

Serial No.	H-V 006E-6
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## Butterfly Valves Type 75

Type 75: 450 – 600 mm (18” – 24”)

Body: PP, PVDF

Type 75D: 450 – 600 mm (18” – 24”)

Body: PDCPD

**User’s Manual**





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This User's Guide contains information important to the proper installation, maintenance and safe use of the ASAHl AV product store in an easily accessible location.

<Warning & Caution Signs>

 Warning	This remark expresses the user to take caution due to the potential for serious injury or death.
 Caution	This remark expresses the user to take caution due to the potential for damage to the valve if used in such a manner.

<Prohibition & Mandatory Action Signs>

	Prohibition: When operating the valve, this remark indicates an action that should not be taken.
	Mandatory action: When operating the valve, this remark indicates mandatory actions that must be adhered to.

(1) Be sure to read the following description of our product warranty.

- Always observe the specifications of and the precautions and instructions on using our product.
- We always strive to improve product quality and reliability, but cannot guarantee perfection. Therefore, should you intend to use this product with any equipment or machinery that may pose the risk of serious or even fatal injury, or property damage, ensure an appropriate safety design or take other measures with sufficient consideration given to possible problems. We shall assume no responsibility for any inconvenience stemming from any action on your part without our written consent in the form of specifications or other documented approval.
- The related technical documents, operation manuals, and other documentation prescribe precautions on selecting, constructing, installing, operating, maintaining, and servicing our products. For details, consult with our nearest distributor or agent.
- Our product warranty extends for one and a half years after the product is shipped from our factory or one year after the product is installed, whichever comes first. Any product abnormality that occurs during the warranty period or which is reported to us will be investigated immediately to identify its cause. Should our product be deemed defective, we shall assume the responsibility to repair or replace it free of charge.
- Any repair or replacement needed after the warranty period ends shall be charged to the customer.
- The warranty does not cover the following cases:
  - (1) Using our product under any condition not covered by our defined scope of warranty.
  - (2) Failure to observe our defined precautions or instructions regarding the construction, installation, handling, maintenance, or servicing of our product.
  - (3) Any inconvenience caused by any product other than ours.
  - (4) Remodeling or otherwise modifying our product by anyone other than us.
  - (5) Using any part of our product for anything other than the intended use of the product.
  - (6) Any abnormality that occurs due to a natural disaster, accident, or other incident not stemming from something inside our product.

## (2) General Operating Instructions



Warning



- Using a positive-pressure gas with our plastic piping may pose a dangerous condition due to the repellent force particular to compressed fluids, even when the gas is under the same pressure as water. Therefore, be sure to take the necessary safety precautions such as covering the piping with protective material. For inquiries, please contact us. For conducting a leak test on newly installed piping, be sure to check for leaks under water pressure. If absolutely necessary to use gas in testing, please consult your nearest service station beforehand.



Caution



- Do not step on the valve or apply excessive weight on valve. (It can be damaged.)

- Keep the valve away from excessive heat or fire. (It can be damaged, or destroyed.)



- Operate the valve within the pressure Vs temperature range.

(The valve can be damaged by operating beyond the allowable range.)

- Allow sufficient space for maintenance and inspection.

- Select a valve material that is compatible with the media, refer to “CHEMICAL RESISTANCE ON ASAHI AV VALVE”. (Some chemicals may damage incompatible valve materials.)

- Do not use the valve on condition that fluid has crystallized. (The valve will not operate properly.)

- Keep the valve away from places of direct sunlight, water and dust. Use cover to shield the valve. (The valve will not operate properly.)

- Perform periodic maintenance. (Leakage may develop due to temperature changes or changes with time during prolonged storage, rest, or operation.)

### (3) General Instructions for Transportation, Unpacking and Storage



Warning

- In suspending and supporting a valve, take enough care and do not stand under a suspended valve.



