

Serial No.	H-V016-E-8
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Gauge Valve

User’s Manual



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This user's guide contains information important to the proper installation, maintenance and safe use of an ASahi AV Product. Please store this manual in an easily accessible location.

#### <Warning & Caution Signs>

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

#### <Prohibited & Mandatory Action Signs>

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

### (1) Be sure to read the following warranty clauses of our product

- 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 compressible fluids even when the gas is under similar pressures used for liquids. 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 a gas in testing, please consult your nearest service station beforehand.



Caution



- Do not step on or apply excessive weight on valve. (It can be damaged.)
- Do not use the valve in conditions where the fluid may have crystallized.  
(The valve will not operate properly.)
- Keep the valve away from excessive heat or fire. (It can be damaged, or destroyed.)
- Always operate the valve within the pressure vs. temperature range.  
(The valve can be damaged or deformed by operating beyond the allowable range.)
- Allow sufficient space for maintenance and inspection.
- Select a valve material that is compatible with the media. For chemical resistance information, refer to "CHEMICAL RESISTANCE ON ASAHI AV VALVE".  
(Some chemicals may damage incompatible valve materials.)
- Keep the valve out 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 periods of prolonged storage, rest, or operation.)

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



Warning

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

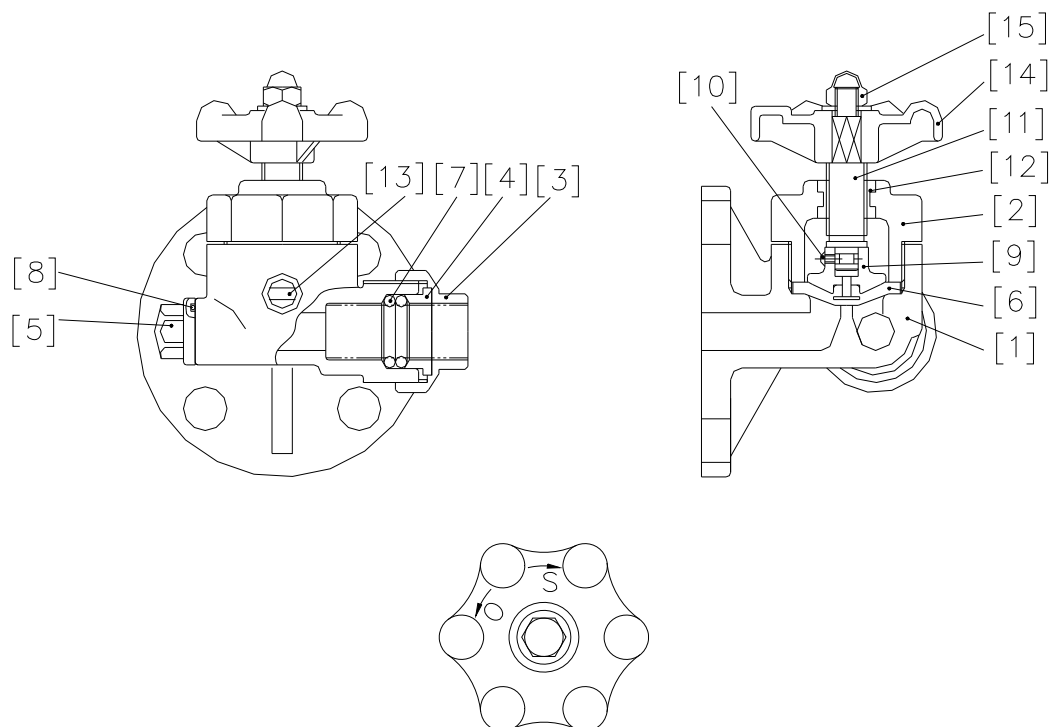


Caution

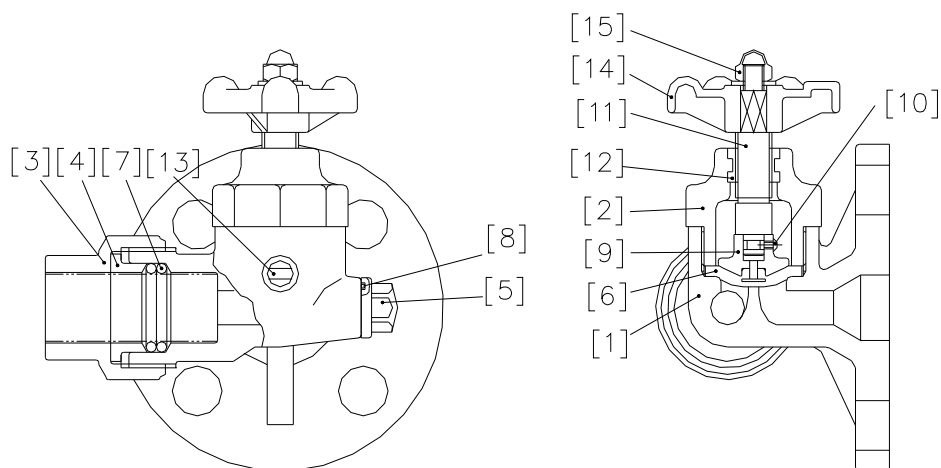
- This valve is not designed to handle impacts of any kind. Avoid throwing or dropping the valve.
- Avoid scratching the valve with any sharp object.
- Do not over-stack cardboard shipping boxes. Excessively stacked packages may collapse.
- Avoid contact with any coal tar creosote, insecticides, vermicides or paint.  
(These chemicals may cause damage to the valve.)
- When transporting a valve, do not carry it by the handle.
- ! - Store products in their corrugated cardboard boxes. Avoid exposing products to direct sunlight, and store them indoors (at room temperature). Also avoid storing products in areas with excessive temperatures.  
(Corrugated cardboard packages become weaker as they become wet with water or other liquid. Take care in storage and handling.)
- After unpacking the products, check that they are defect-free and meet the specifications.

#### (4) Name of parts

20mm(3/4")

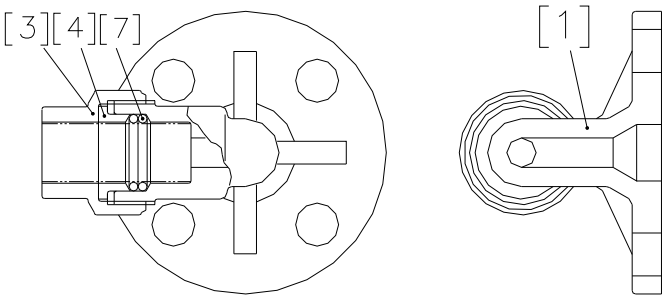


25mm(1")



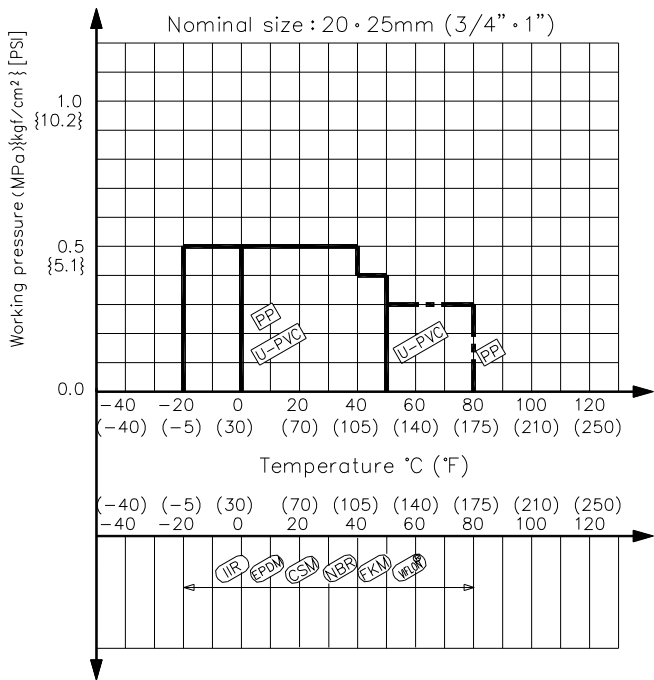
No.	DESCRIPTION	No.	DESCRIPTION	No.	DESCRIPTION
[1]	Body	[6]	Diaphragm	[11]	Stem
[2]	Bonnet	[7]	O-ring (A)	[12]	Inserted metal of bonnet
[3]	Gland nut	[8]	O-ring (B)	[13]	Indication of material
[4]	Gland	[9]	Compressor	[14]	Hand wheel
[5]	Drain plug	[10]	Compressor pin	[15]	Nut

