	40	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 bolts.



## Bolt/Nut

### Hexagon head bolt + Hexagon nut



Hexagon head bolt + Hexagon nut for UB series (mm)													
Flange		JIS 10K				JIS 16K				AS ME Class 150			
mm	inch	Size	L	B	Number	Size	L	B	Number	Size	L	B	Number
50	2	M16	100	38	4	M16	100	38	4	$\frac{5}{8}$	105	38	4
65	2 1/2	M16	110	38	4	M16	110	38	4	$\frac{5}{8}$	110	38	4
80	3	M16	110	38	8	M20	120	46	8	$\frac{5}{8}$	115	38	4
100	4	M16	115	38	8	M20	130	52	8	$\frac{5}{8}$	130	44	8
125	5	M20	130	52	8	M22	130	56	8	$\frac{3}{4}$	140	52	8
150	6	M20	130	52	8	M22	140	56	8	$\frac{3}{4}$	140	52	8
200	8	M20	150	52	12	M22	160	56	12	$\frac{3}{4}$	160	52	8
250	10	M22	160	56	12	M24	170	60	12	$\frac{7}{8}$	180	56	12
300	12	M22	170	56	16	M24	180	60	16	$\frac{7}{8}$	190	56	12

\* The sizes are applied to both the hexagon bolt with nut and the hexagon head bolt (set bolt).

Hexagon head bolt + Hexagon nut for D/A type damper (mm)										
Flange		JIS 5K				JIS 10K				
mm	inch	Size	L	B	Number	Size	L	B	Number	
50	2	M12	90	30	4	M16	100	38	4	
65	2 1/2	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	

These sizes for UB series and D/A type damper are the size of bolt with a gasket of 3 mm.

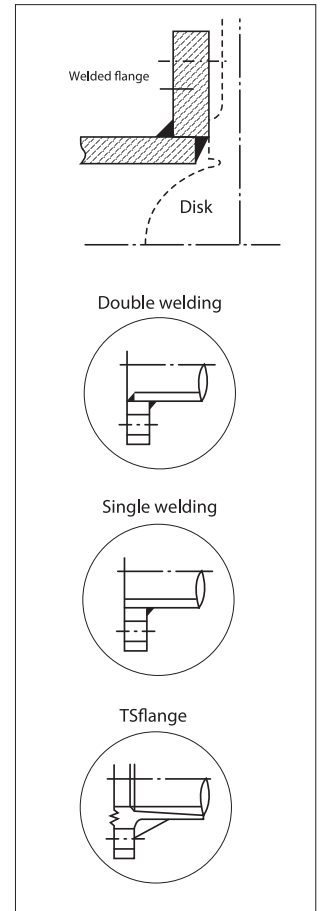


## Pipe

When butterfly valves are being opened, movement of discs may be interrupted by pipe internals. Where butterfly valves are connected with welded pipe flanges shown in the right illustration, use of pipes given in the right table is recommended. Valve-to-flange centering work must be always accurately done on valve mounting on pipelines.

### Double welding

Valve Series		XJ Series			DJ Series			UB Series			D/A Damper		
mm	inch	SGP	Schedule		SGP	Schedule		10S	Schedule		SGP	Schedule	
			20	40		20	40		20	40		20	40
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				D/A Damper			
mm	inch	SGP	Schedule		TS	SGP	Schedule		TS	10S	Schedule		TS	SGP	Schedule		
			20	40			20	40			20	40			20	40	
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 vinyl chloride lined steel pipes, sizes of flanges must be larger than the minimum inside diameters given in the table below. In case of pulverulent polyethylene of the pipes lined steel pipes, no special care is needed.

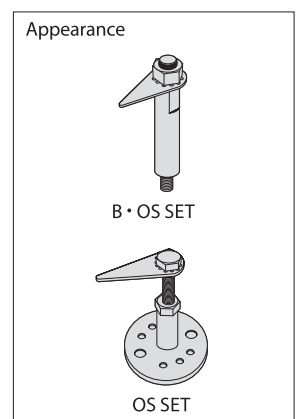
Valve Series	Size	A	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600
		B	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	22	24
XJ Series			28	41	57	71	93	117	142	193	244	292	—	—	—	—	—	—
DJ Series			28	32	52	75	92	118	145	195	244	292	332	379	427	473	513	566
UB Series			—	43	57	71	88	118	140	190	239	281	327	373	424	471	—	567
D/A Damper			—	36	53	69	86	119	139	190	240	288	—	—	—	—	—	—

Note: Connecting a pipe with a diameter at or less than the value in the table above may cause interference of the pipe and the disc.

## Indicator

● Optional component to extend the indicator for displaying degree of opening to outside of a lagging material in the event of insulating including gear unit.

Valve Series		G-10XJ	G-10DJ	G-16DJ	G-20DJ	GL-10/16/150 UB	G-10HRDJ
Size							
40 <sup>A</sup>	1 1/2 <sup>B</sup>	B OS SET1	B OS SET1	—	B OS SET1	OS SET1	B OS SET1
50	2						
65	2 1/2						
80	3						
100	4						
125	5						
150	6						
200	8						
250	10						
300	12						
350	14	—	B OS SET1 *1	B OS SET1 *2	OS SET2	OS SET3	OS SET2
400	16						
450	18	—	OS SET2	OS SET3	OS SET2	OS SET3	—
500	20						
550	22	—	OS SET3	OS SET4	OS SET3	OS SET4	—
600	24						
		—	OS SET3	OS SET4	OS SET4	OS SET5	—



\*1 Indicator for mounting on G-10DJ series. Contact us for products with different material/paint/connection, because there may be a case to use OS SET2CJ.  
\*2 Indicator for mounting on G-16DJ series. Contact us for products with different material/paint/connection, because there may be a case to use OS SET2.

**KITZ XJ series aluminum butterfly valves:**  
**Featuring a unique style for the 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 EN 558 Basic Series 20 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 : Fluid is not frozen.

\*2 Refer to P-T rating chart.

\*3 With centering sleeves.

Refer to the product range chart in page 2 and precaution in page 39 for details.

### Cv value

Size		Cv	Size		Cv
A	B		A	B	
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

### Feature

#### Your choice of two neck designs

A long neck type and a short neck type are available for use in a variety of applications.

#### Easy valve-to-flange centering

The light weight of the die-cast aluminum valve body (which is only one third of the weight of KITZ's conventional cast-iron butterfly valves) eases valve-to-flange centering work on mounting valves on pipelines.

#### Wide range of service applications

Austenitic stainless steel discs and EPDM\* rubber seats can handle many different types of line fluid without risk of corrosion.

#### Stabilized operating torque

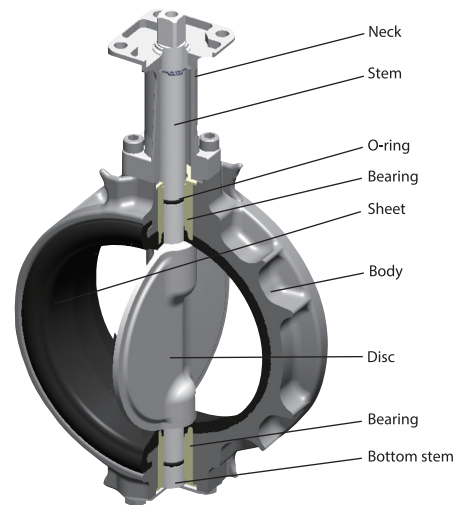
A pair of stem bearings assembled around the top and bottom stems prevents stem galling and stabilizes the valve operating torque for smooth and trouble-free disc rotation.

#### On-the-spot actuator assembly

The actuator mounting pads of all necks are designed in conformity with ISO 5211 requirements for direct on-site mounting of actuators that are provided with ISO 5211 valve mounting flanges.

#### Prevention of dew condensation (Long neck type)

A long stainless steel neck blocks transfer of fluid heat to the valve operating device, so no insulation is needed on the operating device. Dew condensation is also minimized for gear-operated valves used in cold water service.



### Standard Materials

\*Please refer to the drawing of deliverables for detail.

Parts	Materials
Body	Aluminum die-cast/equivalent ASTM B85-84-383.0
Neck	304 stainless steel
Stem	(Equivalent ASTM A276 type 410)
Disk	A351 Gr. CF8M
O-ring	EPDM
Rubber seat	EPDM
Bottom stem	(Equivalent ASTM A276 type 410)
Bearing	Metal backed PTFE (size 10" and 12") Polyphenylenesulfide (10XJMEA: size 1 1/2" to 8") Bronze: CAC401C (PN16XJME: size 2" to 8")

### Rust prevention

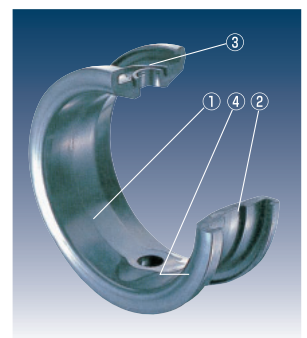
The main parts such as the stems, discs, necks, neck connectors, and endplates and small parts such as stopper plates, washers, and boltings are all made of stainless steel for high-grade rust prevention.

### S-shaped spherical disc for high sealing performance (patented)

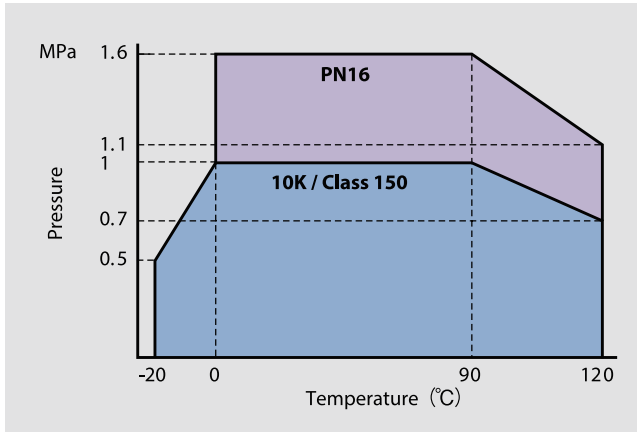
KITZ's original cross-sectionally S-shaped valve discs with spherical surfaces make evenly tight contact with rubber liners for excellent sealing performance with reduced operating torque. Complete 360° shut-off mechanisms help to extend the service life of rubber liners. (Size: ≥2 inches)

### Carefully designed KITZ EPDM seats have the following unique features that ensure their functional stability, high sealing performance, and long life:

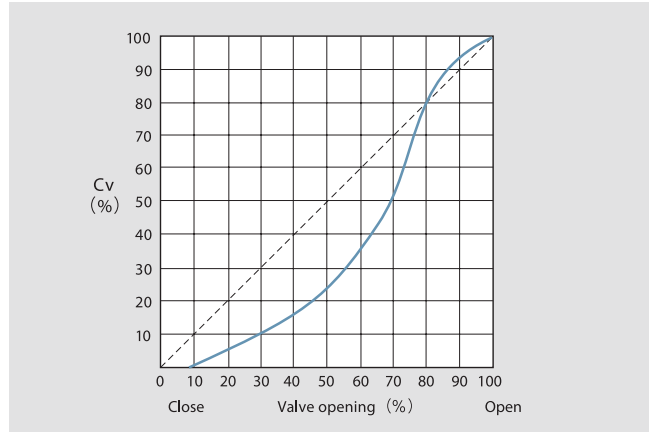
- Self-reinforced ribbing
  - Wide disc seating contact
  - Dual stem seal bearings
- ① Wide disc seating contact for high sealing performance.
  - ② Reinforced ribbing minimizes valve operating problems such as distortion, skidding, and exfoliation of rubber liners caused by line pressure load and friction 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.



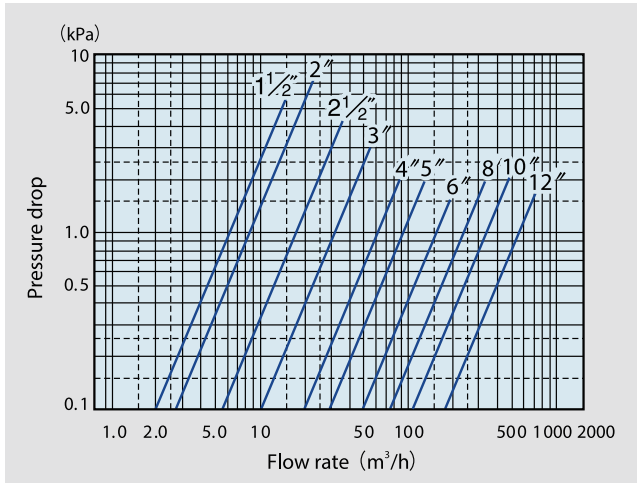
## P-T Rating



## Flow Characteristics



## Pressure Loss



### Long Neck Type

Prevented dew condensation



#### Feature

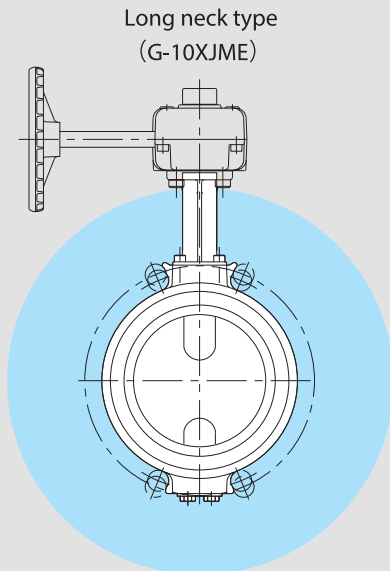
- A long stainless steel neck reduces the conductivity of fluid heat and prevents dew condensation.
- Variety of valve body and neck insulation designs available.
- Choice of actuators for automated valve operation.

#### Application

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

#### Valve Insulation

Insulation is recommended for areas in blue.



Note: It is not available in short neck type.

### Short Neck Type

Compact design



#### Feature

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

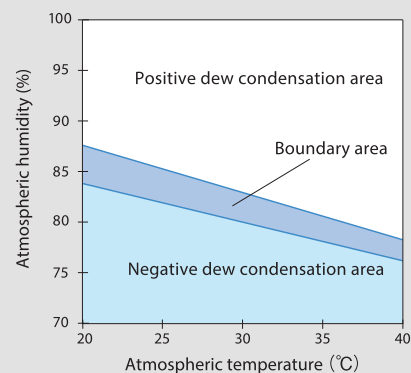
#### Application

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

#### Dew Condensation Test

Samples of KITZ XJ series butterfly valves equipped with long necks (KITZ Product Code: G-10XJMEA) were tested at the KITZ Laboratory under the conditions listed below. The lower surface temperatures of gear boxes, ambient temperatures, and ambient humidities were measured as the variable functions. The dew condensation boundary was estimated as illustrated below.

G-10XJME Estimated Dew Condensation Boundary



#### Test condition

- Line fluid: +5°C cold water
- Atmospheric temperature range: +20°C to +40°C
- Valve insulation: 50-mm glass wool (JIS A 9501) around the test valve, with gear boxes exposed to open air.

