Compact ball valve Type 27
Manual type

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>

Prohibited	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

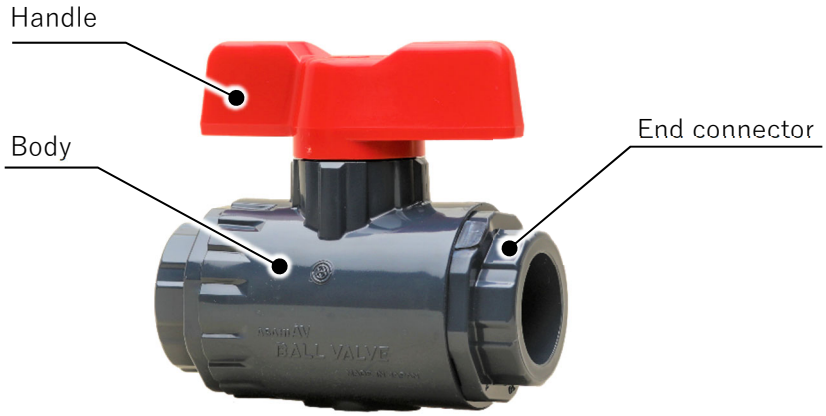
⚠Caution	
Prohibited	**The valve can be damaged, or leak.** ▶ Do not subject the product to impact by throwing, dropping or hitting. ▶ Do not scratch or pierce the product with a sharp object such as a knife or hand hook. ▶ Do not pile up cardboard boxes forcefully to prevent the load from collapsing. ▶ 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	
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 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. **Serious injury or damage to the valve can occur.** ▶ There is a dead space structurally in the ball type valve. Vaporizing fluids such as hydrogen hydroxide (H_2O_2) and soda hypochlorite (NaClO) may vaporize in the deadspace and cause an abnormal pressure rise inside the valve. Be very careful. (Gas with abnormal pressure increase due to vaporization is a compressible fluid. Therefore, if a valve should break, fragments will scatter explosively, which is very dangerous.)

⚠ Caution	
Prohibited	**The valve can be damaged, damaged, or leak.** ▶ Do not disassemble this product as it cannot be replaced. ▶ Do not step on the valve or place heavy objects on it. ▶ Keep away from fire and hot objects. ▶ Do not use for fluids containing slurry. ▶ Do not subject the valve to large vibrations.
Forcing	**There is a danger of injury.** ▶ Secure sufficient space for maintenance and inspection when piping. **The valve can be damaged, damaged, or leak.** ▶ Keep the pressure and temperature of the fluid within the allowable range. (The maximum allowable pressure includes water hammer pressure.) ▶ Use a valve of suitable material for the operating conditions. (Parts may be damaged depending on the type of chemical liquid. 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 referring to "**7. Inspection items**". Pay particular attention to temperature changes and aging during long-term storage or shutdown or use. ▶ If the valve is used at an intermediate position, the mark of the ball opening will remain on the seat (PTFE), and sealing performance may temporarily deteriorate when the valve is fully closed. Therefore, it is recommended to use the valve fully open or closed.