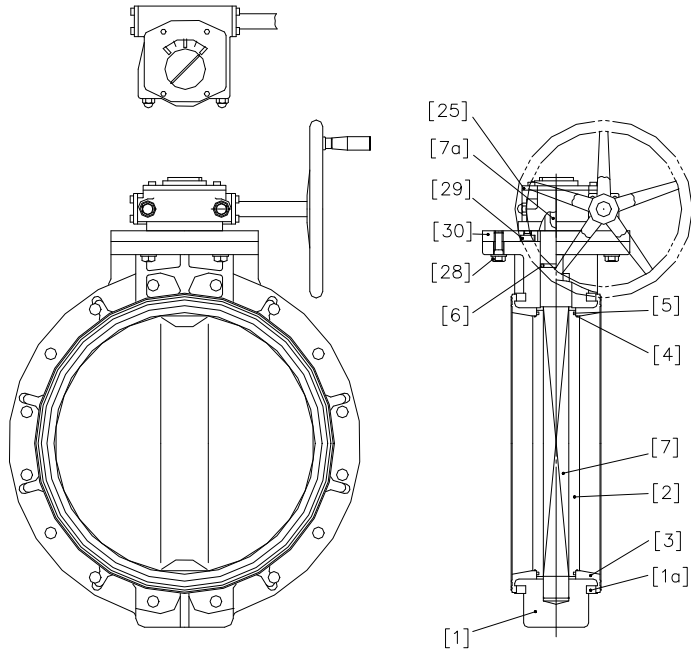
Caution

- The valve is not designed to handle any kind of impact. Avoid throwing or dropping the valve.
- Avoid scratching the valve with any sharp object.
- Do not pile up corrugated cardboard packages one on top of another too much.  
Excessively piled-up packages may collapse.
- Avoid contact with any coal tar creosote, insecticides, vermicides or paint.  
(The force of swelling may damage the valve.)
- When transporting a valve, do not carry it by the handle.
- Keep the piping in the corrugated cardboard boxes, avoid direct sunlight, and store it indoors (at Room Temperature). Also avoid storing it in a place which may become very hot. (Corrugated cardboard packages become weaker as they become wet with water or other liquid. Take enough care in storage and handling.)
- After unpacking the products, check that they are defect-free and meet the specifications.

(4) Name of parts

**Gear Type: 450 mm – 600 mm (18” – 24”)**

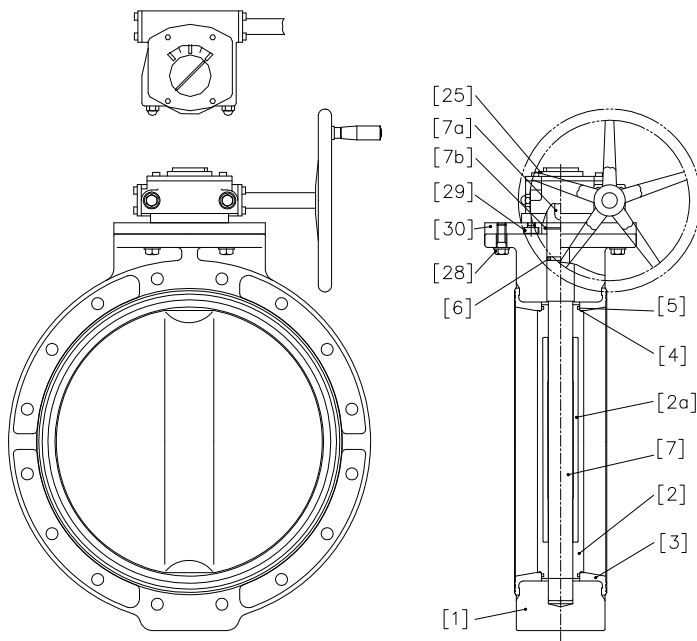
Body Material: PP, PVDF



No.	DESCRIPTION
[1]	Body
[1a]	Ring
[2]	Disc
[3]	Seat
[4]	O-ring (A)
[5]	O-ring (B)
[6]	O-ring (C)
[7]	Stem
[7a]	Key (A)
[25]	Gear Box
[28]	Bolt (A)
[29]	Bolt (D)
[30]	Stand

