Pinch valve Type 01
Manual operation
Pneumatic actuated Type AX

User's Manual

Thank you for choosing our product.
This instruction manual contains important information for safe use of our product, so please be sure to read it before handling the product.
After reading this manual, please be sure to keep it in a place where the user can see it at any time.

ASAHI YUKIZAI CORPORATION

-SAFETY PRECAUTIONS-

This instruction manual is written on the assumption that the person who handles our products has a basic knowledge of our products, electrical equipment, machinery, control, etc., and it contains technical terms depending on the handling contents.
Please read this manual carefully and fully understand the contents and observe the safety precautions for proper use.

In this manual, the warning, caution, prohibition, and enforcement are categorized together with the symbol to inform the situation and scale of human injury or property damage.
Failure to observe this precaution may result in unexpected failure or damage. Be sure to observe this precaution.

<WARNING/CAUTION indications>

⚠Warning	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠Caution	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.

<Prohibited/Forced display>

Prohibition	In the handling of the product, it is prohibited to do it in "Do not do it".
Forcing	In the handling of the product, it is forced by "contents to be carried out without fail".

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1. Our product warranty coverage

Unless otherwise stated in the Contract or Specifications, etc., the warranty for the piping material products (hereinafter referred to as "applicable products") such as valves manufactured or sold by us is as follows.

Applicable to

This warranty applies only when the product is used in Japan. If you intend to use the product overseas, please contact us.

Warranty Period

The warranty period is one year after delivery.

Guaranteed range

In the event of failure or malfunction due to our responsibility during the above warranty period, we will replace or repair the product with a substitute free of charge.
Provided, however, that even within the warranty period, the warranty shall not apply to any of the following cases (charged service).

- ▶ When the storage, operating conditions, precautions, etc. described in the specifications, instruction manual, etc. are not adhered to in the construction, installation, handling, maintenance, etc.
- ▶ Defects, such as the design of the customer's equipment or software, caused by other than the target product.
- ▶ The fault is due to modification or secondary processing of the product by something other than us.
- ▶ In the case of a failure which can be deemed to have been avoided if the periodic inspection described in the instruction manual, etc. or the maintenance or replacement of consumable parts has been performed normally.
- ▶ The component is used for purposes other than the product's intended use.
- ▶ Failure or malfunction due to causes that could not be foreseen by our level of science and technology at the time of shipment.
- ▶ The fault is due to an external factor that is not our responsibility, such as natural disaster or disaster.

Disclaimer

- ▶ The warranty will not cover secondary damage (damage to equipment, loss of opportunity, loss of profit, etc.) or any other damage caused by the failure of our product.
- ▶ Although we strive to improve the quality and reliability of our products, we do not guarantee their integrity. Especially when using this product for equipment that may infringe human life, body or property, take appropriate safety design measures, etc., with full consideration of problems that may normally occur. We assume no responsibility for such use if we have not obtained our consent in advance in writing of specifications, etc.
- ▶ Please observe the product specifications and precautions when using our products. We shall not assume any responsibility for any damage to the customer caused by the customer's negligence. However, this does not apply to damage caused by a defect in our product.

2. Safety Instructions

Unpacking, Transportation and Storage

Warning	
Prohibition	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load.

Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not subject the product to impact by throwing, dropping or hitting. ▶ Do not scratch or pierce the product with a sharp object such as a knife or hand hook. ▶ Do not pile up cardboard boxes forcefully to prevent the load from collapsing. ▶ Avoid contact with coal tar, creosote (a wood preservative), white pesticides, insecticides, paints, etc.
Forcing	**The valve can be damaged, or leak.** ▶ Keep in cardboard until just before piping, and store indoors (at room temperature) away from direct sunlight. Also, avoid storing the product in places of high temperature. (The strength of cardboard packaging decreases when it gets wet. Be very careful when storing and handling it.) ▶ After unpacking, make sure that the product is correct and that it meets the specifications.

Product Handling

⚠警告	
Prohibition	**Serious injury can result.** ▶ Do not disassemble the actuator.
Forcing	**Serious injury can result.** ▶ If positive pressure gas is used for our resin piping material, a dangerous condition may occur due to the repulsive force peculiar to compressible fluids even if the pressure is the same as the water pressure. Therefore, be sure to take safety measures for the surrounding area, such as covering the piping with protective materials. If you have any questions, please contact us. ▶ When conducting a pipe leak test after completion of piping construction, be sure to check with water pressure. Contact us in advance if you are unavoidable to test with a gas.

⚠Caution	
Prohibition	**There is a danger of injury.** ▶ Do not disassemble the manual override. **The valve can be damaged, or leak.** ▶ Do not step on the valve or place heavy objects on it. ▶ Keep away from fire and hot objects. ▶ Do not subject the valve to large vibrations. ▶ Do not open or close the valve with dust or other foreign matter in the fluid. ▶ Do not use with negative pressure or vacuum.
Forcing	**The valve can be damaged, or leak.** ▶ Keep the pressure and temperature of the fluid within the allowable range. (The maximum allowable pressure includes water hammer pressure.) ▶ Secure sufficient space for maintenance and inspection when piping. ▶ Use a valve of suitable material for the operating conditions. (Depending on the type of chemical liquid, the parts may be damaged. Contact us in advance for details.) ▶ Use fluids containing crystalline material under conditions that do not recrystallize. ▶ Avoid any place where the valve is constantly exposed to splashes of water and dust, or direct sunlight, or protect the valve with a cover or the like to cover the entire area. ▶ Perform maintenance periodically by referring to "**12. Inspection items**". Pay particular attention to temperature changes and aging during long-term storage or shutdown or use. ▶ If internal leakage occurs when the manual valve is fully closed, adjust the stopper. ▶ Pay attention to the atmosphere where the valve is installed. Especially, avoid installing the product where it is exposed to sea breezes, corrosive gas, chemical liquids, sea water, steam, etc. ▶ The tightening bolt nuts of the valve body and manual override (or actuator) may become loose due to changes in temperature or creep during storage or use. After checking, tighten the bolt nut diagonally to the body tightening torque specified in "**11. How to disassemble/assemble for parts replacement**". ▶ Connect piping with appropriate valve support. ▶ Always use the product within the indicated product specifications. ▶ If the product is closed for a long time, the seal may stick and become unable to open or close. Periodically check the condition of the sealing part under your operating conditions, and use the product while checking the operating limits.

⚠Caution

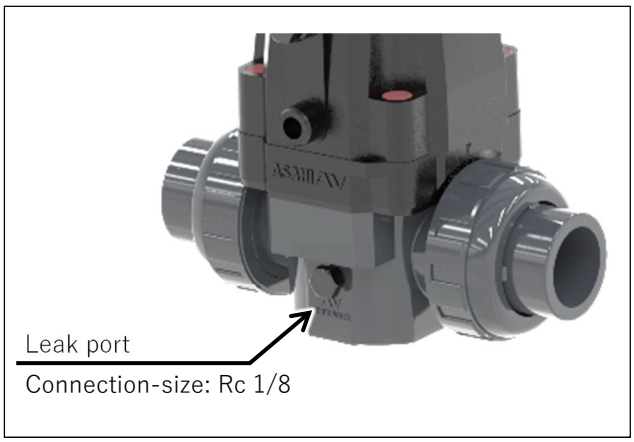
Forcing

Otherwise, the valve may leak.

