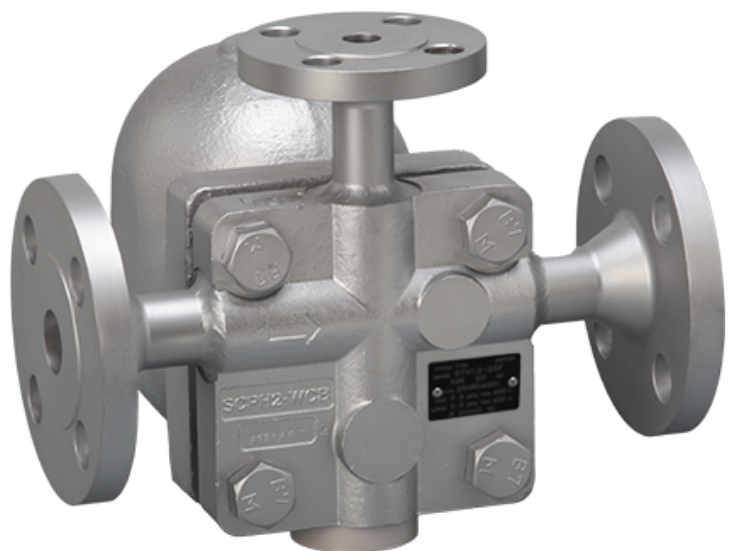


**BALL FLOAT AIR (GAS) DRAIN TRAP**

# **AGH12**

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**USER'S MANUAL**



 **MIYAWAKI INC.**

# SAFETY GUIDE

**The model AGH12 is a cast steel ball float air (gas) drain trap.**

**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 allowable pressure (PMA) or at temperatures higher than the specified maximum allowable temperature (TMA).

The following items are displayed on the name plate or the side of the product.

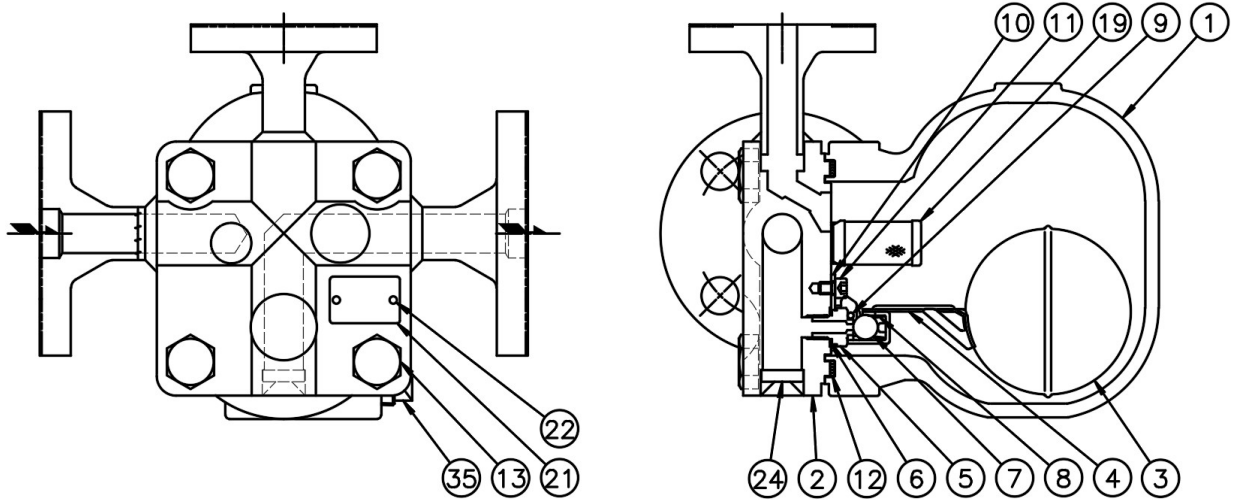
Check each item to avoid misuse of the product.