**Gear Type: 450 mm – 600 mm (18” – 24”)**

Body Material: PDCPD

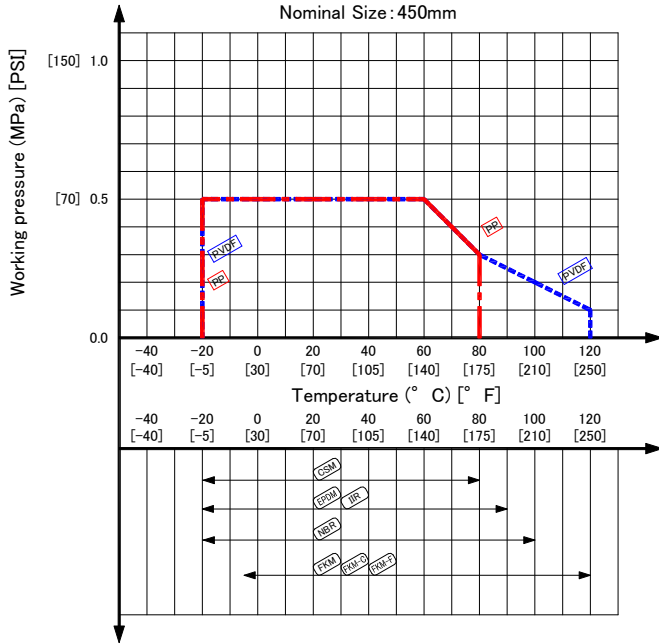


No.	DESCRIPTION
[1]	Body
[2]	Disc
[2a]	Disc-insert
[3]	Seat
[4]	O-ring (A)
[5]	O-ring (B)
[6]	O-ring (C)
[7]	Stem
[7a]	Key (A)
[7b]	Key (B)
[25]	Gear Box
[26]	Gasket (L)
[28]	Bolt (A)
[29]	Bolt (D)
[30]	Stand

