

THERMOSTATIC AIR VENT

# AW2

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USER'S MANUAL



 **MIYAWAKI INC.**

# SAFETY GUIDE

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



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



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

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# 1 SPECIFICATIONS AND MARKINGS

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## WARNING

Be sure not to use this product at higher pressures than the specified maximum operating pressure (PMO) or at temperatures higher than the specified maximum operating temperature (TMO).

Check each item to avoid misuse of the product.

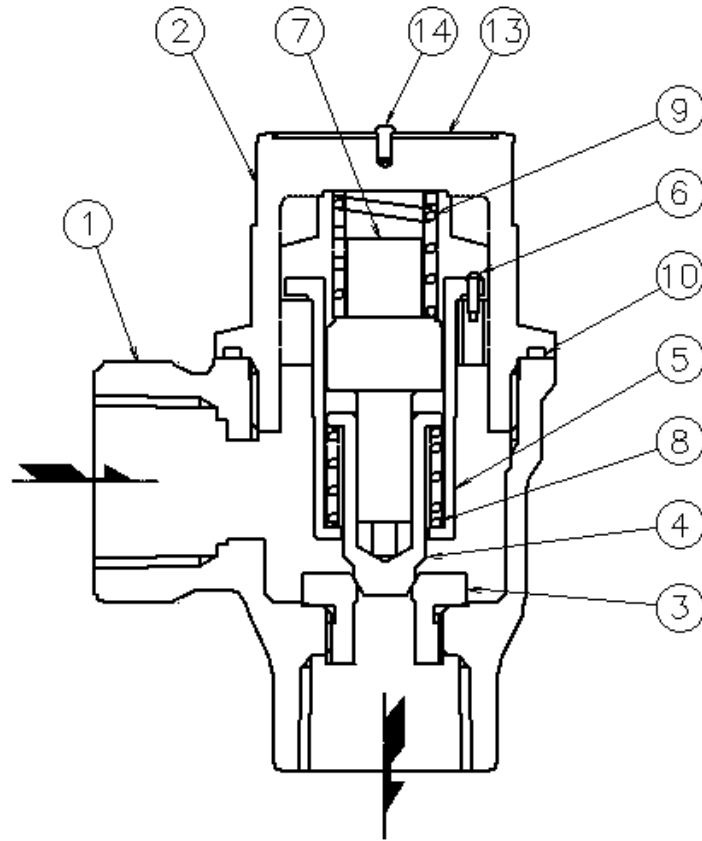
- 1) Maximum allowable pressure (PMA): 0.5 MPa (73 psig)
- 2) Maximum allowable temperature (TMA): 160 °C (320 °F)
- 3) Maximum operating pressure (PMO): 0.5 MPa (73 psig)  
(Shown as MAX.P. on the name plate)
- 4) Maximum operating temperature (TMO): 160 °C (320 °F)  
(Shown as MAX.T. on the name plate)
- 5) Size: 15 mm (1/2") or 20 mm (3/4")
- 6) Year of production: The two leftmost digits in the four-digit or nine-digit "S. No." are the last two digits of the year of production.
- 7) Flow direction: Shown by an arrow
- 8) Body material: Brass
- 9) Model: Showing the product model name

- Some pictures and illustrations in this manual are examples of the AW2 model. For more details regarding dimensions and other specifications, please refer to the catalog.

The model AW2 fully complies with the requirements of the European Pressure Equipment Directive 2014/68/EU. It is classified according to Article 4, Section 3 of the PED, which does not allow to bear the CE marking.

## 2 CONSTRUCTION DETAILS

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- 
- |                  |                  |
|------------------|------------------|
| 1. Body          | 8. Spring        |
| 2. Cover         | 9. Spring        |
| 3. Valve Seat    | 10. Cover Gasket |
| 4. Valve         | 13. Name Plate   |
| 5. Guide Tube    | 14. Rivet        |
| 6. Guide Stopper |                  |
| 7. ThermoElement |                  |

### 3 INSTALLATION

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#### 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.

