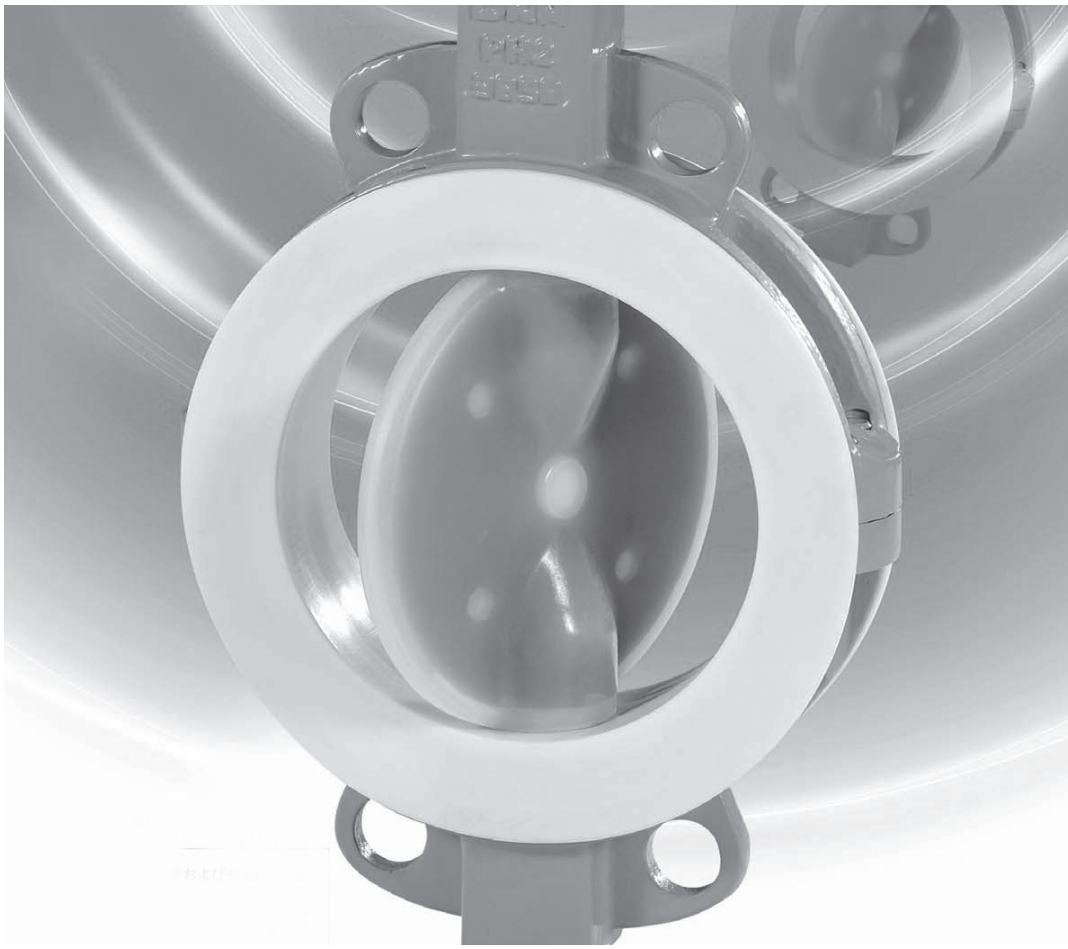
Opening tomorrow's fluid control

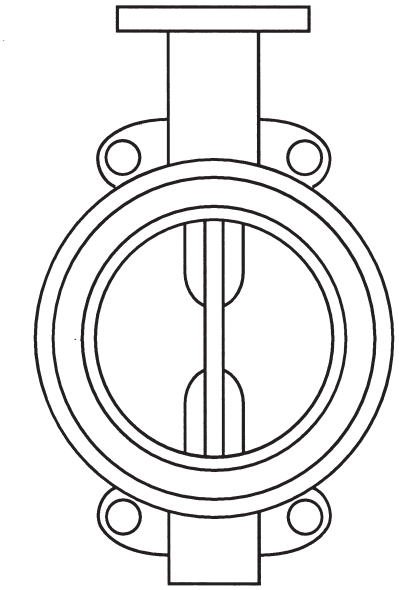
OKM

PTFE Lined (637N/635N) Butterfly Valve



Instruction Manual

OKUMURA ENGINEERING corp.



