

# GENERAL CATALOG



OKUMURA ENGINEERING corp.

**BUTTERFLY VALVES**  
**KNIFE GATE VALVES**  
**PINCH VALVES**

# STANDARD SPECIFICATION LIST

	Model		Use	Purpose , Applications							
				General Fluid	High-Temperature Fluid	High-pressure Fluid	Fluid Shut-off Degree	Fluid Controllability	Low-pressure Loss	Remote Control During Automation	Maintainability
High Performance Butterfly Valves	5410 SERIES	541R Synthetic Rubber Seat ring	Air Conditioning For High-rise Buildings.	○	×	○	◎	◎	○	◎	◎
		541T Teflon® Seat ring	Steam Piping	◎	○	○	◎	◎	○	◎	◎
		541M Metal Seat ring	General Industries.	○	◎	○	○	◎	○	◎	◎
	5400 SERIES	5421 Synthetic Rubber Seat ring	Air Conditioning For High-rise Buildings.	○	×	○	◎	◎	○	◎	◎
		5422 Teflon® Seat ring	Steam Piping	◎	○	○	◎	◎	○	◎	◎
		5423 Metal Seat ring	General Industries.	○	◎	○	○	◎	○	◎	◎
		5452 Teflon® Seat ring		◎	○	◎	◎	◎	○	○	◎
Rubber Seated Butterfly Valves	612X	Construction Equipment. Water Treatment. General Industries.	◎	×	×	◎	◎	○	◎	○	
	615X										
Teflon® Butterfly Valves	618H	Construction Equipment. High-rise Buildings. General Industries.	◎	×	○	◎	◎	○	◎	○	
	622H		◎	×	○	◎	◎	○	◎	○	
Rubber Seated Butterfly Valves	635N	Chemical solutions. General Industries.	○	×	×	○	○	○	◎	△	
Frangé Type Butterfly Valves	602A	Construction Equipment. Water Treatment. General Industries.	◎	×	×	◎	◎	○	◎	○	
	603A										
Electronically Control Type Butterfly Valves	606K 606F	Water Treatment. General Industries.	◎	×	×	◎	◎	○	◎	○	
Knife Gate Valve	VAVTROL DN VAVTROL DNP	Construction Equipment. General Industries.	◎	○	○	◎	◎	○	◎	○	
Pinch valves	336J 336Y	General Industries.	△	△	△	◎	△	◎	○	○	
	704 703 702	General Industries.	◎	×	×	◎	△	◎	○	○	
	Pneumatic-Cylinder Unit Electric-Motor Unit										

Piping Packing	Nominal Size (mm)	Max. Service Pressure (MPa)	Max. Service Temperature (°C) Seat Ring Material	Applicable Flange												Reference Pages		
				JIS					ASME			ISO						
				5K	10K	16K	20K	30K	125L	150L	300L	PN6	PN10	PN16	PN20			
Required	50 to 600	1.0	F K M : -10 to 150 EPDM : -20 to 120															
	50 to 600		-50 to 232	○	○					△	△							
	80 to 600		-50 to 400															
Required	80 to 600	2.0	F K M : -10 to 150 EPDM : -20 to 120															
	50 to 600		-50 to 232		○	○	○			○	○							
	80 to 600		-50 to 230															
	80 to 450	5.0	-50 to 230				○	○	○			△						
Not required	40 to 300 350 to 1200	1.0	N B R : -10 to 70 EPDM : -20 to 120	○	○					○	○		△	○	△			
Not required	50 to 600	1.6	N B R : -10 to 70 EPDM : -20 to 120	△	△	○				○	○		△	△	△			
Not required	50 to 600	2.0	N B R : -10 to 70 EPDM : -20 to 120		○	○	○			○	○				○	○		
Required	50 to 600	1.1 Fluid 0.2 Gases	-20 to 150		○					○	○							
Not required	40 to 300 40 to 200	1.0	N B R : -10 to 70 EPDM : -20 to 120	○	○					△	△							
	50 to 850	1.0	N B R : -10 to 70 EPDM : -20 to 120	○	○					○	○							
Not required	50 to 450	1.0 to 2.0	EPDM : -20 to 120	○	○					○	○							
Required	50 to 600	1.0	CR 0 to 80															
			PTFE 0 to 230															
			SUS316 0 to 230	○	○						○	○						
			SUS304 0 to 230															
Not required	25 to 100	0.4	C R : -10 to 80 N R : -10 to 80															
	125 to 200	125, 150mm 0.3																
		200mm 0.2		○														
25 to 300	0.5																	

27,28

◎ Optimum ○ Adaptation △ Usable Depending On Materials × Out Of Service

Teflon® is manufactured by Mitsui-Dupont Fluoro Chemical.

# 5410

1.0MPa(50 to 600mm) SERIES

# 5400

2.0MPa(50 to 600mm) SERIES

# 5452

5.0MPa(80 to 450mm) SERIES

## HIGH PERFORMANCE BUTTERFLY VALVES

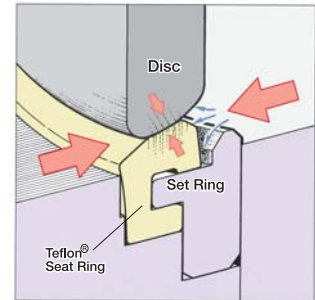
## A Leading-edge butterfly valve for high-performance flow control at:

Service temperature range of

# -50°C to 400°C

### Self-sealing mechanism ensures tight shutoff.

As illustrated below, fluid pressure to the disc and seat ring ensures a secure seal; in other words, the higher the pressure, the better the sealing performance. The sealing performance remains unchanged even when the flow direction changes from one way to the other.



541TK-G



22-G

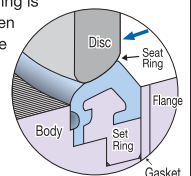
### Three types of seat rings to cover a wide variety of applications.

Seat rings of synthetic rubber, Teflon® and metal are available for effective control of any type of fluid, from slurry/sludge and chemical solutions to high-pressure steam.

### 541R 5421

The Synthetic Rubber Seat Ring (FKM150°C, EPDM120°C)

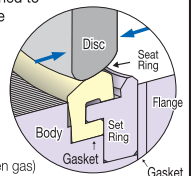
The synthetic rubber seat ring is ideal for abrasive solid-laden fluids and high-temperature fluids of up to 150°C (302°F), (eg. Water, compressed air, crude oil, food stuffs, slurry, sludge) which are difficult to control with conventional butterfly valves.



### 541T 5422 5452

Teflon® Seat Ring (PTFE -50 to 230°C)

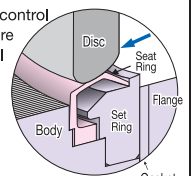
The Teflon® seat ring is designed to withstand extremely corrosive chemical solutions and high-temperature fluids of up to 230°C (446°F), (eg. demineralized water, air-conditioning chilled/hot water, sea water, white liquor, formaldehyde solution, organic solvent, compressed air, oxygen, exhaust gas, town gas, coke-oven gas)



### 541M 5423

Metal Seat Ring (SUS316 400°C)

The metal seat ring allows control of extremely high-temperature fluids, and replaces conventional gate valves, globe valves, and ball valves. (eg. steam, compressed air)



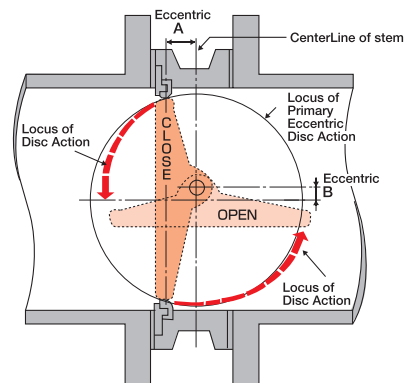
PAT PENDING

OKM 54 Series is a high-performance butterfly valve designed for extreme temperature, high pressure and vacuum conditions that are unsuitable for conventional universal butterfly valves. The 54 Series features a self-sealing seat ring, double eccentric disc, and a choice of three seat rings. It outperforms ball valves and gate valves and can perfectly seal fluids such as corrosive slurry and high-pressure steam.

**Double eccentric disc ensures longer service life, low seating torque and leak-tight shutoff.**

Since the stem is eccentric from the seat ring (as indicated by A and B), the disc is in contact with the seat ring only when the valve is completely closed. The benefits from the double eccentric disc design include:

- Longer service life due to hard-to-wear seat ring.
- When in the closed position, the force of the disc on the seat ring ensures complete sealing.
- Easy operation with less seating torque.
- The offset stem design allows easy replacement of the seat ring without removing the stem.



**Standard Specifications**

**5410 Series**

Model	541R		541T	541M
Seat Ring	FKM	EPDM	PTFE	SUS316
Size	50 to 600		50 to 600	80 to 600
Applicable Flange Std.	JIS 5K / 10K <sup>※1</sup>			
Max. Service Pressure	1.0MPa			
Service Temperature Range				
Without Insulation	-10 to 120°C	-20 to 120°C	-29 to 232°C	-29 to 232°C
With Insulation	-10 to 150°C	—	-50 to 232°C	-50 to 400°C
Hydrostatic Shell Test	1.5MPa			
Hydrostatic Seat Test	1.1MPa			
Face To Face	International Standard (ISO 5752) Dimension between Shorter Faces			
Seat Leakage	Tight Shutoff			Tight Shutoff <sup>※2</sup>
Actuator	Lever-Operated, Worm-Gear, Pneumatic-Cylinder, Electric-Motor			
Coating	Heat-resistant silver except on the stainless steel part.			

※1 : For ASME 125/150Lb. Contact us for assistance separately.  
 ※2 : Applicable to the MSS SP-61 standard.  
 ※3 : The long yolk mechanism is employed for temperatures between 301 and 400°C

**5400 Series**

Model	5421		5422	5423	5452
Seat Ring	The Synthetic Rubber		Teflon®	Metal	Teflon®
Size	80 to 600 <sup>※2</sup>		50 to 600 <sup>※2</sup>	80 to 600 <sup>※2</sup>	80 to 450
Applicable Flange Std.	JIS 10K / 16K / 20K , ASME 125 / 150Lb etc.				JIS 16K / 20K / 30K / 40K , ASME 150Lb / 300Lb
Max. Service Pressure	2.0MPa				5.0MPa
Service Temperature Range	FKM	EPDM	PTFE	SUS316	R-PTFE
Without Insulation	-10 to 120°C	-20 to 120°C	-29 to 230°C	Max. 230°C <sup>※3</sup>	-50°C to 230°C
With Insulation	-10 to 150°C	—	-50 to 230°C	Max. 400°C	
Hydrostatic Shell Test	3.0MPa				7.5MPa
Hydrostatic Seat Test	2.2MPa				5.5MPa
Face To Face	International Standard (ISO 5752) Dimension between Shorter Faces				ISO Standard (short) 80 to 150mm ISO Standard (long) 200 to 450mm
Seat Leakage	Tight Shutoff		Tight Shutoff	Tight Shutoff <sup>※1</sup>	Tight Shutoff
Actuator	Lever-Operated, Worm-Gear, Pneumatic-Cylinder, Electric-Motor				Worm-Gear, Pneumatic-Cylinder, Electric-Motor
Coating	Heat-resistant silver except on the stainless steel part.				

※1 : Applicable to the MSS SP-61 standard.  
 ※2 : 550mm is not available.  
 ※3 : More than 230°C, please consult with OKM oversea div.

NOTE: These models are not suitable for palm oil application.  
 Model No.54mp is recommended for palm oil application.



## Standard Specifications

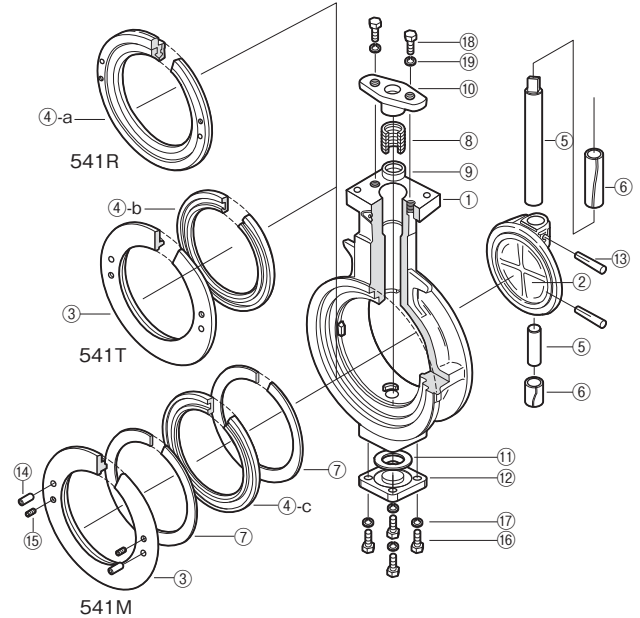
Part Name		5410 Series	
		50 to 300	350 to 600
①	Body	SCS13A	
②	Disc	SCS13A	
③	Set Ring	SCS13A	SUS304
④-a	Rubber Seat Ring 541R	FKM · EPDM	
④-b	Teflon® Seat Ring 541T	PTFE(White),R-PTFE(Black)	
④-c	Metal Seat Ring 541M	SUS316 + Metal Plating	
⑤	Stem	SUS304	
⑥	Bushing	SUS316 + PTFE	
⑦	Gasket	asbestos-Free	
⑧	Gland packing	PTFE	
⑨	Packing washer	SUS304	SUS316
⑩	Gland	SCS14A	SUS304
⑪	Bottom gasket	asbestos-Free	
⑫	Bottom cover	SCS13A	SUS304
⑬	Taper pin	SUS304	SUS630
⑭	Set pin	SUS420J2	SUS304
⑮	Hexagon socket set screws	SUS304	
⑯	Hexagon bolt	SCM435(PLATED)	
⑰	Spring washer	SUS304	
⑱	Grand bolt	SUS304	

\*The disc of Model 541T(metal seat ring)has a plating finish.

\*In case of flow media contains oil or oil material, EPDM seat cannot be applicable.

\*Be sure to inform us of fluid name,and temperature when you place an order.

## Internal structure



## Standard Specifications

Part Name	5421	5422	5423 <sup>※5</sup>
Body	SCPH2 , SCS13 <sup>※1</sup>		SCS14 <sup>※2</sup>
Disc <sup>※3</sup>	SCS13 <sup>※1</sup>		SCS14 <sup>※2</sup>
Set Ring	SUS304		SUS316
Seat Ring	FKM , EPDM		
Rubber Seat Ring	5421		
Teflon® Seat Ring <sup>※4</sup>	5422	PTFE(White) , R-PTFE(Black)	
Metal Seat Ring	5423	SUS316 + Metal Plating	
Stem	SUS630		

※1: Size range: 80 to 600 mm

※2: In 50 mm and 60 mm sizes, Teflon®and SCS14 only.

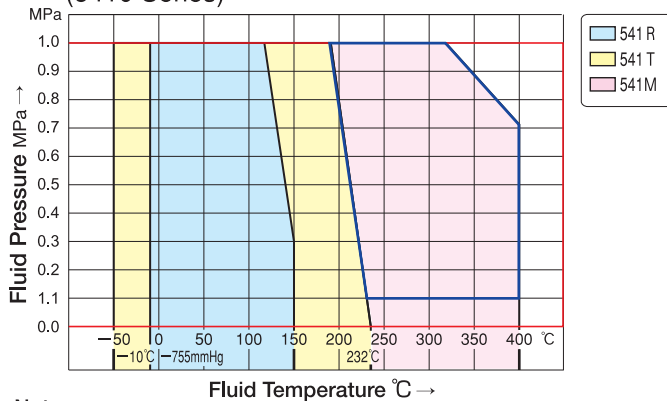
※3: Plating for 5423 only.

※4: Contact us for models with high polymer polyethylene seats.

※5: Contact us if using model 5423 at a high temperature exceeding 230°C (446°F)

Part Name	5452
Body	SCS13
Disc	SCS13
Set Ring	SUS304
Seat Ring	R-PTFE(Black)
Stem	SUS630

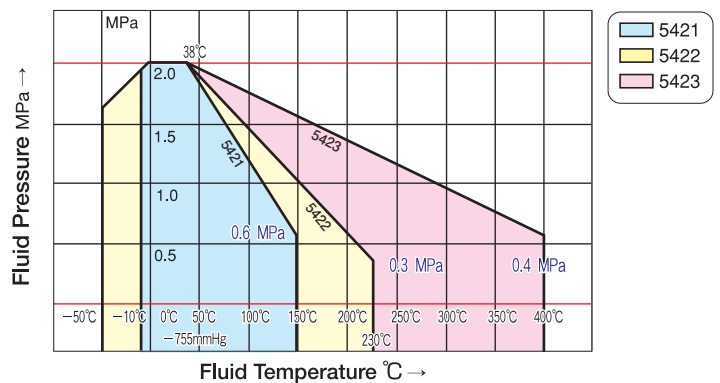
## Temperature and Pressure Ratings (5410 Series)



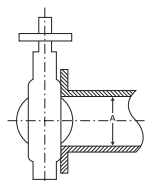
Note:

- Please contact to us, in case of using under condition such as extremely-low temperature, vacuume and in the vicinity of temperature and pressure rating. Seat ring(white) for 541T contains filler content equivalent to reinforced PTFE, however, in case of using under saturated vapor condition, please use black reinforced PTFE(RPTFE)
- Using butterfly valve with automatic actuator(pneumatic/electric) in the range of frame, model shall be 5423.

## Temperature and Pressure Ratings (5400 Series)

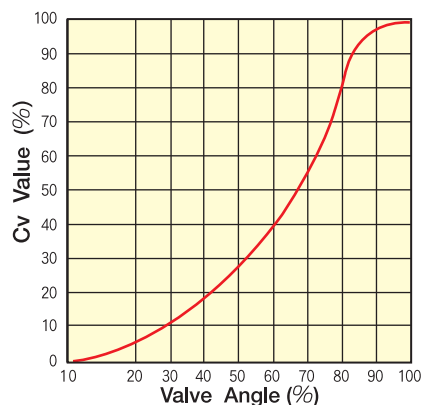


## Min. Internal Diameters Of Piping



Nominal Size (mm)	Min. Internal Diameters Of Piping A	Nominal Size (mm)	Min. Internal Diameters Of Piping A
50	φ 27.3	150	φ 137.7
65	47.8	200	192.3
80	64.9	250	241.6
100	81.5	300	290.5
125	110.6		

## Flow Characteristics



## Cv Values with Valve Fully Open

Size(mm)	10/20W.O.G
※ 50	60
※ 65	100
80	190
100	380
125	730
150	1250
200	2400
250	4000
300	5800
350	7600
400	9200
450	11900
500	14200
※550	17000
600	21700

※Model 541T/5422 only

● **Dimensions** ※Shapes vary according to sizes. ※Contact your OKM representative for the dimensions the 5452 model.

