

# 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.

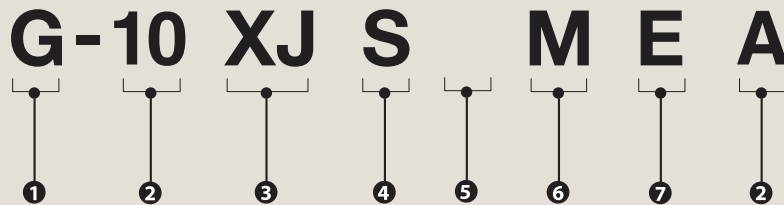
\* Please contact us for the delivery schedule of different products.

# contents

	Product Range	2
	Fluid / Material Matrix	4
	Bolt and Nut	5
	Pipe	7
	Expansion Indicator	7
	XJ Series	8
	DJ Series	16
	EJ Series	24
	LJ Series	27
	UB Series	29
	HB Series	32
	THROTTROL (HRDJ)	34
	D-Damper/A-Damper	37
	KITZ Butter Series (FV/UV)	40
	Precautions	42

\* 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
- EJ ..... Ductile iron EJ Series
- LJF ..... PFA lined LJ Series
- UB ..... Stainless steel UB Series
- HB ..... Double Eccentric HB 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	DN	15	20	25	32	40	50	65	
				NPS	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 □□							●	●	
LJ	10K	Lever	10LJF							●	●	
UB	10K	Lever	10UB						●	●	●	
		Long gear	GL-10UB						●	●	●	
	ASME150	Long gear	GL-16UB							●	●	
		Lever	150UB							●	●	
		Long gear	GL-150UB							●	●	
SHB	10K	Lever	10SHB							●	●	
		Gear	G-10SHB							●	●	
		Lever	16SHB							●	●	
	16K	Gear	G-16SHB							●	●	
		Lever	150SHB							●	●	
	Class 150	Gear	G-150SHB							●	●	
Lever		10UHB							●	●	●	
UHB	10K	Gear	G-10UHB						●	●	●	
			FA-10UHB						●	●	●	
		Pneumatic actuator	FAS-10UHB							●	●	●
			B-10UHB							●	●	●
			BS-10UHB							●	●	●
		Electric actuator	EXS ■ -10UHB							●	●	●
	20K	Lever	20UHB							●	●	●
		Gear	G-20UHB							●	●	●
	Class 150	Lever	150UHB								●	●
		Gear	G-150UHB								●	●
CP	Contact us for details.											
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	
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•	•	•	•	•	•	•										19	
•	•	•	•	•	•	•						*4	*4	*4	*4	20	
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•	•	•	•	•	•	•	•	•	•	•	•					22	
•	•	•	•	•	•	•										22	
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•	•	•	•	•	•	•										22	
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•	•	•	•	•	•	•										43	

\*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.

## 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/HB/FV/UV)				Seat material			
		FCD450	SCS13A	SCS14A	C37771BE	NBR W-NBR	EPDM*	PTFE	PFA
Sulfurous acid		×	○	○	×	△	△	◎	◎
Ammonia (anhydrous liquid)		○	◎	◎	×	△	○	◎	◎
Ammonia (solution)		○	◎	◎	×	○	○	◎	◎
Ethane		○	○	○	—	◎	×	◎	◎
Ethyl alcohol		○	◎	◎	○	○	◎	◎	◎
Hydrochloric acid		×	×	×	×	△	○	◎	◎
Sea water		×	○	○	△	◎	◎	◎	◎
Gasoline (refined/unleaded)		○	◎	◎	◎	△	×	◎	◎
Air		◎	◎	◎	◎	◎	◎	◎	◎
Mineral oil		○	◎	◎	○	◎	×	◎	◎
Heavy oil (A,B,C)		△	◎	◎	—	×	×	◎	◎
Acetic acid (10%)		△	◎	◎	×	×	○	◎	◎
Oxygen (cold)		○	◎	◎	◎	○	○	◎	◎
Lubricating oil (petroleum base)		◎	◎	◎	○	◎	×	◎	◎
Vegitable oil		△	◎	◎	—	◎	△	◎	◎
Steam (100°C)		◎	◎	◎	◎	×	○	◎	◎
Hydrogen gas (cold)		○	◎	◎	—	○	○	◎	◎
Petroleum oil (refined)		—	◎	◎	—	○	×	◎	◎
Soybean oil		△	◎	◎	○	◎	△	◎	◎
Carbonic acid		×	○	○	—	○	○	◎	◎
Calcium carbonate		×	○	○	△	◎	◎	◎	◎
Natural gas		◎	◎	◎	—	○	×	◎	◎
Animal fat		◎	◎	◎	—	◎	×	◎	◎
Propane gas		○	○	◎	—	◎	×	◎	◎
Water (fresh ≤ 40°C)		△	◎	◎	◎	○	◎	◎	◎
Water (hot ≤ 40-100°C)		△	◎	◎	◎	×	○	◎	◎
Methyl alcohol		○	◎	◎	○	○	◎	◎	◎
Sulfuric acid (7%)		×	△	○	—	○	○	◎	◎
Sulfuric acid (20%)		×	×	×	△	×	○	◎	◎
Sulfuric acid (≥50%)		×	×	×	×	×	○	◎	◎
Ammonium sulfate		△	○	○	—	◎	◎	◎	◎
Products		DJ·DJL	DJ·DJL· UB·HRDJ	XJ·DJ· DJL·UV	FV	DJ·DJL FV·UV	XJ·DJ·DJL HRDJ	UB·SHB· UHB	LJ

◎ = Excellent

○ = Good

△ = Less recommended

×

— = Contact us for details

\* EPDM is not applicable for oil.

## 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]

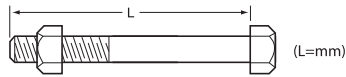
- Contact us in the event of using at condition exceeding the values in this table.

- Control pressure difference is a pressure difference between valve primary side pressure and secondary side pressure. ( $\Delta p = p_1 - p_2$ )

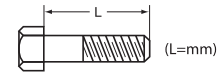
- The pressure difference is presented by the value that the difference of pressure divided by the pressure at the primary side (absolute pressure).

## Bolt/Nut

Hexagon head bolt + Hexagon nut



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

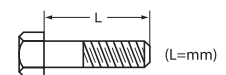


Hexagon head bolt + Hexagon nut for XJ series/DJ series/HRDJ series (mm)																											
Flange		ASME Class 150/200/250				PN6			EN PN10			EN PN16			EN PN25			BS 10 Table E			JIS 10K			JIS 16K/20K			
NPS	DN	Size	L (inch/mm)	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L	Number	Size	L(16K)	L(20K)	Number	
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	20	—	—	—	—
																						70*	16*	—	—	—	—

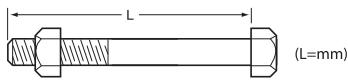
## Lugged type

Hexagon head bolt for DJL (mm)															
Flange		ASME Class 150/200/250				EN PN10			EN PN16			EN PN25			
NPS	DN	Size	L (inch/mm)	Number	Size	L	Number	Size	L	Number	Size	L	Number	Steel	Ductile
2	50	5/8	1.375	35	8	M16	38	8	M16	38	8	M16	40	40	8
2 1/2	65	5/8	1.500	38	8	M16	40	8	M16	40	8	M16	40	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.



## Hexagon head bolt + Hexagon nut



Hexagon head bolt + Hexagon nut for LJ series (mm)					
Flange		JIS 10K			
DN	NPS	Size	L	B	Number
50	2	M16	90	38	4
65	2 1/2	M16	105	38	4
80	3	M16	105	38	4
100	4	M16	105	38	8
125	5	M20	120	46	8
150	6	M20	130	52	8
200	8	M20	150	52	8
250	10	M22	160	56	12
300	12	M22	170	56	12

Hexagon head bolt + Hexagon nut for UB series (mm)													
Flange		JIS 10K				JIS 16K				AS ME Class 150			
DN	NPS	Size	L	B	Number	Size	L	B	Number	Size	L	B	Number
40	1 1/2	M16	90	38	4	M16	90	38	4	1/2	90	38	4
50	2	M16	100	38	4	M16	100	38	4	5/8	105	38	4
65	2 1/2	M16	110	38	4	M16	110	38	4	5/8	110	38	4
80	3	M16	110	38	8	M20	120	46	8	5/8	115	38	4
100	4	M16	115	38	8	M20	130	52	8	5/8	130	44	8
125	5	M20	130	52	8	M22	130	56	8	3/4	140	52	8
150	6	M20	130	52	8	M22	140	56	8	3/4	140	52	8
200	8	M20	150	52	12	M22	160	56	12	3/4	160	52	8
250	10	M22	160	56	12	M24	170	60	12	7/8	180	56	12
300	12	M22	170	56	16	M24	180	60	16	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 HB Series (mm)													
Flange		JIS 10K				JIS 16K / 20K				AS ME Class 150			
DN	NPS	Size	L	B	Number	Size	L	B	Number	Size	L	B	Number
40	1 1/2	M16	90	38	4	M16	90	38	4	1/2	90	38	4
50	2	M16	110	40	4	M16	110	40	8	5/8	110	35	4
65	2 1/2	M16	115	35	4	M16	115	35	8	5/8	120	35	4
80	3	M16	115	35	8	M20	125	40	8	5/8	125	35	4
100	4	M16	120	35	8	M20	135	40	8	5/8	130	35	8
125	5	M20	135	40	8	M22	140	45	8	3/4	140	40	8
150	6	M20	140	45	8	M22	145	45	12	3/4	140	40	8
200	8	M20	145	45	12	M22	155	45	12	3/4	150	40	8
250	10	M22	155	40	12	M24	170	50	12	7/8	165	40	12
300	12	M22	165	40	16	M24	180	45	16	7/8	180	45	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			
DN	NPS	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

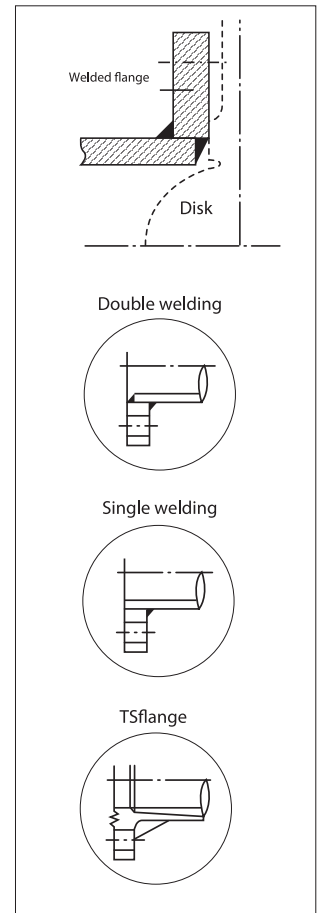
These sizes for UB series and D/A type damper are the size of bolt with a gasket of 3 mm.

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



### Single welding / TS flange

Valve Series	XJ Series				DJ Series				UB Series				HB Series				D/A Damper				
	DN	NPS	Schedule		TS	Schedule		TS	Schedule		TS	Schedule		TS	Schedule		TS	Schedule			
		SGP	20	40	— <th>SGP</th> <th>20</th> <th>40</th> <th>10S</th> <th>20</th> <th>40</th> <th>SGP</th> <th>20</th> <th>40</th> <th>SGP</th> <th>20</th> <th>40</th> <th>SGP</th> <th>20</th> <th>40</th>	SGP	20	40	10S	20	40	SGP	20	40	SGP	20	40	SGP	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.

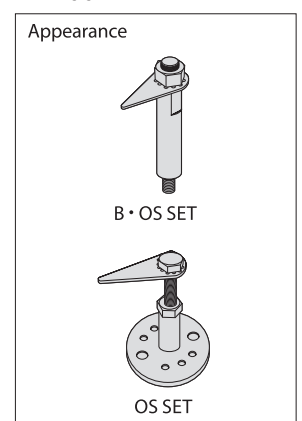
Valve Series	Size	unit: mm																
		DN	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600
	NPS	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	22	24	
XJ Series		28	41	57	71	93	117	142	193	244	292	—	—	—	—	—	—	
DJ Series		28	32	52	75	92	118	145	195	244	292	332	379	427	473	513	566	
UB Series		—	43	57	71	88	118	140	190	239	281	327	373	424	471	—	567	
HB Series		30	44	56	77	97	123	146	200	245	295	—	—	—	—	—	—	
D/A Damper		—	36	53	69	86	119	139	190	240	288	—	—	—	—	—	—	

Note: 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.

Size	Valve Series	Indicator								
		G-10XJ	G-10DJ	G-16DJ	G-20DJ	GL-10/16/150 UB	G-10/16/150 HB	G-10HRDJ	G-10LJF	
DN	NPS									
40	1 1/2	B OS SET1	B OS SET1	—	B OS SET1	B OS SET1	OS SET1	OE 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	—	—	—	—	—	—	—	—	
400	16	—	—	—	—	—	—	—	—	
450	18	—	—	—	—	—	—	—	—	
500	20	—	—	—	—	—	—	—	—	
550	22	—	—	—	—	—	—	—	—	
600	24	—	—	—	—	—	—	—	—	



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

### 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

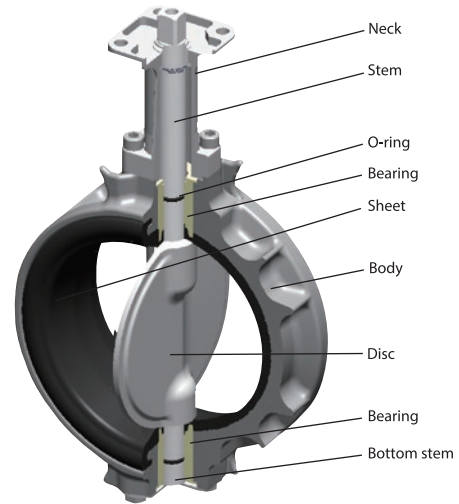
A pair of stem bearings assembled around the top and bottom stems prevents stem galling and stabilizes the valve operating torque for smooth and trouble-free disc rotation.

#### 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 SS
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

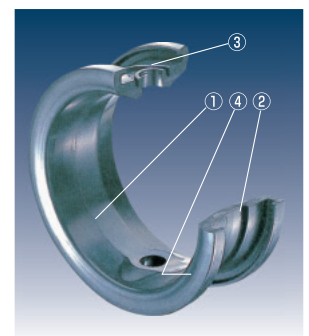
The main parts such as the stems, discs, necks, neck connectors, and endplates and small parts such as stopper plates, washers, and boltings are all made of stainless steel for high-grade rust prevention.

