

# KITZ

# XJ Series Aluminum Butterfly Valves



KITZ CORPORATION

# Aluminum Butterfly Valves

## XJ Series

KITZ XJ Series aluminum butterfly valves : Featured with unique interchangeability of the neck designs (U.S.P. No.6676109) , for accommodation of various piping designs, piping positions and installation environments.



### **Three neck designs for your choice :**

Long neck type, short neck type and neckless type are available for versatile applications. Optionally available **Neck Mounting Kits** enable easy change of valve necks to other types, depending on service conditions. (Valves need to be dismantled from pipelines for neck replacement.)

### **Easy valve-to-flange centering :**

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

### **Wide range of service applications :**

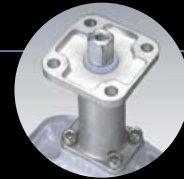
Austenitic stainless steel discs and EPDM rubber seats can handle many different kinds of line fluid without concern of corrosion.

### **Stabilized operating torque :**

A pair of stem bearing assembled around the top and bottom stems prevents stem galling, and stabilizes 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 which are provided with ISO 5211 valve mounting flanges.



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

A long stainless steel neck blocks transfer of the fluid heat to a valve operating device, which thus needs no insulation. Dew condensation is minimized also in case of cold water service.




### **Rust prevention :**

Main parts such as stems, discs, necks, neck connectors and endplates, and small parts such as stopper plates, washers and boltings are all made of stainless steel for highly graded rust prevention.

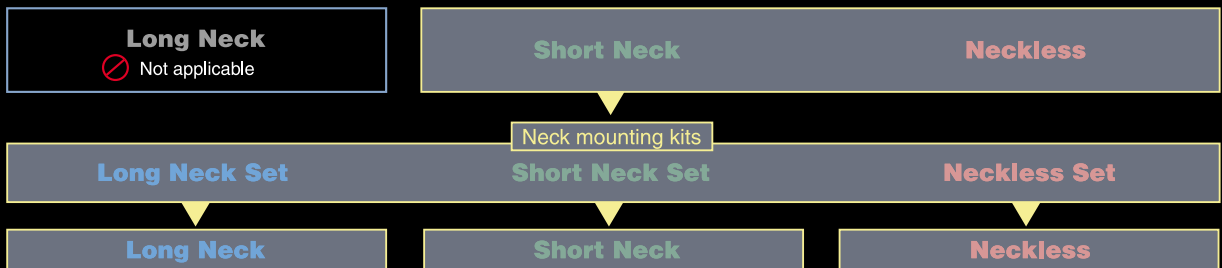

### **S-shape spherical disc for high sealing performance (patented) :**

KITZ's original cross-sectionally S-shaped valve discs with spherical surface evenly make tight contact with rubber liners for excellent sealing performance with reduced operating torque. Thorough 360° shut-off mechanism helps extend service life of rubber liners.



<p><b>Long Neck Type</b> Prevented dew condensation</p>  <ul style="list-style-type: none"> <li>● A long stainless steel neck reduces conductivity of the fluid heat for prevention of dew condensation.</li> <li>● Availability of valve body and neck insulation.</li> <li>● Choice of actuators for automated valve operation.</li> </ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"> <li>● Building utilities .</li> <li>● Piping networks for cold water, hot water and other water supply.</li> </ul>	<p><b>Short Neck Type</b> Compact design</p>  <ul style="list-style-type: none"> <li>● Suitable for piping in a limited space.</li> <li>● Choice of actuators for automated valve operation.</li> </ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"> <li>● Building utilities.</li> <li>● Plant facilities.</li> <li>● Water treatment service.</li> <li>● Operation of industrial machineries.</li> </ul>	<p><b>Neckless Type</b> Built-in operation mechanism (Driven with a socket wrench)</p>  <ul style="list-style-type: none"> <li>● Suitable for less frequent on-off operation.</li> <li>● Suitable for piping in a limited space.</li> <li>● Availability of valve body insulation.</li> <li>● Prevention of unauthorized and unintentional operation.</li> </ul> <p><b>Applications:</b></p> <ul style="list-style-type: none"> <li>● Building utilities.</li> <li>● Plant facilities.</li> <li>● Water treatment service.</li> <li>● Operation of industrial machineries.</li> </ul>
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**Neck mounting kits** are optionally available for easy change of neck designs (U.S.P. No.6676109), depending on desired service conditions. Detailed information is available on contact to KITZ Corporation.