(5) Comparison between working temperature and pressure

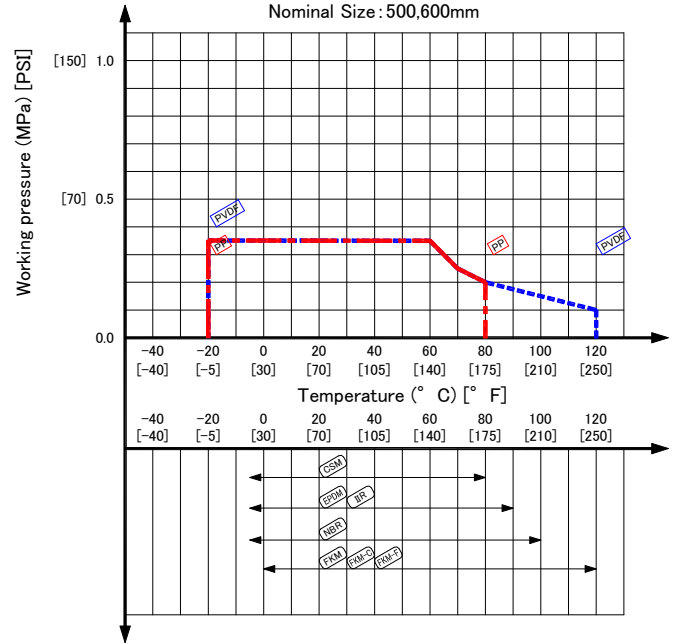
**BUTTERFLY VALVE TYPE75**

Nominal Size: 450mm



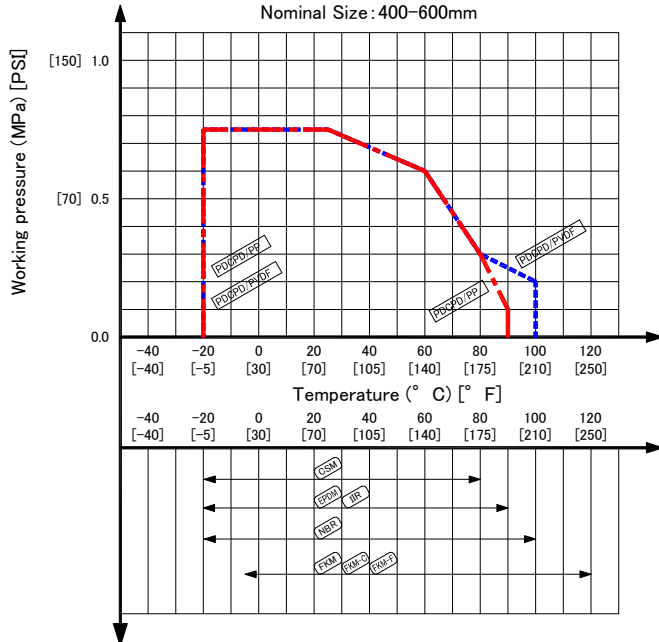
**BUTTERFLY VALVE TYPE75**

Nominal Size: 500,600mm




**BUTTERFLY VALVE TYPE56D,75D**


Nominal Size: 400-600mm




**(6) Installation procedure**

 - In suspending and supporting a valve, take enough care and do not stand under a suspended valve.

Warning

 - Be sure to conduct a safety check on the machine tools and motor-driven tools to be used, before beginning work.

- Wear protective gloves and safety goggles as fluid remains in the valve. (You may be injured.)

 - When installing a pipe support by means of a U-band or something similar, take care not to fasten it too much. (Excessive tension may damage it.)

Caution


- When installing pipes and valves, ensure that they are not subjected to tension, compression, bending, impact, or other excessive stress.

- Use flat faced flanges for connection to AV Valves.

- Ensure that the mating flanges are of the same standards.

- When installing the piping, do not do so with the valves fully closed. (The disc may pinch into the seat, resulting in a high operating torque, thus disabling opening and closing.)

- The gasket is unnecessary. (The seat carries out the role of the gasket.)

 - The valve disc is sent in the position indicated by solid lines in Figure prior to shipment from the factory. If the valve is opened or closed after unpacking, it must be reset in this position before installation. Failure to do so will result in damage to the surface of the valve seat during handling and installation.

- Care must be used during piping installation to ensure that the pipes or flanges are properly aligned so that the valve disc does not contact them in any setting. Misalignment as in Figure below will result in damage to the valve.

Fig.1

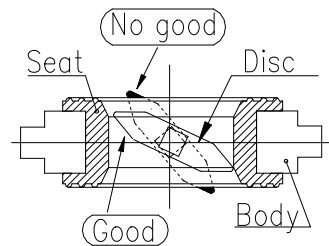
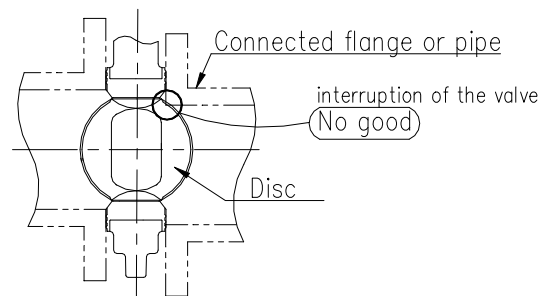
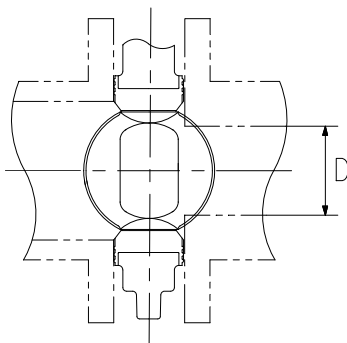


Fig.2



In case of the thickness of the connection part (flange and pipe) is too thick, shave the flange or the pipe inside in order to avoid the contact of pipe and disc. If inside diameter of the connection part is larger than size D, shaving is not necessary.



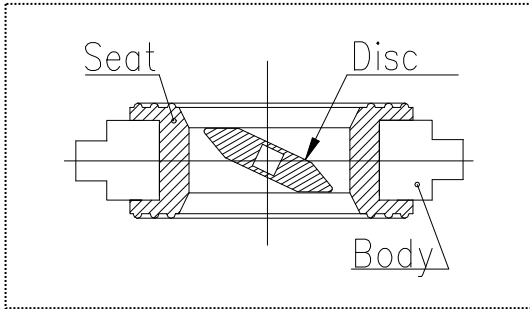
Nominal size	Diameter D
450mm (18")	419mm (16.5")
500mm (20")	469mm (18.5")
600mm (24")	569mm (22.4")

