AIR VENT

AW2

USER'S MANUAL

MIYAWAKI INC.

SAFETY GUIDE

The model AW2 is an air vent for steam to discharge large quantities of air quickly, thereby greatly reducing equipment start-up time.

In order to get maximum benefit from this product, be sure to read this manual before installing it.

The following warnings and cautions are shown at appropriate places in this manual.

WARNING — Failure to observe this type of precaution may lead to serious injury or death.

CAUTION — Failure to follow this type of precaution can lead to injury or damage to equipment and property.

Table of Contents

1 SPECIFICATIONS AND MARKINGS

WARNING

Be sure not to use this product at higher pressure than the specified maximum operating pressure (Max. P.) or at higher temperature than the specified maximum operating temperature (Max. T.).

The following items are displayed on the name plate or the side of the product.
Check each item to avoid misuse of the product.

(1) Maximum operating pressure (Max. P.): 0.5 MPa (73 psig)

(2) Size: 15 mm (1/2”), or 20 mm (3/4”)

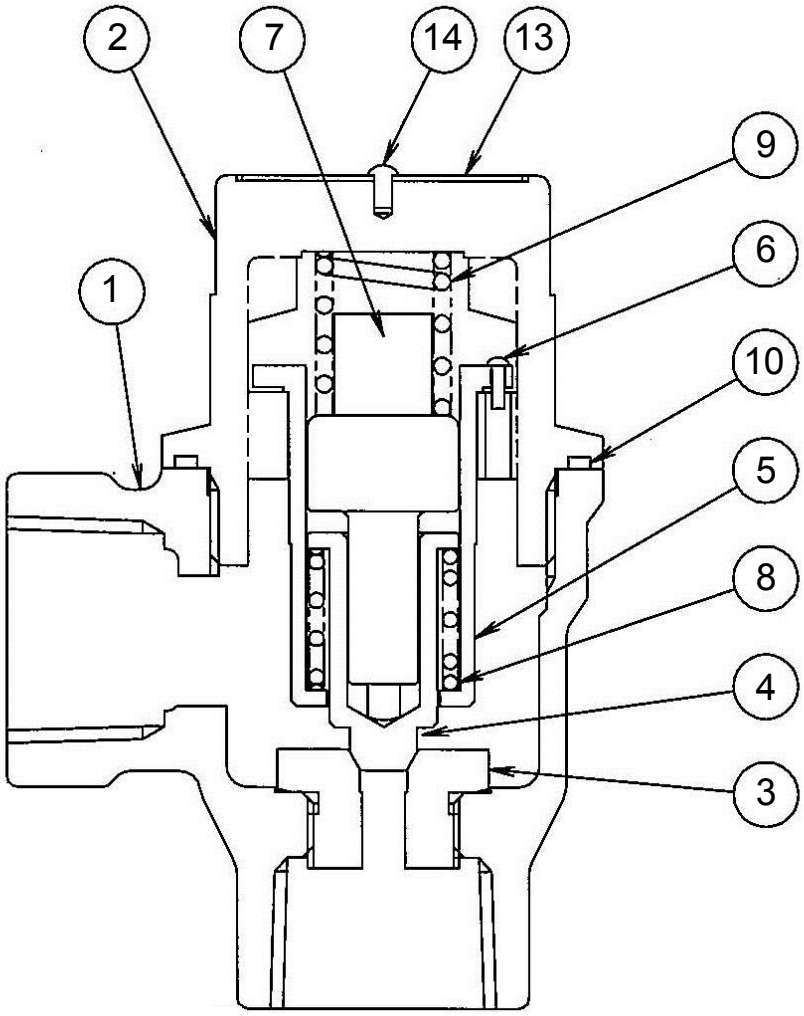
(3) Year of production: The two leftmost digits in the four-digit “S. No.” on the name plate are the last two digits of the year of production.

(4) Flow direction: Shown by an arrow.

(5) Model symbol: Showing the product model name.

For more details regarding dimensions and other specifications, refer to the catalog.

