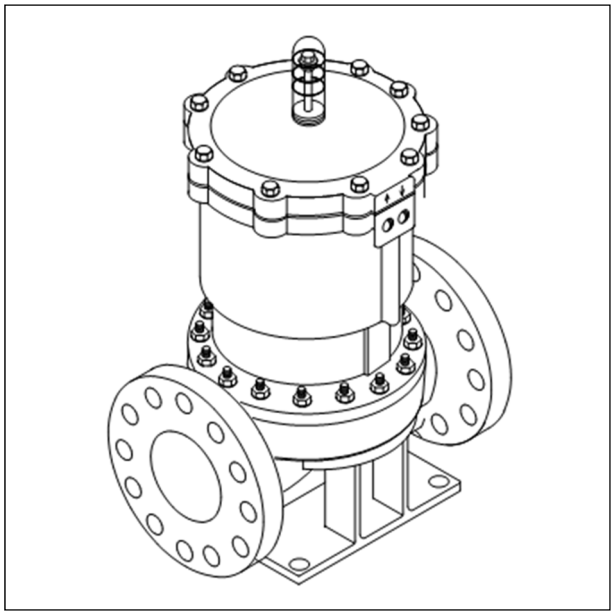
Diaphragm Valve Type 72
Pneumatic Actuated Type AV
(200, 250mm)

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".

Table of contents

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. ▶ Do not hang the handle when transporting the valve.
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

Warning	
Prohibition	**Serious injury can result.** ▶ Do not disassemble the actuator.
Forcing	**The valve can be damaged, or leak.** ▶ 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 separately. ▶ 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. ▶ When installing piping, gaskets are basically not required. However, when connecting to a resin flange that is prone to dents, scratches, or warping, use gaskets to ensure stable sealing performance.

⚠Caution

Prohibition

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.

Forcing

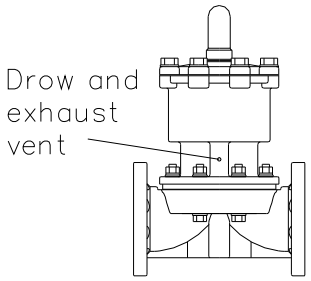
There is a danger of injury.

▶ Secure sufficient space for maintenance and inspection when piping.

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.)

▶ An actuator for a diaphragm valve has a hole (intake and exhaust hole) through which excess air is sucked and exhausted to enable vertical Actuation of the diaphragm. (Rear part of the product)
Note that if the diaphragm is damaged due to operating conditions, the working fluid may spout out of the suction and exhaust holes.



▶ 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.

▶ 「14. Perform maintenance on a regular basis referring to "Inspection items." Pay particular attention to temperature changes and aging during long-term storage or shutdown or use.

▶ When installing a valve, provide an appropriate valve support so that excessive force is not applied to the valve and piping.

▶ Always use the product within the indicated product specifications.

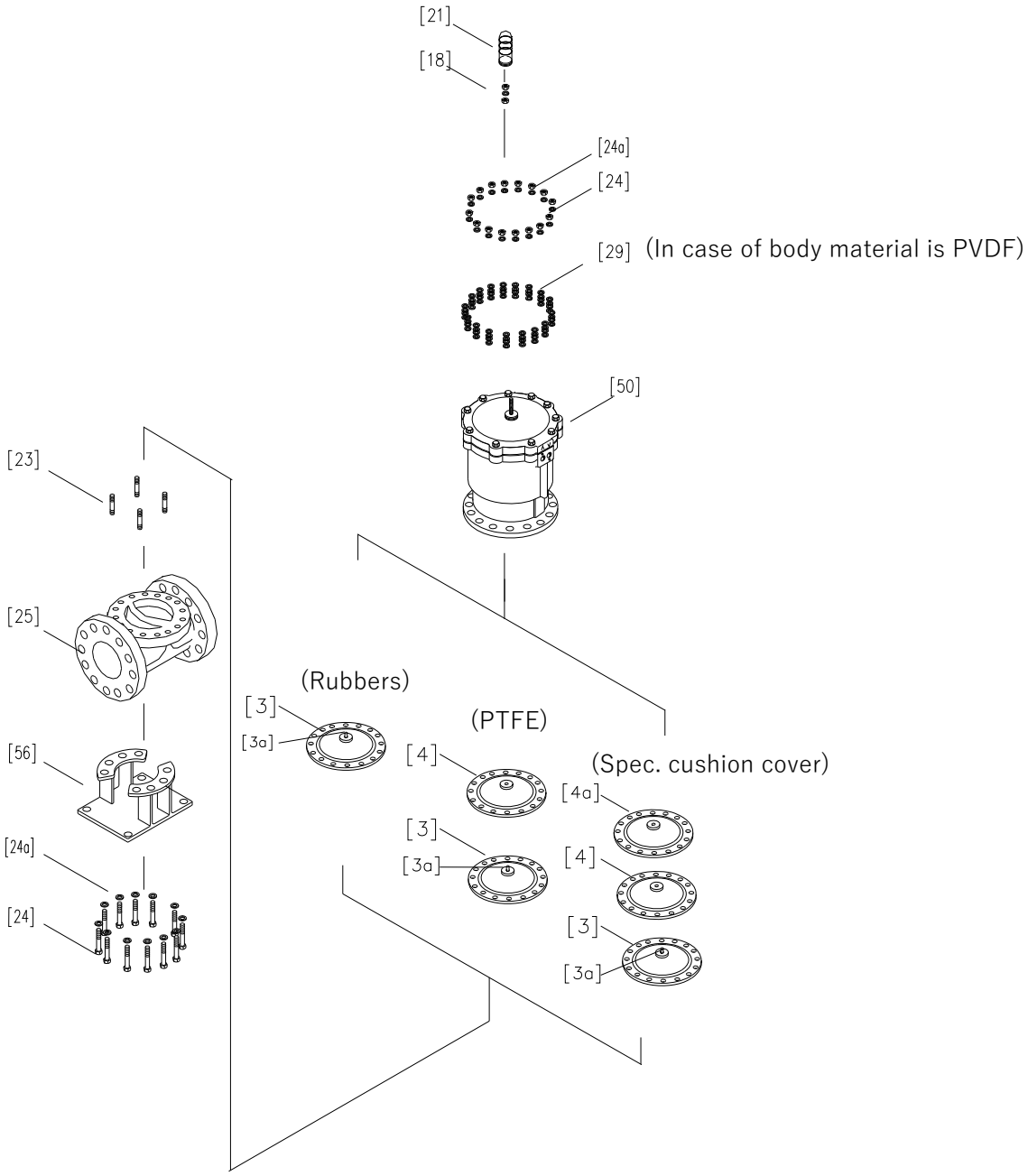
▶ It is recommended to cover the entire valve with a protective plastic bag when it is used outdoors or in a badly atmospheric environment. (Rust may cause Actuation failure.)