Necessary items

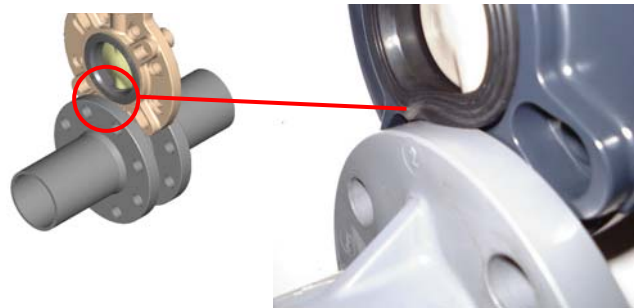
- Torque wrench
- Spanner wrench
- Bolt-Nut-Washer (For many flanges specification.)

Procedure

- 1) Leave the disc [2] slightly opened by the handle.  
Do not make the disc protrude from the seat.  
(The disc may be damaged.)
- 2) Set the valve to the coupled flange.
- 3) Insert the connecting bolt-washer-nuts, and temporarily tighten them by hand.
- 4) Using a torque wrench, tighten the bolts and nuts gradually to the specified torque in a diagonal manner.



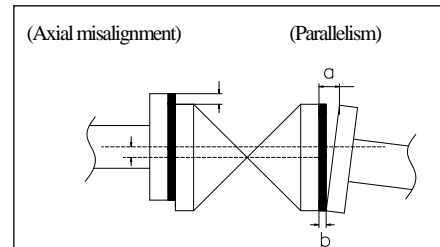
- When you insert a valve between flanges, please insert after extending the fields of flanges fully. (If you insert a valve by force without fully extending fields of flanges, a liner may be turned over and suffer a crack.)



- The parallelism and axial misalignment of the flange surface should be under the values shown in the following table to prevent damage the valve.  
(A failure to observe them can cause destruction due to stress application to the pipe)

Unit : mm [inch]

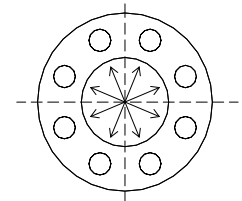
Nom. Size	Axial Misalignment	Parallelism (a-b)
450-600mm [18"-24"]	1.5 [0.06]	1.0 [0.04]



- Tighten the bolts and nuts gradually with a torque wrench to the specified torque level in a diagonal manner.  
(Avoid excessive tightening. (The valve can be damaged.))

Unit: N·m {kgf·cm} [lb·inch]

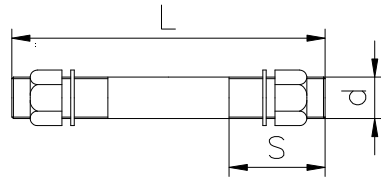
Specified torque value	Unit: N·m {kgf·cm} [lb·inch]	
Nom. Size	450mm [18"]	500, 600mm [20", 24"]
Torque value	80 {816} [710]	100 {1020} [887]



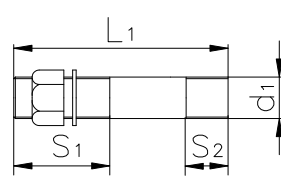


**- Body Material: PP, PVDF**

Bolt A



Bolt B

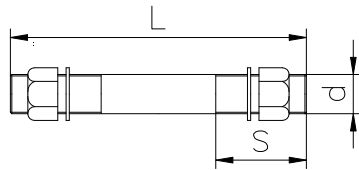


Unit: mm (inch)

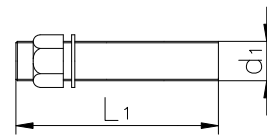
Nom. Size	Bolt A			Bolt B				Nut	Washer
	d	L	S	d1	L	S1	S2		
450mm (18")	M24	More than 315 (12.4)	45 (1.8)	M24	More than 120 (4.8)	45 (1.8)	27 (1.1)	M24	24 (0.94)
500mm (20")		More than 330 (13.0)			More than 125 (4.9)				
600mm (24")	M30	More than 375 (14.8)	50 (20)	M30	More than 145 (5.7)	50 (20)	33 (1.3)	M30	30 (1.2)