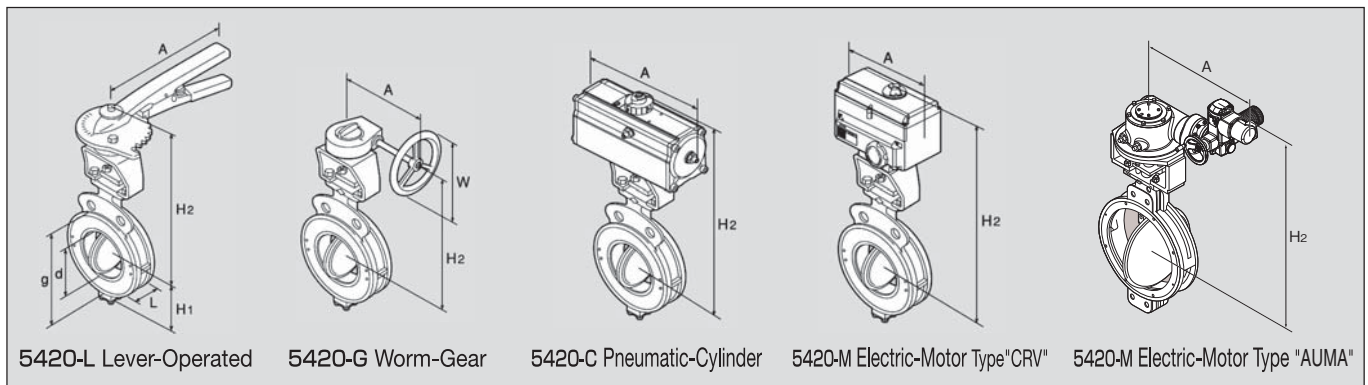
■ **5410 Series Specification Max.Service Pressure:1.0MPa ( Max.Service Temperature:232°C) Standard**



Nominal Size		L	d	g	H <sub>1</sub>	541□-L Lever-Operated			541□-G Worm-Gear			541□-C Pneumatic-Cylinder			541□-M Electric-Motor		
inch	mm					H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight
2	50	43	40	92	64	178	160	3.7	169	141	5.3	252	179	4.9	362	277	14.0
2½	65	46	55	108	74	188	160	4.2	179	141	5.8	262	179	5.4	372	277	14.5
3	80	46	70	127	84	199	200	4.9	189	141	6.4	272	179	6.0	382	277	15.1
4	100	52	94	147	94	209	200	5.7	199	141	7.2	295	223	7.7	392	277	15.9
5	125	56	119	180	110	248	360	10.5	220	182	11.3	360	271	13.0	421	277	19.2
6	150	56	144	209	124	263	360	11.8	235	182	12.6	375	271	14.3	436	277	21.0
8	200	60	195	265	183	—	—	—	271	211	21.0	434	355	25.0	483	301	30.0
10	250	68	244	327	218	—	—	—	330	255	32.0	511	445	34.0	532	301	32.0
12	300	78	293	367	243	—	—	—	350	255	37.0	531	445	39.0	561	345	48.0

(Size : mm , Weight : kg) ※Please contact us for sizes of 350 mm or more.

■ **5400 Series Specification Max.Service Pressure:2.0MPa ( Max.Service Temperature:232°C)**



Nominal Size		L	d	g	H <sub>1</sub>	Lever-Operated			Worm-Gear			Pneumatic-Cylinder			Electric-Motor "CRV"			Electric-Motor "AUMA"			
inch	mm					H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	W	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight
2	50	43	40	94	67	249	260	4.0	228	141	100	5.8	319	223	8	425	277	15	—	—	—
2½	65	46	55	108	74	264	260	5.0	243	141	100	6.8	334	223	11	440	277	16	—	—	—
3	80	46	70	125	82	273	260	8.0	252	182	125	10	342	223	12	446	277	17	—	—	—
4	100	52	94	155	92	283	260	9.0	262	182	125	12	381	271	14	458	277	18	—	—	—
5	125	56	119	180	119	331	360	15.0	304	211	160	17	425	271	18	510	277	21	—	—	—
6	150	56	144	209	132	344	360	18.0	317	211	160	19	466	355	24	544	301	26	—	—	—
8	200	60	195	265	170	—	—	—	349	255	200	35	526	445	40	563	301	31	—	—	—
10	250	68	244	319	224	—	—	—	407	335	315	58	654	506	64	631	345	47	—	—	—
12	300	78	293	367	259	—	—	—	477	320	315	79	762	664	134	675	345	60	—	—	—
14	350	78	328	413	313	—	—	—	530	331	355	118	844	755	160	727	345	85	872	621	170
16	400	102	366	470	343	—	—	—	580	331	355	156	970	1,060	255	—	—	—	914	621	210
18	450	114	415	534	375	—	—	—	620	392	450	196	1,012	1,060	297	—	—	—	966	623	250
20	500	127	463	584	409	—	—	—	798	513	305	277	1,072	1,060	325	—	—	—	1,046	623	285
22	550	154	518	643	429	—	—	—	854	549	400	370	1,235	1,360	480	—	—	—	1,081	659	380
24	600	154	570	692	479	—	—	—	904	549	400	405	1,285	1,360	585	—	—	—	1,169	685	430

(Size : mm , Weight : kg) ※The height dimension is subject to change if fluid temperature is 300°C or above.

# 612X 615X

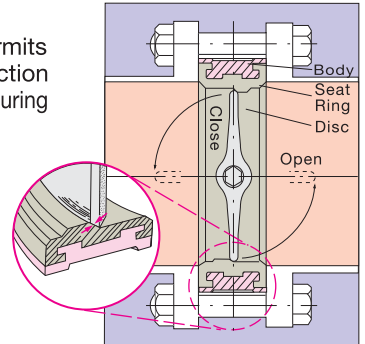
## CAST IRON 1.0MPa BUTTERFLY VALVES

### Wide Selection Range (40 to 1200 mm), 100% Tight Shut-off, Low Torque, Long Service Life

#### For Construction and General Industries

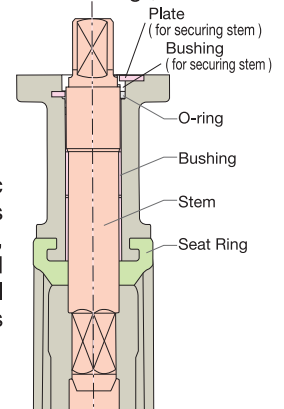
#### "Touch" Seat Design for Reliability and Low Cost

The unique "Touch" seat design permits the disc to close with virtually no friction between the disc and the valve seat, assuring leak-tight shut-off. Extremely low torque is required to open and close the disc, allowing the actuator to be surprisingly compact and light, and improving cost-efficiency.



#### Wear Resistance for Long Service Life

The "Touch" seat design minimizes wear on the seat ring. Each bushing mounted above and beneath the stem offers high wear and friction resistance, thus preventing galling and sticking, and assuring long life.



\*Sizes of valves shown:  
350 to 600 mm (14 to 24 inch)

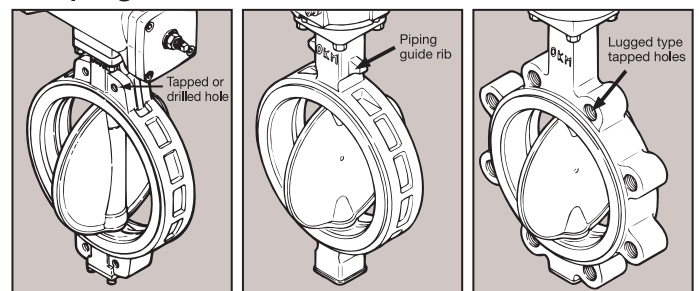
#### Multiple Sealing Structure Eliminates External Leaks

Primary sealing is provided between the disc and the seat ring, and secondary sealing is provided between the stem and the seat ring, thus assuring tight shut-off. An O-ring is mounted between the stem and the bushings for additional sealing. In addition, the valve is covered at its bottom to eliminate external leaks.

#### Pinless Structure for Trouble-Free Maintenance and Operation

The hexagonal stem is fitted into the matching hexagonal disc [nominal size: 40 to 600 mm (1 1/2 to 24 inch)] without pins, thus providing a smooth disc surface with minimum resistance to fluid flow and assuring easy maintenance. A bushing and a plate are provided at the upper part of the stem to prevent the stem from pulling out of the disc.

#### Piping Connection



- A type <Semi-lugged wafer type with tapped holes>  
40 to 300 mm (semi-custom)  
350 to 1200 mm (standard)
- B type <Semi-lugged wafer type with drilled holes>  
40 to 350 mm (semi-custom)
- C type <Wafer type with piping guide rib>  
40 to 300 mm (standard)
- E type <Full-lugged type with tapped holes>  
40 to 600 mm  
(manufactured upon order)

\*A type (350 to 1200 mm) and C type (40 to 300 mm) are standard.  
Contact us if you need types other than the above.



612XC-M

JIS conformed product

PATENTED



## ● Standard Specifications

Model	612X	615X
Size	40mm to 300mm	350mm to 1200mm
Applicable Flange Std.	JIS5K, 10K, ASME 150Lb, ISO PN10	
Max. Service Pressure	1.0MPa	
Max. Service Temperature	-10 to 70°C NBR	-20 to 120°C EPDM※
Hydrostatic Seat Test	1.5MPa	
Hydrostatic Shell Test	1.1MPa	
Face To Face	JIS B 2002 46 Series	
Actuators	Lever-Operated , Worm-Gear , Center Handle-Gear , Pneumatic-Cylinder , Electric-Motor	
Coating	Epoxy Coating(Grey)	Epoxy Coating(Grey)

※In case of flow media contains oil or oil material, EPDM seat cannot be applicable.

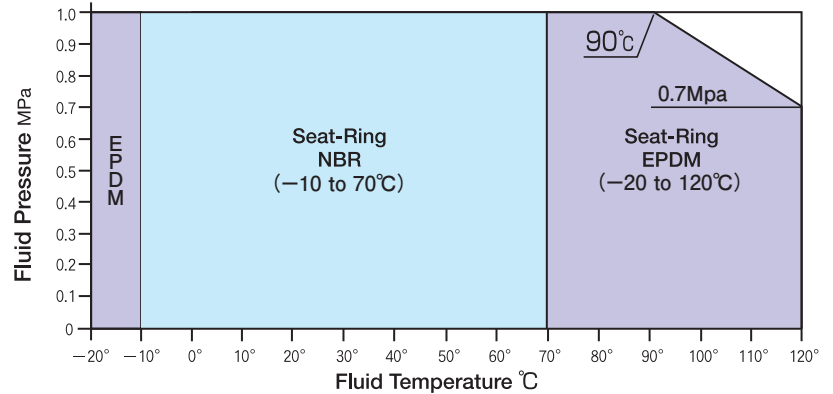
\*Please contact to us in case of using less than 0(Zero) temperature.

## ● Standard Materials

Part Name	Material	
	612X	615X
Body	C TYPE FCD450 A·B·E TYPE FC250	FC250
Disc	SCS14	SCS13 FCD450
Seat Ring	NBR, EPDM	
Stem	SUS420J2	
O-ring	NBR	
Gasket	NBR	Asbestos-Free

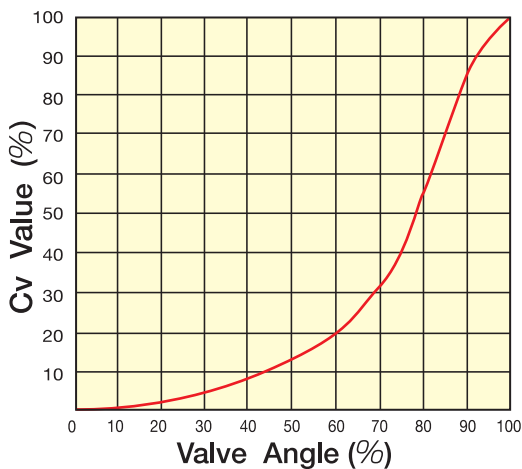
\*Material and shape vary depending on the valve size.

## ● Temperature and Pressure Ratings



\*This table conforms to the JIS standard (JIS B 2032).  
Contact us if you operate your valve outside the above pressure and temperature ranges.  
\*EPDM:Maximum temperature 100°C in case of continuous using.

## ● Flow Characteristics

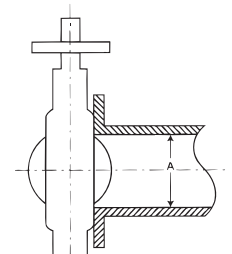


## ● Cv Values with Valve Fully Open

Size (mm)	Full open Cv Value	Size (mm)	Full open Cv Value	Size (mm)	Full open Cv Value
40	102	300	6200	750	39500
50	165	350	7550	800	46000
65	250	400	10700	850	56000
80	380	450	13800	900	69400
100	650	500	17000	1000	80500
125	1100	550	21400	1100	99000
150	1790	600	25200	1200	118300
200	3300	650	28600	—	—
250	4400	700	35000	—	—

## ● Min. Internal Diameters Of Piping

Nominal Size (mm)	Min. Internal Diameters Of Piping A
40	30
50	37
65	50
80	73
100	88
125	120
150	146
200	196
250	244
300	289

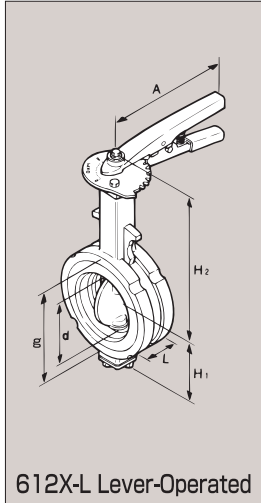


Reliability and Low Cost; these are the advantages that light-weight and compact butterfly valves offer.  
OKM's unique "Touch" seat design and multiple sealing structure assure highly reliable and low cost operation.

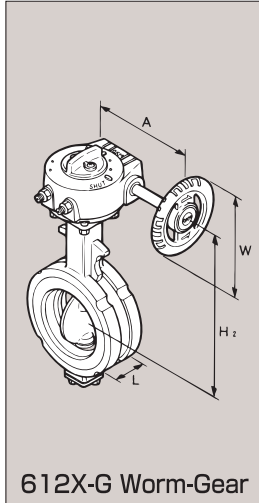
# 612X

● Dimensions: 40 to 300 mm (1 1/2 to 12 inch)

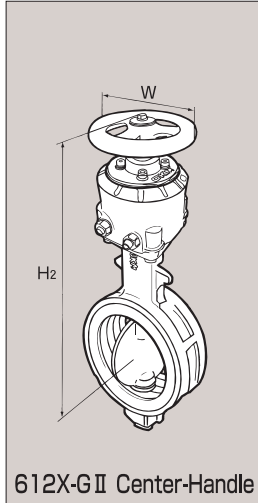
※Shapes vary according to sizes.



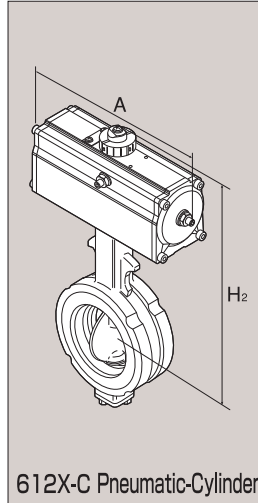
612X-L Lever-Operated



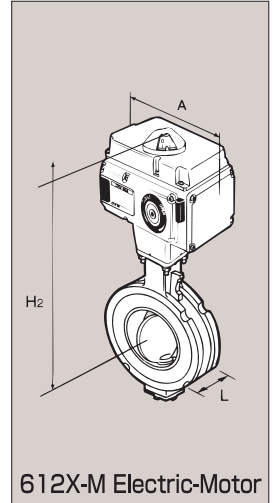
612X-G Worm-Gear



612X-GII Center-Handle



612X-C Pneumatic-Cylinder



612X-M Electric-Motor

For Option Unit ( Positioner,Limit Switch,Solenoid valve,etc ) , contact us for assistance separately.

※Also we have the model:  
612X-CII Single-Acting Type.

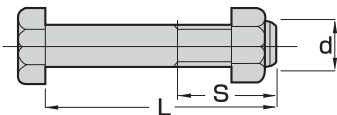
Nominal Size							612X-L Lever-Operated			612X-G Worm-Gear			612X-GII Center-Handle			612X-C Pneumatic-Cylinder			612X-M Electric-Motor		
inch	mm	L	d	g	H1	H2	A	Weight	H2	A	W	Weight	H2	W	Weight	H2	A	Weight	H2	A	Weight
1 1/2	40	33	43	69	66	166	160	2.4	159	132	100	4.0	270	100	4.6	230	179	3.2	301	180	6.2
2	50	43	55	81	69	174	160	2.9	167	132	100	4.5	278	100	5.1	238	179	3.7	309	180	6.7
2 1/2	65	46	66	104	80	187	160	3.8	177	132	100	5.4	288	100	6.0	248	179	4.6	319	180	7.6
3	80	46	84	115	89	192	200	4.0	182	132	100	5.5	293	100	6.1	253	179	4.7	324	180	7.7
4	100	52	100	136	106	204	200	4.9	194	132	100	6.4	305	100	7.0	265	179	5.6	387	277	15.1
5	125	56	130	167	123	234	260	8.0	215	170	125	10.2	329	140	10.1	330	271	11.1	407	277	17.8
6	150	56	154	196	138	249	260	9.8	230	170	125	12.0	344	140	11.9	345	271	12.9	422	277	19.6
8	200	60	200	242	168	288	360	15.0	259	197	160	17.8	408	200	22.0	401	355	21.0	471	301	27.0
10	250	68	246	300	223	-	-	-	319	255	200	32.0	458	200	31.0	483	445	41.0	521	301	35.0
12	300	78	295	346	260	-	-	-	349	255	200	46.0	488	200	45.0	513	445	51.0	551	301	49.0

(Weight : kg)

※200mm lever type is suitable for fluid pressure less than 0.5MPa.  
※40 to 300mm motorized type will be CRV / RCEL / NOAH.

## ● Piping Bolt Sizes

For C type



For Type 612XA , 612XB , 612XE,  
contact us for assistance separately.