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

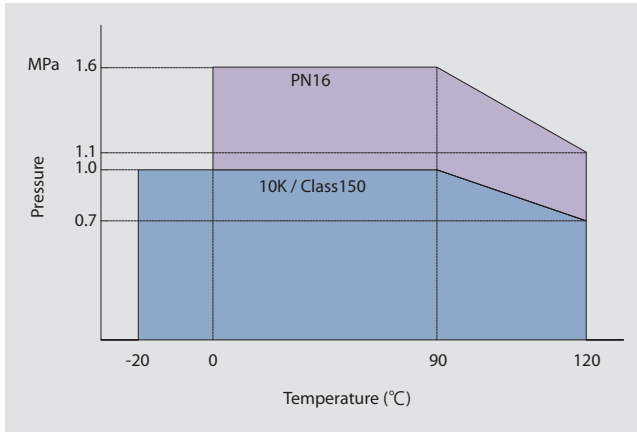
KITZ's original cross-sectionally S-shaped valve discs with spherical surfaces make evenly tight contact with rubber liners for excellent sealing performance with reduced operating torque. Complete 360° shut-off mechanisms help to extend the service life of rubber liners. (Size: ≥2 inches)

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

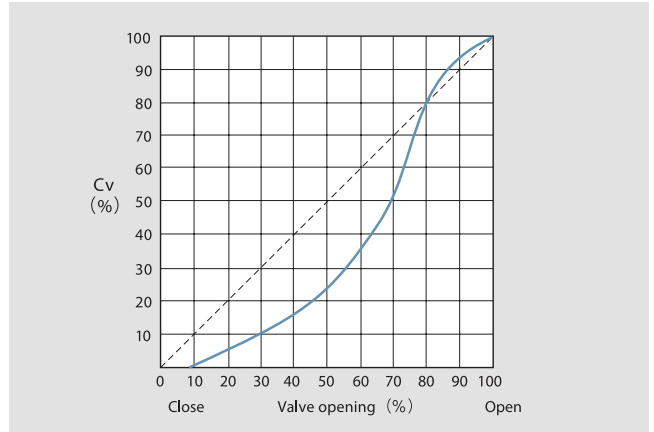
- Self-reinforced ribbing
  - Wide disc seating contact
  - Dual stem seal bearings
- ① Wide disc seating contact for high sealing performance.
  - ② Reinforced ribbing minimizes valve operating problems such as distortion, skidding, and exfoliation of rubber liners caused by line pressure load and friction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



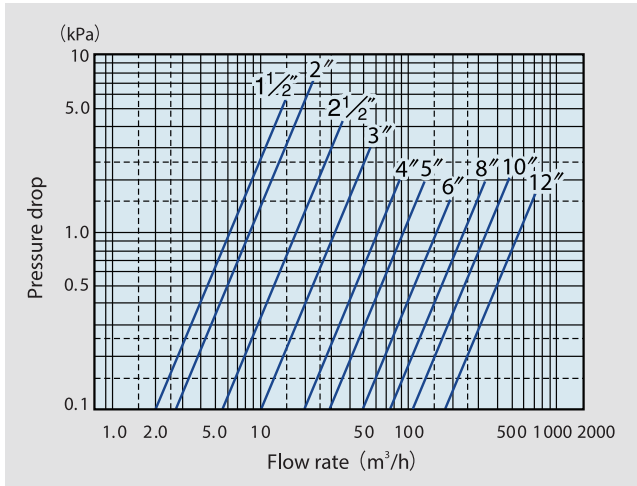
## P-T Rating



## Flow Characteristics



## Pressure Loss



### Long Neck Type

Prevented dew condensation



#### Feature

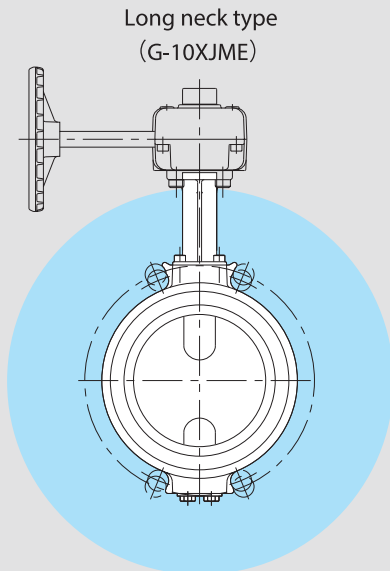
- A long stainless steel neck reduces the conductivity of fluid heat and prevents dew condensation.
- Variety of valve body and neck insulation designs available.
- Choice of actuators for automated valve operation.

#### 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.

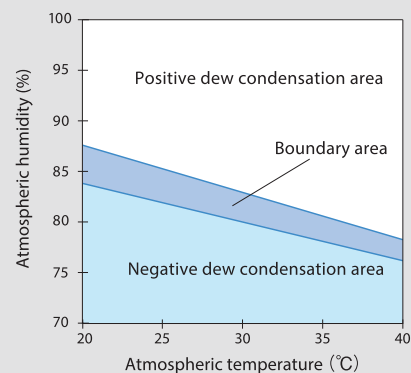
#### Application

- 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.

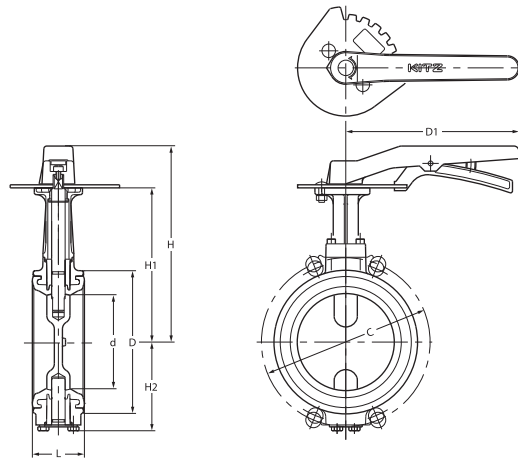
#### Note:

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>



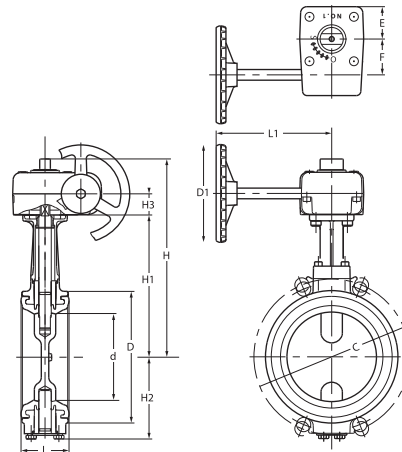
### Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C		D1
A	B							10K	PN16	
40	1½	40	172	128	40	33	80	105	—	180
50	2	50	176	132	66	43	93	120	125	180
65	2½	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

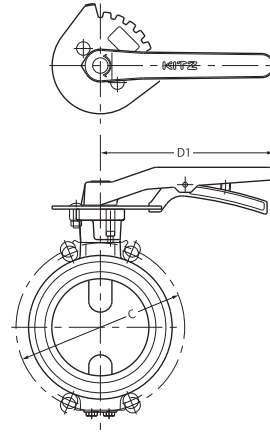
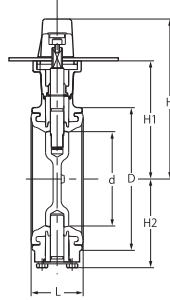
Size		d	H	H1	H2	H3	L	D	C		D1	L1	E	F	Gear type
A	B								10K	PN16					
40	1½	40	175	128	40	19	33	80	105	—	80	122	29	28	No. 0
50	2	50	179	132	66	19	43	93	120	125	80	122	29	28	
65	2½	65	188	141	74	19	46	118	140	145	80	122	29	28	
80	3	80	196*2	149	83	19	46	129	150	160	80	122	29	28	
100	4	100	223	160	94	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	
150	6	150	270	207	135	24	56	214	240	240	110	150	36	40	
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	
300	12	295	430	353	263	32	78	367	400	—	170	180	51	63	

\* 1 G-PN16XJME H2=183

\* 2 G-PN16XJME H=212

### Short Neck Type ▶ Lever Operated

10XJSME



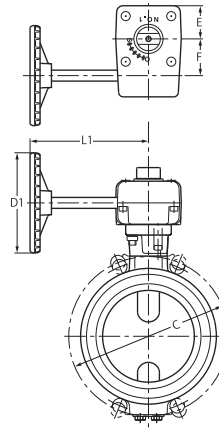
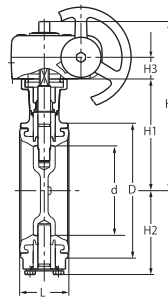
■ Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C	D1
A	B								
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
A	B													
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	
65	2½	65	150	103	74	19	46	118	140	80	122	29	28	
80	3	80	159	112	83	19	46	129	150	80	122	29	28	
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	
150	6	150	226	163	135	24	56	214	240	110	150	36	40	No. 2
200	8	196	267	190	161	32	60	258	290	170	180	51	63	
250	10	245	317	239	238	32	68	316	355	170	180	51	63	
300	12	295	342	264	263	32	78	367	400	170	180	51	63	

# Aluminum Butterfly Valves

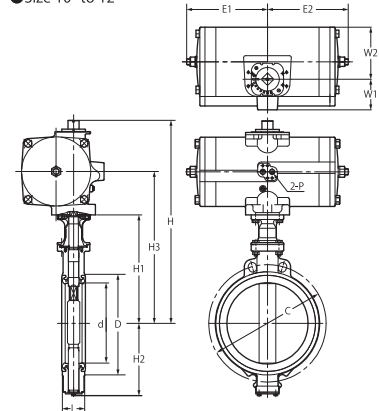
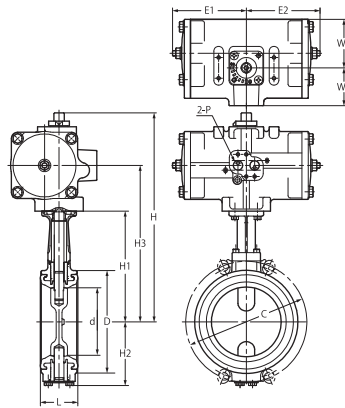
# XJ series

## Long Neck Type Pneumatically Operated – Double Action Actuator

FA-10XJME

● Size 1 1/2" to 8"

● Size 10" to 12"



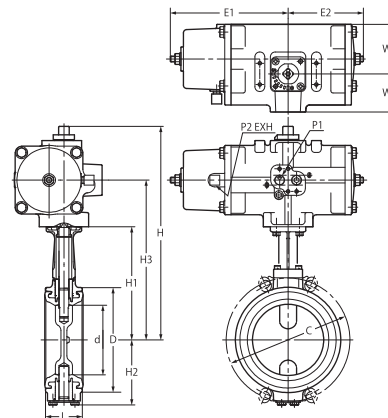
Please contact the KITZ Corporation for actuator specifications.

### Dimensions

Size		d	H	H1	H2	H3	L	D	C	Actuator					
A	B									E1	E2	W1	W2	P	Type
40	1 1/2	40	251	128	40	181	33	80	105	87	87	50	54	Rc 1/4	No. FA-1
50	2	50	255	132	66	185	43	93	120						
65	2 1/2	65	287	141	74	207	46	118	140						
80	3	80	295	149	83	215	46	129	150	107	107	54	70	Rc 1/4	No. FA-2
100	4	100	306	160	94	226	52	149	175						
125	5	125	357	195	122	271	56	184	210	128	128	57	87	Rc 1/4	No. FA-3
150	6	150	369	207	135	283	56	214	240						
200	8	196	435	234	161	327	60	258	290	160	160	68	111	Rc 1/4	No. FA-4
250	10	245	573	328	238	441	68	316	355						
300	12	295	627	353	263	475	78	367	400	208	208	78	135	Rc 1/4	No. FA-5
										268	268	101	178	Rc 1/4	No. FA-6

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

FAS-10XJME



Please contact the KITZ Corporation for actuator specifications.

### Dimensions

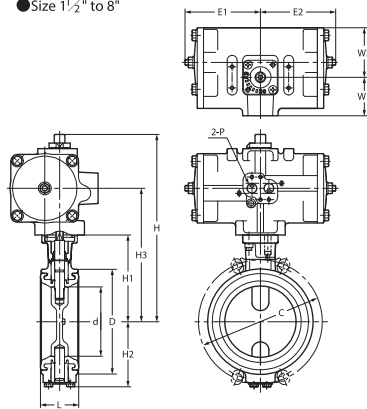
Size		d	H	H1	H2	H3	L	D	C	Actuator						
A	B									E1	E2	W1	W2	P1	P2	Type
40	1 1/2	40	274	128	40	194	33	80	105	166	107	54	70	Rc 1/4	Rc 1/8	No. FAS-2
50	2	50	278	132	66	198	43	93	120							
65	2 1/2	65	303	141	74	217	46	118	140							
80	3	80	311	149	83	225	46	129	150	203	128	57	87	Rc 1/4	Rc 1/8	No. FAS-3
100	4	100	364	160	94	256	52	149	175							
125	5	125	396	195	122	288	56	184	210	290	160	68	111	Rc 1/4	Rc 1/8	No. FAS-4
150	6	150	452	207	135	320	56	214	240							
200	8	196	508	234	161	356	60	258	290	363	208	78	135	Rc 1/4	Rc 1/8	No. FAS-5
										483	268	101	178	Rc 1/4	Rc 1/8	No. FAS-6

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

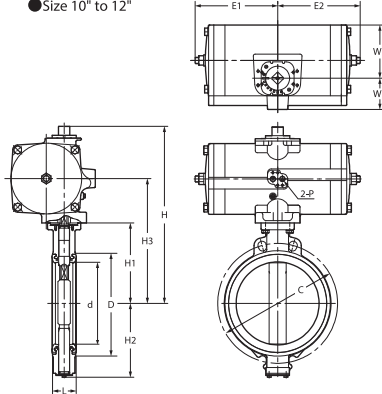
#### FA-10XJSME



● Size 1½" to 8"



● Size 10" to 12"



Please contact the KITZ Corporation for actuator specifications.

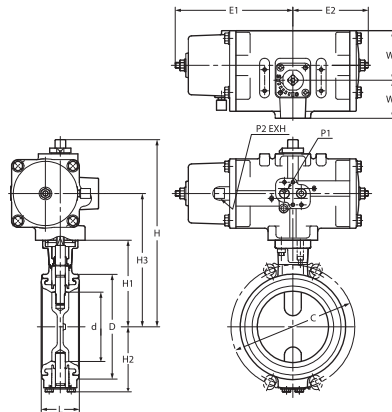
#### Dimensions

unit: mm

Size		d	H	H1	H2	H3	L	D	C	Actuator					
A	B									E1	E2	W1	W2	P	Type
40	1½	40	216	93	40	146	33	80	105	87	87	50	54	Rc¼	No. FA-1
50	2	50	218	95	66	148	43	93	120						
65	2½	65	249	103	74	169	46	118	140						
80	3	80	258	112	83	178	46	129	150	107	107	54	70	Rc¼	No. FA-2
100	4	100	269	123	94	189	52	149	175						
125	5	125	313	151	122	227	56	184	210	128	128	57	87	Rc¼	No. FA-3
150	6	150	325	163	135	239	56	214	240						
200	8	196	391	190	161	283	60	258	290						
250	10	245	483	238	238	351	68	316	355	208	208	78	135	Rc¼	No. FA-5
300	12	295	537	263	263	385	78	367	400						

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

#### FAS-10XJSME



Please contact the KITZ Corporation for actuator specifications.

#### Dimensions

unit: mm

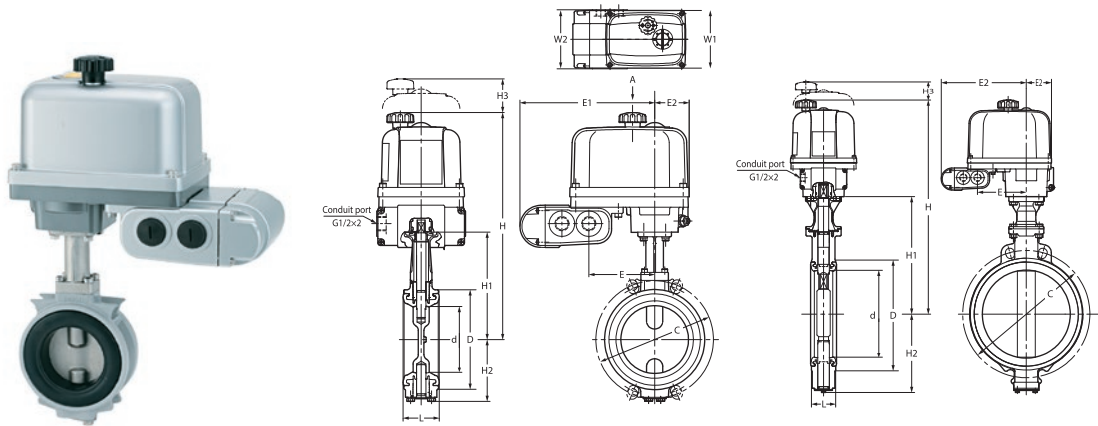
Size		d	H	H1	H2	H3	L	D	C	Actuator						
A	B									E1	E2	W1	W2	P1	P2	Type
40	1½	40	239	93	40	159	33	80	105	166	107	54	70	Rc¼	Rc⅛	No. FAS-2
50	2	50	241	95	66	161	43	93	120							
65	2½	65	265	103	74	179	46	118	140							
80	3	80	274	112	83	188	46	129	150	203	128	57	87	Rc¼	Rc⅛	No. FAS-3
100	4	100	327	123	94	219	52	149	175							
125	5	125	352	151	122	244	56	184	210	290	160	68	111	Rc¼	Rc⅛	No. FAS-4
150	6	150	408	163	135	276	56	214	240							
200	8	196	467	190	161	315	60	258	290							
										363	208	78	135	Rc¼	Rc⅛	No. FAS-5
										483	268	101	178	Rc¼	Rc⅛	No. FAS-6

# Aluminum Butterfly Valves

# XJ series

## Long Neck Type Electrically Operated

EXS-10XJME



Please contact the KITZ Corporation for actuator specifications.