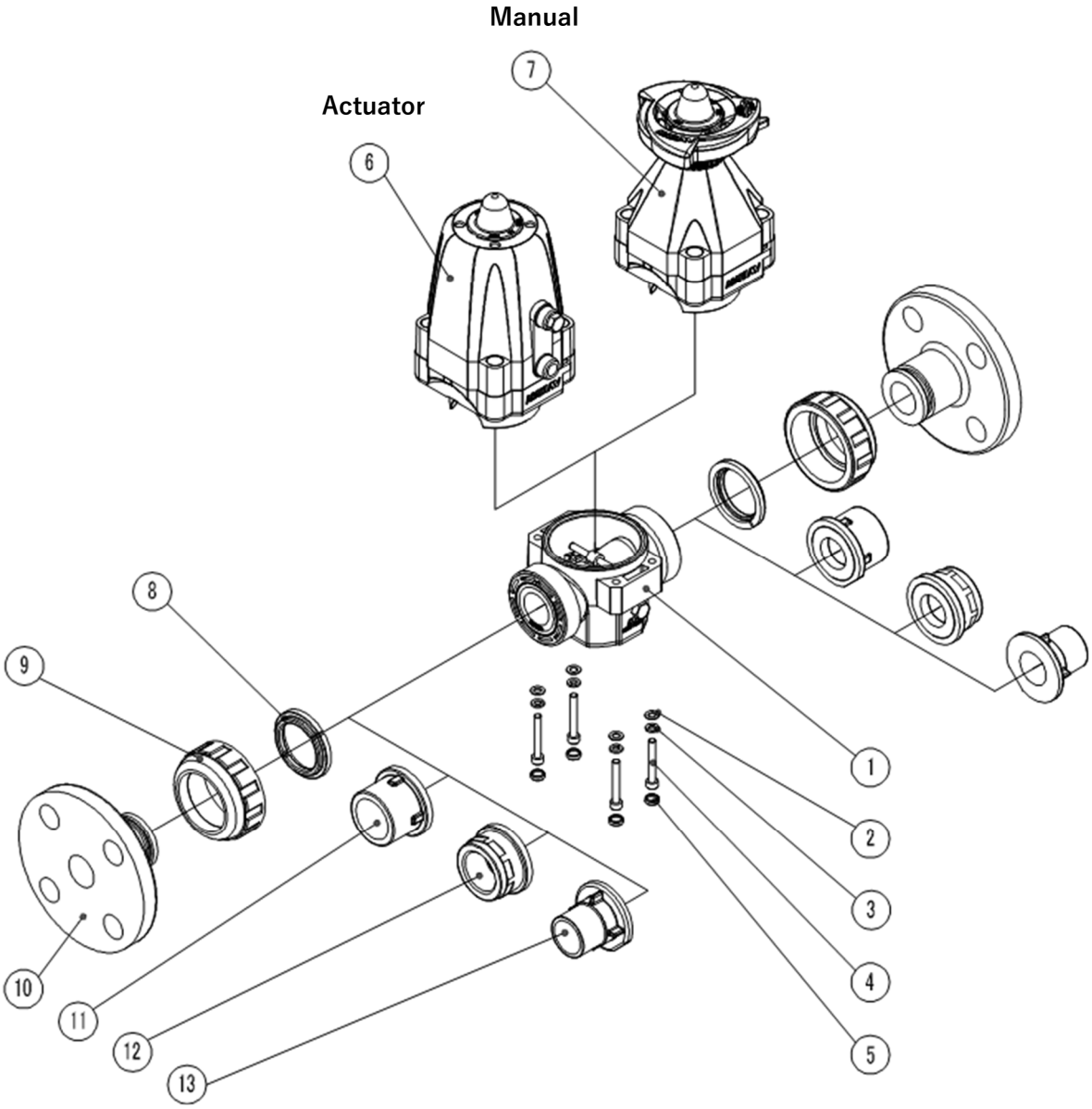
▶ When opening and closing the valve immediately after piping, clean the inside of the piping thoroughly before operating.

▶ Reverse action (N.C.) is indicated by a "protective sheet" sandwiched between the valves to prevent sticking of the sealing part in the stock. Be sure to remove the protective sheet prior to piping installation. (Refer to "(Reverse action only)" for how to remove the protective sheet.)

▶ Remove the nipple screwed into the leak port and connect the drain vent before use. (If the tube is damaged, fluid may flow out.)



3. Name of each part



[1]	Valve	[8]	Stop ring
[2]	Washer	[9]	Cap nut
[3]	Spring washer	[10]	Body cap (Flange type)
[4]	Bolt	[11]	Body cap (Socket type)
[5]	Rubber cap	[12]	Body cap (Threaded type)
[6]	Actuator	[13]	Body cap (Spigot type)
[7]	Manual operation unit		

4. Product Specifications

Model number table

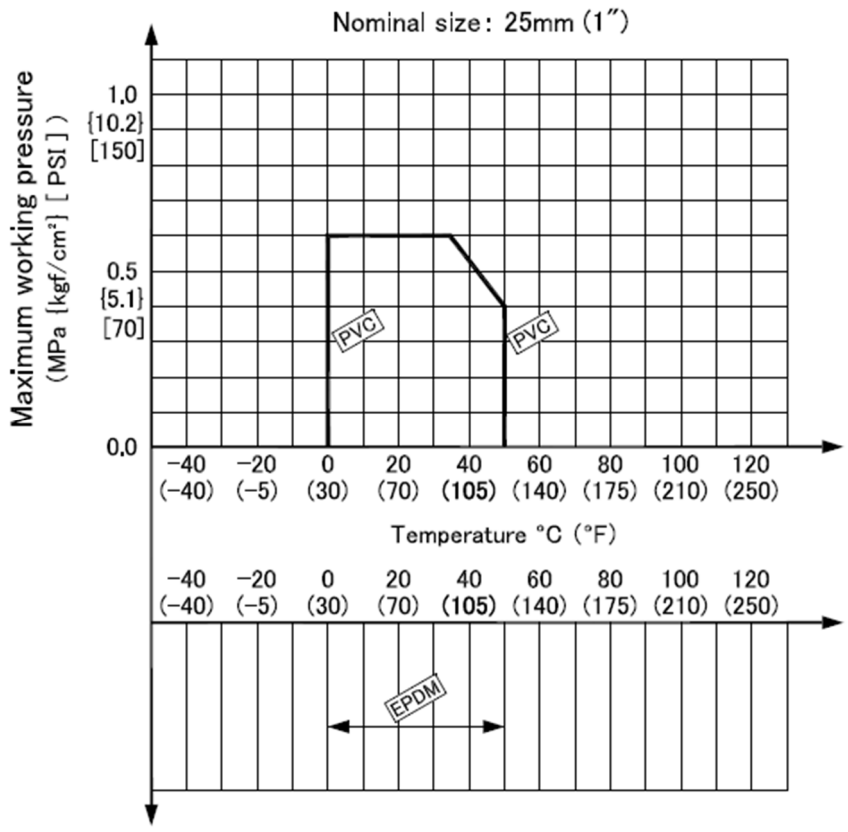
ACTUATION	TYPE	ACTION	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	HIGH PURITY SERIES
V	01	H L	U	E	*	*	025	*

V MANUAL VALVE	01 TYPE 01	HL ROUND HANDLE (HANDLE LOCK)	U U-PVC	E EPDM	F FLANGED S SOCKET N THREADED P SPIGOT	J JIS 1 JIS 10K D DIN A ANSI	025 25mm	BLANK NON 1 LUBRICANT FREE

ACTUATION	TYPE	ACTION	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	HIGH PURITY SERIES
A	01	* *	U	E	*	*	025	*

A AUTOMATIC VALVE	01 TYPE 01	XF TYPE AX DOUBLE ACTING XG TYPE AX AIR TO OPEN XS TYPE AX AIR TO CLOSE	U U-PVC	E EPDM	F FLANGED S SOCKET N THREADED P SPIGOT	J JIS 1 JIS 10K D DIN A ANSI	025 25mm	BLANK NON 1 LUBRICANT FREE

Relationship between maximum allowable pressure and temperature



Actuator

Operation	DN (mm)	Actuator model	Operating pressure range	Air consumed (NL/ open/close)			
				0.3MPa	0.4MPa	0.5MPa	0.6MPa
Double action	25	AX-D070-DA	0.3～0.4 {3.1～4.1}	0.92	1.22	-	-
Air to open	25	AX-D070-AO	0.4～0.6 {4.1～6.1}	-	0.46	0.57	0.68
Air to close	25	AX-D070-AS	0.4～0.6 {4.1～6.1}	-	0.66	0.83	0.99

Operation	DN (mm)	Actuator model	Air supply port size	Operating temperature range
Double action	25	AX-D070-DA	Rc1/8	0～50°C
Air to open	25	AX-D070-AO	Rc1/8	0～50°C
Air to close	25	AX-D070-AS	Rc1/8	0～50°C

5. How to remove the protective sheet (reverse action only)

Caution	
Prohibition	**There is a danger of injury.** ▶ Do not put your fingers or other objects into the flow path of the valve.
Forcing	**Otherwise, the valve may leak.** ▶ Remove the protective sheet before carrying out piping work. ▶ Be sure to fully open the valve before pulling out the protective sheet.