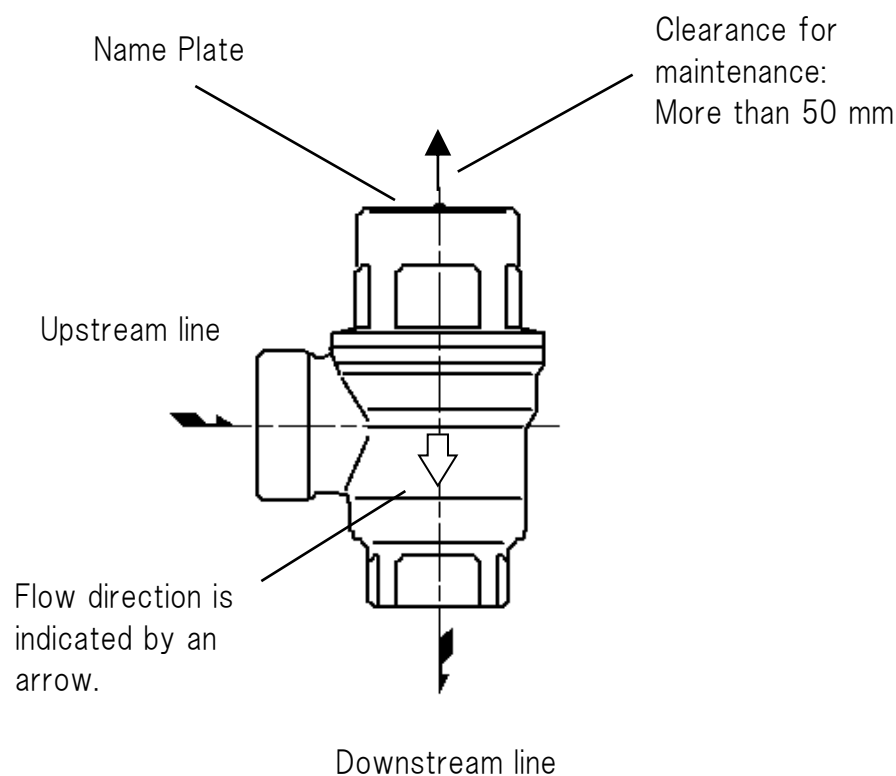
- Make sure that isolation valves are installed on both the upstream and downstream lines.



#### CAUTION

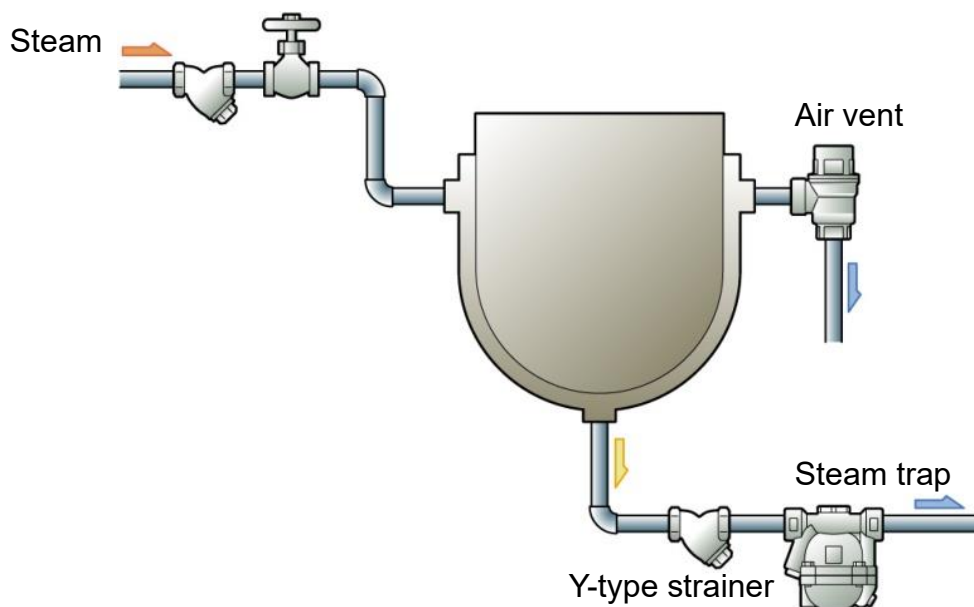
Before installing the product, open both isolation valves and the bypass valve, if one exists, to blow out any debris or dirt inside the pipeline. After blowing out the line, before starting to work, close the isolation valves and allow time for the temperature to drop to a safe working temperature.