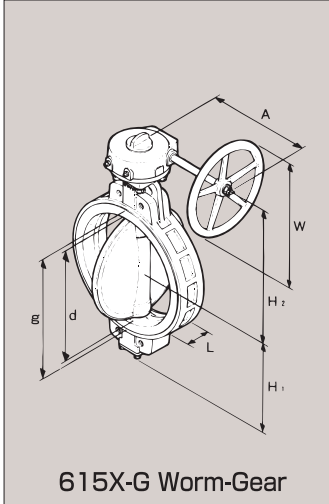
Nominal Size		JIS 5K		JIS 10K	
inch	mm	Qty	Hexagonal bolt&Nut d×L×S	Qty	Hexagonal bolt&Nut d×L×S
1 1/2	40	4	M12x 75x30	4	M16x 85x38
2	50	4	M12x 90x30	4	M16x100x38
2 1/2	65	4	M12x 90x30	4	M16x110x38
3	80	4	M16x100x38	8	M16x110x38
4	100	8	M16x110x38	8	M16x110x38
5	125	8	M16x110x38	8	M20x120x46
6	150	8	M16x120x38	8	M20x130x52
8	200	8	M20x130x52	12	M20x130x52
10	250	12	M20x140x52	12	M22x150x56
12	300	12	M20x150x52	16	M22x160x56

1. Bolt length applies to flange thicknesses that conform to JIS standard.  
2. The hexagonal bolt should use an 8UN splitnut.

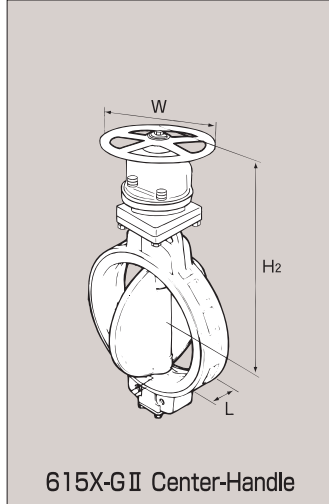
# 615X

● Dimensions: 350 to 1200 mm (14 to 48 inch)

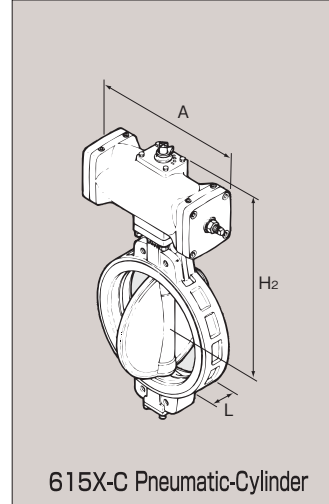
※Shapes vary according to sizes.



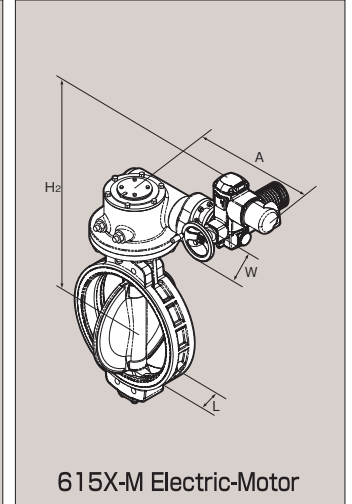
615X-G Worm-Gear



615X-GII Center-Handle



615X-C Pneumatic-Cylinder



615X-M Electric-Motor

※Also we have the model:  
615X-CII Single-Acting Type

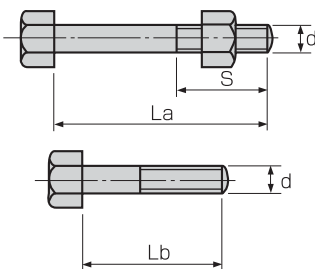
Nominal Size		615X-G Worm-Gear								615X-GII Center-Handle			615X-C Pneumatic-Cylinder			615X-M Electric-Motor			
inch	mm	L	d	g	H <sub>1</sub>	H <sub>2</sub>	A	W	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	W	Weight
14	350	92	336	389	289	369	335	315	72	511	315	62	603	506	70	736	621	200	140
16	400	102	390	448	322	415	320	315	94	650	355	94	707	664	148	779	621	200	160
18	450	114	439	504	345	445	320	315	116	717	355	129	737	664	170	809	621	200	180
20	500	127	490	554	379	493	331	355	167	767	355	167	974	1060	266	854	621	200	215
22	550	154	540	608	410	523	392	450	199	860	450	238	1004	1060	299	894	623	250	250
24	600	154	589	658	445	558	392	450	233	895	450	272	1039	1060	333	929	623	250	280
26	650	170	634	708	468	647	421	390	350	-	-	-	1089	1060	420	934	623	250	335
28	700	165	684	756	496	722	454	390	410	-	-	-	1300	1360	610	983	659	250	490
30	750	190	731	810	540	762	454	390	495	-	-	-	1340	1360	700	1061	685	400	600
32	800	190	781	860	570	792	454	390	575	-	-	-	1370	1360	775	1091	685	400	690
34	850	203	835	911	682	933	538	450	720	-	-	-	-	-	-	1148	685	400	735
36	900	203	884	960	704	956	538	450	755	-	-	-	-	-	-	1212	765	400	815
40	1000	216	980	1050	778	1011	538	450	1015	-	-	-	-	-	-	1298	789	500	1145
44	1100	254	1090	1162	873	1154	632	590	1560	-	-	-	-	-	-	1373	789	500	1365
48	1200	254	1189	1261	923	1224	632	590	1810	-	-	-	-	-	-	1449	811	500	1710

(Weight : kg)

※Motorized type of more than 350mm is selected according to the fluid pressure and power requirement. ( CRV / RCEL / NOAH / Rotork )

● Piping Bolt Sizes

For A type



Nominal Size		JIS 5K					JIS 10K				
inch	mm	Qty	Hex. bolt d×La×S	Qty	Hex. bolt d×Lb	Qty	Hex. bolt d×La×S	Qty	Hex. bolt d×Lb		
14	350	8	M22x170x56	8	M22x55	12	M22x180x56	8	M22x60		
16	400	12	M22x190x56	8	M22x60	12	M24x190x60	8	M24x65		
18	450	12	M22x200x56	8	M22x55	16	M24x210x67	8	M24x65		
20	500	16	M22x210x56	8	M22x55	16	M24x220x73	8	M24x65		
22	550	16	M24x240x73	8	M24x65	16	M30x260x85	8	M30x75		
24	600	16	M24x240x73	8	M24x60	20	M30x260x85	8	M30x75		
26	650	20	M24x260x60	8	M24x60	20	M30x280x72	8	M30x65		
28	700	20	M24x260x60	8	M24x60	20	M30x270x72	8	M30x65		
30	750	20	M30x290x72	8	M30x65	20	M30x300x72	8	M30x75		
32	800	20	M30x290x72	8	M30x65	24	M30x300x72	8	M30x75		
34	850	20	M30x300x72	8	M30x70	24	M30x320x72	8	M30x75		
36	900	20	M30x310x72	8	M30x70	24	M30x320x72	8	M30x75		
40	1000	24	M30x320x72	8	M30x70	24	M36x350x84	8	M36x75		
44	1100	24	M30x370x72	8	M30x70	24	M36x390x84	8	M36x80		
48	1200	28	M30x370x72	8	M30x70	28	M36x390x84	8	M36x80		

- Length of bolts are based on JIS standard and steel flange thickness.
- Hexagonal bolts used 8 pitch nuts.
- Hexagonal bolts & nuts, hexagonal bolts should be in a set. ( 350mm to 1200mm)
- For Lug Type, 1 tap hole 2 bolts.

# 618H

1.6 MPa  
**HIGH PRESSURE  
BUTTERFLY VALVES**

# 622H

2.0 MPa  
**HIGH PERFORMANCE  
BUTTERFLY VALVES**



618H-G



622H-G

JIS conformed product

PATENTED

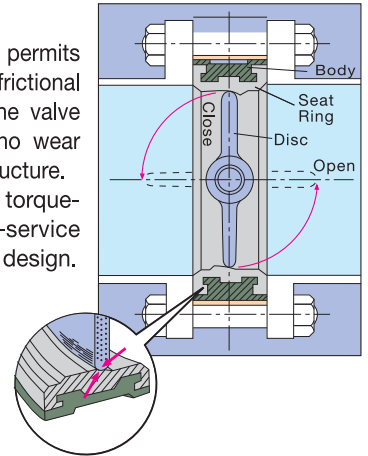
## 1.6MPa · 2.0MPa High-pressure Butterfly Valve created after our thorough pursuit of High-quality Seal Technology

Realized lower torque and excellent sealing performance through the "touch" seat and improving the sealing structure.

This valve brings out its stable performance for high-speed lines or high-flows-speed lines for general industries and air conditioning systems.

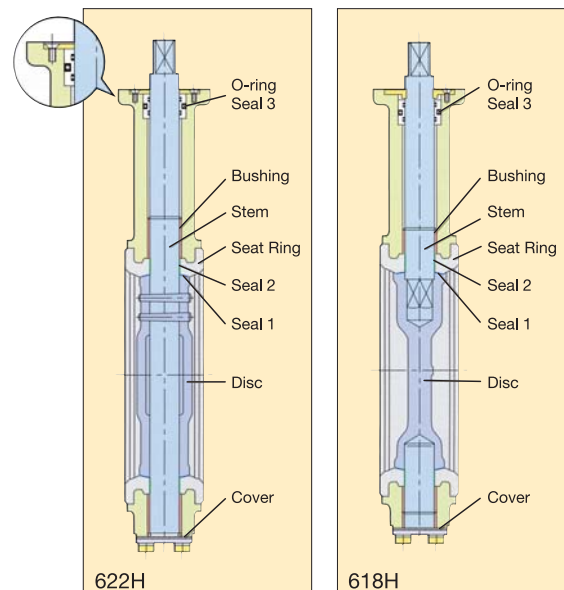
### Friction-Free Operation for Low Torque, Long Service.

The patented "Touch" seat design permits the disc to close with virtually no frictional contact between the disc and the valve seat. And so, there is virtually no wear and tear on the valve's internal structure. The construction ensures a low torque-to-size ratio and improved in-service performance over a conventional design.



### Multiple Sealing Structure Eliminates External Leaks

Primary sealing is provided between the disc and the seat ring, and secondary sealing is provided between the stem and the seat ring, thus assuring tight shut-off. An O-ring is mounted between the stem and the bushings for additional sealing. In addition, the valve is covered at its bottom to eliminate external leaks.



622H

618H

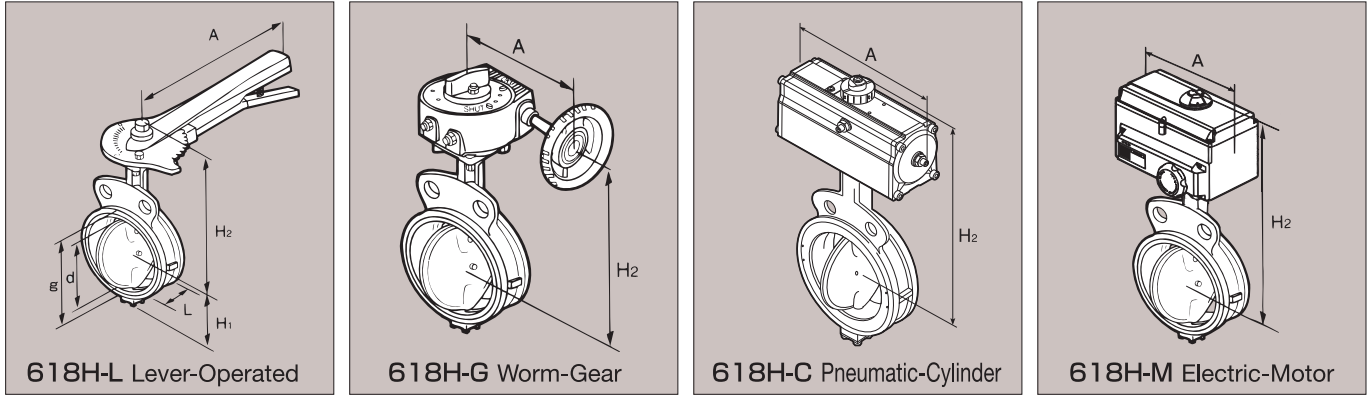
- The body shape varies with the size.
- The 622H has a disc provided with a knock pin while the 618H has a disc with no knock pin.



# 618H

OKM's proprietary "touch" seat and S-line disk have added high-reliability, in addition to the light-weight and compact structure, to the butterfly valve's basic advantages. This valve can be widely used for air conditioning systems as well as in general industries.

## ● Dimensions



Nominal Size		L	d	g	H1	618H-L Lever-Operated			618H-G Worm-Gear			618H-C Pneumatic-Cylinder			618H-M Electric-Motor		
inch	mm					H2	A	Weight	H2	A	Weight	H2	A	Weight	H2	A	Weight
2	50	43	55	81	86	179	160	3.2	172	132	4.8	243	179	4	314	180	7
2 1/2	65	46	66	99	85	192	160	4.0	182	132	5.5	253	179	4.7	324	180	7.7
3	80	46	84	114	93	202	200	4.4	192	132	5.9	263	179	5.1	385	277	14.6
4	100	52	100	136	99	225	260	6.1	207	132	7.2	294	223	7.4	400	277	15.9
5	125	56	130	167	116	253	360	9.3	228	170	10.1	343	271	11	420	277	17.7
6	150	56	154	192	131	—	—	—	244	197	13.4	358	271	12.3	435	277	19
8	200	60	200	242	169	—	—	—	284	255	28	416	355	22	486	301	28
10	250	68	246	299	204	—	—	—	322	255	38	486	445	38	524	301	38
12	300	78	295	348	254	—	—	—	352	255	49	516	445	50	563	345	60
14	350	78	333	389	286	—	—	—	385	320	72	745	664	128	*	*	*
16	400	102	384	447	321	—	—	—	420	320	95	812	755	155	*	*	*
18	450	114	434	507	353	—	—	—	463	331	139	924	1060	245	*	*	*
20	500	127	485	555	385	—	—	—	570	290	167	979	1060	275	*	*	*
24	600	154	586	659	445	—	—	—	626	325	265	1177	1360	470	*	*	*

\*Please contact us for sizes of 350 mm or more.

(Size : mm . Weight : kg)

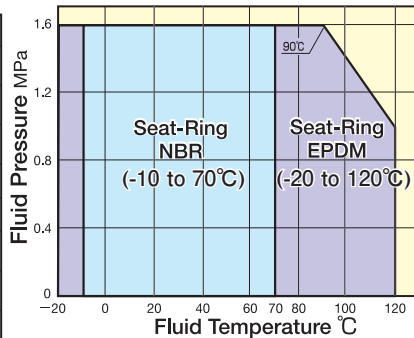
## ● Standard Materials

## ● Temperature and Pressure Ratings

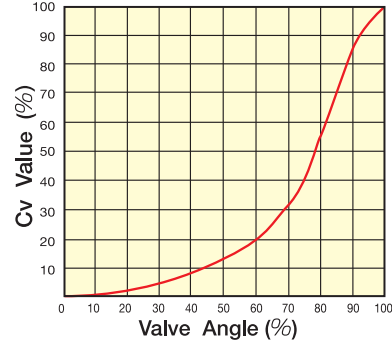
## ● Flow Characteristics

## ● Cv Values with Valve Fully Open

Part Name	Material
Body	FCD450
Disc	SCS13, SCS14
Seat Ring*	NBR, EPDM
Stem	top SUS420J2* *350mm and larger sizes: SUS316+PTFE bottom SUS420J2
O-ring	NBR, EPDM
Gasket	50~300mm NBR, EPDM 350~600mm NON ASBESTOS



\*This table conforms to the JIS standard (JIS B 2032).  
Contact us if you operate your valve outside the above pressure and temperature ranges.



Size(mm)	Cv Value
50	165
65	250
80	380
100	650
125	1100
150	1790
200	3300
250	4820
300	6200
350	8100
400	10800
450	13900
500	17300
600	25300

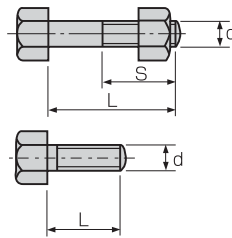
\*The rubber seat is injected to the body.

\*50-300mm with pneumatic actuator is SUS403.

## ● Standard Specifications

## ● Piping Bolt Sizes

Model	618H
Applicable Flange Std.	JIS10K/16K PN10 PN16 ASME 125Lb/150Lb
Max. Service Pressure	1.6MPa
Size	Lever-Operated : 50 to 125 mm Worm-Gear : 50 to 600 mm Pneumatic-Cylinder : 50 to 600mm Electric-Motor : 50 to 600mm
Max. Service Temperature	-10 to 70°C (NBR) , -20 to 120°C (EPDM)*
Face To Face	JIS B2002
Coating	Lacquer Primer ( Dark cyanide green)
Hydrostatic Shell Test	2.4MPa
Hydrostatic Seat Test	1.8MPa



Nominal Size	JIS 10K			JIS 16K		
	inch	mm	Qty	Hexagonal Bolt d×L×S	Qty	Hexagonal Bolt d×L×S
2	50	4	M16×100×38	8	M16×100×38	
2 1/2	65	4	M16×110×38	8	M16×110×38	
3	80	8	M16×110×38	8	M20×120×46	
4	100	8	M16×110×38	8	M20×130×52	
5	125	8	M20×120×46	8	M22×130×56	
6	150	8	M20×130×52	12	M22×140×56	
8	200	12	M20×130×52	12	M22×150×56	
10	250	12	M22×150×56	12	M24×160×60	
12	300	16	M22×160×56	16	M24×170×60	
14	350	12	M22×160×56	12	M30×P3×190×60	
		8	M22×55	8	M30×P3×70	
16	400	12	M24×190×60	12	M30×P3×220×60	
		8	M24×60	8	M30×P3×70	
18	450	16	M24×210×60	16	M30×P3×230×60	
		8	M24×65	8	M30×P3×75	
20	500	16	M24×220×60	16	M30×P3×250×72	
		8	M24×65	8	M30×P3×75	
24	600	20	M30×260×72	20	M36×P3×290×78	
		8	M30×70	8	M36×P3×90	

\*In case of flow media contains oil or oil material, EPDM seat cannot be applicable.

\*Please contact to us in case of using less than 0(Zero) temperature.

● The bolts for piping are optionally available.

● Above size is for the nut (h/d = 0.8).