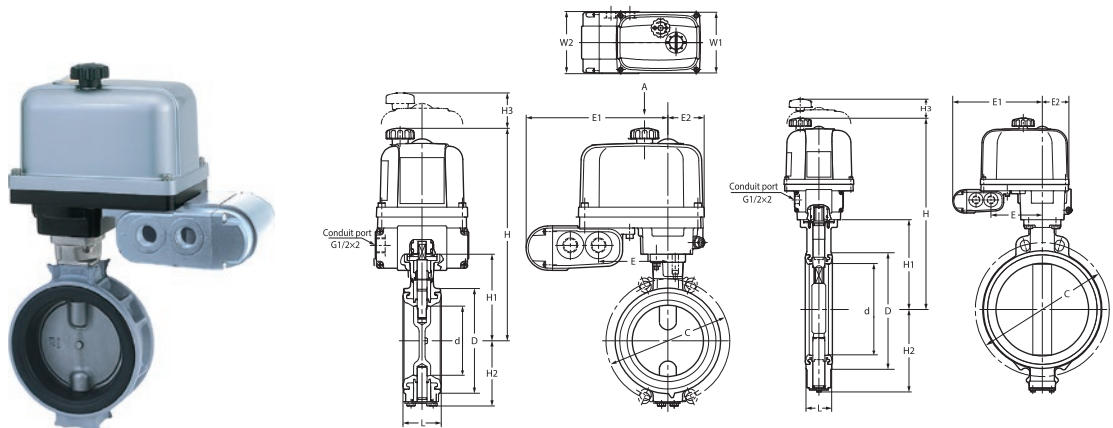
### Dimensions

Size		d	H	H1	H2	L	D	C	Actuator						
A	B								E	E1	E2	W1	W2	H3	Type
40	1½	40	309	128	40	33	80	105	98	206.5	54	131	132	107.5	No. EXS-2
50	2	50	313	132	66	43	93	120							
65	2½	65	322	141	74	46	118	140							
80	3	80	330	149	83	46	129	150							
100	4	100	341	160	94	52	149	175	121.5	230	69	158	132	117.5	No. EXS-3
125	5	125	401	194.5	122	56	184	210							
150	6	150	413.5	207	135	56	214	240							
200	8	196	440	233.5	161	60	258	290							
250	10	245	604	328	238	68	316	355	137	245.5	73	188	132	153	No. EXS-4
300	12	295	629	353	263	78	367	400							

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

Size		d	H	H1	H2	L	D	C	Actuator						
A	B								E	E1	E2	W1	W2	H3	Type
40	1½	40	274	93	40	33	80	105	98	206.5	54	131	132	107.5	No. EXS-2
50	2	50	276	95	66	43	93	120							
65	2½	65	284	103	74	46	118	140							
80	3	80	293	112	83	46	129	150							
100	4	100	304	123	94	52	149	175	121.5	230	69	158	132	117.5	No. EXS-3
125	5	125	357.5	151	122	56	184	210							
150	6	150	369.5	163	135	56	214	240							
200	8	196	396.5	190	161	60	258	290							
250	10	245	514	238	238	68	316	355	137	245.5	73	188	132	153	No. EXS-4
300	12	295	539	263	263	78	367	400							

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

### 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

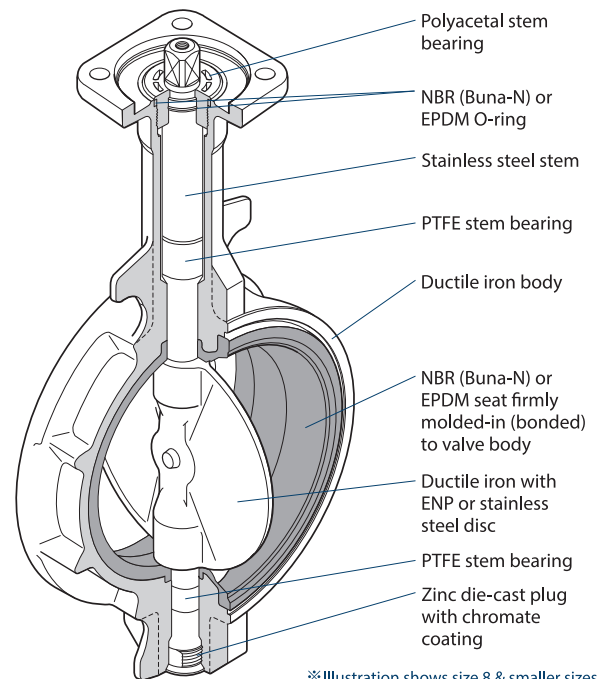
Prevention of external fluid leakage is maximized with a rubber O-ring assembled around the top stem and tight contact between spherically designed rubber seat and spherically designed top and bottom end of the disc.

#### 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

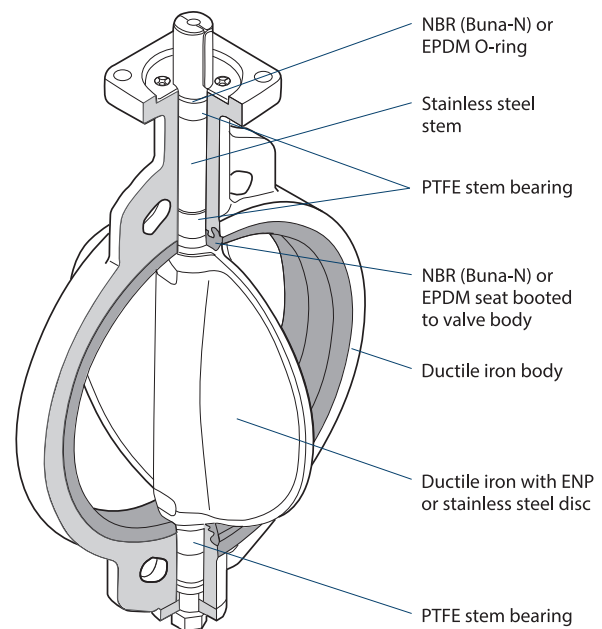
(Size 2 to 12)\*1



※ Illustration shows size 8 & smaller sizes

### Replaceable seat structure

(Size 14 to 24)\*2

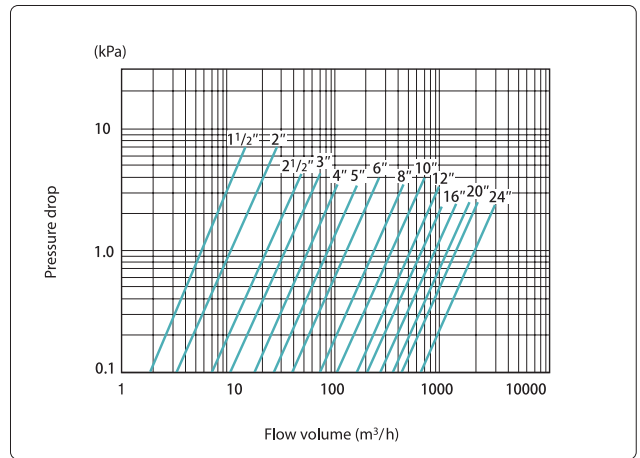


## Flow Coefficient (Cv)

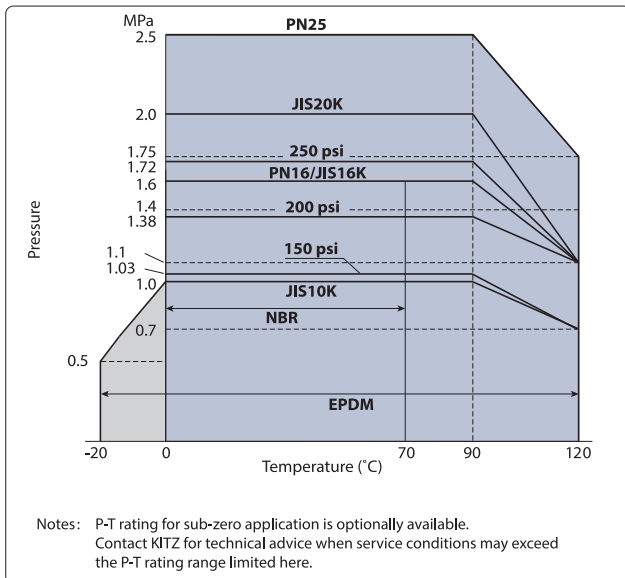
Size		Cv value	Size		Cv value
NPS	DN		NPS	DN	
1 1/2	40	77	10	250	4025
2	50	124	12	300	6010
2 1/2	65	270	14	350	7525
3	80	397	16	400	10080
4	100	671	18	450	13120
5	125	1013	20	500	15990
6	150	1532	24	600	23690
8	200	2792			

## Pressure Loss

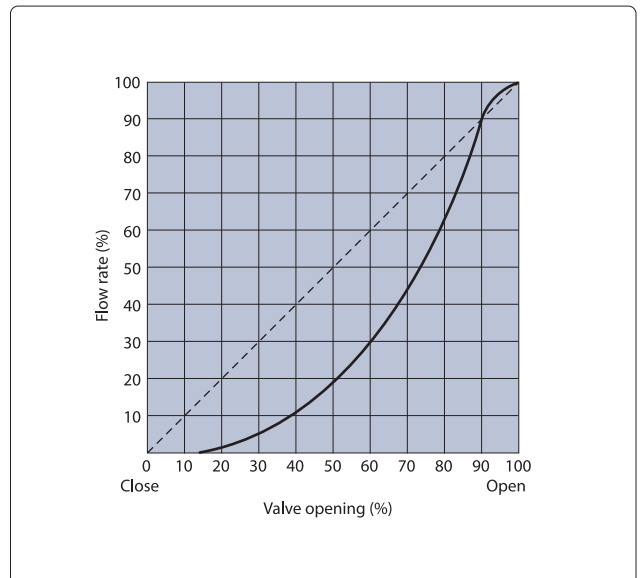
(for handling static clean water with valve fully open)



## P-T Rating



## Flow Characteristics



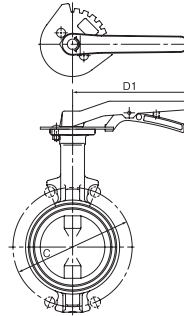
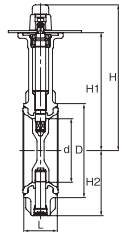
## Standard Materials

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

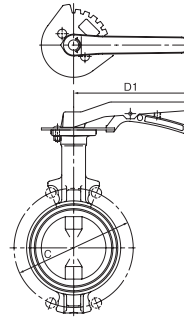
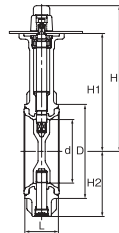
Size		d	H	H1	H2	L	D	C	D1
DN	NPS								
50	2	50	191	147	67	42.9	90	120.5	180
65	2½	65	199	155	75	46	104	139.5	180
80	3	80	217	173	91	46	124	152.5	180
100	4	100	227	183	101	52.3	146	190.5	180
125	5	125	265	211	127	55.6	176	216	230
150	6	150	277	223	139	55.6	206	241.5	230
200	8	197	295	248	169	60.5	257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

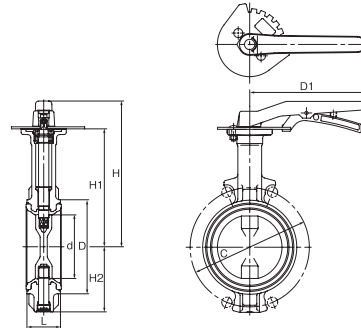
Disc and seat material coding. Please refer to page 1.

# Ductile Iron Butterfly Valves

**DJ** series

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

10DJ    
 16DJ    
 20DJ  E



Dimensions unit: mm

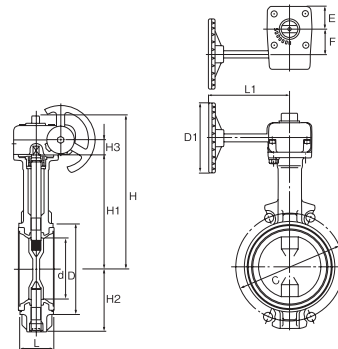
Size		d	H	H1	H2	L	D	C		D1
A	B							10DJ	16/20DJ	
40	1½	40	172	128	37	33	74	105	—	180
50	2	50	191	147	67	43	90	120	120	180
65	2½	65	199	155	75	46	104	140	140	180
80	3	80	217	173	91	46	124	150	160	180
100	4	100	227	183	101	52	146	175	185	180
125	5	125	265	211	127	56	176	210	225	230
150	6	150	277	223	139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

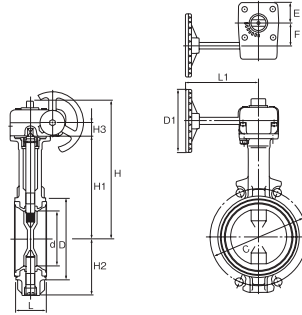
Size		d	H	H1	H2	L	D	C	H3	D1			L1			E	F	Gear type
DN	NPS									150	200	250	150	200	250			
50	2	50	194	147	67	42.9	90	120.5	18.5	80	80	80	122	122	122	29	28	No. 0
65	2½	65	202	155	75	46	104	139.5	18.5	80	80	80	122	122	122			
80	3	80	236	173	91	46	124	152.5	24	110	110	110	135	135	135			
100	4	100	246	183	101	52.3	146	190.5	24	110	110	110	135	135	135	36.5	40.5	No. 1
125	5	125	274	211	127	55.6	176	216	24	110	110	110	150	150	150			
150	6	150	286	223	139	55.6	206	241.5	24	110	110	110	150	150	150			
200	8	197	325	248	169	60.5	257	298.5	32	170	170	170	180	180	180	51	63	No. 2
250	10	246	381	304	219	68.3	312	362	32	170	170	250	180	180	250			
300	12	295	406	329	244	77.7	364	432	32	170	170	250	180	180	250			
350	14	334	447	360	309	77.7	407	476.5	47	310	—	—	220	—	—	54	66.5	No. FC-3
400	16	385	502	415	348	101.6	466	539.5	47	310	—	—	220	—	—			
450	18	434	526	439	365	114.3	522	578	47	310	—	—	220	—	—			
500	20	482	587	468	414	127	575	635	60	500	—	—	360	—	—	68	88.5	No. FC-4
600	24	579	635	536	463	153.9	680	749.5	60	500	—	—	360	—	—			

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

DN	Size		d	H	H1	H2	H3	L	D	C		D1		L1		E	F	Gear type
	NPS									PN16	PN25	PN16	PN25	PN16	PN25			
50	2		50	194	147	67	19	43	90	125	125	80	80	122	122	29	28	No. 0
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	No. 1
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	No. 2
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	No. FC-4
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	No. FC-6
600	24		579	671	536	472	65	154	680	770	—	500	—	400	—	90	134	

Dimensions (10DJ)

unit : mm

A	Size		d	H	H1	H2	H3	L	D	C	D1	L1	E	F	Gear type
	B														
40	1½		40	175	128	37	19	33	74	105	80	122	29	28	No. 0
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	No. 1
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	No. 2
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	No. FC-3
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	No. FC-4
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	No. FC-6
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	No. FC-7
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)

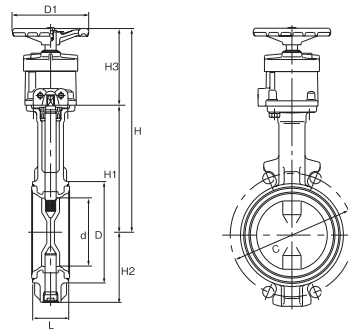
unit : mm

A	Size		d	H		H1	H2		H3		L	D		C	D1		L1		E		F		Gear type
	B			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	No. 0
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	No. 1
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	No. 2
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	—	No. FC-4
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	—	No. FC-6
600	24		579	671	—	536	472	—	65	—	154	680	—	770	500	—	400	—	90	—	134	—	

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

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

VG-10DJ



### Dimensions

unit: mm

Size		d	H	H1	H2	H3	L	D	C	D1	Gear type
A	B										
40	1½	40	251	128	37	123	33	74	105	110	No. VG-1
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	No. VG-2
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	No. RVA-03
350	14	333	569	360	309	209	78	407	445	360	
400	16	385	624	415	341	209	102	466	510	360	No. RVA-04
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	

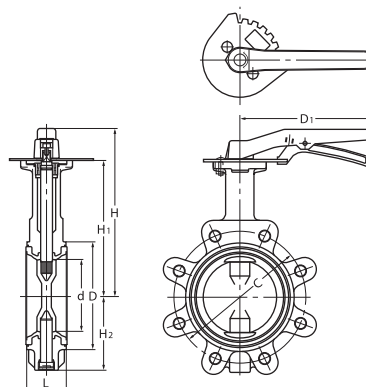
Disc and seat material coding. Please refer to page 1.