▶ When using at an ambient temperature of 5° C or less, remove moisture from the Actuation air to prevent freezing.

▶ Use clean, dehumidified and dust-free air. However, consult with CKD when using high dry air with a dew point of-40° C or less.

3. Name of each part

200mm, 250mm



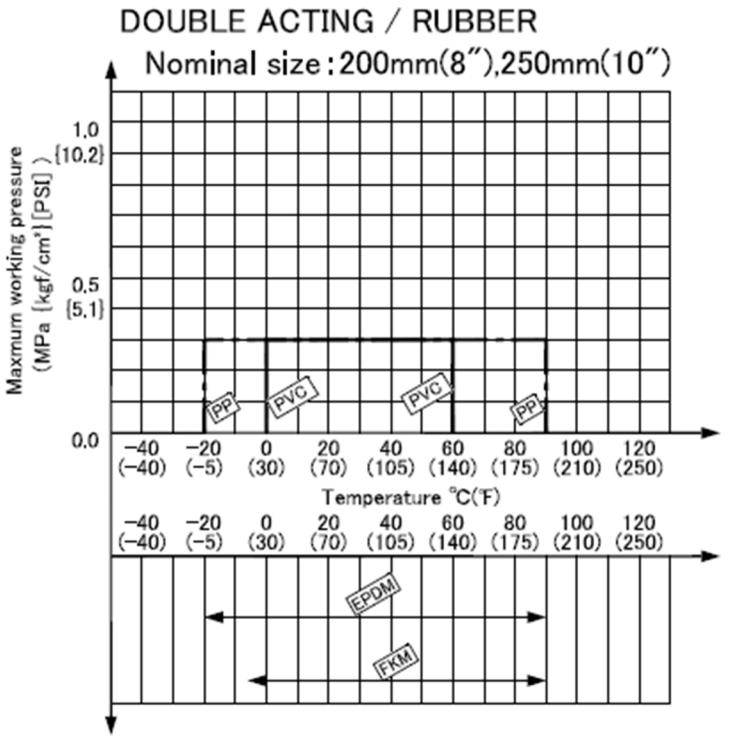
[1]	Body	[18]	Stopper	[29]	Conical spring washer (Use with the PVDF body)
[3]	Diaphragm	[21]	Gauge cover		
[3a]	Insert metal of diaphragm (A)	[23]	Stud bolt	[50]	Actuator (double acting)
[4]	Cushion	[24]	Bolts-nuts	[56]	Stand (A)
[4a]	Cushion cover	[24a]	Washer		

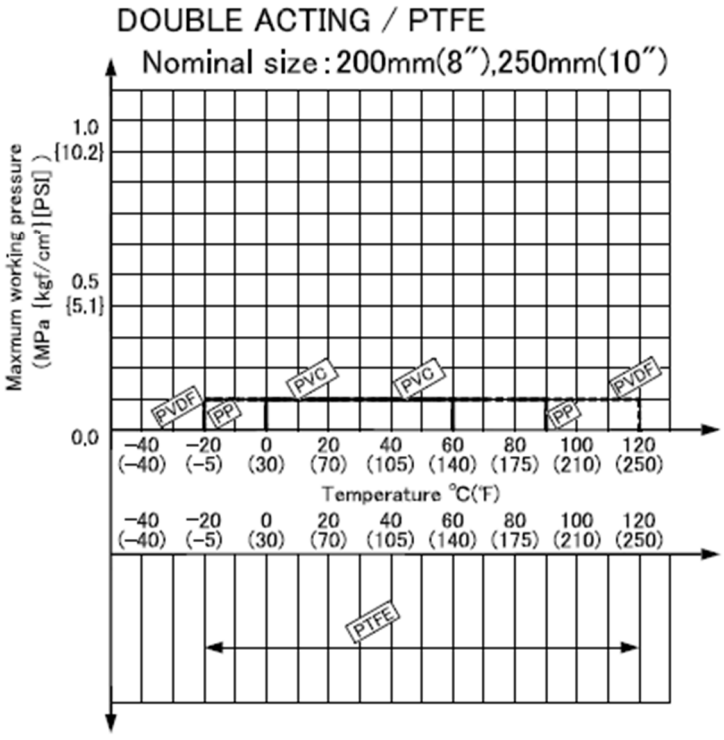
4. Product Specifications

Model number table

ACTUATION	TYPE	ACTUATOR TYPE	ACTION / POWER SOURCE	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE	HIGH PURITY SERIES
A	72	V	F	*	*	F	*	* * *	*
A AUTOMATIC VALVE	72 TYPE 72	V TYPE AV	F DOUBLE ACTING	U PVC P PP F PVDF	E EPDM V FKM T PTFE	F FLANGED	J JIS 10K 5 JIS 5K D DIN A ANSI	200 200mm 250 250mm	1 LIBRICANT FREE

