

# ULTRASONIC CLEANER

## USER MANUAL



### FEATURES

Stainless steel construction

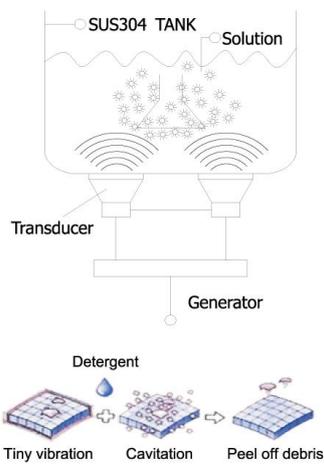
Industrial grade integrated circuit

0-80°C digital temperature control

1-20 minutes mechanical timer with hold feature

28KHz or 40KHz industrial grade transducers

Thank you for purchasing this Sonix 4 ultrasonic cleaner. Please take some time to read these operating instructions before use and keep for future reference. Failure to follow these instructions may lead to unnecessary damages to the product.



## ULTRASONIC PRINCIPLE

Ultrasonic cleaning is achieved by the mechanical action of cavitation - cavitation is a process that occurs in liquids when bubbles violently collapse or implode. The entire process is caused when pressure differentials, particularly due to a drop in pressure, surround a vapor cavity within the liquid.

The cleaning activity of ultrasonic baths is a result of forces created when the bubbles implode. These forces are caused by phenomena that include the formation of a high-velocity water jet during bubble collapse, as well as the "water hammer effect." Both processes generate pressures of up to 60,000 psi and temperatures of 5,000 K, roughly the temperature on the sun's surface

### BEFORE USE:

1. Carefully unpack the cleaner, remove all packing materials and check whether any parts have become loose or damaged during transit.

#### Contents:

- a: machine                      b: cover                      c: Power cord  
d: drain screen (units with valves only)                      e: basket                      f: Manual

2. Place the cleaner on a flat, clean surface - ensure that the cooling fan will get adequate ventilation and that all controls are set to off, and the drain valve is closed.
3. Ensure that the power cord is securely plugged into the cleaner

- Carefully fill at least 1/2 of the tank with water and/or a cleaning solution. Based on cleaning requirements, we recommend using a small amount of our Eco4 cleaning solution because this will help increase the cleaning performance. Now the cleaner is ready for use.

 **Attention**

- A) While the machine is working normally, the ultrasonic waves and tank give a well-proportioned sound and sprays generated by the tiny bubbles. If there are discontinuous surges, please add or reduce the solution in the tank to stop the surges, for a better cleaning effect.
- B) Please don't operate for excessive cycle times (not more than 30 minutes suggested) as long cycles will raise the temperature of the bath and electronics causing premature failure. Also, long cycle times will accelerate tank erosion which also leads to failures.



**SAFETY PRECAUTIONS**

**Keep away from children !**

This device should not be used by individuals with limited physical knowledge, or those lacking training or knowledge, such as children unless they are supervised by an individual who can take charge of their safety or have received training in operating the device.

**Please read the following items very carefully as failure to comply with them may void the warranty**

- DO NOT run the cleaner continuously for more than one hour at a time because it can damage the internal components.
- DO NOT operate the unit without fluid in the tank. Always ensure that the solution is 1/2 to 2/3 full.
- DO NOT drop any item into the tank because it may damage the transducers. Always place items gently into the tank and use the basket whenever possible.
- The more items you place into the cleaning bath, the less cleaning efficient you can get.
- Do keep the lid on during use. This will prevent splashes and reduce evaporation of the fluid.
- Never immerse the machine or power cord in water or other liquid.
- DO NOT touch the power plug with wet hands, especially when inserting or removing the plug.
- DO NOT touch the unit if the machine has fallen into the water during operation. Remove the power plug from the socket first.

- 9) DO NOT disassemble the machine if you are not professional.
- 10) UNPLUG the power source while filling or emptying the tank.
- 11) DO NOT spray water or liquid over the device and the control panel.
- 12) DO NOT operate the cleaner without proper grounding.
- 13) DO NOT place the device on a soft surface where the vents can be blocked.
- 14) Always turn the heater off after using - leaving it on will damage the internal components.
- 15) Use caution when adding or removing items from the cleaning tank as the splashed fluid is likely to be hot. Any splashed fluid must be dried immediately.
- 16) In case of emergency or failure to follow the aforementioned items, disconnect the main supply by removing the plug from the main socket.