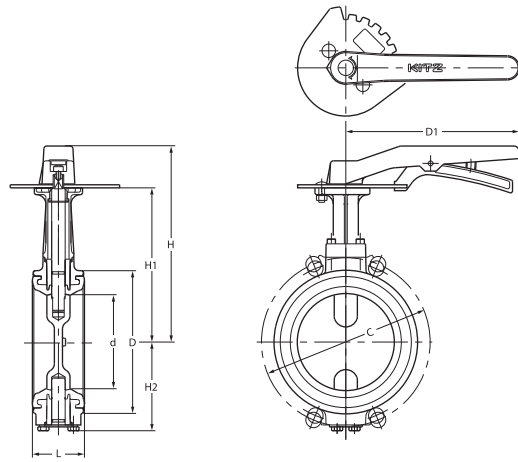
#### Note:

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

## Long Neck Type Lever Operated

10XJME\*  
10XJMEA  
PN16XJME\*

\* Available up to size 150<sup>A</sup>



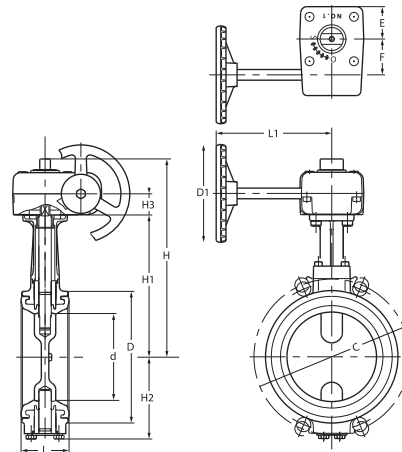
### Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C		D1
mm	inch							10K	PN16	
40	1 1/2	40	172	128	40	33	80	105	—	180
50	2	50	176	132	66	43	93	120	125	180
65	2 1/2	65	185	141	74	46	118	140	145	180
80	3	80	193	149	83	46	129	150	160	180
100	4	100	204	160	94	52	149	175	180	180
125	5	125	249	195	122	56	184	210	210	230
150	6	150	261	207	135	56	214	240	240	230
200	8	196	281	234	161	60	258	290	—	350

## Long Neck Type Gear Operated

G-10XJME  
G-10XJMEA  
G-PN16XJME



### Dimensions

unit: mm

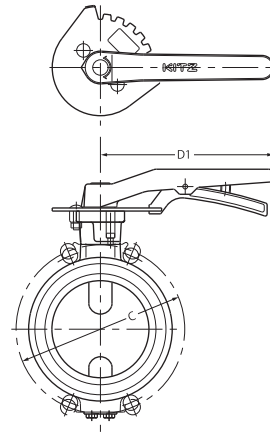
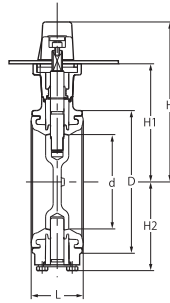
Size		d	H	H1	H2	H3	L	D	C		D1	L1	E	F	Gear type
mm	inch								10K	PN16					
40	1 1/2	40	175	128	40	19	33	80	105	—	80	122	29	28	No.0
50	2	50	179	132	66	19	43	93	120	125	80	122	29	28	No.0
65	2 1/2	65	188	141	74	19	46	118	140	145	80	122	29	28	No.0
80	3	80	196*2	149	83	19	46	129	150	160	80	122	29	28	No.0
100	4	100	223	160	94	24	52	149	175	180	110	135	36	40	No.1
125	5	125	258	195	122	24	56	184	210	210	110	150	36	40	No.1
150	6	150	270	207	135	24	56	214	240	240	110	150	36	40	No.1
200	8	196	311	234	161*1	32	60	258	290	295	170	180	51	63	No.2
250	10	245	405	328	238	32	68	316	355	—	170	180	51	63	No.2
300	12	295	430	353	263	32	78	367	400	—	170	180	51	63	No.2

\* 1 G-PN16XJME H2=183

\* 2 G-PN16XJME H=212

### Short Neck Type Lever Operated

10XJSME



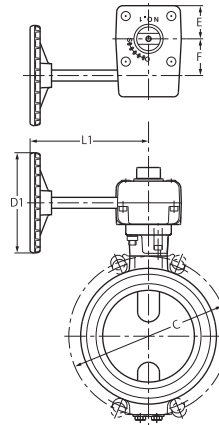
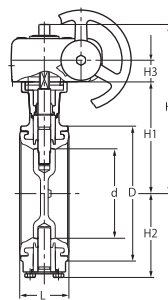
■ Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C	D1
mm	inch								
40	1½	40	137	93	40	33	80	105	180
50	2	50	139	95	66	43	93	120	180
65	2½	65	147	103	74	46	118	140	180
80	3	80	156	112	83	46	129	150	180
100	4	100	167	123	94	52	149	175	180
125	5	125	205	151	122	56	184	210	230
150	6	150	217	163	135	56	214	240	230

### Short Neck Type Gear Operated

G-10XJSME



■ Dimensions

unit: mm

Size		d	H	H1	H2	H3	L	D	C	D1	L1	E	F	Gear type
mm	inch													
40	1½	40	140	93	40	19	33	80	105	80	122	29	28	No.0
50	2	50	142	95	66	19	43	93	120	80	122	29	28	No.0
65	2½	65	150	103	74	19	46	118	140	80	122	29	28	No.0
80	3	80	159	112	83	19	46	129	150	80	122	29	28	No.0
100	4	100	186	123	94	24	52	149	175	110	135	36	40	No.1
125	5	125	214	151	122	24	56	184	210	110	150	36	40	No.1
150	6	150	226	163	135	24	56	214	240	110	150	36	40	No.1
200	8	196	267	190	161	32	60	258	290	170	180	51	63	No.2
250	10	245	317	239	238	32	68	316	355	170	180	51	63	No.2
300	12	295	342	264	263	32	78	367	400	170	180	51	63	No.2

# Aluminum Butterfly Valves

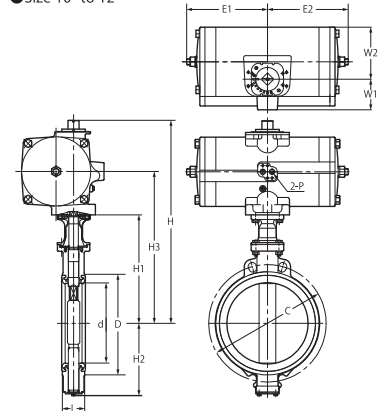
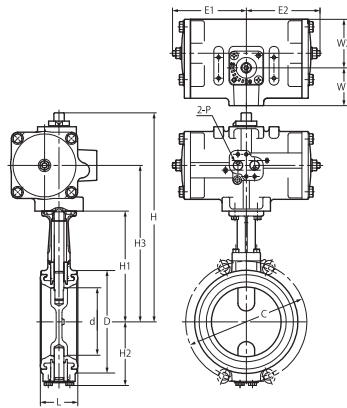
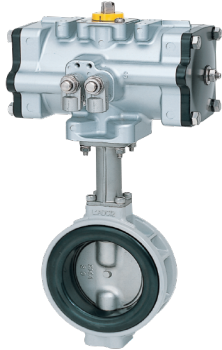
# XJ series

## Long Neck Type Pneumatically Operated – Double Action Actuator

FA-10XJME

● Size 1½ to 8"

● Size 10" to 12"



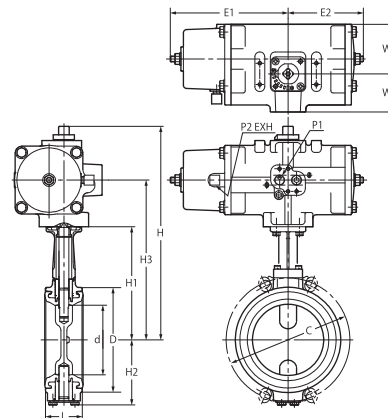
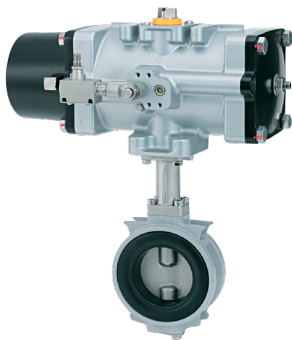
Please contact the KITZ Corporation for actuator specifications.

### Dimensions

Size		d	H	H1	H2	H3	L	D	C	Actuator					
mm	inch									E1	E2	W1	W2	P	Type
40	1½	40	251	128	40	181	33	80	105	87	87	50	54	Rc¼	FA-1
50	2	50	255	132	66	185	43	93	120	87	87	50	54	Rc¼	FA-1
65	2½	65	287	141	74	207	46	118	140	107	107	54	70	Rc¼	FA-2
80	3	80	295	149	83	215	46	129	150	107	107	54	70	Rc¼	FA-2
100	4	100	306	160	94	226	52	149	175	107	107	54	70	Rc¼	FA-2
125	5	125	357	195	122	271	56	184	210	128	128	57	87	Rc¼	FA-3
150	6	150	369	207	135	283	56	214	240	128	128	57	87	Rc¼	FA-3
200	8	196	435	234	161	327	60	258	290	160	160	68	111	Rc¼	FA-4
250	10	245	573	328	238	441	68	316	355	208	208	78	135	Rc¼	FA-5
300	12	295	627	353	263	475	78	367	400	268	268	101	178	Rc¼	FA-6

## Long Neck Type Pneumatically Operated – Spring Return Action Actuator

FAS-10XJME



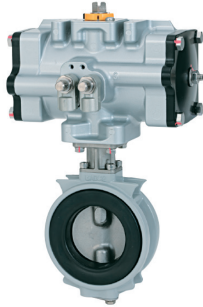
Please contact the KITZ Corporation for actuator specifications.

### Dimensions

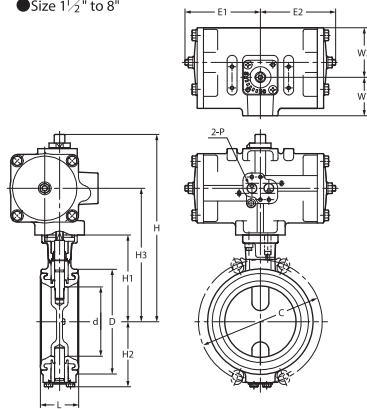
Size		d	H	H1	H2	H3	L	D	C	Actuator						
mm	inch									E1	E2	W1	W2	P1	P2	Type
40	1½	40	274	128	40	194	33	80	105	166	107	54	70	Rc¼	Rc⅛	FAS-2
50	2	50	278	132	66	198	43	93	120	166	107	54	70	Rc¼	Rc⅛	FAS-2
65	2½	65	303	141	74	217	46	118	140	203	128	57	87	Rc¼	Rc⅛	FAS-3
80	3	80	311	149	83	225	46	129	150	203	128	57	87	Rc¼	Rc⅛	FAS-3
100	4	100	364	160	94	256	52	149	175	290	160	68	111	Rc¼	Rc⅛	FAS-4
125	5	125	396	195	122	288	56	184	210	290	160	68	111	Rc¼	Rc⅛	FAS-4
150	6	150	452	207	135	320	56	214	240	363	208	78	135	Rc¼	Rc⅛	FAS-5
200	8	196	508	234	161	356	60	258	290	483	268	101	178	Rc¼	Rc⅛	FAS-6

### Short Neck Type Pneumatically Operated - Double Action Actuator

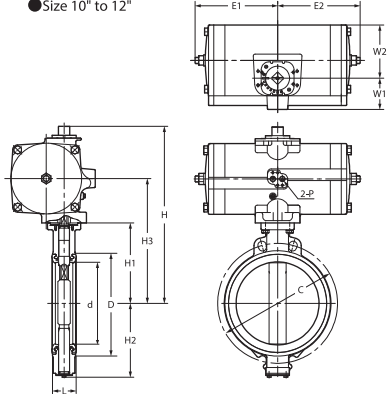
#### FA-10XJSME



● Size 1½" to 8"



● Size 10" to 12"



Please contact the KITZ Corporation for actuator specifications.

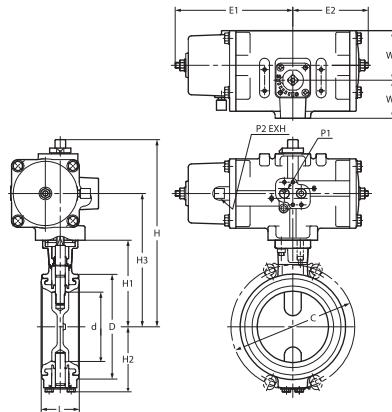
#### Dimensions

unit: mm

Size		d	H	H1	H2	H3	L	D	C	Actuator					
mm	inch									E1	E2	W1	W2	P	Type
40	1½	40	216	93	40	146	33	80	105	87	87	50	54	Rc¼	FA-1
50	2	50	218	95	66	148	43	93	120	87	87	50	54	Rc¼	FA-1
65	2½	65	249	103	74	169	46	118	140	107	107	54	70	Rc¼	FA-2
80	3	80	258	112	83	178	46	129	150	107	107	54	70	Rc¼	FA-2
100	4	100	269	123	94	189	52	149	175	107	107	54	70	Rc¼	FA-2
125	5	125	313	151	122	227	56	184	210	128	128	57	87	Rc¼	FA-3
150	6	150	325	163	135	239	56	214	240	128	128	57	87	Rc¼	FA-3
200	8	196	391	190	161	283	60	258	290	160	160	68	111	Rc¼	FA-4
250	10	245	483	238	238	351	68	316	355	208	208	78	135	Rc¼	FA-5
300	12	295	537	263	263	385	78	367	400	268	268	101	178	Rc¼	FA-6

### Short Neck Type Pneumatically Operated - Spring Return Action Actuator

#### FAS-10XJSME



Please contact the KITZ Corporation for actuator specifications.

#### Dimensions

unit: mm

Size		d	H	H1	H2	H3	L	D	C	Actuator						
mm	inch									E1	E2	W1	W2	P1	P2	Type
40	1½	40	239	93	40	159	33	80	105	166	107	54	70	Rc¼	Rc⅛	FAS-2
50	2	50	241	95	66	161	43	93	120	166	107	54	70	Rc¼	Rc⅛	FAS-2
65	2½	65	265	103	74	179	46	118	140	203	128	57	87	Rc¼	Rc⅛	FAS-3
80	3	80	274	112	83	188	46	129	150	203	128	57	87	Rc¼	Rc⅛	FAS-3
100	4	100	327	123	94	219	52	149	175	290	160	68	111	Rc¼	Rc⅛	FAS-4
125	5	125	352	151	122	244	56	184	210	290	160	68	111	Rc¼	Rc⅛	FAS-4
150	6	150	408	163	135	276	56	214	240	363	208	78	135	Rc¼	Rc⅛	FAS-5
200	8	196	467	190	161	315	60	258	290	483	268	101	178	Rc¼	Rc⅛	FAS-6

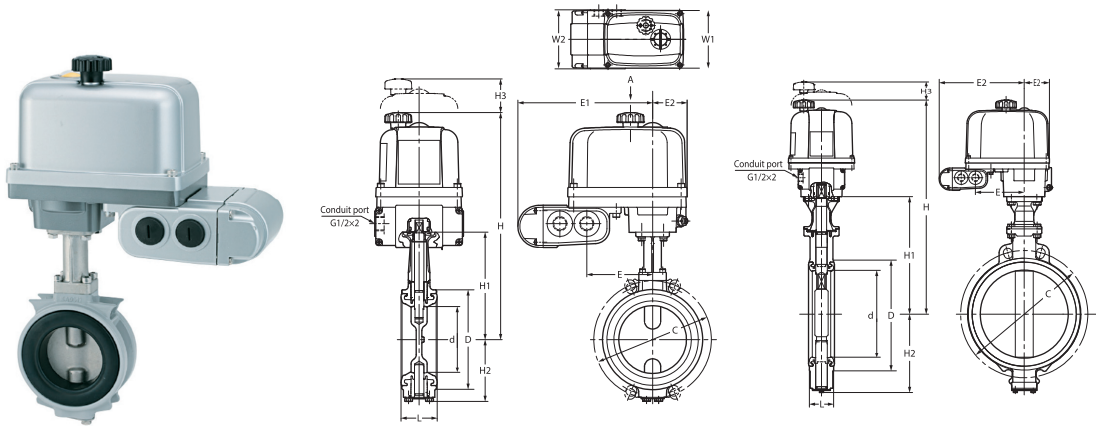


# Aluminum Butterfly Valves

**XJ** series

## Long Neck Type Electrically Operated

EXS-10XJME



Please contact the KITZ Corporation for actuator specifications.

