

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

# **AGH50**

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**USER'S MANUAL**



 **MIYAWAKI INC.**

# SAFETY GUIDE

The model AGH50 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): 3.2 MPa (464 psig)
- (2) Maximum allowable temperature (TMA): 400°C (752°F)
- (3) Maximum differential pressure ( $\Delta$ PMX): AGH50-5: 0.5MPa (72 psig)  
AGH50-10: 1.0MPa (145 psig)  
AGH50-20: 2.0MPa (290 psig)  
AGH50-32: 3.2 MPa (464 psig)
- (4) Maximum operating temperature (TMO): 400°C (752°F)
- (5) Size: 50mm (2"), 65mm (1-1/2"), 80mm (3"), 100mm (4")
- (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 WCB
- (9) Model symbol: Showing the product model name

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

Classification according to PED 2014/68/EU

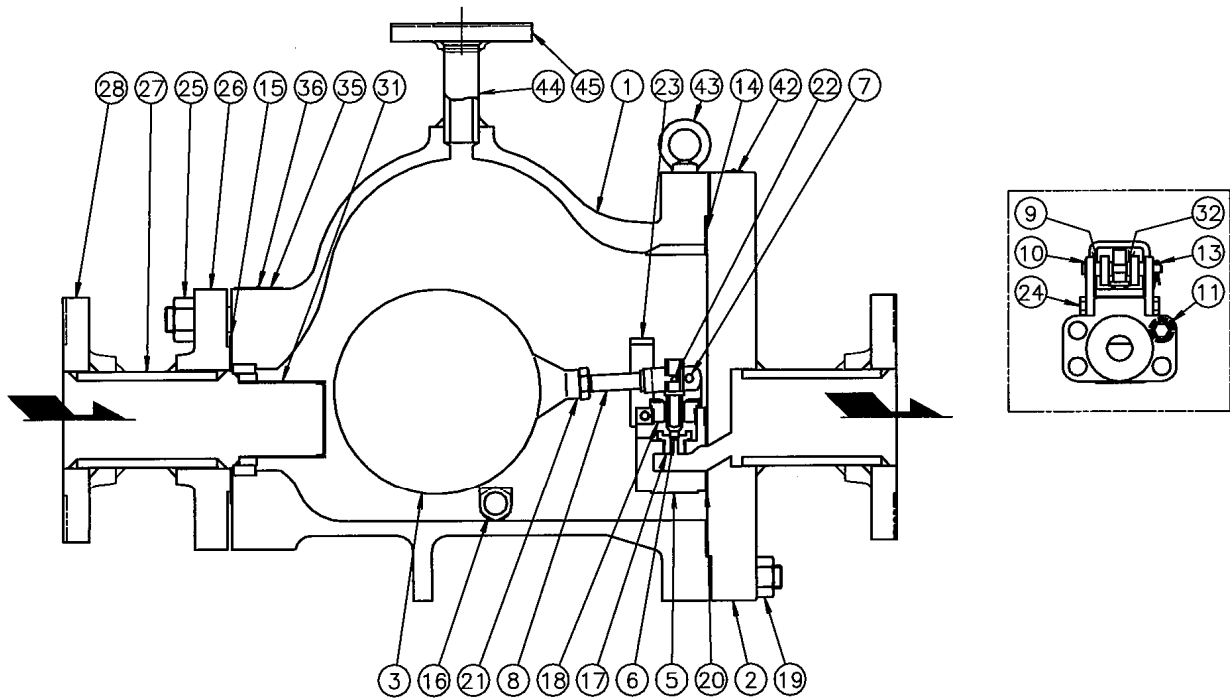
Fluid group 2



The model AGH50 fully complies with the requirements of the European Pressure Equipment Directive 2014/68/EU. It belongs to the category II of the PED.

The product will carry the CE marking and the conformity with the PED will be confirmed by issuing a declaration of conformity.

## 2 CONSTRUCTION DETAILS



- |                  |                            |                     |
|------------------|----------------------------|---------------------|
| 1. Body          | 15. Connection Gasket      | 26. Flange          |
| 2. Cover         | 16. Body Plug              | 27. Reducer or Pipe |
| 3. Float         | 17. Valve Seat             | 28. Flange          |
| 5. Holder        | 18. Bush                   | 31. Screen          |
| 6. Valve         | 19. Cover Bolts, Nuts      | 32. Spacer          |
| 7. Pin           | 20. Holder Gasket          | 35. Name Plate      |
| 8. Lever         | 21. Nut                    | 36. Rivet           |
| 9. Collar        | 22. Pin                    | 42. Plate           |
| 10. Washer       | 23. Stopper                | 43. Eye Bolt        |
| 11. Holder Bolt  | 24. Bolt                   | 44. Pipe            |
| 13. Pin          | 25. Connection Bolts, Nuts | 45. Flange          |
| 14. 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.



