

**DOUBLE-PORTED BALANCE-VALVE  
BALL FLOAT STEAM TRAP**

# **GWH70**

---

**USER'S MANUAL**



 **MIYAWAKI INC.**

# SAFETY



## WARNING

The MIYAWAKI GWH70 is a cast steel ball float steam trap with an integrated bimetal automatic air vent.

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.

## Table of Contents

---

1. SPECIFICATIONS AND MARKINGS	1
2. CONSTRUCTION DETAILS	2
3. INSTALLATION	4
4. OPERATION	5
5. MAINTENANCE	6
6. TROUBLESHOOTING	10
7. WARRANTY	11
8. SERIAL NUMBER (S.No.) DESIGNATION	12
9. GUIDANCE FOR READING SPECIAL PRODUCT NAME	13

# 1 SPECIFICATIONS AND MARKINGS

---



## WARNING

**Be sure not to use this product at higher pressures than the specified design pressure or at temperatures higher than the specified design temperature.**

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): 6.5MPa (943 psig)
- (2) Maximum allowable temperature (TMA): 425°C (797°F)
- (3) Maximum operating pressure (PMO): 6.5MPa (943 psig)
- (4) Maximum operating temperature (TMO): 425°C (797°F)
- (5) Size: 40mm (1 1/2"), 50mm (2")
- (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: Cast Steel WCB.

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

Classification according to PED 2014/68/EU

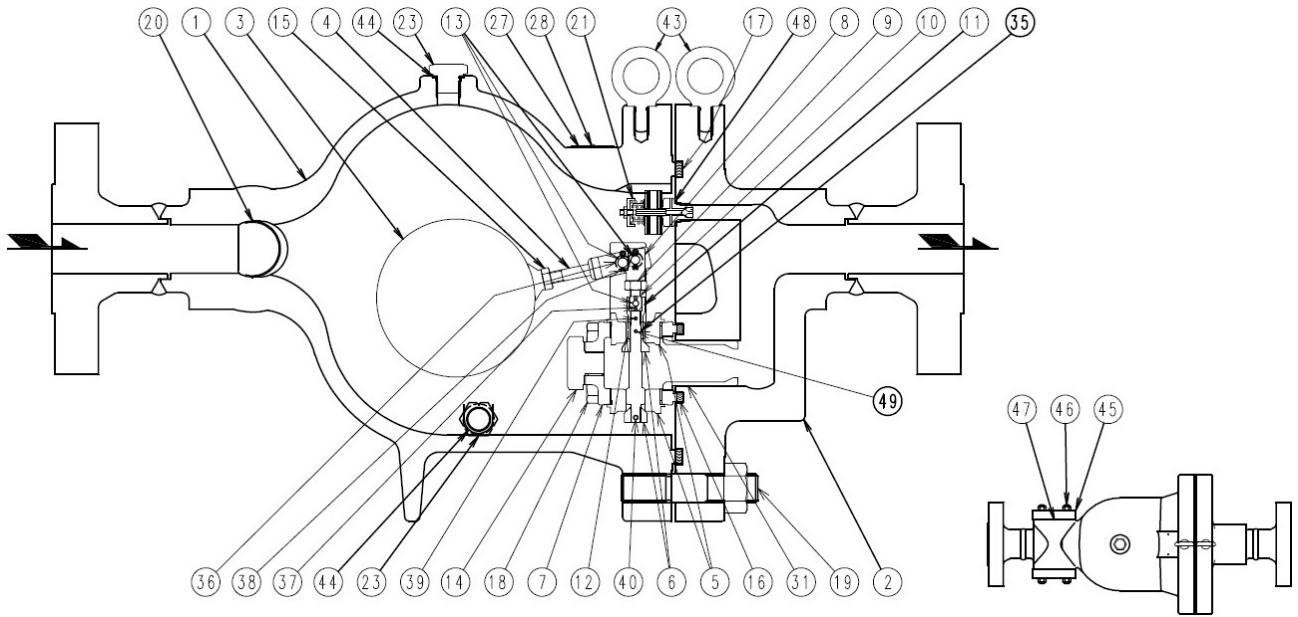
Fluid group 2 gases

Classification: Category II additionally marked as follows.

