

Portable Humidifier No. PUM100B

Background and Purpose

Humidity is often used to enhance and accelerate latent print development. The addition of humidity in the processing of Ninhydrin treated documents is common place and it's also a key component in Cyanoacrylate fuming techniques. The No. PUM100B provides a controlled method of introducing moisture to both of these processes. The Humidifier can be used in conjunction with Cyanoacrylate Fuming Chambers such as the No. FR100, No. FR100P, No. FR200DT, No. FR600 and also for humidifying documents processed with Ninhydrin by using the included hose with the dispersion head attachment or connecting to the No. 214CA Laboratory Fuming Cabinet & Heat Chamber.



Safety Precautions

NOTICE: Elevated temperature mist may be generated by this unit when the Warm Mist mode is selected. Do not touch the outlet nozzle plate during operation. Do not touch the outlet end of the hose.

- To avoid hazard of fire or shock, plug unit directly into an appropriate AC outlet.
- Do not use an extension cord.
- Do not operate the unit without the water tank.
- Do not place near heating devices or in direct sunlight.
- Do not store or use flammable materials (acetone, alcohol, etc.) near the unit.
- Do not use any substances other than those recommended to clean the unit, as it will interfere with the proper operation of the unit.
- Do not use anything other than distilled water in the water tank.
- Do not use sharp or metal objects to remove mineral deposits.
- Do not let water enter the air inlet or any other openings when cleaning.
- Do not immerse the unit in any liquid.
- Turn OFF before moving the unit.
- Prior to storage always unplug the unit then empty the water tank and the base.

Product Information

Electrical Data:

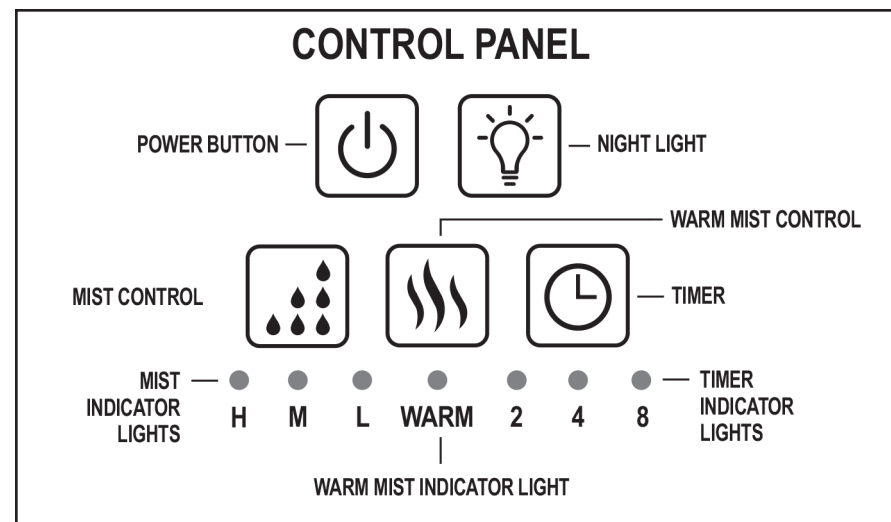
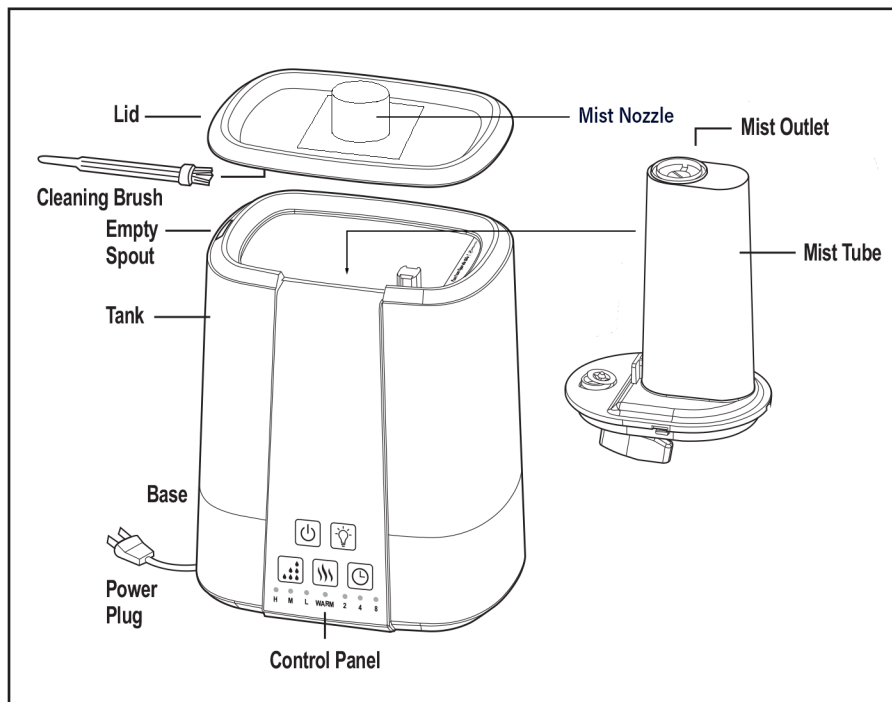
Input Voltage 120V AC/60Hz
 Power use 25 watts (cool mist – default operation)
 85 watts (Warm Mist setting)

