NEW-FLOW

ISO 9001
REGISTERED

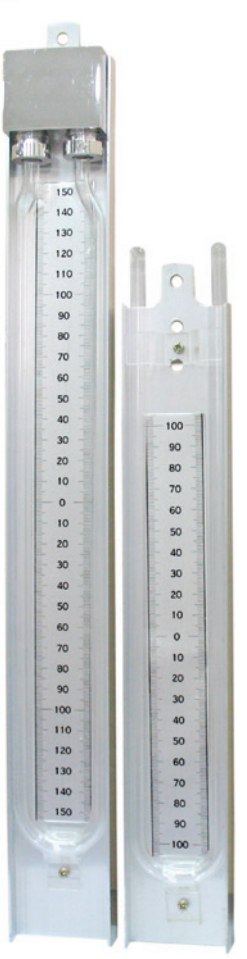
# NEW-FLOW

MANUFACTURE OF U-TUBE MANOMETER

**U SERIES**

AND CONTROL INSTRUMENTS

## *Instruction Manual*



***Approvals:***

EAC


***NEW-FLOW TECHNOLOGIES, INC.***
No.9 Lane 133, Xing-Hua St., Chien Chen Dist., Kaohsiung 806, Taiwan
TEL: 886-7-8135500 FAX: 886-7-8225588 / 8159758
Email: info@new-flow.com www.new-flow.com

# TABLE OF CONTENTS




TEL: 886-7-8135500 FAX: 886-7-8225588
e-mail: info@new-flow.com
http://www.new-flow.com


Instruction No.: 20190212-00-u

# 1. DESCRIPTION

## 1.1 Principles of Operation

$$p = P2 - P1 = \rho g h$$

p = differential pressure
P1 = pressure at the low pressure connection
P2 = pressure at the high pressure connection
ρ = density of the liquid
g = acceleration of gravity
h = height of the liquid column

## 1.2 Technical Data

- Tube Size: O.D ø8mm x I.D ø6mm
- U-Tube Material: Glass
- Working Pressure: max. 3 kg/cm²
- Working Temperature: max. 80°C

## 1.3 Range Table

***1. mm $H_2O$***

| Model | Range | Dimension | | |
|---|---|---|---|---|
| | | L | H | W |
| **200** | ±100 | 300 | 200 | 50 |
| **300** | ±150 | 400 | 300 | 50 |
| **400** | ±200 | 500 | 400 | 50 |
| **500** | ±250 | 600 | 500 | 50 |
| **600** | ±300 | 700 | 600 | 50 |
| **800** | ±400 | 900 | 800 | 50 |
| **1000** | ±500 | 1100 | 1000 | 50 |

*Special range on request.

***2. Inch of Water ("W.C.)***

| Model | Range | Dimension | | |
|---|---|---|---|---|
| | | L | H | W |
| **8"** | ±4" | 300 | 200 | 50 |
| **12"** | ±6" | 400 | 300 | 50 |
| **16"** | ±8" | 500 | 400 | 50 |
| **20"** | ±10" | 600 | 500 | 50 |
| **24"** | ±12" | 700 | 600 | 50 |
| **36"** | ±18" | 1100 | 1000 | 50 |

*Special range on request.

# 2. INSTRUCTIONS

## 2.1 Safety Instructions

There is a risk of injury if the U-Tube manometer breaks.

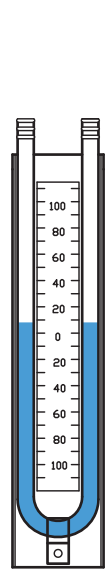
- Do Not subject the glass to any mechanical stresses.
- If the tube is filled with dangerous liquid, safety regulations for the use of dangerous liquid must be observed.

## 2.2 Operation

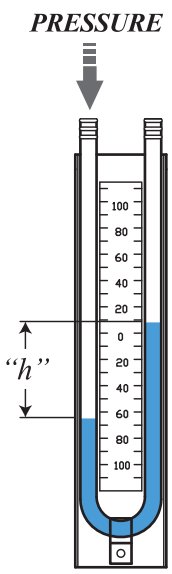
### 2.2.1 Filling the U-Tube Manometer

The tube can be filled with dyed distilled water or petroleum.

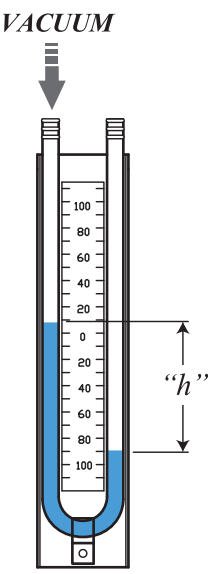
- The manometer tube is to be filled with liquid slowly using a funnel until both sides of the tube are filled up to half way.
- When filling with dangerous liquid or petroleum, the tube should be placed in a collecting basin.
- To empty the manometer of dangerous liquid or petroleum, tip it out over a collecting basin while using a funnel to pour the dangerous liquid or petroleum into a storage bottle.




With both ends of the tube open, the liquid is at the same height in each side.




The difference in height "h", which is the sum of the reading above and below zero, indicates pressure.




The difference in height "h", which is the sum of the reading above and below zero, indicates the vacuum amount.

### 2.2.2 Measurement

- For small differences between the pressure and atmospheric pressure, the recommended filling would be dyed distilled water or petroleum.
- Use a hose to connect the manometer to the vessel for which the pressure is to be measured.

The column of fluid will rise on one side of the U-Tube.

- Read off the difference in height Δh.
- Calculate the pressure.

# 3. MAINTENANCE

## 3.1 Notice Iems

- If cleaning is necessary, remove fittings, drain fluid, and rinse with mild soap and water, and please dry it well.

- Avoid using soaps and solvents which may damage manometer and void warranty.

- When replacing O-ring, apply a thin coat of petroleum jelly to assure a good seal. Do Not coat O-ring used in the overpressure safety trap.

- Avoid using fluids other than those specified. Corrosive fluids may damage the manometer.

- If return is necessary, please contact with the service person of manufacturer to receive a return goods authorization number before shipping back.