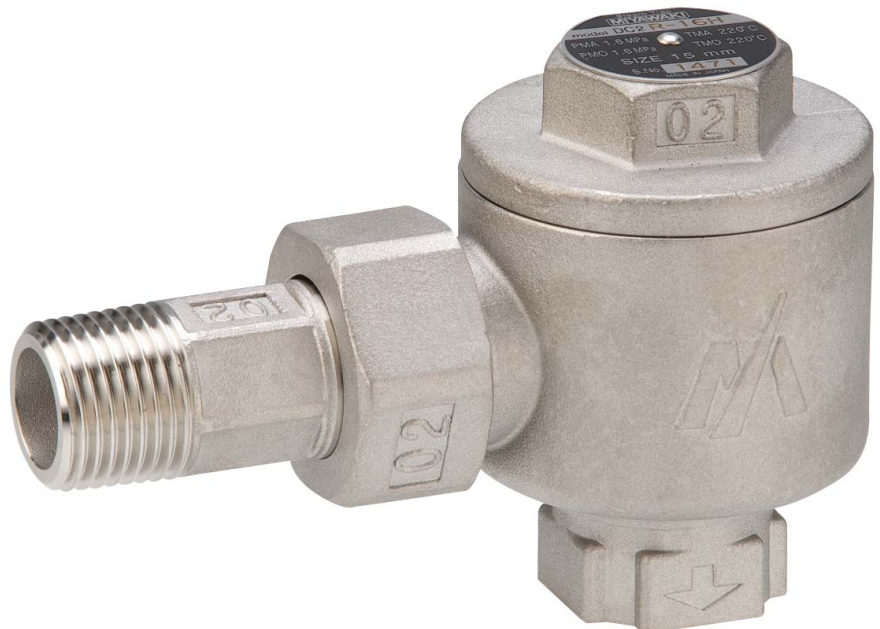


BALANCED PRESSURE THERMOSTATIC STEAM TRAP

DC2/DC2R

USER'S MANUAL



 **MIYAWAKI INC.**

SAFETY GUIDE

The model DC2/DC2R that is all stainless steel and has superior durability and corrosion resistance is a balanced pressure thermostatic steam trap. An orifice is provided in the lower of the body (DC2R), so condensate will not remain in the trap body.

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	3
4. MAINTENANCE	5
5. TROUBLESHOOTING	8
6. WARRANTY	9
7. SERIAL NUMBER (S. No.) DESIGNATION	10
8. GUIDANCE FOR READING SPECIAL PRODUCT NAME	11

1 SPECIFICATIONS AND MARKINGS



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).