**- Body Material: PDCPD**

Bolt A






Bolt B



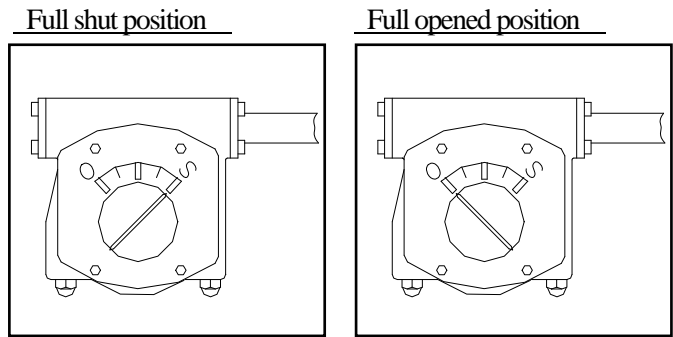
Unit: mm [inch]

Nom. Size	Bolt A			Bolt B		Nut	Washer
	d	L	S	d1	L1		
450mm (18")	M24	More than 310 (12.2)	60 (2.4)	M24	More than 110 (4.3)	M24	24 [0.94]
500mm (20")		More than 320 (12.6)			More than 110 (4.3)		
600mm (24")	M30	More than 350 (13.8)	70 (2.8)	M30	More than 120 (4.7)	M30	30 [1.2]



**(7) Operating Procedure**

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 - Do not use the valve to fluid containing slurry. (The valve will not operate properly.)
- Caution
  - 
 - The installed valve must never be opened or closed when foreign matter such as sand is present in the pipeline.
  - Do not exert excessive force in closing the valve.
  - When operating the handle, be sure to do so with your hand. (Using a tool may damage the handle.)

- The indicator shows the position of the disc on the top of gear box.
  - For the full-shut position, the indication shows Shut [S].
  - For the full-opened position, the indication shows Open [O].



**(8) Disassembly and assembly procedure for parts replacement**

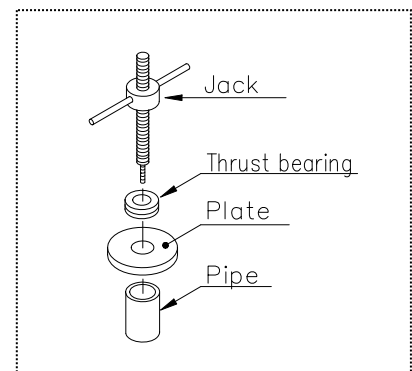
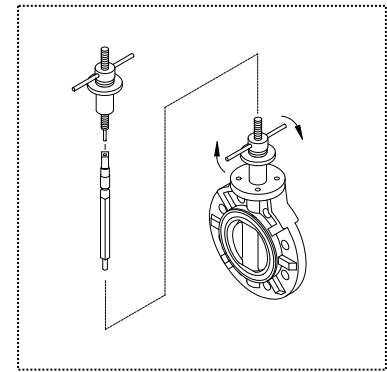
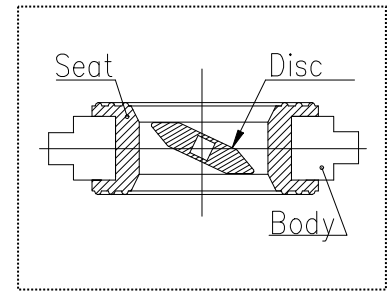
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 - Wear protective gloves and safety goggles as fluid remains in the valve. (You may be injured.)
- Caution
  - When installing pipes and valves, ensure that they are not subjected to tension, compression, bending, impact, or other excessive stress.
  - Do not change or replace valve parts under line pressure.