3. Name of parts

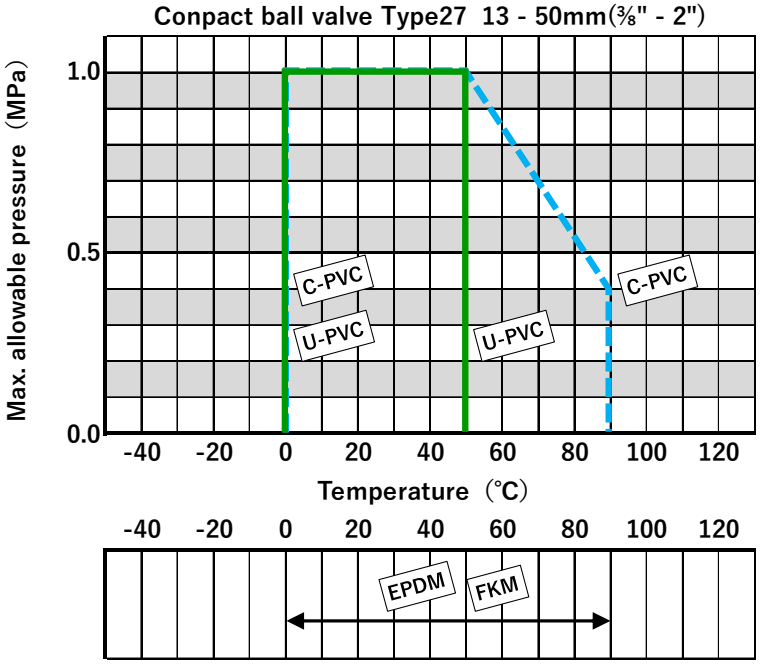


4. Product Specifications

Model number table

Actuation	Valve type	Operation type	Body material	Seal material	Connection	Standard	Size	High purity series
V	7B	LV	*	*	*	*	* * *	*
V Automatic	7B Type 27	LV Lever type	U U-PVC	E EPDM	S Socket	J JIS	013 13mm	Blank Non
			C C-PVC	V FKM	N Treaded	D DIN	015 15mm	1 Lubricant free
						A ANSI	020 20mm	
							025 25mm	
							032 32mm	
							040 40mm	
							050 50mm	

Relationship between maximum allowable pressure and temperature



5. Mounting method

Threaded end

⚠Warning	
Prohibited	**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. ▶ Wear appropriate protective equipment according to the type of work being performed.

⚠Caution	
Prohibited	**Otherwise, the valve may be damaged or leak.** ▶ Do not overtighten the screws at the joints. ▶ Do not use a pipe wrench.
Forcing	**Otherwise, the valve may be damaged or leak.** ▶ Install the product so that excessive stress such as tension, compression, bending or impact is not applied to the piping or valve. ▶ Make sure that the screws at the joints are made of resin. ▶ Use sealing tape for the sealing material of the screw-in part. If liquid sealant or liquid gasket is used, stress cracking (environmental stress cracking) may occur.

Preparations ▶ Sealing tape ▶ Belt Wrench ▶ Spanner or glasses wrench

[Procedure]

1) Wrap sealing tape around the male thread of the fitting, leaving approximately 3mm at the end.
2) Tighten the male thread of the fitting and the female thread of the valve by hand.
3) Screw 1/2 to 1 turn with a wrench to prevent damage.

Socket end (adhesive)

⚠Warning	
Prohibited	**Serious injury can result.** ▶ When hanging or slinging a valve, pay sufficient attention to safety, and do not enter under the load. **Fire or an explosion can result.** ▶ Ensure adequate ventilation when using adhesives and do not use open flames around them.
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.

⚠Caution	
Prohibited	**There is a danger of injury.** ▶ The adhesive contains volatile solvents, so do not inhale odors directly. **Otherwise, the valve may be damaged or leak.** ▶ Do not apply too much adhesive. Excessive adhesive will flow into the valve. ▶ Do not strike the pipe when inserting it into the body and body cap.
Forcing	**There is a danger of injury.** ▶ If the adhesive adheres to the skin, remove it immediately. ▶ If you feel worse or feel unusual when using the adhesive, promptly seek a doctor's diagnosis and take appropriate action. **Otherwise, the valve may be damaged or leak.** ▶ 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 "**ASAHIAV Cement**" depending on the material. ▶ Perform the water flow test after 24 hours or more have elapsed after completion of bonding.

Preparations	□ ASAHIAV glue	□ Waste cloth

[Procedure]

1) Wipe off the insertion part of the pipe and the socket part of the body cap with a waste cloth.

2) Refer to "**Table 5-1 Adhesive Consumption (Reference)**" and apply adhesive evenly in the order of the socket part of the body and body cap and the insertion part of the pipe.

3) After applying the adhesive, quickly insert the pipe into the body and body cap and hold for at least 60 seconds.

4) Wipe off any excess adhesive with a waste cloth.

