

Serial No.	H-V006E(75)-1
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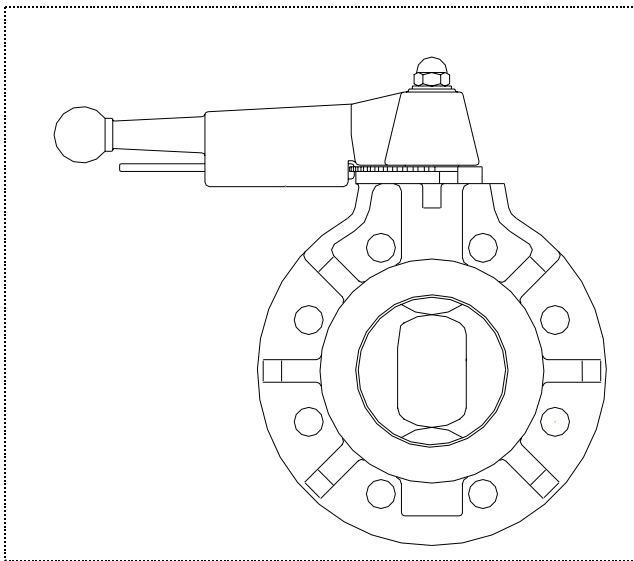
# Rotary Damper

PVDF : 40mm~600mm

User's Manual

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## (1) General operate instructions

- Operate the valve within the pressure Vs temperature range.  
(The valve can be damaged by operating beyond the allowable range. )
- 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 to fluid containing slurry. (The valve will not operate properly.)
- Do not use the valve on condition that fluid has crystallized. (The valve will not operate properly.)
- Do not step on the valve or apply excessive weight on valve. (It can be damaged.)
- Do not exert excessive force in closing the valve.
- Make sure to consult a waste treatment dealer to dispose of the valves.  
(Poisonous gas is generated when the valve is burned improperly.)
- Allow sufficient space for maintenance and inspection.
- Keep the valve away from excessive heat or fire. (It can be deformed, or destroyed )
- Set valve support on the valve.
- Keep the valve away from places of direct sunlight, water and dust. Use cover to shield the valve.  
(The valve will not operate properly.)
- Do not use AV valves in a place where they may become submerged in water.  
(Submergence will make AV valve fail.)

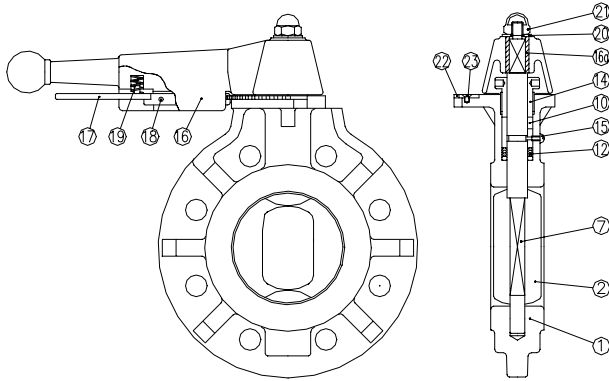
## (2) General instructions for transportation, unpacking and storage

- Keep the valve packed in the carton or box as delivered until installation.
- Keep the valve away from any coal tar, creosote (antiseptic for wood), termite insecticide, vermicides, and paint.  
(This could cause swelling and damage the valve.)
- Do not impact or drop the valve. (It can be damaged.)
- Avoid scratching the valve with any sharp object.

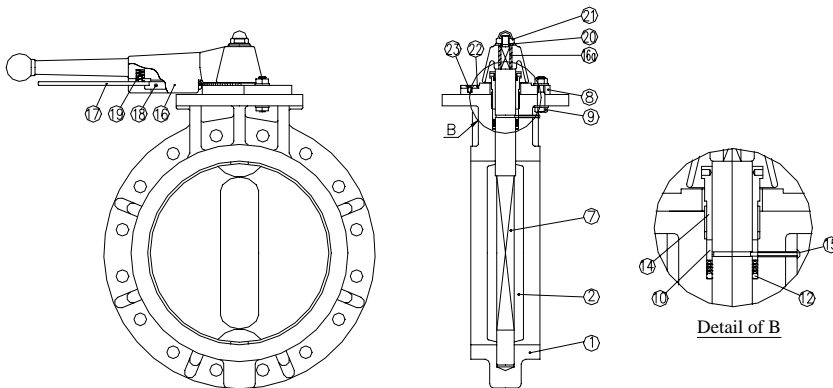
(3) Names of parts

1) Lever Type (40mm[1½"] – 600mm[24"])