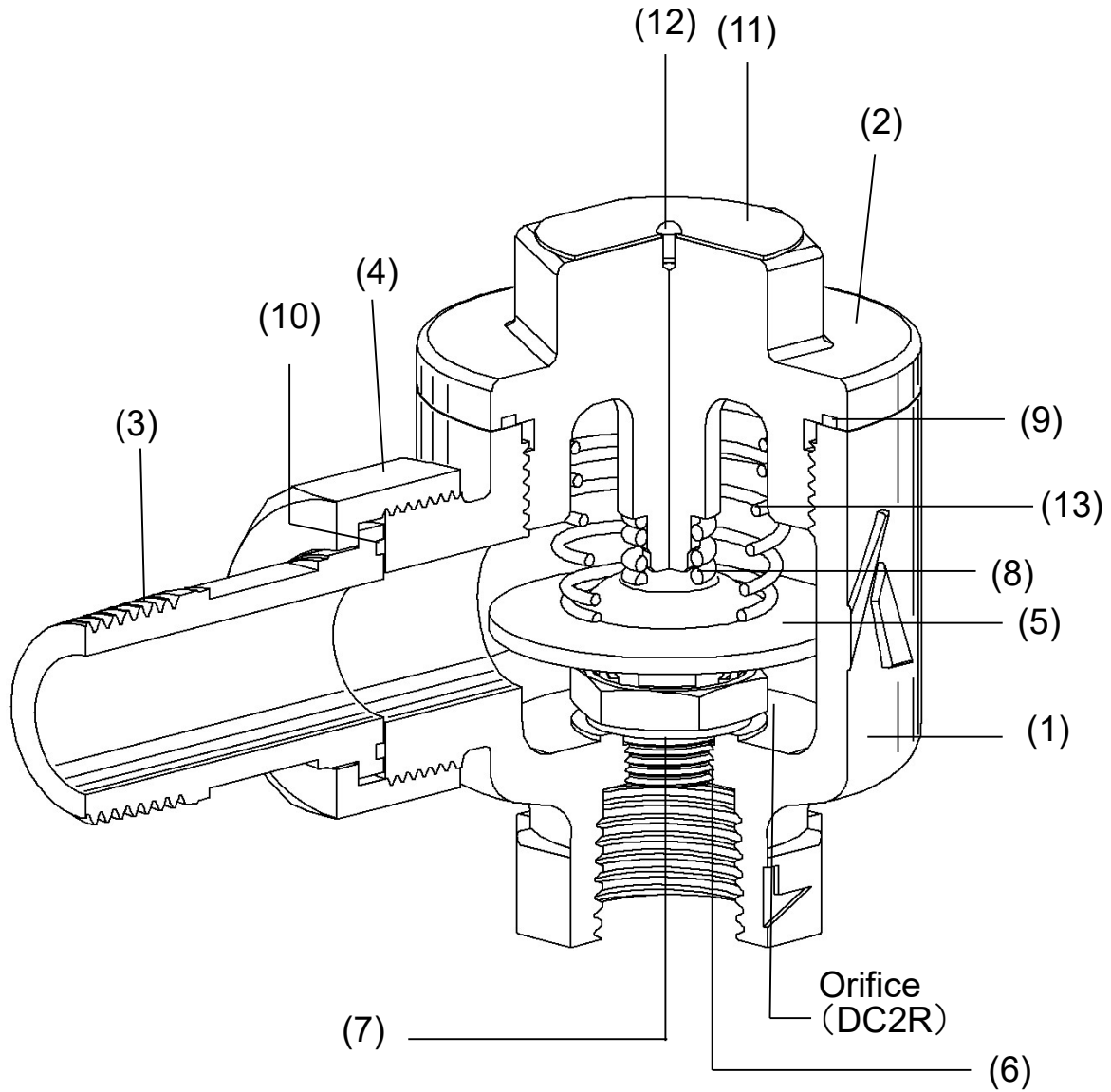
The following items are displayed on the name plate or the side of the product.

Check each item to avoid misuse of the product.

- (1) Maximum allowable pressure (PMA): 1.6MPa (230psig) @220°C(428°F)
- (2) Maximum allowable temperature (TMA): 220°C (428°F) @ 1.6MPa (230psig)
- (3) Maximum operating pressure (PMO): 1.6MPa (230psig)
- (4) Maximum operating temperature (TMO): 220°C (428°F)
- (5) Size: 15mm(1/2")
- (6) S. No.: Showing the year and date of production
- (7) Flow direction: Shown by an arrow.
- (8) Body material: Stainless Steel SCS13A
- (9) Model name: Showing the product model name

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

2 CONSTRUCTION DETAILS



- | | |
|-------------------|-------------------|
| 1. Body | 8. Spring |
| 2. Cover | 9. Cover gasket |
| 3. Nipple | 10. Nipple gasket |
| 4. Union nut | 11. Name plate |
| 5. Thermo element | 12. Rivet |
| 6. Valve seat | 13. Spring |
| 7. Seat gasket | |

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.