- (1) Maximum allowable pressure (PMA): 4.5 MPa (655 psig)
- (2) Maximum allowable temperature (TMA): 425°C (797°F)
- (3) Maximum differential pressure ( $\Delta$ PMX): 4.5 MPa (655 psig)
- (4) Maximum operating temperature (TMO): 425°C (797°F)
- (5) Size: 15mm (1/2"), 20mm (3/4"), 25mm (1")
- (6) Year of production: The two leftmost digits in the four-digit or nine-digit 'S No.' on the name plate are the last two digits of the year of production.
- (7) Flow direction: Shown by an arrow.
- (8) Body material: Cast Steel SCPH2
- (8) Model symbol: Showing the product model name

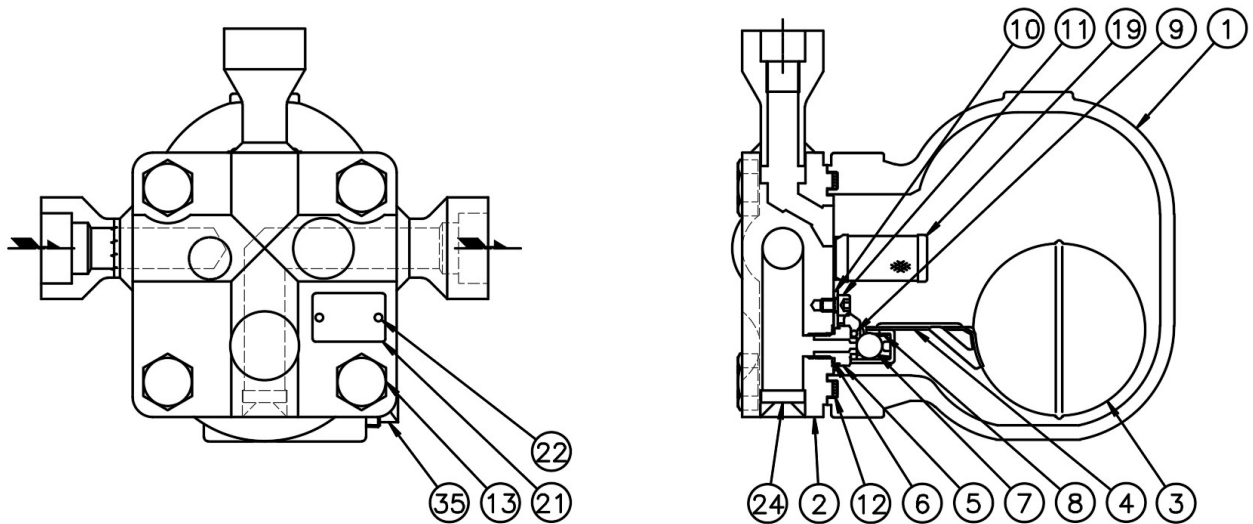
Refer to the leaflet for details about dimensions and other specifications.

## 2 CONSTRUCTION DETAILS

### AGH12-45F model (Flanged)



### AGH12-45W model (Socket weld)



- |                |                   |                |
|----------------|-------------------|----------------|
| 1. Body        | 7. Valve          | 13. Cover bolt |
| 2. Cover       | 8. Spring         | 19. Screen     |
| 3. Float       | 9. Pin            | 21. Name plate |
| 4. Lever       | 10. Bracket       | 22. Rivet      |
| 5. Valve seat  | 11. Mounting bolt | 35. Plug       |
| 6. Seat gasket | 12. Cover gasket  |                |