## **APPLICATIONS**

The uses for ultrasonic cleaners is almost endless. Provided the product is non-porous and can normally be immersed in water, they can be thoroughly sonicated. Here are some examples:

- Jewelry especially gold, silver & platinum
- Watchstraps
- Coins and other collectibles
- Circuit boards
- Engine parts
- Toothbrushes & Dentures
- Electrical components
- Make-up brushes and cases
- Fuel injection nozzles
- Printer heads and toner cartridges
- Motorcycle parts
- Dairy equipment
- Golf clubs & golf balls
- Horse bits & stirrups
- Tattoo equipment
- Surgical instruments
- Turbochargers
- Bicycle parts
- Knives & bayonets
- Gun and ammunition

Ultrasonic cleaning is not recommended to be used to clean the following gemstones: Opal, Pearl, Tanzanite, Malachite, Turquoise, Lapis, and Coral.

## **OPERATION**

1. Fill the stainless steel tank with a cleaning solution; Plug the power cord into a grounded outlet
2. **Time setting:** Turn the timer/sonication knob clockwise to the desired time setting – the timer will continually run down and shut the machine off after the set time. Turn the timer counter clockwise to set the continuous run/hold feature.

**NOTE:** Do not run the cleaner continuously for more than one hour

3. **Temperature setting:** Turn the heat/temperature knob clockwise to the desired operating temperature – the LED will illuminate when the heaters are on. . Usually, the best cleaning temperature is within 40°C to 60°C.
4. **Drain:** if fitted with a valve, open the manual valve to drain.
5. Empty the tank and clean both the outside and inside of the cleaner with a clean and dry cloth for next use.

**NOTE:** Do not empty or fill the tank with high-temperature differences as the hot or cold can damage the machine.

## **DIFFERENT METHODS OF CLEANING**

**General Cleaning**—use only water to clean under the temperature of about 50°C;

**Enhanced Cleaning**—add few drops of standard cleaning solutions, liquid soap, or detergent, or any other non-acidic cleaning agents – Eco 4 is suggested.

**Extensive Cleaning**--removing tarnish, carbon & rust from non-plated metals, it is recommended to use specific cleaning solution associated with ultrasonic cleaners.

**WARNING** : Strong acid or alkaline cleaning solution will cause corrosion, rust and even puncture of tank or machine body. To solve this problem, please dilute the solution to mild PH

The cleaning solution will deteriorate in effectiveness over time and use. It is important to regularly change the fluid and carefully wash the inside of the cleaning tank in order to preserve the effectiveness and longevity of the cleaner. Do not use corrosive or abrasive cleaning tools to clean the tank which must be wiped down and dried before it can be re-connected to the electrical supply.

**NOTE:** If the machine starts to spark, smoke, smell or displays any other fault the operator must immediately stop the machine, and isolate it from the electrical supply and contact the supplier.

## Advantage

Ultrasonic is widely used throughout industries to remove difficult contaminants from the parts during or after manufacturing process which might require a stage of cleaning before the next process. In general, if an item can be cleaned with liquid, it can be cleaned much faster and more thoroughly with an ultrasonic cleaner. Compared with traditional solvent/scrubbing, our ultrasonic cleaners:

- Are more effective at removing contaminants;
- Are quicker to achieve good cleaning results;
- Save labor costs;
- Can heat the cleaning solution to a suitable cleaning temperature to enhance the cleaning efficiency;
- Have a digital controller of high-precision and a long service life;
- Are of high performance;
- Eliminate harsh chemicals;
- Are environment-friendly.

## Best Practices:

- Immerse parts completely into the water.
- Add a small amount of cleaning solution- Eco4 is recommended.
- Arrange parts efficiently within the tank. The more items you place in the tank, the less efficient the process.
- Use a basket. Do not put parts directly onto the bottom of the tank.
- Choose a suitable temperature: Generally, the higher the temperature the better the cleaning effect. However, when temperatures exceed 70°C~80°C cleaning effectiveness is affected. Best temperatures are 40°C~60°C.