AC power cord Double-insulated polarized 2-blade

Physical Data:

Height 13.5 in. (34.3 cm)
 Width 12.4 in. (31.5 cm)
 Depth 10.3 in. (26.3 cm)
 Weight without water 6.45 lbs. (2.93 Kg)
 Water Tank Capacity 2 gal. (7.57 liters)

Parts Description



Power button: Pushing this button toggles power ON and OFF. Make certain the tank contains water before powering the unit on.

Night Light button: Turns the unit's Night Light ON or OFF (toggle).

Mist Control: Press once for LOW mist volume, press twice for MEDIUM mist volume or press three times for HIGH mist volume. The corresponding L, M or H LED under the button will be lit, indicating the selection.

Refill Tank: When all three LEDs under the Mist Control button are blinking, the water tank needs refilling.

Warm Mist Control button: Press to select warm mist. When warm mist is selected, the LED under the WARM button will light. Water temperature is maintained at 80 °F (27°C) for warm. Allow 15 minutes for water to warm. To turn off the Warm Mist function, press the button again.

Cool Mist: This is the default operation of the unit. Mist will be generated by the unit's ultrasonic mechanism. The mist temperature will be that of the water in the tank (i.e., room temperature).

Timer: By default, the Timer function is "off", meaning the unit will run until you turn it off or it runs out of water. For use with Sirchie chambers, the Timer functionality is not needed. See "Recommended Mist Settings for Sirchie Chambers", on the following page, for recommended run times.

Filling The Water Tank

1. Before filling the water tank, set the POWER button to "OFF" and unplug the unit from the AC outlet.
2. Remove the lid from the water tank. Fill tank with distilled water only.
3. Replace the tank lid.



Use With Sirchie Cyanoacrylate Fuming Chambers

1. Place the base of the No. PUM100B on a firm, flat, level and water resistant surface.
2. Fill the tank (as explained above).
3. Plug the power cord firmly and completely into the wall outlet (do not use an extension cord).
4. Connect one end of the vapor hose to the No. PUM100B's nozzle-hose adapter tube (on top of the unit) and connect the other end to an adapter tube on the Sirchie fuming chamber (No. FR100, No. FR100P, No. FR200DT, No. FR600).
5. Push the power button to turn the unit ON.
6. Press the Mist Control button to select the volume of mist desired (Low, Medium or High).
7. If you want Warm Mist, press the Warm button. Note that it will take about 15 minutes to warm up the water. Otherwise the unit will produce a cool mist via its ultrasonic mechanism.
8. To select a Timer duration, press the Timer button. Each time the button is pressed, the next Timer interval is selected. The "2 hour" setting should be sufficient for most operations.



The unit's heater (if Warm Mist is selected) shuts off automatically when water runs out. Also, the unit will cease producing mist if the water runs out.

Recommended Runtimes and Mist Settings for Sirchie Chambers

Sirchie Chamber	Setting	Run Time
FR100 & FR100P Cyanoacrylate Fuming Chambers	M	2-3 minutes
FR200DT Dual Temperature Cyanoacrylate Fuming Chamber	M	4-6 minutes
FR600 Cyanoacrylate Fuming Chamber	H	4-6 minutes
214CA Laboratory Fuming Cabinet & Heat Chamber	M, Warm	10 minutes

After the recommended runtime, shut off the PUM100B by pressing the Power button.

Alternative Uses

Besides its value in increasing the relative humidity in closed fuming chambers, the No. PUM100B may be used to introduce moisture onto other objects such as Ninhydrin treated paper documents.

The No. PUM100B includes a dispersion head that attaches to the free end of the mist vapor hose for this application.