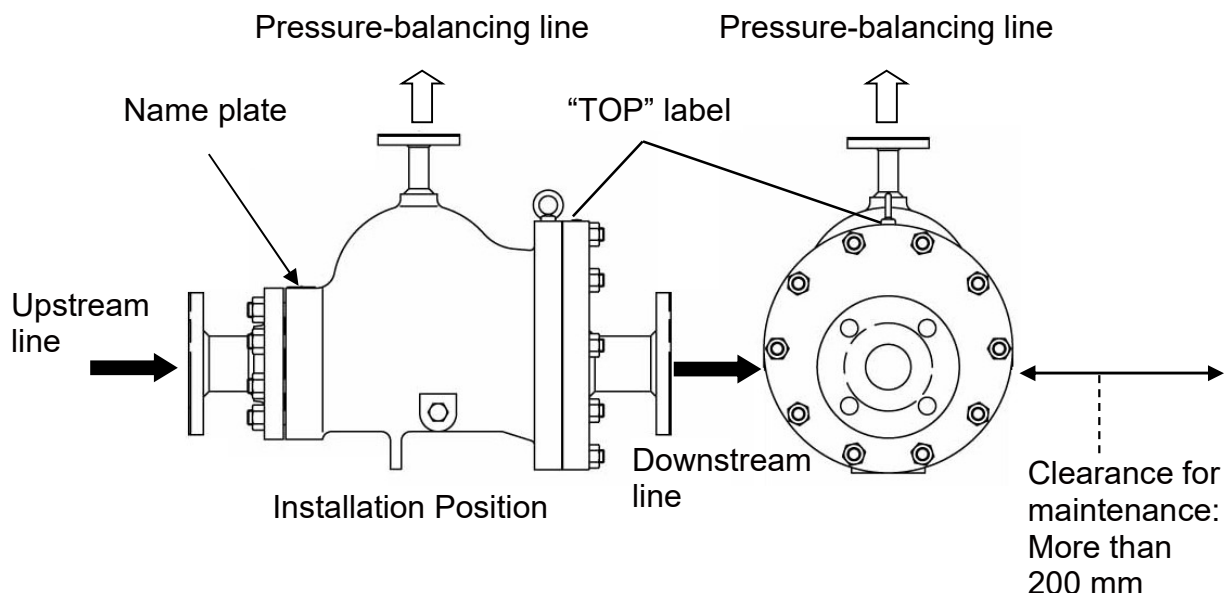
#### CAUTION

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.

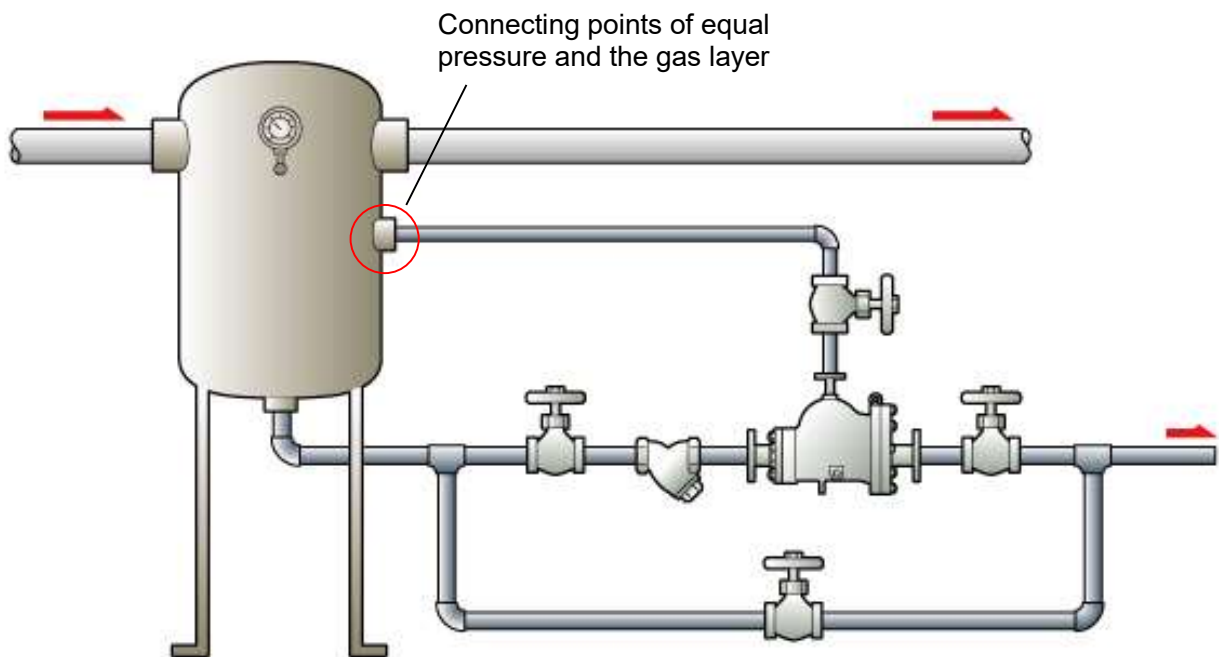
- (1) Remove the dustproof seals covering both connections.
  - (2) Check the flow direction indicated on the side of the body.
  - (3) When installing an AGH50, install it so that the flow from the upstream line to the downstream line is horizontal and the "TOP" label or the name plate is on the top side of the body. Install the AGH50 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.

