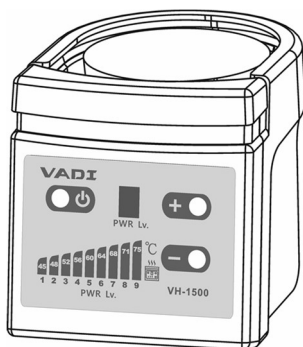


# VADI

## VH-1500

### RESPIRATORY HUMIDIFIER



CE 2460

## Manual

Read instruction carefully before use

Made In Taiwan

VA-1-800-VH1500-110.EN\_01

# Table of contents

<b>1. Intended Use.....</b>	<b>1-2</b>
<b>2. Product Specification.....</b>	<b>3-4</b>
<b>3. Controls and indicators.....</b>	<b>5</b>
<b>4. Setting up the humidifier.....</b>	<b>6-8</b>
<b>5. Performance Data.....</b>	<b>9</b>
<b>6. Disposition.....</b>	<b>9</b>
<b>7. Cleaning.....</b>	<b>9</b>
<b>8. Maintenance.....</b>	<b>9</b>
<b>9. Optional Accessories.....</b>	<b>10</b>
<b>10. Manufacturer information.....</b>	<b>10</b>

# 1. Intended Use

VH-1500 Respiratory Humidifier is designed to warm and add humidity to gases for patients who require respiratory support. The warm and moisture are supplied by passing the gas over the surface of heated water in humidification chamber.

The product has 9 temperature settings.

The highest power level presents the highest level of vaporized water.

## **Attention :**

- If sticky sputum takes place under high heater level, humidifier with servo-control is recommended for usage.
- For patients with low temperature (ex. infants) respiratory humidifier with servo-control is recommended for usage.

## **Caution :**

- No modification is allowed.
- Do not try to dismantle or/and repair the device by yourself if it is malfunction. Please contact local distributor for the service.
- Must be used by qualified medical staff or trained personnel.
- To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
- The AC power plug is served to disconnect the device, not to position the equipment to make it difficult to operate the disconnection device.
- The VH-1500 can be used in all age which is upper airway malfunction, include in neonatal, child, and adult.
- The VH-1500 can be applied on any ventilator which include in servo control, invasive ventilation. The VH-1500 can provide maximal flow rate is 40 LPM.
- The VH-1500 accessories can comply adult (ID/OD 22 mm), child (ID/OD 15 mm), neonate (ID/OD 12 mm) ventilator connector.
- Warning against servicing and maintenance while the ME EQUIPMENT is in use.

The reprocessing of the accessories:

- Breathing circuit:
  1. Dismantle all components except the stainless steel spring attached to the body of water trap
  2. Clean the parts with low flow running water, using a soft brush to remove all foreign material. (for example, soil or organic matter)
  3. Sterilization by autoclave: 132°C/ 4minutes.
- Chamber:
  1. Dismantle all components except the stainless steel spring attached to the body of water trap
  2. Clean the parts with low flow running water, using a soft brush to remove all foreign material. (for example, soil or organic matter)
  3. Sterilization by autoclave: 132°C/ 4minutes.
- Filter:
  1. Take couplings apart from the filter and use detergent compatible with polysulfone to clean the shell of filter with a damp cloth.
  2. The filter has to be sterilized before use and reuse. VADI only recommends steam autoclaving with wrapping the filter in sterilization pouch at temperature at 132°C for 4 minutes (require at least 20 minutes drying cycle after sterilization), complying with the steam autoclave manufacturer's instructions .

## 2. Product Specification

Type : VH-1500

Dimensions : 145mm(H)\*170mm(D)\*135mm(W)

Weight : 1.1kg

### Electrical Ratings

Supply voltage : 100-120Vac ~1.6A or 200-240Vac ~0.8A  
**(Please refer to the mark on device.)**

Supply Frequency : 50/60Hz

Sine Wave Max. power supply: 180W

Device disconnection : pull out the power cord of this device from socket.

Max. operating pressure : 20kpa

Warm-up time : less than 30min.

This device life cycle is 3 years.

Transport condition : -10 to +55°C

(Humidity RH: 5%~95% , without any water condensation)

Storage condition : -20 to +65°C

(Humidity RH: 5%~95% , without any water condensation)

Suggested operating environment temperature: 18~26°.

Suggested operating environmental pressure: 700~1060 hPa.