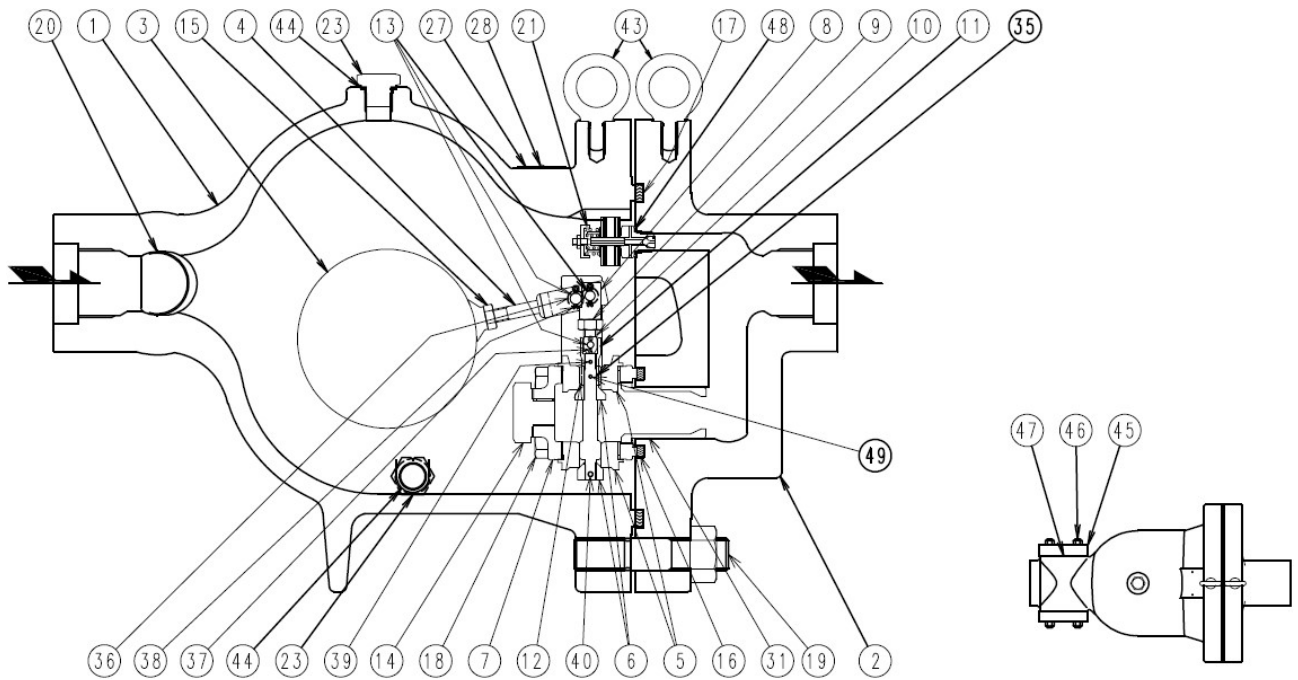


## 2 CONSTRUCTION DETAILS

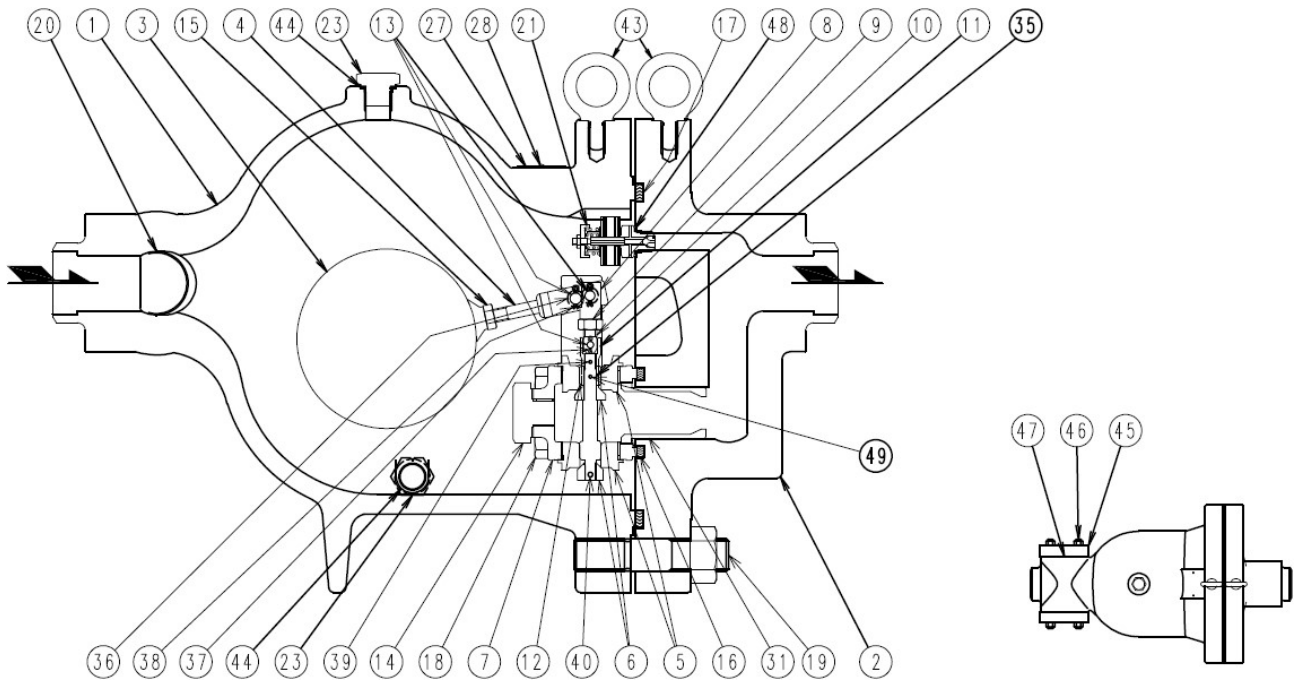
### GWH70-F



### GWH70-W



# GWH70-BW



- |                |                     |                           |
|----------------|---------------------|---------------------------|
| 1. Body        | 16. Holder Gasket   | 40. Spring Pin            |
| 2. Cover       | 17. Cover Gasket    | 43. Eyebolt               |
| 3. Float       | 18. Holder Bolt     | 44. Plug Gasket           |
| 4. Lever       | 19. Cover Bolt, Nut | 45. Screen Cover          |
| 5. Valve Seat  | 20. Screen          | 46. Screen Cover Bolt/Nut |
| 6. Valve       | 21. Air Vent        | 47. Screen Cover Gasket   |
| 7. Holder      | 23. Plug            | 48. Air Vent Gasket       |
| 8. Lever Nut   | 27. Name Plate      | 49. Spring Pin            |
| 9. Nut         | 28. Rivet           |                           |
| 10. Connector  | 31. Pipe            |                           |
| 11. Nut        | 35. Valve Shaft     |                           |
| 12. Guide Wing | 36. Collar          |                           |
| 13. Pin        | 37. Split Pin       |                           |
| 14. Plug       | 38. Split Pin       |                           |
| 15. Nut        | 39. Spring Pin      |                           |