2 CONSTRUCTION DETAILS



1. Body
2. Cover
3. Valve seat
4. Valve
5. Guide tube
6. Guide stopper
7. Thermo element
8. Spring
9. Spring
10. Cover gasket
13. Name plate
14. Rivet

3 INSTALLATION

WARNING

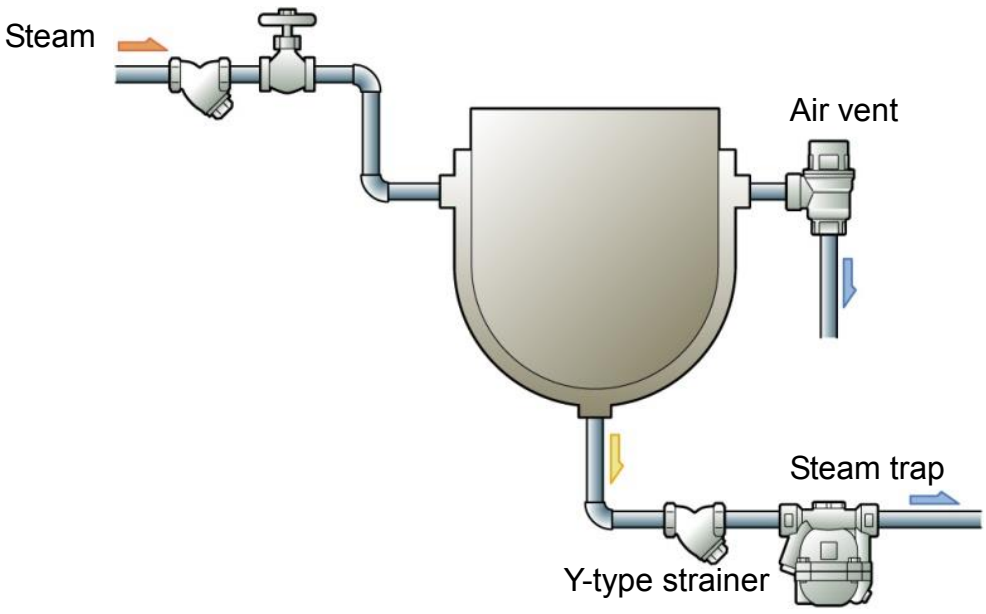
Pay very careful attention when working in hazardous environments. There is a risk of explosion and the possibility of dangerous gases leaking. Always check whether the pipeline contains flammable, high pressure or high temperature materials before starting to work.

CAUTION

Before installing the product, open both isolation valves and the bypass valve, if one exists, to blow out any debris or dirt inside the pipeline. After blowing out the line, before starting to work, close the isolation valves and allow time for the temperature to drop to a safe working temperature.

When installing the product, be sure to leave clearance for maintaining it.

(1) Remove the dustproof seals covering both connections of the air vent.
(2) Check the flow direction indicated on the side of the body.
(3) Be sure to install the air vent on upper part of line where air is easy to accumulate. And also, be sure not to install the air vent upside-down. Install the air vent so that the name plate is on the top side.
(4) Open the isolation valve on the upstream line slowly and make sure the product works normally.



Jacketed kettle

4 MAINTENANCE

⚠ CAUTION

- **When replacing parts, make sure the replacement parts are supplied by Miyawaki.**

The performance of air vents deteriorates gradually over time due to wear, corrosion or dirt accumulating around the valve seat. To keep steam control systems and equipment working well, periodic maintenance of air vents is essential.

4.1 Repairs

When an air vent fails, it is necessary to clean the internal parts and to replace damaged parts. Take the failed air vent apart following the steps below.

4.1.1 Disassembling

All internal parts (except the valve seat (3)) can be easily removed by hand, with the body (1) installed to the equipment.

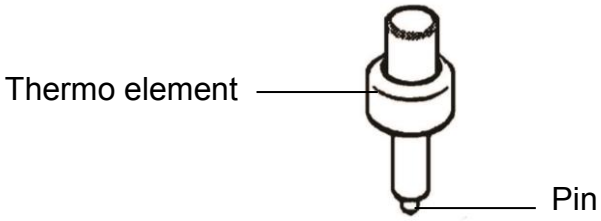
1) Remove the cover (2). The guide tube (5) part which includes the guide stopper (6), the spring (8), the valve (4), thermo element (7), and the spring (9) is attached to the cover.
2) To remove the guide tube part as a unit, hold and lightly push it in, and then rotate it 45°.
3) Remove the cover gasket (10).
4) Remove the valve seat (3) with a torque wrench.
5) Clean and inspect the parts thoroughly.