#### AGH50 model

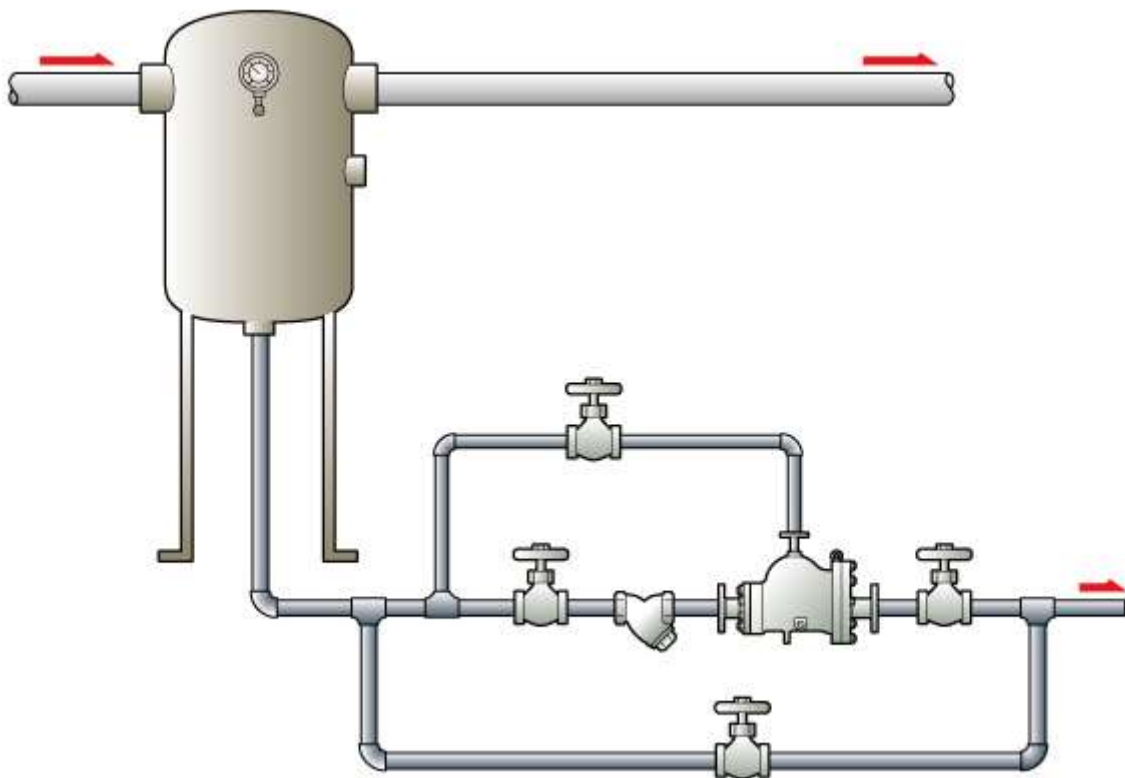


## How to install the pressure-balancing lines

### 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 and 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. Below are steps to disassemble a failed trap.