**Elaborately designed KITZ EPDM seats are featured with the following uniqueness for functional stability, high sealing performance and long life cycle:**

- Self-reinforcing dual back-ribs
- Wider disc seating contact
- Dual stem seal bearings

- ① Wider disc seating contact for high sealing performance.
- ② Dual reinforcing back-ribs to minimize 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 top and bottom stems for stabilized sealing function.
- ④ Gasketless flange sealing contact for easy valve mounting.

## Product Range

Design	Class	Operator	Size Product code	mm	40	50	65	80	100	125	150	200	250	300	Page
				inch	1½	2	2½	3	4	5	6	8	10	12	
Long neck	JIS 10K	Lever	10XJME		●	●	●	●	●	●	●				00
		Gear	G-10XJME		●	●	●	●	●	●	●	●	●	●	00
		Pneumatic actuator (Double action)	FA-10XJME		●	●	●	●	●	●	●	●	●	●	00
		Pneumatic actuator (Spring return)	FAS-10XJME		●	●	●	●	●	●	●	●			00
		Electric actuator	EXS-10XJME		●	●	●	●	●	●	●	●	●	●	00
	JIS 10K/ ASME Class 150	Lever	10XJMEA			●	●	●*	●*	●	●	●*			00
		Gear	G-10XJMEA			●	●	●*	●*	●	●	●*	●		00
		Pneumatic actuator (Double action)	FA-10XJMEA			●	●	●*	●*	●	●	●*	●		00
		Pneumatic actuator (Spring return)	FAS-10XJMEA			●	●	●*	●*	●	●	●*			00
		Electric actuator	EXS-10XJMEA			●	●	●*	●*	●	●	●*	●		00
	EN1092 PN16	Lever	PN16XJME			●	●	●**	●**	●	●**	●			00
Gear		G-PN16XJME			●	●	●**	●**	●	●**	●	●**		00	
Short neck	JIS 10K	Lever	10XJSME		●	●	●	●	●	●	●			00	
		Gear	G-10XJSME		●	●	●	●	●	●	●	●	●	00	
Neckless	JIS 10K	(Socket wrench)	N-10XJSME		●	●	●	●	●	●			00		

\* Centering sleeves are supplied for accurate centering with ASME class 150 flanges.  
 \*\*Centering sleeves are supplied for accurate centering with EN1092 PN16 flanges.

## Product Coding

**G-10 XJ S M E A**

①      ②      ③      ④      ⑤      ⑥      ⑦

### ① Valve operation

None ..... Lever  
 G ..... Gear  
 FA ..... Pneumatic actuator (Double action)  
 FAS ..... Pneumatic actuator  
 (Spring return action)  
 EXS ..... Electric actuator (Please consult KITZ  
 for availability of power supply)  
 N ..... Socket wrench type

