

UNIVERSAL STEAM TRAP  
**SU2-32U**

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USER'S MANUAL



# SAFETY GUIDE

The model SU2-32U is a universal steam trap which can be installed both vertically and horizontally.

The trap uses a universal connection and can be easily installed and removed by installing a connector to piping. The connection using two bolts reduces the time for installation and removal and makes maintenance easier.

Both the body and key parts are made of stainless steel, providing high corrosion resistance and durability.

When you install this product in piping, please use a universal trap connector (model UNC).

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).

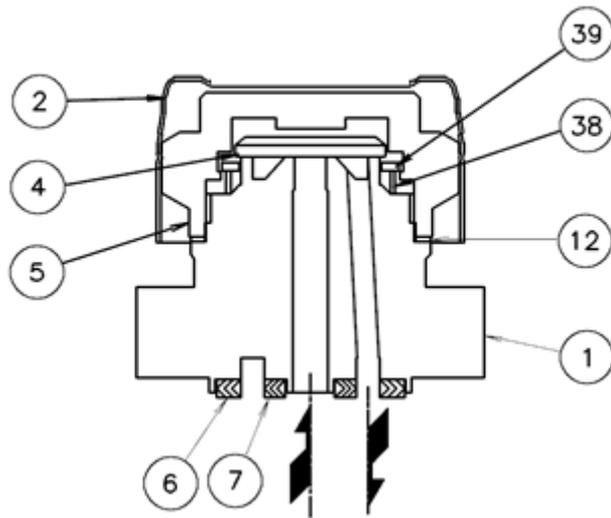
The following items are displayed on the drawing or the cover or the side of the product. Check each item to avoid misuse of the product.

- 1) Maximum allowable pressure (PMA): 3.2 MPa (464 psig)
  - 2) Maximum allowable temperature (TMA): 350 °C (662 °F)
  - 3) Maximum operating pressure (PMO): 3.2 MPa (464 psig)
  - 4) Maximum operating temperature (TMO): 350 °C (662 °F)
  - 5) Size
  - 6) Year of production: The two leftmost digits in the four-digit, six-digit or nine-digit "S. No." on the cover are the last two digits of the year of production.
  - 7) Body material: Stainless Steel SUS420J2
  - 8) Model symbol: Showing the product model name
- Some pictures and illustrations in this manual are examples of SU2-32U models. For more details regarding dimensions and other specifications, please refer to the catalog.

The models SU2-32U fully comply with the requirements of the European Pressure Equipment Directive 2014/68/EU. They are 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
- 2. Cover
- 4. Disc
- 5. Cap
- 6, 7, 12. Gasket
- 38. Bimetal
- 39. Stopper ring

### **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) The models SU2-32U can be used for both horizontal and vertical lines. However, when installing the models in a horizontal line, be sure to maintain a slight slope to the line, so that any condensate will flow smoothly.
- 2) Prevent dust from collecting in the trap, such as by providing a dust collection point in the installation section or using the UNC or other universal trap connectors equipped with a strainer.
- 3) Open the isolation valve on the upstream line and make sure the product works normally.

## 4 OPERATION

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### 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 isolation valve on the trap outlet side.
- 3) Open the isolation valve on the trap inlet side.

\*With disc-type traps, air locking may occur at startup. Isolation valve on the trap inlet side should be opened very gradually.

Air locking is a problem where compressed air occupies inside the pressure chamber (space above the disc), causes condensate retention.

#### 4.2 Stop procedure

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

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### WARNING

- Before removing the trap from the pipe or disassembling it, be sure to close the isolation valves. Then, release the residual pressure from the trap 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.

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

Dr. Trap is a sophisticated steam trap management system for diagnosing steam traps automatically by measuring the vibration and temperature of the steam trap. Survey results are stored in the testing equipment and transferred to a steam trap analysis software. The software aggregates and analyses steam trap survey data, identifying faulty steam traps, providing steam loss and financial loss data, estimating CO<sub>2</sub> emissions corresponding to leaking steam traps and providing many other analyze possibilities to manage the steam trap population easily.

#### ■ Dr. Trap Jr.

Dr. Trap Jr. is an inexpensive and easily to handle steam trap diagnostic system consisting of an ultrasonic checker, temperature probe and a sophisticated analysis software. The software allows to determine the condition of a steam trap, to estimate steam and financial losses and the related CO<sub>2</sub> emissions.

For more details, please, check our homepage:

<https://www.miyawaki.net/en/products/steam-trap-management-system>

or ask our local representative.