Flanged elbow 25mm(1")








No.	DESCRIPTION	No.	DESCRIPTION
[1]	Body	[4]	Gland
[3]	Gland nut	[7]	O-ring (A)

(5) Working pressure vs. temperature



## (6) Installation procedure

- Warning**   - Be sure to conduct a safety check on all hand and power tools to be used before beginning work.
- Wear protective gloves and safety goggles as fluid remain in the valve even if the pipeline is empty.  
(You may be injured.)
- Caution**   - When installing a pipe support by means of a U-band or something similar, take care not to over-tighten.  
(Excessive force may damage the pipe.)
-  - 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.
- Be sure to use sealing gaskets (AV Gasket), bolts, nuts, and washers and tighten them to specified torques.  
(When a non-AV gasket is used, a different tightening torque specification should be followed.)



### Necessary items

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

## Flanged end

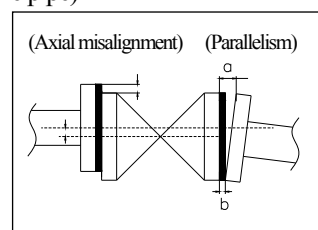
### Procedure

- 1) Set the AV gasket between the flanges.
- 2) Insert washers and bolts from the pipe side, insert washers and nuts from the valve side, then temporarily tighten them by hand.



- 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)
20, 25mm (3/4", 1")	1.0 (0.04)	0.5 (0.02)



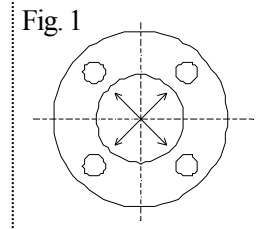
- 3) Using a torque wrench, tighten the bolts and nuts gradually to the specified torque in a diagonal manner.  
(Refer to fig.1.)

- Caution**   - Tighten the bolts and nuts gradually with a torque wrench to the specified torque level in a diagonal manner.

### Recommended torque value Unit: N·m [kgf·cm] [lb·inch]

Nom. Size	20mm (3/4")	25mm (1")
PTFE·PVDF coated	17.5 {179} [155]	20.0 {204} [177]
Rubber	8.0 {82} [71]	20.0 {204} [177]

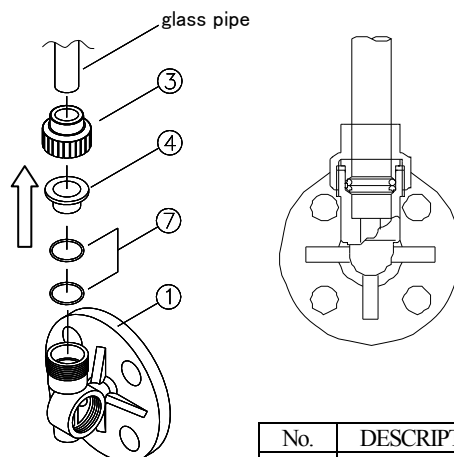
Fig. 1



## Glass pipe

### Procedure

- 1) Loosen the gland nut [3] by hand.
- 2) Remove the gland nut [3], gland [4] and O-ring (A) [7] from the body [1].
- 3) Set the gland nut [3], gland [4] and O-ring (A) [7] through the glass pipe.
- 4) Insert the glass pipe into the body [1].
- 5) Tighten the gland nut [3] with hand.