Preparations ▶ Push-in fitting ▶ Operating air (0.4～0.6MPa)

[**Procedure**]

1) Screw the push-in fitting into the air supply port of the actuator.
2) Insert the tube piping into the push-in fitting.
3) Supply air to the actuator to fully open the valve.
4) Pull out the protective sheet slowly.
5) Make sure that there are no pieces of the protective sheet left in the flow path.
6) Exhaust air from the actuator to fully close the valve.
7) Remove the tube piping from the push-in fitting.
8) Remove the push-in fitting from the actuator.

6. Piping method

Flange type

Warning	
Prohibition	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load. ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand.

Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not overtighten the cap nut. ▶ Do not use a pipe wrench to tighten the cap nut. ▶ Do not tighten the bolt nut more than "Table 6-2 Flange tightening specified torque value".
Forcing	**There is a danger of injury.** ▶ When installing the product, be sure to wear the appropriate protective equipment according to the operation. **The valve can be damaged, or leak.** ▶ When installing the product, make sure that no excessive stress such as tension, compression, bending or impact is applied to the piping or valve, etc. ▶ Fix the body cap during piping installation or disassembly and reassembly. ▶ Be sure to attach the cap nut and body cap on the secondary side (downstream side) when attaching to the end of the pipe of the piping line. ▶ When connecting a resin valve to metal piping, make sure that no piping stress is applied to the resin valve. ▶ air to open type (N.C.) is indicated by a "protective sheet" sandwiched between the valves to prevent sticking of the sealing part in the stock. Be sure to remove the protective sheet prior to piping installation. (Refer to "**5. How to remove the protective sheet (reverse action only)**" for how to remove the protective sheet.) ▶ Use a connection flange with a full-face seat. ▶ Check that there is no difference in mutual flange standards. ▶ Be sure to use sealing gaskets (AV packing) between flanges and tighten them to the specified torques. (When other than AV packing, the tightening torque value will change.) ▶ The dimension of the axis misalignment and parallelism of the flange surface should be less than the value in "**Table 6-1 Axis misalignment and parallelism**". ▶ Tighten the bolt nuts of the connection flange diagonally to the specified torque value.

Preparations ▶ Torque wrench ▶ AV packing Bolt nut for ▶ pipe, washer ▶ cloth

[Procedure]

1) Clean mutual flange surfaces with a waste cloth.
2) Set AV packing between the flanges.
3) Insert the washer and bolt from the connecting flange side. Insert the washer and nut from the valve side and tighten temporarily by hand.
4) Set the axis misalignment and parallelism of the flange surface below the values shown in Table 6-1, "Axis misalignment and parallelism." (See Fig. 6-1.)
5) Using a torque wrench, gradually tighten the screws diagonally until they reach the specified torque value in Table 6-2. (Refer to Figure 6-2.)
6) Tighten it more than two turns clockwise with "Table 6-2 Flange Tightening Torque Specified Values". (See Fig. 6-2.)

Fig. 6-1

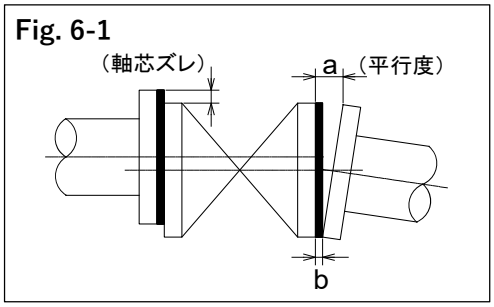


Table 6-1 Axis misalignment and parallelism

Size	Axis misalignment	Parallelism (a-b)
25mm	1.0 mm	0.5 mm

※If you loosen or remove the cap nut, follow the procedure below to install it.

[Procedure]

1) Bring the body cap into contact with the end face of the tube.
2) Tighten the cap nut by hand until it is tight.
3) Screw in the cap nut by 1/4 to 1/2 turn with a belt wrench to prevent damage to the nut.

Fig. 6-2

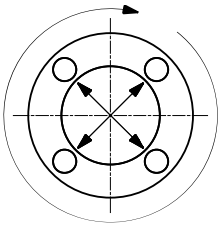


Table 6-2 Flange tightening torque

Unit: N-m

Size	PTFE coating	PVDF coating	Rubber
25mm	20.0	20.0	20.0

Threaded type

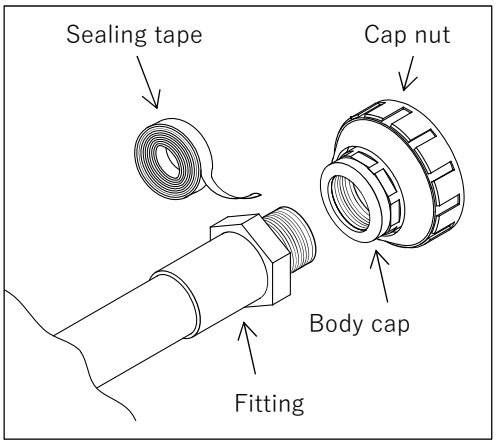
⚠ Warning	
Prohibition	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load. ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand.

⚠ Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not overtighten the cap nut. ▶ Do not use a pipe wrench to tighten the cap nut.
Forcing	**There is a danger of injury.** ▶ When installing the product, be sure to wear the appropriate protective equipment according to the operation. **The valve can be damaged, or leak.** ▶ When installing the product, make sure that no excessive stress such as tension, compression, bending or impact is applied to the piping or valve, etc. ▶ The cap nut of this product is lightly tightened to make it easier to loosen. Be sure to remove the body cap before installation. ▶ Fix the body cap during piping installation or disassembly and reassembly. ▶ Be sure to attach the cap nut and body cap on the secondary side (downstream side) when attaching to the end of the pipe of the piping line. ▶ When connecting a resin valve to metal piping, make sure that no piping stress is applied to the resin valve. ▶ Air to open type (N.C.) is indicated by a "protective sheet" sandwiched between the valves to prevent sticking of the sealing part in the stock. Be sure to remove the protective sheet prior to piping installation. (Refer to "**5. How to remove the protective sheet (reverse action only)" for how to remove the protective sheet**.) ▶ Make sure that the screws at the joints are made of resin. ▶ Use sealing tape for the thread joints of our resin piping materials.

Preparations ▶ Sealing tape ▶ belt wrench ▶ spanner or motor wrench

[**Procedure**]

1) Wrap sealing tape around the male thread of the fitting, leaving approximately 3mm at the end.
2) Loosen the cap nut by hand.
3) Remove the cap nut and body cap from the body.
4) Tighten the male thread of the fitting and the body cap until tight.
5) Screw the body cap 1/2 to 1 turn to prevent it from being damaged by a spanner or motor wrench.
6) Bring the body cap into contact with the end face of the tube.
7) Tighten the cap nut by hand until it is tight.
8) Screw the cap nut 1/4 to 1/2 turn to prevent it from being damaged by the belt wrench.



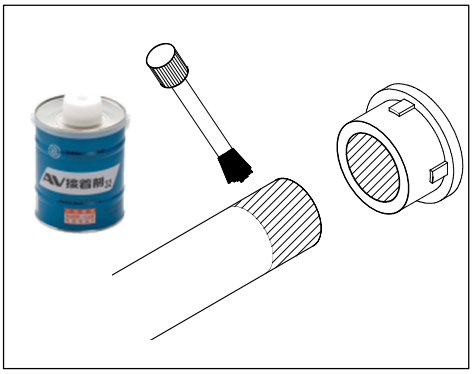
Socket type (adhesive)

Warning	
Prohibition	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load. ▶ When using adhesives, ventilate thoroughly, prohibit the use of fire in the surroundings, and do not inhale odors directly.
Forcing	**Serious injury can result.** ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand.

Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not overtighten the cap nut. ▶ Do not use a pipe wrench to tighten the cap nut. ▶ Do not apply too much adhesive. (Excessively applied adhesive may flow into the valve, causing it to malfunction or leak internally, and may cause a solvent crack and damage.) ▶ Do not strike the pipe when inserting it into the body cap.
Forcing	**There is a danger of injury.** ▶ When installing the product, be sure to wear the appropriate protective equipment according to the operation. ▶ If the adhesive adheres to the skin, remove it immediately. In addition, if you feel worse or feel abnormal, promptly seek a doctor's diagnosis and take appropriate action. **The valve can be damaged, or leak.** ▶ When installing the product, make sure that no excessive stress such as tension, compression, bending or impact is applied to the piping or valve, etc. ▶ The cap nut of this product is lightly tightened to make it easier to loosen. Be sure to remove the body cap before installation. ▶ Fix the body cap during piping installation or disassembly and reassembly. ▶ Be sure to attach the cap nut and body cap on the secondary side (downstream side) when attaching to the end of the pipe of the piping line. ▶ Air to open type (N.C.) is indicated by a "protective sheet" sandwiched between the valves to prevent sticking of the sealing part in the stock. Be sure to remove the protective sheet prior to piping installation. (Refer to "5. How to remove the protective sheet (reverse action only)" for how to remove the protective sheet.) ▶ Be careful when constructing under low temperature, as solvent vapor is less likely to evaporate and tends to remain. ▶ After piping, open both ends of the pipe and use a blower (low-pressure type) to ventilate to remove the solvent vapor. ▶ Use ASAHI AV adhesive for the adhesive. (Select adhesive according to material) ▶ Perform the water flow test after at least 24 hours have elapsed after completion of bonding.

Preparations ▶ ASAHI AV Cement ▶ belt wrench ▶ cloth

[**Procedure**]



1) Loosen the cap nut by hand.
2) Remove the cap nut and body cap from the body.
3) Pass the cap nut to the pipe side.
4) Wipe off the insertion part of the pipe and the socket part of the body cap with a waste cloth.
5) Apply adhesive evenly to the body cap receptacle and the pipe insertion area. (Refer to Table 7-3 "Use of adhesives (reference)")
6) After applying the adhesive, quickly insert the pipe into the body cap and hold it as is for at least 60 seconds.
7) Wipe off any excess adhesive with a waste cloth.
8) Bring the body cap into contact with the end face of the tube.
9) Tighten the cap nut by hand until it is tight.
10) Screw the cap nut 1/4 to 1/2 turn to prevent it from being damaged by the belt wrench.

Table 7-3. Usage of adhesives (reference)

Size	Amount used (g)
25mm	2.0

Spigot type (welding)

⚠ Warning	
Prohibition	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load.
Forcing	**Serious injury can result.** ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand.

⚠ Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not overtighten the cap nut. ▶ Do not use a pipe wrench to tighten the cap nut.
Forcing	**There is a danger of injury.** ▶ When installing the product, be sure to wear the appropriate protective equipment according to the operation. **The valve can be damaged, or leak.** ▶ When installing the product, make sure that no excessive stress such as tension, compression, bending or impact is applied to the piping or valve, etc. ▶ The cap nut of this product is lightly tightened to make it easier to loosen. Be sure to remove the body cap before installation. ▶ Fix the body cap during piping installation or disassembly and reassembly. ▶ Be sure to attach the cap nut and body cap on the secondary side (downstream side) when attaching to the end of the pipe of the piping line. ▶ Reverse action (N.C.) is indicated by a "protective sheet" sandwiched between the valves to prevent sticking of the sealing part in the stock. Be sure to remove the protective sheet prior to piping installation. (Refer to "5. How to remove the protective sheet (reverse action only)" for how to remove the protective sheet.)

Preparations ▶ Belt Wrench ▶ Welding Machine ▶ Welding Machine Operation Manual

[Procedure]

1) Loosen the cap nut by hand.
2) Remove the cap nut and body cap from the body.
3) Pass the cap nut through the pipe side.
4) Weld the pipe and body cap. (Refer to the manual of the welding machine.)
5) After welding is complete, bring the body cap into contact with the end face of the tube.
6) Tighten the cap nut by hand until it is tight.
7) Screw the cap nut 1/4 to 1/2 turn to prevent it from being damaged by the belt wrench.

Product support

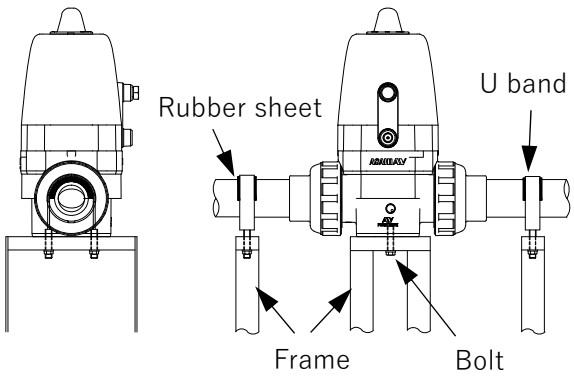
Warning	
Forcing	**Serious injury can result.** ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand.

Caution	
Prohibition	**The valve can be damaged, damaged, or leak.** ▶ Do not over-tighten when supporting piping with a U-band, etc. ▶ When installing a valve in the piping around the pump, do not cause large vibrations in the valve.
Forcing	**There is a danger of injury.** ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand. ▶ When installing the support, wear appropriate protective equipment according to the work details.

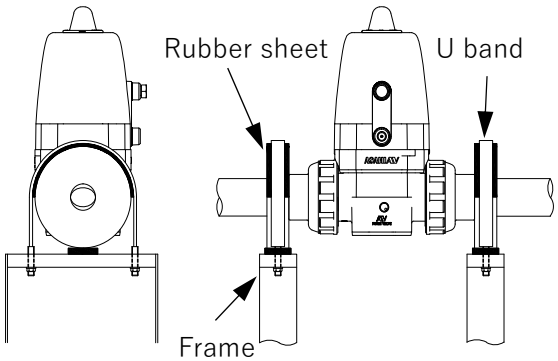
[Horizontal piping]

1) Secure the screw holes on the bottom of the valve and the frame with the bolts. Refer to "Table 8-1 Valve Bottom Thread Dimensions" for the dimensions of the screw holes on the bottom of the valve.
2) Lay a rubber sheet on the top of the pipe section or flange and secure it with the U-band.

・Example of support installation
(Socket type, Threaded type, spigot type)



・Example of support installation (flange type)



[Vertical piping]

1) Secure the screw holes on the bottom of the valve and the frame with the bolts. Refer to "Table 8-1 Valve Bottom Thread Dimensions" for the dimensions of the screw holes on the bottom of the valve.

2) Lay a rubber sheet on the top of the pipe section or flange and secure it with the U-band.

3) Lay a rubber sheet on the actuator part and support it with the frame.

