

Serial No.

UA-043E



Read and use the information contained within these documents.

This User's Guide contains very important information for the proper installation, maintenance and safe use of the BALL VALVE TYPE21α flow control type. Please store in an easily accessible location.

<Warning, Caution, Prohibited & Mandatory Action 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: 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.

General Information for Transportation, Unpacking and Storage

	-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.)
	-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.

Inspection Items

	-Please inspect the following items. <input type="checkbox"/> Check for flaw, crack, or deformation on the valve. <input type="checkbox"/> Check for leaks to the outside or inside. <input type="checkbox"/> Inspect the union nut and be sure it is not loose. <input type="checkbox"/> Check for the smoothness of handle operation.

General Operating Instructions

	-A ball valve structurally has a dead space. Be careful of volatile liquids such as hydrogen peroxide solution and sodium hypochlorite because those liquids may turn into gas in the dead space and cause an abnormal rise of pressure in the valve. The gas that causes an abnormal rise of inner pressure through vaporization is compressible fluid. So, if the valve breaks, its fragments explosively scatter, and it is very dangerous.
	-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.

	-Do not step on or apply excessive weight on valve. (It can be damaged.) -Do not apply excessive force and shock to the indicator. (Failure to do so may cause damage.) -Keep the valve away from excessive heat or fire. (It can be damaged, or destroyed.) -Do not use the valve to fluid containing slurry. (The valve will not operate properly.) -When installing a pipe support by means of a U-type clamp or something similar, take care not to over-tighten. (Excessive force may damage the pipe.) -Take care not to over-tighten the Union Nut. (The valve can be damaged.) -Do not use the pipe wrench. (The valve can be damaged.) -Do not exert excessive force in operating the valve. (The hand wheel can be damaged.) -Do not open/close the valve when foreign matters such as dust are included in fluid.

General Operating Instructions

⚠ Caution

- Always operate the valve within the pressure vs. temperature range. (The valve can be damaged or deformed by operating beyond the allowable range.)-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.)
- Allow sufficient space for maintenance and inspection.
- Do not use the valve in conditions where the fluid may have crystallized. (The valve will not operate properly.)
- Keep the valve out of direct sunlight, water and dust. Use cover to shield the valve. (The valve will not operate properly.)
- Be sure to conduct a safety check on all hand and power tools to be used before beginning work.
- When conducting piping work, wear personal protective equipment appropriate to the contents of work. (Failure to do so may cause an injury.)
- When installing pipes and valves, ensure that they are not subjected to tension, compression, bending, impact, or other excessive stress.
- When installing, disassembling, or reassembling the piping, fix the End Connector.
- Fasten the Union Nut while avoiding the parallelism and axial misalignment of the flange surface.
- When installing a piece of equipment at the end of the piping line, be sure to keep the secondary (Downstream) End Connector and Union Nut installed on the valve.
- Before a water test, be sure that the Union Nut is tightly fastened.
- Foreign matters such as sand may be left inside the pipeline after the installation of the valve. Therefore, clean inside the pipe before opening/closing the valve.
- When tightening the union nut, make sure that the valve is fully closed and that there is no piping stress. (The seat may be damaged, causing leakage.)
- Perform periodic maintenance. (Leakage may develop due to temperature changes or over periods of prolonged storage, rest or operation.)
- When replacing valves and parts, completely eliminate pressure in the piping.
- When operating the handle, be sure to do so with your hand. (Using a tool may damage the handle.)
- Because the edge of the ball opening remains on the seat (PTFE) when used at an intermediate opening, so that leaks may be caused at the time of full closing.
- Please use the indicator as a guide for valve opening.

Installation Procedure

Flanged end

⚠ Caution

- Avoid tightening the bolt & nut too tightly. Failure to do so may cause valve breakage.
- The parallelism and axial misalignment of the flange surface should be under the values shown in the table 1 to prevent damage the valve.
(A failure to observe them can cause destruction due to stress application to the pipe. Refer to Fig. 1.)
- 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 table 1 specified torques.
- When connecting a ASAHI AV Valve to metal piping, take care not to let the piping stress on the valve.