Relationship between maximum allowable pressure and temperature





Actuator specifications

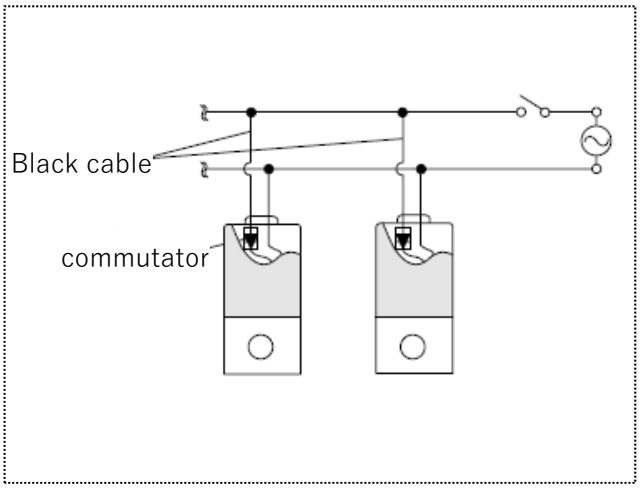
Size (mm)		200	250
Standard operating pressure MPa {kgf/cm2}	Double action type	0.4{4.1}～0.6{6.1}	
Air consumption N/ per 1 open and close (at 0.4MPa)	Double action type	87.3	214
Air supply bore	Double action type	Rc 3/8	

5. Optional specifications

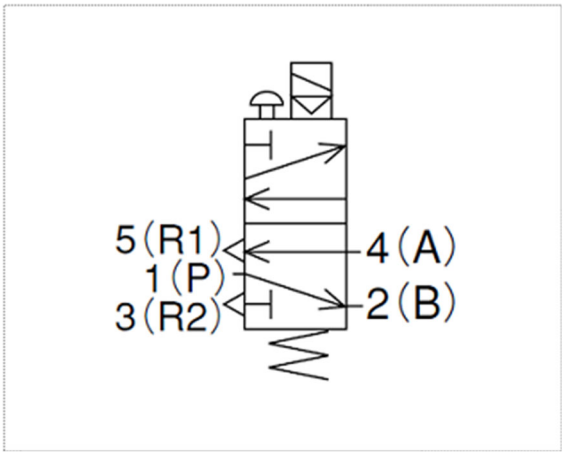
Solenoid valve

Actuation	Size	Type sign	Pipe bore	Effective area
Double action type	200,250mm	2503-4E1-54W	Rc 3/8	15mm^2

connection diagram



JIS sign



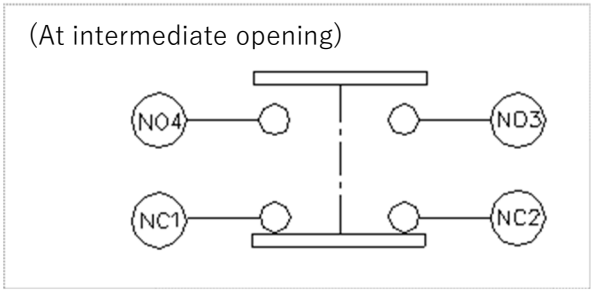
Limit switch

Actuation	Size	Type sign	Protection grade
Double action type	200、250 mm	1LS1-J	IP67(IEC529)

Limit switch rating

Rated voltage (V)	Resistance load (A)	Induction load (A)
125AC	10	6
250AC	10	6
115DC	0.8	0.2
230DC	0.4	0.1

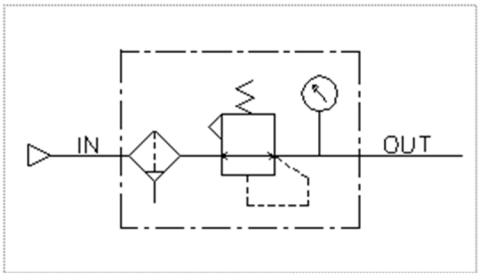
connection diagram



Filter-regulator

Actuation	Size	Type sign	Pipe bore	Element Filtration rate
Double action type	200mm 250mm	ARU3A-03-10A-G	Rc 3/8	5 μ m

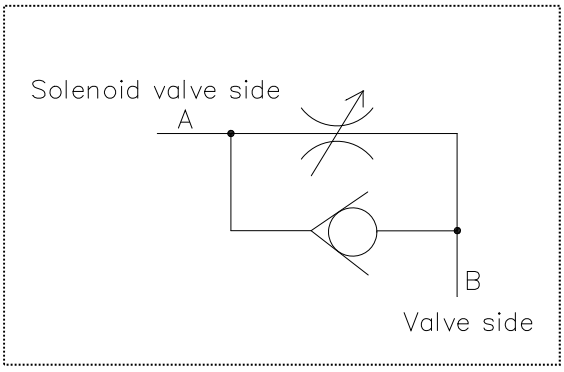
JIS sign



Speed controller

Actuation	Size	Type sign	Pipe bore
Double action type	200mm 250mm	SC6-02-10A	Rc 3/8

JIS sign



6 Mounting method

⚠Caution	
Forcing	**The valve can be damaged, or leak.** ▶ Do not open or close the valve with dust or other foreign matter in the fluid. ▶ Since foreign matter such as sand may remain in the pipeline even after the valve is installed, open and close the valve after cleaning the inside of the pipe. ▶ If the stopper is loose, adjust the stopper. ▶ Use a connection flange with a full-face seat. ▶ Check that there is no difference in mutual flange standards. ▶ Be sure to use the sealing gaskets (AV packing), bolts/nuts, and washers to tighten them to the specified tightening torque. (The tightening torque will change if the gasket is not a AV gasket.)