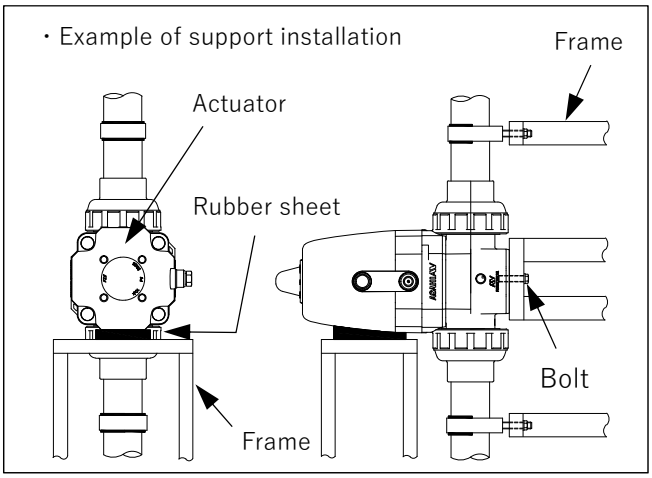
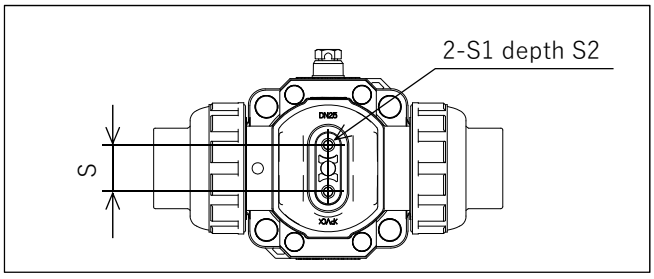


Table 8-1 Valve bottom thread dimensions

Unit: mm

Nominal diameter	S	S1	S2
25mm	25	M6	13



7. Air piping method

⚠Caution	
Prohibition	**Doing so may cause the actuator to malfunction.** ▶ Do not remove the protective plug until just before connecting the air piping. **Doing so may damage or leak the actuator.** ▶ Do not over-tighten the fitting for air piping.
Forcing	**Doing so may damage or leak the actuator.** ▶ Confirm the connection location, air piping size, and screw type from the delivery drawing, and then connect the air piping. ▶ When using a metal pipe for the air piping, use the inner surface of the pipe treated with anti-rust treatment. ▶ Flush the inside of the air piping thoroughly before connecting the air piping. ▶ When connecting the air piping, be careful that foreign matter, such as sealant, does not enter the piping. ▶ Be sure to remove any burrs on the threads of the pipe fittings.

Preparations		
	▶ Copper or tube for air piping	▶ wrench
	▶ Copper or tube fittings	▶ sealing tape

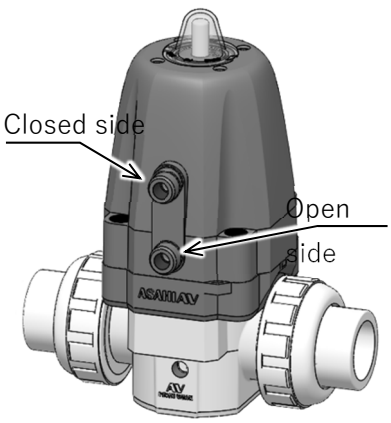
[Procedure]

1) Wrap sealing tape around the end of the male thread of the fitting, leaving about t
(approx. 2 rolls. See Fig. 7-1.)
2) Screw the fitting into the air supply port of the actuator.
3) Screw the fitting in one turn with a wrench.
4) Attach metal or tube pipes for air piping to the fitting.

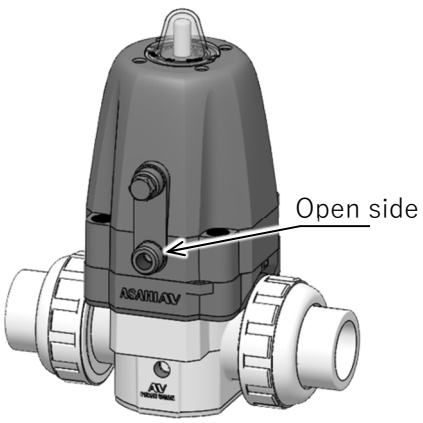
Fig. 7-1

Leave about
two piles

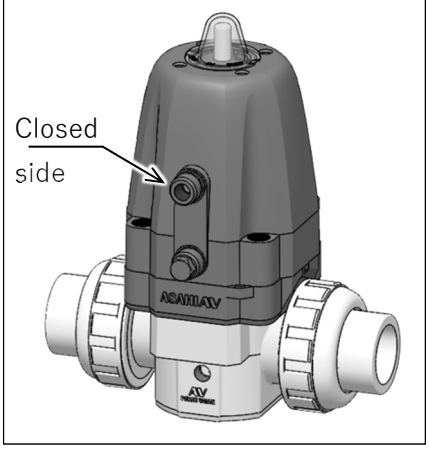
Double action



Air to open



Air to close



8. Operation method

⚠Caution	
Prohibition	**Damage to the valve can occur.** ▶ When fully closing or opening the valve, do not turn the handle unnecessarily with excessive force. ▶ Do not open or close the valve with dust or other foreign matter in the fluid.
Forcing	**Damage to the valve can occur.** ▶ The product is shipped with the simple lock engaged. Release the lock before operating the valve. (Refer to "8. Operating procedure [Handle lock]" for how to release the handle lock.) ▶ Since foreign matter such as sand may remain in the pipeline after installing the valve, open and close the valve after cleaning the inside of the pipe. ▶ Handle operation must be done by hand.

[Procedure]

1) Quietly turn the handle to open or close it. (See Fig. 8-1.)

- Turn clockwise to close the valve. ("SHUT" Orientation of Handle Engraving)
- Turn counterclockwise to open the valve. ("OPEN" Orientation of Handle Engraving)

2) When the valve is fully closed, the indicator tip is hidden in the nameplate. (See Fig. 8-2.)

Fig. 8-1

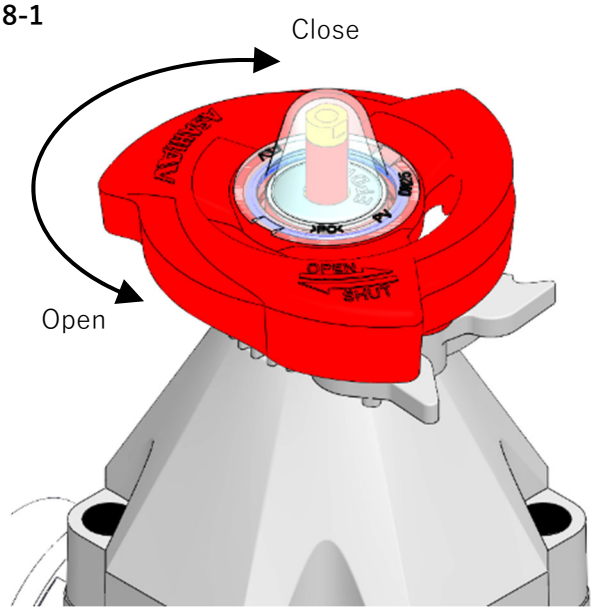
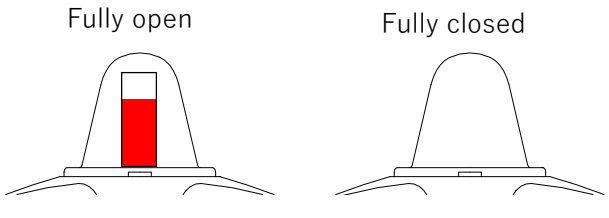


Fig. 8-2



Handle lock

⚠Caution	
Prohibition	**Damage to the valve can occur.** ▶ Do not disassemble the handle. ▶ Do not turn the handle with excessive force when it is locked. ▶ Do not open or close the valve with dust or other foreign matter in the fluid.
Forcing	**Damage to the valve can occur.** ▶ After locking, use a padlock to prevent accidental operation. ▶ The product is shipped with the simple lock engaged. Release the lock before operating the valve.

[Procedure]

1) Push the Lock Release Lever with the padlock holes to unlock.
2) Turn the handle to the desired opening.
3) Push the Lock Lever without the padlock hole to engage the quick lock.
4) Insert a lock into the padlock hole if necessary to prevent accidental operation.

