



**VWR Brand
Ultrasonic Cleaners**

OWNER'S MANUAL

Operating Instructions and
Warranty for these models...

50, 75, 150, 175, 250, P250, 550, 750

Warnings

.....

FAILURE TO READ THESE WARNINGS MAY CAUSE THE UNIT TO FAIL, AND/OR PERSONAL INJURY AND PROPERTY DAMAGE.

- Ensure that the unit is grounded at all times.
- Never operate the unit without liquid in the tank.
- Never use flammable liquids.
- Never use mineral acids or bleaches
- Maintain a liquid level of approximately one and one quarter inches from top of the tank when operating.
- Never immerse the unit in water or any other liquid.
- Keep the area around the unit dry.
- Do not cover or block heat vents.
- Do not put your hands in the tank when the unit is operating.
Do not operate the unit with wet hands.
- Do not open the unit. There are no user-serviceable parts inside.
- **DO NOT LEAVE THE HEATER ON OVERNIGHT.**

The Ultrasonic Cleaning Process

When ultrasonic energy is introduced into a cleaning solution, cavitation, the foundation of ultrasonic cleaning occurs. Ultrasonic energy causes alternating patterns of low and high pressure phases. During the low pressure phases, minute bubbles, or vacuum cavities form. During the subsequent high pressure phases, the bubbles implode violently. This is called cavitation.

Cavitation provides an intense scrubbing action that leads to unsurpassed cleaning speed and consistency when compared with simple soaking or immersion with agitation. Additionally, the bubbles are small enough to penetrate even microscopic crevices, cleaning them thoroughly and consistently. As a result, ultrasonic cleaning is one of the most highly effective and efficient methods you can use for cleaning a wide array of parts, even in mass-production environments.

Operation - General

.....

- Install draw assembly prior to filling unit. See page 8 for assembly instructions. (Does not apply to models 50T, 50HT and 50D)
- Fill the unit with water to 1 inch from the top of the tank.
-- Allow for the addition of cleaning solution and displacement.
- Add cleaning solution based on the manufacturer's recommended dilution.
- Plug the unit into the correct power source.
-- Always use a grounded plug and outlet
- When first starting the unit, allow it to run for 5 minutes to degas for optimum operation.

TIMER MODEL-T

- This model allows for either continuous or timed operation of the ultrasonics.
- For continuous operation, turn the knob to the LEFT, or counter-clockwise, to the ON position.
- For timed operation, turn the knob to the RIGHT, or clockwise, for the desired cycle (0-30 minutes).

TIMER AND HEATER MODEL - HT

- This model allows for either continuous or timed operation of the ultrasonics and thermostatic control of the heat (Ambient to 80 degrees C).
- For continuous operation, turn the knob to the LEFT, or counter-clockwise, to the ON position.
- For timed operation, turn the knob to the RIGHT, or clockwise, for the desired cycle (0-30 minutes).
- To activate the heater circuit, turn the power switch to ON position.
- To set the heat, turn the knob to the RIGHT, or clockwise, to the desired temperature (Ambient to 80 degrees C).

DIGITAL MODEL-D

This model allows for the precise control of the timer, heater and power functions and a preset degas cycle.

Note: The **POWER LEVEL**, Temperature and Time can be changed when the ultrasonics are **OFF**.

- Turn the main power switch to the **ON** position. The LED displays will light for three seconds to indicate the unit is operating properly.
- For initial startup, the LED displays will read as follows:
Timer: 00 Heater: Ambient Power: 9

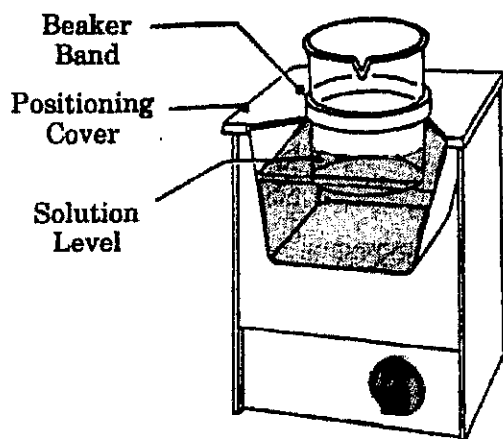
Note: A non-volatile memory will retain future programmed settings when the power is shut off.