Preparations ▶ Torque Wrench ▶ AV packing

[Procedure]

1) Set AV packing between the flanges.
2) Insert the washer and bolt from the connecting flange side, insert the washer and nut from the valve side, and tighten temporarily by hand.

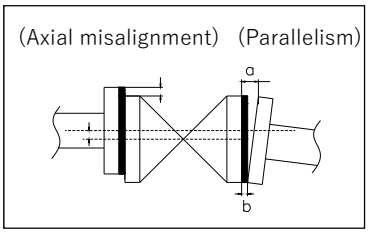
⚠Caution

Forcing

Otherwise, stress may be applied to the piping and damage may result.

▶ Flange surface parallelism and shaft misalignment should be less than the values shown in the table below.

Size (mm)	Axial Misalignment	Parallelism (a-b)
200,250	1.5mm	1.0mm



3) Gradually tighten to the specified torque value diagonally (see Fig. 1) with a torque wrench.

⚠Caution

Prohibition

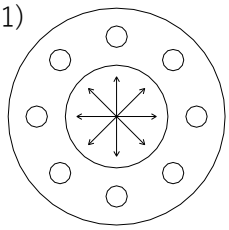
Risk of damage or leakage.

▶ Tighten the bolts and nuts of the connection flange diagonally to the specified torque.

Specified torque. Unit: N•m {kgf・cm}

Size	200mm	250mm
Torque value	55.0{561}	55.0{561}

(Fig. 1)



7. Air piping method

⚠Caution	
Prohibition	**The valve can be damaged, or leak.** ▶ Do not remove the protective plug until just before connecting the air piping. ▶ Do not over-tighten the fitting for air piping.
Forcing	**The valve can be damaged, or leak.** ▶ Check the connection location, air piping size, and screw type from the approval drawing of the product, and then connect the air piping. ▶ Use clean, dehumidified and dust-free air. Consult with CKD when using high dry air with a dew point of-40° C or less. ▶ When using at an ambient temperature of 5° C or less, remove moisture from the Actuation air to prevent freezing. ▶ When using steel pipes for 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 burrs on the threads of the pipe fittings. (This may cause galling or air leakage.)

Preparations	▶ Copper or tube for air piping ▶ Copper or tube fittings ▶ Sealing tape	▶ Wrench

[Procedure]

1) Wrap sealing tape around the male thread of the fitting, leaving approximately 3mm at the end.
2) Tighten the fitting to the piping port of the actuator.
3) Screw the fitting in one turn with a wrench.
4) Install copper or tube for air piping.

8. Support installation method

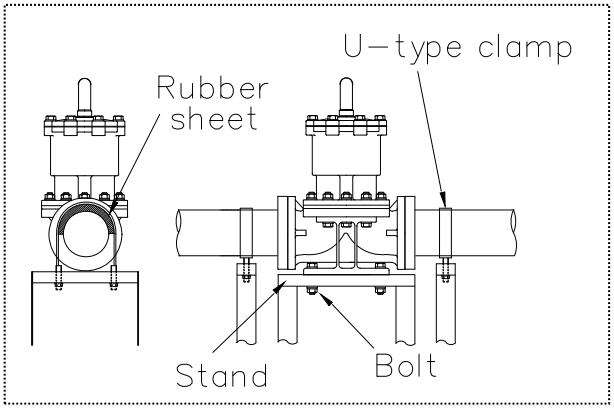
⚠Caution	
Prohibition	**The valve can fail, break, become damaged, or leak.** ▶ Do not cause large vibrations to the valve by the piping around the pump.
Forcing	**The valve can be damaged, or leak.** ▶ Install a valve support. (Excessive force is applied to the valve body and piping, which may cause damage.)

Preparations ▶ Spanner ▶ U-band (with bolt) ▶ Bolt/Nut (M20) ▶ Rubber Seat

Horizontal piping

Fix the mounting base [56] and the mount provided on the valve with bolts.

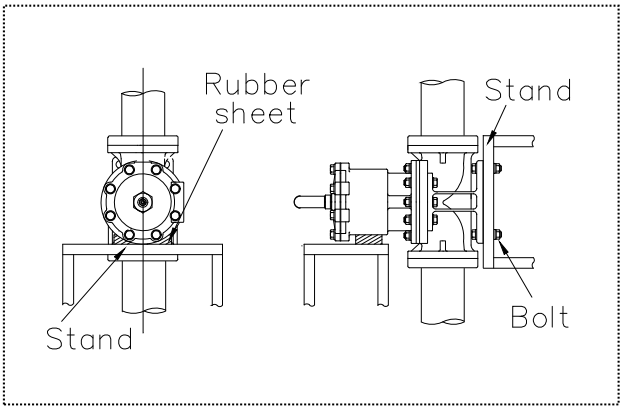
Lay a rubber sheet on the top of the pipe and secure it with the U-band.



Vertical piping

Fix the mounting base [56] and the mount provided on the valve with bolts.