### ② Class

10 ..... JIS 10K  
 10\_A ..... JIS 10K/ASME Class 150  
 PN16 ..... EN1092 4504 PN16

### ③ KITZ Butterfly valve series

XJ ..... XJ series

### ④ Design

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

### ⑤ Disc material

M ..... 316 stainless steel

### ⑥ Seat material

E ..... EPDM

## Technical Specification

Class	JIS 10K	Class 150	PN16
Maximum service pressure	1MPa	1MPa	1.6MPa (16bar)
Service temperature range*1	-20°C~+120°C		
Continuous service temperature range*2	0°C~+100°C		
Face-to-face dimension	API609, BS5155 (Short pattern) ISO 5752-20, JIS B 2002 46 series		
Shell test pressure	[Hydrostatic] 1.5MPa	1.5MPa	2.40MPa (24bar)
Seat test pressure	[Hydrostatic] 1.1MPa	1.1MPa	1.76MPa (17.6bar)
Coupling flanges	ASME Class 150*3 JIS B 2220 / 2239 10K	ASME Class 150*3 JIS B 2220 / 2239 10K	EN1092 PN16*3

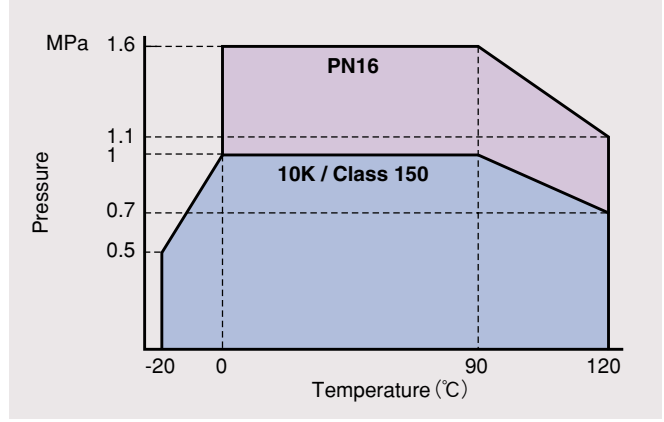
\*1 Condition : Fluid is not frozen.

\*2 Refer to P-T rating chart.

\*3 With centering sleeves.

Refer to the product range chart in page 3 and precaution in page 14 for details.

## P-T Rating

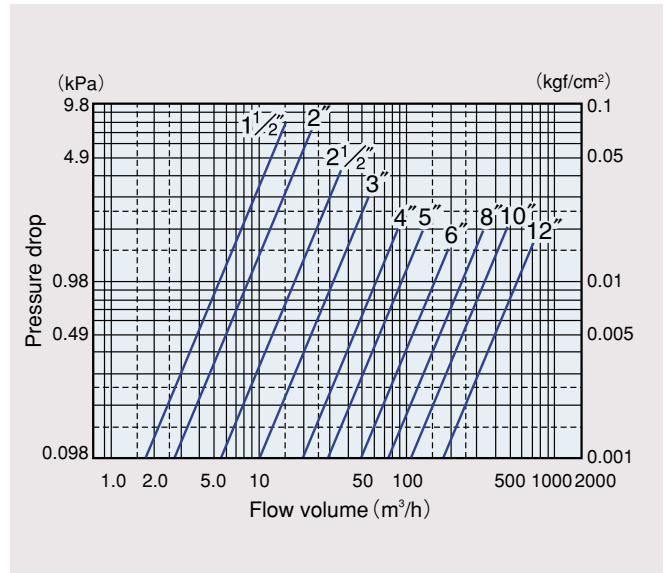


Note : Contact KITZ corporation for technical advice when service conditions may exceed the P-T rating range limited here.