### Dimensions

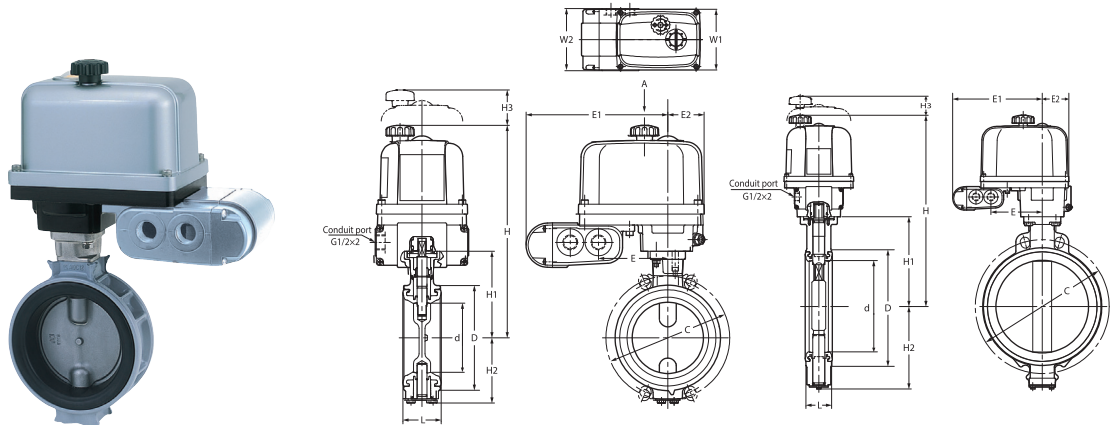
unit: mm

Size		d	H	H1	H2	L	D	C	Actuator						Type
mm	inch								E	E1	E2	W1	W2	H3	
40	1 1/2	40	309	128	40	33	80	105	98	206.5	54	131	132	107.5	EXS-2
50	2	50	313	132	66	43	93	120	98	206.5	54	131	132	107.5	EXS-2
65	2 1/2	65	322	141	74	46	118	140	98	206.5	54	131	132	107.5	EXS-2
80	3	80	330	149	83	46	129	150	98	206.5	54	131	132	107.5	EXS-2
100	4	100	341	160	94	52	149	175	98	206.5	54	131	132	107.5	EXS-2
125	5	125	401	194.5	122	56	184	210	121.5	230	69	158	132	117.5	EXS-3
150	6	150	413.5	207	135	56	214	240	121.5	230	69	158	132	117.5	EXS-3
200	8	196	440	233.5	161	60	258	290	121.5	230	69	158	132	117.5	EXS-3
250	10	245	604	328	238	68	316	355	137	245.5	73	188	132	153	EXS-4
300	12	295	629	353	263	78	367	400	137	245.5	73	188	132	153	EXS-4

Power sources of actuator coding. Please refer to page 1.

## Short Neck Type Electrically Operated

EXS-10XJSME



Please contact the KITZ Corporation for actuator specifications.

### Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C	Actuator						Type
mm	inch								E	E1	E2	W1	W2	H3	
40	1 1/2	40	274	93	40	33	80	105	98	206.5	54	131	132	107.5	EXS-2
50	2	50	276	95	66	43	93	120	98	206.5	54	131	132	107.5	EXS-2
65	2 1/2	65	284	103	74	46	118	140	98	206.5	54	131	132	107.5	EXS-2
80	3	80	293	112	83	46	129	150	98	206.5	54	131	132	107.5	EXS-2
100	4	100	304	123	94	52	149	175	98	206.5	54	131	132	107.5	EXS-2
125	5	125	357.5	151	122	56	184	210	121.5	230	69	158	132	117.5	EXS-3
150	6	150	369.5	163	135	56	214	240	121.5	230	69	158	132	117.5	EXS-3
200	8	196	396.5	190	161	60	258	290	121.5	230	69	158	132	117.5	EXS-3
250	10	245	514	238	238	68	316	355	137	245.5	73	188	132	153	EXS-4
300	12	295	539	263	263	78	367	400	137	245.5	73	188	132	153	EXS-4

Power sources of actuator coding. Please refer to page 1.

Through pursuit of functions required for butterfly valves. Variety of product range 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

\* There are some fluid type restrictions for the service at 130°C. Contact us for details.

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 to 14
	W-2: Size 16 to 24
	EN 558 basic series 20, ISO 5752 20 Series, JIS B 2002 46 Series

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

### Feature

#### Non-peeling Seat-to-body Construction

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

\*1 Maximum 4 meters/second for on-off service for valves up to size 12, and 3 meters/second for size 14 and larger.

\*2 Up to 30 Torr. Vacuum service is option for size 14 and larger.

#### Spherical Design for Discs and Seats

Rubber seats are spherically designed where they contact top and bottom stems. This protects widely designed rubber seats from peeling or deformation for prolonged service life of valves. Thinly streamlined metal discs are the results of elaborate laboratory study to ultimately minimize the pressure loss.

#### Choice of Materials and Operating Devices

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

#### Integral ISO 5211 Actuator Mounting Flange

Any pneumatic or electric valve actuators provided with ISO 5211 valve mounting flanges can be easily mounted for actuation of valves in the field.

#### Low Valve Operating Torque

Low operating torques are designed low for extension of valve service life and economic consideration in selection of valve operating devices.

#### Light-designed for Operation Efficiency

Designed much lighter than our conventional series for operation efficiency in piping

#### Emission-free Stem Sealing Mechanism

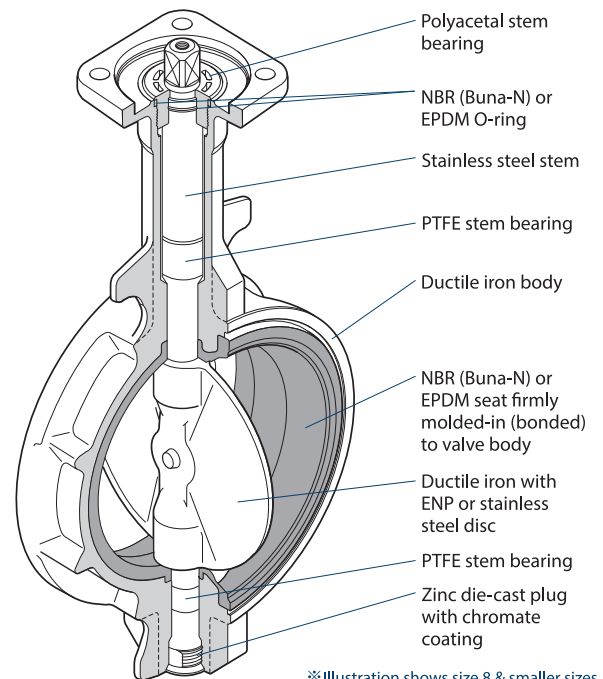
Prevention of external fluid leakage is maximized with a rubber O-ring assembled around the top stem and tight contact between spherically designed rubber seat and spherically designed top and bottom end of the disc.

#### Dew Condensation Prevention

Dew condensation prevention type is optionally available with heat insulating plate (size 2 to 6) or stainless steel stand (size 8 to 24).

### Molded-in (bonded) seat structure

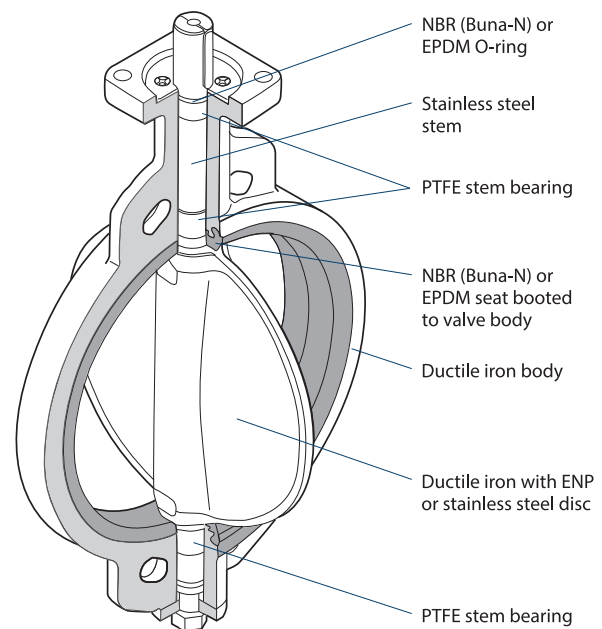
(Size 2 to 12)\*1



※ Illustration shows size 8 & smaller sizes

### Replaceable seat structure

(Size 14 to 24)\*2

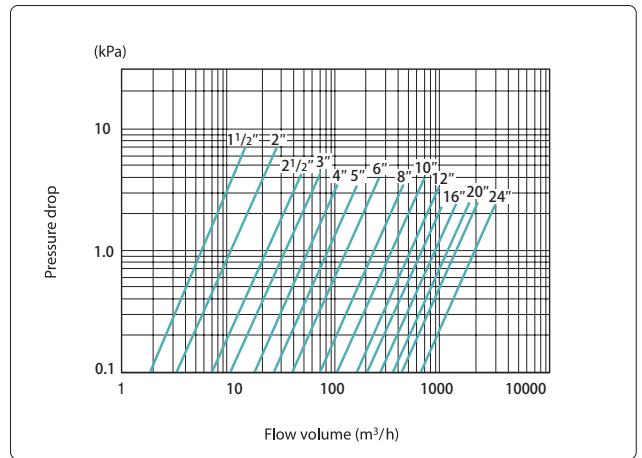


## Flow Coefficient (Cv)

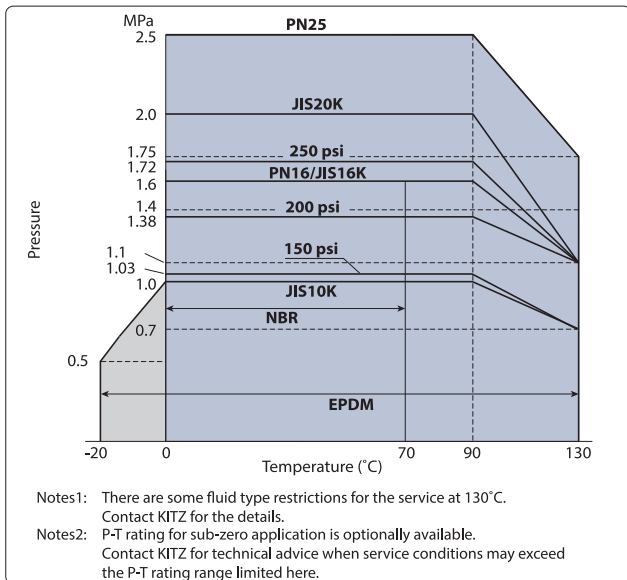
Size		Cv value	Size		Cv value
inch	mm		inch	mm	
1 1/2	40	77	10	250	4025
2	50	124	12	300	6010
2 1/2	65	270	14	350	7525
3	80	397	16	400	10080
4	100	671	18	450	13120
5	125	1013	20	500	15990
6	150	1532	24	600	23690
8	200	2792			

## Pressure Loss

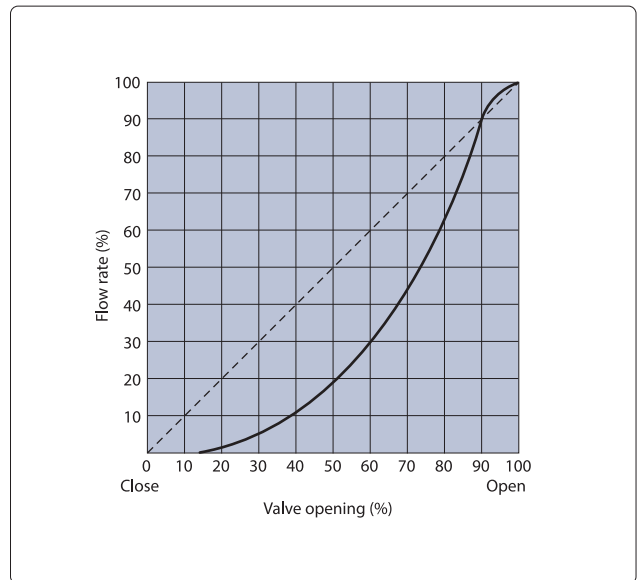
(for handling static clean water with valve fully open)



## P-T Rating



## Flow Characteristics



## Standard Materials

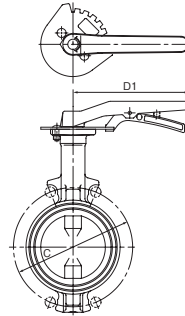
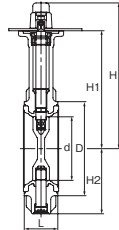
Parts	Material	
Body	Ductile Iron	
	Cast Iron (JIS 10K design Size 14" to 24")	
Stem Bottom stem	410 Stainless Steel / 420 Stainless Steel	
Disc	Ductile Iron (Ni-plated) / 304SS / 316SS / Aluminum Bronze (See Explanation of Product Code)	
Seat O-ring	NBR (Buna-N) / EPDM (See Explanation of Product Code)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

### Wafer Type

### ASME 200/250 psi Design - Lever Operated

200DJ

250DJ



#### Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C	D1
mm	inch								
50	2	50	191	147	67	42.9	90	120.5	180
65	2½	65	199	155	75	46	104	139.5	180
80	3	80	217	173	91	46	124	152.5	180
100	4	100	227	183	101	52.3	146	190.5	180
125	5	125	265	211	127	55.6	176	216	230
150	6	150	277	223	139	55.6	206	241.5	230
200	8	197	295	248	169	60.5	257	298.5	350

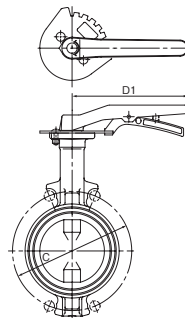
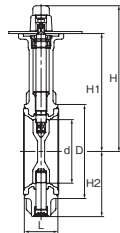
Disc and seat material coding. Please refer to page 1.