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



9. Limit switch wiring method

⚠Caution	
Prohibition	**Serious injury can result.** ▶ Do not connect or separate lines to the limit switch in the power supply status. (electric shock or sudden start of the machine) **The valve can be damaged or leak.** ▶ Do not leave or use with the cover open. (Water or dust may penetrate and cause Actuation failure.)
Forcing	**The valve can be damaged or leak.** ▶ Connect the wires using solderless terminals with insulation covering so that they do not come into contact with the cover or housing. (If the crimp terminal comes into contact with the cover, the cover may not be tightened or a ground fault may occur.) ▶ Contact CKD when using the limit switch in a 1mA～100mA, 5～30V. ▶ Securely attach the cover. (Rainwater, etc. may enter the product and cause malfunction.)

Preparations	▶ Phillips screwdriver ▶ connector (G1/2) ▶ Compressed Terminal ▶ Wire Stripper ▶ Terminal Crimp Tool

[Procedure]

1) Loosen the three screws holding the limit switch cover with a Phillips screwdriver and remove the cover.
※The screws are structured so that they do not come off the cover.

2) Pull off the resin protective cap.

3) Pass the cable through the connector.

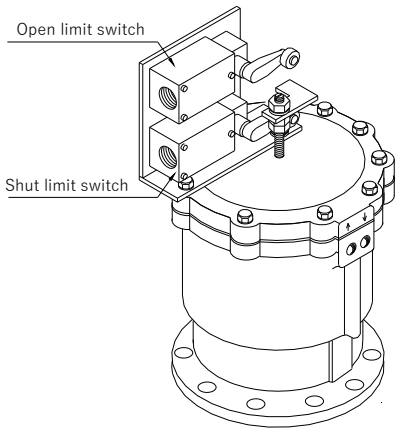
4) Peel off the outer skin of the cable with a wire stripper.

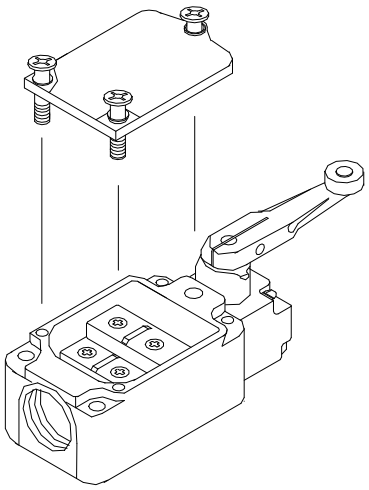
5) Use a terminal crimping tool to attach the crimping terminal to the lead wire.

6) Wire the terminal screws with a Phillips screwdriver according to the internal circuit diagram on page 13.
※Tighten the screws securely.
(There is a risk of electric leakage or electric shock.)

7) Tighten the three screws holding the limit switch cover with a Phillips screwdriver to attach the cover.

8) Tighten the cable with the connector.





10. Solenoid valve connection method

Caution	
Prohibition	**Serious injury can result.** ▶ Do not connect or separate lines to the solenoid valves in the power supply status. Doing so may result in electric shock or sudden machine start.
Forcing	**The valve can be damaged or leak.** ▶ Be sure to lock the adjustment knob of the solenoid valve after adjustment. ▶ Confirm that the power supply voltage indicated on the solenoid valve matches the voltage to be wired.

Preparations		
	▶ Phillips screwdriver	▶ Wire stripper
	▶ Connector (G1/2)	▶ Terminal crimping tool

[Procedure]

1) Loosen the cover set screw with a Phillips screwdriver and remove the cover.
※Do not lose the O-ring.

2) Pull out the Faston terminal and insulation cover that are inserted to the coil side terminal.
※The grounding terminal is not provided with an insulating sleeve.

3) Pass the cables in the order of the connector and cover.

4) Peel off the outer skin of the cable with a wire stripper.

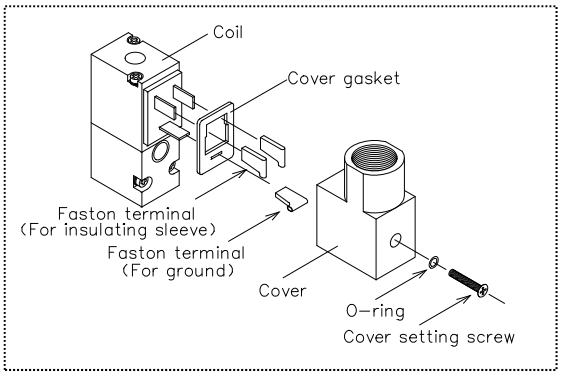
5) Pass the lead wire through the insulation cover.

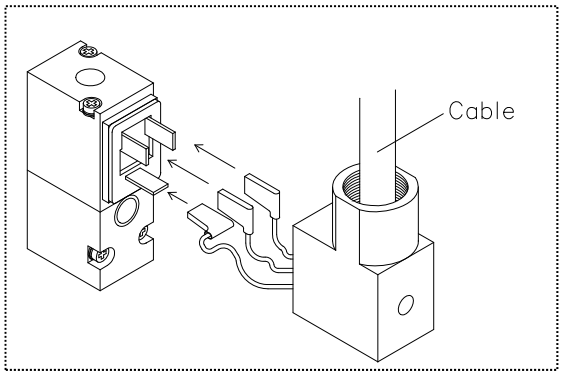
6) Use a terminal crimping tool to attach the Faston terminal to the lead wire.

7) Insert the Faston terminal into the coil side terminal and put the insulation cover on.

