

T3

SIGHT GLASS USER'S MANUAL

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ISO9001
JMI-0205



ISO14001
JQA-EMI1403



The T3 lets you discover steam leaks or steam trap problems at an early stage, simply by observing the trap operation through the glass window. It is especially useful for checking a steam trap used in the condensate return line. Besides, it is also useful for checking the flow conditions of other fluids such as water. In order to get maximum benefit from this product, be sure to read this manual before installation.

 **MIYAWAKI INC.**

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.

1 Specifications and markings



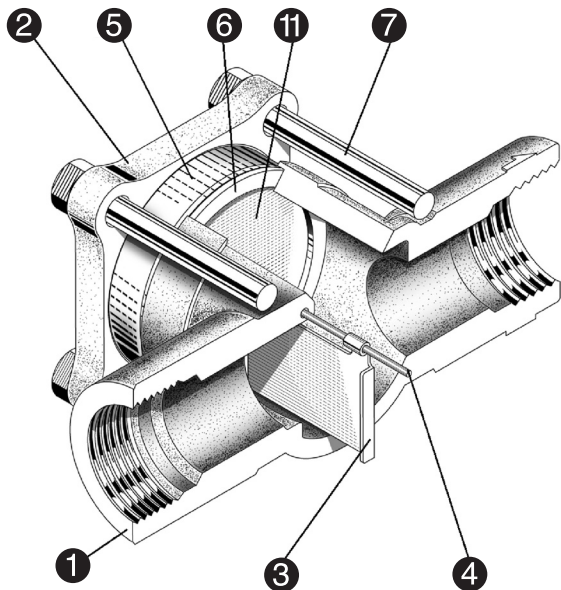
Be sure not to use this product at higher pressures than the specified maximum allowable pressure (PMO) or at temperatures higher than the specified maximum allowable temperature (TMO).

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

- (1) Maximum Operating pressure (PMO): 1MPa(145psig)
- (2) Maximum Operating temperature (TMO): 220°C(428°C)
- (3) Size: 15 mm(1/2"), 20mm(3/4"), 25mm(1"), 32mm(1 1/4"), 40mm(1 1/2"), 50mm(2")
- (4) Year of production: The two leftmost digits in the four-digit 'S No.' on the nameplate are the last two digits of the year of production.
- (5) Flow direction: Shown by an arrow on the nameplate.
- (6) Body material: WCB (FC200 for the size 50 mm (2"))

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

2 Construction details



- ① Body
- ② Cover
- ③ Flapper
- ④ Pin
- ⑤ Sight glass
- ⑥ Gasket
- ⑦ Bolt
- ⑪ Mica plate

3 Installation



- Pay very careful attention when working in hazardous environments such as this. 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



- 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.

- Remove the dustproof seals covering both connections.
- Check the flow direction indicated on the nameplate.
- When the T3 is used in steam pipelines, where steam traps are installed, install the T3 at least 1 m (3.28 ft) away from the steam trap.
- Install the T3 so that the inlet and the outlet are kept horizontal and the face of the sight glass is vertical.
- Open the isolation valve on the upstream line slowly and make sure the product works normally.

4 Maintenance



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

The performance of the T3 deteriorates gradually, over time, due to wear, corrosion, or dirt accumulating around the sight glass. To keep the T3 in good operation, periodic maintenance is essential. Since the sight glass and the mica plate are consumable items, inspect them once a year or as necessary.

*When some damage is found on the mica plate, replace it and, at the same time, be sure to check carefully whether the sight glass is also damaged.

○Repairs

When maintaining the T3, it is necessary to clean the internal parts and replace damaged parts. Take the T3 apart following the steps below.

- Remove the bolt (7), the nut (8) (when the connection size is 50mm (2") , remove only the bolt) and the cover (2). Remove the gasket (6), the sight glass (5), and then the mica plate (11) can be removed by hand.
- Pull out the pin (4) to remove the flapper (3) from the body (1).