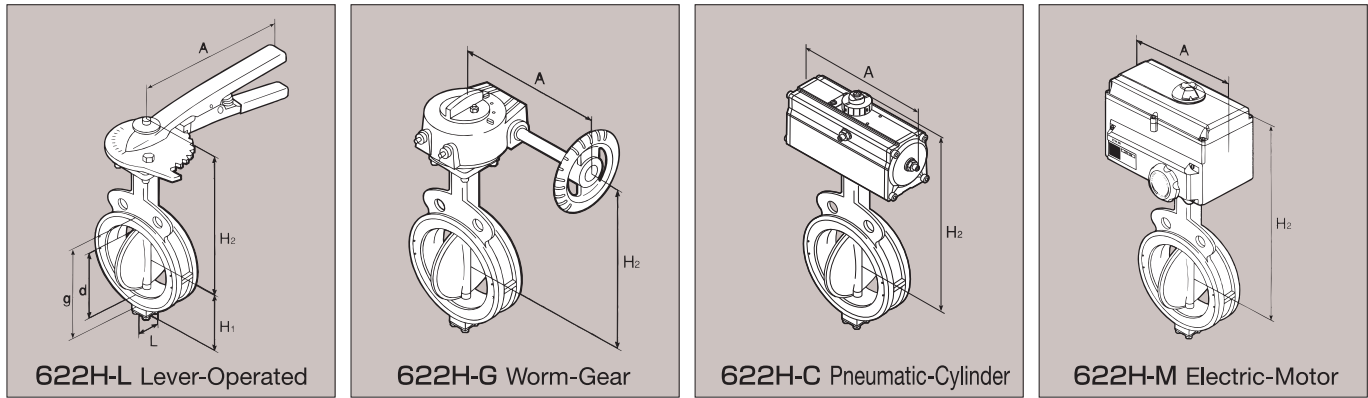
● 350 to 600 mm: Long bolt for the upper level, set bolt for the lower level

● Use head screw type of set bolt.

# 622H

The "touch" seat and the excellent multiple-sealing structure eliminate external leaks. This valve brings out its stable performance under conditions such as high-pressure, high-differential pressure, high-speed flow or vacuums in various fields of general industries and air conditioning.

## ● Dimensions



Nominal Size		L	d	g	H <sub>1</sub>	622H-L Lever-Operated			622H-G Worm-Gear			622H-C Pneumatic-Cylinder			622H-M Electric-Motor		
inch	mm					H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight
2	50	43	55	81	86	179	160	3.2	172	132	4.8	243	179	4	365.5	277	14.5
2 1/2	65	46	66	99	85	192	160	4.0	182	132	5.5	253	179	4.7	375.5	277	14.2
3	80	46	84	114	93	202	200	4.4	192	132	5.9	279	223	6.1	385.0	277	14.6
4	100	52	100	136	99	225	260	6.1	207	132	7.2	294	223	7.4	400.0	277	15.9
5	125	56	130	167	116	253	360	9.3	228	170	10.1	343	271	11	420.0	277	17.7
6	150	56	154	192	131	—	—	—	244	197	13.4	398	355	18	435.0	277	19
8	200	60	200	242	169	—	—	—	284	255	28	416	355	22	486.0	301	28
10	250	68	246	299	204	—	—	—	319	255	38	507	445	41	521.0	301	38
12	300	78	295	348	254	—	—	—	349	335	56	732	664	114	560.0	345	60
14	350	78	333	389	286	—	—	—	385	320	72	745	664	128	*	*	*
16	400	102	384	447	321	—	—	—	428	331	110	929	1060	215	*	*	*
18	450	114	434	507	353	—	—	—	463	392	144	924	1060	245	*	*	*
20	500	127	485	555	385	—	—	—	570	386	167	979	1060	275	*	*	*
24	600	154	586	659	445	—	—	—	626	421	265	1186	1360	470	*	*	*

\*Please contact us for sizes of 350 mm or more.

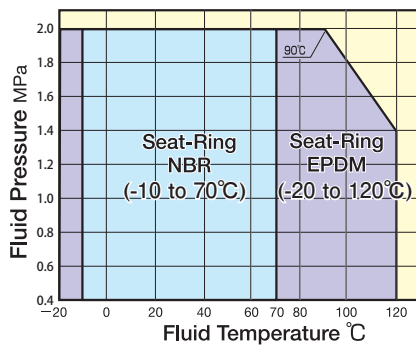
(Size : mm , Weight : kg)

## ● Standard Materials

Part Name	Material
Body	FCD450
Disc	SCS13
Seat Ring*	NBR, EPDM
Stem	SUS403
O-ring	NBR, EPDM
Gasket	50~300mm NBR, EPDM
	350~600mm NON ASBESTOS

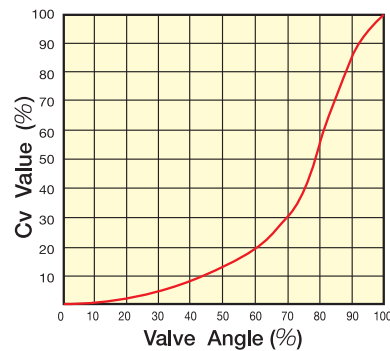
\*The rubber seat is injected to the body.

## ● Temperature and Pressure Ratings



Contact us if you operate your valve outside the above pressure and temperature ranges.

## ● Flow Characteristics



## ● Cv Values with Valve Fully Open

Size (mm)	Cv Value
50	134
65	206
80	327
100	562
125	968
150	1547
200	2931
250	4258
300	5576
350	8100
400	10800
450	13900
500	17300
600	25300

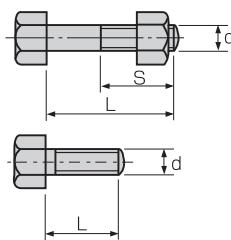
## ● Standard Specifications

Model	622H
Applicable Flange Std.	JIS10K/16K PN10 PN16 PN20 ASME 125Lb/150Lb
Max. Service Pressure	2.0MPa
Size	Lever-Operated : 50 to 125 mm Worm-Gear : 50 to 600 mm Pneumatic-Cylinder : 50 to 600mm Electric-Motor : 50 to 600mm
Max. Service Temperature	-10 to 70°C (NBR) , -20 to 120°C (EPDM)**
Face To Face	JIS B 2002
Coating	Lacquer Primer
Hydrostatic Shell Test	3.0MPa
Hydrostatic Seat Test	2.2MPa

\*\*In case of flow media contains oil or oil material, EPDM seat cannot be applicable.

\*Please contact to us in case of using less than 0(Zero) temperature.

## ● Piping Bolt Sizes



Nominal Size	JIS 16K				JIS 20K			
	inch	mm	Qty	Hexagonal Bolt d×L×S	Qty	Hexagonal Bolt d×L×S		
2	50	8	8	M16×100×38	8	M16×100×38		
2 1/2	65	8	8	M16×110×38	8	M16×110×38		
3	80	8	8	M20×120×46	8	M20×120×46		
4	100	8	8	M20×130×52	8	M20×130×52		
5	125	8	8	M22×130×56	8	M22×140×56		
6	150	12	12	M22×140×56	12	M22×140×56		
8	200	12	12	M22×150×56	12	M22×150×56		
10	250	12	12	M24×160×60	12	M24×170×60		
12	300	16	16	M24×170×60	16	M24×180×60		
14	350	12	8	M30×P3×190×60 M30×P3×70	12	M30×P3×200×72 M30×P3×75		
16	400	12	8	M30×P3×220×60 M30×P3×70	12	M30×P3×230×85 M30×P3×80		
18	450	16	8	M30×P3×230×60 M30×P3×75	16	M30×P3×250×85 M30×P3×80		
20	500	16	8	M30×P3×250×72 M30×P3×75	16	M30×P3×270×85 M30×P3×85		
24	600	20	8	M36×P3×290×78 M36×P3×90	20	M36×P3×310×97 M36×P3×95		

● The bolts for piping are optionally available.

● Above size is for the nut (h/d = 0.8).

● 350 to 600 mm: Long bolt for the upper level, set bolt for the lower level

● Use head screw type of set bolt.

# 635N

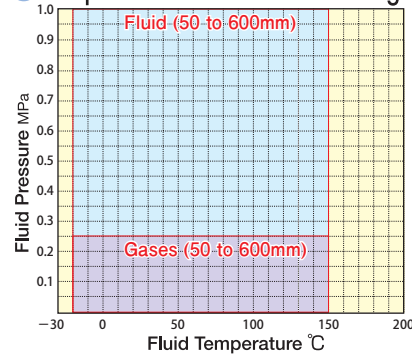
## Teflon® (PTFE) BUTTERFLY VALVES

### High Corrosion Resistance and Durability

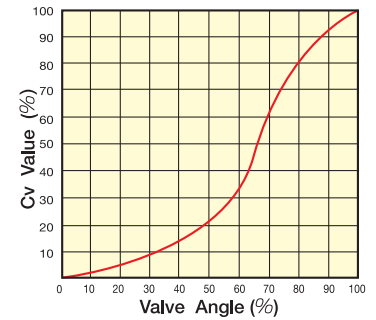
No other materials have better performance than Teflon®(PTFE) resin in keeping high corrosion resistance and preventing the adhesion of fluid. This resin is ideal for acids, gases, and food in the form of fluid. Furthermore, the unique internal structure prevents residual fluid, thus maintaining its durability and cleanliness far better than conventional valves.

Valves connected to pipes used for pharmaceutical, food, and industrial applications that handle acid and alkali solvents are required to have more corrosion resistance, chemical resistance, and sealing performance than other valves. The entire surface of OKM's Teflon butterfly valve, which comes in contact with fluid, uses a tetrafluoroethylene perfluoroalkoxy (PTFE) resin. This valve demonstrates stable performance in a wide variety of fields, for pure water equipment as well as pharmaceutical, food, and chemical applications.

#### Temperature and Pressure Ratings



#### Flow Characteristics



#### Standard Materials and Specifications

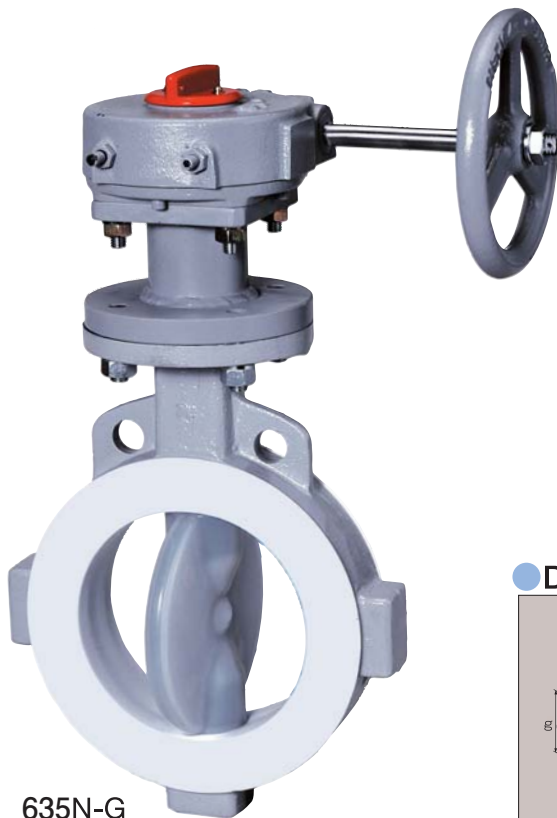
Model	635N
Applicable Flange Std.	JIS10K ASME 125Lb/150Lb
Max. Service Pressure	Fluid 1.0MPa / Gases 0.25MPa
Actuators	Lever-Operated, Worm-Gear, Pneumatic-Cylinder, Electric-Motor
Max. Service Temperature	-20°C to 150°C
Face To Face	JIS B2002 46 · 47 Series
Coating	Epoxy Coating
Hydrostatic Shell Test	Fluid 1.1MPa / Gases 0.3MPa
Hydrostatic Seat Test	1.5MPa

Part Name	Material
Body	SCPH2
Disc	PFA+SCPH2 PFA+SS
Seat Ring	PTFE
Stem	S45C
O-ring	FKM
Seal ring	PTFE

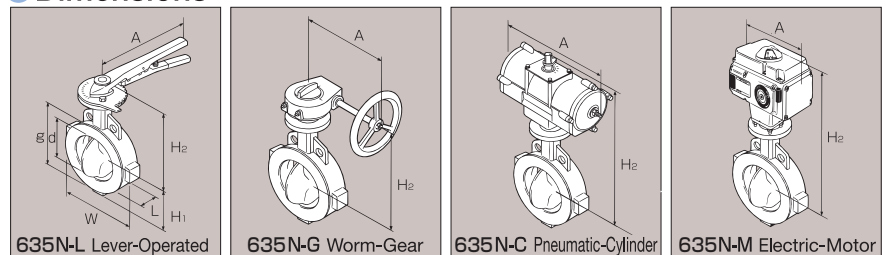
#### Cv Values with Valve Fully Open

Size (mm)	Cv Value
50	120
65	120
80	280
100	450
125	750
150	1250
200	2250
250	3600
300	5000
350	9200
400	14500
450	20100
500	22000
600	31000



635N-G

#### Dimensions



Nominal Size		L	d	g	H <sub>1</sub>	W	635N-L Lever-Operated			635N-G Worm-Gear			635N-C Pneumatic-Cylinder			635N-M Electric-Motor		
inch	mm						H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight
2	50	43	59	100	60	142	192	160	4.1	186	141	5.7	257	179	4.9	328	180	7.9
2 1/2	65	43	59	100	60	142	192	160	4.1	186	141	5.7	257	179	4.9	328	180	7.9
3	80	46	79	135	86	150	234	200	6.2	225	141	7.7	312	223	7.9	418	277	16.4
4	100	52	99	160	112	174	254	260	8.9	236	182	11.1	322	223	10.2	428	277	18.7
5	125	56	124	185	130	202	278	360	11.8	251	182	12.7	370	271	14.1	443	277	21
6	150	56	149	213	145	231	315	360	15.9	289	211	18.7	403	271	17.5	480	277	25
8	200	60	196	265	175	280	—	—	—	317	211	26	459	355	29	529	301	34
10	250	68	249	322	215	344	—	—	—	388	255	41	552	445	44	590	301	44
12	300	78	299	370	251	392	—	—	—	423	255	50	587	445	54	634	345	64
14	350	78	348	415	292	480	—	—	—	502	320	95	792	664	142	858	621	171
16	400	102	396	475	320	550	—	—	—	527	320	145	817	664	188	883	621	222
18	450	114	447	530	361	605	—	—	—	587	331	183	888	755	220	922	621	243
20	500	127	490	585	383	660	—	—	—	608	331	243	994	1060	338	943	621	303
24	600	154	589	690	453	770	—	—	—	678	392	339	1064	1060	428	1023	623	398

\*Please contact us for sizes of 350 mm or more.

(Size : mm , Weight : kg)



# 602A

**CONDENSATION RESISTANT  
ALMI DICAST BODY  
BUTTERFLY VALVES**

# 603A

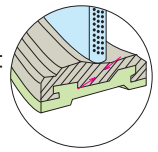
**ALMI DICAST BODY  
BUTTERFLY VALVES**

## JIS Compliant Light-weight Anti-condensation Valve suitable for Air Conditioning, Plant and so on.

The OKM butterfly valve 602A is a highly reliable multi-purpose valve with an extraordinarily efficient anti-condensation structure. We have designed and developed this valve fully utilizing our accumulated data and technologies such as our proprietary "touch" seal system. The valve sports by far the best controllability and sealing performance. The JIS compliant (JIS B 2032) almi dicast butterfly valve is a general purpose valve that is easy to install, has excellent durability and realizes cost-savings.

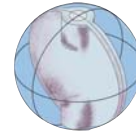
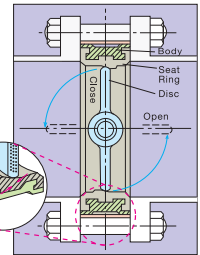
### More Economic with New OKM-specific Soft "Touch" Seat

We have developed a new soft "touch" seat that presses at an obtuse angle when the disk makes contact to close on the rubber seat surface, permitting the seat ring to have a long service life economically and without straining contact with the seat.



### Low Torque realized with Lightweight and Compact Actuator

OKM's unique proprietary seat system is patented. We realized the lightweight and compact actuator by further lowering the torque as well.

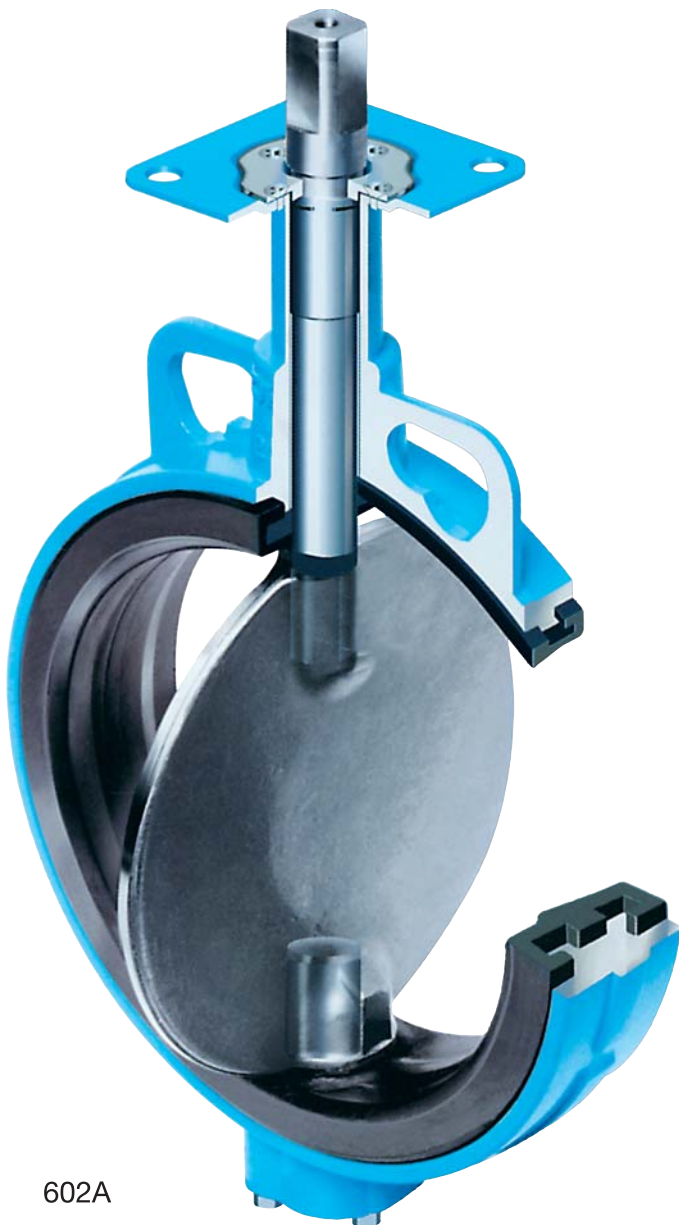
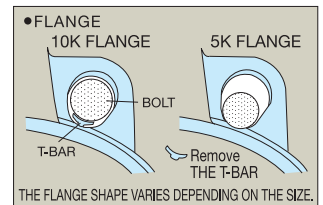


### One-piece Structure between Almi Main Body and Stainless Steel Neck JIS Compliant Valve with Anti-condensation Structure (602A)

We have designed a one-piece structure between the lightweight and solid almi dicast main body and the stainless steel neck. This is a JIS compliant almi dicast butterfly valve, which brings about excellent durability to prevent condensation with OKM's proprietary structure (patented).