### 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.



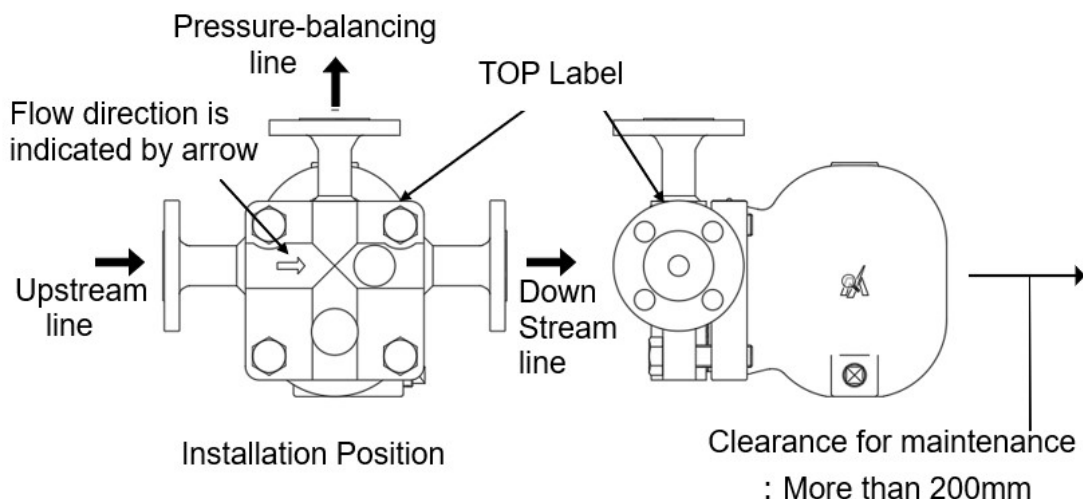
#### CAUTION

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.

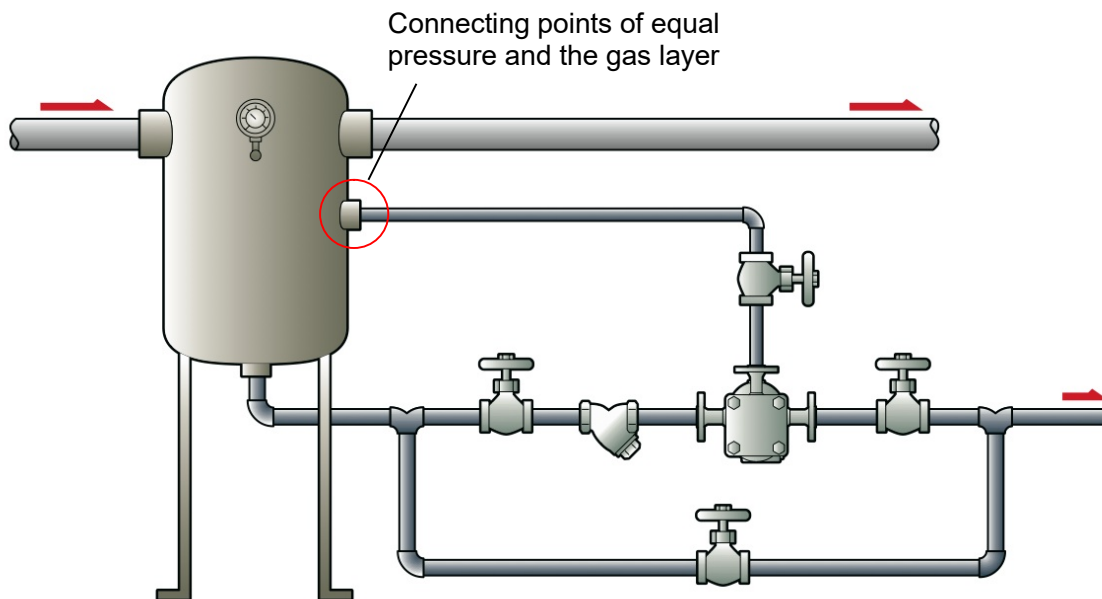
- (1) Remove the dustproof seals covering both connections.
  - (2) Check the flow direction indicated on the side of the body.
  - (3) When installing an AGH12, install it so that the flow from the upstream line to the downstream line is horizontal and the top label is on the top side of the body. Install the AGH12 at the end of a pipe that is angling down, so that condensate flows into the drain trap easily.
- Open the isolation valve on the upstream line slowly and make sure the product works normally.