### Wafer Type

### EN PN16/25 Design - Lever Operated

PN16DJ

PN25DJ  E



#### Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C		D1
mm	inch							PN16	PN25	
50	2	50	191	147	67	43	90	125	125	180
65	2½	65	199	155	75	46	104	145	145	180
80	3	80	217	173	91	46	124	160	160	180
100	4	100	227	183	101	52	146	180	190	180
125	5	125	265	211	127	56	176	210	220	230
150	6	150	277	223	139	56	206	240	250	230
200	8	197	295	248	169	60	257	295	—	350

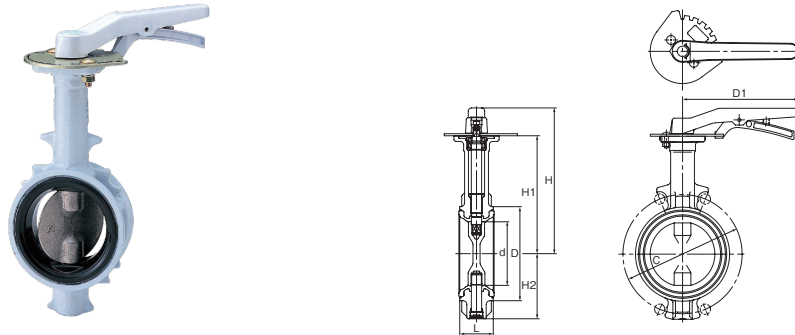
Disc and seat material coding. Please refer to page 1.

# Ductile Iron Butterfly Valves

**DJ** series

## Wafer Type JIS 10K/16K/20K Design - Lever Operated

- 10DJ
- 16DJ
- 20DJ  E



### Dimensions

unit: mm

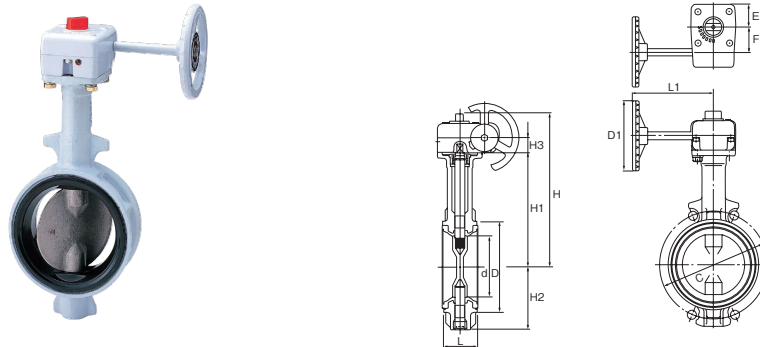
Size		d	H	H1	H2	L	D	C		D1
mm	inch							10DJ	16/20DJ	
40	1½	40	172	128	37	33	74	105	—	180
50	2	50	191	147	67	43	90	120	120	180
65	2½	65	199	155	75	46	104	140	140	180
80	3	80	217	173	91	46	124	150	160	180
100	4	100	227	183	101	52	146	175	185	180
125	5	125	265	211	127	56	176	210	225	230
150	6	150	277	223	139	56	206	240	260	230

Disc and seat material coding. Please refer to page 1.

## Wafer Type ASME 150/200/250 psi Design - Gear Operated

- G-150DJ
- G-200DJ  \*
- G-250DJ  \*

\* Available up to size 300<sup>A</sup>



### Dimensions

unit: mm

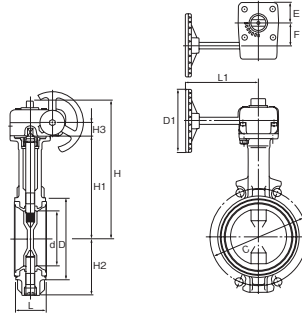
Size		d	H	H1	H2	L	D	C	H3	D1			L1			E	F
mm	inch									150	200	250	150	200	250		
50	2	50	194	147	67	42.9	90	120.5	18.5	80	80	80	122	122	122	29	28
65	2½	65	202	155	75	46	104	139.5	18.5	80	80	80	122	122	122	29	28
80	3	80	236	173	91	46	124	152.5	24	110	110	110	135	135	135	36.5	40.5
100	4	100	246	183	101	52.3	146	190.5	24	110	110	110	135	135	135	36.5	40.5
125	5	125	274	211	127	55.6	176	216	24	110	110	110	150	150	150	36.5	40.5
150	6	150	286	223	139	55.6	206	241.5	24	110	110	110	150	150	150	36.5	40.5
200	8	197	325	248	169	60.5	257	298.5	32	170	170	170	180	180	180	51	63
250	10	246	381	304	219	68.3	312	362	32	170	170	250	180	180	250	51	63
300	12	295	406	329	244	77.7	364	432	32	170	170	250	180	180	250	51	63
350	14	334	447	360	309	77.7	407	476.5	47	310	—	—	220	—	—	54	66.5
400	16	385	502	415	348	101.6	466	539.5	47	310	—	—	220	—	—	54	66.5
450	18	434	526	439	365	114.3	522	578	47	310	—	—	220	—	—	54	66.5
500	20	482	587	468	414	127	575	635	60	500	—	—	360	—	—	68	88.5
600	24	579	635	536	463	153.9	680	749.5	60	500	—	—	360	—	—	68	88.5

Disc and seat material coding. Please refer to page 1.

### Wafer Type

EN 16/25 JIS 10K/16K/20K Design - Gear Operated

- G-PN16DJ
- G-PN25DJ  E
- G-10DJ
- G-16DJ
- G-20DJUE



#### Dimensions (PN16/PN25)

unit: mm

Size		d	H	H1	H2	H3	L	D	C		D1		L1		E	F
mm	inch								PN16	PN25	PN16	PN25	PN16	PN25		
50	2	50	194	147	67	19	43	90	125	125	80	80	122	122	29	28
65	2½	65	202	155	75	19	46	104	145	145	80	80	122	122	29	28
80	3	80	236	173	91	24	46	124	160	160	110	110	135	135	36	40
100	4	100	246	183	101	24	52	146	180	190	110	110	135	135	36	40
125	5	125	274	211	127	24	56	176	210	220	110	110	150	150	36	40
150	6	150	286	223	139	24	56	206	240	250	110	110	150	150	36	40
200	8	197	325	248	169	32	60	257	295	310	170	250	180	250	51	63
250	10	246	381	304	219	32	68	312	355	370	250	250	250	250	51	63
300	12	295	406	329	244	32	78	364	410	430	250	250	250	250	51	63
350	14	333	461	360	309	60	78	407	470	—	360	—	350	—	68	89
400	16	385	516	415	348	60	102	466	525	—	360	—	350	—	68	89
450	18	434	540	439	372	60	114	522	585	—	360	—	350	—	68	89
500	20	482	623	488	423	65	127	575	650	—	500	—	400	—	90	134
600	24	579	671	536	472	65	154	680	770	—	500	—	400	—	90	134

#### Dimensions (10DJ)

unit: mm

Size		d	H	H1	H2	H3	L	D	C	D1	L1	E	F
mm	inch												
40	1½	40	175	128	37	19	33	74	105	80	122	29	28
50	2	50	194	147	67	19	43	90	120	80	122	29	28
65	2½	65	202	155	75	19	46	104	140	80	122	29	28
80	3	80	236	173	91	24	46	124	150	110	135	36	40
100	4	100	246	183	101	24	52	146	175	110	135	36	40
125	5	125	274	211	127	24	56	176	210	110	150	36	40
150	6	150	286	223	139	24	56	206	240	110	150	36	40
200	8	197	325	248	169	32	60	257	290	170	180	51	63
250	10	247	381	304	219	32	68	312	355	250	250	60	63
300	12	296	406	329	244	32	78	364	400	250	250	60	63
350	14	333	445	360	309	47	78	407	445	310	220	54	66
400	16	385	500	415	341	47	102	466	510	310	220	54	66
450	18	434	524	439	365	47	114	522	565	310	220	54	66
500	20	482	589	488	414	60	127	575	620	360	350	68	89
600	24	579	637	536	463	60	154	680	730	360	350	68	89
650	26	632	710	575	488	65	165	743	780	600	413	130	134
700	28	682	735	600	513	65	165	793	840	600	413	130	134
750	30	732	836	669	542	137	190	847	900	500	365	165	213
800	32	782	862	695	568	137	190	897	950	500	365	165	213

□ 650 to 800A: Gear operation/EPDM seat only.

#### Dimensions (16DJ/20DJ)

unit: mm

Size		d	H		H1	H2		H3		L	D		C	D1		L1		E		F	
mm	inch		16K	20K		16K	20K	16K	20K		16K	20K		16K	20K	16K	20K	16K	20K	16K	20K
50	2	50	194	194	147	67	67	19	19	43	90	90	120	80	80	122	122	29	29	28	28
65	2½	65	202	202	155	75	75	19	19	46	104	104	140	80	80	122	122	29	29	28	28
80	3	80	236	236	173	91	91	24	24	46	124	124	160	110	110	135	135	36	36	40	40
100	4	100	246	246	183	101	101	24	24	52	146	146	185	110	110	135	135	36	36	40	40
125	5	125	274	274	211	127	127	24	24	56	176	176	225	110	110	150	150	36	36	40	40
150	6	150	286	286	223	139	139	24	24	56	206	206	260	110	110	150	150	36	36	40	40
200	8	197	325	325	248	169	169	32	32	60	257	257	305	170	170	180	180	51	51	63	63
250	10	247	381	381	304	219	219	32	32	68	312	312	380	250	250	250	250	60	60	63	63
300	12	296	406	406	329	244	244	32	32	78	364	364	430	250	250	250	250	60	60	63	63
350	14	333	461	—	360	309	—	60	—	78	407	—	480	360	—	350	—	68	—	89	—
400	16	385	516	—	415	348	—	60	—	102	466	—	540	360	—	350	—	68	—	89	—
450	18	434	540	—	439	372	—	60	—	114	522	—	605	360	—	350	—	68	—	89	—
500	20	482	623	—	488	423	—	65	—	127	575	—	660	500	—	400	—	90	—	134	—
600	24	579	671	—	536	472	—	65	—	154	680	—	770	500	—	400	—	90	—	134	—

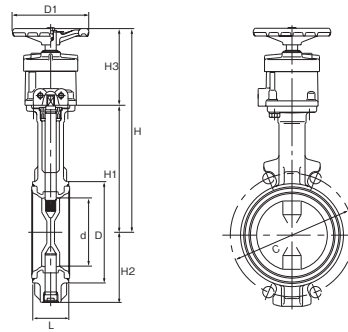
□ Disc and seat material coding. Please refer to page 1.

# Ductile Iron Butterfly Valves

DJ series

## Wafer Type JIS 10K/16K - Vertical Gear Operated

VG-10DJ



■ Dimensions unit: mm

Size		d	H	H1	H2	H3	L	D	C	D1
mm	inch									
40	1½	40	251	128	37	123	33	74	105	110
50	2	50	270	147	67	123	43	90	120	110
65	2½	65	278	155	75	123	46	104	140	110
80	3	80	285	173	91	112	46	124	150	110
100	4	100	295	183	101	112	52	146	175	110
125	5	125	325	211	127	114	56	176	210	170
150	6	150	337	223	139	114	56	206	240	170
200	8	197	404	248	169	156	60	257	290	200
250	10	247	461	304	219	157	68	312	355	310
300	12	296	486	329	244	157	78	364	400	310
350	14	333	569	360	309	209	78	407	445	360
400	16	385	624	415	341	209	102	466	510	360
450	18	434	648	439	365	209	114	522	565	360
500	20	482	741	488	414	253	127	575	620	500
600	24	579	789	536	463	253	154	680	730	500

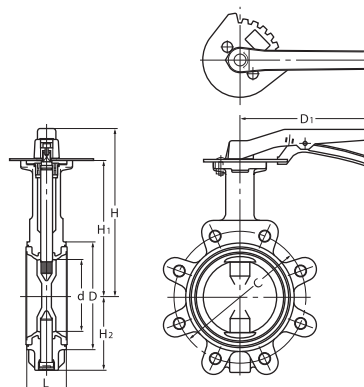
Disc and seat material coding. Please refer to page 1.

## Lugged Type ASME 150/200/250 psi Design - Lever Operated

150DJL

200DJL

250DJL



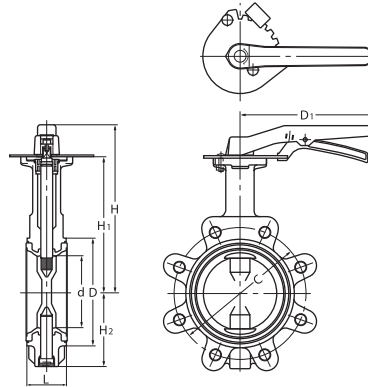
■ Dimensions unit: mm

Size		d	H	H1	H2	L	D	C	D1
mm	inch								
50	2	50	191	147	67	42.9	90	120.5	180
65	2½	65	199	155	75	46	104	139.5	180
80	3	80	217	173	91	46	124	152.5	180
100	4	100	227	183	104	52.3	146	190.5	180
125	5	125	265	211	127	55.6	176	216	230
150	6	150	277	223	139	55.6	206	241.5	230
200	8	197	295	248	169	60.5	257	298.5	350

Disc and seat material coding. Please refer to page 1.

### Lugged Type EN PN16/PN25 Design - Lever Operated

PN16DJL □ □  
PN25DJL □ E



Dimensions unit: mm

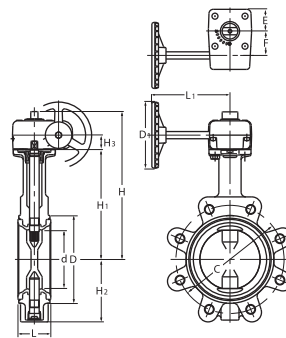
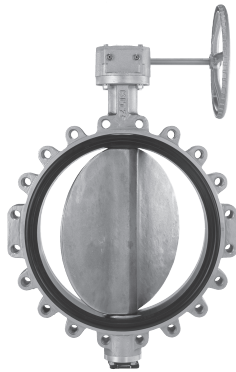
Size		d	H	H1	H2	L	D	C		D1
mm	inch							PN16	PN25	
50	2	50	191	147	67	43	90	125	125	180
65	2½	65	199	155	75	46	104	145	145	180
80	3	80	217	173	91	46	124	160	160	180
100	4	100	227	183	104	52	146	180	190	180
125	5	125	265	211	127	56	176	210	220	230
150	6	150	277	223	139	56	206	240	250	230
200	8	197	295	248	169	60	257	295	—	350

□ Disc and seat material coding. Please refer to page 1.