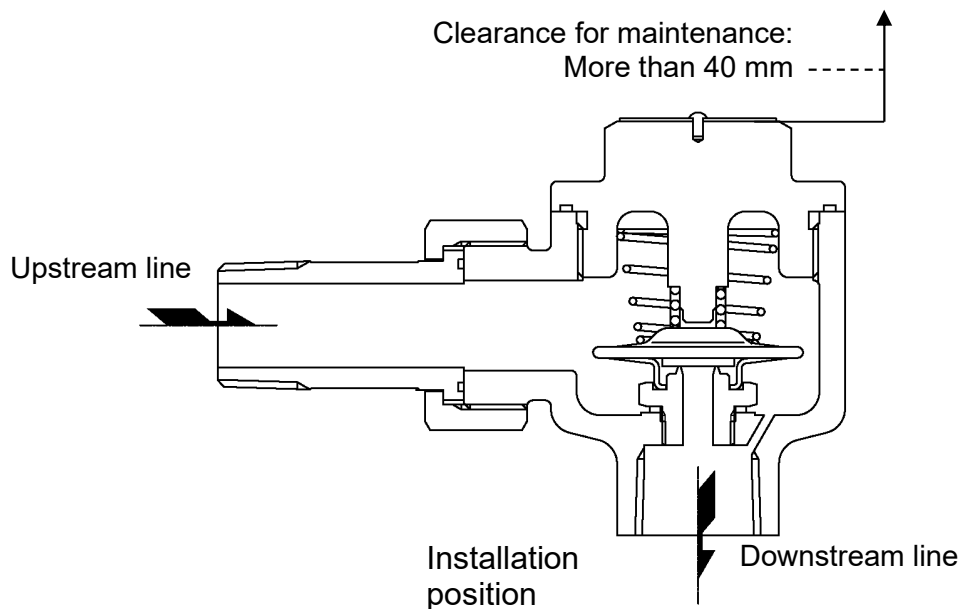
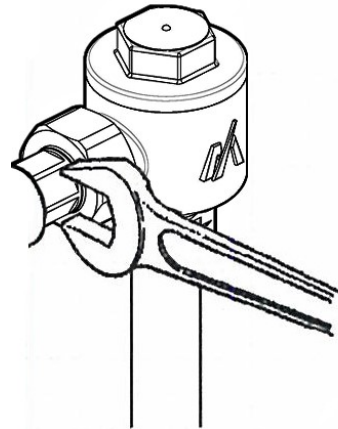
- (1) Remove the dustproof seals covering both connections.
- (2) Check the flow direction indicated on the side of the body.
- (3) When installing the DC2/DC2R, the name plate must be either facing upward or at an angle (less than 90°). The name plate must not be facing down.

EXPLANATION:

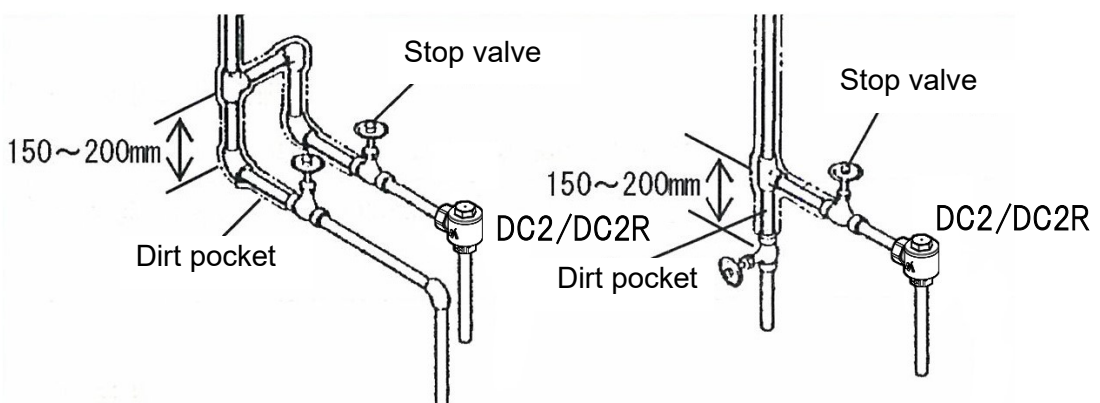
Correct installation allows the orifice be in the lowest position. If not, small amount of condensate will remain in the trap body.