### Dual Purpose Hole for Bolt and JIS 5K and 10K Piping Guide, and Deviation-proof

OKM's proprietary "T Bar" (patented) has been adopted for the bolt guide hole, which makes it secure and easy to set the piping position without any anxiety as to deviation.



602A

## 603A

In the field of the drainage processing of water purification plants and factories, efforts have been made toward water treatment, such as the development of new processing systems. In the above situation, OKM has developed resin valve PPS (polyphenylene sulfide) that has excellent corrosion resistance. To meet the demands of the times, OKM will continue developing new valves in response to users' needs.

### Development of Resin Valve PPS

A lineup of discs made of stainless and resin valve PPS that has high corrosion resistance demonstrates preminent durability.

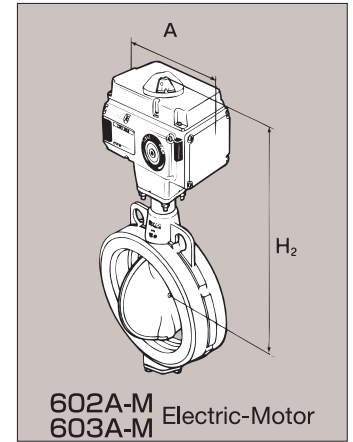
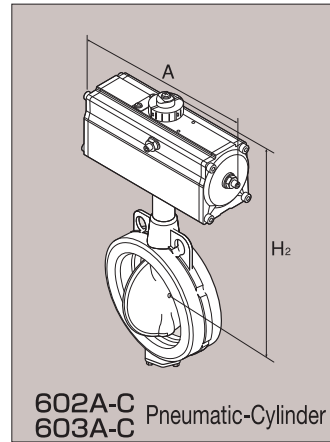
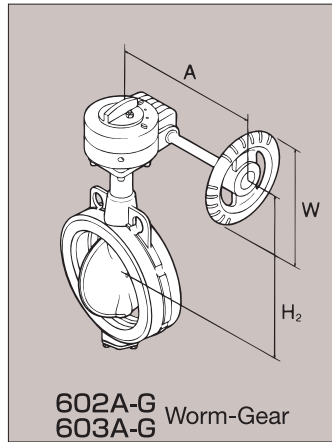
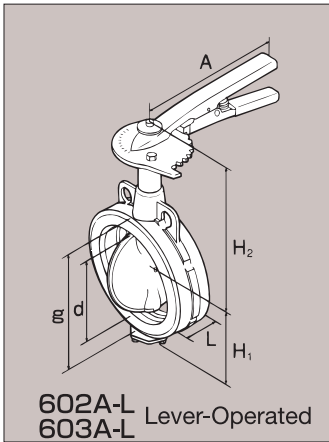


JIS conformed product

PATENTED



## Dimensions ※Shapes vary according to sizes.



※Please contact us for 603A

Nominal Size		602A-L Lever-Operated							602A-G Worm-Gear				602A-C Pneumatic-Cylinder			602A-M Electric-Motor		
inch	mm	L	d	g	H <sub>1</sub>	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	∅W	Weight	H <sub>2</sub>	A	Weight	H <sub>2</sub>	A	Weight
1 1/2	40	33	43	69	66	168	160	1.4	154	80	70	1.5	230	179	2.5	301	180	5.5
2	50	43	55	81	69	176	160	1.6	162	80	70	1.7	238	179	2.7	309	180	5.7
2 1/2	65	46	66	104	80	189	160	2.2	172	80	70	2.3	248	179	3.3	319	180	6.3
3	80	46	84	115	89	194	200	2.5	179	133	100	3.1	253	179	3.4	324	180	6.4
4	100	52	100	136	106	206	200	3.2	191	133	100	3.8	265	179	4.1	387	277	13.6
5	125	56	130	167	123	234	260	4.8	215	172	125	5.8	330	271	8.3	407	277	15
6	150	56	154	196	138	249	260	5.8	230	172	125	6.8	345	271	9.3	422	277	16
8	200	60	200	242	168	—	—	—	259	197	160	10.9	401	355	16.2	471	301	22
10	250	68	246	300	223	—	—	—	319	222	200	21	483	445	30	521	301	29
12	300	78	295	346	260	—	—	—	349	222	200	28	513	445	37	551	301	36

※Please contact us for sizes of 350 mm or more.

(Size : mm , Weight : kg)

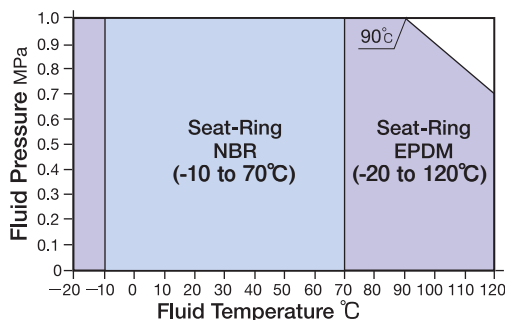
## Standard Specifications

Model	602A	603A	Face To Face	JIS B 2002 46 Series	
Size	40mm to 300mm	40mm to 200mm	Applicable Flange	ISO 5211	
Applicable Flange Std.	JIS: 5K, 10K ASME 125Lb/150Lb		Standard Materials	Body : ADC12	
Max. Service Pressure	1.0MPa			Disc : SCS14 SCS13 603A Disc : PPS (40 to 200mm) SCS14 (40 to 200mm) SCS13 (40 to 200mm)	
Max. Service Temperature	-20 to 120°C EPDM※、 -10 to 70°C NBR			Stem : SUS420J2	
Hydrostatic Seat Test	1.1MPa			Seat Ring : EPDM (NBR)	
Hydrostatic Shell Test	1.5MPa			Coating	Polyester Powder Coating Light Blue
Actuators	Lever-Operated , Worm-Gear , Pneumatic-Cylinder , Electric-Motor				

※In case of flow media contains oil or oil material, EPDM seat cannot be applicable.

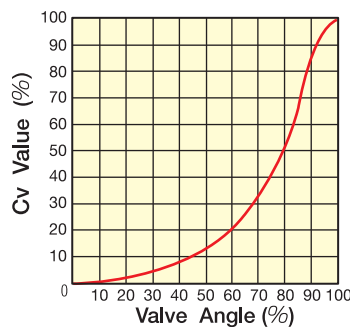
\*Please contact to us in case of using less than 0(Zero) temperature.

## Temperature and Pressure Ratings



\*This table conforms to the JIS standard (JIS B 2032).  
Contact us if you operate your valve outside the above pressure and temperature ranges.

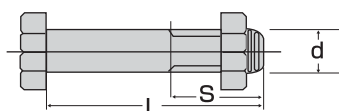
## Flow Characteristics



## Cv Values with Valve Fully Open

Size (mm)	Cv Value
40	102
50	165
65	250
80	380
100	650
125	1100
150	1790
200	3300
250	4400
300	6200

## Piping Bolt Sizes



Bolt length applies to flange thicknesses that conform to JIS standard.  
The hexagonal bolt should use an 8UN splitnut.

Nominal Size		JIS 5K		JIS 10K	
inch	mm	Qty	Hexagonal Bolt d×L×S	Qty	Hexagonal Bolt d×L×S
1 1/2	40	4	M12× 75×30	4	M16× 85×38
2	50	4	M12× 90×30	4	M16×100×38
2 1/2	65	4	M12× 90×30	4	M16×110×38
3	80	4	M16× 100×38	8	M16×110×38
4	100	8	M16× 110×38	8	M16×110×38
5	125	8	M16× 110×38	8	M20×120×46
6	150	8	M16× 120×38	8	M20×130×52
8	200	8	M20× 130×52	12	M20×130×52
10	250	12	M20× 140×52	12	M22×150×56
12	300	12	M20× 150×52	16	M22×160×56

\*As for the minimum internal diameter size for piping, refer to the table of minimum internal diameter size for piping, 615X on Page 10.

# 606K 606F

## DOUBLE-FLANGED BUTTERFLY VALVES

### Highly Reliable Double-Flanged Butterfly Valve for Ships and General Industries

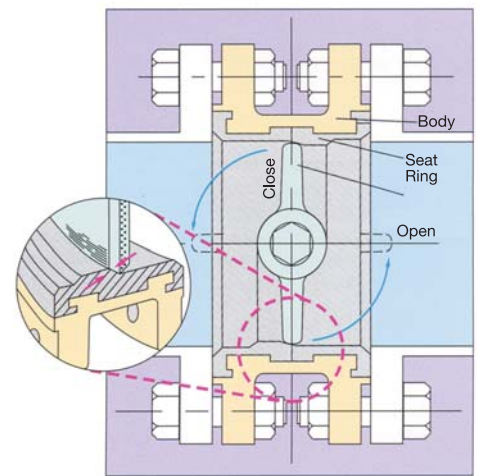
OKM's unique "Touch Seat" Design, double-flanged structure, and multiple-sealing system combine to provide a highly reliable valve with a wide variety of uses, as shipside valves or for general industrial use,

#### "Touch Seat" Design Ensures High Reliability and Long Service Life

Our Unique "Touch Seat" Design enables the disc to close with virtually no friction between the disc and the valve seat. This minimizes wear on the seat ring ensuring leak-proof closure. The design also ensures highly reliable valve operation and a long service life.



606K-G

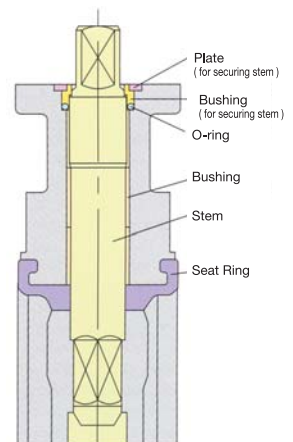


#### Double-flanged Structure

The 606 valve can be installed directly to the end of a pipe and to the side of a ship. A bushing and plate at the top of the stem prevent the stem from leaving the body ensuring safe flow control.

#### Reliable Multiple Seals

A primary seal between the disc and the seat ring and a secondary seal between the stem and the seat ring ensure a tight seal when the valve is closed. An O-ring seal between the stem and bushing is also included. The bottom of the valve is covered to eliminate any external leakage.



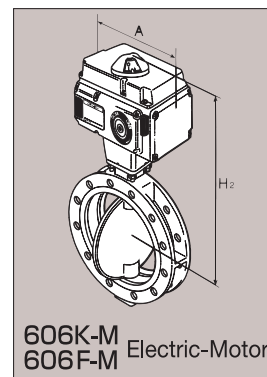
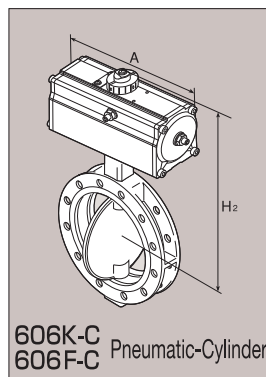
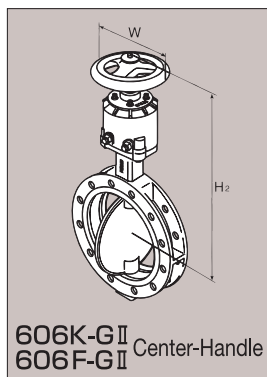
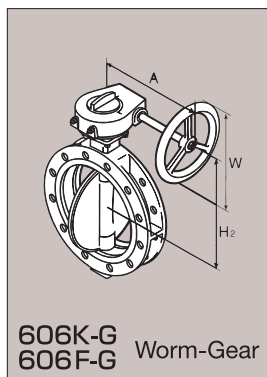
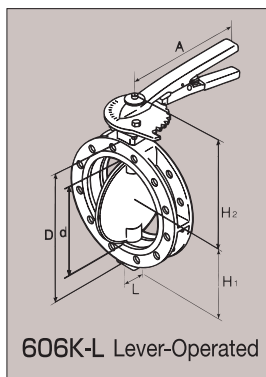
#### Easy-maintenance and Wear-resistant Design

The disc and stem are hexagonally jointed without pins. This provides a smooth disc surface which minimizes fluid resistance, making maintenance easier. Also, the upper and lower stem bushings provide excellent resistance against wear and friction, preventing galling and

JIS conformed product

PATENTED

## Dimensions \*Shapes vary according to sizes.



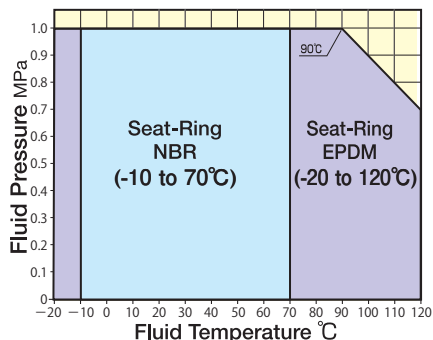
Nominal Size		606K-L Lever-Operated							606K-G · 606F-G Worm-Gear				606K-GII · 606F-GII Center-Handle			606K-C · 606F-C Pneumatic-Cylinder			606K-M · 606F-M Electric-Motor		
inch	mm	L	d	D	H1	H2	A	Weight	H2	A	∅W	Weight	H2	∅W	Weight	H2	A	Weight	H2	A	Weight
2	50	43	55	155	70	174	160	6.2	167	141	100	7.8	278	100	8.7	238	179	7.3	309	163	10.3
2½	65	46	66	175	80	187	160	8	177	141	100	9.6	288	100	10.4	248	179	9	319	163	12
3	80	46	84	185	96	192	200	9.3	182	141	100	10.8	293	100	11.2	253	179	9.8	324	163	12.8
4	100	52	100	210	116	204	200	12	194	141	100	13.6	305	100	13.9	265	179	12.5	387	277	22
5	125	100	130	250	140	234	260	19.2	215	182	125	22	329	140	21	330	271	21	407	277	28
6	150	100	154	280	155	249	260	24	230	182	125	26	344	140	25	345	271	25	422	277	32
8	200	100	200	330	183	288	360	33	259	211	160	36	408	200	40	401	355	38	471	301	42
10	250	110	246	400	223	—	—	—	319	255	200	62	458	200	58	483	445	63	521	301	62
12	300	110	295	445	260	—	—	—	349	255	200	71	488	200	67	513	445	72	551	301	72
14	350	120	336	490	289	—	—	—	369	335	315	95	511	315	85	603	506	93	580	345	99
16	400	130	390	560	322	—	—	—	415	320	315	129	650	355	129	707	664	183	620	345	131
18	450	150	439	620	345	—	—	—	445	320	315	159	717	355	172	737	664	213	650	345	161
20	500	160	490	675	379	—	—	—	493	331	355	215	767	355	215	974	1060	320	*	*	*
22	550	170	540	745	410	—	—	—	523	392	450	258	860	450	297	1004	1060	358	*	*	*
24	600	170	589	795	445	—	—	—	558	392	450	290	895	450	329	1039	1060	390	*	*	*
26	650	170	634	845	468	—	—	—	647	421	390	465	*	*	*	*	*	*	*	*	*
28	700	165	684	905	496	—	—	—	722	454	390	550	*	*	*	*	*	*	*	*	*
30	750	190	731	970	540	—	—	—	762	454	390	630	*	*	*	*	*	*	*	*	*
32	800	190	781	1020	570	—	—	—	792	454	390	680	*	*	*	*	*	*	*	*	*
34	850	203	835	1070	682	—	—	—	933	538	450	845	*	*	*	*	*	*	*	*	*

(Weight : kg)

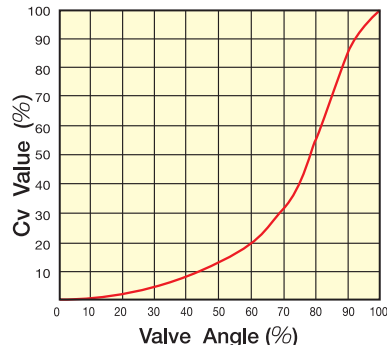
## Standard Materials

Part Name	Material	
	606K	606F
Body	SCPH2,FCD450	
Disc	SCS13	
	SCS14	—
Seat Ring	NBR,EPDM	
Stem	SUS420J2	
O-ring	NBR	
Gasket	NBR	Asbestos-Free

## Temperature and Pressure Ratings



## Flow Characteristics



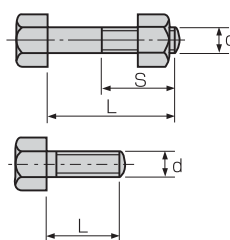
## Cv Values with Valve Fully Open

Size (mm)	Cv Value
50	165
65	250
80	380
100	650
125	1100
150	1790
200	3300
250	4400
300	6200
350	7550
400	10700
450	13800
500	17000
550	21400
600	25200
650	28600
700	35000
750	39500
800	46000
850	56000

## Standard Specifications

Model	606K	606F
Size	50 to 300mm	350 to 850mm
Applicable Flange Std.	JIS 5K/10K	
Max. Service Pressure	1.0MPa	
Actuators	Lever-Operated, Worm-Gear, Center-Handle-Gear, Pneumatic-Cylinder, Electric-Motor	
Max. Service Temperature	-10 to 70°C (NBR), -20 to 120°C (EPDM)**	
Face To Face	JIS F7480	
Coating	Epoxy Coating (Munsell N7)	
Hydrostatic Shell Test	1.5MPa	
Hydrostatic Seat Test	1.1MPa	

## Piping Bolt Sizes



\*As for the minimum internal diameter size for piping, refer to the table of minimum internal diameter size for piping, 615X on Page 10.