### 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.

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

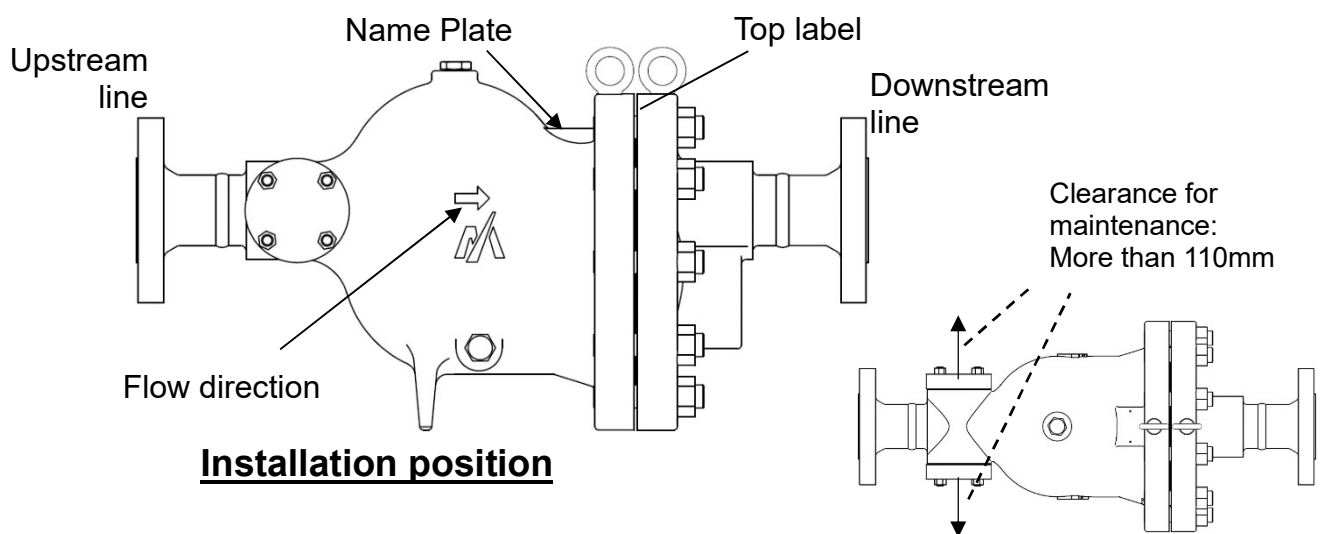


#### CAUTION

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 a GWH70, install it so that the flow from the upstream line to the downstream line is horizontal. Install the GWH70 at the end of a pipe that is angling down, so that condensate flows into the steam trap easily.
- Open the isolation valve on the upstream line slowly and make sure the product works normally.



## **4 OPERATION**

---



### **CAUTION**

**Before starting operation, open the bypass valve or blow valve completely and blow off the scale in the piping.**

#### **4.1 Operation procedure**

- 1) After blowing off the scale from the piping, close the bypass valve or blow valve.
- 2) Open the stop valve on the trap outlet side.
- 3) Open the stop valve on the trap inlet side.

#### **4.2 Stop procedure**

- 1) Close the stop valve on the trap inlet side.
- 2) Close the stop valve on the trap outlet side.

\* When stopping for a long time, completely drain the condensate from the piping and trap and close the valves before and after the trap.

## 5 MAINTENANCE

---



### CAUTION

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

The performance of steam traps deteriorates gradually over time due to wear, corrosion or dirt accumulating around the valve and the valve seat. Please conduct periodic diagnosis of traps in order to keep steam control systems and equipment working well.

### 5.1 Tools for Diagnosis Steam Traps

#### ■ Dr. Trap

It is a diagnostic tool with hardware (diagnostic equipment) that performs automatic diagnosis at high speed (maximum 10 seconds) and exclusive aggregate analysis software from the vibration and temperature information of the trap.

Diagnostic information is recorded in the diagnostic equipment and data can be transferred to the software. As a result, high-speed aggregate analysis, quantitative grasp of steam leakage and loss amount are possible.

#### ■ Dr. Trap Jr.

It is an inexpensive and simple diagnostic tool using hardware (steam trap checker) with vibration sensor, temperature sensor and exclusive aggregate analysis software.

From the vibration and temperature information of the trap, the judgment such as good or fail is made by a diagnostician. By inputting the vibration value detected by the steam trap checker to the aggregate analysis software, it is possible to quantitatively grasp the amount of steam leakage and money loss.

#### **Caution:**

Even if both diagnostic tools are used, accurate diagnosis results may not be obtained depending on the location and installation status of the steam trap, or the type and operating condition of the steam trap.

For details, please contact MIYAWAKI, our local authorized agent, or the place where you purchased.



## 5.2 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.

### 5.2.1 Disassembling the trap

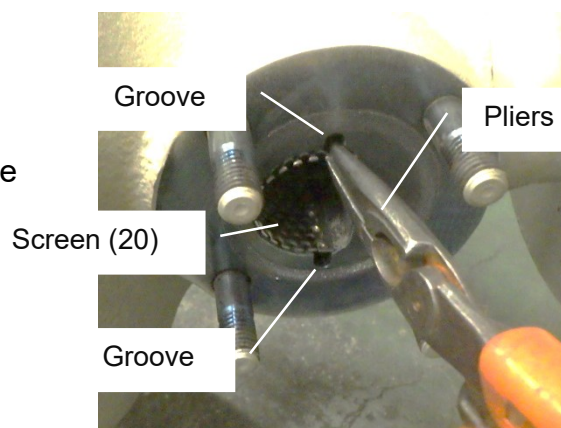
- 1) Remove product from plumbing.
- 2) Loosen the cover nuts (19) and remove the body (1).
- 3) The internal unit is secured to the cover (2). Remove the holder bolts (18), and then remove the valve unit connected to the float (3).
- 4) Secure the lever (4) with a wrench or similar device. Then loosen the nut (15) and rotate the float (3) by hand to remove it.