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



- 1) Remove the dustproof seals covering both connections.  
※Products shipped in plastic bags may not have dustproof seals.
- 2) Check the flow direction indicated on the side of the body.
- 3) Be sure to install the air vent on the upper part of the equipment where air will accumulate easily. Do not 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 and make sure the product works normally.

### Sample of installation



### Jacketed kettle

## 4 MAINTENANCE

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### WARNING

- Before removing the air vent from the pipe or disassembling it, be sure to close the isolation valves. Then, release the residual pressure from the air vent body (make sure that the pressure in the main body is equal to the atmospheric pressure). After it has fully cooled down (after the temperature of the main body has reached ambient temperature), confirm for safe conditions and then begin work.
- Even when the isolation valves are closed, there may be residual internal pressure due to leaks from the isolation valves. Therefore, be very careful.



### CAUTION

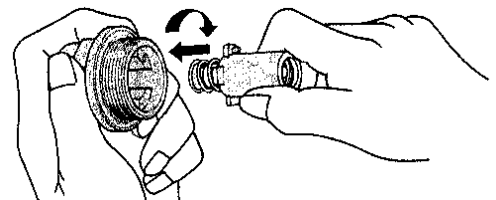
- When replacing parts, make sure the replacement parts are supplied by MIYAWAKI.

### 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 the air vent

- 1) Remove the cover (2). \* All internal parts excluding the valve seat (3) will be taken apart with the cover (2).
- 2) The internal parts installed in the cover (2) can be dismantled by hand. First, push and turn the guide tube (5) 45 degrees as the drawing on the right. The guide tube (5), guide stopper (6), spring (8,9), valve (4) and the thermoelement (7) will come apart.
  - \* There is a pin inside the thermoelement (7), please do not dismantle it from the thermoelement.



**After cleaning the air vent and replacing damaged parts, reassemble the parts in reverse order as follows.**

#### 4.1.2 Reassembling the air vent

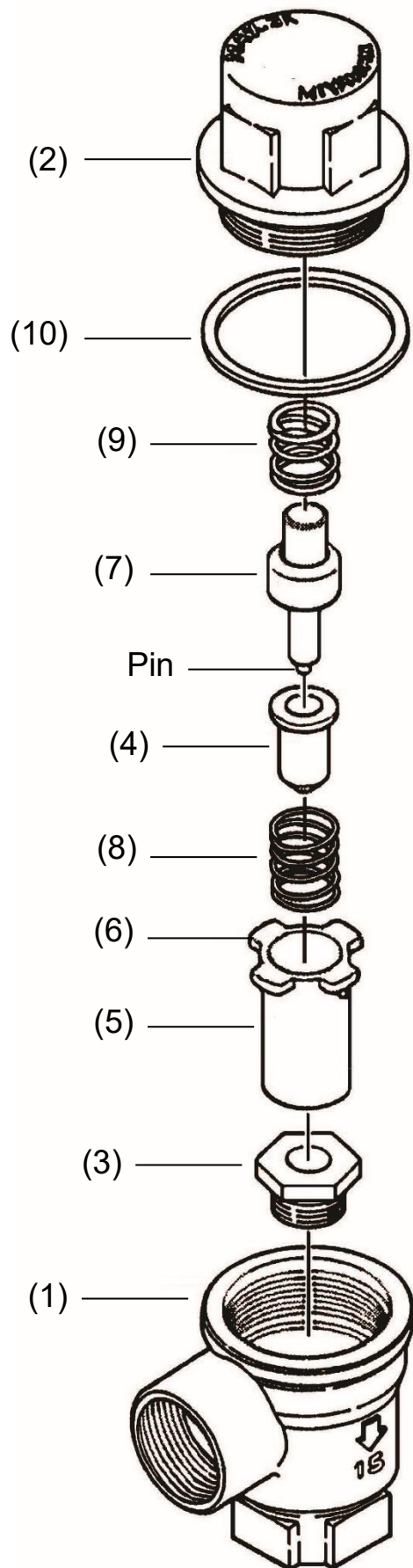
- 1) Insert the spring (8), valve (4), thermoelement (7) and spring (9) into the guide tube (5).
  - \* The stronger spring (9) will be on the top and the weaker spring (8) will be at the bottom.