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

150DJL

200DJL

250DJL



### Dimensions

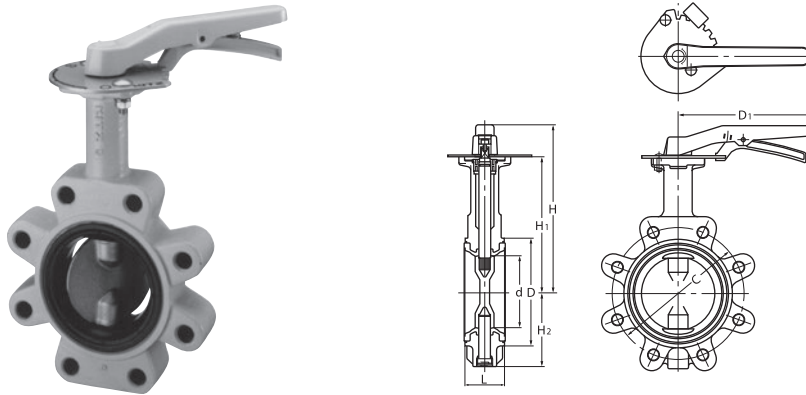
unit: mm

Size		d	H	H1	H2	L	D	C	D1
DN	NPS								
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

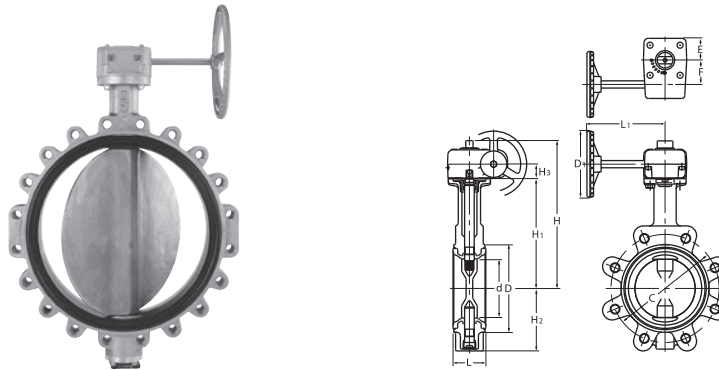
Size		d	H	H1	H2	L	D	C		D1
DN	NPS							PN16	PN25	
50	2	50	191	147	67	43	90	125	125	180
65	2½	65	199	155	75	46	104	145	145	180
80	3	80	217	173	91	46	124	160	160	180
100	4	100	227	183	104	52	146	180	190	180
125	5	125	265	211	127	56	176	210	220	230
150	6	150	277	223	139	56	206	240	250	230
200	8	197	295	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	Gear type
DN	NPS									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	No. 0
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	No. 1
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	No. 2
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	No. FC-3
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	No. FC-4
600	24	579	635	536	463	60	153.9	680	749.5	500	—	360	—	68	88.5	

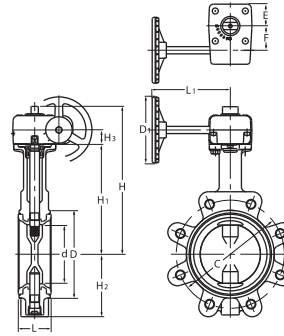
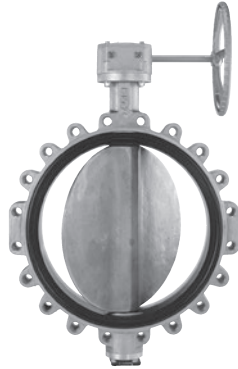
□ Disc and seat material coding. Please refer to page 1.

## 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	Gear type
DN	NPS								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	No. 0
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	No. 1
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	No. 2
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	No. FC-4
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	No. FC-6
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>1</sup>
<sup>1</sup> Obsolete Standard.	
Applicable standards	
Valve design	EN 593:2004
Coupling flanges	
Wafer type	EN1092 PN6, PN10, PN16 BS10 Table E ASME Class125, Class150

#### Cv value

Size		Open degree							
DN	NPS	20°	30°	40°	50°	60°	70°	80°	90°
50	2	8	17	29	42	56	75	86	88
65	2½	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

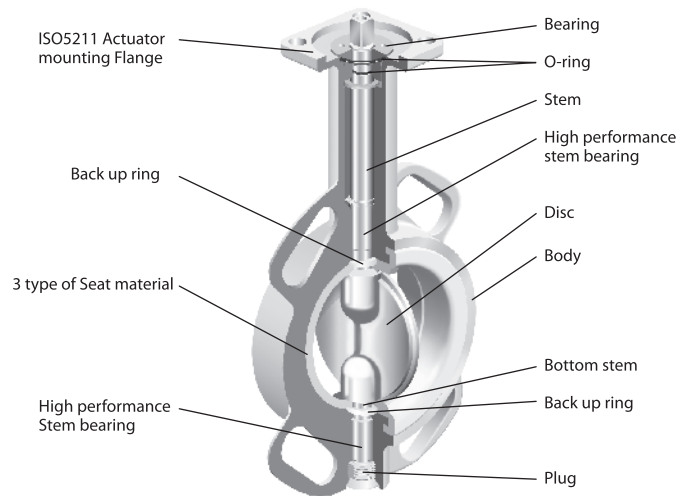
All the sizes are suitable for the flanges of EN1092 PN6, PN10, PN16/BS10 Table E / ASME Class 125 and Class 150.

##### 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 [AISI 410]
Disc	Stainless Steel [A351 Gr.CF8M]
Seat	W-NBR (White NBR) VMQ (Silicone rubber) FKM (Fluoro rubber)
O-ring	FKM
Bearing	Multi-layered bearing*
Stem bearing	Multi-layered bearing*
Plug	Zinc die-cast
Bottom stem	Stainless Steel [AISI 410]

##### 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.

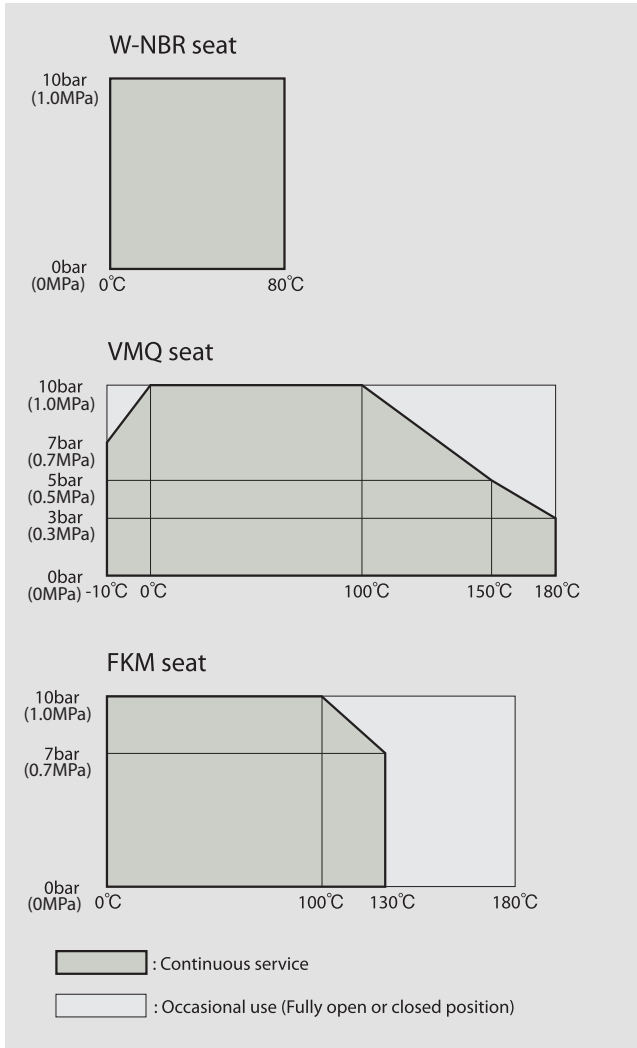
##### Stainless steel bearing features

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.

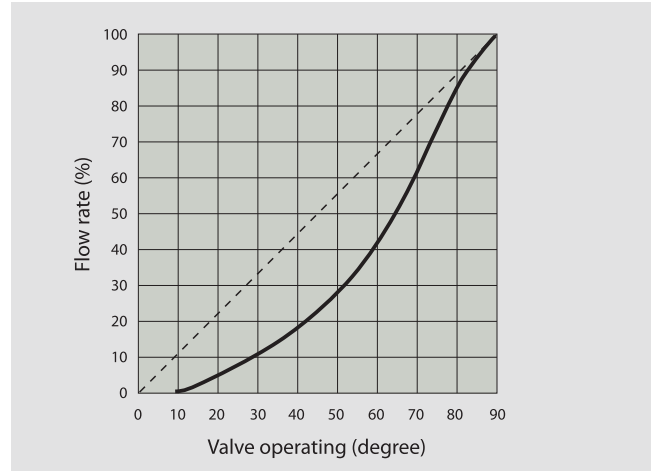
##### Polished disc

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

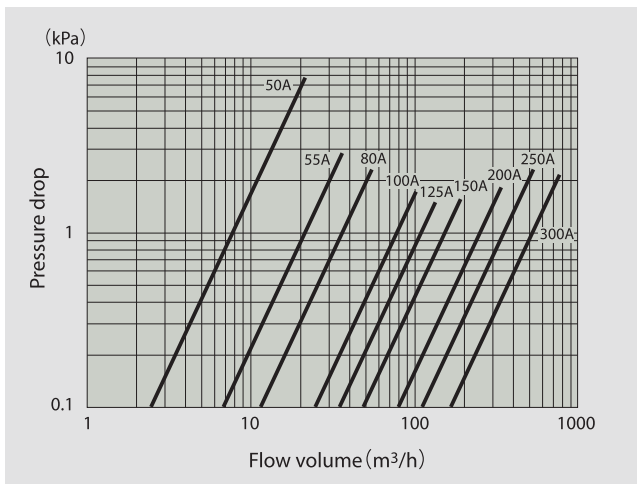
## P-T Rating



## Flow Characteristics



## Pressure Loss



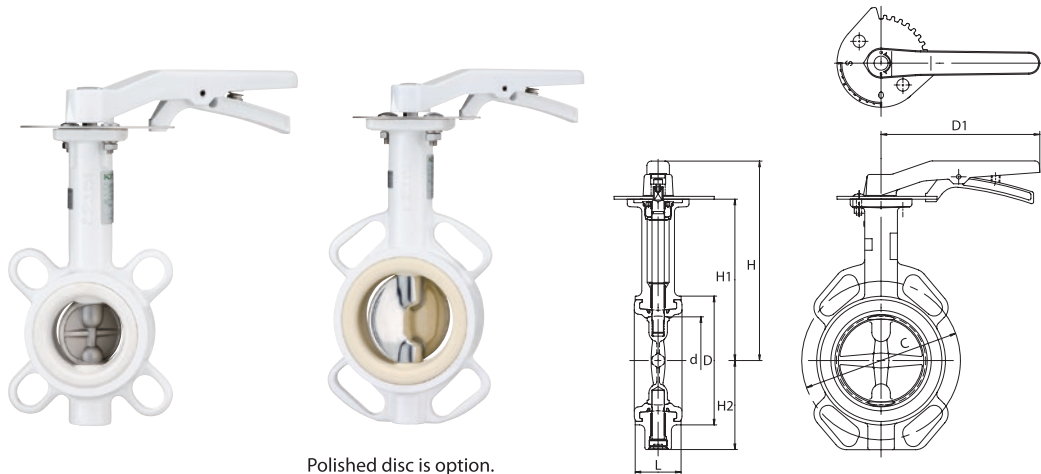
Wafer Type

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
DN	NPS								
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

# Ductile Iron PFA Lined Butterfly Valves

LJseries

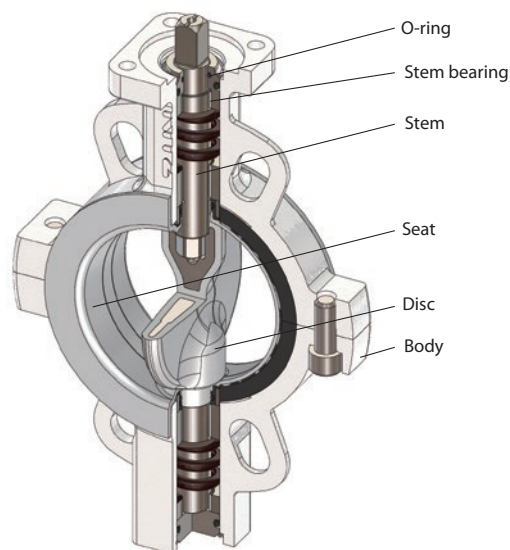
**PFA lined Butterfly valves applicable to high corrosive fluids.**

## Specification

- Size ..... 50 to 300mm (2" to 12")
- Product code ..... 10LJF
- Maximum service pressure ..... 1.0MPa
- Service temperature range ..... -10 to +150°C  
Note: Refer to Pressure-Temperature Ratings.
- Coupling flanges ..... JIS2220 / 2239 10K  
Note: JIS5K and ASME Class 150 are optional.
- Automatic operation ..... Please contact us

## Standard Materials

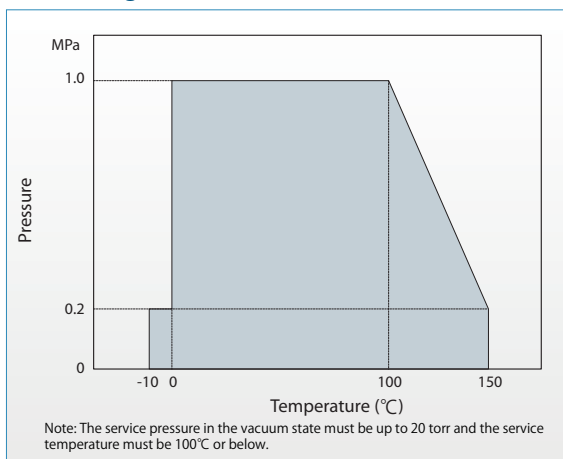
Parts	Materials
Body	FCD450-10
Disc	SCS13A+PFA
Seat Liner	PFA
Back Up Rubber	FKM



## Feature

- Various fluids can be applicable for PFA-lined internal wetted parts.
- High-grade PFA prevents troubles from corrosive fluids permeation.
- Sealing mechanism with coil springs realizes high sealing performance.
- Original stem sealing design prevents external fluid leakage.
- Easy maintenance with easily disassembled stem and disk.
- Top flange according to ISO 5211.
- Blowout-proof stem.

