

# Maintenance

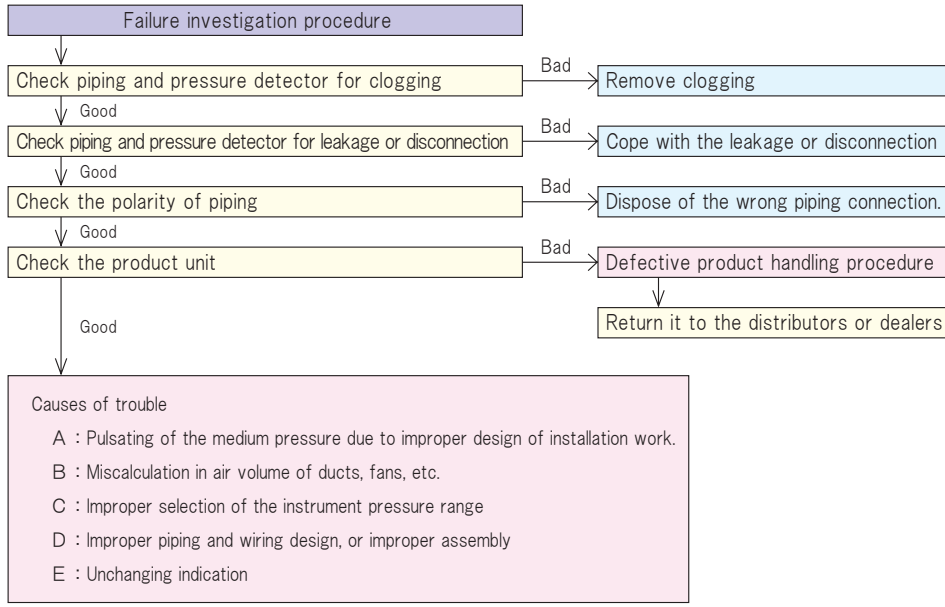
WO81

## Troubleshooting

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- When Manostar products do not function properly, the user should check whether the trouble is caused by the failure of the instrument itself or it comes from the failure in the pressure detector or piping system by referring to the investigation procedure below.
- When the failure of the instrument is evident as a result of the check, you had better return the instrument to us because the repair on site is impossible due to its structure and mechanism.

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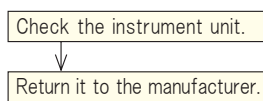
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- Equivalent of product returned to the distributors or dealers



EMT1

EMTGP1

## (Reference)

If there is no defects in the piping system and the product, but the product indicates an error:

- A) Pulsating of the medium pressure due to improper design of installation work.  
In principle, the pressure should be measured in such a way that the fluctuation affecting the measurement is minimized or at the position where less fluctuation is generated.
- B) Miscalculation in air volume of ducts, fan motors, and so on.  
Design error by installing contractor hired by the user
- C) Improper selection of the instrument pressure range
  - 1) A simple ordering error by the user
  - 2) Various simple errors in distribution channels
  - 3) Design error by the contractor hired by the user
  - 4) Insufficient consideration concerning the min. air volume, which is sometimes seen in the selection of a air volume meter. Since a air volume meter has an extraction of square root scale, the scale near the zero point is very fine.
- D) Improper piping and wiring design, or improper assembly
  - 1) A simple error by the designer of the equipment
  - 2) The system is too complicated and a prior experiment is required.
  - 3) The micro differential pressure switch does not function due to wrong connecting of the contact terminals.
- E) The point of the gage does not rise even after several months (when the micro differential pressure gage is used as a filter gage).  
The cause of the problem is sometimes not easily identified, but one of the solution is a problem caused by the characteristics between "the passing air velocity (or passing air volume) and the pressure loss of the filter and the characteristic between the load and the generated air volume of the fan.  
The only way to solve this problem is to increase the power of the fan, the filter or to replace it periodically (for example, you check the clogging of the filter once several months). Therefore, the micro differential pressure gages do not function as a filter gage.  
An electronic ultra micro differential pressure gage has the capability to detect the air velocity, and can indicate the more exact pressure loss of the filter than the characteristics between "the passing air velocity and the pressure loss".