- To start the ultrasonics you have two options:
 1. Press the Degas **ON/OFF** button and the unit will run for a preset time to degas the solution, and then shut off. Degas can be shut off at any time during the cycle by pressing the Degas **ON/OFF** button.
 2. Press the **SONIC ON/OFF** button and the ultrasonics will run continuously. The LED will show 00 unless a time cycle has been programmed into the memory.
- To set the **TIMER**, turn the ultrasonics **OFF**, then press either the **UP** or **DOWN** keys to the desired cycle (0-99 minutes), then press the **SONICS ON/OFF** button, and the unit will run for the preset time. At the end of the cycle, the LED display will return to the preset time.
 - A dot will flash in the lower right hand corner of the LED to indicate the timer is operating.
- While the **TIMER** is running, the **UP/DOWN** keys will not change the preset time. The preset can only be changed if the ultrasonics are **OFF**. If the timer button is shut **OFF** during the cycle, the LED will hold the time, and when the ultrasonics are restarted, will continue to count down to the end of the cycle.

Note: To clear the time cycle, hold either the **UP** or **DOWN** keys for over three seconds and return to 00 or a new time cycle.

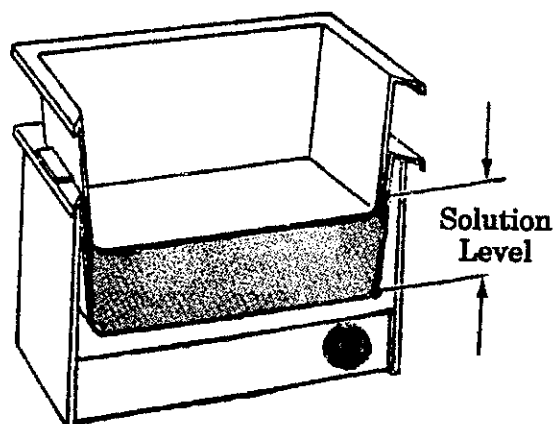
- To turn the **HEATER ON**, press the heater **ON/OFF** button. On initial startup, the display will read ambient, or the preset value retained by the non-volatile memory. To set the **HEATER**, press either the **UP** or **DOWN** keys until the desired temperature is reached (Ambient - 80 degrees C).
 - When the **UP** or **DOWN** button are released, the LED display will read the actual tank temperature (+2 degrees C).
 - A dot will flash in the lower right hand corner of the LED to indicate the heater circuit is engaged. The heater preset can be changed while the heater is in operation, but the ultrasonics must be **OFF**. Press the **UP/DOWN** keys and the preset will move up or down until the switch is released.
- To set the **POWER LEVEL**, press the **UP/DOWN** keys until the desired power level is displayed.

Proper Procedure for Using Auxiliary Pans and Beakers



If a beaker is used, place in a beaker cover using a beaker O-Ring to adjust the depth of suspension so beaker bottom is just below the surface of the solution in the main tank but off the bottom.

Cavitation will be transmitted from the main tank to the auxiliary pan or beaker. More than one beaker can be used at one time depending on the model.



Fill stainless steel tank to fill line with proper ultrasonic cleaning chemical and clean normally. Fill auxiliary pan or beaker with another designated ultrasonic chemical to a level just above item to be cleaned or rinsed. The auxiliary pan or beaker will now function as another ultrasonic cleaning machine when used properly. Place auxiliary pan into main tank, resting it on its handles, making sure that the bottom of the auxiliary pan is below solution level. Several combinations may be utilized. It is recommended that additional covers be placed on the auxiliary pans to reduce evaporation loss and fumes.

Operating Hints

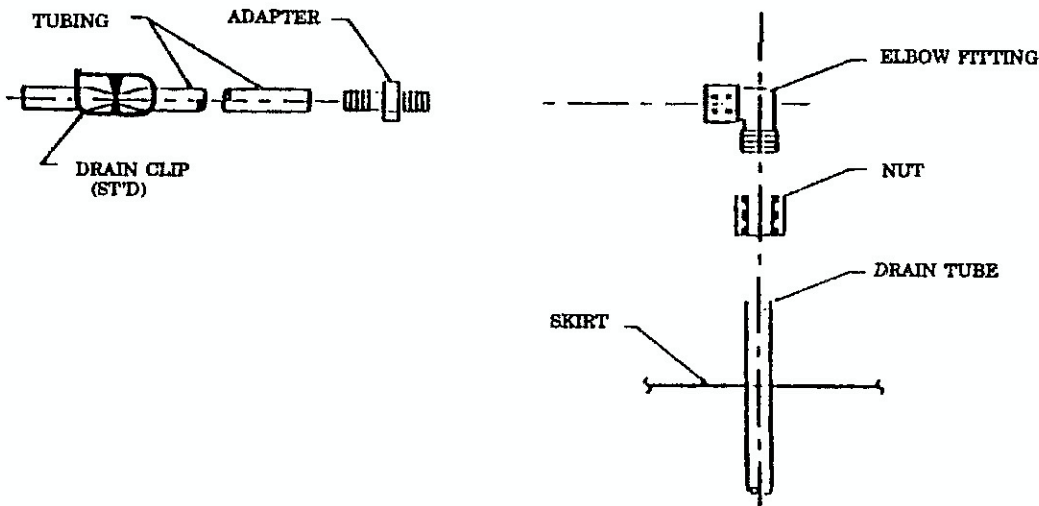
- Starting with warm tap water will allow the unit to reach optimum operating temperature (50-60 degree C) quicker.
- For best results, use VWR brand cleaning solution. This will improve the performance (cavitation) of the unit.
- When ever possible, do not use DI water as it will speed cavitation erosion in the tank. If DI water is used, a wetting agent should be added.
- **NEVER PLACE ITEMS TO BE CLEANED OR BEAKERS ON THE BOTTOM OF THE TANK. THESE ITEMS SHOULD BE SUSPENDED AT LEAST 1/2" ABOVE THE TANK BOTTOM.**
- Decreasing the liquid level will not improve ultrasonic wattage. For optimum results, keep the water level approximately 1" from the top of the tank.
- Never allow the unit to run without liquid. This will cause it to fail.
- Covers allow the cleaner to heat up faster to a higher temperature.
- After frequent use, the tank should be emptied, rinsed out and wiped with a non-abrasive cloth and water.