Nominal Size	JIS 5K				JIS 10K				
	inch	mm	Qty	Hexagonal Bolt d × La	inch	mm	Qty	Hexagonal Bolt d × La	
2	50	—	—	8	M12×30	—	—	8	M16×35
2½	65	—	—	8	M12×30	—	—	8	M16×35
3	80	—	—	8	M16×30	—	—	16	M16×35
4	100	—	—	16	M16×35	—	—	16	M16×35
5	125	8	M16×55	8	M16×40	8	M20×60	8	M20×40
6	150	8	M16×60	8	M16×40	8	M20×65	8	M20×45
8	200	8	M20×65	8	M20×45	16	M20×65	8	M20×45
10	250	16	M20×70	8	M20×45	16	M22×75	8	M22×50
12	300	16	M20×70	8	M20×45	24	M22×75	8	M22×50
14	350	16	M22×80	8	M22×55	24	M22×80	8	M22×50
16	400	24	M22×85	8	M22×55	24	M24×90	8	M24×60
18	450	24	M22×85	8	M22×55	32	M24×95	8	M24×60
20	500	32	M22×85	8	M22×55	32	M24×95	8	M24×60
22	550	32	M24×90	8	M24×60	32	M30×110	8	M30×70
24	600	32	M24×90	8	M24×60	40	M30×110	8	M30×70
26	650	—	—	—	—	40	M30×110	8	M30×65
28	700	—	—	—	—	40	M30×110	8	M30×65
30	750	—	—	—	—	40	M30×120	8	M30×75
32	800	—	—	—	—	48	M30×120	8	M30×75
34	850	—	—	—	—	48	M30×130	8	M30×80

Bolt length applies to flange thicknesses that conform to JIS standard. The hexagonal bolt should use an 8UN splitnut. All Valves sizes require the hexagonal bolt/nuts sets.

\*\*In case of flow media contains oil or oil material, EPDM seat cannot be applicable.

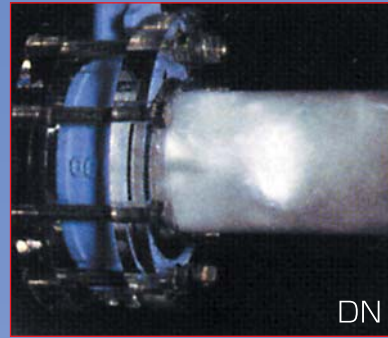
\*Please contact to us in case of using less than 0(Zero) temperature.

# VAVTROL<sup>®</sup> DN

## *Electronically Control Type Butterfly Valves*



DN2P



DN



DNP

The DN series made their debut. Microprocessors are equipped on the electronic control butterfly valves, VAVTROL of OKM. They are the most advanced valves in the 21st century with high reliability and controllability unique to digital control.

**The valves have got intelligence now.**

**VAVTROL-DN Series**

**PATENTED**



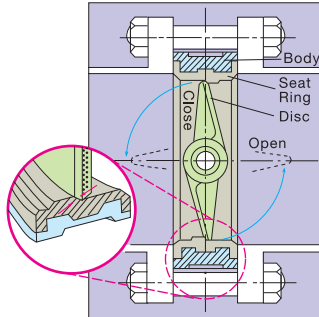
## "Stainless Disk" The Valve Body for Stable Control

The high range ability (more than 1:100) extends the control range. The high choking feature enables stable control. The disk is made of stainless steel, and the inside surface in contact with the fluid will not rust.



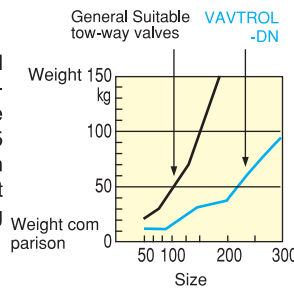
## "Touch Sheet" High Sealing Feature with a Tight Shutoff

The OKM pioneered touch sheet method allows smooth contact for the sheet, and achieves high durability and sealing capability. The VAVTROL-DN series with the close-off function can serve as a shutoff valve.



## "Compact Size" Cost-saving Compact-sized Contour

Terminal block boxes and control board boxes are not required for the VAVTROL-DN series. When compared with the equal-type ML series, the DN series is 15 to 20 cm shorter in height, and more than 4 kg lighter in weight. The compact design further simplifies the piping procedures.



## "Microcomputerized Digital Control" Realizing Accurate Operation and Easy Field Adjustments

The latest digital control increases the resolving power of the DN series from 100 : 1 to 200 : 1, making accurate control available. Field adjustments, including changing valve characteristics and functions, are also easier with the DN series. (Supporting Windows95/98)

## "Communications Function" Enabling Remote Monitoring and Centralized Management

This function enables communications with external personal computers and remote monitoring computers. The loading of valve control information, changing parameters, and maintenance can be performed easily. The DN provides a new system for remote monitoring.

## "Self-Controlled Operation Function" Quickly Responding to Startup and Abnormal Conditions

When the control system starts up or abnormal conditions are detected, the computer judges the conditions based on the internal condition of the driveline and communications status, and then performs predefined operations to protect the valve and system.

## "Status Recording Function" Useful for Data Analysis of Abnormal Conditions

When abnormal conditions are encountered in the internal temperature or aperture, the DN saves the details into memory and sounds an external warning. It is useful for tracking down the problem and examining the responses smoothly. This feature is useful for making judgments about necessary parts replacement and lifespan during maintenance jobs. This feature is very useful for preventive maintenance of the system and system analysis when performing maintenance.

## "Self-Contained Control ST Type" Operating based on the Assessment of Conditions

The ST type is an intelligent control-valve with a built-in regulator. This innovative self-contained control valve performs comparative computation of the signal from the sensor for PID control. Loading valve control information, changing parameters, and maintenance can be performed easily. The ST provides a new system for remote monitoring.

**VAVTROL-DN**

TYPE  
**DN19**  
On-Off type variable speed control

Use this model for on-off control. The rate of the open/close operation is easily controlled. The DN 19 prevents water hammer, and enables pressure control using a closing motion system of warmth and controlled-floating regulator when starting up an absorbing-type freezer. The valve aperture is 0 to 90°.

TYPE  
**DN2L**  
Two-way Valve Proportional Control

Use this model for general two-way valve control. There are two microcomputer-controlled models for the proportional control type: the 2L with linear flow rate characteristics, and the 2E with approximately equal characteristics. Select the type best suited to the characteristics of the control system. Generally, the 2L model is used for temperature control and liquid surface control, and the 2E model is used for pressure control and flow rate control. The characteristics can be changed after the installation to the desired settings.

TYPE  
**DN2E**  
Two-way Valve Proportional Control

The DN3 type enables proportional control for both diverted and mixed flows. Use two linear-characteristic type valves as one unit. One serves as the master-valve and receives signals from the regulator. The master-valve and sub-valve perform opposite functions to divert and mix the flow. Unlike the mixed three-way valves, the DN3 can be installed almost anywhere and minimize the capacity required for installation.

TYPE  
**DN3**  
Three-way Valve Proportional Control

The valve body features cavitation control construction so that it can be used for pressure control and other heavy control demands. The DN2P is useful for pressure control with highly different pressure, different-pressure control, and intrigue pressure control in a heat storage tank which requires preventing water from being let out.

TYPE  
**VAVTROL-DN2P**  
Two-way Valve Proportional Control

The Self-Contained Control type is added to the line up to meet a wider range of control demands.

Function name	DN19	DN2L	DN2E	DN3	DN2P	Description
Input signal	—	○	○	○	○	Select the input signal from a 0-135Ω resistance signal, DC4-20 mA signal, and DC1 V to DC5 V. Changeable after installation.
Valve operation (forward/reverse operation)	—	○	○	○	○	Forward and reverse operation is available for the valve operation. Changes are made easily.
Interlock function	—	○	○	○	○	Select from open valve/closed valve/forceful halt/forceful halt with arbitrary aperture. Operates between the contacts and can be locked during the cable break.
Linear characteristics function	—	○	—	○	○	Changes the flow rate characteristics to be linear.
Arbitrary setting function for max/min of aperture.	—	○	○	—	○	Maximum aperture (50 to 100°C) and minimum aperture (0 to 50°C) are standard. The setting can be changed according to the circumstances.
Time adjustment for closing motion	○	—	—	—	—	Time for the closing motion can be adjusted between rapid closing (approx. 30 sec) and 10-times closing time (approx. 5 min).
Speed control function for closing motion	—	○	○	○	○	The desired speed for the closing motion can be set and changed for three individual points between the open and closed states.
Output function of valve aperture	—	○	○	○	○	Outputs a valve aperture of 0 through 100% with DC4 mA through DC20 mA. The current valve aperture can be monitored.
Medium and limit of non-voltage closing motion	○	○	○	○	○	Medium and limit of the non-voltage closing motion are standard. The limit at overload was added.
Communication function (Valve communication)	—	○	○	○	○	Data communication can be input/output from/to a personal computer for remote monitoring and centralized management.
Operational function for start up and abnormal conditions	—	○	○	○	○	Autonomously performs the predefined operation at start up and during abnormal conditions.
Status recording function	—	○	○	○	○	Saves the abnormal inner temperature and valve aperture into memory and transmits the data to external personal computers.

## Standard Specifications

### Valve body

Type	DN
Size	50 to 450 A
Flange	JIS10K/JIS16K/JIS20K
Maximum working voltage	1.0MPa / 1.6MPa / 2.0MPa Closed-off *1
Standard material Main unit Valve body Sheet ring Stem	FCD450 SCS13 EPDM SUS403
Ambient fluid temperature	-20 to 120°C *2

\*Do not use the piping gaskets.

Supply voltage	100 VAC / 200 VAC / 220 VAC
Motor type	Condenser motor
Operation time	DN19: approx. 30 sec to 10 min. (Varies with size) Others: approx. 25 sec to 50 sec
Positioning limitation	One fully-open stopper at open-side (OLS1)
Overload limitation	One fully-closed stopper at closed-side (CTS1)
Thermal protection (combustion inhibitor)	Comes with all types. 120°C ± 10°C
Sequence output (medium limitation)	One for each side (open / closed). One for abnormal torque
Space heater	Comes with all types. (5W)
Hand-operated handle	Comes with all types. (Circular or lever type, depending on the size)
Environmental resistance	Water-proof structure for outside service Operating temperature : 0 to 50°C Vibration-proof : 1G

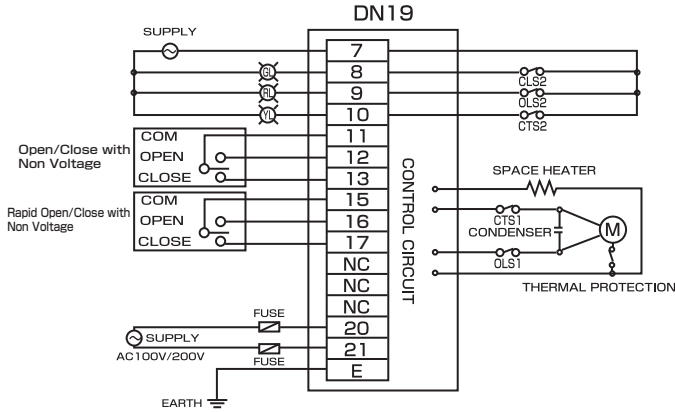
- \*1 : A fully stainless-steel valve is also available for application in a vapor environment and refrigerant brine. Please contact us for more information. Maximum operational pressure: 1.96 MPa / 2.94 MPa  
\*2: Maximum operational temperature is 230 °C. Please contact us for details.

### Electronically controlled unit

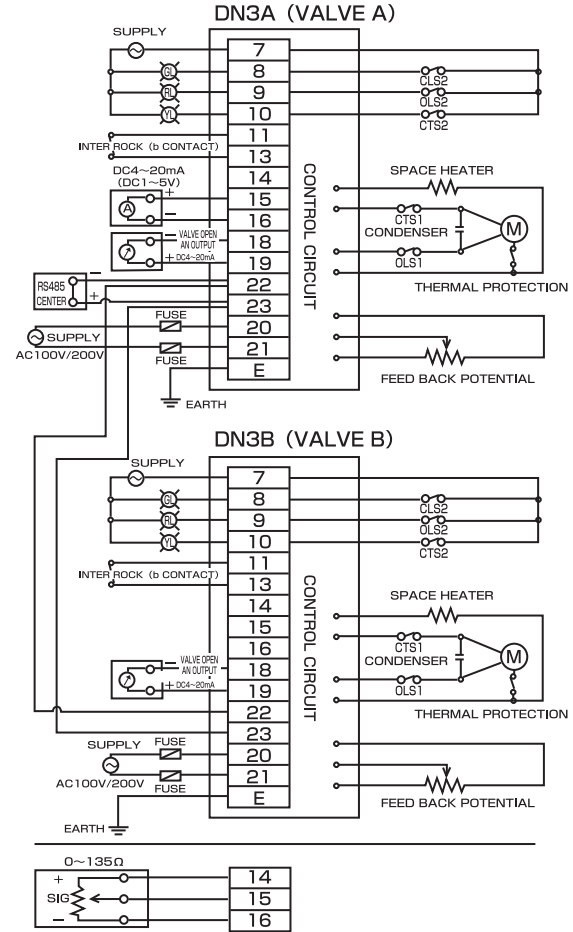
Power supply unit	Transformer. Built-in constant voltage circuit.
Control circuit	Microcomputer-controlled. (Built-in to the driver.)
Motor control	SSR (Non-contact relay)
Terminal box	Raceway scramble. Two G (PF) 1/2", one 3/4"

## Electric Diagram

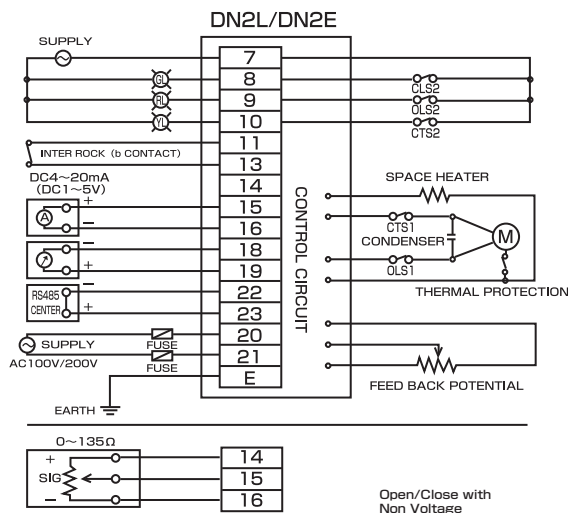
### DN19 (ON-OFF Type variable speed control)



### DN3 (Three-way valve proportional control)



### DN2L (Two-way valve proportional control) DN2E (Two-way valve proportional control)



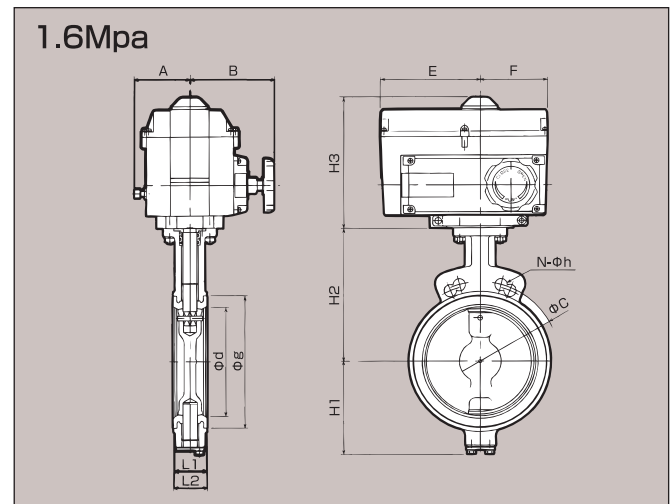
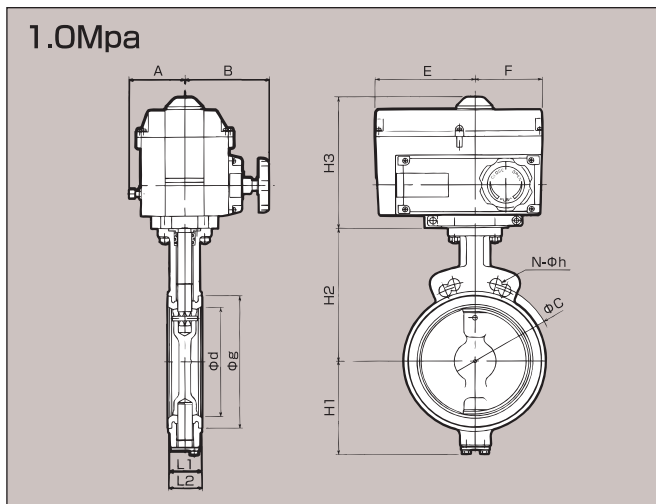
⊗ SHUT LAMP ⊗ OPEN LAMP ⊗ CLOSE TORQUE ABNORMAL LAMP

## DN Series Products Names

DN2L 10 08 A B 3 2 R S

DN2L TYPE	10 Flange Standard	08 Size	A Bare shaft Models	B Actuator Amount Direction	3 Power Source	2 Signal	R Function	S Interlock
DN19 : On-Off Type Variable speed control	10 : JIS10K	02 : 50A 12 : 300A	A : 616J (350A up 615X Type)	A : C :	1 : AC100V	1 : 0~135Ω	R : Standard Reverse Action (Signal Increase to Valve Open)	S : Standard Non-Load Contact Open to Valve Close (Not Available DNS type)
DN2E : Two-Way valve proportional control (Linear flow rate characteristics)	16 : JIS16K	2H : 65A 14 : 350A	B : 622H F : 5423 Q : 618P	B : Standard D :	2 : AC200V	2 : DC4~20mA	D : Normal Action (Signal Increase to Valve Close)	T : Standard Non-Load Contact Open to Stop Operation by force
DN2L : Two-Way valve proportional control (Approximately equal characteristics)	20 : JIS20K	03 : 80A 16 : 400A	C : Special G : 618H R : 541R			3 : DC1~5V	X : No (Only for DN19 type)	N : Standard Non-Load Contact Open to Valve Stop Operation at rated position by force
DN3 : Three-Way valve proportional control		04 : 100A 18 : 450A	D : 5421 M : 541M T : 541T			X : No Signal (Only for DN19 type)	X : NO (Only for DN19 type)	
DN2P : Two-Way valve proportional control (Pressure Control)		05 : 125A	E : 5422 P : 616P (DN2P)					
DNOP : Option		06 : 150A						
		08 : 200A						
		10 : 250A						

## ● Dimensions



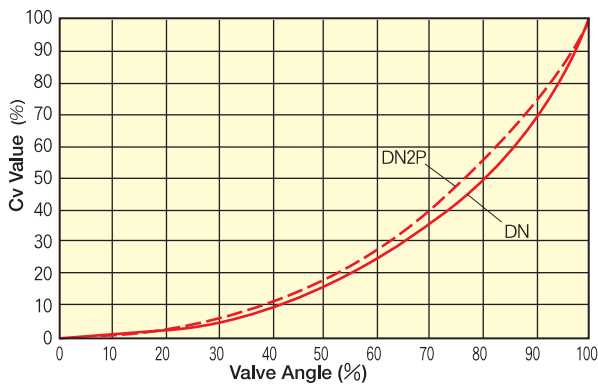
[Dimension Table of JIS10K Specifications.  
Please contact us for sizes larger than 400A for JIS 16K flange.]