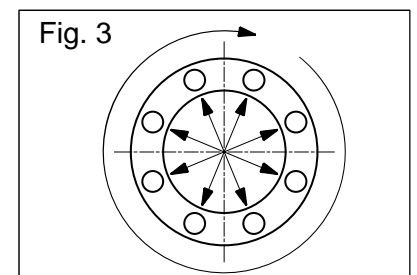
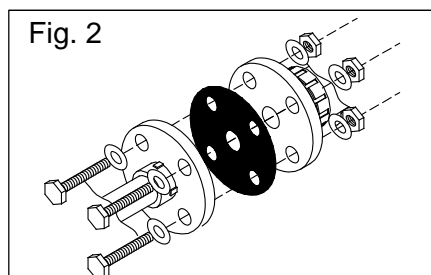
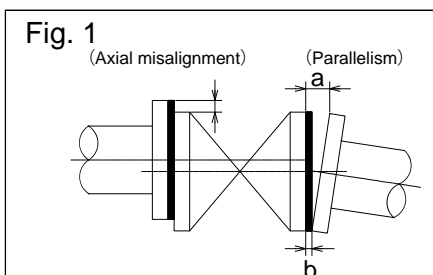
1. Confirm the flange face area is clean and free of dirt or foreign materials.
2. Set the AV gasket between the flanges. Insert washers and bolts from the pipe side, insert washers and nuts from the valve side, then temporarily tighten them by hand. (Refer to Fig. 2)
3. Tighten the bolts and nuts gradually with a torque wrench to the specified torque level in a diagonal manner. (Refer to Fig.3)
4. Tighten it more than 2 turns clockwise with specified torque. (Refer to Fig. 3)

[Table 1] Parallelism and axial misalignment of the flange

Nom. size	15 - 32mm 1/2 - 1 1/4"	40, 50mm 1 1/2, 2"
axial misalignment	1.0mm 0.04 inch	1.0mm 0.04 inch
parallelism (a-b)	0.5mm 0.02 inch	0.8mm 0.03 inch

[Table 2] Specified torque value

Nom. size	15, 20mm 1/2, 3/8"	25, 32, 40mm 1, 1 1/4, 1 1/2"	50mm 2"
PTFE coted	17.5N-m 155 lb-in	20.0N-m 177 lb-in	22.5N-m 200 lb-in
PVDF coted			
Rubber	8.0N-m 71 lb-in	20.0N-m 177 lb-in	22.5N-m 200 lb-in



Socket end

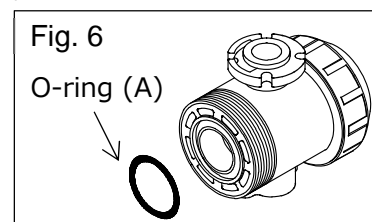
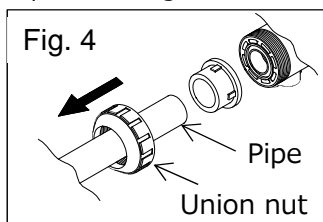
Warning

- When using an adhesive, ventilate the space sufficiently, prohibit the use of a fire in the vicinity, and do not inhale adhesive vapors directly.

Caution

- Do not apply more adhesive than necessary. (The valve can be damaged due to solvent cracking.)
- Do not under any circumstances try to insert a pipe into another fitting or valve by striking it. (Which may break the piping.)
- If an adhesive gets into contact with your skin, wash it off immediately. If you feel sick or find anomaly, receive a physician's diagnosis and take appropriate measures promptly.
- Take care in doing work at low temperatures. Solvent vapors are hard to evaporate and are likely to remain. (Solvent cracks may occur, damaging the equipment.)
- After assembling the piping system, open both ends of the piping and use a fan (of the Low-pressure Type) or something similar to ventilate the space, thus removing the solvent vapors.
- The union nut of this product is fastened lightly so that it can be loosened easily. Be sure to remove the end connector before carrying out the work. (Failure to do so may cause external leakage.)
- Use the appropriate Asahi AV cement. (Use No.32, 52, or 62 for PVC. Use No.88 for C-PVC.)
- Conduct a water test at least 24 hours after joining the pipes with an adhesive.