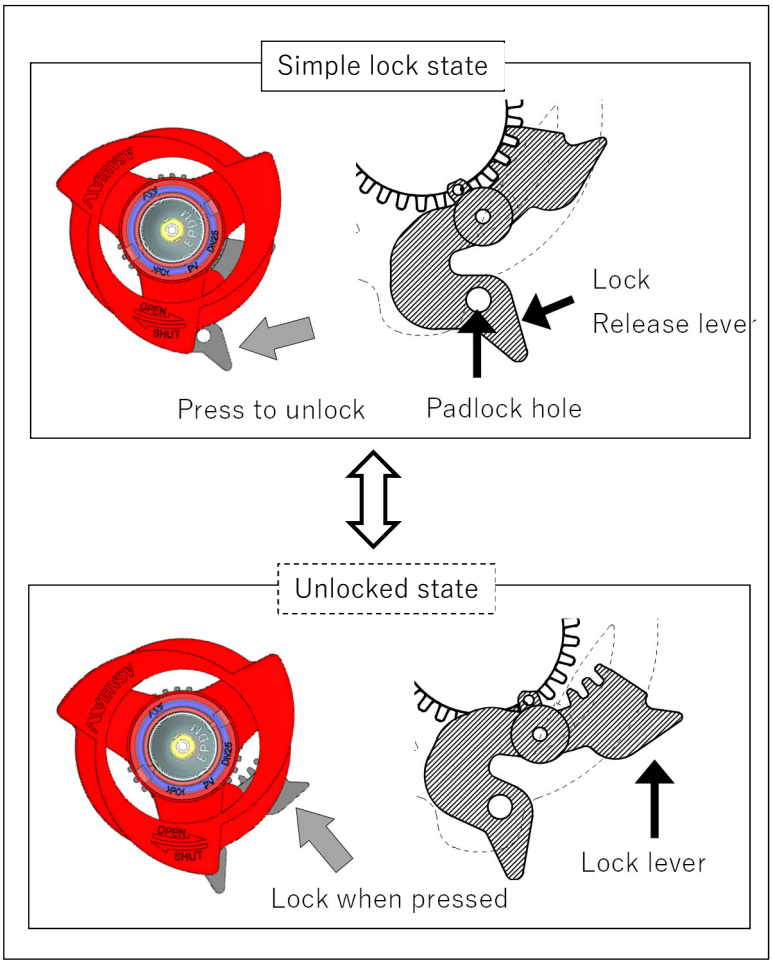
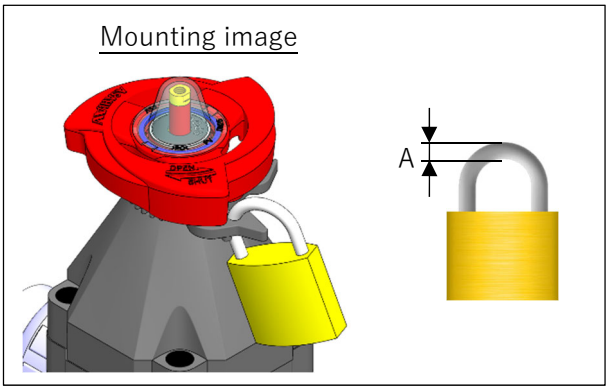


Table 8-1 Padlock size

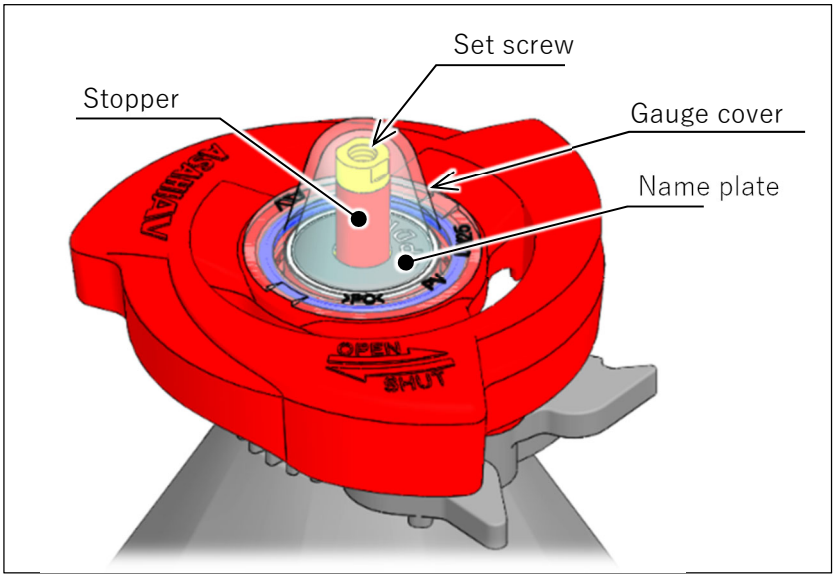
DN (mm)	A
25	5mm



9. How to adjust the stopper

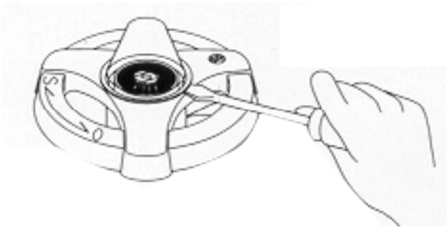
⚠Caution	
Forcing	**Adjust the stopper.** ▶ If internal leakage occurs when the valve is fully closed, the stopper may not function because the stopper is loose. Adjust the stopper. **Otherwise, the valve may leak.** ▶ Tighten the stopper securely.

Preparations			
	▶ Spanner (Width 8mm)	▶ Hex wrench (Width 3mm)	▶ Flat head screwdriver
	▶ Protective gloves	▶ Protective goggles	

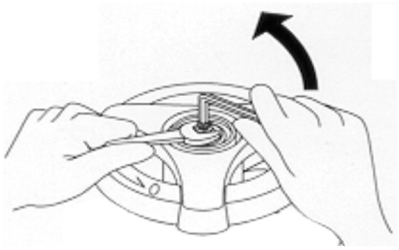


[Procedure]

1) Remove the gauge cover and remove the nameplate, taking care not to damage the O-ring.

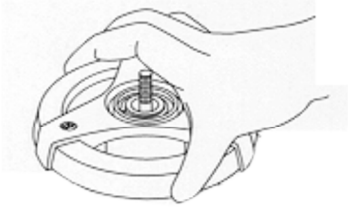


2) Fix the stopper and loosen the set screw.



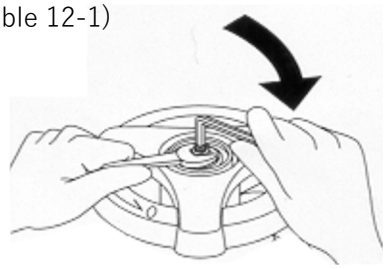
3) Loosen the stopper.

4) Tighten the handle gradually, stop at the position where liquid leakage stops.



5) Screw in until the flange of the stopper contacts the step inside the sleeve. Then return the stopper half a turn.

6) Fix the stopper with a spanner and tighten the set screw to the specified torque value. (See Table 12-1)



7) Fit the nameplate and the gauge cover.

Table 9-1 Tightening torque of set screw

Units: N-m

Nominal diameter	25mm
Torque value	8.0

10. Commissioning method

Manual operation

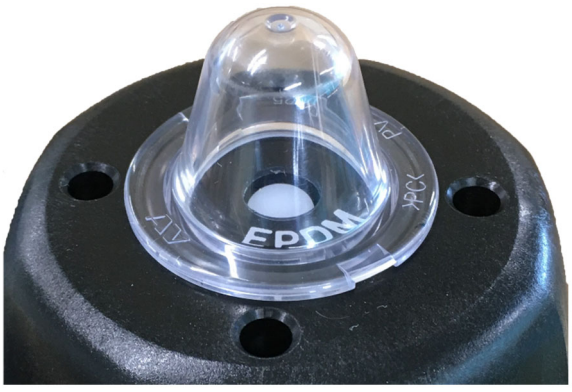
⚠Caution	
Forcing	**The valve can be damaged or leak.** ▶ Operate the actuator with the operating pressure described in section 4, Product Specifications [Actuator]. ▶ Clean the inside of the piping thoroughly before starting operation. (The sealing performance may be impaired by dust and foreign matter inside the piping.)