- (4) Slope a line down with a 1/200 grade or so in the direction of flow, so that any condensate will flow by gravity into the steam trap.
- (5) Install dirt pockets (Refer to the plumbing example) or Y-strainers in places where there are lots of dirt or scale present.

- (6) This steam trap that is temperature sensing type utilizes heat in the condensate. So do not insulate the trap body.
- (7) A nipple thread is provided so that you can easily install it with a wrench or a monkey wrench. The dimensions of across the flats of hex nipple are 19 mm.
- (8) Open the isolation valve on the upstream line slowly and make sure the product works normally.



Plumbing example



4 MAINTENANCE



CAUTION

- When replacing parts, make sure the replacement parts are supplied by Miyawaki.
- Before removing the trap from the line or disassembling it, release the remaining pressure in the trap body (check whether the pressure in the trap body is equal to the atmospheric pressure), and let it cool down (check whether the surface temperature of the body is at room temperature). Then, make a safety check and start the maintenance operation. If there is any pressure or temperature in the trap body, you may be seriously burned due to the venting of steam or condensate.

The performance of steam traps 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 steam 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

- 1) Remove the cover (2).
- 2) Remove the thermo element (5), and remove the valve seat (6) with a torque wrench.
- 3) And then remove the seat gasket (7).

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) Attach the seat gasket (7) to the body (1), and tighten the valve seat (6). And then, apply a small amount of anti-seize & lubricating compound to the thread of valve seat (6). The gasket seat or the gasket surface must be handled carefully not to get dirt or damaged during attaching.
- 2) Attach the thermo element (5) to the valve seat (6). Then, make sure the thermo element (5) is properly installed. (Refer to Section 2, "Construction Details".)
When the thermo element (5) is tilting, it is possible that the bottom metal part of the thermo element is not fitted properly in the valve seat.
- 3) Attach the cover gasket (9) to the cover (2) that springs (8) and (13) are installed.

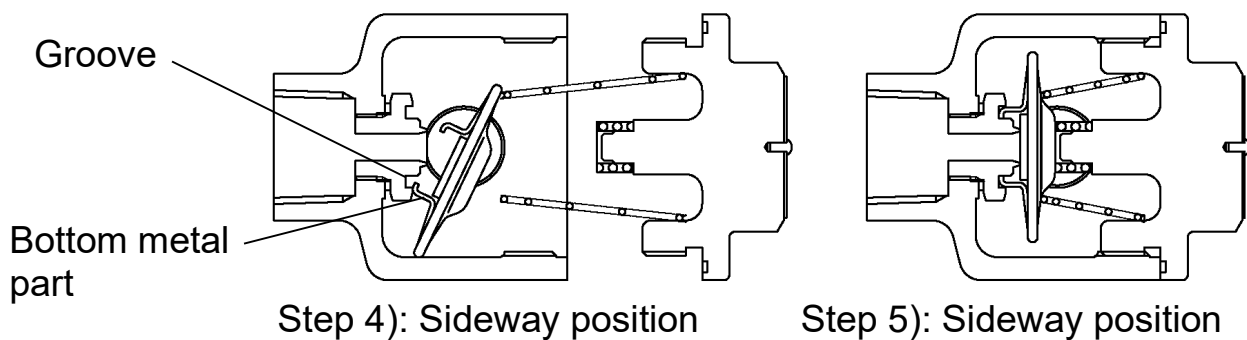
You can use most parts of the disassembled parts as reusable parts. But check springs (8) and (13) or the cover gasket (9) for distortion or damage, and then replace it with a new one if necessary. The cover gasket should be handled not to damage the gasket groove during removing. When reassembling the cover gasket, pay attention not to damage the gasket surface.