### Lugged Type ASME 150/200/250 psi Design - Gear Operated

G-150DJL □ □  
G-200DJL □ □\*  
G-250DJL □ □\*

\* Available up to size 300<sup>A</sup>



Dimensions unit: mm

Size		d	H	H1	H2	H3	L	D	C	D1		L1		E	F
mm	inch									150/200	250	150/200	250		
50	2	50	194	147	67	18.5	42.9	90	120.5	80	80	122	122	29	28
65	2½	65	202	155	75	18.5	46	104	139.5	80	80	122	122	29	28
80	3	80	236	173	91	24	46	124	152.5	110	110	135	135	36.5	40.5
100	4	100	246	183	103	24	52.3	146	190.5	110	110	135	135	36.5	40.5
125	5	125	274	211	127	24	55.6	176	216	110	110	150	150	36.5	40.5
150	6	150	286	223	139	24	55.6	206	241.5	110	110	150	150	36.5	40.5
200	8	197	325	248	169	32	60.5	257	298.5	170	170	180	180	51	63
250	10	247	381	304	219	32	68.3	312	362	170	250	180	250	51	63
300	12	296	406	329	244	32	77.7	364	432	170	250	180	250	51	63
350	14	334	447	360	309	47	77.7	407	476.5	310	—	220	—	54	66.5
400	16	385	502	415	341	47	101.6	466	539.5	310	—	220	—	54	66.5
450	18	434	526	439	365	47	114.3	522	578	310	—	220	—	54	66.5
500	20	482	587	488	414	60	127	575	635	500	—	360	—	68	88.5
600	24	579	635	536	463	60	153.9	680	749.5	500	—	360	—	68	88.5

□ Disc and seat material coding. Please refer to page 1.



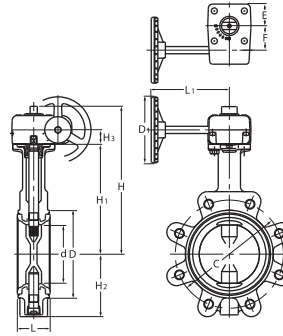
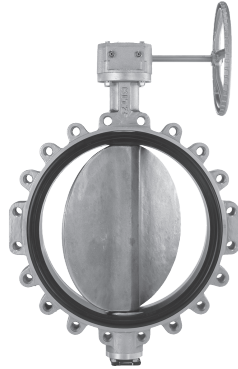
# Ductile Iron Butterfly Valves

**DJ** series

## Lugged Type EN PN16/PN25 Design - Gear Operated

G-PN16DJL

G-PN25DJL  E



### Dimensions

unit : mm

Size		d	H	H1	H2	H3	L	D	C		D1		L1		E		F
mm	inch								PN16	PN25	PN16	PN25	PN16	PN25	PN16	PN25	
50	2	50	194	147	67	19	43	90	125	125	80	80	122	122	29	29	28
65	2½	65	202	155	75	19	46	104	145	145	80	80	122	122	29	29	28
80	3	80	236	173	91	24	46	124	160	160	110	110	135	135	36	36	40
100	4	100	246	183	101	24	52	146	180	190	110	110	135	135	36	36	40
125	5	125	274	211	127	24	56	176	210	220	110	110	150	150	36	36	40
150	6	150	286	223	139	24	56	206	240	250	110	110	150	150	36	36	40
200	8	197	325	248	169	32	60	257	295	310	170	250	180	250	51	51	63
250	10	<b>246</b>	381	304	219	32	68	312	355	370	250	250	250	250	51	60	63
300	12	<b>295</b>	406	329	244	32	78	364	410	430	250	250	250	250	51	60	63
350	14	333	461	360	309	60	78	407	470	—	360	—	350	—	68	—	89
400	16	385	516	415	348	60	102	466	525	—	360	—	350	—	68	—	89
450	18	434	540	439	372	60	114	522	585	—	360	—	350	—	68	—	89
500	20	482	623	488	423	65	127	575	650	—	500	—	400	—	90	—	134
600	24	579	671	536	472	65	154	680	770	—	500	—	400	—	90	—	134

Disc and seat material coding. Please refer to page 1.

## Lineup of 3-type special seat material. Available for variety of fluids.

### Specifications

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 <sup>11</sup>
*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							
mm	inch	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

## Feature

### Three types of seat material

The three types of seat material are as follows; VMQ (Silicone rubber), which can be used for a wide range of temperature applications; W-NBR (White NBR), which is suitable for use in the food processing industry; and FKM (Fluoro rubber), which has properties such as strength and durability for use in a variety of fluid applications. W-NBR and VMQ meet the requirement of the FDA.\*

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

### Suitable for various flanges

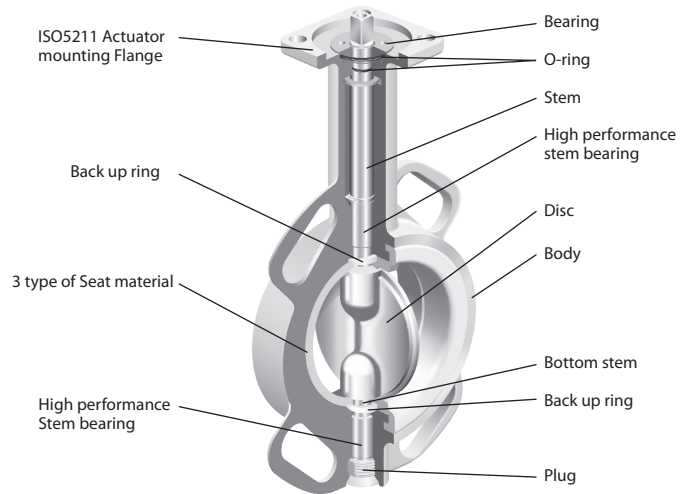
All the sizes are suitable for the flanges of EN1092 PN6, PN10, PN16/BS10 Table E / ASME Class 125 and Class 150.

### Integral ISO 5211 actuator mounting flange

Any pneumatic or electric valve actuator provided with the ISO 5211 valve mounting flange can be easily mounted for the actuation of valves in the field.

### High-performance stem bearing having additional strength to withstand high temperature and high pressure

The stem bearing of the EJ series is a multilayered backmetal to provide a high-performance bearing surface capable of withstanding high pressure and temperature.



### Standard Materials

\* Tetrafluoroethylene resin filled overlay, a sintered bronze interlayer and a steel backing.

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

### Backup ring to maintain the stem sealing

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

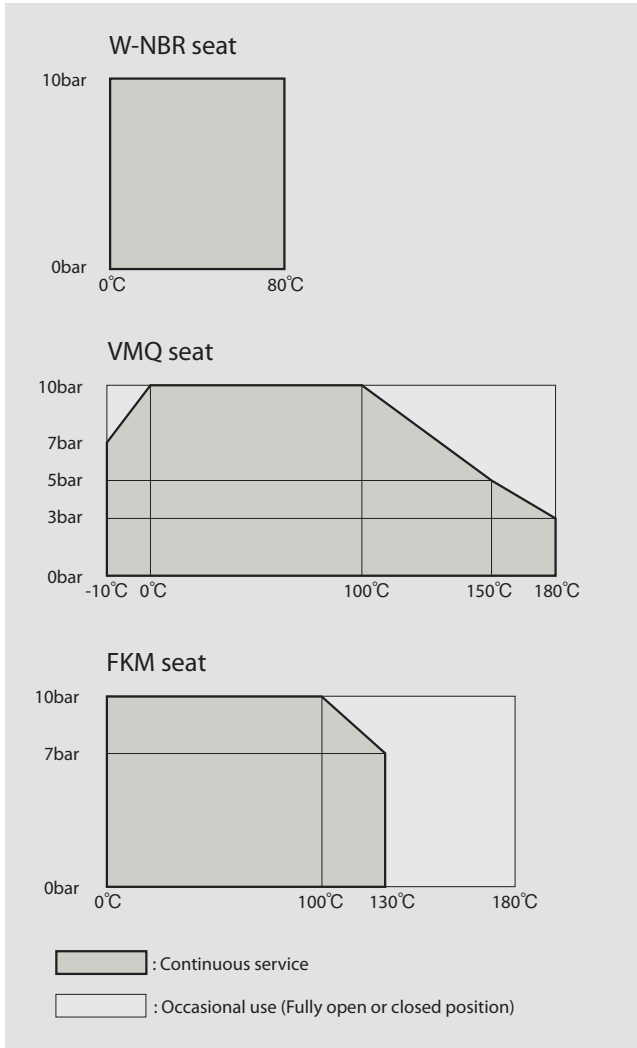
### Stainless steel bearing features

Embedded within the stainless upper body bearing is a multi-layered bearing for providing smooth stem operation. Also housed within the stem bearing is a snap ring to provide protection and prevent blow out of the stem due to internal pressure.

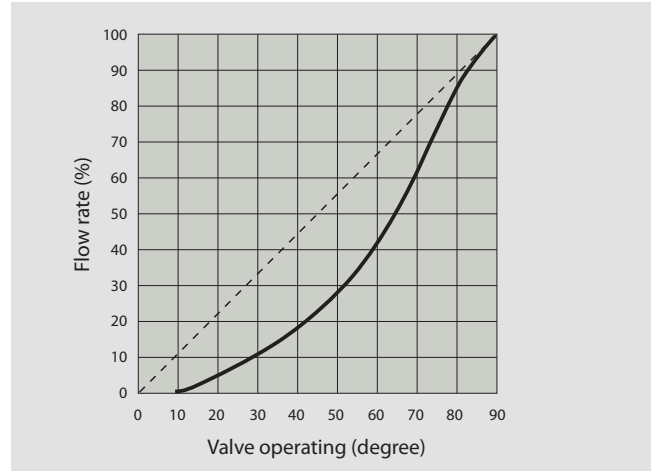
### Polished disc

The polished disc is standard for VMQ and optional for W-NBR seats for use within the food and pharmaceutical industry.

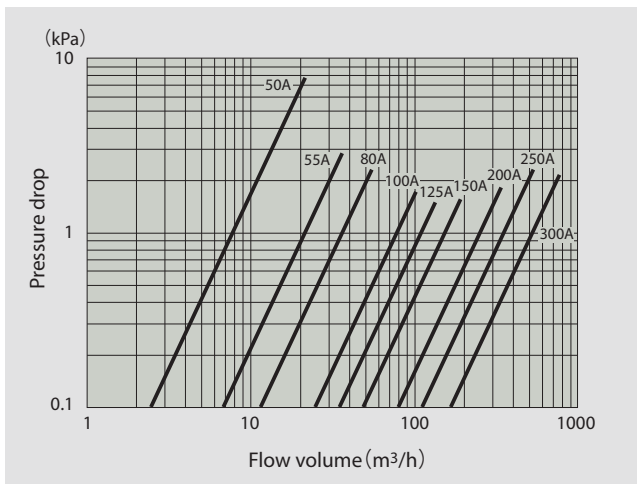
## P-T Rating



## Flow Characteristics



## Pressure Loss



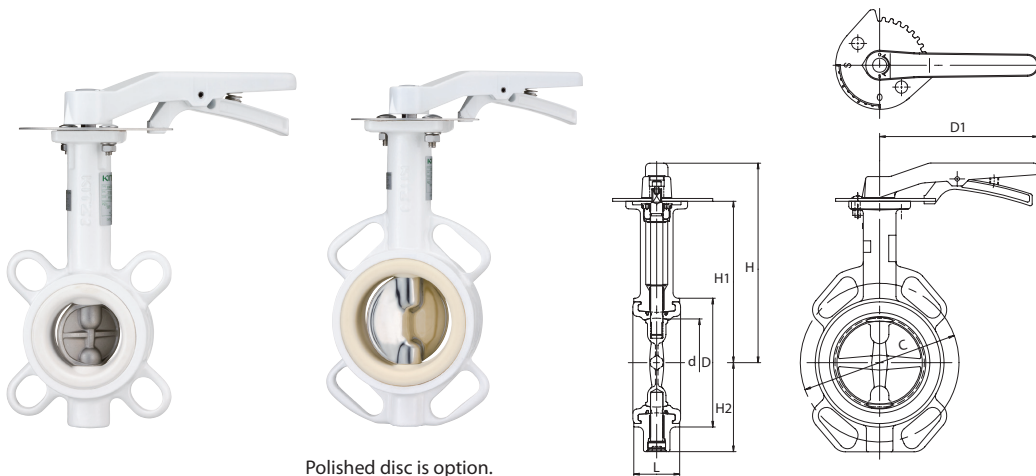
Wafer Type

Lever Operated

PN10EJM□□

□□ of product coding are trim material coding

For trim material coding, please refer to page 1.



Polished disc is option.

### Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C	D1
mm	inch								
50	2	49	191	147	67	43	90	125	180
65	2½	65	199	155	75	46	104	145	180
80	3	79	217	173	91	46	124	160	180
100	4	100	227	183	101	52	146	180	180
125	5	125	265	211	127	56	176	210	230
150	6	147	277	223	139	56	206	240	230
200	8	197	287	248	169	60	257	295	350

**Double-eccentric kinematics, and all stainless steel bodies and trims guarantee high performance corrosion resistant service for application of KITZ Type UB butterfly valves to chemical industries.**

## Specification

Maximum service pressure			
10UB	1.4 MPa	16UB (size 14" to 24")	1.4 MPa
16UB (size 2" to 12")	2.0 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		
150UB	ASME Class 150		

## Standard Materials

Parts	ASTM Materials	JIS Materials
Body	A351 Gr.CF8* <sup>1</sup>	SCS13A* <sup>1</sup>
Stem	SUS304 N2	SUS304 N2
Disc	A351 Gr.CF8* <sup>1</sup>	SCS13A* <sup>1</sup>
Gland	A351 Gr.CF8* <sup>1</sup>	SCS13A* <sup>1</sup>
Seat ring	PTFE* <sup>2</sup>	PTFE* <sup>2</sup>
Seat retainer	A276 TYPE304	SUS304
Gland packing	PTFE	PTFE
Gasket	PTFE	PTFE

## Feature

### Double-eccentric Kinematics

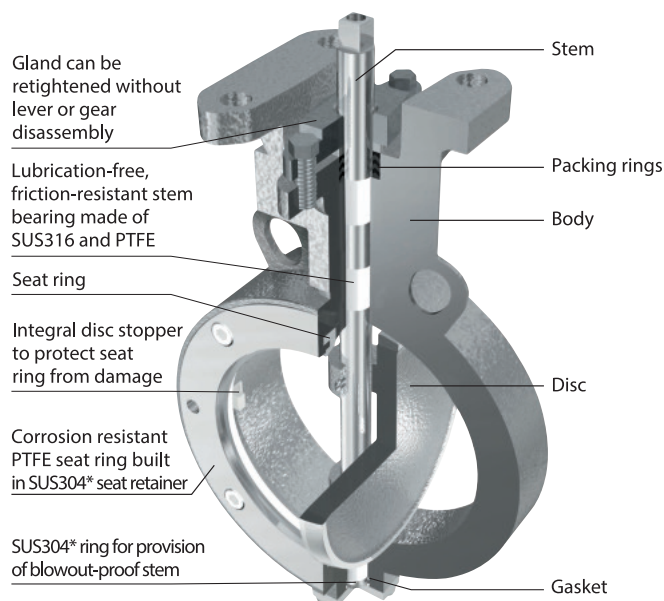
The valve's stem is designed eccentric to both the center of the seat ring (by X) and the center of the valve body (by Y), which makes the clearance C between the seat ring and the disc seat surface on its fully open position (Fig. 1). Disc seating surface is spherically machined and contacts PTFE seat tightly through 360°C for leak-free service. All these help minimize frictional wear of seat rings and reduce the 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 a rather usual problem of conventional butterfly valves. This makes the service life twice as long as rubber seated butterfly valves.