No.	DESCRIPTION
1	Body
3	Gland nut
4	Gland
7	O-ring (A)

### Recommended O.D. of glass pipe Unit: mm (inch)

Nom. Size	O.D.
20mm (3/4")	18mm (0.72")
24mm (1")	26mm (1.04")

## (7) Operating Procedure



Caution



- Do not use the valve to fluid containing slurry. (The valve will not operate properly.)



- 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.)

- Hand wheel operating should be done by hand.
- Open and close the valve by rotating the hand wheel.







Right turn (Clockwise) → Shut

Left turn (Counterclockwise) → Open

- Check the opening degree.  
(When the valve shuts, operation torque of the valve is high.)



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

- Warning**   - Be sure to conduct a safety check on all hand and power tools to be used before beginning work.  
 - Wear protective gloves and safety goggles as fluid remain in the valve even if the pipeline is empty.  
 (You may be injured.)
-  - Do not change or replace valve parts under line pressure.
- Caution**   - Take care not to over-tighten the Gland Nut. (The valve can be damaged.)  
 - Do not use the pipe wrench. (The valve can be damaged.)
-  - When installing pipes and valves, ensure that they are not subjected to tension, compression, bending, impact, or other excessive stress.

### Necessary items

- Torque wrench                      ● Spanner wrench                      ● Screw driver                      ● Monkey wrench
- Strap wrench                      ● Protective gloves                      ● Safety goggles



### <Disassembly>

- 1) Drain fluid completely from the pipeline.
- 2) Loosen the gland nut [3] and remove the glass pipe.
- 3) Loosen bolts from the pipe side and nuts from the valve side.
- 4) Loosen the nut [15] of the upper hand wheel side.
- 5) Remove the hand wheel [14].
- 6) Loosen the bonnet [2] with the spanner wrench.
- 7) Remove the stem part from the bonnet [2].
- 8) Loosen the compressor pin [10] that fixed compressor [9] with the screwdriver.
- 9) Remove compressor part from the stem [11].

### <Assembly>

The produce of assembly is the reverse of its disassembly.

## (9) Inspection items

- Caution**   - Perform periodic maintenance. (Leakage may develop due to temperature changes or over periods of prolonged storage, rest or operation.)

- Inspect the follow items ;

(1)	Check for any flaw, crack, or deformation on the outside.
(2)	Check whether fluid leaks to the outside.
(3)	Check for tightness of body and bonnet.
(4)	Check for tightness of gland nut and glass pipe.
(5)	Check whether the handle can be operated smoothly.

## (10) Troubleshooting

Problem	Cause	Treatment
Fluid leaks from the body and the bonnet.	The bonnet is loose.	Retighten
	Media has crystallized.	Clean
The Fluid is leaking past the fully closed position.	Media has worn diaphragm and / or weir.	Replacement
	Solid particles have lodged in the valve.	Clear the solid particles from the valve.
Fluid leaks from the glass pipe.	The gland nut is loose. Solid particles have lodged. O-ring is worn. Glass pipe is damaged.	Retighten Clean Replacement Replacement
Fluid leaks from stem part.	Diaphragm is worn.	Replacement

## (11) Handling of residual and waste materials



Warning



- Make sure to consult a waste treatment dealer for recommendations on the proper disposal of plastic valves.  
(Poisonous gas is generated when the valve is burned improperly.)

## Gauge valve



ASAHI AV VALVES

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### Distributor

Asahi Organic Chemicals Industry's homepage

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

Information in this manual is subject to change without notice.

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