## P-T Rating



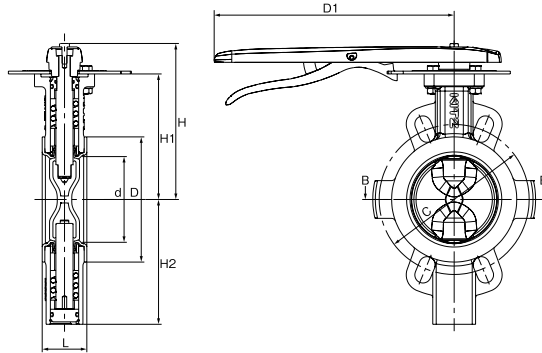
This product is designated as Strategic Materials in the Foreign Exchange and Foreign Trade Law. If you export, you need an export license based on the law. Please contact us for details.

## CAUTION

- Note1: Do not damage the PFA seat when handling this product.
- Note2: Do not store the valve in the place exposed to direct sunlight.
- Note3: Installation of gaskets between the valve and flange is not required with accurate centering of each pair of upstream and downstream pipes, and with clean flanges and pipe bores that must be cleaned thoroughly to remove welding spatters, and foreign objects that may have been left inside.
- Note4: In case of necessity, use PFA solid gaskets which have a minimum of 3 mm in thickness. (Rubber materials are not allowed.)

## Lever Operated

10LJF



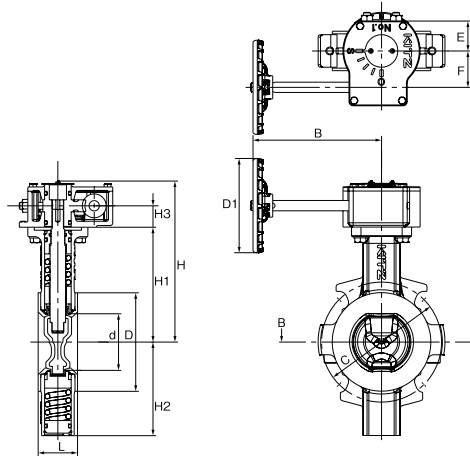
■ Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C	D1
A	B								
50	2	54	155	122	102	43	90	120	230
65	2½	66	171	134	110	46	115	140	280
80	3	80	178	142	139	46	126	150	
100	4	100	182	147	146	52	146	175	350
125	5	125	217	181	178	56	181	210	
150	6	150	230	194	191	56	211	240	

## Gear Operated

G-10LJF



■ Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C	Gear Unit					
A	B								H3	D1	B	E	F	Size
50	2	54	175	122	102	43	90	120	25	110	150	35	42	No. FC-1
65	2½	66	188	134	110	46	115	140						
80	3	80	195	142	139	46	126	150						
100	4	100	200	147	146	52	146	175	28	170	180	42	60	No. FC-2
125	5	125	238	181	178	56	181	210						
150	6	150	253	194	191	56	211	240						
200	8	197	287	228	223	60	257	290	47	310	280	54	66	No. FC-3
250	10	246	357	272	272	68	316	355						
300	12	296	382	297	297	78	363	400						

**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 1½" 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	304SS	
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>	
Seat retainer	304SS	
Gland packing	PTFE	
Gasket	PTFE	

## Feature

### Double-eccentric Kinematics

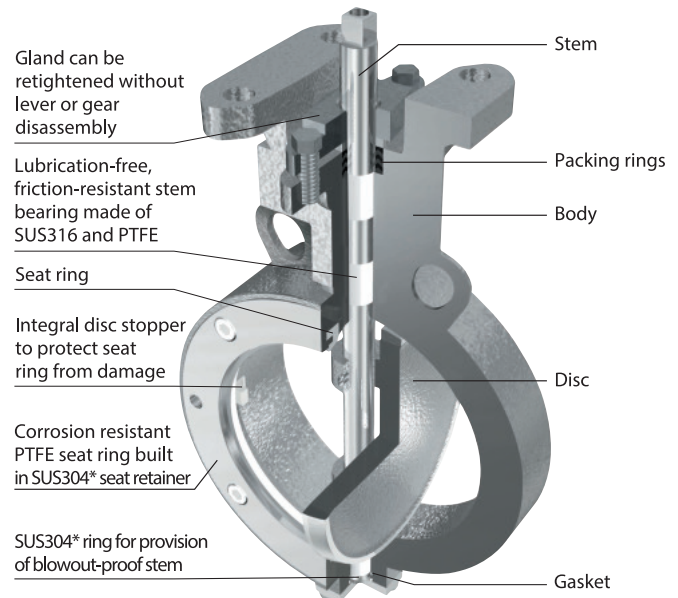
The valve's stem is designed eccentric to both the center of the seat ring (by X) and the center of the valve body (by Y), which makes the clearance C between the seat ring and the disc seat surface on its fully open position (Fig. 1). Disc seating surface is spherically machined and contacts PTFE seat 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

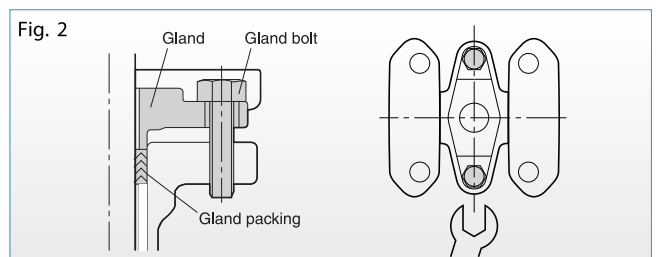
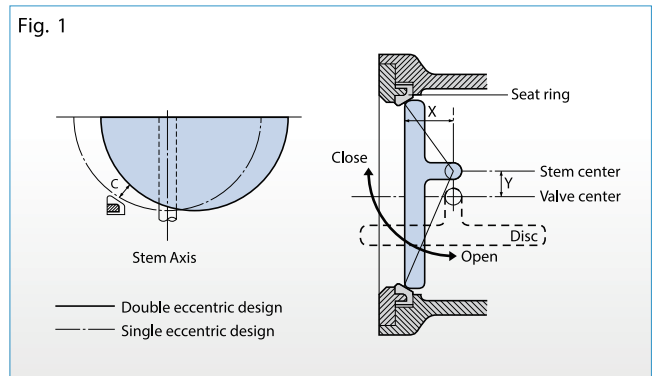
There is a room between the gland and the lever or gear to allow retightening of gland boltings without trouble of disassembly of the lever or gear during plant operation (Fig. 2).



\*SCS14A or SUS316 is available as an option

Parts	ASTM Materials	JIS Materials
Set bolt	Stainless Steel	
Taper pin	316SS	
Stem bearing	METAL BACKED PTFE	
Gland bolts	Stainless Steel	
Thrust washer	PTFE	
End plate	A351 Gr.CF8	SCS13A
End plate bolts	304SS	

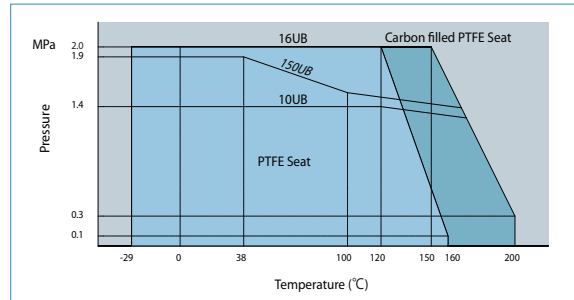
\*1. CF8M(316)/SCS14A(SUS316) is available as an option.  
\*2. Carbon filled PTFE seat rings are optionally available.



### Flow Coefficient (Cv)

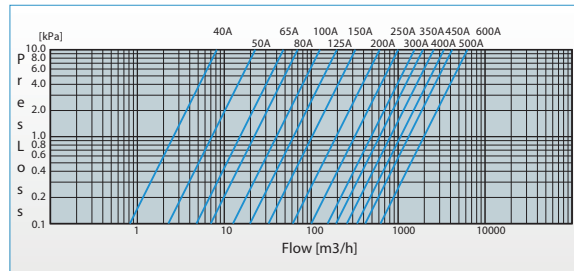
Size		Cv value	Size		Cv value
DN	NPS		DN	NPS	
40	1 1/2	30	250	10	3660
50	2	83	300	12	5640
65	2 1/2	175	350	14	7060
80	3	255	400	16	9390
100	4	460	450	18	12300
125	5	722	500	20	15300
150	6	1180	600	24	22900
200	8	2240			—

### P-T Rating

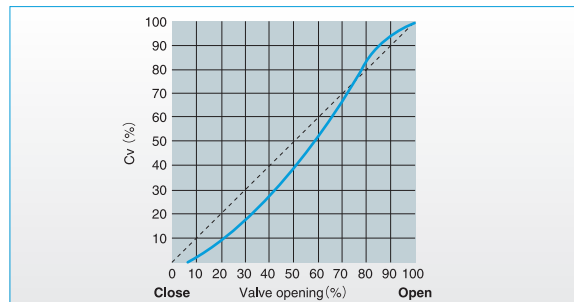


Contact KITZ for technical advice when service conditions may exceed the P-T rating range limited here.

### 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

unit: mm

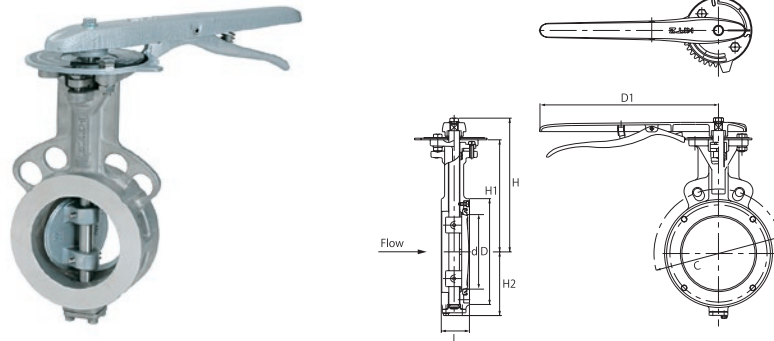
Size		I / D		O / D	Thickness
DN	NPS	Min.	Max.	Min.	Min.
40	1 1/2	48	57	73	3
50	2	60	61	90	3
65	2 1/2	73	77	115	3
80	3	88	90	126	3
100	4	108	116	146	3
125	5	136	143	181	3
150	6	162	170	211	3
200	8	213	220	257	3
250	10	266	275	322	3
300	12	312	326	367	3
350	14	342	359	410	3
400	16	389	410	470	3
450	18	444	460	530	3
500	20	493	513	580	3
600	24	594	615	688	3

### 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.
- Retighten the gland bolts before operation of the valve. Check a handle torque while retightening the bolts so that the operation won't become too difficult due to over-tightening. The gland bolts should be alternately tightened with an even force. Even if leakage is observed from the gland section due to stress relaxation, make sure to retighten the gland bolts.

## Lever Operated

10UB  
150UB



### Dimensions

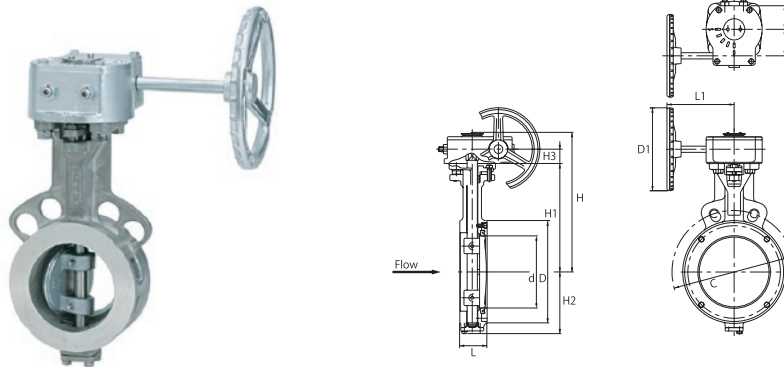
unit: mm

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

\*1 GL-10UB only.

\*2 GL-10UB:149

### Original seat configuration and material for stable sealing performance Double eccentric structure and RPTFE seat.

#### Specification

● Valve nominal size	SHB ..... 50 <sup>A</sup> ~ 300 <sup>A</sup> UHB ..... 40 <sup>A</sup> ~ 300 <sup>A</sup>
● Applicable flange	5UHB ..... JIS 5K 10SHB • 10UHB ..... JIS 10K 16SHB • 20UHB ..... JIS 16K (JIS 20K) 150SHB • 150UHB ..... ASME Class150
● Maximum allowable pressure	5UHB ..... 0.7MPa 10SHB • 10UHB ..... 1.4MPa 20SHB • 20UHB ..... 2.0MPa 150SHB • 150UHB ..... 1.72MPa
● Service temperature range	SHB ..... -10 ~ +200°C UHB ..... -29 ~ +200°C
● Face-to-face dimensions	..... JJIS B 2002 46 series
● Flow direction	..... Bidirectional flow ※Recommended flow direction: Flow pressure from the retainer side
● Applicable gaskets (commercially available gaskets)	..... Joint seats (Minimum thickness 1.5 mm) Spiral wound gaskets / Envelope gaskets
● Automatic valves	..... Contact KITZ Corporation for details.

#### Feature

##### RPTFE seat rings for various types of fluids

- Chemical-resistant RPTFE is adopted as seat material, so that it can be used for fluids that cannot be handled with rubber seats. (See the table for "Corrosion resistance level of materials of disc and seat against fluid" on page 4.)

##### Double eccentric structure for stable sealing performance

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

##### Easy retightening of packing

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

##### Original seat configuration for high durability (patented)

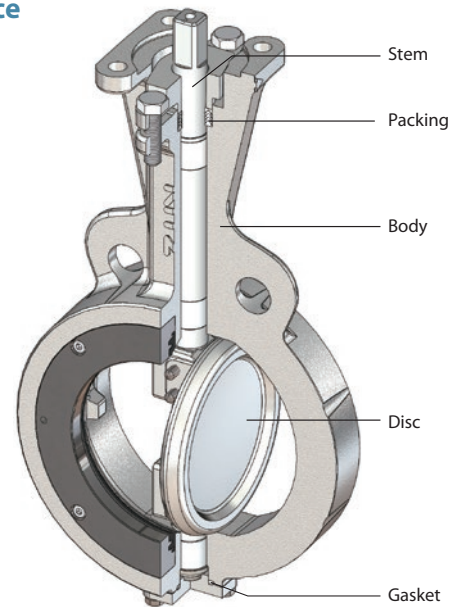
##### Bidirectional flow

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

##### Applicable to commercially-available pipe gaskets

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

##### Top flange dimensions according to ISO 5211

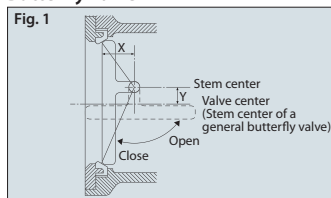


※This illustration shows the structure of size 100<sup>A</sup>.