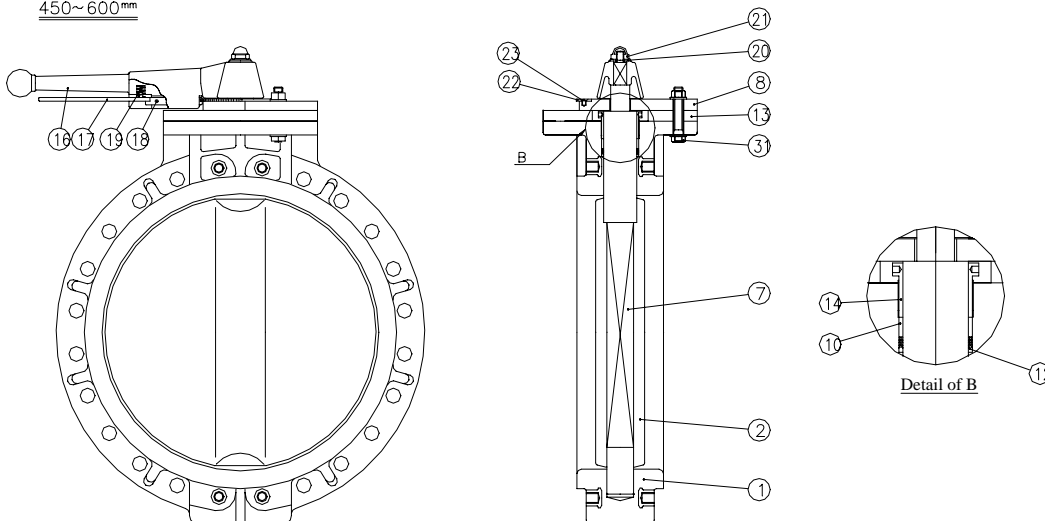
40~200mm



250~400mm



450~600mm



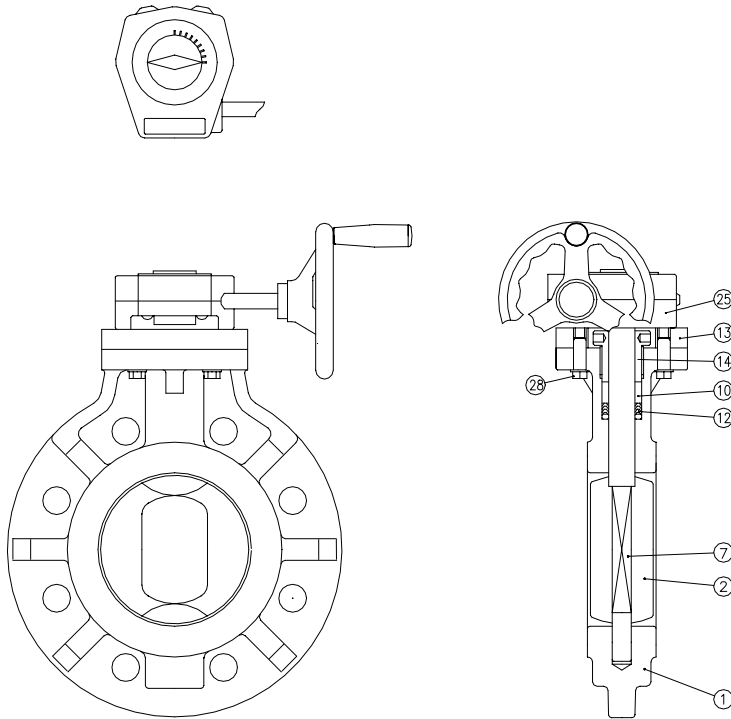
No.	DESCRIPTION
①	Body
②	Disc
⑦	Stem
⑧	Stem holder
⑨	Bolt·Nat(A)
⑩	Bush(A)
⑫	V-Packing
⑭	Grand
⑮	Screw(A)
⑯	Handle(A)
⑯a	Inserted metal of Handle
⑰	Handle lever
⑱	Pin
⑲	Spring
⑳	Washer(A)
㉑	Nat(A)
㉒	Locking plate
㉓	Screw(B)

No. ⑧&⑨ are used for 250~600mm (10"~24").

