

Whittemore Ultrasonic Cleaner



Tank Capacity	Heating Power	Ultrasonic Power	Time Setting	Temperature Setting
1.3L	50W	60W	1 - 30 minutes	0-80 degrees Celsius
2L	50W	60W	1 - 30 minutes	0-80 degrees Celsius
6L	200W	180W	1 - 30 minutes	0-80 degrees Celsius
3L	100W	120W	1 - 30 minutes	0-80 degrees Celsius
10L	250W	240W	1 - 30 minutes	0-80 degrees Celsius
15L	400W	360W	1 - 30 minutes	0-80 degrees Celsius
22L	600W	480W	1 - 30 minutes	0-80 degrees Celsius
30L	800W	600W	1 - 30 minutes	0-80 degrees Celsius

How to use your Ultrasonic Cleaning System

A. WHAT IS ULTRASONIC CLEANING

Congratulations on your purchase of an Ultrasonic Cleaning System. Your machine is part of a complete cleaning process which is thoroughly described in this owner/operator manual

Ultrasonic cleaning is created by sound waves that are transmitted at frequencies beyond the range of human hearing. These sound waves are carried through the solution in the tank and create a unique vibrational pattern causing alternating high and low pressures in the liquid. During the low pressure stage, millions of tiny bubbles form. This process is called CAVITATION, meaning the formation of cavities. During the high pressure stage, the bubbles collapse or implode, releasing enormous amounts of energy. Working in all directions, the bubbles attack every surface and invade all recesses and crevices, pulling debris off the object being cleaned.

A generator located within your system develops the high frequency power which causes a transducer to radiate and create cavitation. The Ultrasonic Cleaning System generators feature unique solid state circuitry designed to ensure maximum cleaning efficiency and optimum reliability.

Equally important to efficient cleaning is selecting the proper solution for the cleaning task. The use of the wrong solution will slow down the cleaning process and may cause lessened results.

Factors such as length of cleaning time and the use of a heated solution may also enhance your cleaning task.

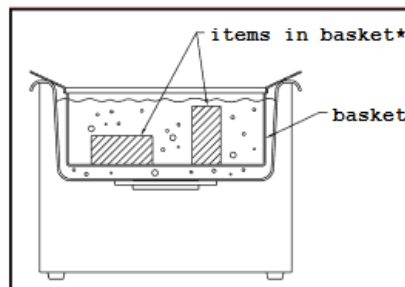
B. START UP

Before operating your machine, make sure the drain assembly is properly assembled if necessary.

- Plug line cord into the proper AC outlet. If an adapter plug is used, the grounding wire (green) must be secured to either a water pipe or an adequately grounded electrical outlet.
- Pour in the required amount of Cleaning Solution, properly diluted as specified on the container, to a level one inch from the top of the tank. Place the part(s) to be cleaned in your Accessory Basket. Insert the accessory basket containing the parts into your machine. If necessary, add more solution to bring the level to just above the part(s) being cleaned.
- **For machines with a timer...** To activate your machine, simply plug unit in, add solution and set your timer to the number of minutes desired for ultrasonic cleaning. These self-timing units will automatically shut themselves off at the end of the pre-set time.
- **For machines with heat.** On machines equipped with heat, a separate button is located on the front control panel. This switch allows pre-heating of cleaning solution before the ultrasonic operation. The rocker switch is lit when the heater is in operation and must be switched off when not in use.

C. CLEANING METHODS **USE OF STAINLESS STEEL ACCESSORY BASKET** **(Direct Cleaning Method)**

This direct method of cleaning is beneficial due to its simplicity and cleaning effectiveness. In this method, the part(s) to be cleaned are placed in your accessory basket. The basket is then placed directly into the main tank already containing the proper Cleaning Solution.

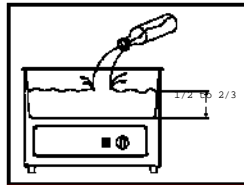


*The item(s) to be cleaned are put directly into an Accessory Basket and placed into the tank

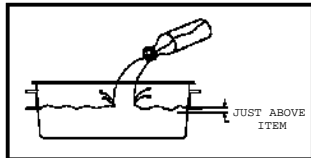
Cleaning times may vary depending on the amount and types of contamination on the items. We suggest that a 3-5 minute cycle be initiated and more time added if necessary.