## 5-2. Disassembling procedure

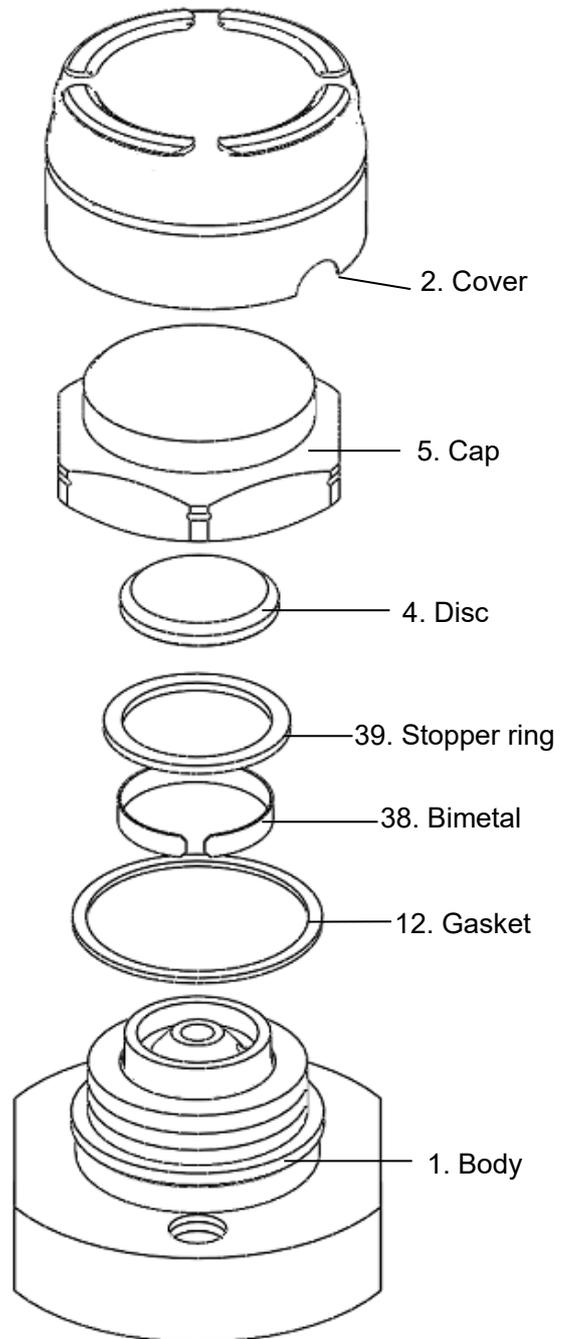
### [1] Removing from the connector (piping)

- 1) Loosen the bolts from the connector side to remove them.
- 2) The trap can now be removed.

### [2] Disassembling the trap body

- 1) Remove the cover (2).  
\*Use a slotted screwdriver or a similar tool to remove the cover.
- 2) Loosen the cap (5) and remove it.
- 3) Take out the disc (4), stopper ring (39), bimetal (38), and gasket (12).
- 4) Check and clean the body, the inside of the cap, and the internal parts.

When you disassemble them, be sufficiently careful not to scratch the sealing surface of the gaskets. The gaskets (6 and 7) at the connection of the connector can be reused if they have no harmful scratches or are not deteriorated.