#### 4.1.1 Disassembling the trap

- 1) Remove the cover (2) by taking off the nuts (19) from the body (1). The internal parts are installed on the cover (2).
- 2) Remove the holder bolt (11) to remove the inner unit and holder gasket (20) from the cover (2).
- 3) Clean the internal parts. Handle the valve (6) and valve seat (17) with care. Avoid scratching or dropping the parts.
- 4) Use fine sandpaper, non-woven polishing or waste cloth to remove any scale or rust found on the valve (6) or valve seat (17).

#### 4.1.2 Removing the screen

- 1) Remove the connection flange by taking off the nuts (25) from the body (1).
- 2) Remove the screen (31).
- 3) Clean the screen (31).

**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 cover gaskets (14), connection flange (15) and gasket (20) are replaced with new.
- 2) When removing rust and rubbish form 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 dirty is stuck between the gasket and the gasket seat surface.

### 4.1.4 Installing the screen

- 1) After cleaning, install the screen (31) back into the body (1).
- 2) If the screen is found damaged, replace it with new.

### 4.1.5 Reassembling the trap

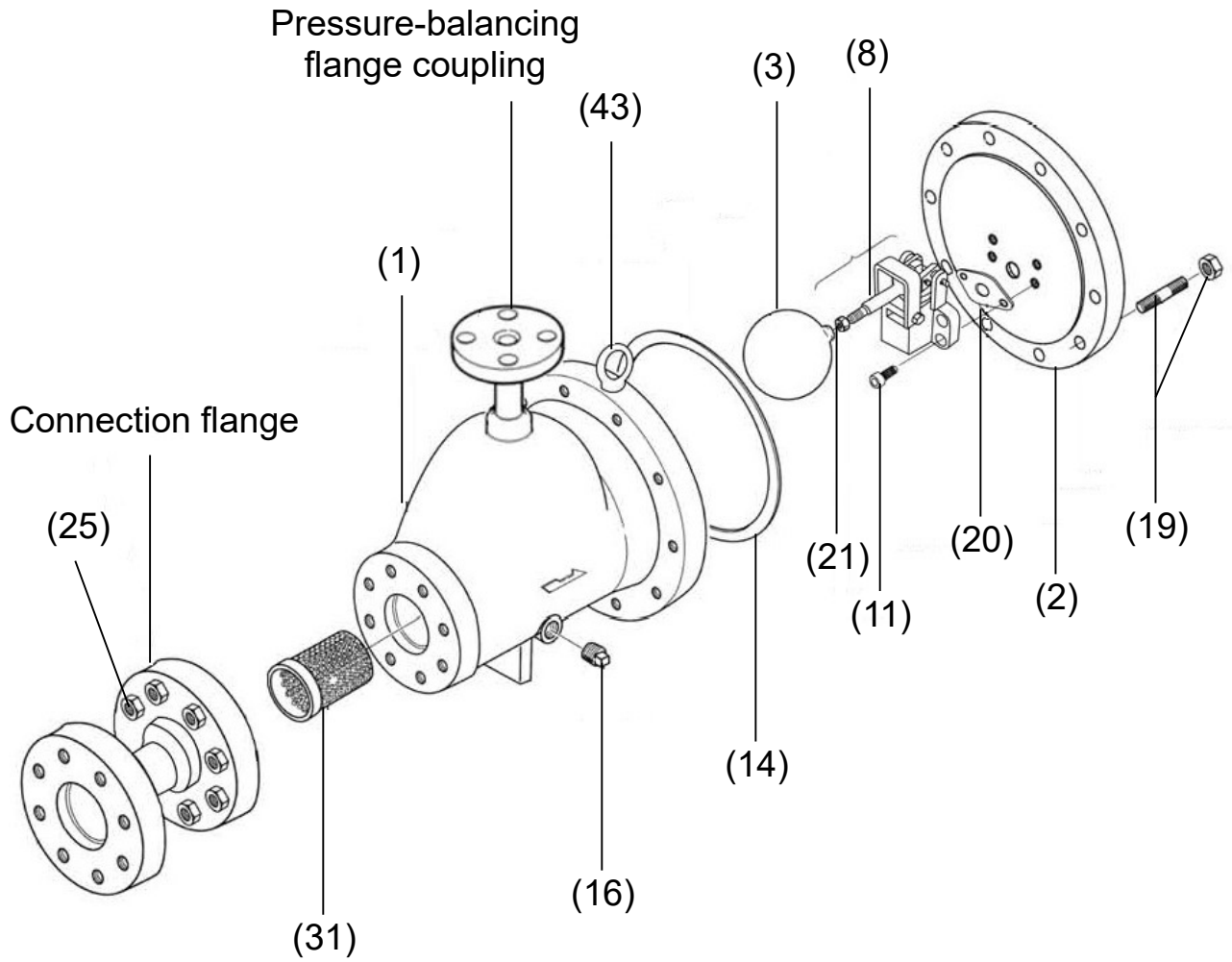
- 1) Set the holder gasket (20) on the cover (2) and install the inner unit after the holder gasket (20).
- 2) Tighten the holder bolt (11) to secure the inner unit on the cover (2).
- 3) Set the cover gasket (14) on the body.
- 4) Attach the cover (2), with the installed inner unit, to the body (1) in the way that the "TOP" label is facing the top. Secure it by tightening with 10 nuts (19).
- 5) Set the connection gasket (15) on the body.
- 6) Attach the connection flange to the body (1) and secure it by tightening with 8 nuts (25).
  - 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.