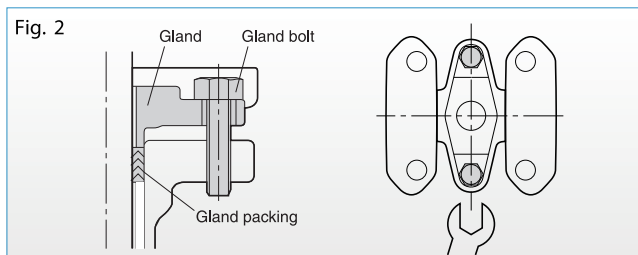
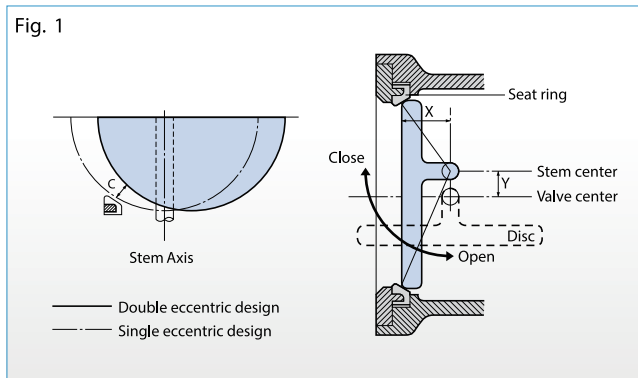
### Retightening of Gland Packing

There is a room between the gland and the lever or gear to allow retightening of gland boltings without trouble of disassembly of the lever or gear during plant operation (Fig. 2).



Parts	ASTM Materials	JIS Materials
Set bolt	A193 Gr.B8	SUS304
Taper pin	A276 TYPE316	SUS316
Stem bearing	METAL BACKED PTFE	METAL BACKED PTFE
Gland bolts	A193 Gr.B8	SUS304
Thrust washer	PTFE	PTFE
End plate	A351 Gr.CF8	SCS13A
End plate bolts	A193 Gr.B8	SUS304

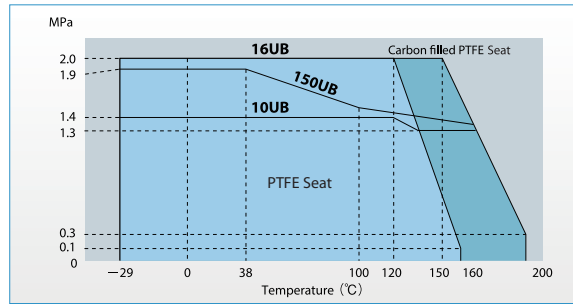
\*1. CF8M(316)/SCS14A(SUS316) is available as an option.  
\*2. Carbon filled PTFE seat rings are optionally available.



### Flow Coefficient (Cv)

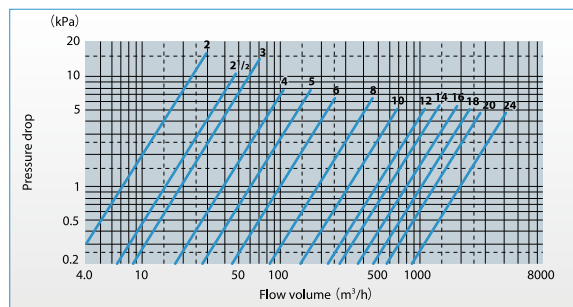
Size		Cv value	Size		Cv value
mm	inch		mm	inch	
50	2	83	250	10	3660
65	2½	175	300	12	5640
80	3	255	350	14	7060
100	4	460	400	16	9390
125	5	722	450	18	12300
150	6	1180	500	20	15300
200	8	2240	600	24	22900

### P-T Rating

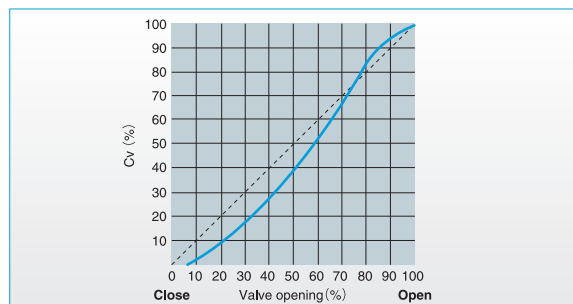


Contact KITZ for technical advice when service conditions may exceed the P-T rating range limited here.

### Pressure Loss (for handling static clean water)



### Flow Characteristics



## CAUTION

For mounting valves onto pipes, be sure to use gaskets\* specified below:

\*Non-asbestos joint sheet or PTFE sheet

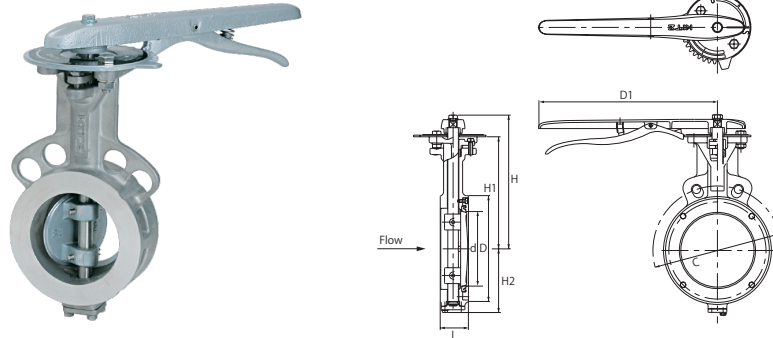
Size	I / D		O / D	Thickness
	Min.	Max.		
2	60	61	90	3
2½	73	77	115	3
3	88	90	126	3
4	108	116	146	3
5	136	143	181	3
6	162	170	211	3
8	213	220	257	3
10	266	275	322	3
12	312	326	367	3
14	342	359	410	3
16	389	410	470	3
18	444	460	530	3
20	493	513	580	3
24	594	615	688	3

## CAUTION

- The following gaskets should be used for installation of the UB series butterfly valves to pipelines.
  - [Type of Gasket]
    - Non-asbestos joint sheet gasket
    - Reinforced PTFE gasket (Jacketed gasket, Spiral Wound gasket, or Metal gasket cannot be installed.)
  - [Shape of Gasket]
    - Full-face gasket
    - Ring gasket (for full-face flanges and flat-face flanges)
  - [Dimension of Gasket]
    - The dimension of the gasket should comply with JIS B 2404 and ASME B 16.21 (minimum gasket thickness is 3 mm).
- UB series butterfly valves cannot be used with lapped loose flanges (lap joints + stub ends, stainless steel pipe joints with flanged pipe end).
- UB series butterfly valves may not be used with some large flat face flanges.
  - JIS 5K RF Flange: Not applicable
  - JIS 10K RF Flange: Applicable, but be sure to align the centers of the flange and the valve.
  - JIS 16K RF Flange: Applicable
  - Class 150 RF Flange: Applicable, but be sure to align the centers of the flange and the valve.
- UB series butterfly valves cannot be used with rubber lining pipes
- UB is a unidirectional valve. The valve must be installed according to an arrow, provided on the side of the operator mounting flange. The arrow must point from the higher pressure side to the lower pressure side in the valve closed position.
- To retighten the packing, do not cover the gland with insulation material.

## Lever Operated

10UB  
150UB



### Dimensions

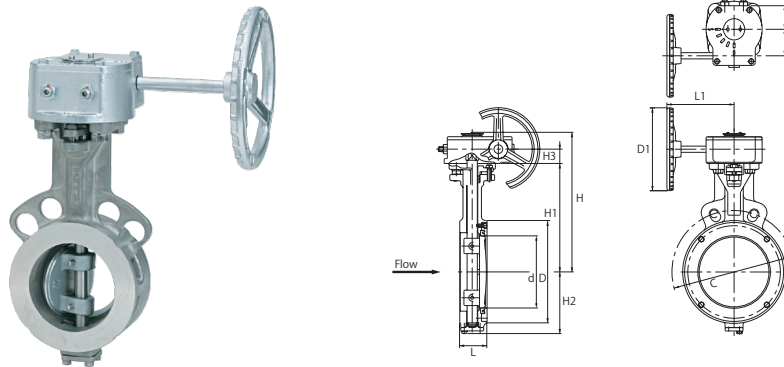
unit: mm

Size		d	H	H1	H2	L	D	C		D1
mm	inch							10UB	150UB	
40*	1 1/2*	36	183	149	58	33	81	105	—	230
50	2	50	176	138	64	43	92	120	120.5	230
65	2 1/2	65	186	148	74	46	117	140	139.5	230
80	3	78	207	167	82	46	128	150	152.5	280
100	4	98	221	181	92	52	148	175	190.5	280
125	5	123	241	202	115	56	183	210	216	350
150	6	148	263	225	126	56	213	240	241.5	350

\* 10UB only.

## Gear Operated

GL-10UB  
GL-16UB  
GL-150UB



### Dimensions

unit: mm

Size		d	H	H1	H2	H3	L	D	C			D1	L1	E	F	Gear type
mm	inch								10UB	16UB	150UB					
40*1	1 1/2*1	36	202	149	58	25	33	81	105	—	—	110	150	35	42	No. 1
50	2	50	192	138	64	25	43	92	120	120	120.5	140	150	35	42	No. 1
65	2 1/2	65	202	148*2	74	25	46	117	140	140	139.5	140	150	35	42	No. 1
80	3	78	226	167	82	28	46	128	150	160	152.5	170	195	42	60	No. 2
100	4	98	240	181	92	28	52	148	175	185	190.5	170	195	42	60	No. 2
125	5	123	261	202	115	28	56	183	210	225	216	200	204	42	60	No. 2
150	6	148	283	225	126	28	56	213	240	260	241.5	200	204	42	60	No. 2
200	8	197	348	263	163	47	71	259	290	305	298.5	310	280	54	66	No. 3
250	10	243	416	315	234	60	76	322	355	380	362	360	310	68	89	No. 4
300	12	295	443	342	257	60	83	367	400	430	432	360	310	68	89	No. 4
350	14	325	475	375	293	57	92	410	445	480	—	500	358	70	94	No. 5
400	16	371	572	409	314	94	102	470	510	540	—	500	360	90	134	No. 6
450	18	421	607	443	369	94	114	530	565	605	—	500	360	90	134	No. 6
500	20	470	623	459	394	94	127	580	620	660	—	500	360	90	134	No. 6
600	24	569	757	558	475	117	154	688	730	770	—	500	371	105	213	No. 7

\*1 GL-10UB only.

\*2 GL-10UB:149

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

### Specification

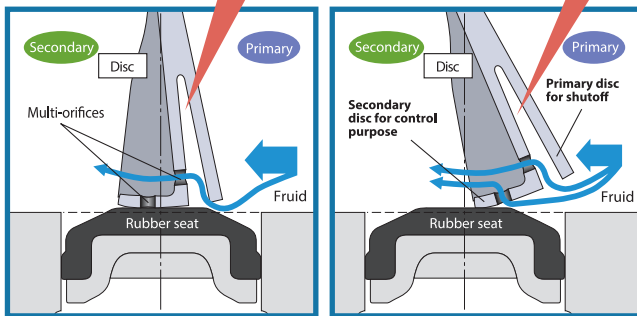
- Maximum service pressure ······ 1.0 MPa
- Service temperature range EPDM ··· -20°C to +120°C  
Note: Refer to Pressure-Temperature Ratings in next page.
- Rangeability ······ 160 : 1
- Flow characteristics ······ Equal percentage flow characteristics
- Sealing feature ······ Tight shutoff
- Face to face dimensions ······ JIS B 2032 series number 46
- Coupling flange ······ JIS 5K/10K/16K/20K

### Feature

#### Excellent flow volume control performance with 160:1 of rangeability

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

The pressure reducer slit and multi-orifices reduce flow velocity, and minimize cavitation and noise.

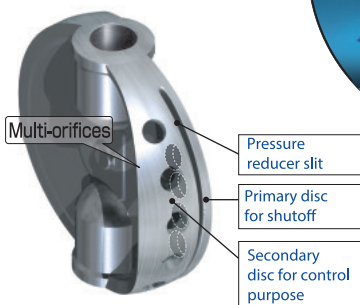
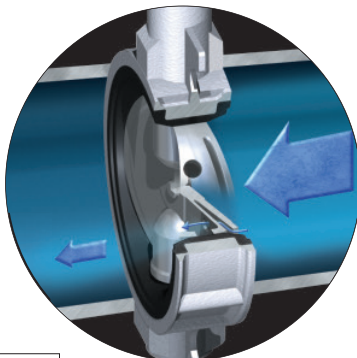


At low degree of opening: 1

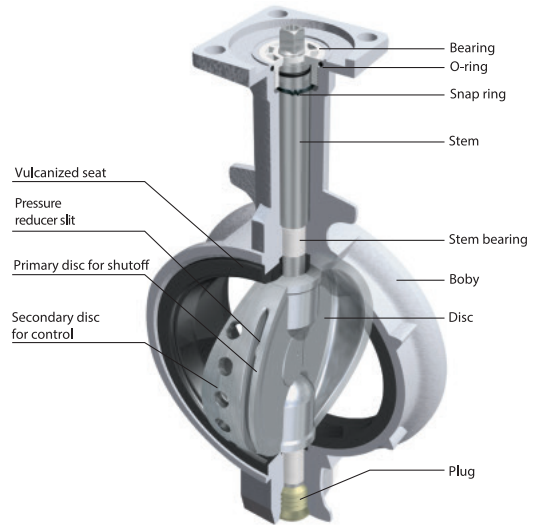
At low degree of opening: 2

#### Prevention of erosion by jet flow

- The vulcanized bond seat is suitable for controlling high flow velocity fluid to reduce erosion due to jet flow.



Fluids only flow through the orifices at low degree of opening.

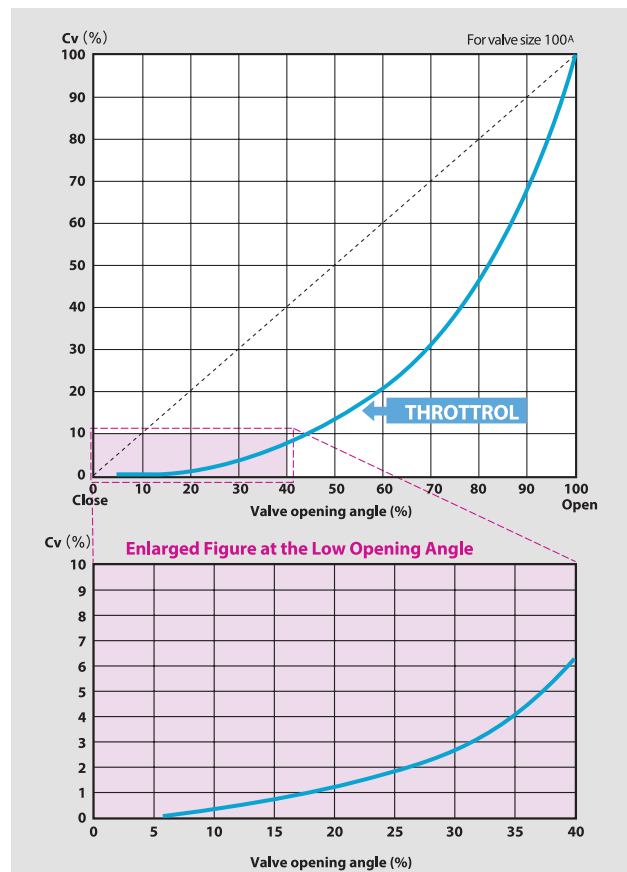


### Standard Materials

\*Please refer to the drawing of deliverables for detail.