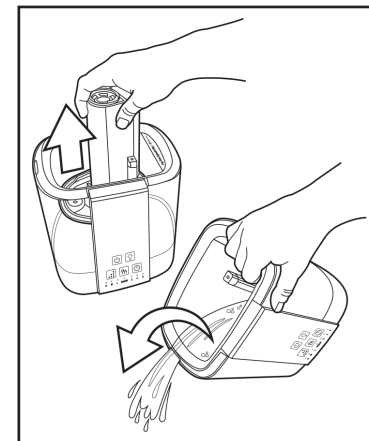


Cleaning and Maintenance

CAUTION! Use only distilled water! Tap water contains minerals and other particles that may contaminate evidence being processed. During operation, most of these minerals remain in the water reservoir. Gradual buildup of deposits coat the water reservoir and ultrasonic disk, and thus reduce efficiency. Therefore, routine cleaning and care is recommended.

WARNING! Failure to perform the necessary cleaning steps will damage the unit.

1. Before cleaning, set the Power Button to "OFF" position and unplug the unit from the AC outlet.
2. Remove the lid from the Water tank. Remove the mist tube by rotating it counter clockwise. Empty the tank by pouring all the water on the left side (see arrow inside tank). Clean the mist tube with fresh water and a light brush (bottle cleaning brush is recommended). Replace mist tube after cleaning. Turn clockwise to lock. See graphic, next page.



Descaling

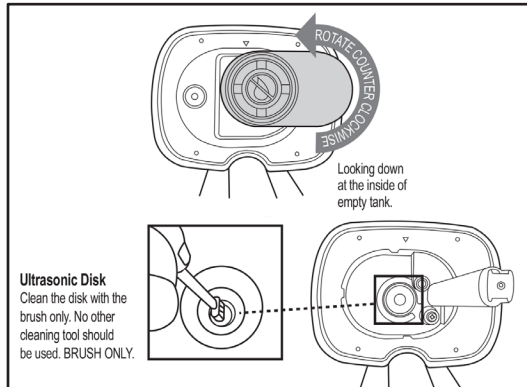
Depending on usage, cleaning to remove scale may be required weekly or every other week to optimize unit performance. Use only distilled water in the unit. This will reduce the precipitation of minerals or 'white dust.' Do not clean the unit or water tank with detergents or cleaning chemicals of any kind.

If scale becomes difficult to remove with brush:

1. Fill the tank with: mixture of 1 tsp. white vinegar and 1 tsp. water.
2. Let solution stand for 5 minutes.
3. With the vinegar in the tank, clean all interior surfaces with a soft cloth or brush to help remove scale.
4. Also check mist nozzle and mist tube in water tank. Clean as needed.
5. Rinse the tank thoroughly with water to remove scale and vinegar solution.

Ultrasonic Disk Maintenance

1. Unplug unit.
2. Remove the mist tube by rotating it counter clockwise. Empty the tank by pouring all the water on the left side (see arrow inside tank).
3. Locate the ultrasonic disk on the inside center of the base unit.
4. Use ONLY the enclosed cleaning brush (located on the underside of the Lid) to gently clean disk and remove build up and deposits.



Do not scrub or scrape the ultrasonic disk.

Storage

- Follow the Cleaning and Descaling instructions when the humidifier will be stored.
- Dry the humidifier completely before storing. DO NOT store with water inside the Base or Water Tank.
- Pack the unit in its original carton and store in a cool, dry location.

Troubleshooting Guidelines

Problem	Solution
Water vapor and humidity are not produced.	Power Plug: Unplug and then try again. Power Failure: When the power is returned, try again. The surface of the ultrasonic disk is dirty: Clean ultrasonic disk.
Air blows but water vapor is not produced.	Excessive Water: Remove a certain amount of water from the tank. Excessive Water in mist tube. Remove water from tank and mist chamber and try again. Detergent residue and/or oil ingredients from cosmetics, eta may be in tank; wash out tank and try again. The surface of the ultrasonic disk is dirty: Clean ultrasonic disk. If you use hard water, replace with softer water.
Humidity level is low.	The surface of the ultrasonic disk is dirty: Clean ultrasonic disk. The water in the unit is too cold: Replace with cool, but not cold water. Damage on the ultrasonic disk: Contact Customer Service
The humidity has a bad smell.	Poor maintenance or dirty water: Clean the unit thoroughly, and fill it with fresh water.
Unit has stopped working.	No or low water. Unplug unit and refill tank.
Water is accumulating outside of unit or area surrounding unit.	Saturation of humidity. Lower mist control setting. Unit not level and water is accumulating. Unplug and place on level surface. Point spray away from objects. Raise unit on a water-resistant level surface 2-3 feet off of floor.
Increased noise level.	Unit must be placed on a flat, level, hard surface. Make sure it is NOT placed on a soft or absorbent surface.
3 blinking blue LED lights.	Indicates low water. Unplug and refill tank.
Warm humidity is not produced.	It may take 10-15 minutes before warm humidity is created. The mist may not feel warm due to the fact it is so fine.



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