- 4) Screw the cover (2) into the body (1) securely.
Apply a small amount of anti-seize & lubricating compound to the thread.
- 5) Tighten the cover (2) to the correct torque.

Precautions when reassembling the trap in the sideways position

When reassembling the trap in the sideways position, perform the following steps. Steps 1)-3) and 5) are the same as in the normal position.

- 4) Tighten the cover (2) into the body (1) securely by hand only.
If all internal parts are in their proper place, it is easy to tighten the cover (2) into the body (1) fully by hand.
If not, remove the cover (2), and make sure the thermo element (5) is installed properly. After that, tighten the cover (2) into the body (1) securely by hand.
(When reassembling the trap in the sideways position, it is possible that the thermo element (5) has fallen down inside the body before installing the cover (2).
In this case, press the thermo element (5) lightly onto the valve seat (6) which holds the spring (13), and make sure that the bottom metal part of the thermo element fits properly in the valve seat. And then, tighten the cover (2) into the body (1) securely by hand.)

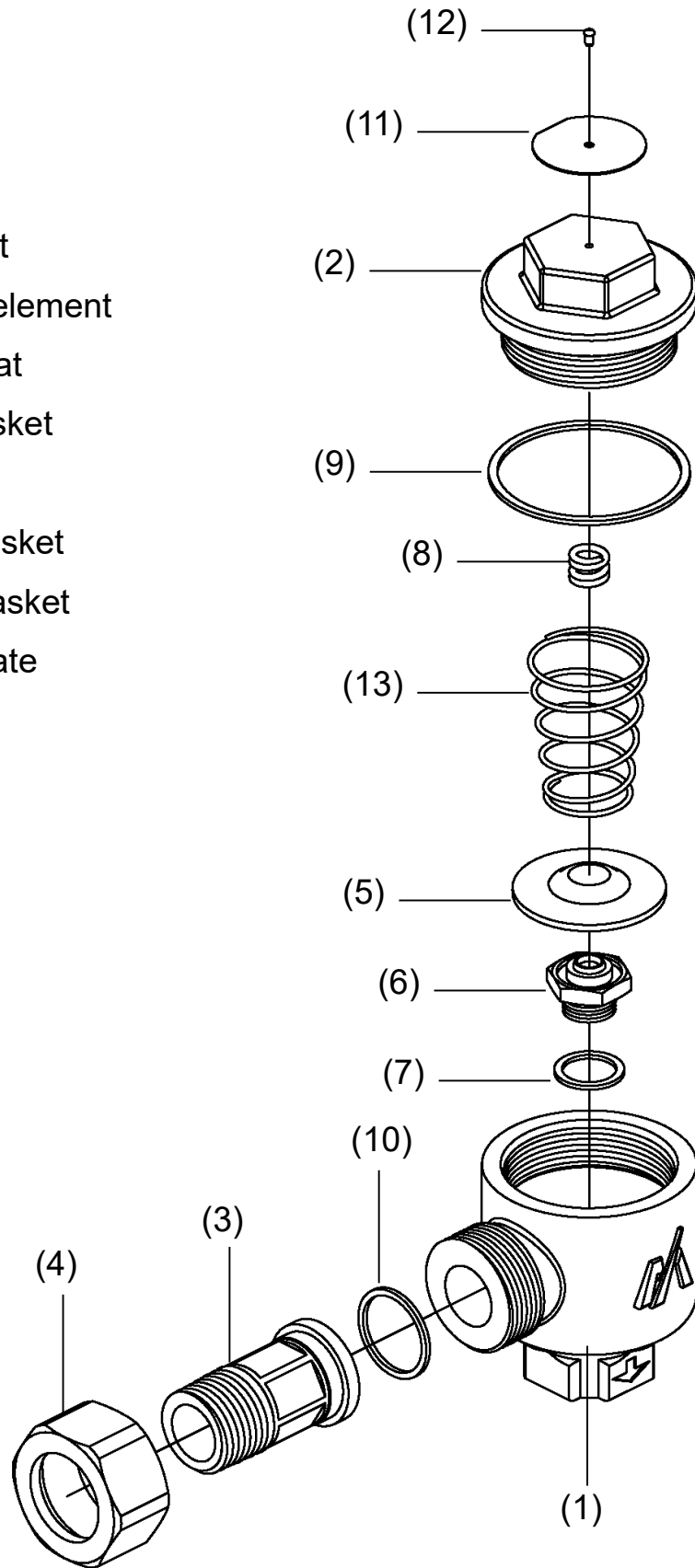


- The torque specifications are listed below to help you determine the correct tightness of parts.

Torque specifications

Parts	Tools	Across the flats	Torque
Cover (2)	Spanner (Wrench) Torque wrench	27mm (1.06")	70N·m
Valve seat (6)	Torque wrench	17mm (0.67")	25N·m
Union nut (4)	Spanner (Wrench)	32mm (1.26")	50N·m

1. Body
2. Cover
3. Nipple
4. Union nut
5. Thermo element
6. Valve seat
7. Seat gasket