Take the appropriate measures, as described in Section 5, “Troubleshooting”.
Reassemble the parts as follows, reversing the procedure used to disassemble them.
Refer to the torque table to use the correct torque for each part.

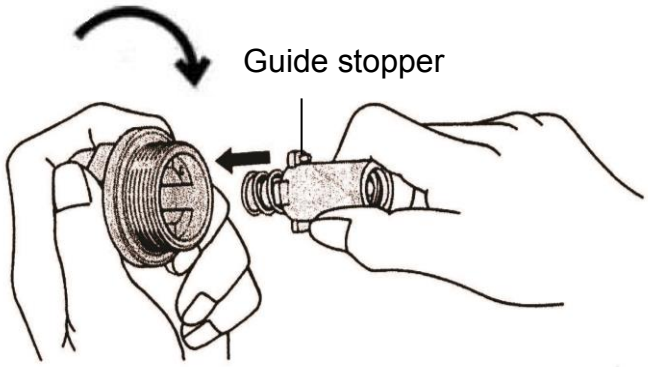
4.1.2 Reassembling

1) Screw the valve seat (3) into the body (1).
2) Reinstall the spring (8), the valve (4), the thermo element (7), and the spring (9) in the guide tube (5).

   * When installing the thermo element (7), be careful not to lose a small pin from the thermo element. When the small pin is lost, the valve can not close.



3) Lightly push the guide tube part in, to reinstall it in the cover (2). At this time, make sure that the guide stopper (6) is inserted into the hole in the cover.
   And then rotate it 45°.



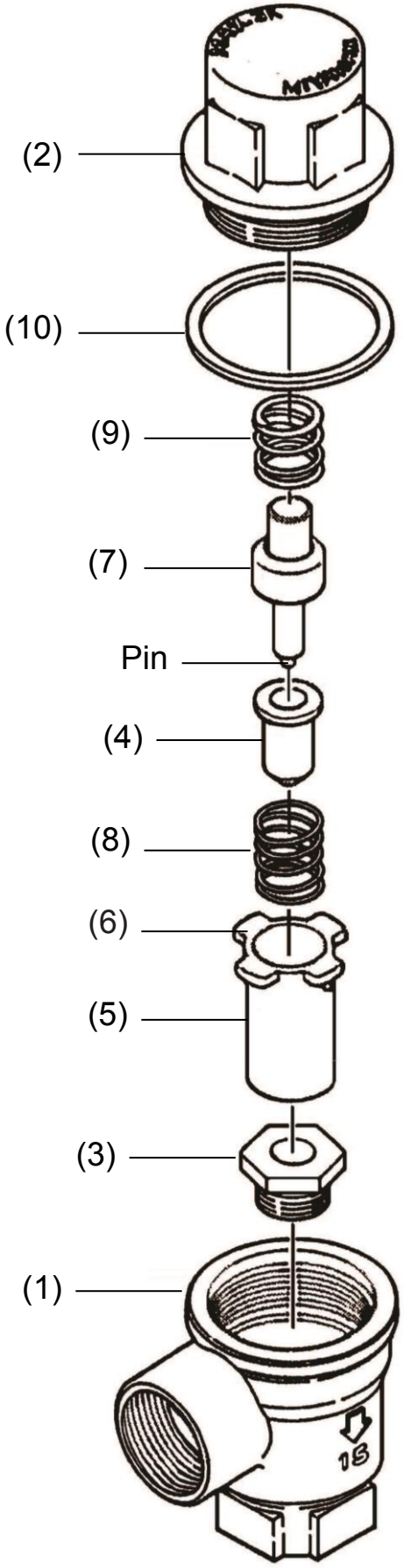
4) After placing the cover gasket (10) on the cover (2), screw the cover (2) onto the body (1) securely. Apply a small amount of anti-seize & lubricating compound to the thread.

- The torque specifications are listed below.