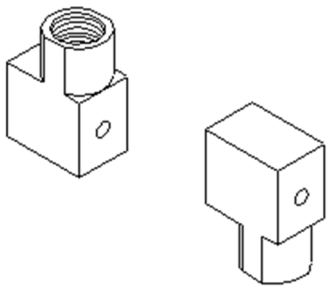
8) Attach the cover with the cover set screw.
※With the cover, the wiring outlet is either up or down.
Mounting is also possible. (Fig. 1)

9) Tighten the cable with the connector.





(Fig 1)



11. Commissioning method

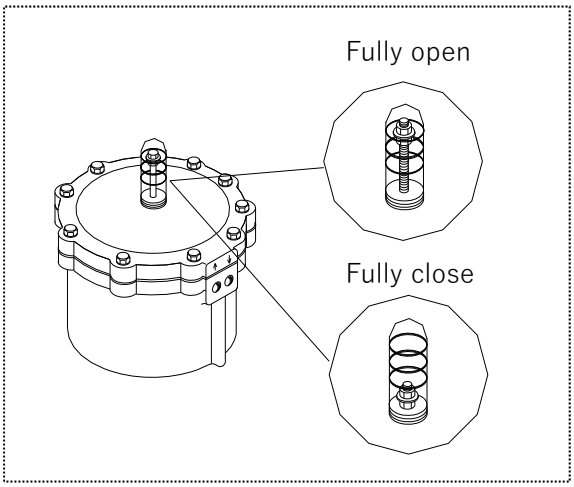
⚠Caution	
Prohibition	**Serious injury can result.** ▶ For models with solenoid valves, do not leave the solenoid valve terminal cover removed. (If the terminal is touched, an electric shock will occur.) ▶ Do not supply air during manual Actuation.

[Procedure]

1) Supplies air to the air supply port.

2) Check that the air supply side is aligned with the stopper [18] position.
※There is no stopper [18] for the full-opening adjustment mechanism (special product). Check the opening and closing with fluid flow.

3) **Stop the air supply.**



<For models with solenoid valve>

[Procedure]

1) Supplies air to the solenoid valve.

2) Check that the Actuation is as shown in the table below by pressing the push button on the top of the solenoid valve with a screwdriver, etc.

3) Confirm that the solenoid valve is operated as shown in the table below by energizing or de-energizing.

4) Turn off the power to the solenoid valve.

Push button	Power supply	Double action
Pushed	On	Open
Not pushed	Off	Shut

<How to adjust the open/close speed>

Preparations : ▶ Wrench

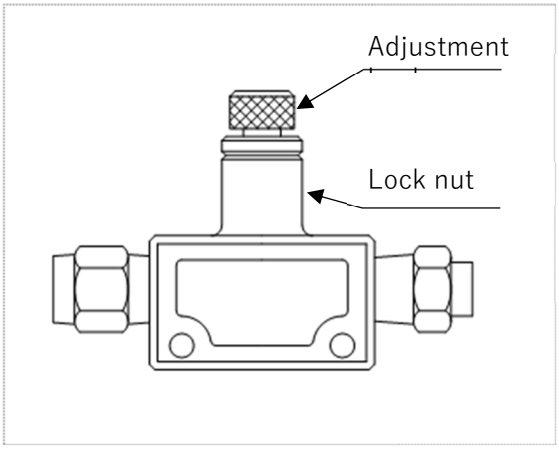
[Procedure]

1) Turn the adjustment knobs of both open and close speed controllers clockwise until they do not turn.
※Do not turn it too forcibly.
(risk of damage)

2) Supply air and turn the adjustment knob counterclockwise little by little to set the desired opening/closing speed.

3) When the desired speed is achieved, hold the adjustment knob with your finger and rotate the lock nut clockwise with the spanner to secure the adjustment knob.
※Do not tighten the lock nut with excessive force.

For models with speed controller



12. How to adjust and operate stoppers

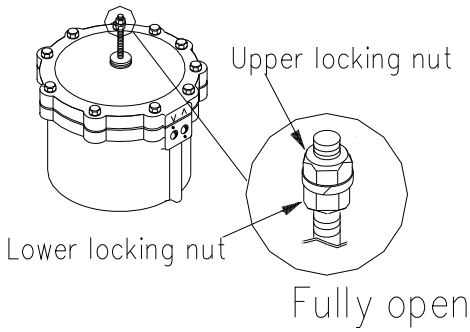
⚠Warning	
Prohibition	**Serious injury can result.** ▶ When operating the actuator with air, never touch the drive section.

⚠Caution	
Forcing	**The valve can be damaged or leak.** ▶ If the stopper is loose or internal leakage occurs when the valve is fully closed, the stopper may not be functioning. Adjust the stopper. ▶ Tighten the stopper securely. (If the tightening torque of the stopper is insufficient, the stopper may become loose.)

Preparations ▶ Wrench

[Procedure]

1) Remove gauge cover [21] by rotating it counterclockwise.
2) Fully open the valve by air Actuation.
3) Loosen the upper lock nut with a wrench while holding the lower lock nut of the stopper [18] with a wrench.
4) Remove stopper [18] from stem (A).
5) Fully close the valve with air.
6) Fit the lower locking nut of the stopper [18] onto the stem (A) and tighten until it cannot be turned by hand.
7) Rotate the lower locknut of the stopper [18] clockwise with a spanner until the fluid starts to leak slightly.