8. Spring
9. Cover gasket
10. Nipple gasket
11. Name plate
12. Rivet
13. Spring



5 TROUBLESHOOTING

Problem	Possible cause	Solution
Steam leaks or blows through.	The steam flows from the orifice (DC2R) in the body (1).	Because the trap (DC2R) works correctly, there is no need to take an action.
	Dirt is stuck or caught around the thermo element (5) or the valve seat (6).	Clean the thermo element (5) or the valve seat (6)
	The thermo element (5) is damaged.	Replace the thermo element (5).
	The valve seat (6) is damaged.	Replace the valve seat (6).
	The valve seat (6) is loose.	Retighten the valve seat (6).*1
	The seat gasket (7) is damaged.	Replace the seat gasket (7).
	Wrong installation direction	Reinstall the product in the correct direction.
Steam leaks from between the body and body cover.	The cover (2) is loose.	Retighten the cover (2).*2
	Damage, erosion or deterioration of the cover gasket (9)	Replace the cover gasket (9).
	The gasket sealing surface on the body (1) or cover (2) is damaged.	Replace the body (1) or the cover (2).
Steam leaks from between the body and union nut.	The union nut is loose.	Retighten the union nut (4).*3
	The gasket sealing surface on the body (1) or nipple (3) is damaged.	Replace the body (1) or the nipple (3).
No condensate discharged, or insufficient condensate discharged.	Dirt is stuck or accumulated around the thermo element (5) or the valve seat (6).	Clean the thermo element (5) or the valve seat (6)
	The thermo element (5) is damaged.	Replace the thermo element (5).
	Insufficient condensate capacity.	Replace the trap with a larger capacity trap.