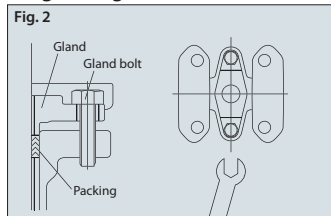
#### Standard Materials

Parts	Material	
	SHB	UHB
Body	FCD450-10	SUS13A/A351 Gr.CF8
Stem	SUS420J2	SUS304N2
Disc	SCS13A+Cr plated	
Gland	SCS13A	
Seat ring	RPTFE (Carbon fiber-filled PTFE)	
Seat retainer	S45C	SUS304
Stem bearing	PTFE (Metal backed)	
Gland packing	PTFE	
Gasket	PTFE	

#### Structural Drawing of Double Eccentric Butterfly Valve



#### Retightening of Gland Bolts



#### Cv

Nominal size	Rated CV value	
	A	B
50	2	64
65	2 1/2	112
80	3	199
100	4	372
125	5	569
150	6	838
200	8	1669
250	10	3088
300	12	4502

### CAUTION

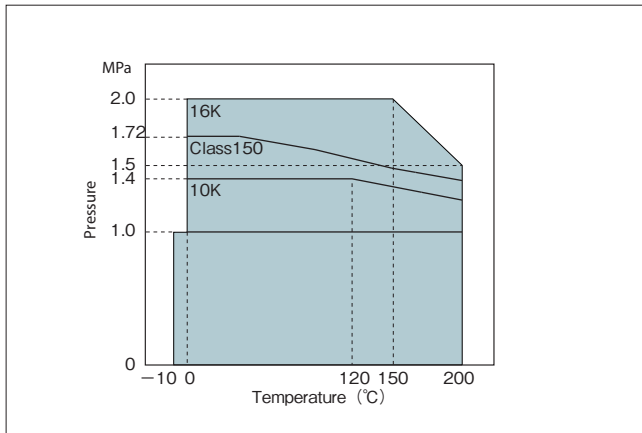
- HB series butterfly valves must be installed according to the arrow direction indicated on the body.
- When HB series butterfly valves are used for bidirectional service, align the flow direction with the arrow which indicates the flow direction from the higher pressure side to the lower pressure side.
- HB series butterfly valves can be used with joint seats (minimum thickness 1.5 mm), spiral wound gaskets and PTFE envelope gaskets conforming to the applicable standards.
- HB series butterfly valves cannot be used with stub ends (lap joints, stainless steel pipe joints with flanged pipe end).
- HB series butterfly valves adopt gland structure. Retighten the gland bolts before operation of the valve. Check the handle torque while retightening the bolts so that the operation will not become too difficult due to over-tightening. Tighten the gland bolts alternately with even force. Retighten the gland bolts if leakage from the gland section due to stress relaxation is observed.
- Do not cover the gland with insulation material. Keep the gland uncovered to retighten the gland.

High pressure (upstream) side in the valve fully closed position

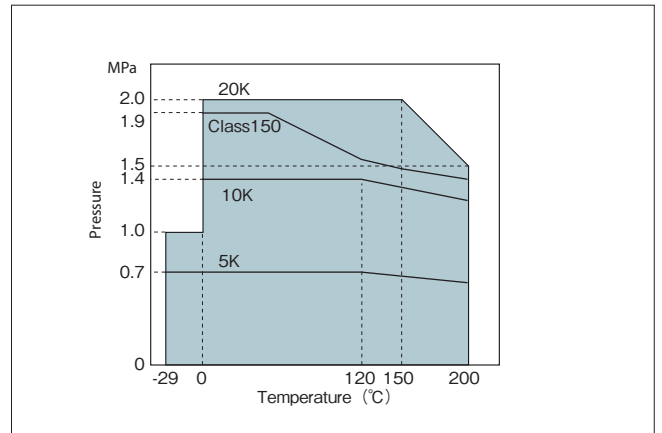
Low pressure (downstream) side in the valve fully closed position

## Double Eccentric Butterfly Valves

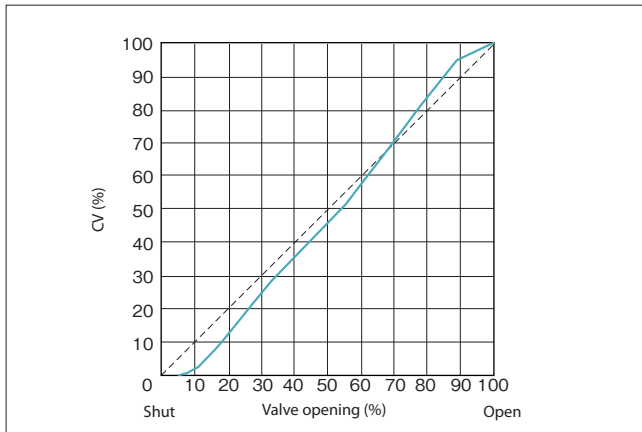
### P-T Rating (SHB series)



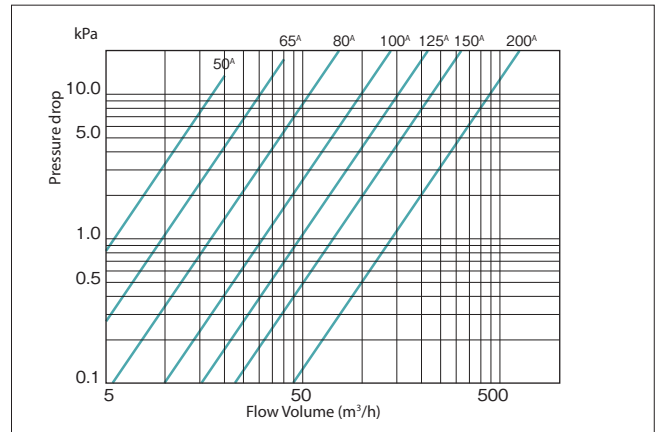
### P-T Rating (UHB series)



### Flow Characteristics



### Pressure Loss



## Double Eccentric Butterfly Valves

### 10K · 16K · Class150 Lever Operated / Gear Operated

HB

Valve operator

None: Lever

G: Gear

Class

10: JIS10K

10: JIS16K (SHB only)

20: JIS20K (UHB only)

150: Class150

Body material

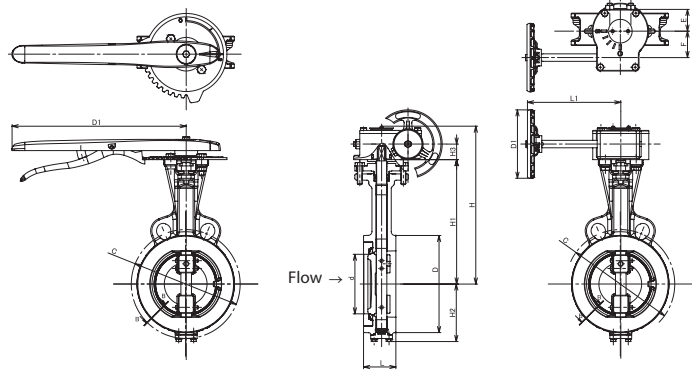
S: FCD450-10

U: SUS13A



Lever type

Gear type



#### Dimensions

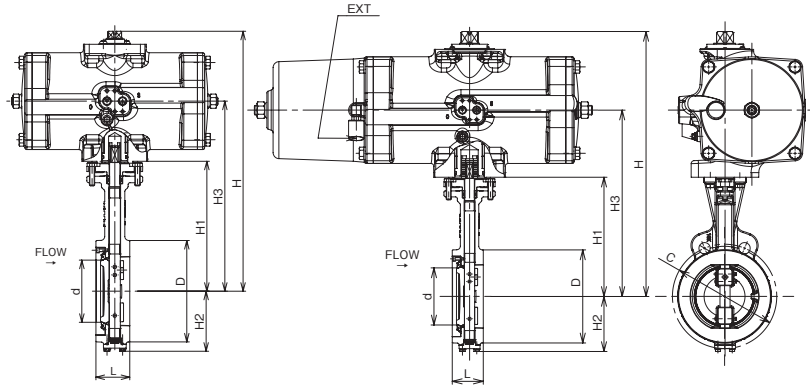
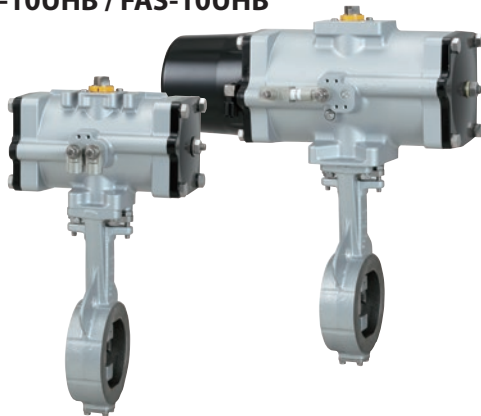
unit: mm

Size		d	H		H1	H2	H3	L	D	C			h			D1		Gear type
A	B		Lever	Gear						10K	16K/20K	150	10K	16K/20K	150	Lever	Gear	
40	1	36	183	202	149	58	25	33	81	105						230	110	No. FC-1
50	2	48	190	209	155	64	25	43	101	120	120	120.5	19	19	19	230		No. FC-1
65	2	59	203	222	168	74	25	46	121	140	140	139.5	19	19	19	230		
80	3	75	223	240	186	82	25	46	131	150	160	152.5	19	23	19	280		
100	4	96	237	254	200	92	25	52	156	175	185	190.5	19	23	19	280		No. FC-2
125	5	119	258	280	221	111	28	56	187	210	225	216	23	25	22	350		
150	6	142	275	297	238	142	28	56	215	240	260	241.5	23	25	22	350		No. FC-2
200	8	188	—	324	265	177 <sup>*1</sup>	28	60	267	290	305	298.5	23	25	22	350		
250	10	234	—	401	317	228	47	68	330	355	380	362	—	—	—	—	—	No. FC-3
300	12	283	—	429	344	266	47	78	374	400	430	432	—	—	—	—	—	

\*1 : 189 in case of UHB

### FA Type Pneumatically Operated

#### FA-10UHB / FAS-10UHB



#### Dimensions

unit: mm

Size		d	H		H1	H2	H3		L	D	C	Actuator	
A	B		FA	FAS			FA	FAS				FA	Fas
50	2	48	301	317	155	64	221	231	43	101	120	No. FA-2	No. FAS-3
65	2½	59	314	368	168	74	234	261	46	121	140		No. FAS-4
80	3	75	348	386	186	82	262	279	46	131	150	No. FA-3	No. FAS-5
100	4	96	400	445	200	92	293	313	52	156	175	No. FA-4	
125	5	119	421	495	221	111	314	343	56	187	210	No. FA-5	No. FAS-6
150	6	142	483	512	238	142	351	360	56	215	240		—
200	8	188	580	—	265	177	448	—	60	267	290	—	—

# Double Eccentric Butterfly Valves

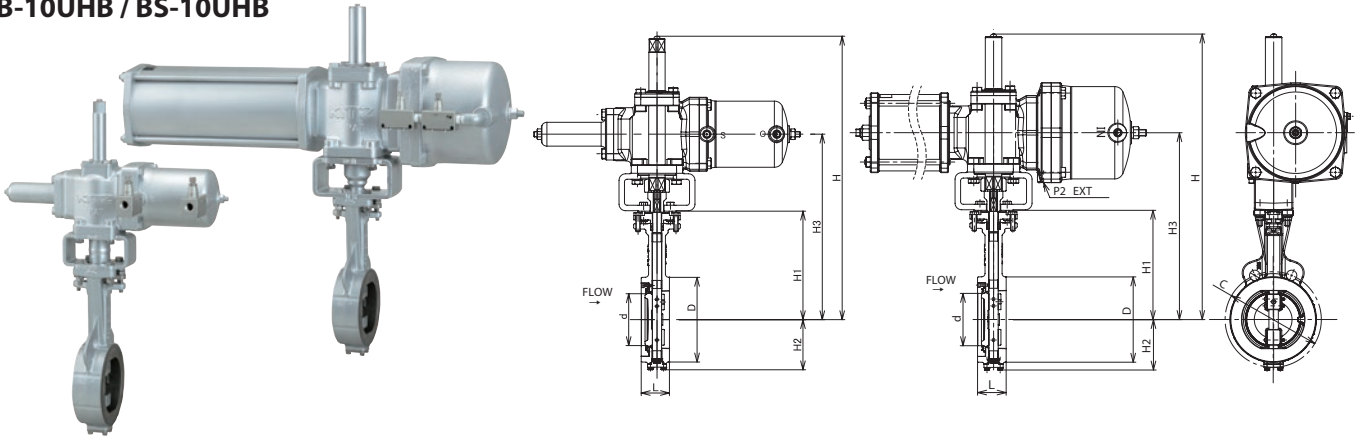
# HBseries

## B Type

## Pneumatically Operated

See page 00 for pressure-temperature range.

### B-10UHB / BS-10UHB



#### Dimensions

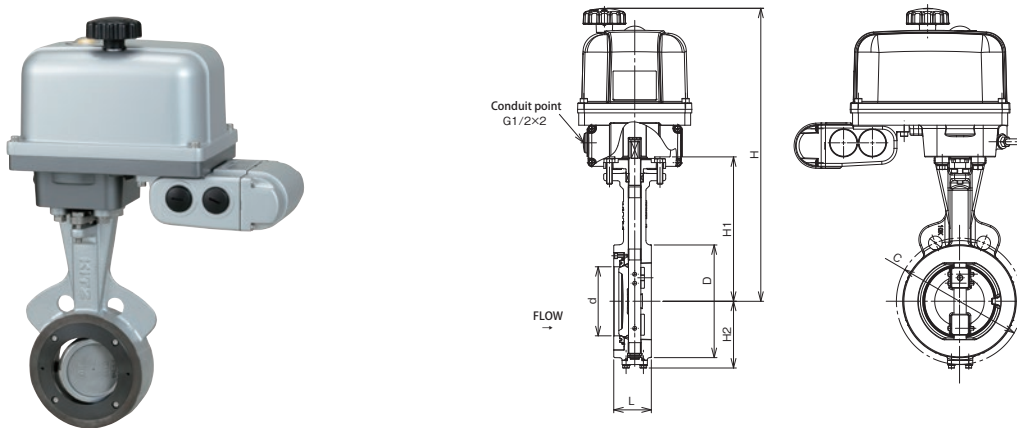
unit: mm

Size		d	H		H1	H2	H3		L	D	C	Actuator	
A	B		B	BS			B	BS				B	BS
50	2	48	403	403	155	64	262	262	43	101	120	No. B-1	No. BS(W)-1
65	2 ½	59	431	431	168	74	277	277	46	121	140	No. B-2	No. BS(W)-2
80	3	75	449	509	186	82	295	328	46	131	150	No. B-3	No. BS(W)-3
100	4	96	523	523	200	92	342	342	52	156	175		No. BS(W)-4
125	5	119	544	544	221	111	363	363	56	187	210	No. B-4	No. BS(W)-4
150	6	142	561	644	238	142	380	413	56	215	240		No. BS(W)-4
200	8	188	685	685	265	177	454	454	60	267	290	No. B-4	No. BS(W)-4

## EX Type

## Electrically Operated

### EXS-10UHB



#### Dimensions

unit: mm

Size		d	H	H1	H2	L	D	C	Actuator
A	B								
50	2	48	336	155	64	43	101	120	No. EXS-2
65	2 ½	59	349	168	74	46	121	140	
80	3	75	393	186	82	46	131	150	No. EXS-3
100	4	96	407	200	92	52	156	175	
125	5	119	428	221	111	56	187	210	No. EXS-4
150	6	142	515	238	142	56	215	240	
200	8	188	612	265	177	60	267	290	No. EXS-4

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

### Specification

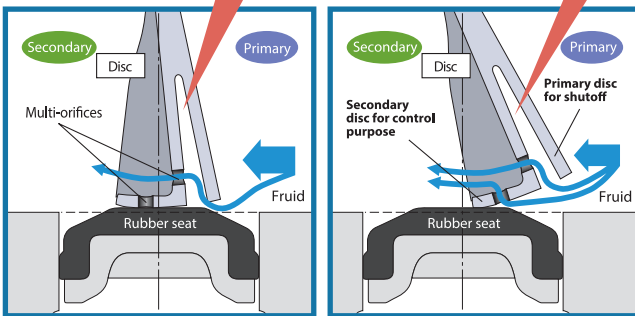
- Maximum service pressure ..... 1.0 MPa
- Service temperature range EPDM ..... -20°C to +120°C
- Continuous service temperature range ..... 0 ~ +100°C  
Note: Refer to Pressure-Temperature Ratings in next page.
- Rangeability ..... 160: 1
- Flow characteristics ..... Equal percentage flow characteristics
- Sealing 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.