**D. USE OF AUXILIARY
PANS AND/OR GLASS BEAKERS
(Indirect Cleaning Method)**

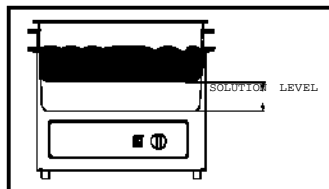
When a cleaning application necessitates a series of different solutions, or when a specialized solution, not to be placed directly into the tank is to be used, the following procedure is recommended.



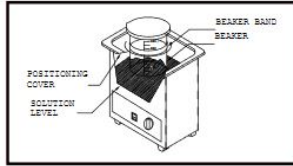
*Fill the stainless steel tank approximately 1/2—2/3 full with a proper solution or carrier bath.



*Fill auxiliary pan or beaker(s) with an appropriate cleaning solution(s) to a level just above the item(s) to be cleaned.



*Place auxiliary pan into main tank, resting it on its handles, making sure that the bottom of the auxiliary pan is below the solution level in the main tank. This insures proper sound wave transference.



*If a beaker or beakers are used, a positioning beaker band to the beaker the surface of the solution in the main tank, but off the bottom.

In the "Indirect Method" the auxiliary pan or beaker functions as a second ultrasonic cleaning machine when properly used.

E. BASIC OPERATING DO'S AND DON'TS

Before using your Ultrasonic Cleaning Machine, please read and understand the following. Failure to follow, may result in personal injury or property damage, and negate the warranty.

Do's

- Ensure the line cord provided with your Ultrasonic Cleaning System is properly grounded. Maintain the grounding pin on the line.
- Use only proper solutions for compatibility.
- Operate your Ultrasonic Cleaning System with sufficient solution in the tank.
- When using beakers or an auxiliary pan for cleaning, enough solution must be in the tank to act as a coupling agent. The beaker should be suspended just below the solution level, but off the bottom of the tank. Beaker covers should be on at all times.
- To prevent solution loss through evaporation and splashing use the tank cover when the machine is in operation.
- Keep the inside surface of the tank clean and free of sediment.
- Keep ventilating louvers clean and free of obstructions. Good ventilation is required.
- Be sure to unplug the machine before moving it.
- If service is required, contact an authorized Service Technician.
- Make sure you are using the proper voltage for your machine.

- Keep the control panel and area around the machine clean and dry.

Don'ts

- Do not subject your machine to shock impact.
- Do not let the solution level drop below 1 inch (25 mm) from the top of the tank if your machine has a heater. Always operate with sufficient solution in the tank. Allowing the tank to run dry will damage the machine.
- Do not immerse machine in water or any other liquid. To clean the unit: unplug, rinse and wipe dry.
- Do not use gasoline, benzene, acetone or other highly flammable chemicals in your Ultrasonic Cleaning System.
- Do not use acid or blend in your stainless steel tank as pinholes will be created.
- Do not use water alone as the carrier bath. A wetting agent, such as General Purpose Cleaner Concentrate, or Jewelry Cleaning Concentrate, is required for proper transference of ultrasonic energy
- Do not place any objects directly on the bottom of the tank.
They may block cavitation, prevent proper cleaning, cause a build-up of heat in the transducers. A Stainless Steel Accessory Basket is recommended.
- Do not operate your machine in extremely dusty areas. Dust build-up may interfere with the machine's normal operation.
- Avoid placing hands in the machine. Always use accessories.
- Do not operate your Ultrasonic Cleaning Machine when your hands are WET.
- Do not disassemble your machine. This should be done by an authorized service technician.
- Do not operate your machine at extremely high temperatures for extended periods of time.
- Do not use the heater without a non-aqueous base solution for prolonged periods of time.

HELPFUL HINTS

After prolonged use, your beaker(s) will become etched and scratched on the bottom. When this occurs, replace the beaker(s), as this etching will reduce ultrasonic cleaning abilities of your system.

Trouble Shooting

If unit fails to start...

- Insure unit is plugged in.
- Insure power switch or timer is on.
- Refer to qualified service personnel.

If unit does not clean adequately...

- Do not overload tank.
- Clean tank, replace with new solution
- Ensure water/cleaning solution ratio is correct