Parts	Material
Body	FCD450-10
Stem	SUS630
Disc	SCS13A
Seat	EPDM
O-ring	EPDM
Bearing	POM (50 <sup>A</sup> to 200 <sup>A</sup> )
Plug	Chromated ZDC2
Bottom stem	SUS403 (50 <sup>A</sup> to 100 <sup>A</sup> ) SUS420J2 (250 <sup>A</sup> to 300 <sup>A</sup> )

### Flow Characteristic Curve



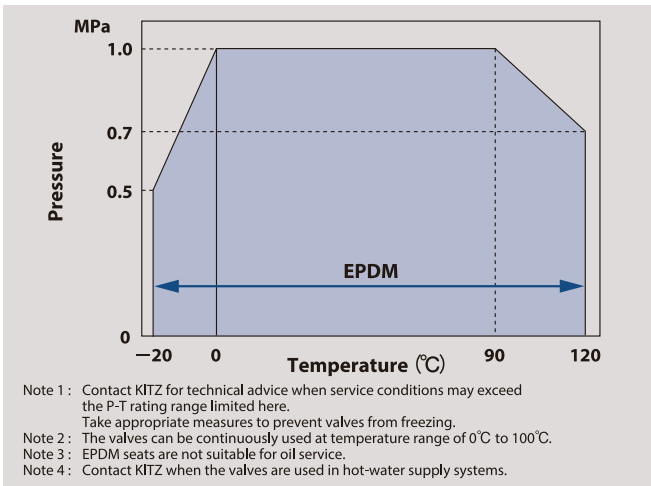


## High Rangeability Butterfly Valves

### 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	390.2	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

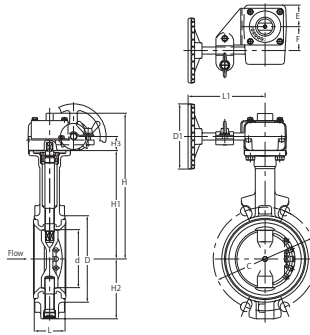


### ⚠ CAUTION

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

### Locking Mechanism Gear Operated with Locking Mechanism

G-10HRDJUE  
G-20HRDJUE



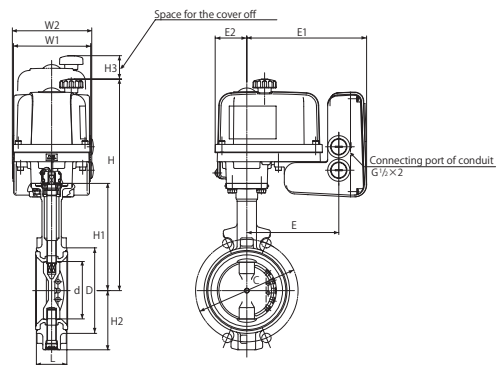
#### Dimensions

unit: mm

Size		d	H	H1	H2	H3	L	D	C		Gear unit				
mm	inch								10K	20K	D1	L1	E	F	Size
50	2	50	210	147	67	24	43	90	120	120	110	135	36	40	No. 1
65	2½	65	218	155	75	24	46	104	140	140	110	135	36	40	No. 1
80	3	80	236	173	91	24	46	124	150	160	110	135	36	40	No. 1
100	4	100	246	183	101	24	52	146	175	185	110	135	36	40	No. 1
125	5	125	274	211	127	24	56	176	210	225	110	150	36	40	No. 1
150	6	150	286	223	139	24	56	206	240	260	110	150	36	40	No. 1
200	8	197	325	248	169	32	60	257	290	305	170	180	51	63	No. 2
250	10	247	393	304	220	47	68	312	355	—	310	280	54	66	No. 3
300	12	295	418	329	244	47	78	364	400	—	310	280	54	66	No. 3

### Proportional Control Electrically Operated

EXCN-10HRDJUE  
EXCN-20HRDJUE  
EXD-10HRDJUE  
EXD-20HRDJUE



#### Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C		Actuator					Actuator size	
mm	inch							10K	20K	W1	W2	E	E1	E2		H3
50	2	50	328	147	67	43	90	120	120	131	132	157	206.5	54	107.5	Size 2
65	2½	65	336	155	75	46	104	140	140	131	132	157	206.5	54	107.5	Size 2
80	3	80	354	173	91	46	124	150	160	131	132	157	206.5	54	107.5	Size 2
100	4	100	389.5	183	101	52	146	175	185	158	132	180.5	230	69	117.5	Size 3
125	5	125	417.5	211	127	56	176	210	225	158	132	180.5	230	69	117.5	Size 3
150	6	150	429.5	223	139	56	206	240	260	158	132	180.5	230	69	117.5	Size 3
200	8	197	524	248	169	60	257	290	305	188	132	196	245.5	73	153	Size 4
250	10	247	580	304	219	68	312	355	380	188	132	196	245.5	73	153	Size 4
300	12	295	686	329	244	78	364	400	430	188	132	196	245.5	73	153	Size 5

Power sources of actuator coding. Please refer to page 1.

## 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



### Feature

#### Type D

##### For high temperature

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

#### Type A

##### For high temperature fluid

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

### Flow Coefficient (Cv)

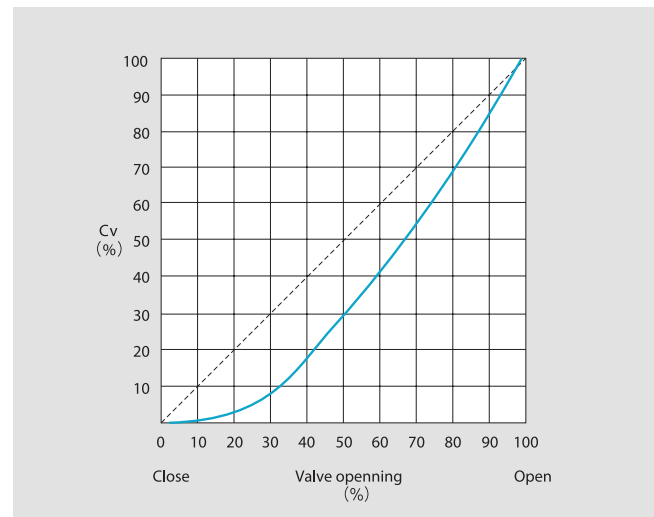
Size		Cv
mm	inch	
50	2	104
65	2 1/2	174
80	3	348
100	4	557
125	5	905
150	6	1183
200	8	2575
250	10	4037
300	12	6264

### Standard Materials

Parts	Material
Body	FC250+HCr
Stem	SUS403
Disc	SUS430
Gland	C3604BE
Gland packing	Asbestos-free
Disc nut	SUS304
Disc bolt	SUS304
Index plate	SPCC
Set bolt	SS400
Bottom stem	SUS403

\*Please refer to the drawing of deliverables for detail.  
A gasket is required for piping this product.

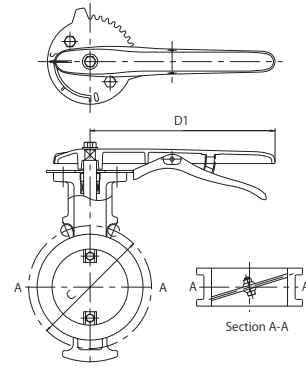
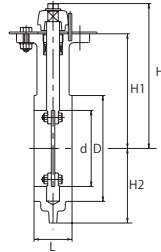
### Flow Characteristics



### Type D

### Lever Operated

10D



#### Dimensions

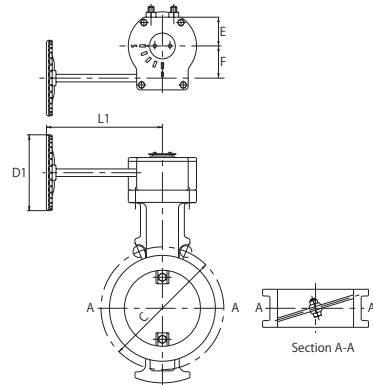
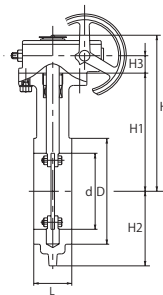
unit: mm

Size		d	H	H1	H2	L	D	C	D1
mm	inch								
50	2	50	183	145	57	40	90	120	200
65	2½	65	191	153	75	45	115	140	200
80	3	80	198	160	82	50	126	150	200
100	4	100	208	170	98	60	146	175	200
125	5	130	237	196	117	65	181	210	280
150	6	150	247	206	145	70	211	240	280
200	8	200	272	231	170	80	257	290	280
250	10	250	340	297	205	90	322	355	350
300	12	300	365	322	230	100	367	400	350

### Type D

### Gear Operated

GL-10D



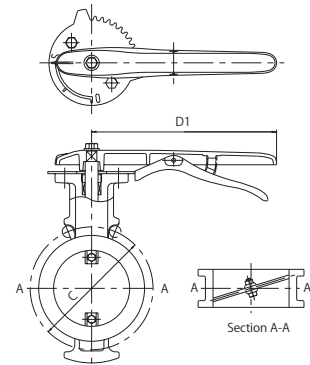
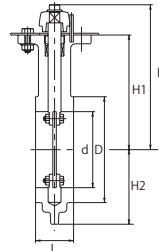
#### Dimensions

unit: mm

Size		d	H	H1	H2	H3	L	D	C	D1	L1	E	F	Gear type
mm	inch													
50	2	50	198	145	57	25	40	90	120	110	150	35	42	No. 1
65	2½	65	206	153	75	25	45	115	140	110	150	35	42	No. 1
80	3	80	213	160	82	25	50	126	150	110	150	35	42	No. 1
100	4	100	223	170	98	25	60	146	175	110	150	35	42	No. 1
125	5	130	249	196	117	25	65	181	210	170	190	35	42	No. 1
150	6	150	259	206	145	25	70	211	240	170	190	35	42	No. 1
200	8	200	284	231	170	25	80	257	290	170	190	35	42	No. 1
250	10	250	355	297	205	28	90	322	355	170	195	42	60	No. 2
300	12	300	380	322	230	28	100	367	400	170	195	42	60	No. 2

## Type A Lever Operated

10A



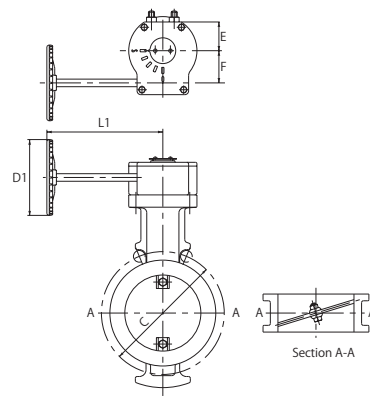
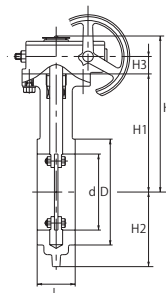
### Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C	D1
mm	inch								
50	2	50	183	145	57	40	90	120	200
65	2½	65	191	153	75	45	115	140	200
80	3	80	198	160	82	50	126	150	200
100	4	100	208	170	98	60	146	175	200
125	5	130	237	196	117	65	181	210	280
150	6	150	247	206	145	70	211	240	280
200	8	200	272	231	170	80	257	290	280
250	10	250	340	297	205	90	322	355	350
300	12	300	365	322	230	100	367	400	350

## Type A Gear Operated

GL-10A



### Dimensions

unit: mm

Size		d	H	H1	H2	H3	L	D	C	D1	L1	E	F	Gear type
mm	inch													
50	2	50	198	145	57	25	40	90	120	110	150	35	42	No. 1
65	2½	65	206	153	75	25	45	115	140	110	150	35	42	No. 1
80	3	80	213	160	82	25	50	126	150	110	150	35	42	No. 1
100	4	100	223	170	98	25	60	146	175	110	150	35	42	No. 1
125	5	130	249	196	117	25	65	181	210	170	190	35	42	No. 1
150	6	150	259	206	145	25	70	211	240	170	190	35	42	No. 1
200	8	200	284	231	170	25	80	257	290	170	190	35	42	No. 1
250	10	250	355	297	205	28	90	322	355	170	195	42	60	No. 2
300	12	300	380	322	230	28	100	367	400	170	195	42	60	No. 2

# KITZ Threaded Compact Butterfly Valves

## Compact butterfly valves for threaded piping connection



### Specification

- Size .....  $\frac{1}{2}^B \sim 2^B$
- 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 ..... Standard of KITZ

### Feature

#### Clean design with pocket-less to prevent standing fluid

- Full-port structure prevents standing fluid in pocket used in a ball valve, and rubber seat is adopted to clear the Food Sanitation Act.

#### Threaded type which is the first in butterfly valve

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

#### Compact/light weight design

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

#### W-NBR seat with high sealing characteristics

- Adopting W-NBR with high elasticity for a seat to improve sealing characteristics to be ideal for fluid line such as air/gas for which high sealing is required.

#### Self cleaning feature for sealing section

- Self cleaning feature to remove dirt at sealing section during open/close with elastic effect of the disc is equipped.

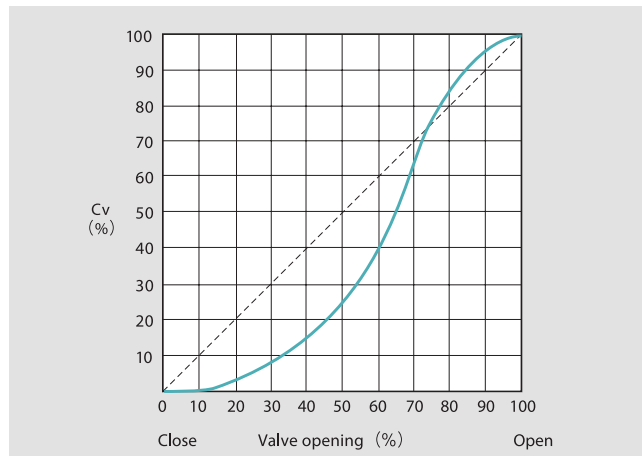
#### Capable of flow volume control

- It is equipped with the balancing stop mechanism to fix at intermediate opening degree, and is capable of stable flow volume control thanks to opening scale.

#### Accurate lost-wax casting

- Body of the stainless steel product employs accurate lost-wax casting to configure clean and dust-free piping line with smooth surface.

### Flow Rate



### Standard Materials

Parts	Material	
	FV	UV
Body	C3771BE	SCS13A
Stem	SUS304	
Disc	SUS304+W-NBR	
Brace of Packing	C3771BD	SUS304
O-ring	NBR	

\*Please refer to the drawing of deliverables for detail.