8) Turn the lower lock nut of the stopper [18] counterclockwise 1/4 to 1/2 turn from the position of step 7. (The stem (A) may rotate together. It is recommended to work with the valve fully opened by air Actuation.)
9) Fix the lower lock nut of the stopper [18] with a spanner and tighten the spring washer and the upper lock nut firmly with a mounting spanner.
10) Repeat fully opening ⇔ closing the valve by air Actuation to check for fluid leakage.
※If there is fluid leakage, turn the lower lock nut of the stopper [18] by a wrench 1/4 turn counterclockwise after steps 2 and 3 until it is no longer present, and then return to step 9.
11) Attach gauge cover [21] by rotating it clockwise.

※Use the same procedure to adjust the stopper when a limit switch, positioner, or other option is attached. After adjusting the stopper, also adjust the option. For safety purposes when the positioner is attached, Be sure to make adjustments with the auto control turned OFF.

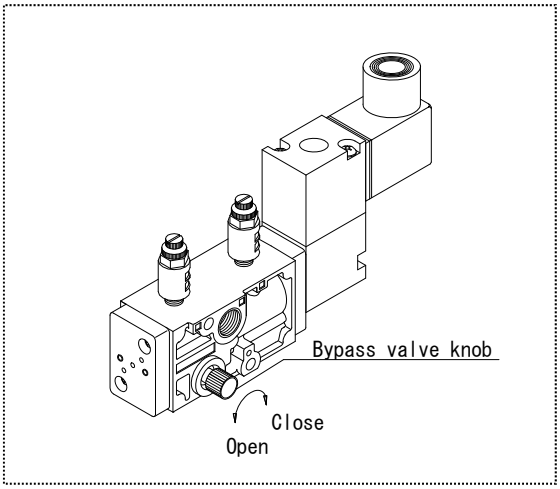
13. How to disassemble/assemble parts for replacement

⚠Warning	
Prohibition	**Serious injury can result.** ▶ Do not disassemble the actuator. ▶ When operating the actuator with air, never touch the drive section.

⚠Caution	
Forcing	**Serious injury can result.** ▶ Be sure to perform safety inspections of the machine tool and power tool beforehand. ▶ Wear appropriate protective equipment according to the type of work being performed. ▶ Completely drain the fluid in the piping when replacing the valve or replacing parts. If the fluid does not escape, reduce the fluid pressure to zero.

Preparations ▶ Spanner ▶ Protective gloves ▶ Protective glasses

<Disassembly>
[Procedure]



1) Completely drain the fluid in the piping.
2) Close the main valve of the air. If the valve is equipped with a solenoid valve, open the bypass valve to exhaust air from the actuator.
3) Disconnect air piping.
4) Completely loosen the bolts and nuts [24] and recessed bolts and nuts [23] between the body [1] and the actuator [50] with a wrench.
5) Remove actuator [50] from body [1].
6) Remove the diaphragm [3] by rotating it counterclockwise.

<Assembly>
[Procedure]

1) Follow Steps 1 to 4 in Adjusting and Operating Stoppers, and remove the stoppers [18].
2) Mount the diaphragm [3] by rotating it clockwise. Turn the diaphragm [3] counterclockwise until the direction of the valve seat seal rib and the pressing surface of the compressor coincide after tightening until the threaded portion stops. (Smooth work can be done by inserting air into the actuator.)
3) Fully open the actuator [50] using air.
4) Place actuator [50] on body [1].
5) Install bolts and nuts [24] and recessed bolts and nuts [23] and tighten body [1] and actuator [50]. (Refer to Table 1 for the body tightening torque.)
6) Adjust the stoppers from step 5 of the procedure for adjusting and operating the stoppers.

(Table 1) Body tightening torque value Units: N•m{kgf・cm}

Size / Diaphragm	200mm	250mm
Rubber	30.0 {306}	30.0 {306}
PTFE	30.0 {306}	30.0 {306}

14. Inspection item

⚠Caution	
Forcing	**The valve can be damaged, or leak.** ▶ 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 "10. Cause of malfunction and remedy".

Daily inspection

Inspection items and inspection methods	Guideline of judgment	Check point	Treatment method
External leakage (visual inspection)	No leakage	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. Mounting method)
		Surface of the entire valve	Remove the valve from the pipe and replace the valve. (Ref: 13. How to disassemble for parts replacement)
Internal leakage (visual and measurement)	No leakage	Leakage to secondary side when valve is fully closed	Remove the valve from the piping and replace the valve or defective part. (Ref: 13. How to disassemble for parts replacement)
		Measured values of flowmeters, pressure gauges, etc.	Remove the valve from the piping and replace the valve or defective part. (Ref: 13. How to disassemble for parts replacement)
Misalignment of operating position (visual inspection)	No deviation	Actuator opening display	Remove the actuator cover and adjust the stopper operating position. (Ref: 12. How to adjust stopper)
Abnormal noise (hearing)	Of abnormal noise No	Valves and actuators	Remove the valve from the pipe and replace the valve or actuator. (Ref: 13. How to disassemble for parts replacement)
		Piping around the valve	Reconfirm the conditions of use (Ref: 2. Handling Precautions)
Odor (sniffing)	No abnormal noise	Valves and actuators	Remove the valve from the pipe and replace the valve or actuator. (Ref: 13. How to disassemble for parts replacement)

Periodic inspection

●Guideline for the inspection cycle: 3 months

Inspection items and inspection methods	Guideline of judgment	Check point	Remedy for malfunctions
Operating time (Measurement)	Error within ±1 second	Actuator opening display	Check the power supply voltage (±10%). (Ref: Actuator nameplate)
			Remove the valve from the pipe and replace the valve or actuator. (Ref: 13. How to disassemble for parts replacement)
Vibration (palpation)	No different from other parts	Valves and actuators	Recheck the operating conditions and remove the source of vibration. (Ref: 2. Handling Precautions)
			Remove the valve from the pipe and replace the valve or actuator. (Ref: 13. How to disassemble for parts replacement)
		Piping around the valve	Recheck the operating conditions and remove the source of vibration. (Ref: 2. Handling Precautions)