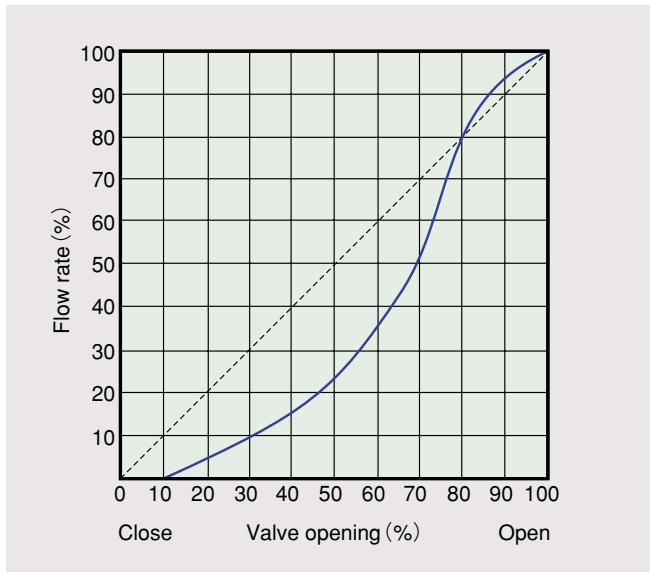
## Cv Value

Valve size		Valve opening			
mm	inch	30°	45°	60°	90°
40	1½	6	12	25	62
50	2	10	20	40	99
65	2½	15	37	80	205
80	3	26	77	132	372
100	4	50	127	260	723
125	5	93	212	419	1100
150	6	128	326	660	1820
200	8	194	501	1050	2780
250	10	326	957	2170	4350
300	12	508	1510	3360	6860

## Pressure Loss (for handling static clean water)



## Flow Characteristics



## Material

Parts	Material
Body	Aluminum Die-cast / Equivalent ASTM B85-84-383.0
Neck	A351 Gr. CF8
Stem	(Equivalent ASTM A276 Type 410)
Disc	A351 Gr. CF8M
O-ring	EPDM
Rubber seat	EPDM
Bottom stem	(Equivalent ASTM A276 Type 410)
Bearing	Metal Backed PTFE (Size 1½", 10" and 12") Polyphenylenesulfide (10XJMEA : Size 2" to 8") Bronze : CAC401C (PN16XJME : Size 2" to 8")

## Dew Condensation Test

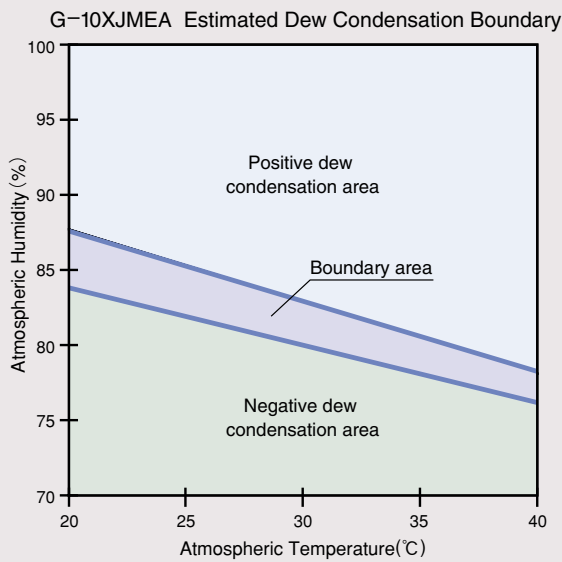
Samples of KITZ XJ Series butterfly valves equipped with long necks (KITZ Product Code : G-10XJMEA) were tested at KITZ laboratory under the conditions introduced below. Lower surface temperature of gear boxes, atmospheric temperatures and atmospheric humidities were measured as the variable functions. The dew condensations boundary was estimated as illustrated below.

### Test condition :

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

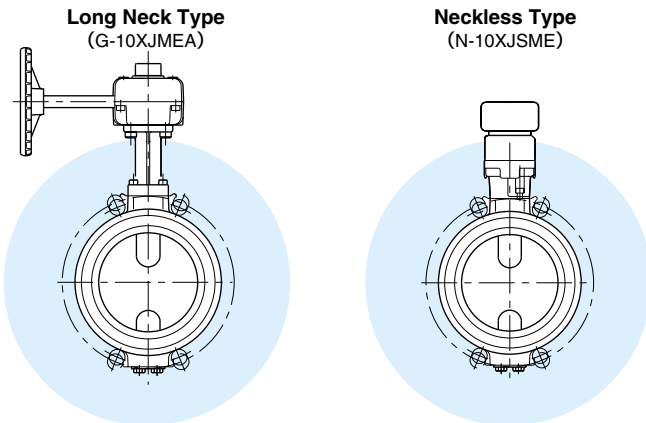
### Note:

The estimation introduced here is a result of summary of the tests carried out within a test basin provided with constant temperature and humidity, and does not necessarily represent absolute values. Note that dew condensation preventative property of these valves may be affected by change of test environments such as extent of air transfer and variation of line fluid temperature, atmospheric humidity or condition of insulation. Thus, acceptance of allowance of  $\pm 5\%$  over the boundary area is recommended.