#### AGH12-F model (Flanged)

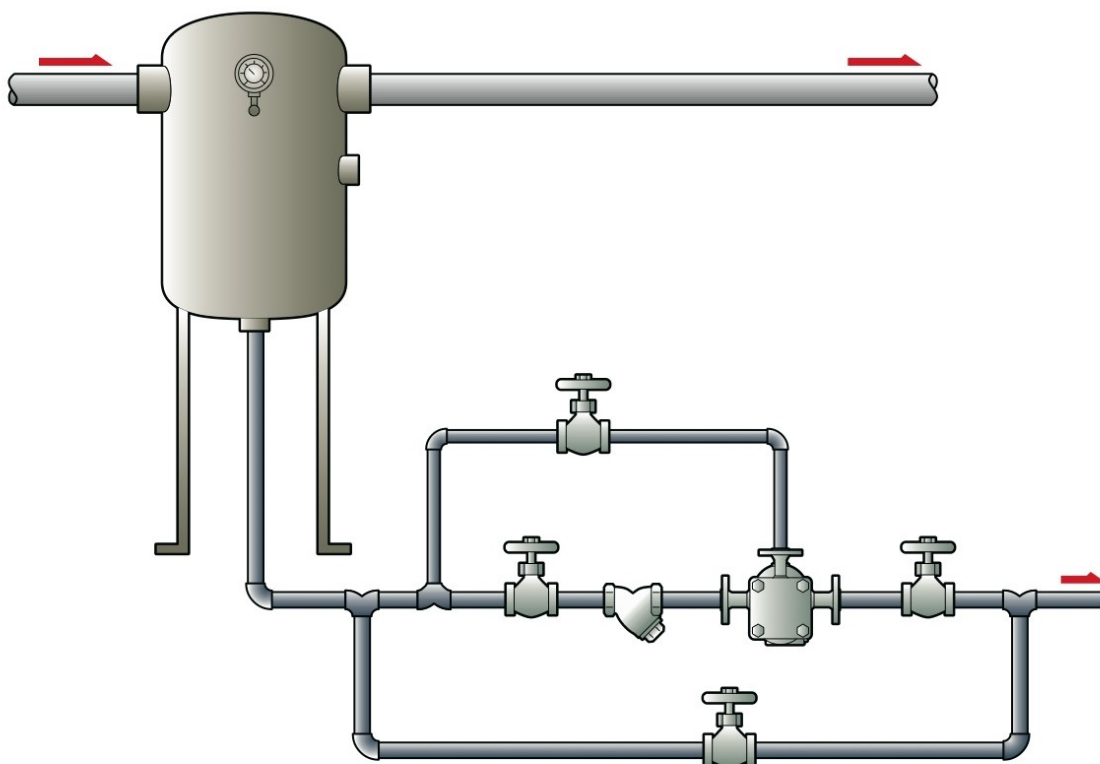


## How to install the pressure-balancing lines

### a) Proper installation line



### b) Wrong installation line



The drain will stay in the globe valve and the Y type strainer fitted upstream of drain trap. Neither air nor the drain is substituted, so the drainage from the drain trap is not done.

## 4 MAINTENANCE

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### CAUTION

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

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

### 4.1 Repairs

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

#### 4.1.1 Disassembling the trap

- 1) Loosen the 4 cover bolts (13) and remove the body (1). The internal parts are installed on the cover (2).
- 2) Remove the pin (9) from the bracket (8), and remove the lever (4) connected to the float (3).  
When cleaning the internal parts, pay special attention not to miss the valve (7) and spring (8).
- 3) Remove the valve seat (5).
- 4) Remove the mounting bolt (11) and the bracket (10).
- 5) Clean the internal parts. Handle the valve (7) and valve seat (5) with care. Avoid scratching or dropping the parts.
- 6) Use fine sandpaper, non-woven polishing or waste cloth to remove any scale or rust found on the valve (7) or valve seat (5).

#### 4.1.2 Removing the screen

- 1) Turn the screen (19) counterclockwise, and remove it from the cover (2).  
While removing it, avoid bending or damaging the screen's screw end.
- 2) Clean the screen (19).

**After repairing the trap, re-assemble the parts in reverse order as follows.**

#### 4.1.3 Replacing the gasket

- 1) After disassembling the trap, make sure that both seat gasket (6) and cover gasket (12) are replaced with new.
- 2) When removing rust and rubbish from the gasket, pay special attention not to damage gasket seat, and reinstall it.
- 3) When reassembling, pay special attention that foreign material such as scale or dirt is stuck between the gasket and the gasket seat surface.

#### 4.1.4 Installing the screen

- 1) After cleaning, install the screen (19) back into the cover (2) by turning it clockwise. While installing it, avoid bending or damaging the screen's screw end.
- 2) If the screen is found damaged, replace it with new.