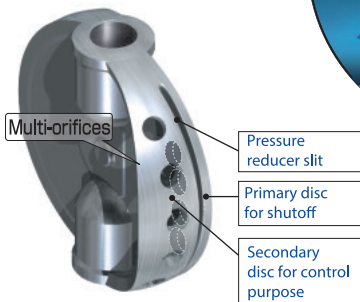
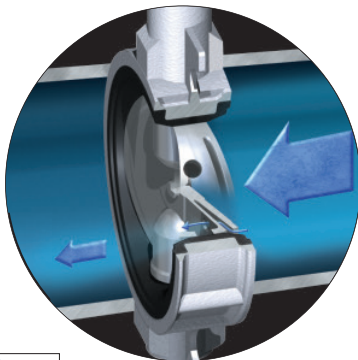


At low degree of opening: 1

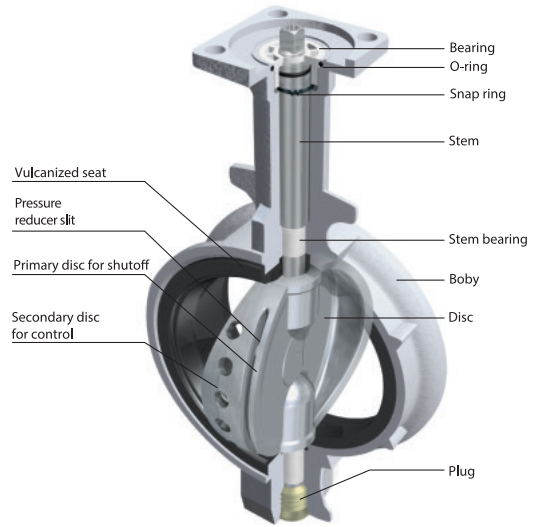
At low degree of opening: 2

#### 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.

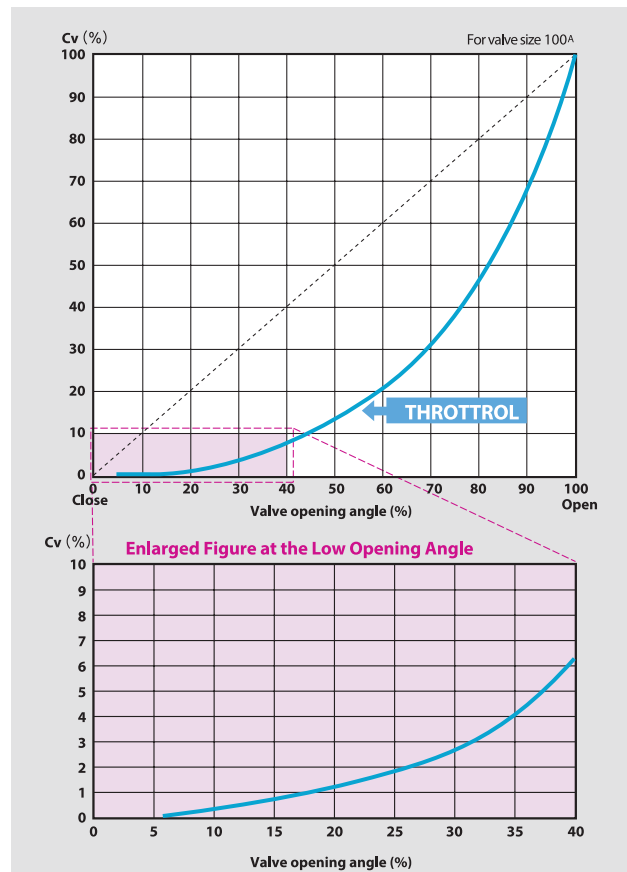


### Standard Materials

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

Parts	Material
Body	FCD450-10
Stem	SUS630
Disc	A351 Gr. CF8 / 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> )

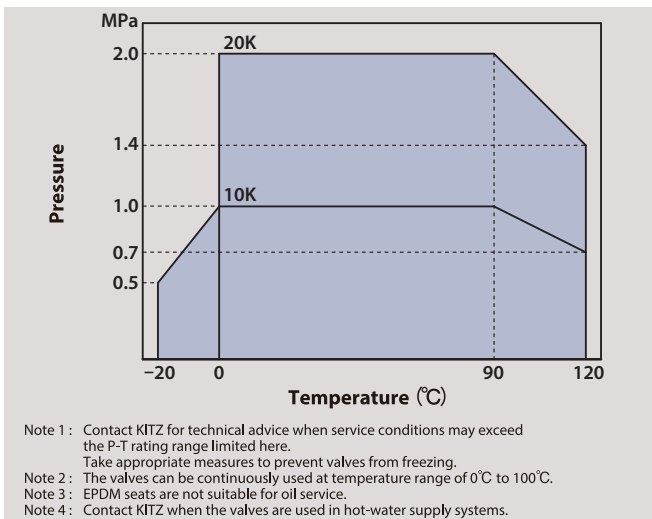
### Flow Characteristic Curve



## 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

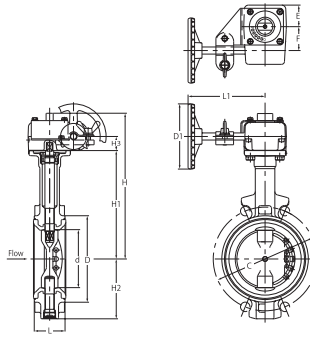


## CAUTION

- 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



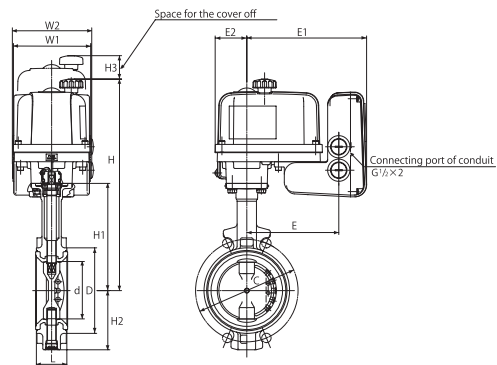
#### Dimensions

unit: mm

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

### 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	
A	B							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	
80	3	80	354	173	91	46	124	150	160	131	132	157	206.5	54	107.5	
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	
150	6	150	429.5	223	139	56	206	240	260	158	132	180.5	230	69	117.5	Size 4
200	8	197	524	248	169	60	257	290	305	188	132	196	245.5	73	153	
250	10	247	580	304	219	68	312	355	380	188	132	196	245.5	73	153	
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)

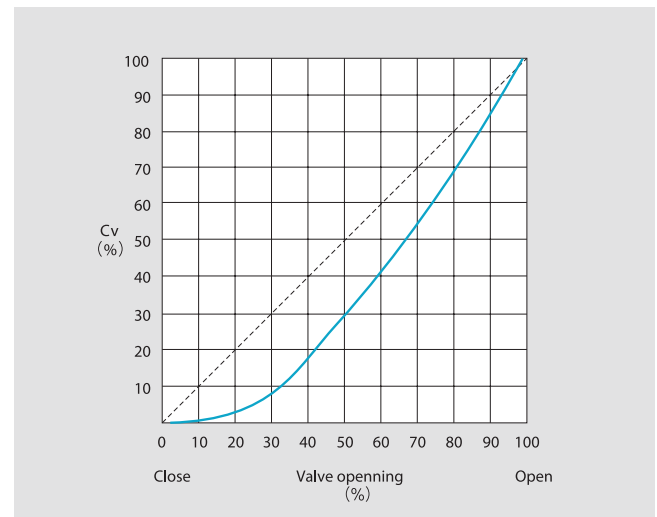
Size		Cv
A	B	
50	2	104
65	2 1/2	174
80	3	348
100	4	557
125	5	905
150	6	1183
200	8	2575
250	10	4037
300	12	6264

### Standard Materials

Parts	Material
Body	FC250+HCr
Stem	403SS
Disc	SUS430
Gland	C3604
Gland packing	Flexible Graphite
Disc nut	304SS
Disc bolt	304SS
Index plate	Carbon Steel
Set bolt	Carbon Steel
Bottom stem	403SS

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

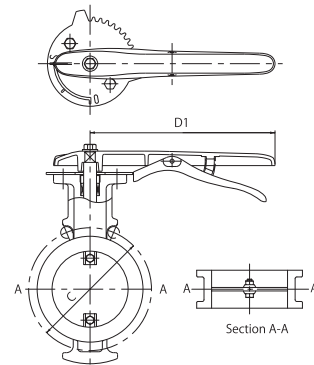
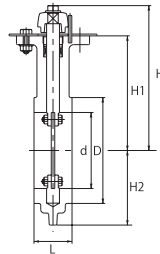
### Flow Characteristics



### Type D

### Lever Operated

10D



#### Dimensions

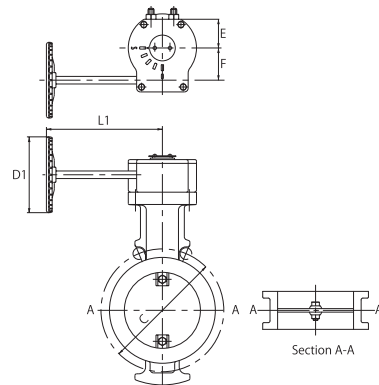
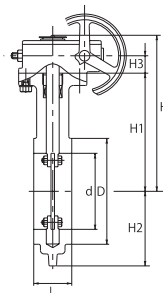
unit: mm

Size		d	H	H1	H2	L	D	C	D1
A	B								
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



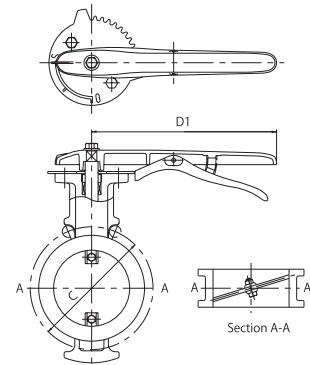
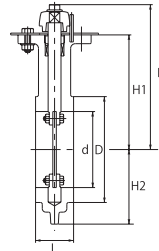
#### Dimensions

unit: mm

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

## Type A Lever Operated

10A



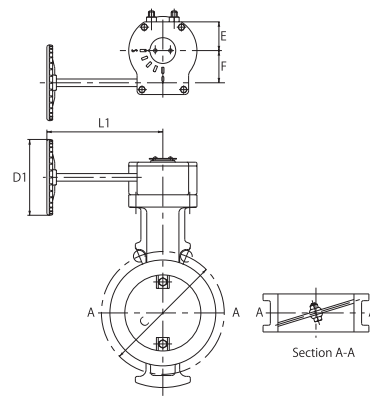
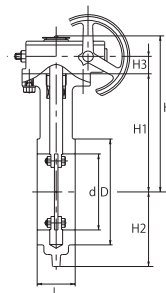
### Dimensions

unit : mm

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

## 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.

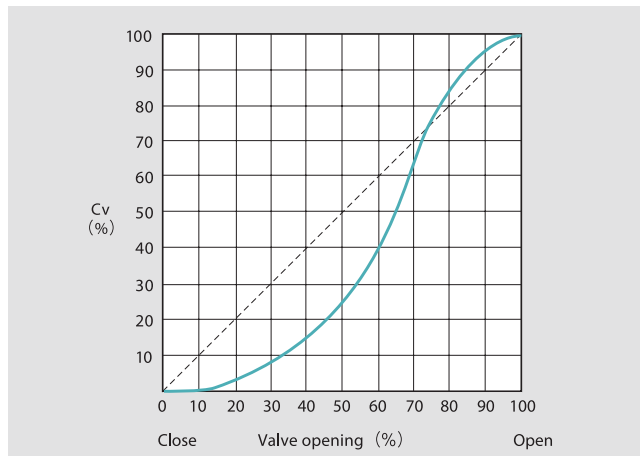
#### Capable of flow volume control

- 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

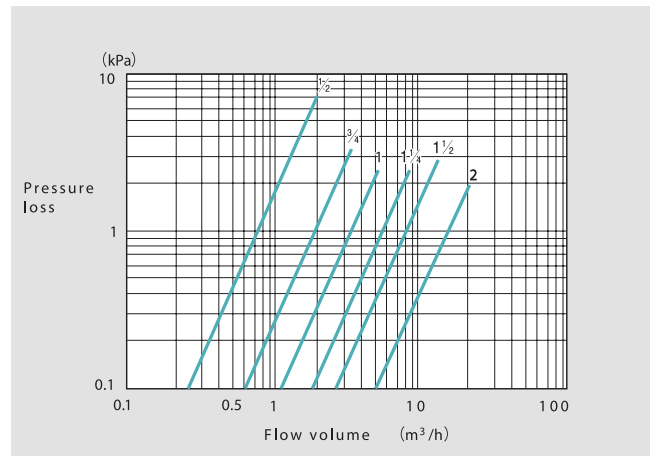
### Cv

Size		Cv
A	B	
15	$\frac{1}{2}$	8.7
20	$\frac{3}{4}$	21
25	1	39
32	$1\frac{1}{4}$	66
40	$1\frac{1}{2}$	94
50	2	176

### CAUTION

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

### Pressure Loss

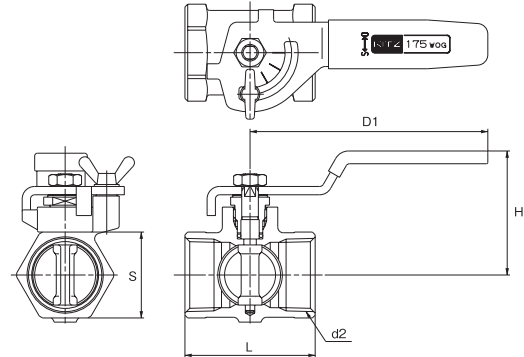


# KITZ Threaded Compact Butterfly Valves

**KITZ**  
**BUTTER**series

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

**FV**



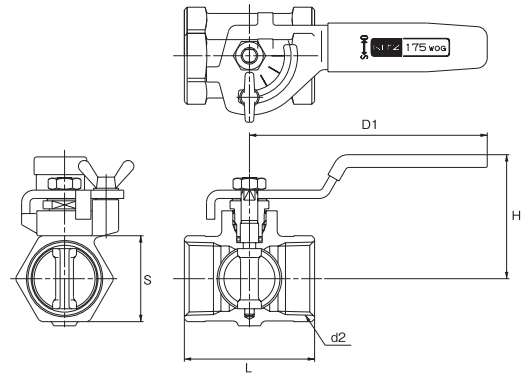
■ Dimensions unit: mm

Size		d2	H	D1	L	S
A	B					
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
A	B					
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.

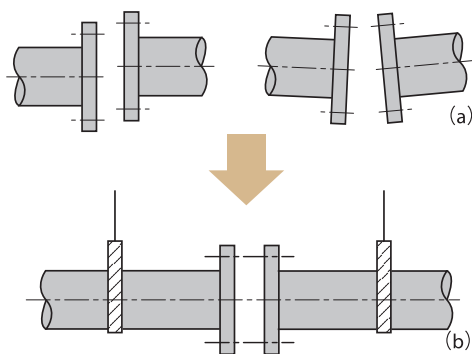
## Storage and Handling

- 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

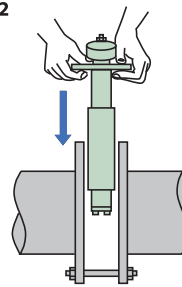
- Valves must be mounted on flanges only after flanges have been welded to pipes and cooled down to the ambient temperature. Otherwise, the welding heat may affect the quality of the resilient seats.
- Edges of welded flanges must be machined to achieve a smooth surface finish so that they will not damage 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.