SIZE	d	L1	g	H1	H2	H3	A	B	E	F	ACTUATOR	WEIGHT	JIS10K		
													C	N	h
50A	55	43	81	85.5	145	220	91	145	160	117	CRV-10A	13.5	120	2/04	18
65A	66	46	99	84.5	155	220	91	145	160	117	CRV-10A	14.2	140	2/04	18
80A	84	46	114	92.5	165	220	91	145	160	117	CRV-10A	14.6	150	2/08	18
100A	100	52	136	98.5	180	220	91	145	160	117	CRV-10A	15.9	175	2/08	18
125A	130	56	167	115.5	200	220	91	145	160	117	CRV-10A	17.7	210	2/08	22
150A	154	56	192	130.5	215	220	91	145	160	117	CRV-20A	19	240	2/08	22
200A	200	60	242	168.5	245	241	100	105	177	124	CRV-40A	27.5	290	2/12	22
250A	246	68	299	203.5	283	241	100	105	177	124	CRV-60A	37.5	355	2/12	24
300A	295	78	348	253.5	316	241	100	105	177	124	CRV-60A	49	400	2/16	24
350A	336	92	389	289	330	250	177	167	195	150	CRV-100	76	445	4/16	M22
400A	390	102	448	322	370	250	177	167	195	150	CRV-150	96	510	4/16	M24
450A	439	114	504	345	400	250	177	167	195	150	CRV-150	118	565	4/20	M24

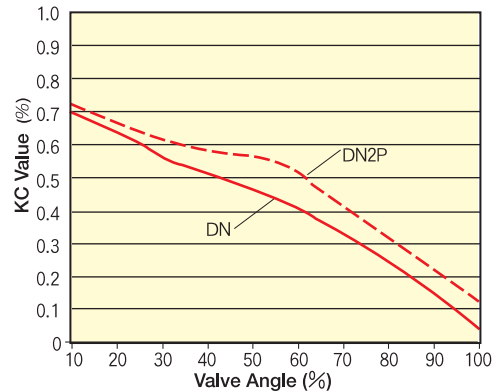
[Dimension Table of JIS20K Specifications.  
Please contact us for sizes larger than 400A for JIS 16K flange.]

SIZE	d	L1	g	H1	H2	H3	A	B	E	F	ACTUATOR	WEIGHT	JIS10K		
													C	N	h
50A	55	43	81	85.5	145	220	91	145	160	117	CRV-10A	13.5	120	2/08	18
65A	66	46	99	84.5	155	220	91	145	160	117	CRV-10A	14.2	140	2/08	18
80A	84	46	114	92.5	165	220	91	145	160	117	CRV-10A	14.6	160	2/08	22
100A	100	52	136	98.5	180	220	91	145	160	117	CRV-10A	15.9	185	2/08	22
125A	130	56	167	115.5	200	220	91	145	160	117	CRV-20A	17.7	225	2/08	24
150A	154	56	192	130.5	215	220	91	145	160	117	CRV-20A	19	260	2/12	24
200A	200	60	242	168.5	245	241	100	105	177	124	CRV-40A	27.5	305	2/12	24
250A	246	68	299	203.5	283	241	100	105	177	124	CRV-60A	39.3	380	2/12	26
300A	295	78	348	253.5	313	250	177	167	195	150	CRV-100	60	430	2/16	26
350A	333	78	389	286	340	250	177	167	195	150	CRV-100	76.1	480	4/16	M30x3
400A	384	102	447	321	375	250	177	167	195	150	CRV-100	99.9	540	4/16	M30x3

## ● Flow Characteristics



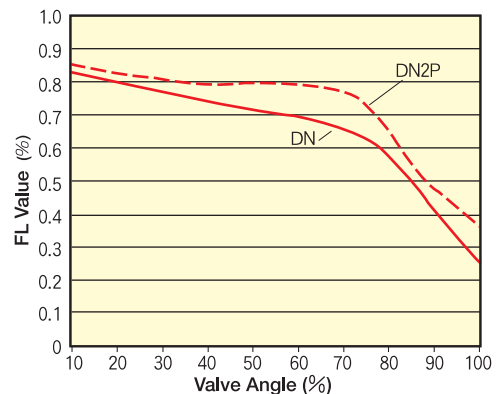
## ● Cavitation Factor (KC Value)



## ● Cv Values with Valve Fully Open (Values of 10K Specifications)

Nominal Size	DN19	DN2L, 2E	DN3	DNP
50A	165	90	90	75
65A	250	155	155	130
80A	380	180	180	150
100A	650	300	300	250
125A	1100	570	570	475
150A	1790	890	890	745
200A	3300	1420	1420	1190
250A	4820	2070	2070	1730
300A	6200	2660	2660	2225
350A	7550	5290	5290	2910
400A	10700	7500	7500	3875
450A	13800	9670	9670	—

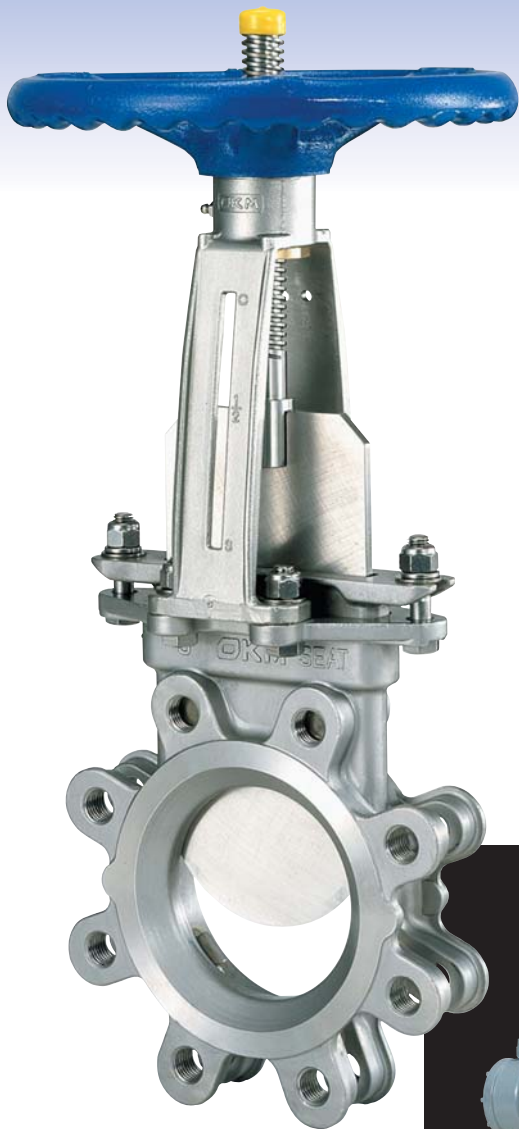
## ● Pressure Recovery Factor (FL Value)





# 336J 336Y

## MULTI-SEATABLE KNIFE GATE VALVES



336J-H  
(50 to 300mm)



336J-M

## Meeting All Severe Fluid Conditions with multi-Seatable Structure

The knife-gate technology of OKM with 30 years of experience and reliable record has been refined and developed all stainless-steel 336US in order to meet very severe conditions of liquid control. The model 336US has improved over the previous model of 336S and employed a multi-seatable type design so that only the seal ring could be changed which was impossible on 336US. It is ideal for flow control these difficult-to-control liquids such as slurry, pulp, very fine particles with high concentration and viscosity for the industries of pulp, chemical, food, mines, and wastewater treatment. It is a compact & light all stainless-steel knife-gate valve with excellent corrosion & wear resistance for high performance and long service life.

### 1. All Stainless-Steel Structure with Excellent corrosion and wear resistance.

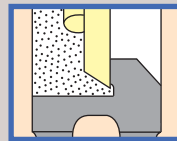
Not only the liquid contact areas but also the rest of the main body of valve are constructed with stainless-steel 316 with excellent corrosion and wear resistance in order to guarantee long service life under severe fluid condition.

### 2. Stainless-Steel Plate with High Precision Grinding Finish

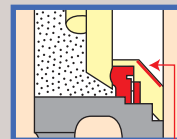
The plate is made out of strong stainless-steel with high precision grinding finish. It has a very high sealing contact with valve seat. Not only very fine particles (powder) but also high concentrate slurry and high viscosity fluids can be shut off sharply to close the valve.

### 3. Special Seat Structure Multi Seatable

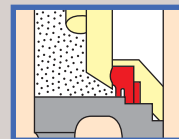
The standard metal seat of stainless-steel and rubber seats or Teflon® seat may be used according to the control conditions of fluid.



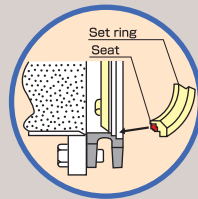
Metal seat  
Standard



Rubber seat  
Multi Seatable



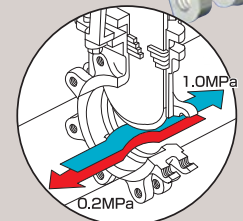
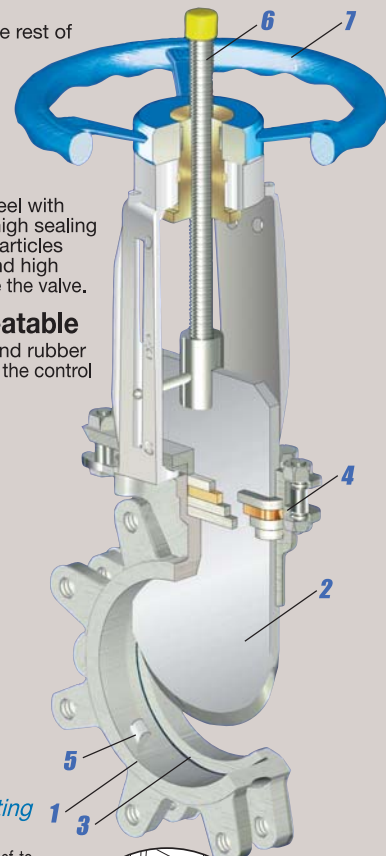
Teflon® seat  
Multi Seatable



Set ring  
Seat

### Valve Seat of Preventing Choking Mechanism

The seat is provided with a relief to prevent choking so that slurry fluid can be prevented from choking. The flow direction is specified depending on the type of fluid. The taper angle of inlet bore for very fine particles is less than 45° for reliability.



### 4. Multi-Layer Gland Packing with Good sealing

The gland is held firmly by the gland box of main body. The gland has a multi-layer structure with Teflon impregnated silicon rubber for excellent chemical resistance in order to assure high sealing performance. Maintenance is also easy.

### 5. Original Jaws to Guarantee Close Contact Seal

Two jaws are used on the valve seat. The tip of knife-shaped plate makes contact with the jaws to push the plate against the seal to ensure close contact. Sealing efficiency is further improved by this.

### 6. Double Thread for Faster Operation

Fast handle operation due to compact & light structure is realized. Because of double-thread mechanism of stem, the speed of handle operation is increased.

### 7. Low-Torque Circular Hand Wheel

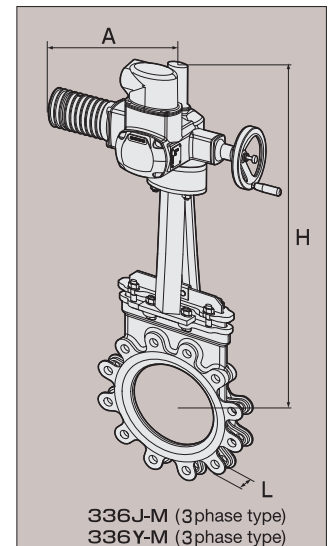
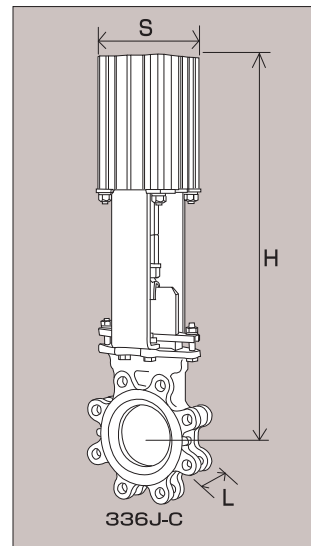
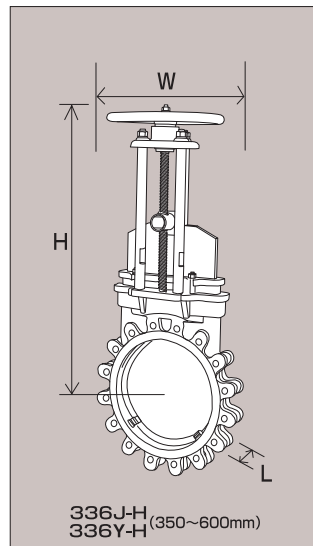
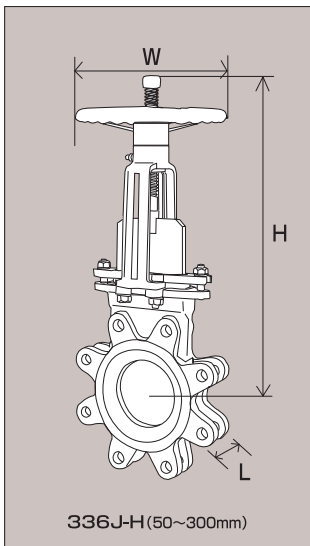
Designed to reduce friction on sliding surfaces. It is shaped for easy gripping & handling with light torque. The outer circumference is wave-shaped to stop slipping of hand.



# Capabilities and materials to withstand wide variations of use

## Dimensions

\*Shapes vary according to sizes.



Pressure (MPa)	336J-H		336Y-H		336J-C		336Y-C		336J-M		336Y-M		L									
	0~0.5		0~1.0		0~1.0		0~0.5		0~1.0		0~1.0											
	H	W	H	W	H	S	H	S	H	A	H	A										
2	50	—	293	200	—	—	425	98	425	98	—	—	618	267	561	514	561	514	—	—	48	
2 1/2	65	—	322	200	—	—	456	98	469	117	—	—	645	267	590	514	590	514	—	—	48	
3	80	—	334	200	—	—	492	98	506	117	—	—	661	267	604	514	604	514	—	—	51	
4	100	—	364	200	—	—	574	117	588	142	—	—	692	267	635	514	635	514	—	—	51	
5	125	—	450	280	—	—	657	117	671	142	—	—	754	267	398	514	698	514	—	—	57	
6	150	—	497	280	—	—	745	142	758	178	—	—	994	298	746	514	746	514	—	—	57	
8	200	—	591	280	—	—	877	178	899	204	—	—	1088	298	839	514	839	514	—	—	70	
10	250	—	701	355	—	—	1096	204	1149	274	—	—	1418	370	1018	538	1018	538	—	—	70	
12	300	—	815	400	—	—	1201	226	1288	274	—	—	1516	370	1120	538	1164	732	—	—	76	
14	350	950	400	—	—	960	400	1392	274	—	—	1477	404	1591	370	1298	538	—	—	1249	732	76
16	400	1071	500	—	—	1071	500	1540	274	—	—	1634	468	—	—	1442	732	—	—	1442	734	89
18	450	1161	560	—	—	1162	560	1732	404	—	—	1795	522	—	—	1526	732	—	—	1526	734	89
20	500	1312	630	—	—	1312	630	1906	404	—	—	1999	586	—	—	1743	734	—	—	1743	734	114
22	550	1411	630	—	—	1411	630	2073	468	—	—	2094	586	—	—	1919	734	—	—	1898	799	114
24	600	1514	710	—	—	1514	710	2203	468	—	—	2300	640	—	—	2009	734	—	—	1988	799	114

(Size : mm , Weight : kg)

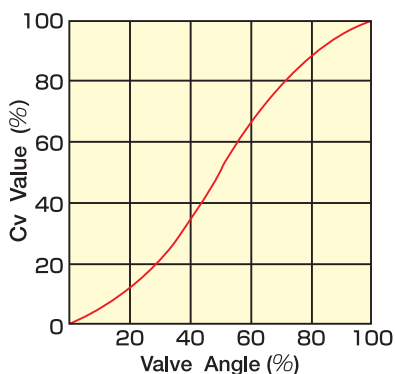
## Standard specifications

Model	Range of nominal dia. of valve	Applicable flange	Test pressure		Max. pressure	Material			Max. temperature	Leak rate from seat W.T.P 0.3MPa
			Body	Seat		Body	Plate	Seat ring		
336J Standard	50 to 300mm	JIS 5K 10K ASME 125/150Lb	WTP 1.1 MPa	WTP 0.28 MPa	1.0 MPa	50 to 300 SCS 13A SCS 14A	50 to 300 SUS 304 SUS 316	metal**	230°C	40cc/min/in. For cylinder type 400cc/min/in.
	350 to 600mm		WTP 0.55 MPa	WTP 0.28 MPa	0.5 MPa	350 to 600 SCS 13	350 to 600 SUS 304	(CR) (EPDM)	(80°C) (100°C)	0cc/min/in.
336Y Semi-Standard	350 to 600mm		WTP 1.1 MPa	WTP 0.28 MPa	1.0 MPa			(PTFE)	(230°C)	4cc/min/in.

Leak rate from seat is for flow from primary side.

\*Inside ( ) indicates standard specifications.  
3phase type is also available. Please contact us for the details.  
Please ask for the details.  
\*\*The same material as the body.

## Flow Characteristics



## Cv Values with Valve Fully Open

Size (mm)	Full open Cv Value 90°C	Size (mm)	Full open Cv Value 90°C
50	156	300	5395
65	230	350	6730
80	340	400	8735
100	612	450	10870
125	970	500	14095
150	1430	550	17335
200	2620	600	20655
250	4230		

Teflon® is manufactured by Mitsui-Dupont Fluoro Chemical.