### 5.2.2 Disassembling the air vent

- 1) Remove the air vent (21) from the cover (2).
- 2) Do not disassemble the air vent (21).

### 5.2.3 Disassembling the screen

- 1) Loosen the screen cover nuts (46) and remove the screen cover (45).
- 2) Remove the screen (20) using needle nose pliers or the like.
- 3) Clean the screen (20).  
(It is not necessary to remove the screen cover (45) on the opposite side.)



Take the appropriate measures, as described in Section 6, "Troubleshooting".

Reassemble the parts as follows, reversing the procedure used to disassemble them.

Refer to the torque table to learn the correct torque for each part.

Replace the cover gasket (17), the holder gasket (16), the screen cover gaskets (47), the plug gaskets (44) and the air vent gasket (48) with new ones.

Clean the body (1), cover (2), holder (7) and screen cover (45) with care not to damage the sealing surfaces. Scratches on the sealing surfaces may cause leakage.

#### **5.2.4 Reassembling the screen**

- 1) Insert the screen (20) into the body (1) while squeezing it slightly.
- 2) Attach the screen cover (45) and the screen cover gasket (47) to the body (1).
- 3) Tighten the screen cover (45) with the screen cover nuts (46).

#### **5.2.5 Reassembling the air vent**

- 1) Attach the air vent gasket (48) to the cover (2).
- 2) Secure the air vent (21) to the cover (2).
- 3) Do not disassemble the air vent (21).

#### **5.2.6 Reassembling the trap**

- 1) Connect the float (3) to the valve unit.
- 2) Attach the holder gasket (16) to the cover (2).
- 3) Secure the valve unit to the cover (2). In this case, make sure that the holder gasket (16) is fitted. Tighten it with the holder bolts (18).
  - Make sure to tighten the nuts in a crosswise pattern, to avoid uneven tightening.
- 4) Attach the cover gasket (17) to the cover (2) and attach the body (1) to the cover (2). Make sure that the cover gasket (17) is installed in the right place. Tighten the cover (2) with the cover nuts (19).
  - Finally, tighten the bolts in a crosswise pattern to avoid uneven tightening.



## 6 TROUBLESHOOTING

Problem		Possible cause	Solution
<b>Steam leaks or blows through.</b>		Foreign material such as scale or dirt is stuck between the valve, the valve seat, and the holder of the valve unit.	Disassemble the valve unit and remove the material.
		The valve, the valve seat and/or the holder are damaged, worn or corroded.	Replace the valve unit.
		The float is damaged.	Replace the float.
		The threads on the valve seat or holder in the valve unit are loose.	Replace the valve unit.
		The holder bolt is loose.	Retighten the bolt. *1
		The holder gasket is damaged.	Replace the holder gasket.
		Foreign material such as scale or dirt stuck on the air vent.	Disassemble the air vent unit and remove the material.
		The air vent is loose.	Retighten the air vent. *1
		The seating surfaces on the valve or the valve seat in the air vent is damaged, worn or corroded	Replace the air vent.
		Wrong installation position	Change the installation so that the top label or 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.
		Drain is less than designed capacity.	Replace the trap with another capacity trap.
<b>Steam leaks from the body.</b>	<b>between the body and cover</b>	The cover bolts are loose.	Retighten them. *1
		Damage, erosion or deterioration of the cover gasket	Replace the cover gasket.
		The gasket sealing surface on the body or cover is damaged.	Replace the body with a new one, or replace the cover.
	<b>between the body and plug</b>	The plug is loose.	Retighten the plug.
		The 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>		The screen is clogged.	Clean the screen.
		Foreign material such as a scale or dirt is stuck in the valve seat.	Clean the valve seat.
		Foreign material such as a scale or dirt is stuck in flow route in the body and/or cover.	Clean the body and/or cover.
		The float is damaged.	Replace the float.
		The air vent is damaged.	Replace the air vent.
		Wrong installation position	Correct the installation position.
		The steam pressure is 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: Refer to the torque table in Section 5, "Maintenance" to retighten the parts to the correct torque.