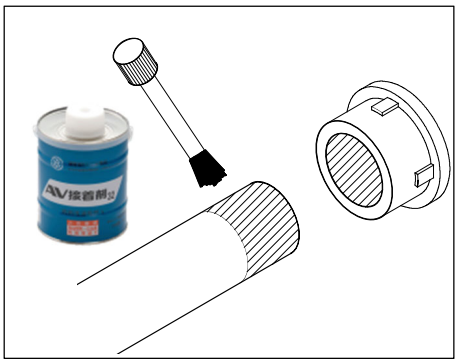


Table 5-1.
Usage of adhesives (reference)

Nominal size	Volume used
13mm	0.8 g
15mm	1.0 g
20mm	1.3 g
25mm	2.0 g
32mm	2.4 g
40mm	3.5 g
50mm	4.8 g

6. Operation method

⚠Caution	
Prohibited	**The valve may be damaged.** ▶ Do not turn the handle more than necessary with excessive force. ▶ Do not open or close the product with dust or other foreign matter mixed in the fluid.
Forcing	**There is a danger of injury.** ▶ If the adhesive adheres to the skin, remove it immediately. ▶ If you feel worse or feel unusual when using the adhesive, promptly seek a doctor's diagnosis and take appropriate action. **Otherwise, the valve may be damaged or leak.** ▶ 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 "**ASAHIAV Cement**" depending on the material. ▶ Perform the water flow test after 24 hours or more have elapsed after completion of bonding.

[Procedure]

1) Close the valve by turning the handle clockwise.

2) Open the valve by turning the handle counterclockwise.

Fully open

The position of the handle is parallel to the tube axis direction.

When fully closed

The handle position is perpendicular to the tube axis.

7. 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, completely remove the fluid from the piping before starting work. ▶ If any trouble is found, take the appropriate action referring to "**12. Troubleshooting**".

Daily inspection

Inspection items and methods	Guideline of judgment	Check point	Treatment method
External leakage (visual inspection)	No leakage	[Socket end] Adhesive construction section	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting [Socket end])
		[Threaded end] Threaded connection	① Remove the valve from the piping and screw the valve in again. (Ref: 5. Mounting [Socket end]) ② Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method [Threaded end])
		Stem portion of the valve (under handle)	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
		Between end connector and body	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
		Surface of the entire valve	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
Internal leakage (visual and measurement)	No leakage	Leakage to secondary side when valve is fully closed	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
		Measured values of flowmeters, pressure gauges, etc.	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
Abnormal noise (hearing)	No abnormal noise	Entire valve	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)

Periodic inspection

●Guideline for the inspection cycle: 3 months

Inspection items and methods	Guideline of judgment	Check point	Remedy for malfunctions
Vibration (palpation)	No difference from other parts	Valve	Recheck the operating conditions and remove the source of vibration. (Ref: 4. Product specifications [Relationship between maximum allowable pressure and temperature])
		Piping around the valve	Recheck the operating conditions and remove the source of vibration. (Ref: 4. Product specifications [Relationship between maximum allowable pressure and temperature])

●Guideline of the inspection cycle: 6 months

Inspection items and methods	Guideline of judgment	Check point	Remedy for malfunctions
Handle operability (touch)	Operation shall be smooth.	Manual operation unit	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
Corrosion (visual inspection)	No corrosion	Appearance of the product	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
Product damage	No scratches, cracks, or deformation	Appearance of the product	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)

8. Cause of malfunction and remedy

⚠Caution	
Forcing	**This valve cannot be disassembled** ▶ Parts of this valve cannot be replaced. Replace the entire valve when a problem occurs.

Failure phenomenon	Possible cause	Measures and measures
Handle does not turn (cannot turn)	The valve is already fully open (or fully closed).	Rotate the handle in the opposite direction. (Ref: 6. Operation)
	Foreign matter caught in valve	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
	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: 4. Product specifications [Relationship between maximum allowable pressure and temperature])
Fluid leaks even when fully closed (internal leak)	High fluid pressure	Use below the maximum allowable pressure (Ref: 4. Product specifications [Relationship between maximum allowable pressure and temperature])
	Seat or ball stem is worn or scratched	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
	Missing parts	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
	Foreign matter caught in valve	Remove the valve from the pipe and replace the valve. (Ref: 5. Mounting method)
	Piping stress is applied to the valve.	Remove the piping stress

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, and replace the valve. (Ref: 5. Mounting method)
	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, and replace the valve. (Ref: 5. Mounting method)
	Valve is cracked or broken	Stop using the product immediately, remove the valve from the piping, and replace the valve. (Ref: 5. Mounting method)
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: 5. Mounting method)

9. 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]

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Manual type

ASAHI YUKIZAI

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

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