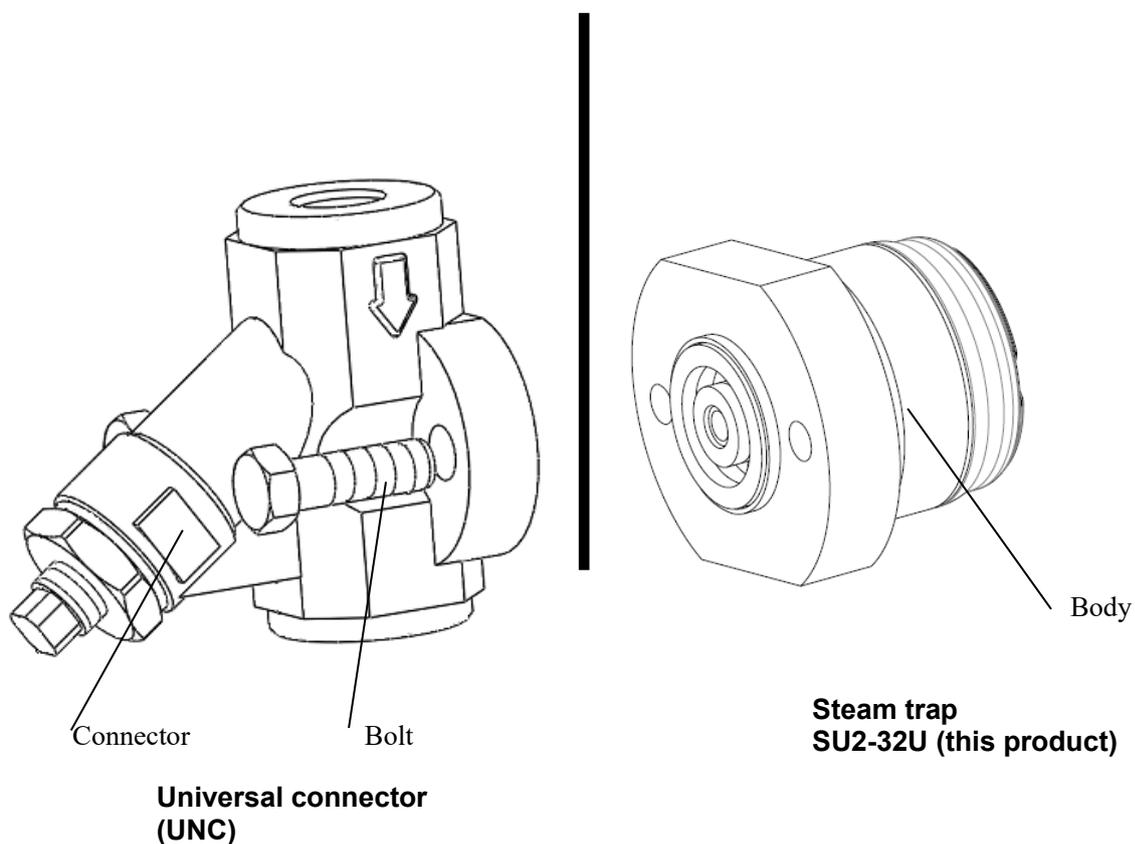
### 5-3. Assembling procedure

#### [1] Assembling the trap body

- 1) Set the gasket (12) on the body (1).
- 2) Set the bimetal (38) and stopper ring (39) on the body.
- 3) Set the disc (4) on the seat surface of the body (1).  
\*The grooved side of the disc should face downward.
- 4) Tighten the cap (5).
- 5) Attach the cover (2).

#### [2] Attaching to the connector (piping)

- 1) Clean the seat surface of the gasket and the thread of the bolts and apply a small amount of the anti-seizure agent on the thread of the bolts.
- 2) Secure the trap body using two bolts from the connector side.



Tighten each part with the following tools and to the specified torques.

No.	Part name	Tool	Width across flats	Tightening torque
5	Cap	Torque wrench	46 mm	150 N•m
-	Bolt	Torque wrench	(14.29 mm)	30 N•m

\*For maintenance of the connector for universal traps, refer to the user's manual for the universal trap connector.

## 6 TROUBLESHOOTING

Problem		Possible cause	Solution
<b>Steam leaks or blows through.</b>		Dirt is stuck around the disc (4) or seat.	Clean the disc (4) and the seat.
		Damage, wear or corrosion of the seat and/or disc (4).	Replace the body (1) and/or disc (4).
		Damage of the bimetal (38).	Replace bimetal (38).
		Damage of the gasket (12).	Replace the gasket (12).
		The back pressure is too high. (The back pressure must be less than 50% of the inlet pressure.)	Replace the trap with an appropriate trap.
<b>Steam leaks from the body.</b>	<b>From the cap connection</b>	The cap (5) is loose.	Tighten the cap (5). *1
		The cap gasket (12) is damaged.	Replace the cap gasket (12).
		The sealing surface of the body (1) and/or cap (5) are damaged.	Replace the cap or the steam trap to a new one.
	<b>From the Universal connector</b>	The bolts are loose.	Tighten the bolts on the connector unit.
		Damaged or deteriorated the gasket (6), (7).	Replace the product with new one.
<b>Insufficient condensate discharged, or no condensate discharged.</b>		Trap or piping clogged with dirt, scale or foreign substances. The disc is stuck to the sealing surface of the body.	Disassemble and clean to remove dirt, scale or foreign substances.
		Dirt has built up around the seat.	Clean the seat on the body(1).
		The bimetal (38) is damaged.	Replace the bimetal (38).
		Wrong installation direction	Reinstall the product in the correct direction.
		Universal connector installed in the incorrect direction.	Reinstall the universal connector in the correct direction.
		Insufficient condensate capacity.	Replace the trap with a larger capacity trap.
		Air locking	Remove compressed air in pressure chamber (space above the disc) *Refer to step 3 in 4.1 Operation procedure (open the isolation valve on trap inlet side very gradually).

\*1 : Refer to the torque table in Section 5, "Maintenance" to retighten the parts with the correct torque.

## **7 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.

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

The following 4-digit, 6-digit or 9-digit “S. No.” is displayed on the product.

	Display				Example of serial number designation
		(A)	(B)	(C)	
4-digit	S.No.	□ □ □ □			S.No. 1 7 1 1 → Jan.1, 2017
					S.No. 2 9 X M → Oct. 21, 2029
6-digit	S.No.	□ □ □ □ □ □			S.No. 1 7 9 1 0 1 → Jan.1, 2017
					S.No.2 9 X F 2 1 → Oct. 15, 2029
9-digit	S.No.	□ □ □ □ □ □ □ □ □			S.No. 1 7 1 1 2 C 0 2 0 → Jan. 1, 2017
					S.No. 2 9 X T 5 M 0 5 0 → Oct. 28, 2029

### Notes

(A)

Represents the year of production.

Last two digits of the year according to the Western calendar.

(B)

Represents the month of production. See following table.

#### 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

(C)

Represents the day of production. See following table.

#### 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

(D)

6-digit or 9-digit : Represents MIYAWAKI identification number.

## 9 GUIDANCE FOR READING SPECIAL PRODUCT NAME

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**Special symbol:**  
The symbol applies only to  
special products  
(Please refer to table 1 for details)

**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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- 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 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.
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