Read This Instruction Manual Carefully before Using This Product

Warnings and Precautions listed in this document are specified to prevent users, other persons or facilities and equipment from injury or damage, therefore please always follow these instructions.

This product is controlled under export control laws and regulations.

This product is controlled under Foreign Exchange and Foreign Trade Law in Japan. Therefore, if this product or a part of this product is exported to overseas, please confirm thoroughly the situation of clients in the export destination and usage of the product, as well as permission for export by the Ministry of Economy, Trade and Industry must be obtained in advance.
Store this Instruction Manual and associated specification and drawings in a location so all the persons engaged in handling of this product can read.

Safety Precautions

Precautions listed below are specified to use this product safely, as well as to prevent users, other persons or facilities and equipment from injury or damage. In addition, this Instruction Manual uses the following illustrations to clarify the seriousness of the hazard or damage and degree of urgency when this product is misused.

Warning	This indicates that if ignored, may lead to imminent risk of death or serious injury(*1), or material damage.
Precaution	This indicates that if ignored, may lead to the user suffering injury(*2), or valve damage.

*1: Serious injury means a person suffers aftereffects and needs hospitalization and long-term hospital visit for medical treatment.
*2: Personal injury means an injury without hospitalization or long-term hospital visit for medical treatment.

● Types of indications are explained below.

	This symbol indicates “prohibition” items, which must not conduct.
	This symbol indicates “mandatory” items, which must conduct

Important items for handling of this product are shown below.

Retention of documents which define the contents of fluids to be handled

This product can be used in a process using corrosive liquids, penetrants or toxics, which are harmful for humans.

Users (or administrators) of this product should prepare the Material Safety Data Sheet (MSDS) with detailed contents of the fluids to be handled (liquid or gas), severity in case of adhesion or inhalation of the fluid to a human, as well as methods for emergency treatment.

Through preventive measures for adhesion of fluids to be handled

In inspection of valves, there is a possibility that the fluids inside the valve adhere to the worker or the worker inhales the components of the fluid evaporated. Therefore, the worker inspecting the valve should prepare the following measures for protection at his/her own risk, and must wear them.

Protective masks to remove harmful components, protective goggles, face protection cover, protective wear without exposed skin area, helmet, and necessary protection measures specific to the relevant operation.

If any abnormality is observed in body, consult a doctor immediately.

Operational Range

《Temperature, pressure limit》

Use this product under the range described in Figure 1 depending on the state of the fluid to be used (liquid or gas). However, the range is not always applied to every chemical solutions. Therefore, confirm the contents of our company’ s specification regarding this product, or contact our company about the operational range suitable for a chemical solution to be used.

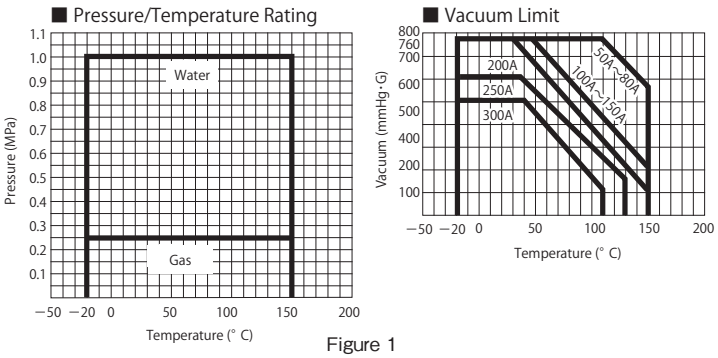


Figure 1

* If you use the product at 350A or more, please contact our company

Precaution

This product cannot be used in a process, which may solidify the fluid of the product, such as under low-temperature liquid or low-temperature environment.