No. ⑯a is used for 40~250mm (1½"~10").

2) Gear Type (40mm[1½"]~600mm[24"])

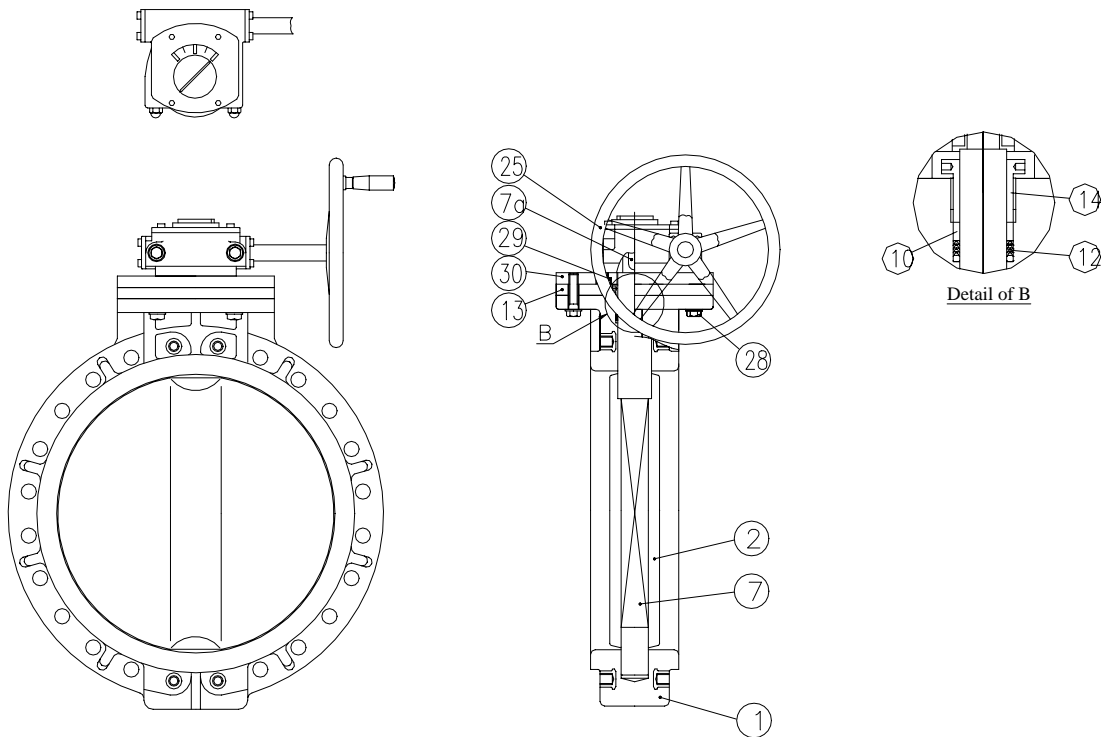
40~400mm



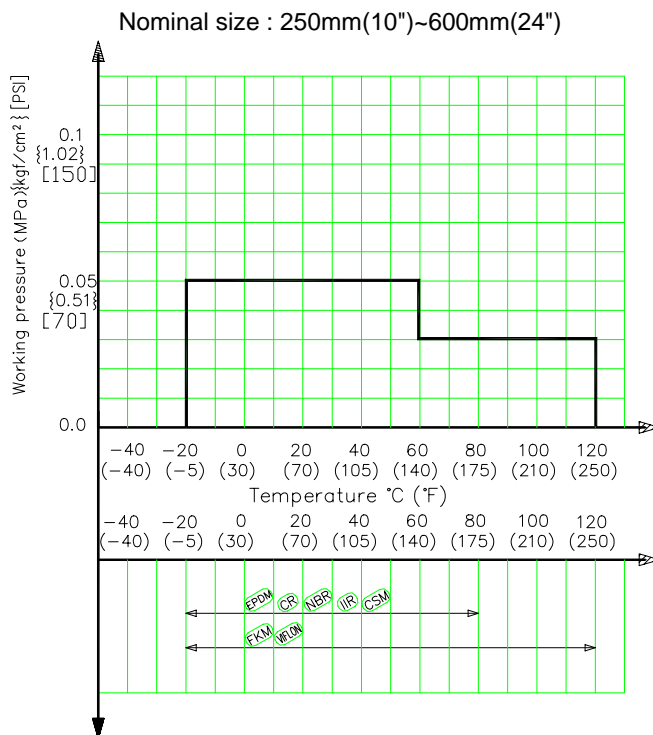
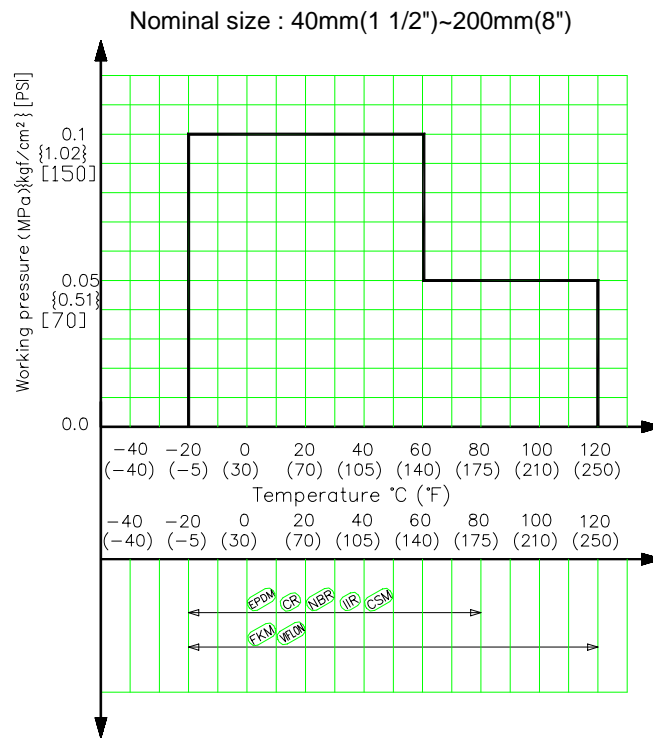
No.	DESCRIPTION
①	Body
②	Disc
⑦	Stem
⑦a	Key(A)
⑩	Bush(A)
⑫	V-Packing
⑬	Spacer(A)
⑭	Grand
⑮	Gear box
⑳	Bolt(C)
㉑	Bolt(D)
⑳	Stand

No. ⑦a, ㉑ & ⑳ is used for 450~600mm (18"~24").

450~600mm



(4) Comparison between working temperature and pressure

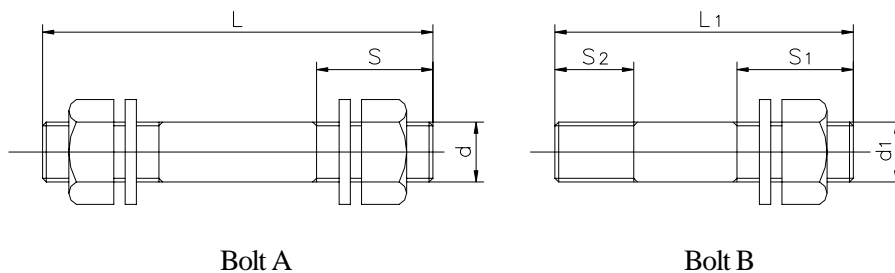


Caution

Do not operate valve beyond the range of working temperature and pressure.  
(The valve can be damaged.)

**(5) Installation procedure**

- Necessary items
- Torque wrench      ● Spanner wrench      ● AV gasket
  - Bolt, Nut, Washer (For many flanges specification)



Nom.Size		Bolt A			Bolt B				Nut	Washer
		d	L (mm)	S (mm)	d1	L (mm)	S1 (mm)	S2 (mm)		
40mm	1 1/2"	M16	125 or more	35	-	-	-	-	M16	16
50mm	2"		125 or more							
65mm	2 1/2"		130 or more							
80mm	3"		130 or more							
100mm	4"	145 or more								
125mm	5"	M20	165 or more	40						
150mm	6"		175 or more							
200mm	8"		190 or more							
250mm	10"	M22	220 or more	40						
300mm	12"		245 or more							
350mm	14"		250 or more							
400mm	16"	M24	300 or more	45	M24	120 120 125	45	27	M24	24
450mm	18"		315 or more							
500mm	20"		330 or more							
600mm	24"	M30	375 or more	50	M30	145 155	50	33	M30	30