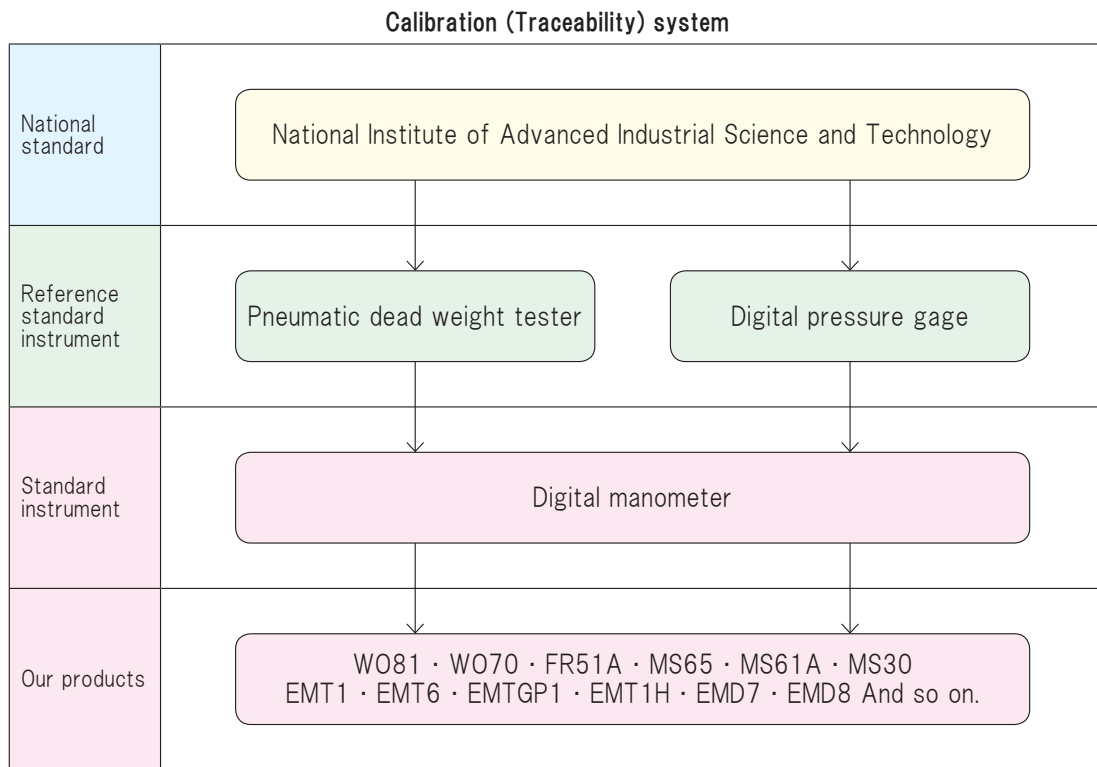
Combination of Manosys

Accessories

Application Cautions for use Maintenance

## Maintenance of accuracy

The calibration system to maintain the accuracy of our standard instrument is as shown below.



### ⚠ Important cautions (Critical damages to the product can be caused if not avoided.)

- Inrush of over-loading .....The diaphragm and the retainer are broken if the pressure exceeding the withstanding pressure of the receiving element is applied to the instrument. The case body and the transparent cover of the instrument are broken if the pressure exceeding the withstanding pressure of the instrument body is applied to the instrument.
- Inrush of excessive current .....The contacts of the switch are stuck if the excessive current exceeding the contact specification value inrushes.
- Dropping the product .....If a Manostar product is dropped onto a desk or floor, not only its exterior but also interior mechanism is broken.
- Cleaning with organic solvent .....Use a cloth soaked with water-diluted neutral detergent to wipe the surface of a product. Using of organic solvent causes damage on the surface.
- Wrong terminal connection .....If the signal input and output terminals are connected to the power supply, the internal mechanism burns out.

**“The withstanding pressure of the pressure receiving element” means;**

The max. pressure under which the diaphragm withstands distortion or breakage (withstand single pressure)  
 The single pressure acting on either H or L side.

**“The withstanding pressure of the instrument body ” means;**

The max. pressure under which the instrument body withstand safely without breakage (double side withstanding pressure)  
 The pressure acting on both high and low sides.

Note: The withstanding pressure of the instrument body is not the pressure under which the airtightness of the instrument is guaranteed.

**Caution:** If the pressure exceeding the withstanding pressure of the pressure receiving element is applied to both L and H sides at the same time, the imbalance of the ultimate pressure arising from the difference in the capacity between the L side and H side chambers or tube. It may cause the pressure exceeding the withstanding pressure and the breakage or distortion of the diaphragm.  
 When applying the pressure exceeding the withstanding pressure of the diaphragm from both H and L sides at the same time, increase the pressure slowly and gradually. Likewise, in relieving the pressure, decrease the pressure slowly.

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FR51A

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EB3C

EMD8

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EMT6

EMT1

EMTGP1

EMT1H

EMP5

EMA3

EMRT1

HWS15

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Accessories

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## Product Warranty

### Warranty Period

This product warranty is valid for one year from the date of delivery to a place specified by an ordering party who has transacted directly with Yamamoto Electric Works Co., Ltd.

### Coverage

If a product breaks down due to a reason for which we are responsible during the warranty period and you return the product to us, we will either repair or replace the product free of charge.

This warranty does not cover:

- (1) Usage of the product under any inappropriate conditions or environment contrary to what is described in our product catalog, specifications or manual.  
Handling or usage of the product other than as described in our product catalog, specifications or manual.
- (2) Breakdown due to a reason other than a fault within our product.
- (3) Any product that has been modified or repaired by a party other than us.
- (4) Any breakdown due to a reason that was not foreseeable based on scientific and technical standards applied at the time of shipment.
- (5) Any breakdown due to a reason not attributable to us such as a natural calamity or other disaster.

These terms of warranty represent our entire liability with respect to the product, and we shall have no liability for any other loss arising in connection with a breakdown of the product.

\*This product warranty is only valid within Japan.

This document is a translation from the original Japanese version, and the original Japanese version has priority over this translation.

Be sure to refer to the original Japanese for the details of this warranty.



Caution

The Japanese original document shall always take precedence over the translated versions.

You should be sure to refer to the Japanese original document.

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