Torque specifications

Parts	Tools	Across the flats	Torque
Valve seat (3)	Torque wrench	17mm (0.67 in.)	35N-m (350kgf-cm)
Cover (2)	Adjustable spanner	32mm (1.26 in.)	50N-m (500kgf-cm)

1. Body
2. Cover
3. Valve seat
4. Valve
5. Guide tube
6. Guide stopper
7. Thermo element
8. Spring
9. Spring
10. Cover gasket



5 TROUBLESHOOTING

Problem	Possible cause	Solution
Steam leaks or blows through.	Dirt is stuck around the thermo element (7) or the valve seat (3).	Clean the thermo element (7) or the valve seat (3)
	The valve seat (3) is loose.	Retighten the valve seat (3).*1
	The valve (4) or the valve seat (3) is damaged	Replace the valve (4) or the valve seat (3).
	The thermo element (7) is damaged.	Replace the thermo element (7).
Steam leaks from between the body and cover.	The cover (2) is loose.	Retighten the cover (2).*2
	Damage, erosion or deterioration of the cover gasket (10)	Replace the cover gasket (10).
No air discharged, or insufficient air discharged.	Dirt is stuck around the valve seat (3).	Clean the valve seat (3)
	The thermo element (7) is damaged.	Replace the thermo element (7).
	Insufficient capacity.	Replace the air vent with a larger capacity.

*1 and *2: Refer to the torque table in Section 4, “Maintenance” to retighten the parts to the correct torque.

6 WARRANTY

6.1 Warranty period

The warranty period is 18 months after shipment or 12 months after installation, whichever occurs first.

6.2 Details of the warranty

If the product stops working correctly within the warranty period, we will repair or replace the product free of charge if the cause of the trouble is not one of the following items.

1) The precautions described in this manual were not observed
2) User's errors or mistakes such as an inappropriate installation or incorrect handling, or an excessively large impact caused by dropping
3) Problems caused by devices or equipment other than ours, or a disallowed use environment
4) When a repair or modification has been performed by anyone other than us or people who are authorized to make such repairs
5) Intrusion of salt or other substances that promote significant rust or corrosion or problems from fluids that contain the same substances
6) Consumable parts such as Packing, Gasket, O-ring, Diaphragm, etc
7) Attachment or accumulation of foreign matter in the pipe, such as dust and scale
8) Problems from fires, natural disasters, or other force majeure which is not our responsibility

6.3 Warranty limitation

The remedy available under the warranty shall not exceed the sales price of the products delivered, for any cause whatsoever.

★Guidance for reading special product name

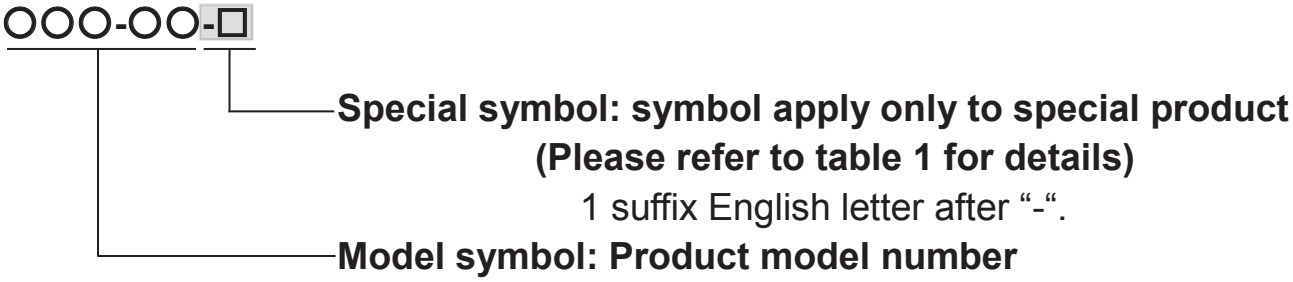


Table 1 Symbol description

Suffix	Special contents
A	Approved high-pressure gas trap
C	Blow valve attached & countermeasure against scale
K	Change of gasket
L	Special face to face dimension
M	Change of parts material
P	Change of operating pressure
R	Change of screen mesh or countermeasure against scale
T	Parts are standards, and the specification (operating temp, press. etc.) is changed
V	Change of air vent
X	Other than mentioned above or complex of special contents above

- For any questions about the product that you purchased or about the details in this user’s manual, please contact the following.
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- Some special specifications of the product you have, may found to be different from the ones in the user's manual. If you have any question, please contact MIYAWAKI, our local authorized agent, or the place where you purchased.

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