#### 4.1.5 Reassembling the trap

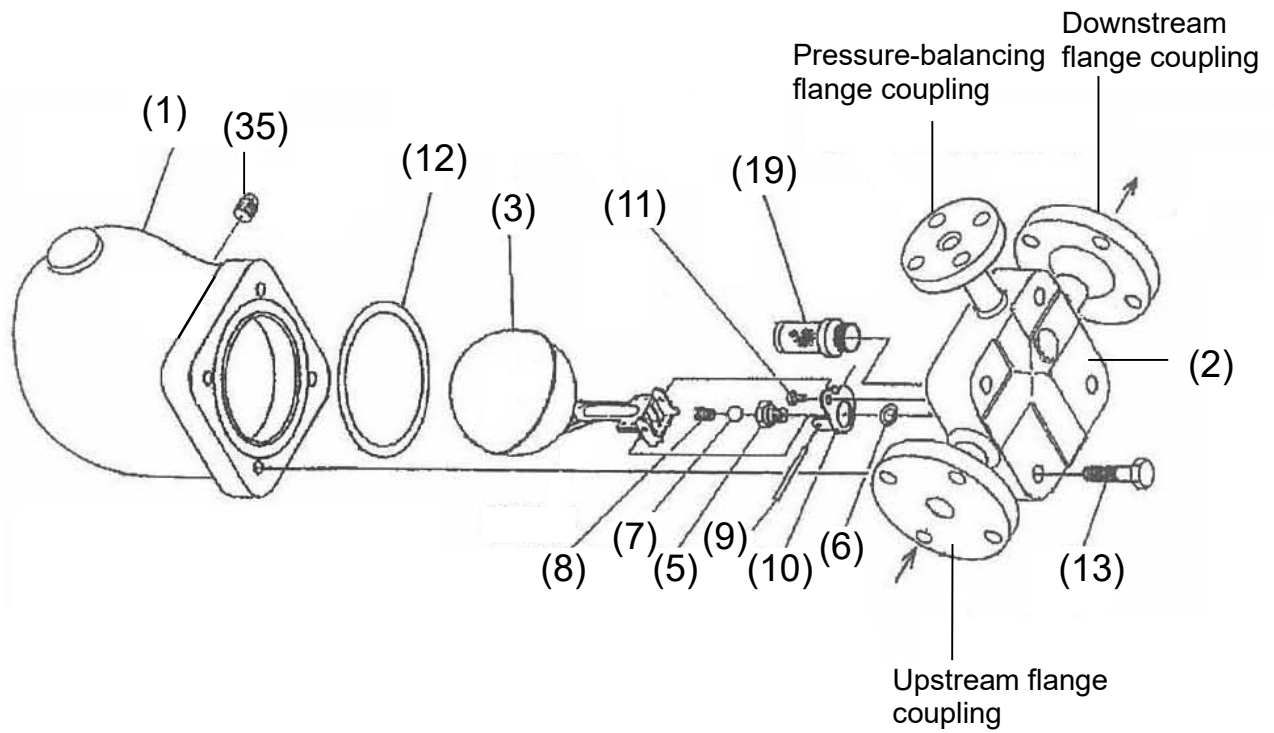
- 1) Match the bracket (10) mounting bolt hole to the valve seat hole, and attach the bracket (10) to the cover.
- 2) Attach the valve seat (5) fitted with the mounting bolt (11) and the seat gasket (6) to the cover.
- 3) Connect the spring (8) and the valve (7) to the lever (4).
- 4) Fit the valve (7) to the valve seat (5), and attach the lever (4) to the bracket (10). And then insert the pin (9) into the bracket mounting hole to connect.
- 5) Attach the body (1) to the cover (2). Tighten it with the four cover bolts (13).
  - Make sure to tighten the bolts in a crosswise pattern, to avoid uneven tightening.

The torque for each part is shown in the following table.