## Valve Insulation

Areas in blue are recommended to insulate



## Corrosion Resistance Level

This table indicates general corrosion resistance level of the materials of discs and rubber liners used for KITZ XJ Series butterfly valves against typical line fluids. The data is based on the laboratory test finding on **material test specimens** (not valve component test specimens) under constantly controlled test conditions, and thus each data may be subject to variation, depending on actual valve service conditions in the field. Please contact KITZ Corporation for technical advice, if service conditions are extra-ordinarily severe, or you have any doubt about corrosion resistance level of valves on-site. Also please contact KITZ Corporation when valves are used for hot water service.

- ⊙ = Excellent
- = Good
- △ = Less recommended
- × = Not recommended

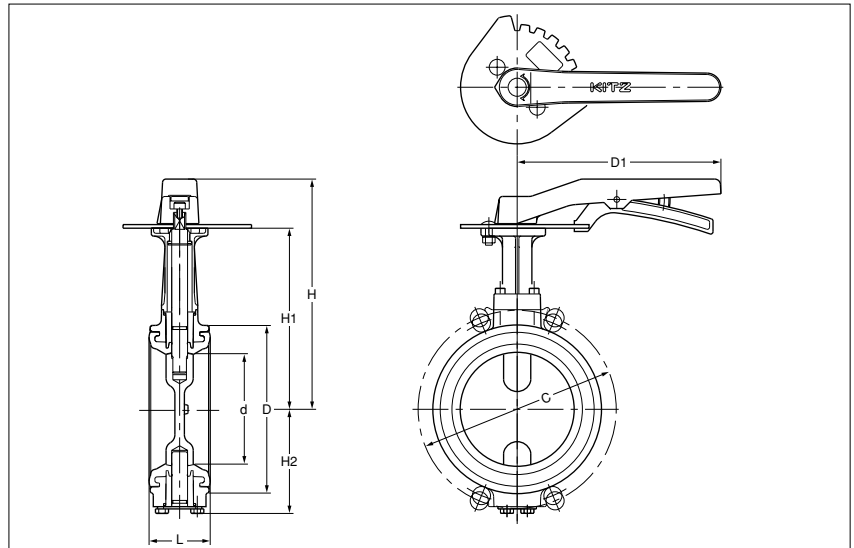
Fluid	Materials	Disc material	Seat material
		CF8M	EPDM
Acetic acid (10%)		⊙	●
Air		⊙	⊙
Ammonia (anhydrous liquid)		⊙	●
Ammonia (solution)		⊙	●
Ammonium sulfate		●	⊙
Animal oil		⊙	×
Calcium carbonate		●	⊙
Carbonic acid		●	●
Chlorinated water		△	×
Ethane		●	×
Ethyl alcohol		⊙	⊙
Freon 12		⊙	⊙
Gasoline (refined / unleaded)		⊙	×
Hydrochloric acid		×	●
Hydrogen gas (cold)		⊙	●
Lubricating oil (petroleum base)		⊙	×
Methyl alcohol		⊙	⊙
Mineral oil		⊙	×
Heavy oil		⊙	×
Natural gas		⊙	×
Oxygen (cold)		⊙	●
Petroleum oil (refined)		⊙	×
Propane gas		⊙	×
Sea water		●	⊙
Soybean oil		⊙	△
Sulfuric acid (7%)		●	●
Sulfuric acid (20%)		×	●
Sulfuric acid (50% $\geq$ )		×	●
Sulfurous		●	△
Steam (100°C)		⊙	●
Vegetable oil		⊙	△
Water (fresh) *		⊙	⊙