Procedure

- 1) Close the valve fully.
- 2) Set the AV gasket between the flanges.
- 3) Insert washers and bolts from the pipe side, insert washers and nuts from the valve side, then temporarily tighten them by hand.  
(Threaded bolts are needed for JIS 10K [the connection standard], 450mm~600mm [18"~24"])



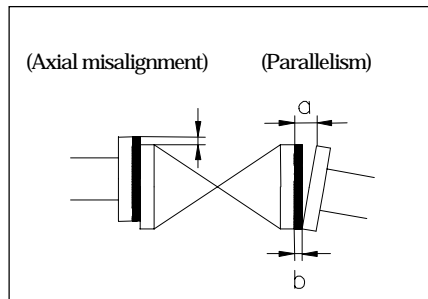
Caution

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)
40~80mm (1½"~3")	1.0mm (0.04")	0.8mm (0.03")
100~150mm (4"~6")	1.0mm (0.04")	1.0mm (0.04")
200~600mm (8"~24")	1.5mm (0.06")	1.0mm (0.04")



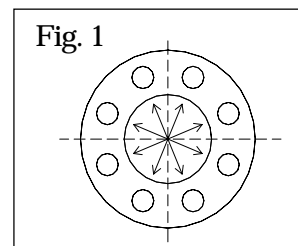
- 4) Tighten the bolts and nuts gradually with a torque wrench to the specified torque level in a diagonal manner.  
(Refer to Fig.1.)

Recommended torque value

Unit : N·m{kgf·cm}[lb·inch]

Nom. Size	40mm (1½")	50, 65mm (2", 2½")	80, 100mm (3", 4")	125, 150mm (5", 6")
Torque value	20.0 {204} [177]	22.5 {230} [200]	30.0 {306} [266]	40.0 {408} [355]

Nom. Size	200, 250mm (8", 10")	300, 350mm (12", 14")	400, 450mm (16", 18")	500, 600mm (20", 24")
Torque value	55.0 {561} [488]	60.0 {612} [532]	80.0 {816} [710]	100.0 {1020} [887]



\*These figures above show the specified torque value when the AV gasket used for 40mm(1½") to 350mm(14"). As for 400mm(16") or more, refer to the figures above just as the recommended torque value as they do not use AV gaskets.



Caution

Avoid excessive tightening. (The valve can be damaged.)

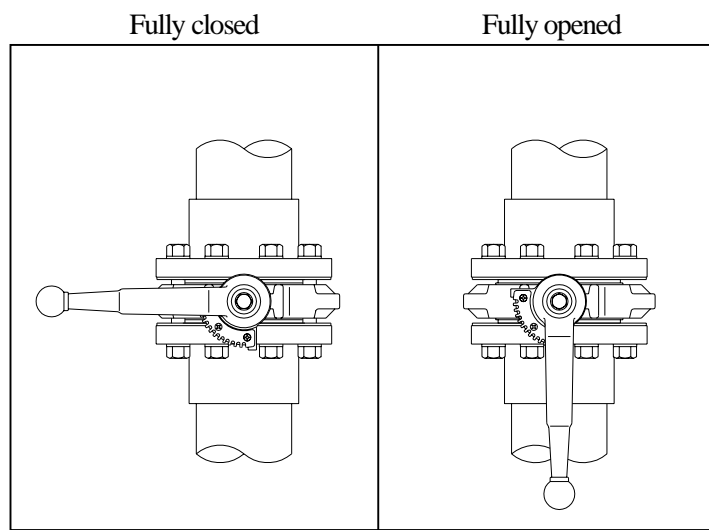
(6) Operating procedure



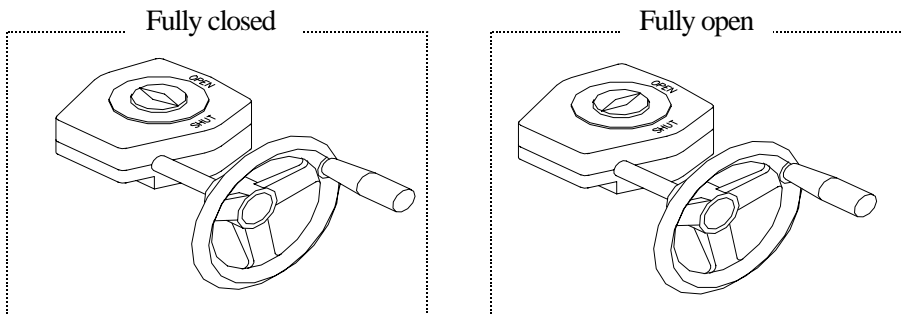
Caution

Operated the valve manually.