Humidity Output: >33mg/l within recommended flow range.

Standard Compliance : EN/IEC-60601-1 , EN-60601-1-2

Classified as : Class I, Type BF, IPX1

### Definitions of symbols



**TYPE BF Applied Part  
(Inhalation tube)**



**Consult operating  
instructions**



**CAUTION  
Hot surface may  
exceed 75°C**



**Drip Proof**



**Caution  
Electrical Shock Hazard.  
Refer to qualified service  
Personnel.**



**CE Mark**

**Heater control:** settings from 0 to 9. Power Level settings:

0	1	2	3	4	5	6	7	8	9
Stand by	45°C	48°C	52°C	56°C	60°C	64°C	68°C	71°C	75°C

Max. Flow : 40 LPM

Max. Delivered Gas Temp. : 37.9°C @15LPM

(Power Level : 9, room temperature 23°C± 2°C, 120cm-silicone circuit)

**Performance** : Temperature difference between heater plate and patient's side (room temperature 23°C± 2°C, silicone circuit length 22mmID / 120cm, VADI chamber G-314004):

Power Level	Heater plate Temperature (°C)	Flow rate range (LPM)	Temperature at patient Y(°C)
3	52	5~40	26~30
5	60	5~40	30~34
8	71	5~40	33~36

Temperature accuracy:±3°C.

Over-heated protection:

if the heater temperature exceeds 95±6°C, the power to the heated plate is discontinued and the Power-on/off will not be operative.

Low Temperature Alarm:

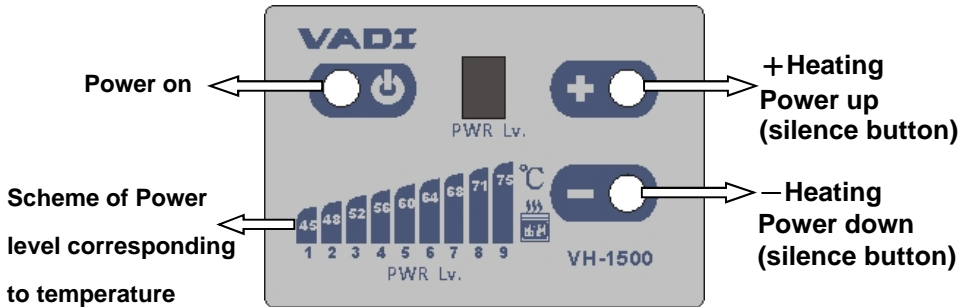
30 min after operation, the temperature of the heater plate is 5°C lower than setting. The display will be shown “L” and emit an alarm.

High Temperature Alarm:

While the temperature of heater plate is over 85±3°C, the display will be shown “H” and emit an alarm.

### 3. Controls and Indicators

Device control panel has 3 main buttons, power level corresponding with temperature scheme.



**Power On:** Press the “Power On” button to turn on. Press the on/off switch again to turn off the humidifier.

**+ Heating-power Up (silence button) :**  
increase the heating level by pressing the button.(press this button to cut off the alarm signal; alarm continues signal after 2 minutes)

**- Heating-power Down :**  
decrease the heating level by pressing the button.(press this button to cut off the alarm signal; alarm continues signal after 2 minutes)

The scheme of power level shows the temperature of heater plate.

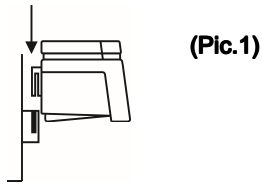
▲Caution :

- 0 Heater level is Stand by, heater plate is not heated.
- If the over temperature protection is activated, the heater plate is not heated; the control panel shows 『H』 .
- Temperature at patient’s side will be different from the heater plate’s, due to tubing size, length, flow rate and room temperature affection.

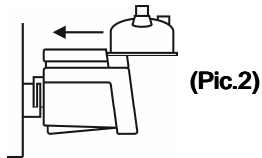
**Comment :** Thermometer is recommended to use for more accurate temperature data on patient’s side.