Damages to the parts of the product, or leakage of the fluid may occur due to an excessive expansion pressure of prohibited solidified fluid.

《Corrosion resistance》

Fluorine resins, “PFA” and “PFTE” , which are used for liquid contact part of this product, have an excellent resistance to corrosion and permeation compared to the other fluorine resins. However, swelling by permeation of liquids or gases, blister, deformation and occurrence of stress crack due to strong permeability are inevitable because the fluorine resins are polymers. In addition, if more than one chemical solutions are mixed, an unusual behavior, which is unforeseeable from corrosion resistance data of our company, might be observed.

The abovementioned phenomenon may be accelerated due to occurrence of a partial turbulent flow by valve opening, etc.

Prepare consumable parts of this product, and use this product with judging the usage limit by inspecting condition of the surface of liquid contact part, and leakage from seal part periodically (at least once a year).

《Abrasion resistance》

Sealing characteristics of seat and ground parts of the valve are secured by adhesion between fluorine resins. Because fluorine resins are not abrasion resistant, if this product is used with liquids containing slurry, the slurry scratches the seal part, and sealing characteristics can easily be impaired. Therefore, this product is not applicable to liquids with slurries. When this product is reluctantly used in a process contains slurry, confirm abrasion condition periodically, as well as exchange the entire valve if consumable parts are abraded.

Receipt and Confirmation of an Actual Valve Product

(1)Confirm that the diameter and size of the valve is same as ordered specification by nameplate.

(2)Confirm that there are no damages on every parts of the valve during shipment or storage.

A protection plate is attached to a flange part of this product in order to prevention of contamination of foreign matters into flow path, as well as prevention of damage of the fluorine resins. Do not remove the protection plate just before piping.

Storage of Valves

(1)Sealing characteristics of valve seat are obtained from pressing the body seat to valve periphery by elasticity of the back-up rubber (Figure 4, (vii)). When the valve is stored, set the opening of the valve at intermediate (however, the valve body is placed within the surface) in order to minimize the creep of the back-up rubber. When the valve is stored for a long time, perform identification appropriately.

Attachment to Piping

(1)Confirm that the inner diameter of the piping is wider than the size specified in Table 1 so the valve body is not touch the inside of piping when the valve is fully opened. If the inner diameter of the piping is smaller than the specified value, insert spacer or short pipe with appropriate inner diameter between the valve and piping.

Diameter	50A	65A	80A	100A	125A	150A	200A	250A	300A
ϕA mm	45.9	45.9	69.5	89.5	115.8	143.2	193.7	246.6	295.7

Table 1 Acceptable minimum inside diameter of piping to be attached

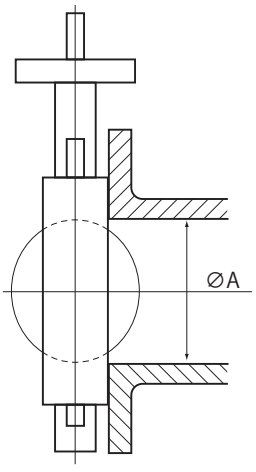


Figure 2
Minimum inside diameter of piping

(2)If a foreign matter is contaminated in inside of the piping, the foreign matter damages soft materials such as sealing parts, and therefore there is a risk of damaging the sealing characteristics of valve seat and pressure resistance. Attach the valve after confirming that there is no foreign matter in inside of the piping

Precaution

Since fluorine resins are fragile, caution is required when handling the product. Do not repair scratches or cracks on the surface by welding. Quality of lining is degraded and crack can be formed by the welding heat.

(3)Use the following recommended PTFE wrapped gaskets for piping.