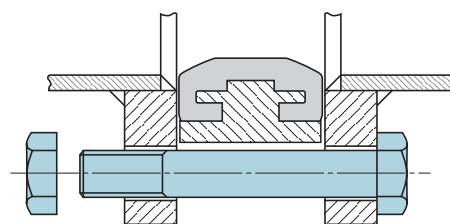
Fig. 2



Recommended torque values

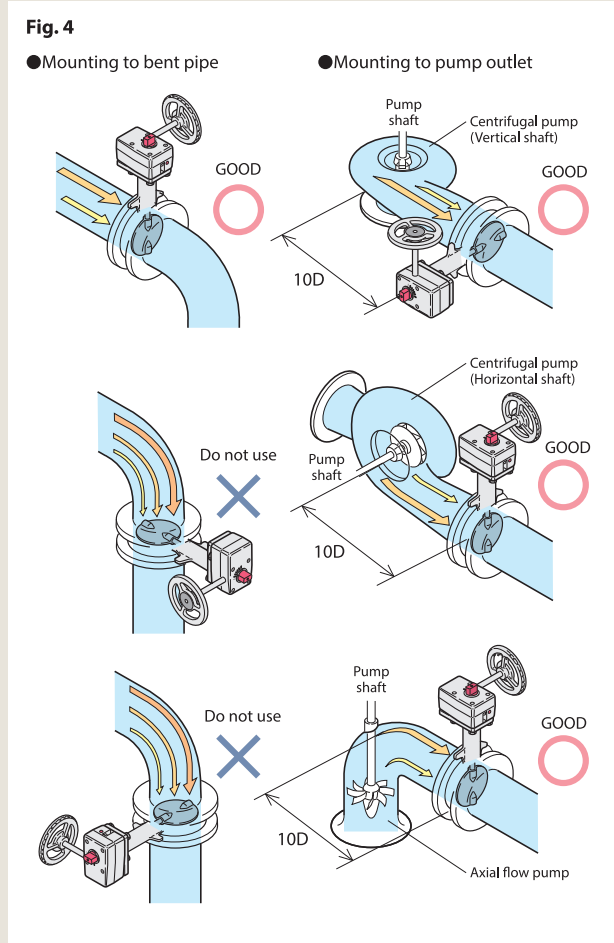
DN	N · m (kgf · m)
40	49(5)
50	
65	
80	
100	
125	88(9)
150	
200	
250	118(12)
300	

Fig. 3

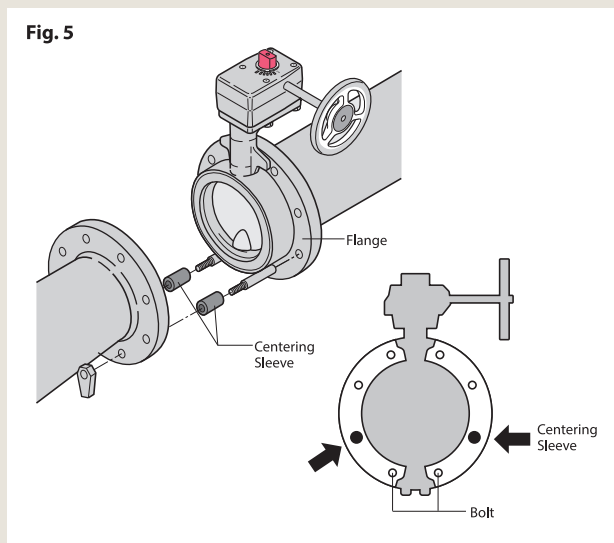


- For mounting actuated valves, provide valve supports to prevent bending of valve necks and reduce valve and pipe vibration.
- Do not step on valve necks or valve hand-wheels.
- Do not mount butterfly valves directly to check valves or pumps; this may result in damage caused by the disc contacts.
- 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.



**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.



## 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.

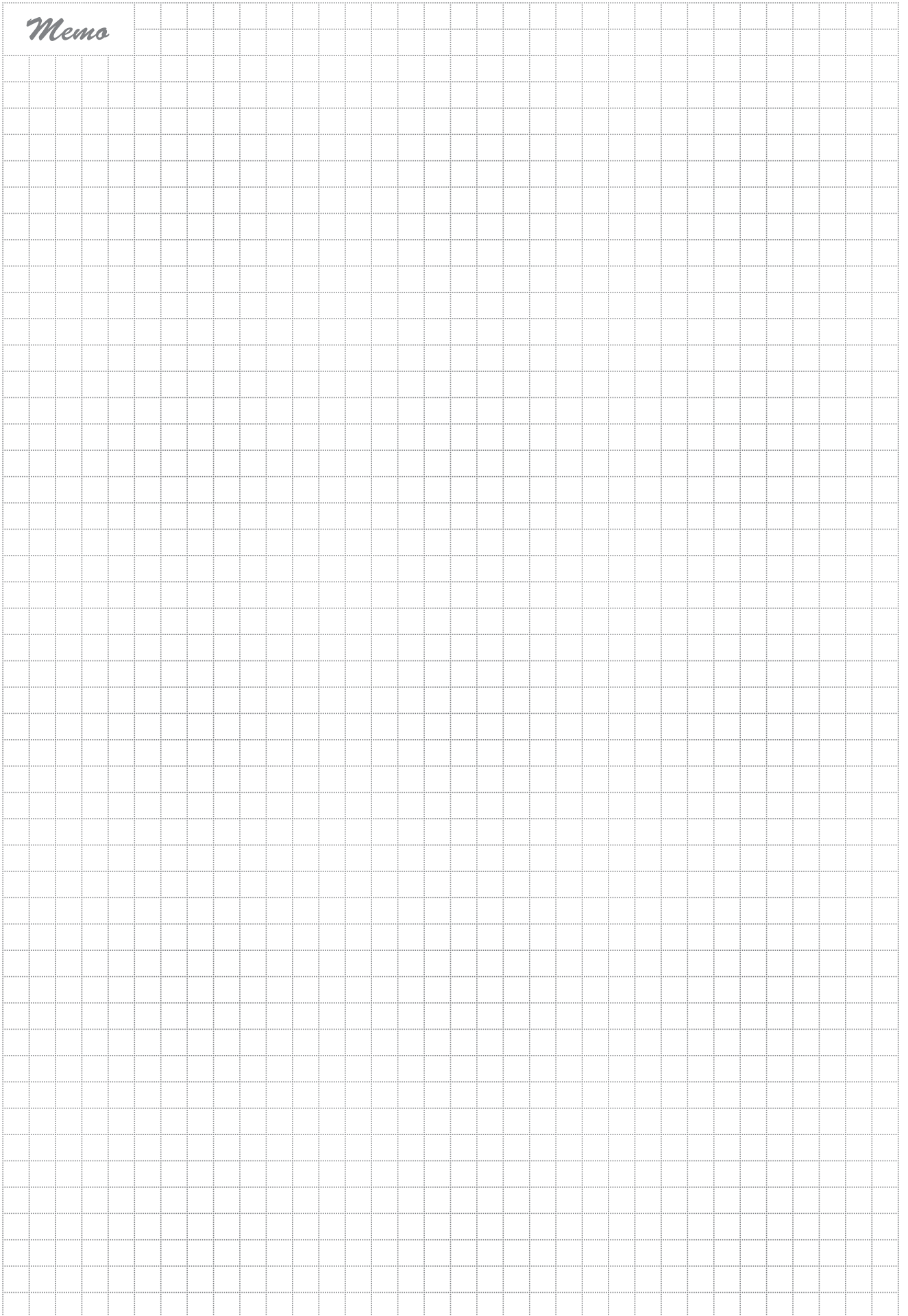
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While this catalog has been compiled with the utmost care, we assume no responsibility for errors, impropriety or inadequacy. Any information provided in this catalog is subject to from-time-to-time change without notice for error rectification, product discontinuation, design modification, new product introduction or any other cause that the KITZ Corporation considers necessary. This edition cancels all previous issues.

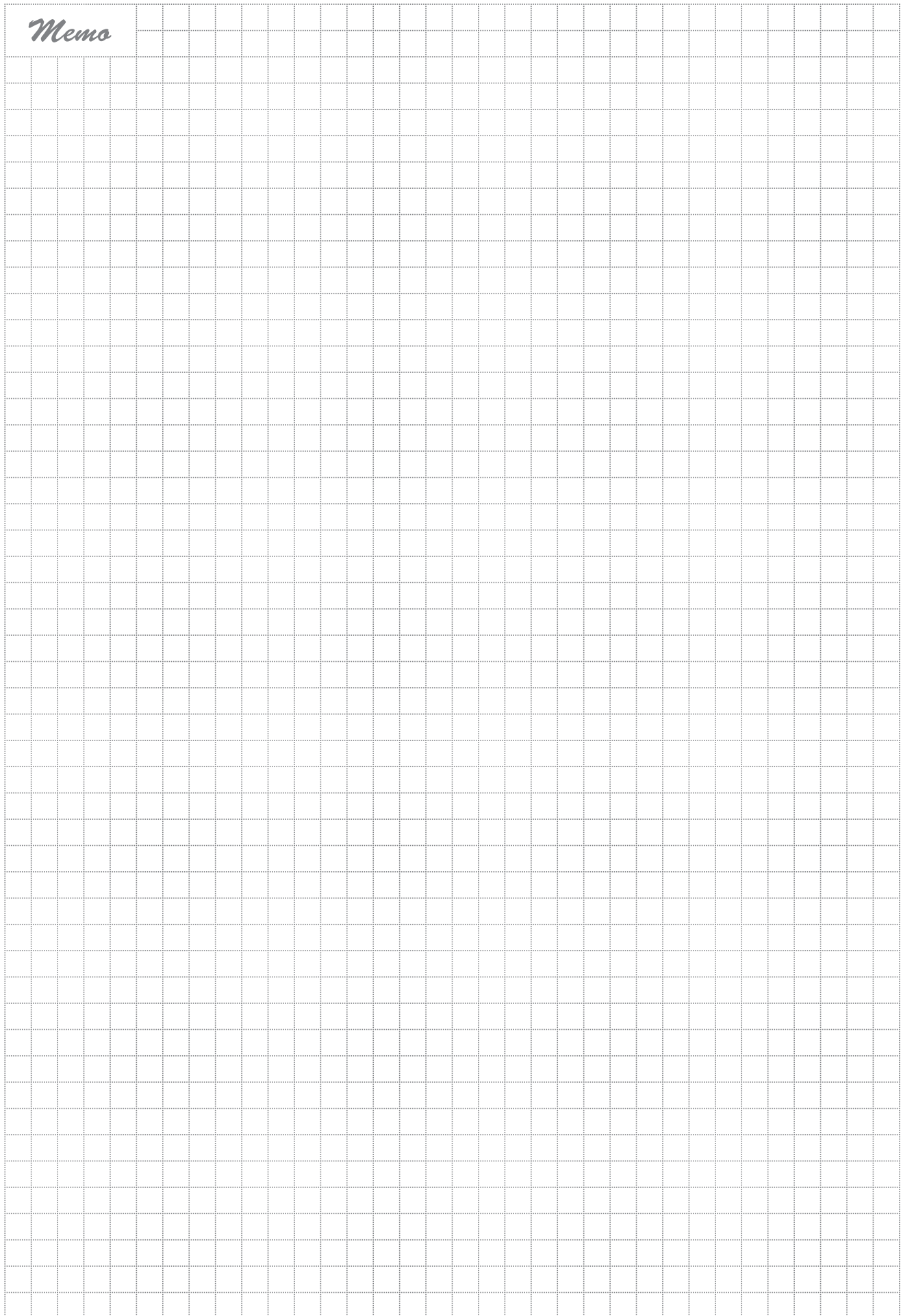
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- KITZ does not take any responsibilities for damages arising from product modification not entrusted to KITZ or usage under the load applied from other devices.

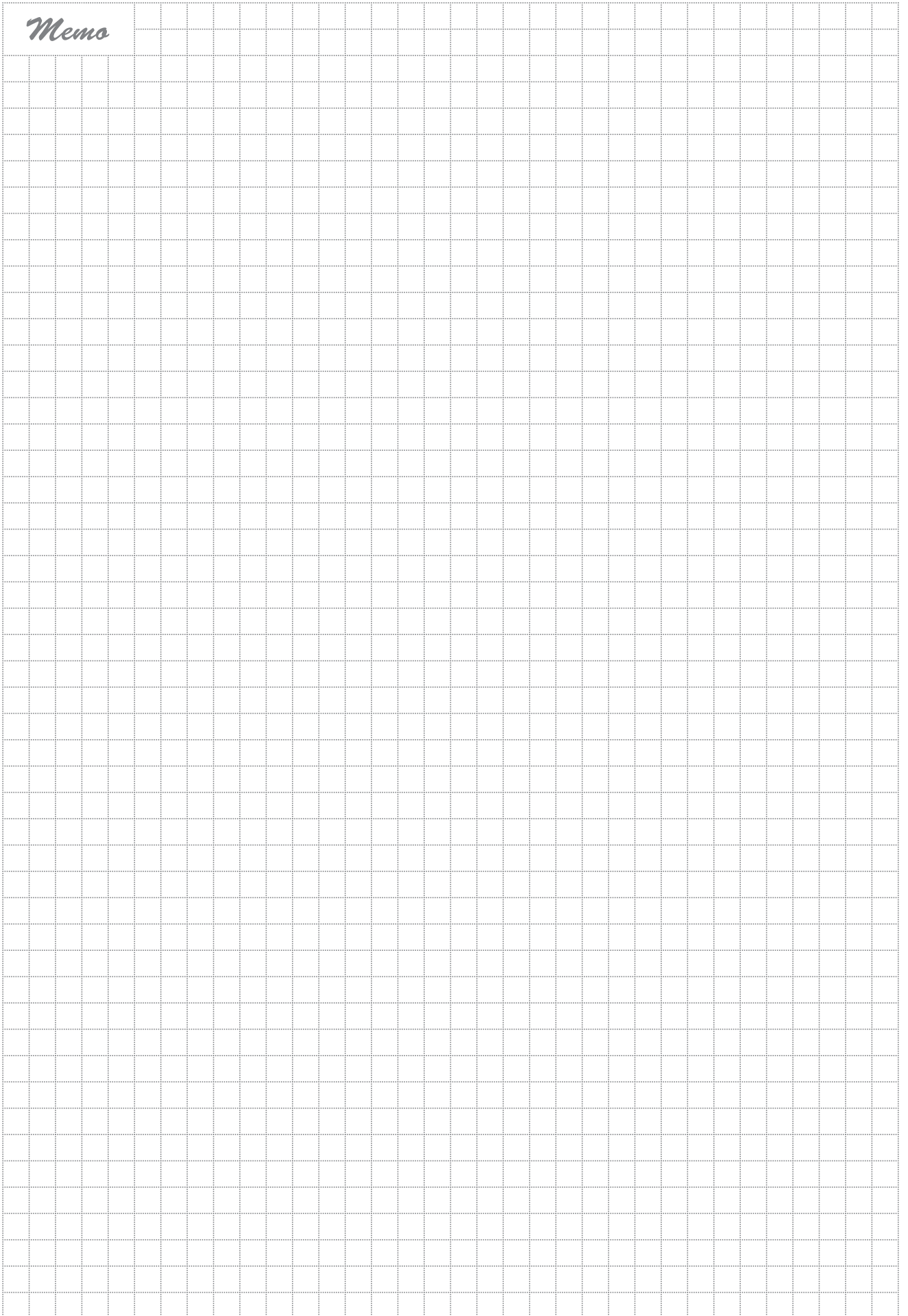
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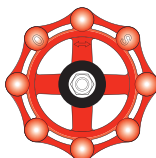
Read instruction manual carefully before using KITZ products.

## NOTICE

If any products designated as strategic material in the Foreign Exchange and Foreign Trade Law, Cabinet Order Concerning Control of Export Trade, Cabinet order Concerning Control of Foreign Exchange and other related laws and ordinances ("Foreign Exchange Laws") are exported to any foreign country or countries, an export license issued by the Japanese Government will be required under the Foreign Exchange Laws.

Furthermore, there may be cases in which an export license issued by the Government of the United States or the government of another country will be required under the applicable export-related laws and ordinances of that country.

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

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