\* Chlorine-free

**Long Neck Type**

*Lever Operated*

10XJME  
10XJMEA  
PN16XJME



**Dimensions**

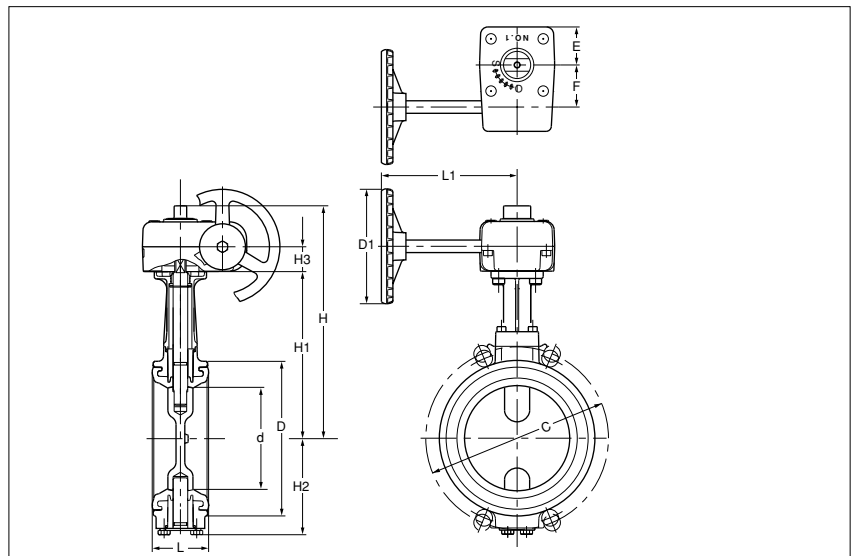
unit : mm

Size		d	H	H1	H2	L	D	C			D1
mm	inch							10K	Class 150	PN16	
40	1½	40	174	130	60	33	78	105	—	—	180
50	2	50	176	132	66	43	93	120	120.5	125	180
65	2½	65	184	141	74	46	118	140	139.5	145	180
80	3	80	193	149	83	46	129	150	152.5	160	180
100	4	100	204	160	94	52	149	175	190.5	180	180
125	5	125	249	195	122	56	184	210	216	210	230
150	6	150	261	207	135	56	214	240	241.5	240	230
200	8	196	280	234	161	60	259	—	298.5	—	350

**Long Neck Type**

*Gear Operated*

G-10XJME  
G-10XJMEA  
G-PN16XJME



**Dimensions**

unit : mm

Size		d	H	H1	H2	H3	L	D	C			D1	L1	E	F	Gear type
mm	inch								10K	Class 150	PN16					
40	1½	40	177	130	60	19	33	78	105	—	—	80	122	29	28	No.0
50	2	50	179	132	66	19	43	93	120	120.5	125	80	122	29	28	No.0
65	2½	65	188	141	74	19	46	118	140	139.5	145	80	122	29	28	No.0
80	3	80	212	149	83	24	46	129	150	152.5	160	110	135	36	40	No.1
100	4	100	223	160	94	24	52	149	175	190.5	180	110	135	36	40	No.1
125	5	125	257	195	122	24	56	184	210	216	210	110	150	36	40	No.1
150	6	150	270	207	135	24	56	214	240	241.5	240	110	150	36	40	No.1
200	8	196	310	234	161*	32	60	258	290	298.5	295	170	180	51	63	No.2
250	10	245	405	328	238	32	68	316	355	362	—	170	180	51	63	No.2
300	12	295	430	353	263	32	78	367	400	—	—	170	180	51	63	No.2

\*PN16XJME H2=183