Parts	Tools	Across the flats	Torque
Bolt (11)	Torque wrench	8mm (0.31")	50N·m
Nut (19)	Torque wrench	22 mm (0.87")	100N·m
Nut (25)	Torque wrench	24 mm (0.94")	120N·m
Nut (21)	Spanner wrench	-	30N·m



# AGH50 model



- |     |              |     |                        |
|-----|--------------|-----|------------------------|
| 1.  | Body         | 16. | Body Plug              |
| 2.  | Cover        | 19. | Cover Bolts, Nuts      |
| 3.  | Float        | 20. | Holder Gasket          |
| 8.  | Lever        | 21. | Nut                    |
| 11. | Holder Bolt  | 25. | Connection Bolts, Nuts |
| 14. | Cover Gasket |     |                        |

## 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 holder gasket (20) is damaged.	Replace gasket.
		The holder bolt (11) is loose.	Retighten the holder bolt.*1
		Wrong installation position	Change the installation so that the name plate is on the top side of the body.
		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 nuts are loose.	Retighten them.*2
		Damage, erosion or deterioration of the cover gasket	Replace the cover gasket.
		Damage, erosion or deterioration of the cover gasket (14)	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 flange</b>	The Connection nuts are loose.	Retighten them.*3
		Damage, erosion or deterioration of the connection gasket	Replace the connection gasket.
		The gasket sealing surface on the body or connection flange is damaged.	Replace the body with a new one, or replace the connection flange.
	<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.
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, \*2and \*3: 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) Extremely worn gaskets or other parts
- 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**

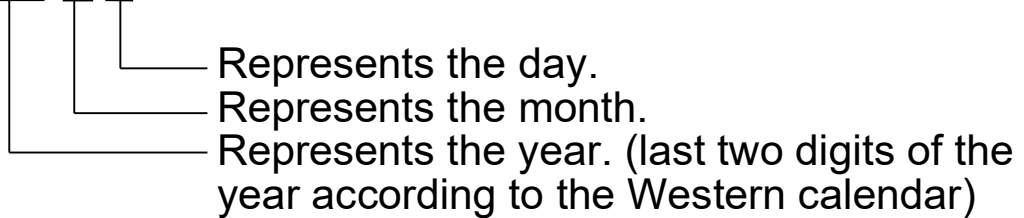
The remedy available under the warranty shall not exceed the sales price of the products delivered, for any cause whatsoever.

## 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. □□□□



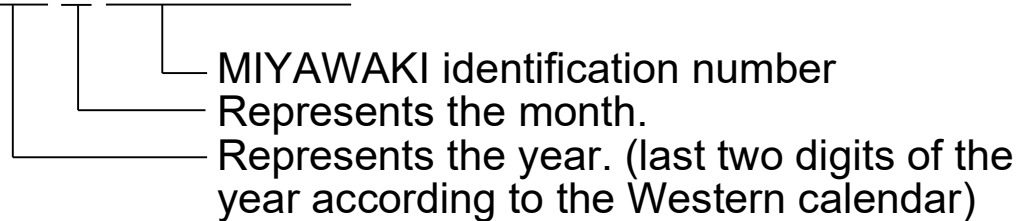
Example of serial number designation

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 (only for Gas Trap)
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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