1. After fully close the valve, loosen the union nut and remove the union nut and the end connector.
2. Lead the union nut through the pipe. (Refer to Fig. 4)
3. The bench mark indicates the maximum penetration depth of the pipe into the end connector.
4. Clean the hub part of the end connector by wiping with a waste cloth.
5. Apply adhesive evenly to the hub part of the end connector and the pipe spigot. (Refer to Fig. 5)
6. After applying adhesive, insert the pipe quickly into the end connector and leave it alone for at least 60 seconds.
7. Wipe away overflowing adhesive.
8. After make sure the valve is fully closed, make sure that O-ring(A) is mounted. (Refer to Fig. 6)
9. Tighten union nut by hand.
10. Using a strap wrench tighten union nuts uniformly on each side approx. 90° -180°, 1/4 to 1/2 turns.

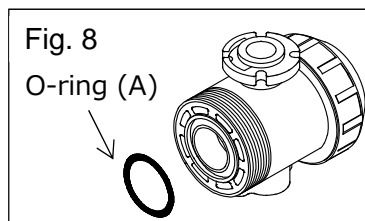
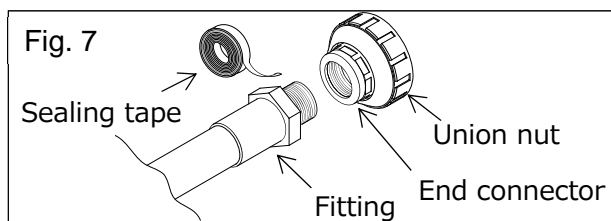


Threaded end

Caution

- Avoid excessive tightening. (The valve can be damaged.)
- The union nut of this product is fastened lightly so that it can be loosened easily. Be sure to remove the end connector before carrying out the work. (Failure to do so may cause external leakage.)
- Make sure that the threaded connections are plastic x plastic. (Metallic thread can cause damage.)
- Wrap the threaded joints on our plastic piping with sealing tape. Using a liquid sealing agent or liquid gasket may cause stress cracks (Environmental Stress Cracking). Our product warranty shall not apply in case of said use, even when said use is unavoidable.

1. After fully close the valve, loosen the union nut and remove the union nut and the end connector.
2. The sealing tape is wound to the Male threaded adapter. (2 to 3 complete wraps around the male threads are sufficient. Refer to Fig. 7.)
3. Tighten the external thread of the joint and the end connector hand tight. Using the spanner wrench, screw in the end connector by turning 180°-360°carefully without damaging it.
4. After make sure the valve is fully closed, make sure that O-ring (A) is mounted. (Refer to Fig. 8.)
5. Tighten union nut by hand.
6. Using a strap wrench tighten union nuts uniformly on each side approx. 90° -180°, 1/4 to 1/2 turns.

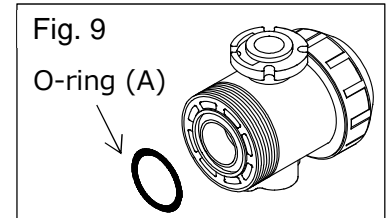


Spigot end

⚠ Caution

! -The union nut of this product is fastened lightly so that it can be loosened easily. Be sure to remove the end connector before carrying out the work. (Failure to do so may cause external leakage.)

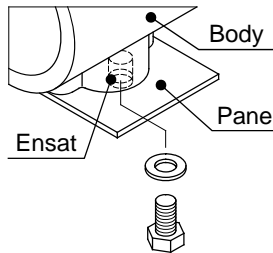
1. After fully close the valve, loosen the union nut and remove the union nut and the end connector.
2. Lead the union nut through the pipe.
3. For the next step, refer to the user's manual for the sleeve welder or automatic welding machine.
4. After make sure the valve is fully closed, make sure that O-ring (A) is mounted. (Refer to Fig. 9.)
5. Tighten union nut by hand.
6. Using a strap wrench tighten union nuts uniformly on each side approx. 90° -180°, 1/4 to 1/2 turns.



Option

<Panel Mounting>

Refer to the User's manual for Metal Insert (Ensat) by Maker.



Metal Insert (Ensat)

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.)

Product Warranty

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.
- * Note that damage induced by a defect of our product is not covered by warranty.
- This guarantee applies to the use of our product only in Japan. If it is used overseas, please inquire with us separately.

Inquiries

For details, please consult with your nearest service station. As for details, refer to the User's manual (No.H-V077-E).

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