Diameter (A)	Recommended gasket Nichias@T#9010	Applicable bolt	Reference tightening torque (N·m)
50A	A-5-S 50A 用	M16	53～73
65A	A-5-F 65A 用	M16	54～76
80A	A-5-F 80A 用	M16	48～67
100A	A-5-F 100A 用	M16	68～96
125A	A-5-F 125A 用	M20	83～116
150A	A-5-F 150A 用	M20	150～210
200A	A-5-F 200A 用	M20	129～180
250A	A-5-F 250A 用	M20	192～269
300A	A-5-F 300A 用	M20	168～236

Table 2 JIS 10k Flange Specification

Diameter (B)	Recommended gasket Nichias@T#9010	Applicable bolt	Reference tightening torque (N·m)
50A	A-5-F 50A 用	U5/8	44～62
65A	A-5-S 65A 用	U5/8	46～64
80A	A-5-F 80A 用	U5/8	75～106
100A	A-5-F 100A 用	U5/8	51～71
125A	A-5-F 125A 用	U3/4	69～97
150A	A-5-F 150A 用	U3/4	122～171
200A	A-5-F 200A 用	U3/4	157～220
250A	A-5-F 250A 用	U7/8	168～235
300A	A-5-S 300A 用	U7/8	120～167

Table 3 ASME-150L b Flange Specification

Precaution

Ensure adequate seat pressure and seal surface area for the product. External leakage by creep or clack of the fluorine resin may occur if inappropriate gasket is used. If a gasket other than the recommended is inevitably used, select the gasket with the same size of internal and external center diameter and thickness as the recommended gasket.

(4)Prepare a new bolt without adhesion of oil and fat. Tighten the bolt according to the order described in Figure 3 increasing the tightening by 10 to 12 N·m increments, to finally make the torque specified in Table 2 or Table 3 with respect to the flange specification.

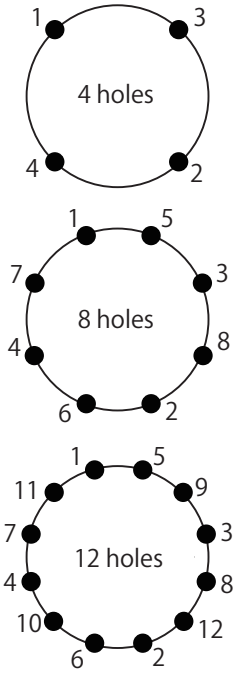


Figure 3 Tightening order

Precaution

The values for toeque described in Table 2 and Table 3 are not applicable to rusted bolts. Tightening force of the rusted bolts are vary widely, and may result in a leakage from flange. If bolts coated with grease or molybdenum disulfide grease are used, the torque values are decreased to 90% of the value in the Tables 2 and 3.

Open direction of the valve is indicated by direction of lever handle or indicator. When rotation torque at closing is heavier than usual, chack the valve because there are possibilities that a foreign matter may bitten in the valve sealing, or ablasion of valve sealing is occurred.