Periodic inspection

●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)	Rotates smoothly	Manual Actuation unit	Remove the valve from the pipe and replace the valve or actuator. (Ref: 13. How to disassemble for parts replacement)
Looseness of bolts (visual and palpation)	No Loose	For flange piping	Retighten the pipe bolts to the specified torque. (Ref: 6. Mounting [Flange Type])
Water-intrusion (visual inspection)	No intrusion	Inside the actuator	Replace the actuator (Ref: 13. How to disassemble for parts replacement)
Intrusion of foreign objects (visual inspection)	No intrusion	Inside the actuator	Replace the actuator (Ref: 13. How to disassemble for parts replacement)
Corrosion Or rust (visual inspection)	No corrosion or rust	Appearance of the product and in the actuator	Remove the valve from the pipe and replace the valve or actuator. (Ref: 13. How to disassemble 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: 13. How to disassemble for parts replacement)

15. Cause of malfunction and remedy

Failure phenomenon	Possible cause	Measures and measures
Do not open or close by air Actuation.	The solenoid valve is turned off.	Turn on the power.
	Connection to the solenoid valve is disconnected.	Check the connection condition again. (Ref: 10. Solenoid valve connection method)
	Air is not supplied	Supply air.
	The power voltage of the solenoid valve is different.	Check the voltage with a tester and set the correct voltage.
	Solenoid valve voltage is low	
	The speed controller adjustment knob is turned all the way to the right.	Turn the knob to the left
	Operating pressure is low	Check operating pressure
	The diaphragm is worn out.	Replace diaphragm (Ref: 13.How to disassemble for parts replacement)
	Scratches on diaphragm or body	Replace applicable parts (Ref: 13.How to disassemble for parts replacement)
	Foreign matter caught in valve	Disassemble to remove foreign matter (Ref: 13.How to disassemble for parts replacement)
Of fluid from the valve Leak	Bolt between body and actuator is loose	Tighten to the specified torque. (Ref: 13.How to disassemble for parts replacement)
	Scratches on diaphragm or body	Replace applicable parts (Ref: 13.How to disassemble for parts replacement)
	Foreign matter caught between diaphragm and body	Disassemble to remove foreign matter (Ref: 13.How to disassemble for parts replacement)
Actuator is operating but valve is not open or closed	The diaphragm or joint fitting is damaged.	Replace applicable parts (Ref: 13.How to disassemble for parts replacement)
Fluid leaks even when fully closed	Insufficient stopper adjustment	Perform stopper adjustment. (Ref: 12. How to adjust the stopper)

CAUSE OF FAILURE AND HOW TO REMEDY (continued)

Failure phenomenon	Possible cause	Measures and measures
The Allen key does not turn (does not turn) during manual Actuation.	The valve is already fully open (or fully closed).	Rotate the hex wrench in the reverse direction (Ref. 11. Test Run)
	The power remains supplied in the opposite direction of the handle Actuation direction.	Turning the power off and then manually operating
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 13. How to disassemble for parts replacement)
	Piping stress is applied to the valve.	Remove the piping stress
	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. Handling Precautions)
Fluid leaks even when fully closed (internal leak)	High fluid pressure	Use below the maximum allowable pressure (Ref: 13. How to disassemble for parts replacement)
	Body or diaphragm is worn or scratched	Remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 13. How to disassemble for parts replacement)
	Missing parts	Remove the valve from the piping and attach the relevant part or replace the valve. (Ref: 13. How to disassemble for parts replacement)
	Foreign matter caught in valve	Remove the valve from the piping, disassemble it, and remove foreign matter. (Ref: 13. How to disassemble 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)	O-ring is scratched, worn, melted, or altered	Stop using the product immediately, remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 13. How to disassemble for parts replacement)
	Scratches or wear are found on the sliding or fixing surfaces of the O-ring.	Stop using the product immediately, remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 13. How to disassemble for parts replacement)
	Valve is cracked or broken	Stop using the product immediately, remove the valve from the piping, and replace the valve. (Ref: 13. How to disassemble for parts replacement)
Actuator is operating but valve is not open or closed	Damaged stem	Stop using the product immediately, remove the valve from the piping, replace the relevant part, or replace the valve. (Ref: 13. How to disassemble for parts replacement)
Actuator is corroded	The watch is exposed to water, chemical liquids, or other liquids.	Stop using the product immediately, remove the valve from the piping, and replace the actuator. (Ref: 13. How to disassemble for parts replacement)
Valve is corroded or deformed	The watch is exposed to water, chemical liquids, or other liquids.	Stop using the product immediately, remove the valve from the piping, and replace the valve. (Ref: 13. How to disassemble for parts replacement)

16. Disposal method of residual materials and waste materials

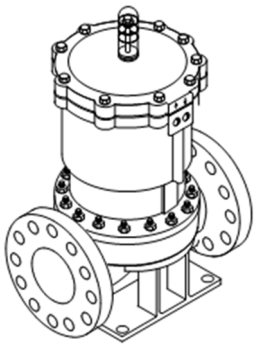
⚠Warning	
Forcing	**When burnt, toxic gas is generated.** ▶ When disposing of the product or parts, please dispose of them according to the guidelines of each local authority by a professional disposal company.

Inquiries

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

[User's Manual]

Diaphragm Valve Type 72
Pneumatic Actuated Type AV
(200, 250mm)



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

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