Notes:

1. The Timer Pilot Light will remain LIT while the ultrasonics are operating.
2. The Heater Pilot Light will remain LIT as long as the Heater Power Switch is in the ON position. It will not shut off when the solution reaches temperature.
3. Ultrasonic activity will raise the solution temperature and may cause it to exceed the preset temperature.
4. The amount of visible activity is not necessarily related to optimum cavitation for cleaning.

DRAIN ASSEMBLY

1. Open bag and remove drain assembly.
2. Loosen nut several turns. DO NOT REMOVE.
3. Push assembly over drain tube until it stops.
4. Hand tighten. DO NOT OVER TIGHTEN. If further tightening is needed, an adjustable or 15/16 open-end wrench is recommended.
5. Secure tubing control valve on plastic tubing (squeeze closed) before filling machine.



DRAIN ASSEMBLY

ORDER FROM VWR INTERNATIONAL
Call 800-932-5000

From anywhere in the U.S. and Canada

Customer Service Locations:

Calif. - Los Angeles
P.O. Box 6016
Cerritos, CA 90702
310-404-0770

Calif. - San Francisco
P.O. Box 7900
San Francisco, CA 94120
415-468-7150

Colorado
P.O. Box 39396
Denver, CO 80239
303-371-0970

Georgia
P.O. Box 669967
Marietta, GA 30066
404-423-1354

Illinois
P.O. Box 66929
O'Hare AMF
Chicago, IL 60666
708-879-0600

Massachusetts
P.O. Box 232
Boston, MA 02101
617-461-1880

New Jersey
P.O. Box 626
Bridgeport, NJ 08014
800-234-9300

NY - New York City
P.O. Box 1380
Piscataway, NJ 08855
908-756-8030

NY - Rochester
P.O. Box 1050
Rochester, NY 14603
716-247-0610

Penna. - Philadelphia
P.O. Box 626
Bridgeport, NJ 08014
800-234-9300

TX - Houston
P.O. Box 5025
Sugar Land, TX 77487
713-240-4700

Washington
P.O. Box 3551
Seattle, WA 98124
206-575-1500

VWR Canada Ltd.

Eastern Canada
902-468-2237
800-565-1151
fax: 902-468-2881

Quebec
514-344-6692
800-361-6442
fax: 514-344-0133

Ontario
519-649-5454
800-265-3496
fax: 519-649-5444

Western Canada
403-469-4411
800-661-9428
fax: 403-469-2504

Or Call Direct for Specialized Service Locations:

VWR International
P.O. Box 1002
600C Corporate Court
So. Plainfield, NJ 07080
908-757-4045
fax: 908-757-0313

Puerto Rico
Carr. 869 Km. 1.5 E4
Royal Industrial Park
Catano
Puerto Rico 00962
809-788-3222
fax: 809-788-4320

Switzerland
Stationsstrasse 20
8606 Greifensee
Switzerland
41-1-941-5440
fax: 41-1-941-5650

VWR Furniture Division

P.O. Box 3405
Irving, TX 75015
214-258-6953

VWR National Accounts

1919 So. Broadway
St. Louis, MO 63104
314-241-1218

VWR Integrated Business Services

Bridgeport
P.O. Box 483
501 Heron Drive
Bridgeport, NJ 08014
609-467-2605

Lake Charles
804 Columbia
Southern Rd.
West Lake, LA 70669
318-882-6200

Los Alamos
P.O. Box 1320
Los Alamos, NM 87544
505-662-5558

Parkersburg
2323 Garfield Avenue
Parkersburg, WV 26101
304-485-5123

Oak Ridge
161 Mitchell Rd.
Oak Ridge, TN 37380
615-481-0874

VWR  **INTERNATIONAL**