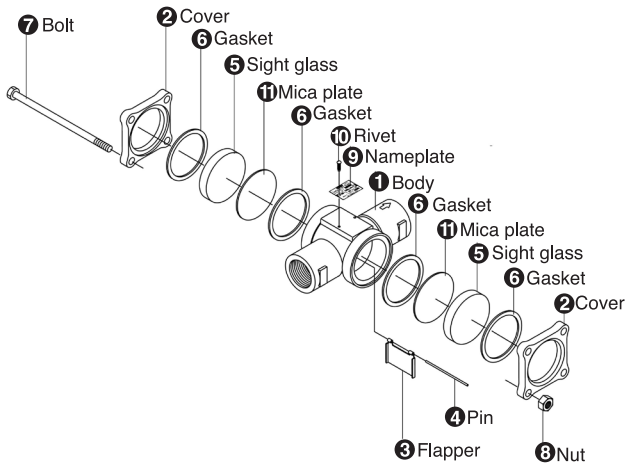
After restoring the sight glass, reassemble the parts in reverse order, as follows.

- Reinstall the flapper (3) in the body (1), and fix it with the pin (4).
- Reinstall the gasket (6), the mica plate (11), the sight glass (5), and the gasket (6), in that order, in the body (1). Then, pass the bolts (7) through the two covers (2) and fasten the nuts (8) so that the mica plate (11), the sight glass (5) and the gaskets (6) will not become misaligned.

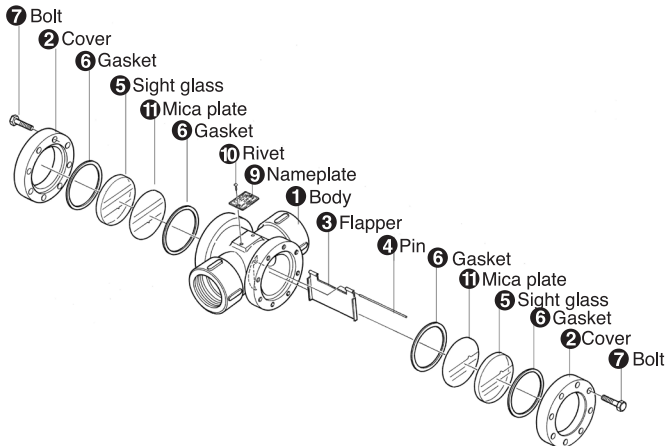
* The torques for the bolt (7) and nut (8) are as shown in the following table.

| Model | Size | Parts | Tools | Across the flats | Torque |
|------------|------------------------------|-------------------|---------------|------------------|----------------------------|
| T3• T3F | 15•20•25 (1/2", 3/4", 1") | Bolt (7), nut (8) | Torque wrench | 13 mm (0.51") | 200 kgf-cm (174 lbf-in) |
| | 32•40 (1 1/4", 1 1/2") | Bolt (7), nut (8) | Torque wrench | 13 mm (0.51") | 240 kgf-cm (208 lbf-in) |
| | 50 (2") | Bolt (7) | Torque wrench | 13 mm (0.51") | 200 kgf-cm (174 lbf-in) |

15A·20A·25A·32A·40A



50A



5 Troubleshooting

| Problem | Possible causes | Solution |
|---|--|---|
| Poor operation or Operation cannot be checked. | Improper installation direction or inappropriate installation orientation. | Reinstall the product in the correct direction. |
| | The flapper is damaged. | Replace the flapper. |
| | The sight glass is dirty. | Clean the sight glass. |
| Steam leaks from the joint between the body and the cover. | The bolts or nuts are loose. | Tighten the bolts and nuts. *1 |
| | The gasket is damaged. | Replace the gasket.*2 |
| | The sight glass is damaged. | Replace the sight glass.*3 |

*1 : Refer to the torque table in Section 4, "Maintenance" to retighten the bolts to the correct torque.

*2 : When the steam leak doesn't stop after replacing the gaskets, it is recommended that both the sight glass and the mica plate be replaced.

*3 : Whenever the sight glass is replaced, the mica plate must always be replaced

6 Warranty

Warranty period

The warranty period shall last 12 months from the date of product delivery.

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 have 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 packing, gaskets, or other parts
- 7) Attachment or accumulation of foreign objects in the pipe, such as dust and scale
- 8) Problems from fires, natural disasters, or other force majeure which is not our responsibility

Warranty limitation

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

- 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は下記にお問い合わせください。
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は、同じく下記にご請求ください。

For any questions about the product that you purchased or about the details in this instruction manual, please contact the following.

If you lose this user's manual or can no longer read it due to stains, please make a request to the following.



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