[Procedure]

1) Air is supplied to the air supply port alternately to open and close the valve.
2) Check that the display rod moves up and down smoothly.
3) Supply air to the open side and check that the display rod comes out of the actuator.
4) Supply air to the closed side and check that the display rod is inside the actuator. In the case of a test run with the fluid flowing, also check that the fluid is not leaking to the secondary side.
5) Stop the air supply and exhaust the air in the actuator.

Fully open

Fully closed



11. How to disassemble/assemble for parts replacement

Warning	
Prohibition	**Serious injury can result.** ▶ Do not disassemble the actuator.
Forcing	**Serious injury can result.** ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand.

Caution	
Prohibition	**There is a danger of injury.** ▶ Do not disassemble the manual override. ▶ For the air reverse operation, disassemble and assemble the actuator with air supplied to the actuator (valve fully opened). Do not put your hand in the flow path or disassembled parts. **The valve can be damaged or leak.** ▶ Do not over tighten the cap nut. ▶ Do not use a pipe wrench when tightening the cap nut.
Forcing	**There is a danger of injury.** ▶ Before starting work, completely drain the fluid by reducing the pressure in the piping to zero. ▶ Wear protective gloves and goggles as there is a possibility that some fluid will remain in the valve.

Preparations	▶ Belt Wrench	▶ Protective gloves and goggles	
	▶ Hex wrench (Width 4mm)	▶ Waste	▶ Precision flathead screwdriver or scribe

[Disassembly procedure]

1) Zero the pressure in the piping to completely drain the fluid.

2) Follow the procedure below to operate the valve according to the operation method.

a) Manually, turn the handle counterclockwise to fully open the valve.

b) For double acting, close the main valve of the operation air while the valve is fully opened and held by air operation, exhaust the air in the actuator, and remove the air piping.

c) For air to open and air to close, close the main valve of the operation air, exhaust the air in the actuator, and remove the air piping. (Air to close is fully open, air to open is fully closed)

3) Loosen the right and left cap nuts (⑨) with a belt wrench.

4) Remove the valve from the piping.

5) Remove the black protective cap (⑤) with a precision flathead screwdriver or a sharp blade. (See Fig. 11-1.)

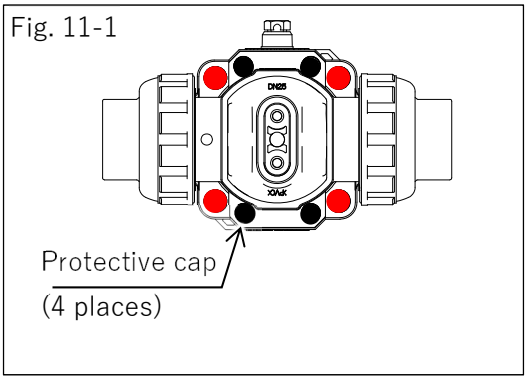
6) For air to open only, supply air to fully open the valve.

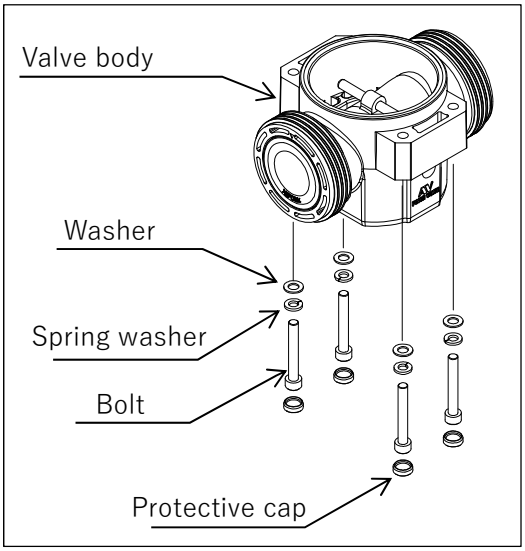
7) Slightly loosen the bolts (④) diagonally with an Allen wrench, and remove them together with the washers and spring washers.

8) Remove the manual override or actuator by pulling it from the valve body (①).

9) For the air to open only, exhaust the air to the fully closed state.

Fig. 11-1





[Assembly Procedure]

1) Adjust the pins on the tube of the valve body so that they are symmetrical. (See Fig. 11-2.)
2) Check that the O-ring on the top of the valve body is installed correctly. (See Fig. 10-2.)
3) Follow the steps below to fully close the product (compressor is out) by using the operation method. (See Fig. 10-3.)
  a) For manual operation, turn the handle clockwise to the fully closed position.
  b) For double acting and air to close are fully closed by air operation.
  c) For the air to open, confirm that the air is exhausted and in the fully closed state.
4) Align the manual operation section or actuator and place it on the valve body parts (①).
5) Push the manual override or actuator into the valve body ① until it "clicks" and pull lightly to ensure that the pin and compressor are connected.
6) Follow the procedures below to fully open the valve.
  a) For manual operation, turn the handle counterclockwise to the fully open position.
  b) For double acting and air to close are fully opened by air operation.
  c) For the air to open, exhaust the air to the fully open state.
7) Insert the bolt (④) through the spring washer and washer into the mounting hole of the valve body part (①), and tighten lightly temporarily with an Allen wrench.
8) Gradually tighten the bolts to the body tightening torque using an Allen wrench diagonally. (See Table 10-1 and Figure 10-4.)
9) Tighten clockwise with the body tightening torque value for at least two turns. (See Table 10-1 and Figure 10-4.)
10) Attach the protective cap (⑤).
11) Double acting and air to open exhausts air. (The double acting is fully open and the air to open is fully closed.)
12) Clean both ends of the tube of the valve body part (①) with a waste cloth.
13) Set the valve body (①) in the piping.
14) Bring the body cap (⑩ to ⑬) into contact with the end face of the valve body section (①).
15) Screw in the cap nut (⑨) by hand until it is tight.
16) Screw the cap nut (⑨) 1/4 to 1/2 turn with a belt wrench so as not to damage it.

Table 10-1 Body tightening torque value

Nominal size	Torque value
25mm	5.0N-m

Fig. 11-2

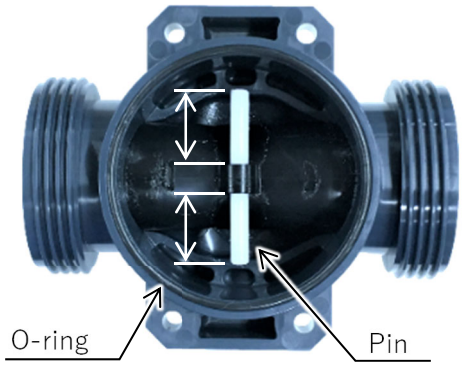
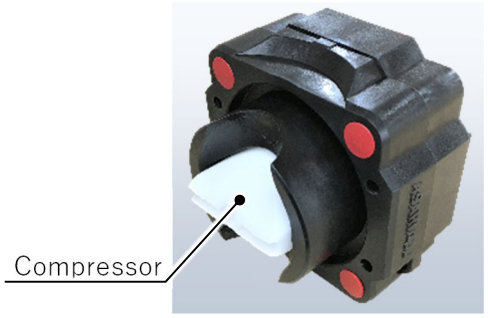


Fig. 10-3



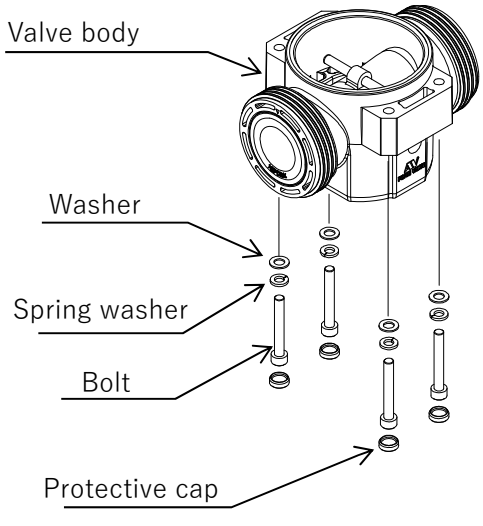
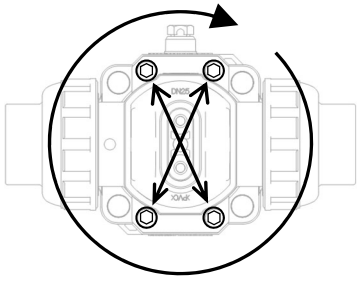