- 2) Reinstall the guide tube (5) to the cover (2).
  - \* Be sure to check that the guide stopper (6) has entered the hole in the cover (2).
- 3) Reinstall the cover (2) on the body (1).

#### **Torque table**

<b>Parts</b>	<b>Tools</b>	<b>Across the flats</b>	<b>Torque</b>
Cover (2)	Torque Wrench	32 mm (1.26")	50 N·m
Valve Seat (3)	Socket Wrench	17 mm (0.67")	25 N·m





1. Body
2. Cover
3. Valve Seat
4. Valve
5. Guide Tube
6. Guide Stopper
7. ThermoElement
8. Spring
9. Spring
10. Cover Gasket

## 5 TROUBLESHOOTING

Problem	Possible cause	Solution
<b>Steam leaks or blows through.</b>	Dirt is stuck around the thermoelement (7) or the valve seat (3).	Clean the thermoelement (7) or the valve seat (3).
	Damage, wear or corrosion of the valve (4).	Replace the valve (4).
	Damage, wear or corrosion of the valve seat (3).	Replace the valve seat (3).
	The thermoelement (7) is damaged.	Replace the thermoelement (7).
	The valve seat (3) is loose.	Retighten it. *1
<b>Steam leaks from the body.</b>	The cover (2) is loose.	Tighten the cover (2). *2
	The cover gasket (10) is damaged.	Replace the cover gasket (10).
	The sealing surface of the body (1) or cover (2) is damaged.	Replace the damaged part.
<b>Insufficient air discharged, or no air discharged.</b>	Dirt has built up around the valve seat (3).	Clean the valve seat (3).
	The thermoelement (7) is damaged.	Replace the thermoelement (7).
	Wrong installation direction	Reinstall the product in the correct direction.
	Insufficient capacity.	Replace the air vent with a larger capacity air vent.

\*1 to \*2: Refer to the torque table in Section 4, "Maintenance" to retighten the parts with the correct torque.

## **6 WARRANTY**

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### **7.1 Warranty period**

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

### **7.2 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 MIYAWAKI's, or a disallowed use environment
- 4) When a repair or modification has been performed by anyone other than MIYAWAKI 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 MIYAWAKI's responsibility

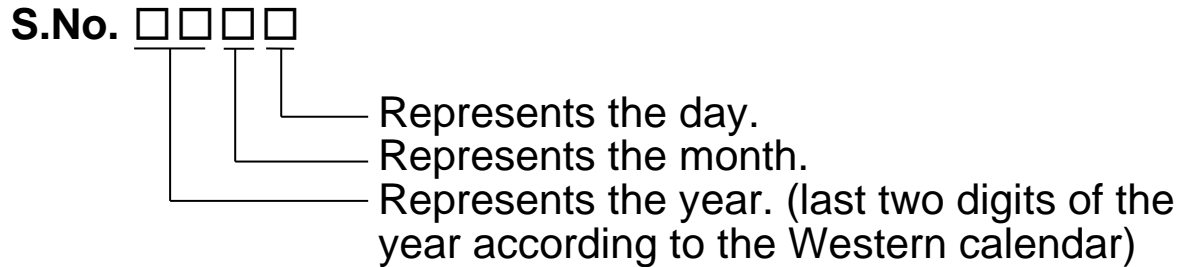
### **7.3 Warranty limitation**

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

## 7 SERIAL NUMBER (S. No.) DESIGNATION

The following 4-digit or 9-digit “S. No.” is displayed on the product.