## **7 WARRANTY**

---

### **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 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

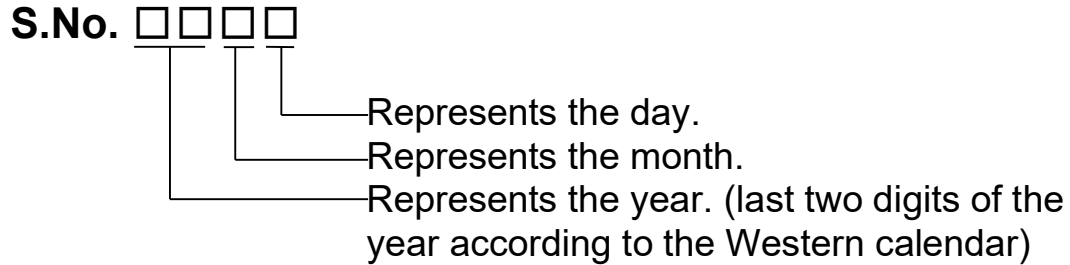
### **7.3 Warranty limitation**

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

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

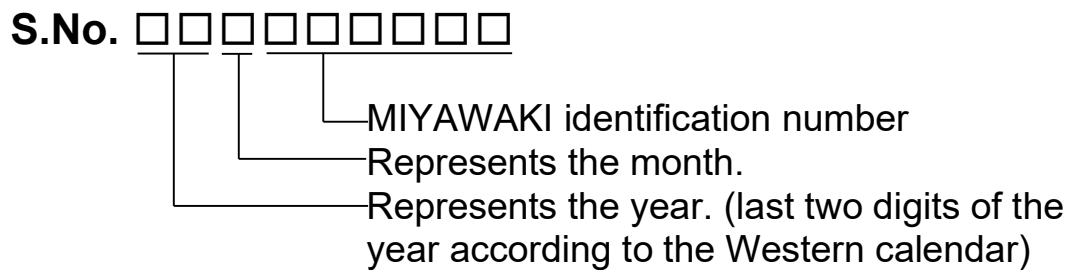
The following 4-digit or 9-digit 'S. No.' is displayed on the product.

- 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

## 9 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

- 
- For any questions about the product that you purchased or about the details in this user's manual, please contact the following.
  - © 2023 MIYAWAKI INC.  
This user's manual may not be reproduced or copied in whole or in part, without the written consent of MIYAWAKI INC.
  - Some special specifications of the product 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.
  - 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.
-





If you need any assistance regarding this manual, please contact MIYAWAKI INC.'s International Sales Dept. or its local representative. By scanning QR Code, you can access inquiry form.



**INTERNATIONAL SALES DEPT.**  
2-1-30, Tagawakita, Yodogawa-ku, Osaka, 532-0021, Japan  
Tel: +81-6-6302-5549  
[www.miyawaki-inc.com/en](http://www.miyawaki-inc.com/en) e-mail: [export@miyawaki-inc.co.jp](mailto:export@miyawaki-inc.co.jp)

EU Importer and Authorized representative:



Birnbaumsmühle 65, 15234 Frankfurt (Oder), Germany  
Tel: +49-335-4007-0097  
[www.miyawaki.de](http://www.miyawaki.de) e-mail: [info@miyawaki.de](mailto:info@miyawaki.de)

China Importer and Authorized representative:



Room 902, Building 8, Huaqing Chuangzhi Park, No.3 Qingyan Road, Huishan District,  
Wuxi City Jiangsu Province, China  
Tel: +86-510-8359-5125  
[www.miyawaki-inc.com.cn](http://www.miyawaki-inc.com.cn) e-mail: [mywkwest@miyawaki-inc.com.cn](mailto:mywkwest@miyawaki-inc.com.cn)

808139-00 2308

**GWH70**