# 702 703 704

## NEO-PINCH VALVES

### Fluid is perfectly controlled by the elasticity of a special rubber sleeve.

The valve is opened and closed easily when the powerful special rubber sleeve located inside it is pressed. This is a straight through-type slurry valve of the simplest compact structure.

This valve has an ultra-long life, ensures ease of maintenance with no pressure loss, and is suitable for handling fluids, such as sludge, ore slurry, cement, powder, pulp, and sewer sludge.

The valve perfectly seals off the flow of fluid and is not affected by the penetration of solid matters.

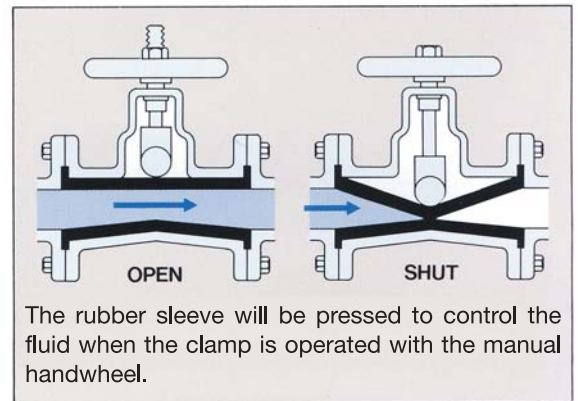
### Operation Principles

OKM's Neo Pinch Valves are classified into the 704 and 703 models, which are of air-pressurized operation type, and the 702 model, which is of manual operation type. The respective operation principles of these models are shown below.



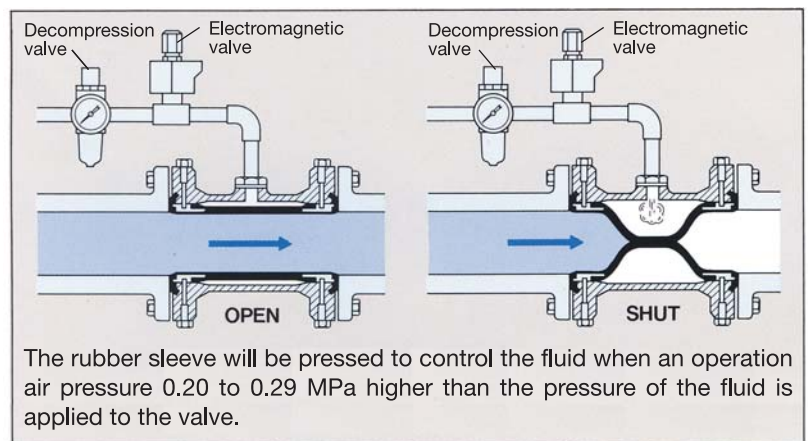
702

#### ● Manual (702)



703

#### ● Air pressurization (704 / 703)



704

### ● Standard Specifications

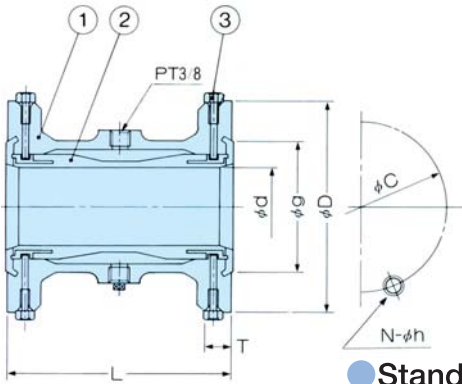
Model	Size(mm)	Max.Service Pressure	Max.Service Temperature	Sleeve Material	Body Material	Face To Face	Action type
704	25 to 100	0.4MPa	-10 to 80°C	CR	FC250	JIS10K	Air pressurization
703	125,150 200	0.3MPa 0.2MPa	-10 to 80°C	CR , NR	FC250	JIS10K	
702	25 to 300	0.5MPa	-10 to 80°C	CR , NR	FC250	JIS10K	Manual*

◆Operating conditions may vary with the fluid specifications. Contact your OKM representative.

\*cylinder or motor driving available as well

**Fluid under the perfect remote control of air pressurization.**

- The 704 and 703 models are compact automatic valves that can be under remote control by mounting an electromagnetic valve and decompression valve to each model provided with air piping. An operation air pressure 0.20 to 0.29 MPa higher than the pressure of the fluid makes it possible to open and close the valve with ease.
- Each valve is operable semipermanently with the rubber sleeve replaced periodically.
- The elasticity of the rubber sleeve will perfectly shut off the fluid if a solid matter is caught by the valve.
- The rubber sleeve made of a special molding compound ensures high durability.



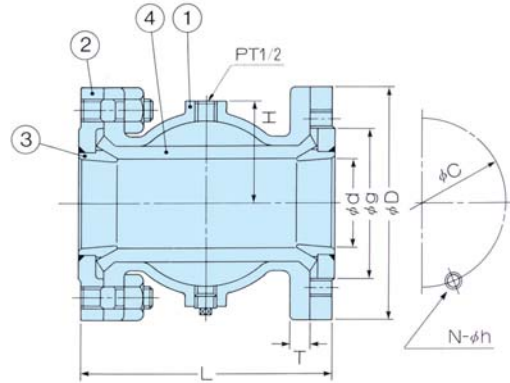
● **Standard Materials**

No.	Part Name	Material
1	Body	FC250
2	Sleeve	CR
3	Stopper Bolt	SUS304

● **Dimensions**

	Nominal Size		d	g	D	L	T	C	N	h	Weight
	inch	mm									
704	1	25	27	63	125	160	18	90	4	M16	4.6
	1½	40	40	75	140	160	20	105	4	M16	5.9
	2	50	50	90	155	170	20	120	4	M16	7.1
	2½	65	65	109	175	185	22	140	4	M16	9.7
	3	80	80	121	185	230	22	150	8	M16	11.8
4	100	98	147	210	285	24	175	8	M16	16.8	

(Size : mm , Weight : kg)



● **Standard Materials**

No.	Part Name	Material
1	Body	FC250
2	Flange	SS400
3	Bushing	SUS304
4	Sleeve	NR · CR

● **Dimensions**

	Nominal Size		d	g	D	L	T	C	N	h	Weight
	inch	mm									
703	5	125	125	185	280	350	24	210	8	M20	54.0
	6	150	150	215	330	420	26	240	8	M20	84.0
	8	200	200	260	400	555	26	290	12	M20	126.0

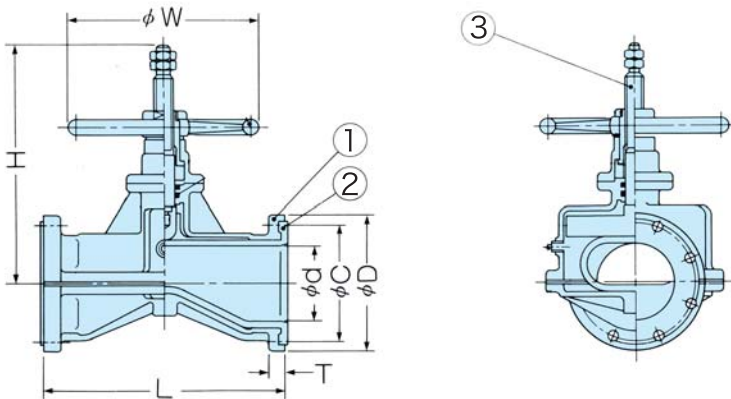
(Size : mm , Weight : kg)

- The 702 model has a rubber sleeve covered with rigid cast iron, thus ensuring high durability.
- The rubber sleeve can be replaced with ease by removing the tightening bolts of the valve body.
- The 702 Series provides two types of models, i.e., the 702-C model, which is driven by an air cylinder, and the 702-M model, which is driven by a motor. Contact your OKM representative for details.

● **Standard Materials**

No.	Part Name	Material
1	Body	FC250
2	Sleeve	NR · CR
3	Stem	SUS403

● **Dimensions**



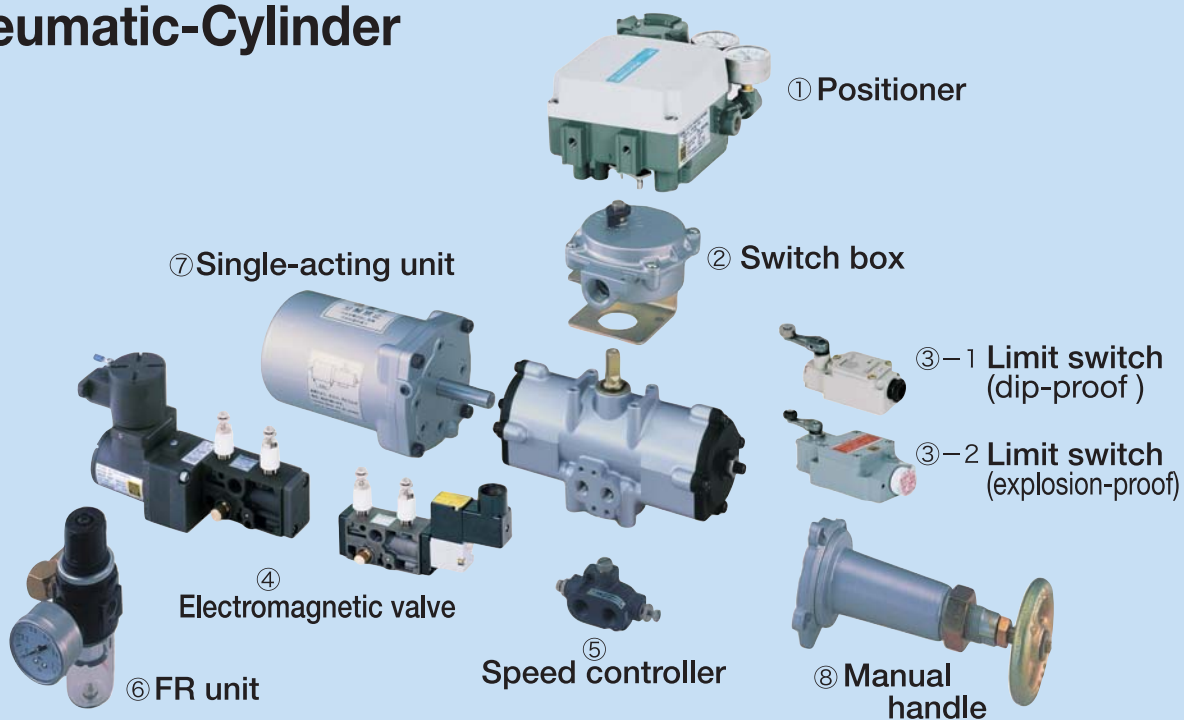
Nominal Size		702							Weight
inch	mm	L	H	D	C	T	W		
1	25	149	202	125	90	16	160	10	
1½	40	184	247	140	105	18	180	14	
2	50	211	269	155	120	18	180	18	
2½	65	260	324	175	140	18	200	23	
3	80	289	363	185	150	18	224	31	
4	100	338	421	210	175	20	280	41	
5	125	407	465	250	210	22	315	55	
6	150	480	496	280	240	32	400	78	
8	200	655	650	330	290	34	400	140	
10	250	785	846	400	355	34	355	228	
12	300	935	914	445	400	40	355	355	

(Size : mm , Weight : kg)

※ Actuators of 250 to 350mm is Worm-Gear Type

# Pneumatic-Cylinder Option List

## Pneumatic-Cylinder



	Name of accessory	U s e
①	<b>Positioner</b> (electropneumatic and pneumatic)	A positioning device for flexible control of the opening and closing of the valve.
②	<b>Switch box</b>	A device to detect the opening and closing position of the valve. (A switch box cannot be installed if the valve is fitted with a positioner.)
③	<b>Limit switch</b> (dip-proof and explosion-proof)	A device to detect the opening and closing position of the valve.
④	<b>Electromagnetic valve</b> Speed controller with silencer (dip-proof single) (conforms to NAMUR standards) (explosion-proof single)	A device to change the flow of air using electric signals to open and close the valve.
⑤	<b>Speed controller equipped with bypass valve</b>	A device to set and adjust the opening and closing speed of the valve.(This differs in type from the single-acting speed controller.)
⑥	<b>FR unit</b> (filter regulator)	A device that constantly controls and purifies the air supply.
⑦	<b>Single-acting unit</b>	A device with a built-in spring to change the double-acting type to the single-acting type.
⑧	<b>Manual handle</b>	A device to manually open and close the valve of the single-acting cylinder.

\* Other devices, such as proximity switches, quick exhaust valves, electromagnetic (double solenoid) valves, lockup valves, booster relays, opening adjustment bolts, and manual gears, are also available.



# Electric-Motor Standard Specs

## Electric-Motor

### ■ Expansion of cable connection port

The number of cable connection jacks has been expanded to three, which are suitable to almost all cable modules.

### ■ Reliable self-lock function

The self-lock function withstands unbalanced torque that results from the flow of fluid and attempts to turn the valve shaft, thus always properly maintaining the valve shaft.

### ■ Mechanical stopper

A position adjustable mechanical stopper is provided at both the opening and closing ends, thus preventing the valve body from overrunning.

### ■ Adoption of PCB

A PCB is built in for control, which allows optional devices to be added easily.



## ● Electric-Motor Standard Specs

Model	CRV-05A	CRV-10A	CRV-20A	CRV-40A	CRV-60A	
Set output torque (N·m)	<input type="checkbox"/> 40	<input type="checkbox"/> 50 <input type="checkbox"/> 85	<input type="checkbox"/> 160	<input type="checkbox"/> 320	<input type="checkbox"/> 450 <input type="checkbox"/> 530	
Switching time (sec) 90°	43	26	26	29	29	
Output axial rotation angle	<input type="checkbox"/> 70° / <input type="checkbox"/> 90°					
Manual operation	Operation part		Handle (with clutch)		Detachable lever (without clutch)	
	Rotating speed (Rotation) 90°		9		18	
	18		18		11	
	11		11		11	
Opening indicator	4-division scale 90°		4-division scale / 70° or 90°			
Conduit tube connection	G3/4 1points		G1/2 2points , G3/4 1points			
Terminal block	M3.5 screw					
Motor	Voltage	<input type="checkbox"/> AC110V±10% 60Hz 1φ / <input type="checkbox"/> AC220V±10% 60Hz 1φ				
	Output (W)	6	25	25	40	60
	Rated current (A) 100V	0.28	0.8	0.8	1.3	2.0
	200V	0.14	0.5	0.5	0.8	1.0
	Locked rotor current (A) 100V	0.45	1.5	1.5	2.2	3.1
	200V	1.23	0.8	0.8	1.2	1.8
	Insulation	Type E				
Time rating	30min					
Protection	With built-in thermal protector (120°C±10°C)					
Space heater	Power capacity	5W		20W		
	Power consumption	3W		5W		
Limit switch	Position	1 piece each for opening and closing sides (Closing side - for outputting overload abnormal signals)				
	Torque	2 pieces for closing side (1 piece - for outputting overload abnormal signals)				
Protective structure	IP66					
Ambient temperature	-10°C to 60°C					
Ambient humidity	30 to 85% RH					
Vibration resistance	JIS C 60068-2-6 2G (0.75G with continuous vibration)					
Shock resistance	JIS C 60068-2-27 10G					
Mounting position	From upright to horizontal					
Dielectric strength	AC1500V / 1min					
Lubrication	Grease					
Coating	Body : Munsell 6.0Y8.3/0.6 Front part : Munsell 6.5PB6.7/7.3					
Weight	4.5Kg	11Kg	11Kg	14Kg	14Kg	
Option	With limit switch (stander), Non Option	<input type="checkbox"/> Potentiometer : <input type="checkbox"/> 0~300Ω , <input type="checkbox"/> 0~135Ω				
		<input type="checkbox"/> Intermediate limit switch : <input type="checkbox"/> For standard load <input type="checkbox"/> For small load 1 piece each for opening and closing sides ※1				

※ When an intermediate limit switch is used in a small load circuit, please designate the limit switch for small load (gold contact type).

# Precautions

## Storage

- Handle the valve carefully, not allowing it to be dropped, tipped over, or dragged.
- Do not store for extended periods where it may be subject to temperatures less than -10°C (14°F) or greater than 40°C, high humidity, or shacking.  
An indoor location that is cool and dark is best.
- If stored after being unpacked, protect the valve from dust, foreign matter, and oil.
- The valve is shipped with the disc slightly open. Store it in this condition.

## Installation

- Install and remove the valve with its disc slightly open.
- Note that a distorted or damaged flange surface may cause flange leaks.  
Protect the flange surfaces that will contact the valve.  
Remove any rust or foreign matter.
- To suspend valves, pass a nylon-coated sling through the holes provided in the upper part of the body [for valve sizes 400 to 1200mm (16 to 48 inch)] or tie the sling around the neck of the valve (for smaller valve sizes).
- All 615X valves do not require any gasket for piping.
- When installing, do not force the valve into position. Doing so may cause piping problems.
- Center the valve and flanges accurately.
- Align the flanges properly.
- Do not weld the flanges after the valve is installed. Do not install the valve soon after welding.
- Before tightening the flange bolts, fully open the valve and make sure that the disc movement is not restricted inside the piping.
- Tighten the bolts evenly and diagonally. Stop tightening them when the seat ring is completely covered.

## Operation

- Do not use the fully closed valve as a blind flange.
- Do not operate the actuator with a wrench or lever.
- Note that operation of the valve beyond its service conditions can cause malfunctions.
- If the valve is not to be used for extended periods after installation, open and close it once every 2-3 weeks.
- Do not manually operate the valve while the operation switch or the power is turned on.

### 336J / 336Y Handling instructions

- Please ask the nearest local dealer for the dimensions of valve piping bolts.
- When leaking from the gland part, tighten the gland bolts evenly until the leak stops.
- The drive part of cylinder type and motor type shall be supported when installing in places with excess vibrations or in non-vertical positions.
- When operating valves before piping, do not touch inside the bore with hand or place any objects in bore.

### Warranty Period

Our products are guaranteed for either a period of 18 months from shipment out of our factory or 12 months from trial operation, whichever is the shorter.

- Valve body design is different from valve sizes.
- Detail description is subject to change without prior notice.



### HEAD OFFICE and Factory

446-1 Ohtani, Hino-cho, Gamo-gun, Shiga Prefecture 529-1608, Japan.

### Osaka Branch - International Sales Department

Higobashi Center Building 10F, 1-9-1 Edobori, Nishi-ku, Osaka City 550-0002, Japan.

Phone: 81-6-6445-0501 FAX: 81-6-6445-1333