- For 4-digit display

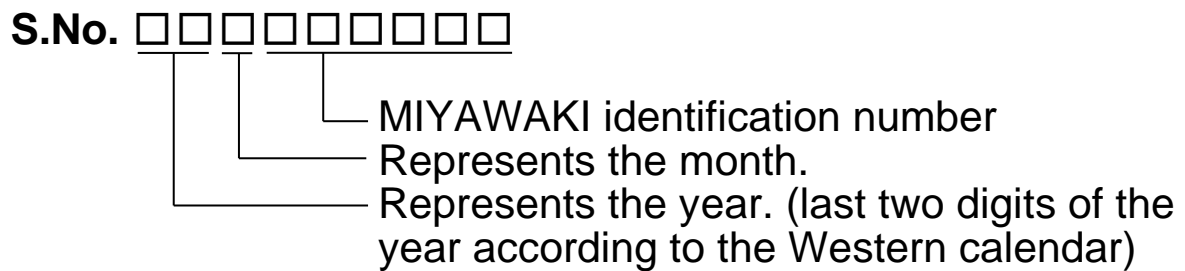


Example of serial number designation

1 7 1 1 → Jan.1, 2017

2 9 X M → Oct. 21, 2029

- For 9-digit display



Example of serial number designation

1 7 1 1 2 C 0 2 0 → Jan., 2017

2 9 X 0 5 M 0 5 0 → Oct., 2029

### Month designation system

Month	1	2	3	4	5	6	7	8	9	10	11	12
Symbol	1	2	3	4	5	6	7	8	9	X	Y	Z

### Day designation system

Day	1	2	3	4	5	6	7	8	9	10	11	12
Symbol	1	2	3	4	5	6	7	8	9	A	B	C

Day	13	14	15	16	17	18	19	20	21	22	23	24
Symbol	D	E	F	G	H	J	K	L	M	N	O	P

Day	25	26	27	28	29	30	31
Symbol	Q	R	S	T	U	V	W

## **8 GUIDANCE FOR READING SPECIAL PRODUCT NAME**

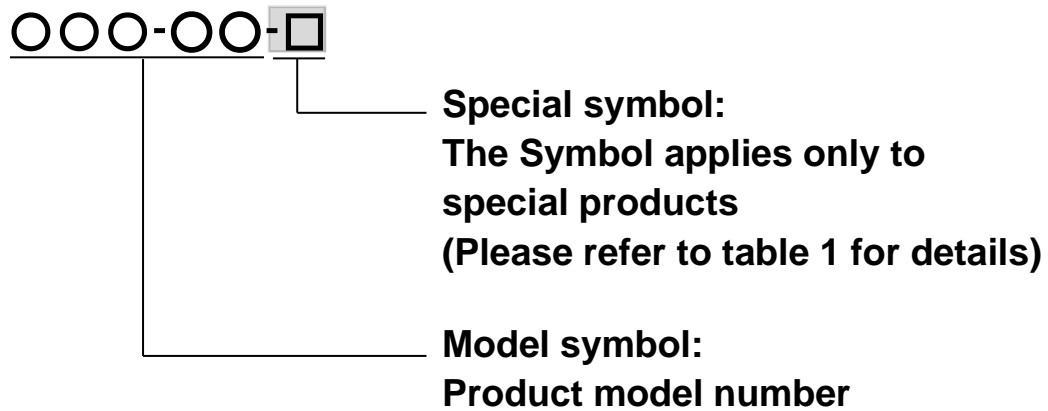


Table 1 Symbol description

Suffix	Special contents
A	Air vent for high-pressure gas installed property (only for Gas Air vent)
C	Blow valve attached
K	Change of gasket
L	Special face to face dimension
M	Change of parts material
P, T	Change of operating pressure, temperature, condensate capacity, etc
R	Change of screen mesh
V	Change of air vent
X	Other than mentioned above or complex of special contents above

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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.
  - In the interest of the development and improvement of our products, MIYAWAKI Inc. reserves the right to change the specification of the products without prior notice.
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By scanning QR Code, you can access inquiry form.



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