- Open and close the valve by turning handle gently.
- In case of lever type, the direction of handle is same as the disc.
  - For the full-closed position, the handle is vertical to the piping axis direction.
  - For the full-opened position, the handle is parallel to the piping axis direction.



- In case of gear type, the indicator shows the position of the disc on the top of gear box.
  - For the full-closed position, the indication shows Shut [S].
  - For the full-opened position, the indication shows Open [O].



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

Necessary

- |                     |                  |                   |        |
|---------------------|------------------|-------------------|--------|
| ● Protective gloves | ● Safety goggles | ● Spanner wrench  | ● Jack |
| ● Plate             | ● Thrust bearing | ● Silicone grease |        |
| ● Screwdriver(－)    |                  |                   |        |



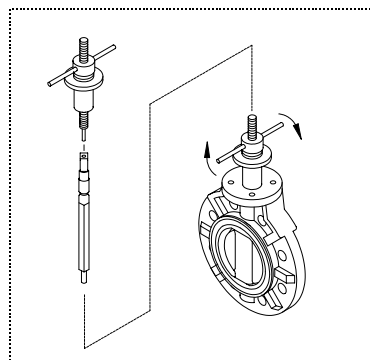
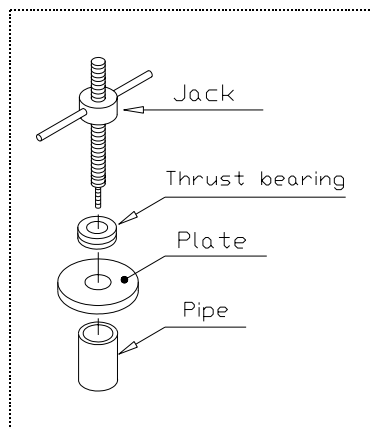
**Caution**

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

<< Disassembly >>

Procedure

- 1) Drain the fluid completely from the pipeline, and close the valve fully.
- 2) Loosen the connecting bolts and nuts with a spanner wrench.
- 3) Remove the valve from the pipeline.
- 4) <As for the lever type>  
To take off handle [16], firstly take off cap [24] by using a screwdriver (－) and release bolt [21] by using a socket wrench, then pull up the handle [16] with holding handle lever[17].  
To take off locking plate [22], release four tapping screws [23] first by using a screwdriver (+) and take off stem holder [8].  
<As for the gear type>  
To take off gear box [18], loosen bolt (A)[20] and pull the gear box up to remove.
- 5) As for 40mm~100mm (1½”~4”), pull out the stem [7] by pliers or hand.
- 6) As for 125mm~600mm(5”~24”), attach jack, thrust bearing, plate, and pipe to the valve, and thread the jack into the stem [7]. Remove the stem [7] from the jack.



<< Assembly >>

Procedure

- 1) Before starting assembly, silicone grease (equivalent to Toray Silicone HVG) should be spread O-ring (C)[6].
- 2) The procedure of the assembly is the almost reverse of its disassembly.

**(8) Adjustment procedure for stopper**

Necessary

- Protective gloves
- Allen wrench
- Spanner wrench

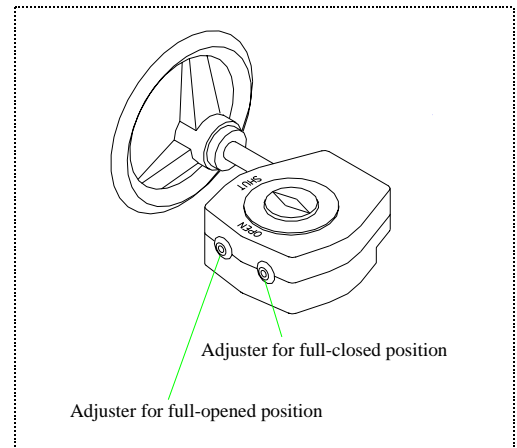


Caution

As for the lever type, adjust the valve travel with the locking plate [22]. The far edge of the rock part is the full-closed or full-opened position.