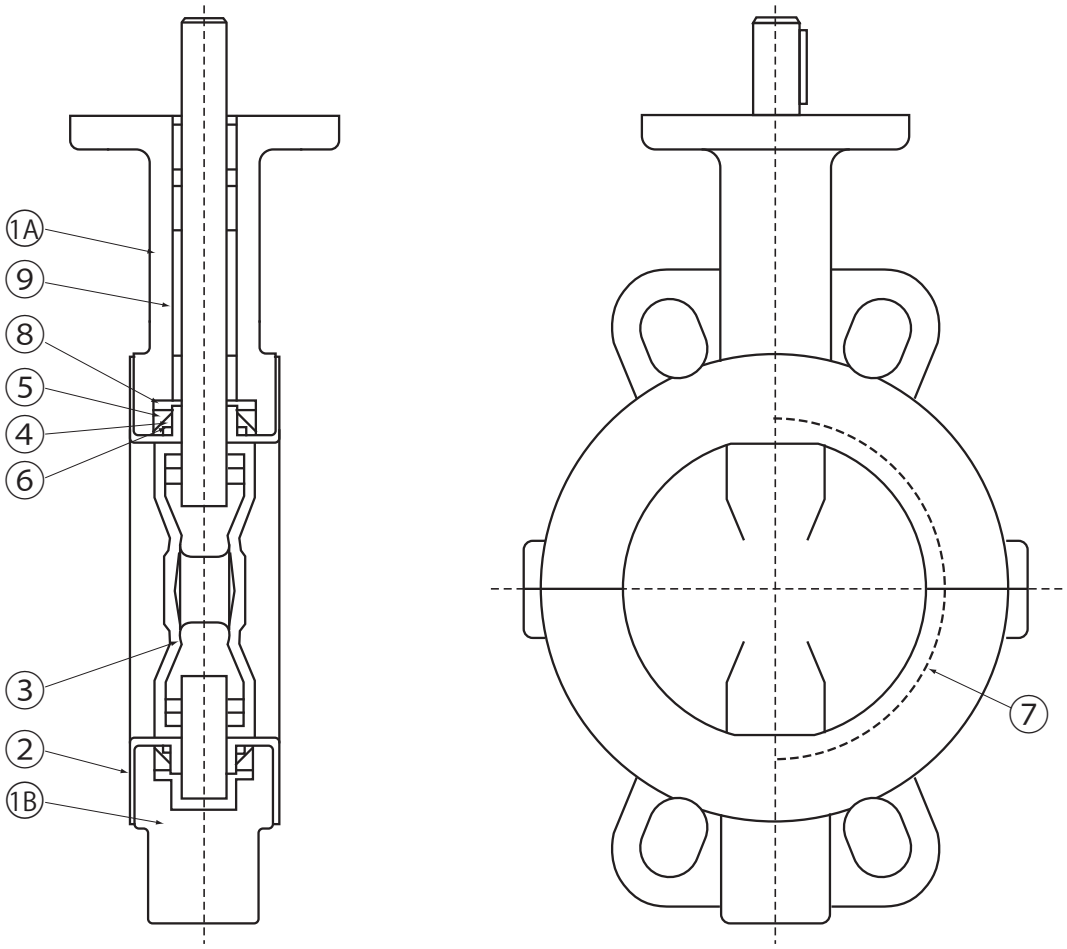
Precaution

Do not forcedly open the valve using a secondary tool to the handle.
It may result in breakage of the valve and may cause inoperatable or leakage.
If the opening-closing torque is heavy, investigate the cause first.

Maintenance of Valve

If there are any problems with this product during periodical inspection, please contact the business office of our company.

Structural Drawing



No	Parts name	No	Parts name
1 A	Body (upper)	5	Back-up ring
1 B	Body (lower)	6	O-ring
2	Seat ring	7	Back-up rubber
3	Disc and Shaft	8	Spring washer
4	Seal ring	9	Bushing

Regarding materials for each part, refer to the drawings in the specifications for relevant products.

Figure 4　Assembled cross-sectional drawing

●Specifications and designs may change without prior notice
●For more details, please contact our sales representative

Opening tomorrow's fluid control

Okumura Engineering Corp.

Head Office and Factory
446-1, Otani, Hino-cho, Gamo-gun, Shiga
Prefecture 529-1608, Japan
Tel (0748) 52-2131 Fax (0748) 52-8156

Tokyo Branch Office
Hatchobori Front Bldg 3F.,2-20-9,Hatchobori,Chuo-ku,Tokyo 104-0032 Japan
Tel (03) 3206-1871 Fax (03) 3206-1873

Osaka Branch
Higobashi Center Bldg 10F.,1-9-1,Edobori,Nishi-ku,Osaka 550-0002 Japan
Tel (06) 6445-0501 Fax (06) 6445-1333

OKM VALVE(M)SDN,BHD
No.7,Jalan Sungai Kayu Ara 32/31,Berjaya Industrial Park,40460 Shah Alam,Selangor Darul Ehsan,Malaysia.
Tel (60) 3-57408250 Fax (60) 3-57408256

SUZHOU OKM VALVE CORP
No.96-5,South of Ying Chun Road Wu Zhong E.D.Z Suzhou China
Tel (86) 512-6513-1716 Fax (86) 512-6585-3869

Agent