### W-NBR (No.NF81W) Test Result

Test item		Test result	Criteria
Material test	Lead	Applicable (7.00 ppm)	100 ppm or less
	Cadmium	Applicable (not detected (0.2 ppm or less))	100 ppm or less
Dissolution test	Potassium permanganate consumption	Applicable (2.4 ppm)	10 ppm or less
	Heavy metal	Applicable	Must be thinner than the color presented by standard fluid for comparison
Vaporization residue	Water	Applicable (0 ppm)	30 ppm or less
	4% acetic acid	Applicable (1.5 ppm)	30 ppm or less
	n-heptane	Applicable (16.5 ppm)	30 ppm or less
	20% ethanol	Applicable (1.5 ppm)	30 ppm or less

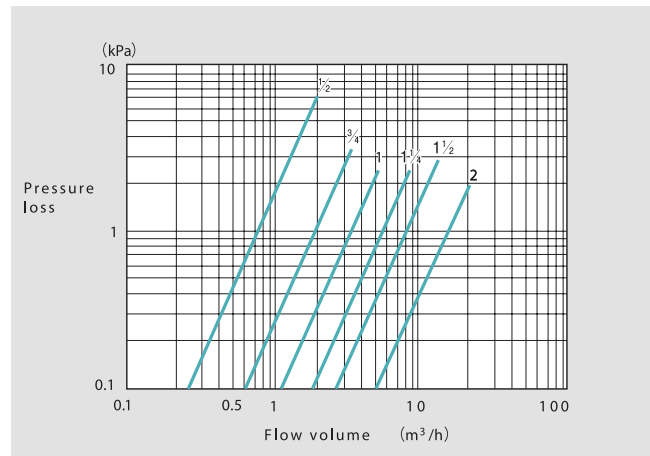
### Cv

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

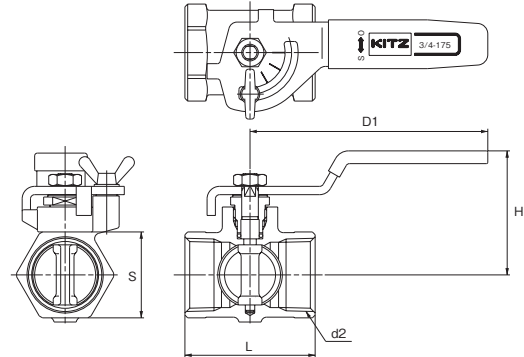


# KITZ Threaded Compact Butterfly Valves

**KITZ**  
**BUTTERseries**

**Brass Type**      **Lever Operated**

FV



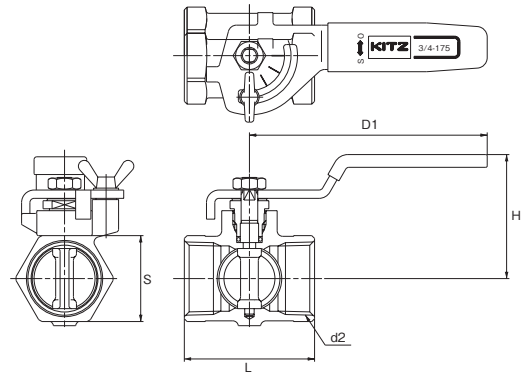
■ Dimensions unit: mm

Size		d2	H	D1	L	S
mm	inch					
15	1/2	Rc 1/2	44	85	47	28
20	3/4	Rc 3/4	47	85	51	34
25	1	Rc 1	50	85	58	41
32	1 1/4	Rc 1 1/4	60	110	67	50
40	1 1/2	Rc 1 1/2	63	110	73	56
50	2	Rc 2	70	110	82	68

※ Loosen the set bolt before turning the handle. After setting the opening degree, tighten the set bolt and fix the handle.

**Stainless Type**      **Lever Operated**

UV



■ Dimensions unit: mm

Size		d2	H	D1	L	S
mm	inch					
15	1/2	Rc 1/2	44	85	43	25
20	3/4	Rc 3/4	47	85	47	31
25	1	Rc 1	50	85	56	38
32	1 1/4	Rc 1 1/4	60	110	63	47
40	1 1/2	Rc 1 1/2	63	110	69	54
50	2	Rc 2	70	110	77	67

※ Loosen the set bolt before turning the handle. After setting the opening degree, tighten the set bolt and fix the handle.

# Precautions for Trouble-free Operation of KITZ Butterfly Valves

## Valve Selection

- Make sure to select a valve with design specifications that are appropriate for the fluid type and the pressure and temperature conditions expected.
- Lubricants are applied to discs and rubber seats to protect their surfaces.  
Oil-free treated types are also available. Contact the KITZ Corporation or one of its local distributors for the details.
- Contact the KITZ Corporation or one of its local distributors for service with fine particles.

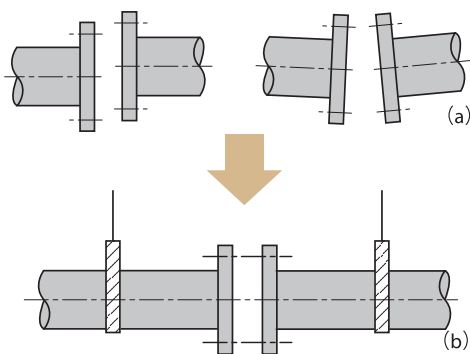
## Storage and Handling

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

## Mounting on Pipelines

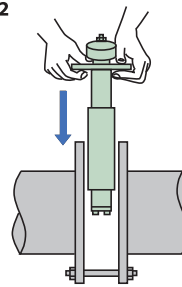
- Valves must be mounted on flanges only after flanges have been welded to pipes and cooled down to the ambient temperature. Otherwise, the welding heat may affect the quality of the resilient seats.
- Edges of welded flanges must be machined to achieve a smooth surface finish so that they will not damage the resilient seats during valve mounting. Flange faces must be free from 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 for mounting KITZ XJ series butterfly valves.
- Flanges and pipe bores must be cleaned thoroughly to remove welding spatters, scales, and foreign objects that may have been left inside.
- Accurate centering of each pair of upstream and downstream pipes is essential for trouble-free operation of the valves mounted between them. Incorrect centering, shown in **Fig. 1**, must be avoided at all costs.

Fig. 1



- When mounting valves, set jack bolts under the pipes to provide support at a consistent height and adjust the flange-to-flange distance to allow 6 to 10 mm of space on each side of the valve body. Remember that valves must be left open 10° from the fully closed position (**Fig. 2**).
- Set two bolts into the lower mounting guides of a valve and mount it carefully so that the flange faces do not damage the resilient seats.
- Then set another two bolts into the upper mounting guides of the valve, ensuring the correct centering between the pipes and the valve.
- Try opening the valve to check that there is no obstructing contact between the valve disc and the flanges.
- Remove the jack bolts, set all bolts around the valve body, and tighten the bolts alternately and diagonally until the flanges come into contact with the valve body (**Fig. 3**). Refer to the table shown below for recommended torque values.

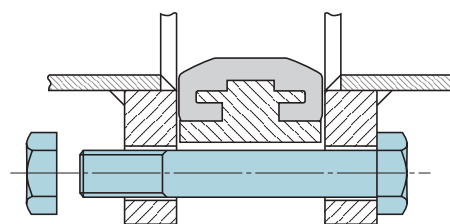
Fig. 2



Recommended torque values

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

Fig. 3



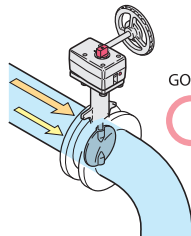
- For mounting actuated valves, provide valve supports to prevent bending of valve necks and reduce valve and pipe vibration.
- Do not step on valve necks or valve hand-wheels.
- Do not mount butterfly valves directly to check valves or pumps; this may result in damage caused by the disc contacts.
- Do not mount valves on the downstream sides of elbows, reducers, or regulating valves where the fluid velocity changes. It is recommended that valves be installed at distances of approximately 10 times the nominal valve sizes in such cases.



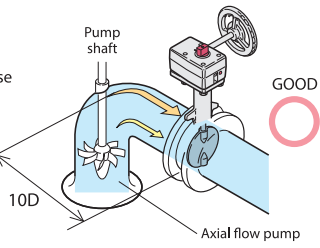
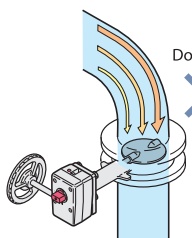
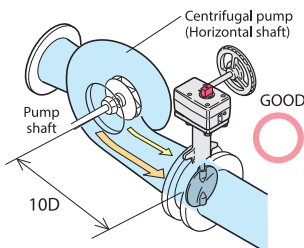
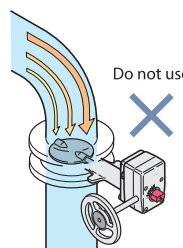
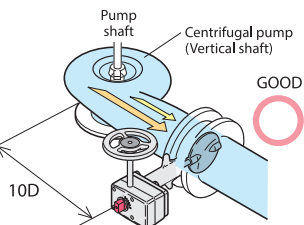
- Mount valves taking into consideration the effects on discs of fluid velocity or pressure changes in the piping. Refer to the illustrations. (Fig. 4)  
Contact the KITZ Corporation or one of its local distributors for the details.

**Fig. 4**

● Mounting to bent pipe

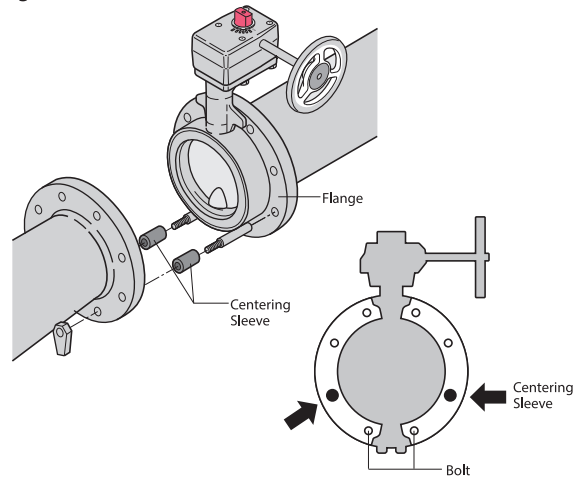


● Mounting to pump outlet



**Note:**  
Centering with centering sleeves is required for valves equipped with such sleeves for accurate centering (Fig. 5)  
Refer to 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 in malfunction of valves and their operators.
- Make sure to open valves fully before conducting a loop test of the piping system at a line pressure higher than the nominal pressure of the tested valves. Never use closed valves in place of blind flanges.
- When valves need to be removed from pipes for maintenance or any other reason, make sure to thoroughly relieve the line pressure beforehand. Loosening piping bolts under line pressure is dangerous. Any residual fluid left inside the pipeline must be completely drained.
- Users should contact the KITZ Corporation or one of its local distributors for technical advice when valves need to be continuously pressurized while left open 30° or less.
- Do not use position indicators to operate valves or overload position indicators. These actions may cause damage to the indicators.
- Make sure to use blind flanges when butterfly valves are mounted at the end of pipelines.
- Standard actuators are referenced in this catalog for actuated valve operation. Contact the KITZ Corporation or one of its local distributors for information on mounting optional actuators.
- Contact the KITZ Corporation for service at hopper or pump outlets.
- Avoid touching gear operators and actuator stopper bolts accidentally.
- Periodic inspection is recommended to
  - Check the valve opening degree
  - Check loosened bolts and leakage at each connection
  - Check vibration and noise
- Refer to instruction manual for other precautions. Refer to actuator catalogs and instruction manuals for actuated valves.

## ⚠ WARNING

To prevent stem blow-out, do not disassemble necks while a valve is pressurized. Do not dismantle valve operating devices because this may cause valve discs to rotate and may result in valve malfunction.

## WARNING

- This product is not designed for explosion-proof. DO NOT use it in any inflammable or corrosive gaseous environment. Also DO NOT use it for handling inflammable fluid.
- DO NOT disassemble the actuator while the unit is being energized.
- DO NOT put your fingers or insert any foreign objects within the valve core before or during valve operation.

## CAUTION

- Make sure to read and follow instructions of operation manual when handling the actuator introduced in this catalog.
- Handle the product carefully so that it may not fall or drop on the ground. Any extraordinary mechanical impact should be avoided.
- Indoor storage of the product in a dust-free, low humidity and well-ventilated place is recommended.
- DO NOT remove protective cover until installation on piping.
- DO NOT apply excessive load or step on the product, which may damage the product or cause personal injury.
- Allow sufficient room for manual operation or removal of the actuator cover, when the valve is installed in the pipeline.
- Where the actuator is exposed to sunlight or rainwater while in service, use appropriate protection for trouble-free operation. Also use insulation boards for the heat generated from the equipment around the actuator.
- Take some appropriate measures, if the possibilities of damage by briny atmosphere, snow or freezing are expected.
- Avoid installing the valve where the actuator may be hampered by vibration caused by other equipment such as pumps or engines.
- Before installation, the connecting pipes should be cleaned to remove any foreign objects such as sand, dust or welding spatters.
- When threaded valves are screwed into pipes, apply a spanner to the ends of valves on the side of the connecting pipe being inserted.
- For flanged valves, alternately tighten bolts of the end flanges in a star pattern to ensure to fasten the flanges properly.
- The actuator should not be mounted downward in any piping orientation.
- The pipeline should be flushed to remove foreign particles from pipes.
- If cast iron or cast carbon steel valves are used in the water line, be aware that rust may develop in the valves, which may damage the ball seats, leading to operation failure. Pay extra attention on valve selection and protection from rust.
- Connect cables correctly in accordance with the circuit diagram.
- Ensure to use a terminal base when connecting cables.
- After connecting cables, conduct an insulation resistance test to ensure its insulation.
- Ensure the housing is securely sealed with such sealing materials as O-rings to prevent dust or water from entering the housing.
- DO NOT try to operate two or more actuators at the same time with only one operation switch. Other electrical equipment should not also be operated at the same time with one operation switch.
- Ensure the space heater to be activated all the time to keep the inside of the actuator warm for the prevention of due condensation, which may result in operational malfunction.
- Ensure the actuator is powered off, when it is used for manual operation.
- Place at least one-second interval, when the direction of operation is reversed. Failure to follow this instruction may result in operation malfunction.
- DO NOT make any unauthorized modifications. Such modifications may result in causing a troubled operation or accidents. We shall not be responsible for any troubles or accidents caused by improper use of the products.
- Refer to our catalogs for more details on valve information.

## CAUTION

Technical data published in this catalog have been developed from our design calculation, in-house testing, field reports provided by our customers and/or published official standards or specifications. They are good only to cover typical applications as a general guideline to users of KITZ products introduced in this catalog.

For any specific application, users are kindly requested to contact the KITZ Corporation for technical advice, or to carry out their own study and evaluation for providing suitability of these products to such an application. Failure to follow this request could result in property damage and/or personal injury, for which we shall not be liable.

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## CAUTION

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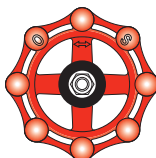
Read instruction manual carefully before using KITZ products.

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The contract shall become effective subject to a relevant export license being obtained from the Japanese Government.



*A chrysanthemum-handle is a symbol of KITZ,  
the brand of valve reliability*

ISO 9001 certified since 1989

**KITZ**  
KITZ CORPORATION

1-10-1, Nakase, Mihama-ku, Chiba 261-8577, Japan

International Sales Dept.

Phone : 81-43-299-1730

Fax : 81-43-299-0121

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