As for the gear type, the adjustments for full-opened and full-closed position are step-less, and it can be done with the stopper adjuster.

- 1) Remove the rubber cap of Full-closing (Full-opening) adjuster.
- 2) Loosen the stopper hex-bolt by a allen wrench.
- 3) Adjust the disc of valve to required position.
- 4) Tighten the stopper with a allen wrench.
- 5) Put the rubber cap of Full-closing (Full-opening) adjuster back on gearbox by hand.



**(9) Adjustment procedure for the indicator on Gear Type**

Necessary

- Protective gloves
- Wooden or plastic pole

- 1) Remove the gearbox from the valve according to the (7) Disassembly and assembly procedure for parts replacement
- 2) Remove the drive bushing from the gearbox.
- 3) Set the gearbox to a full opened position.
- 4) Insert a tool from the bottom of the gearbox, then remove the indicator by pushing it out. Do not remove the indicator cap from the top of the gearbox as the indicator and gearbox can be damaged.
- 5) Align the highest convex part of eight convex parts of the indicator with the deepest concave part of the gearbox as shown in Fig 1&2.(If not properly aligned the indicator cap can be damaged.)

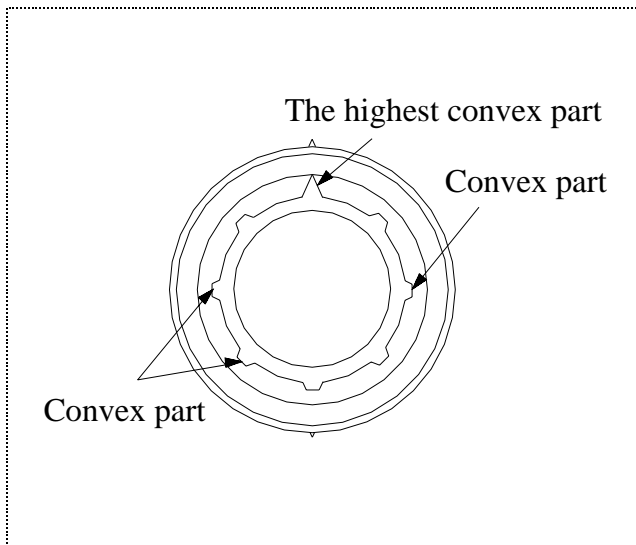


Fig.1 .Indicator (Under view)

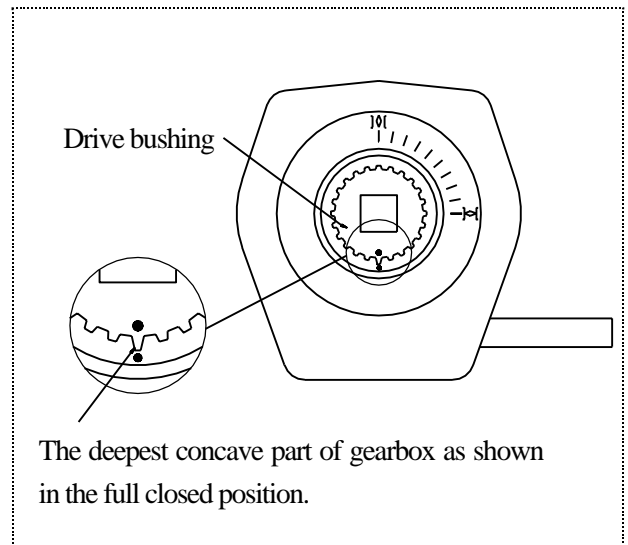


Fig.2 Gear box (Upper view)

(10) Inspection items

Inspect the following items.

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

(11) Troubleshooting

Problem	Cause	Treatment
Fluid leaks to the outside.	1) The connecting bolts are not tightened properly or torqued unevenly.	Adjust and retighten the bolts.
The handle does not operate smoothly.	1) Foreign materials have collected on the disc. 2) The gearbox is damaged. 3) The connecting bolt is too much tightened.	Remove the material. Repair or replace. Adjust and retighten the flange bolts.
Valve does not operate.	1) The gear box is damaged. 2) The stem is damaged.	Repair or replace. Replace the stem.

(12) Handling of residual and waste materials



Caution

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

(13) Inquiries
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<b><u>Distributor</u></b>
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**Rotary Damper**



**ASAHI AV VALVES**

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