*1, *2 and *3: 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

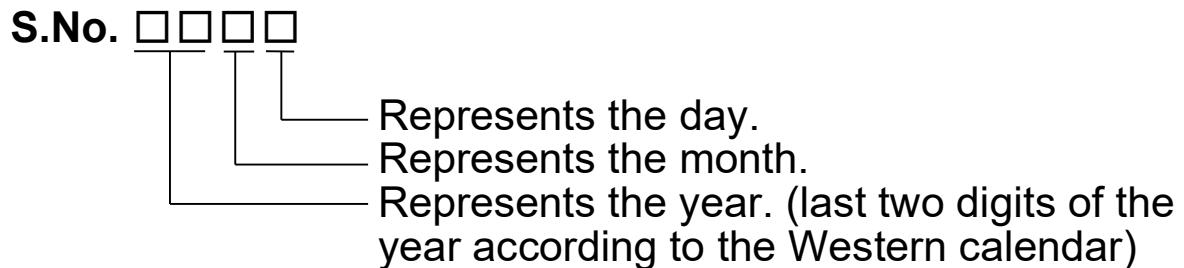
6.3 Warranty limitation

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

7 SERIAL NUMBER (S. No.) DESIGNATION

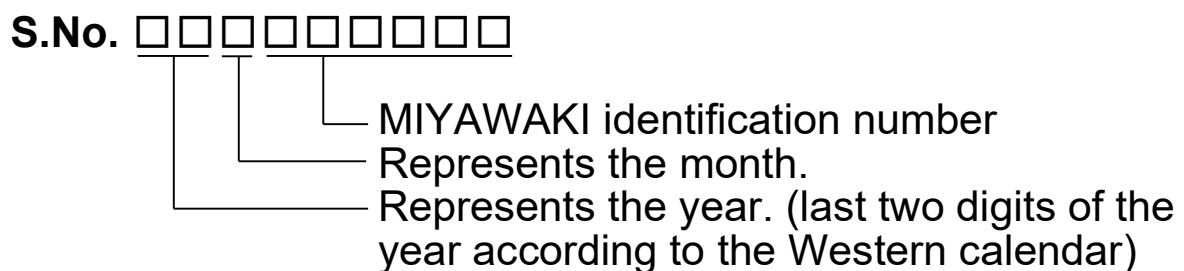
The following 4-digit or 9-digit 'S. No.' is displayed on the product.

- For 4-digit display



<p>Example of serial number designation</p> <p>1 7 1 1 → Jan.1, 2017</p> <p>2 9 X M → Oct. 21, 2029</p>

- For 9-digit display



<p>Example of serial number designation</p> <p>1 7 1 1 2 C 0 2 0 → Jan., 2017</p> <p>2 9 X 0 5 M 0 5 0 → Oct., 2029</p>

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

○○○-○○-□

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

-
- お買い上げの製品及びこの取扱説明書内容についてのご質問・お問い合わせ、またこの取扱説明書を紛失したり、汚損により読めなくなった場合の資料等のご請求は、お買い上げ頂いた販売店もしくは最寄の弊社ミヤワキへご連絡ください。
 - 特殊仕様の製品については、取扱説明書の内容と一部異なる場合があります。特殊仕様に関する取扱説明書内容についてのご質問は、お買い上げ頂いた販売店もしくは最寄の弊社ミヤワキまでお問い合わせください。
 - For any questions about the product that you purchased or about the details in this user's manual, please contact MIYAWAKI, our local authorized agent, or the place where you purchased.
 - 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.
 - © 2016 MIYAWAKI INC. All Rights Reserved.
This user's manual may not be reproduced or copied in whole or in part, without the written consent of MIYAWAKI INC.
-



お問い合わせ窓口

製品の使い方やアフターサポートなど、製品に関するお問い合わせは、右のQRコードから、最寄りの弊社事業所までご連絡ください。弊社事業所一覧(連絡先)は右のQRコードをスマートフォン、携帯電話等で読み取っていただくことでアクセスできます。



本社・工場

〒532-0021 大阪市淀川区田川北 2-1-30

Tel : 06-6302-5531(代)

www.miyawaki-inc.com



INTERNATIONAL SALES DEPT.

2-1-30, Tagawakita, Yodogawa-ku, Osaka, 532-0021, Japan

Tel: +81-6-6302-5549

www.miyawaki.net e-mail: export@miyawaki-inc.co.jp

EU Importer and Authorized representative:



Birnbaumsmühle 65, 15234 Frankfurt (Oder), Germany

Tel: +49-335-4007-0097

www.miyawaki.net e-mail: info@miyawaki.de

China Importer and Authorized representative:



Room 1705, No.1, Building, No.311, Yanxin Road, Huishan Economic Development Zone, Wuxi, Jiangsu, China

Tel: +86-510-8359-5125

www.miyawaki-inc.com.cn e-mail: mywkwest@miyawaki-inc.com.cn

808009-02 2301

DC2R/DC2