<b>Parts</b>	<b>Tools</b>	<b>Across the flats</b>	<b>Torque</b>
Valve seat (5)	Torque wrench	17 mm (0.67 in.)	25N-m
Mounting bolt (11)	Hex key	5 mm (0.2 in.)	11N-m
Cover bolt (13)	Torque wrench	24 mm (0.94 in.)	110N-m
Screen (19)	Pipe wrench	-	30N-m



**AGH12 model**



- |                |                   |
|----------------|-------------------|
| 1. Body        | 9. Pin            |
| 2. Cover       | 10. Bracket       |
| 3. Float       | 11. Mounting bolt |
| 5. Valve seat  | 12. Cover gasket  |
| 6. Seat gasket | 13. Cover bolt    |
| 7. Valve       | 19. Screen        |
| 8. Spring      | 35. Plug          |

## 5 TROUBLESHOOTING

Problem		Possible cause	Solution
<b>Air (gas) leaks or blows through.</b>		Foreign material such as scale or dirt is stuck between the valve and the valve seat.	Clean the valve and the valve seat.
		The valve and/or the valve seat are damaged, worn or corroded.	Replace the valve and/or the valve seat.
		The seat gasket (6) is damaged.	Replace gasket.
		The valve seat is loose.	Retighten the valve seat.*1
		Wrong installation position	Change the installation so that the top label should face up.
		Wrong installation direction	Make sure the arrow on the main body matches the flow direction of the fluid.
<b>Air (gas) leaks from the body.</b>	<b>From between the body and body cover</b>	The cover bolts are loose.	Retighten them.*2
		Damage, erosion or deterioration of the cover gasket	Replace the cover gasket.
		The gasket sealing surface on the body or bottom cover is damaged.	Replace the body with a new one, or replace the bottom cover.
	<b>From between the body and plug</b>	The plug is loose.	Retighten the plug.
		The gasket sealing surface on the body or plug is damaged.	Replace the body with a new one, or replace the plug.
<b>Insufficient condensate discharged, or no condensate discharged.</b>		Foreign material such as a scale or dirt is stuck in the valve seat.	Clean the valve seat.
		The installation position is wrong.	Change the installation with the pressure-balancing line connecting from the top.
		The float is damaged.	Replace the float.
		Installing the pressure-balancing line is wrong	Correct the installation line.
		The pressure for saturated steam service was over the specified maximum operating pressure.	Lower the pressure or replace the trap with one that has a higher maximum operating pressure.
		Insufficient condensate capacity.	Replace the trap with a larger capacity trap.

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

## **6 WARRANTY**

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### **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**

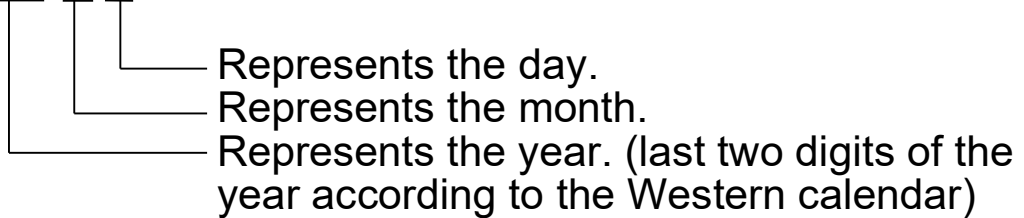
The remedy available under the warranty shall not exceed the sales price of the products delivered, for any cause whatsoever.

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

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

- For 4-digit display

S.No. □□□□

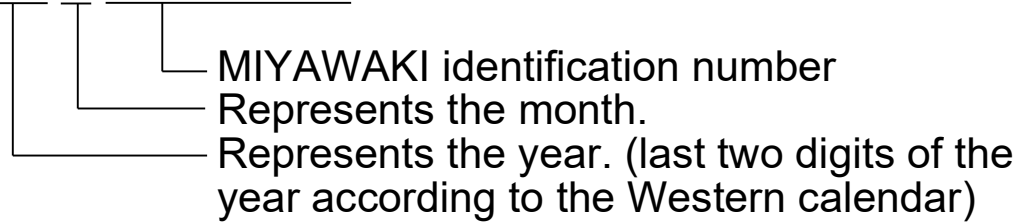


Example of serial number designation

1 7 1 1 → Jan.1, 2017  
2 9 X M → Oct. 21, 2029

- For 9-digit display

S.No. □□□□□□□□□



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	D	E	F	G	H	J	K	L	M	N	O	P

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

○○○-○○-□

**Special symbol:**  
**Symbol apply only to special product**  
**(Please refer to table 1 for details)**  
 English letter after “-“

**Model symbol:**  
**Product model number**

Table 1 Symbol description

Suffix	Special contents
A	Trap for high-pressure gas installed property
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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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 company where you purchased the product.
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