

Warner Instruments  
Humidifying Module Warmer  
Model HMW-1



Warner Instruments  
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**THIS EQUIPMENT IS NOT DESIGNED NOR INTENDED  
FOR USE ON HUMAN SUBJECTS**

## GENERAL

The delivery of heated and humidified gas is a well accepted method for providing atmospheric control within a chambered environment. The **HMW-1** facilitates this goal by gently warming a reservoir in which the gas to be delivered is bubbled through water.

The **HMW-1** is designed to be used with Warner's **HM-1** Humidifying Module which has part number 64-1619. The **HM-1** must be ordered separately.



Each **HMW-1** is supplied with a warming sleeve, a **TC-124** temperature controller, an insulated gas line, a connecting tube, and an un-insulated gas line. Instructions for use of the temperature controller is left to the **TC-124** user's manual.

## SETUP

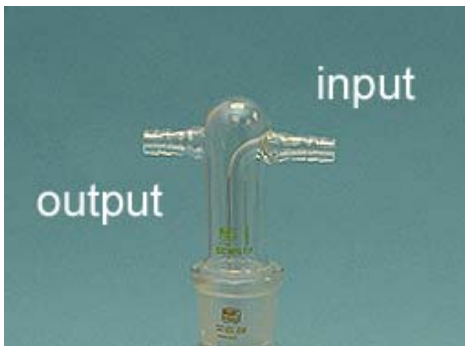
Set up is direct and simple. A fully assembled **HMW-1**, including the **HM-1** humidifying module and an example chamber, is shown to the right.





1. Fill the **HM-1** with water, then place the warming sleeve over the reservoir.

2. Place the **HM-1** top piece into the reservoir. Note the two ports are different: The input port runs to the bottom of the reservoir while the output port draws from the top.

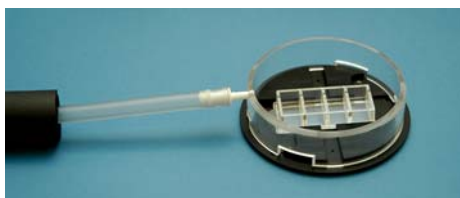


3. Attach the connecting tube to the input side of **HM-1** top piece.



4. Connect the barbed end of the connecting tube to one end of the un-insulated gas line.
5. Connect the other end of the un-insulated gas line to your gas source.

6. Connect the open end of the insulated gas line to the output port of the **HM-1** top piece.



7. Connect the Luer fitting on the other end of the insulated gas line to the input of the chamber to be humidified.

8. Finally, connect the multi-colored cable from the **HMW-1** to the TC-124 temperature controller. Also connect the TC-124 to its wall adapter power supply.



## OPERATION

1. Remove the insulated gas line from your chambered environment.
2. Turn *on* the **TC-124** and set the operating temperature to 37-40°C.
3. Start your gas flow. The rate of gas flow is critical for efficient operation. Set your flow rate as low as possible to maximize efficiency.
4. If using room temperature solution allow up to 20 minutes for the system to reach equilibrium. Wait time can be shortened if the reservoir solution is pre-warmed before use.

**Note:** The humidified gas can condense en route to the chamber. Losses can be mitigated by making the distance traveled as short as possible.

5. Make any temperature adjustments on the **TC-124** as necessary.
6. Once the system has equilibrated, you may connect the insulated gas line to your chambered environment.

## APPENDIX

### Maintenance

The **HMW-1** can be cleaned with soap and water should it become dirty. Do not immerse the **TC-124**. Store dry.

### Warranty and service

#### *Warranty*

The model **HMW-1** is covered by our Warranty to be free from defects in materials and workmanship for a period of one year from the date of shipment. If a failure occurs within this period, we will either repair or replace the faulty component(s). This warranty does not cover failure or damage caused by physical abuse, lack of maintenance, or electrical stress (inputs exceeding specified limits).

In the event that instrument repairs are necessary, shipping charges to the factory are the customer's responsibility. Return charges will be paid by Warner Instruments.

Normal business hours are 8:30 AM to 5:30 PM (EST), Monday through Thursday and 8:30 AM to 5:00 PM on Friday. Our offices are located at 1125 Dixwell Avenue, Hamden, CT 06514, and we can be reached by phone at (800) 599-4203 or (203) 776-0664. Our fax number is (203) 776-1278.

In addition, we can be reached by e-mail at [support@warneronline.com](mailto:support@warneronline.com) or through the web at <http://www.warneronline.com>.

#### *Service notes*

Please refer all questions regarding service to our Customer Service department.

- A) Should service be required, please contact the factory. A problem can sometimes be easily corrected by our shipping a replacement part. Factory service, if required will be expedited to minimize the customer's inconvenience.
- B) Instruments are inspected immediately upon receipt and the customer is notified if the repair is not covered by the warranty. Repairs can often be completed in 1-2 days from our receipt of the instrument.
- C) If factory service is required, please observe the following instructions:
  - 1) Package the instrument with at least 2 inches of cushioning on all sides. Use the original shipping carton if it is available.
  - 2) Insure the shipment for its full value.
  - 3) Include with the shipment an explanation of the problem experienced.

#### **IMPORTANT: CUSTOMERS OUTSIDE OF THE U.S.**

Please be sure to contact us before return shipping any goods. We will provide instructions so that the shipment will not be delayed or subject to unnecessary expense in clearing U.S. Customs.