- Necessary items
- Protective gloves
  - Safety goggles
  - Spanner wrench
  - Plate
  - Thrust bearing
  - Silicone grease
  - Screwdriver (-)

<< Disassembly >>

Procedure

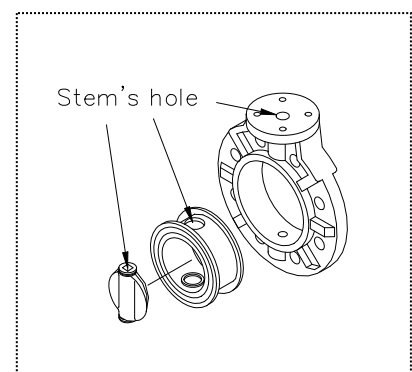
- 1) Drain fluid completely from the pipeline and leave the valve slightly opened.
- 2) Loosen the connecting bolts and nuts with a spanner wrench.
- 3) Remove the valve from the pipeline.
- 4) To take off the gearbox [25], loosen the bolt (C) [28] and pull up the gearbox.
- 5) Attach jack, thrust bearing, plate, and pipe to the valve, and thread the jack into the stem [7].
- 6) Remove the stem [7] from the jack.
- 7) Remove the O-ring (C) [6].
- 8) Make the disc [2] fully open.
- 9) Pull out the both edges of seat [7] and remove the seat [3] and disc [2].
- 10) Take the disc [2] out of the seat [3].
- 11) Remove the O-ring (A) [4] and the O-ring (B) [5].



<< Assembly >>

Procedure

- 1) Before starting assembly, silicone grease (equivalent to Toray Silicone HVG) should be spread on the disc O-rings (A)[4], (B) [5] and stem O-ring (C)[6].
- 2) The procedure of the assembly is the almost reverse of its disassembly. However, to insert seat [3] with the disc [2] into the body [1], set the disc [2] with half - opened position. Press outer rim of seat [3] into inside of the body [1], keeping stem holes straight. (Make sure that stem holes of the seat [3] are in alignment with the stem holes of the body [1].)
- 3) After assembly, make sure that the disc [2] fits seat [3] well.



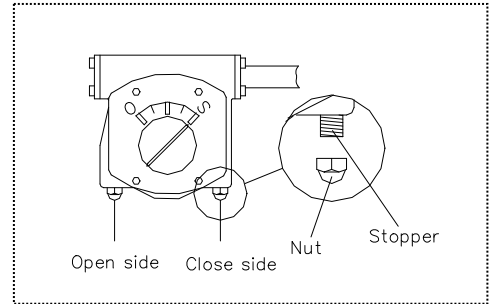
**(9) Adjustment procedure for stopper**

Necessary items

- Protective gloves
- Allen wrench
- Spanner wrench

The adjustments for full-opened and full-shut position are step-less, and it can be done with the stopper adjuster.

- 1) Remove the nut of Full-shut (Full-opening) adjuster.
- 2) Turn the stopper hex-bolt to required position by allen wrench.
- 3) Put the nut of Full-shut (Full-opening) adjuster back on gearbox.



**(10) Inspection items**



Caution



- Perform periodic maintenance. (Leakage may develop due to temperature changes or changes with time during prolonged storage, rest, or operation.)

(1)	Check for flaw, crack, or deformation on the valve.
(2)	Check for leaks to the outside.
(3)	Check for the deformation of seat due to improper installation of valve.
(4)	Check for the smoothness of handle operation.

(11) Troubleshooting

Phenomenon	Cause	Treatment
Fluid is not stopped in the full closed position at the seat.	1) The stopper is not set correctly. 2) The seat is damaged or worn. 3) Foreign materials are caught. 4) The disc is damaged or worn. 5) The connecting bolts are over tightened or tightened unevenly.	Adjust the stopper. Replace the seat. Clean up. Replace the disc. Adjust and retighten.
Fluid leaks to the outside.	1) The seat is damaged or worn.	Replace the seat.
The handle does not work smoothly	1) Foreign materials have adhered. 2) The gearbox is damaged. 3) The connecting bolt is over tightened.	Adjust and retighten. Replace the gearbox. Adjust and retighten.
Valve doe not operated	1) The gearbox is damaged 2) The stem is damaged.	Repair or replace. Replace the stem.

(12) Handling of residual and waste materials



 - Make sure to consult a waste treatment dealer to dispose of the valves.  
 (Poisonous gas is generated when the valve is burned improperly.)

## Butterfly Valves Type 75



ASAHI AV VALVES

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**Distributor**

Asahi Organic Chemicals Industry's homepage

<http://www.asahi-yukizai.co.jp/en/>