Fig. 10-4



12. Inspection item

⚠Caution	
Forcing	**Fluid may leak from the valve.** ▶ Maintenance should be performed every 3 to 6 months as a guide in order to keep the watch in normal condition and use it for a long time. Pay particular attention to temperature changes and aging during long-term storage or shutdown or use. ▶ When removing the valve from the piping when replacing the valve or parts, completely remove the fluid from the piping before starting work. ▶ If any trouble is found, take the appropriate action referring to "**13. Cause of trouble and remedy**". **Doing so may cause malfunction.** ▶ Check that the valve can be opened and closed smoothly once every 30 days, even if the valve operates infrequently. At the same time, check that the handle lock can be smoothly locked and unlocked.

Daily inspection

Inspection items and inspection methods	Guideline of judgment	Check point	Treatment method
External leakage (visual inspection)	For leakage No	[Flange type] Pipe flange connection	① Retighten the pipe bolts to the specified torque. ② Remove the valve from the pipe and re-tighten the pipe bolts. (Ref: 6. Piping method [Flange type])
		[Socket type] Adhesive construction section	Remove the valve from the piping and retry the bonding process. (Ref: 6. Piping method [Socket type])
		[Threaded type] Threaded connection	Remove the valve from the piping and screw the valve in again. (Ref: 6. Piping method [Threaded type])
		Cap nut portion of the valve	① Retighten the cap nut ② Remove the valve from the piping, check the O-ring and sealing surface, and replace the defective part. (Ref: 6. Piping method)
		Leak port	Remove the valve from the pipe and replace the valve. (Ref: 11. How to disassemble/assemble for parts replacement)
		Surface of the entire valve	Remove the valve from the pipe and replace the valve. (Ref: 11. How to disassemble/assemble for parts replacement)
Internal leakage (visual and measurement)	For leakage No	Leakage to secondary side when valve is fully closed	Remove the valve from the piping and replace the valve or defective part. (Ref: 11. How to disassemble/assemble for parts replacement)
		Measured values of flowmeters, pressure gauges, etc.	Remove the valve from the piping and replace the valve or defective part. (Ref: 11. How to disassemble/assemble for parts replacement)
Abnormal noise (hearing)	No abnormal noise	Valve	Remove the valve from the pipe and replace the valve. (Ref: 11. How to disassemble/assemble for parts replacement)
		Piping around the valve	Reconfirm the conditions of use (Ref: 2. Safety Instructions)

Periodic inspection

●Guideline for the inspection cycle: 3 months

Inspection items and inspection methods	Guideline of judgment	Check point	Remedy for malfunctions
Vibration (palpation)	To differences from other parts No	Valve	Recheck the operating conditions and remove the source of vibration. (Ref: 2. Safety Instructions [Handling the Product])
		Piping around the valve	Recheck the operating conditions and remove the source of vibration. (Ref: 2. Safety Instructions [Handling the Product])

●Guideline of the inspection cycle: 6 months

Inspection items and inspection methods	Guideline of judgment	Check point	Remedy for malfunctions
Operability of manual handle (touch)	To rotate smoothly	Manual operation unit	Remove the valve from the pipe and replace the valve or actuator. (Ref: 11. How to disassemble/assemble for parts replacement)
Looseness of bolts (visual and palpation)	No loose	[Flange type] For flange piping	Retighten the pipe bolts to the specified torque. (Ref: 6. Piping method [Flange type])
		Body mount	Retighten the mounting bolts to the specified torque. (Ref: 11. How to disassemble/assemble for parts replacement)
Corrosion or rust (visual inspection)	No corrosion or rust No	Appearance of the product	Remove the valve from the pipe and replace the valve or actuator. (Ref: 11. How to disassemble/assemble for parts replacement)
Product damage	No scratches, cracks, or deformation	Appearance of the product	Remove the valve from the pipe and replace the valve or actuator. (Ref: 11. How to disassemble/assemble for parts replacement)

13. Cause of malfunction and remedy

⚠Caution	
Forcing	**There is a danger of injury.** ▶ If any malfunction is found, immediately stop using the product and take appropriate action. ▶ When removing the valve from the piping when replacing the valve or parts, completely remove the fluid from the piping before starting work.

Failure phenomenon	Possible cause	Measures and measures
Handle does not turn by manual operation (cannot turn)	The valve is already fully open (or fully closed).	Rotate the handle in the opposite direction (Ref: 10. Commissioning method)
	Handle lock is in effect.	Release the handle lock (Ref: 8. Operation method [Handle lock])
	Piping stress is applied to the valve.	Remove the piping stress
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 11. How to disassemble/assemble for parts replacement)
	The torque of the valve has increased due to the effects of the fluid (temperature, components, pressure, etc.)	Reconfirm the conditions of use (Ref: 2. Safety Instructions [Handling the Product])
Idle steering wheel	Stem is broken	Contact us
Cannot be fully opened by manual operation	Tube or compressor pin damaged	Disassemble the valve from the piping and replace the valve unit set. (Ref: 11. How to disassemble/assemble for parts replacement)
The valve does not open/close by air operation.	Air is not supplied	Supply air (Ref: 10. Commissioning method)
	Operating pressure is low	Check the operating pressure (Ref: 10. Commissioning method)
Actuator is operating but valve is not open or closed	Tube or compressor pin damaged	Disassemble the valve from the piping and replace the valve unit set. (Ref: 11. How to disassemble/assemble for parts replacement)
Fluid leaks even when fully closed (internal leak)	High fluid pressure	Use below the maximum allowable pressure (Ref: 11. How to disassemble/assemble for parts replacement)
	Sheet or ball is worn or scratched	Remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 11. How to disassemble/assemble for parts replacement)
	Missing parts	Remove the valve from the piping and attach the relevant part or replace the valve. (Ref: 11. How to disassemble/assemble for parts replacement)
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 11. How to disassemble/assemble for parts replacement)
	Piping stress is applied to the valve.	Remove the piping stress

CAUSE OF FAILURE AND HOW TO REMEDY (continued)

Failure phenomenon	Possible cause	Measures and measures
Fluid leaks from valve (external leak)	Cap nut is loose	Retighten the cap nut (Ref: 6. Piping method)
	Tube is scratched, worn, melted, or altered	Stop the operation immediately, remove the valve from the piping, and replace the valve part set. (Ref: 11. How to disassemble/assemble for parts replacement)
	Valve is cracked or broken	Stop the operation immediately, remove the valve from the piping, and replace the valve part set. (Ref: 11. How to disassemble/assemble for parts replacement)
Fluid leaks from leak port (external leak)	Tube is broken	Stop the operation immediately, remove the valve from the piping, and replace the valve part set. (Ref: 11. How to disassemble/assemble for parts replacement)
Valve is corroded or deformed	The watch is exposed to chemical liquids.	Stop using the product immediately, remove the valve from the piping, and replace the valve. (Ref: 11. How to disassemble/assemble for parts replacement)

14. Disposal method of residual materials and waste materials

⚠Warning	
Forcing	**When burnt, toxic gas is generated.** ▶ When disposing of the product or parts, please dispose of them according to the guidelines of each local authority by a professional disposal company.

Inquiries

Contact the nearest dealer, our sales office, or our web website for inquiries about this product.

[User's Manual]

Pinch valve Type 01 Manual type
Pinch Valve Type 01 Pneumatic actuated Type AX

https://www.asahi-yukizai.co.jp/en

Please note that the content of this manual is subject to change without notice. **April 2024**