## 4. Setting up the humidifier

4.1 Slide the device on the bracket .  
(Pic.1)



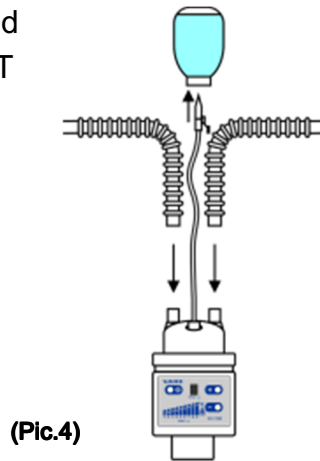
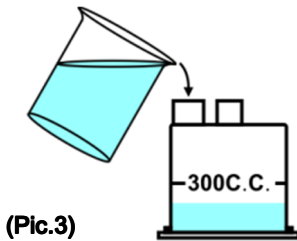
4.2 Slide chamber onto the heater base.  
(Pic.2)



▲Caution:

-Choose the appropriate chamber.

4.3 Add distilled water into chamber.(Pic.3) Or stab distilled water with the needle of IV-SET and connect the tube to humidification chamber.(Pic.4)



▲Attention:

- Water level should not exceed the highest level and should not be less than the lowest level.
- Device cannot be lean over 10°.
- Condensed water in circuit is not acceptable.
- Connect water trap is recommended.

●Warning:

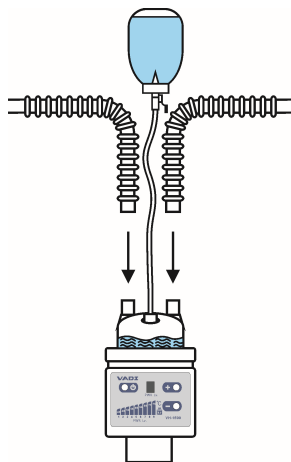
- Water level exceed in chamber may result water condensation in breathing circuit.
- Do not touch the heater plate while operation.
- Do not use any blanket to cover the breathing circuit.

●Operating environment:

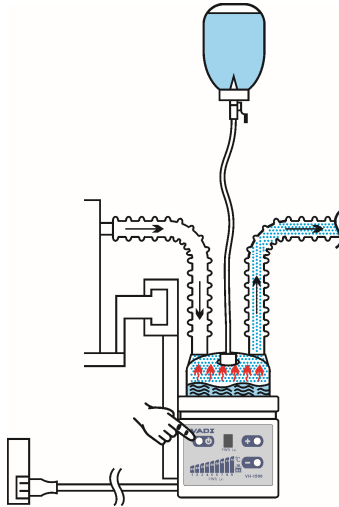
- Suggested environment temperature: 18~26°.
- Suggested environmental pressure: 700~1060 hPa.
- Humidity Output: >33mg/l within recommended flow range.

4.4 Connect tube from gas supply to inlet port of chamber.

4.5 Connect inspiratory part of circuit to outlet of chamber.



4.6 To change power level, press heating-power up/down buttons accordingly.



Attention:

- Water vapor in humidification chamber is observed during normal operation.
- If there is no flow, turn off the humidifier.
- Water traps are recommended for use to collect water condensation due to differences in temperature.
- Absorbent paper is recommended for usage to increase the temperature and moisture performance.
- It is not allowable to heat the chamber without distilled water.

## **5. Performance Data**

Follow the next steps to conduct product test:

- 5.1 Put temperature tester on heater plate.
- 5.2 Set temperature level as 3 , check if the temperature is correspondent to the indicator on device panel.
- 5.3 Set temperature level as 6 , check if the temperature is correspondent to the indicator on device panel.
- 5.4 Set temperature level as 9 , check if the temperature is correspondent to the indicator on device panel.

Suggested Tester: Fluke 572 Thermometer (Accuracy  $\pm 1.0^{\circ}\text{C}$ )

Note: Please make performance test every 12 months.

## **6. Disposition**

Please dispose humidifier according to the local rules of the disposition of electronic devices.

## **7. Cleaning**

The Heater base may be wiped with a damp cloth with using clean water.

## **8. Maintenance**

- 8.1 Check the power cord for damage, replace if necessary.
- 8.2 Check the heater plate for scratching, dirt or moisture; replace if necessary.
- 8.3 Conduct cleaning when necessary.

## 9. Optional Accessories

Item number	Description
G-314001-0	Disposable infant humidification chamber
G-314001-C	Disposable auto-feeding humidification chamber
G-314002	Reusable auto-feeding humidification chamber
G-314003-P	Disposable adult humidification chamber
G-314004	Reusable adult humidification chamber
G-314005	Reusable infant humidification chamber
E-4011-07-2	Absorbent paper for adult chamber
E-4011-07-3	Absorbent paper for infant chamber

## 10. Manufacturer Information



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