ULTRASONIC CLEANER

Operation manual

UC-9000 Series

LCD display

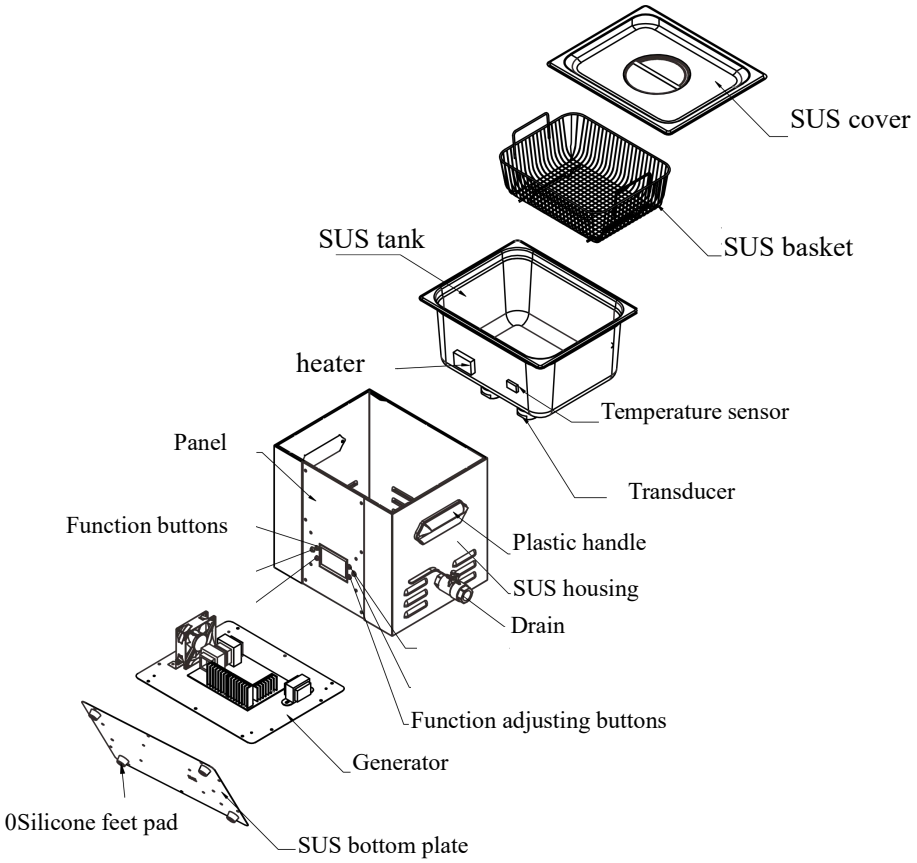
Degassing

Power adjustable

Heated

Timer adjustable

Ⅰ、Product List



* Remarks: The above is for reference only. For specific details, please compare the actual product purchased with the corresponding product display exploded view.

Item	Quantity	Accessories	Quantity
Ultrasonic cleaner	1	Cover	1
Operation manual	1	Power cable	1
Washing basket	1		Standard

Please confirm whether the above items are complete and intact. If there is any damage or lack of accessories, please contact the dealer.

Ⅱ、Principle of ultrasonic cleaning

Ultrasonic cleaning machine generates ultrasonic frequency electricity, which is converted by energy converter into high-frequency mechanical oscillation that is transferred to cleaning fluid. Ultrasound wave is beamed forwards unevenly in the cleaning fluid to make the fluid vibrate and generate tens of thousand of micro bubbles, which form and grow in the negative pressure area where the ultrasound wave travels longitudinally and close (crush out) in positive pressure area. Formation, growth and quick closure of the micro bubbles is called cavitation. In cavitation, closure of bubbles will generate instantaneous high pressure higher than 1,000 times of atmospheric pressure, and the continuous high pressure force hits surface of the work piece like numerous small blasts to peel off dirty on the surface and in clearance of object, and this is how the ultrasonic cleaning machine operates.

Ⅲ、Product features:

▶LCD display and control, simple operation;
▶One-key deqigong can quickly remove air in water, and the ultrasonic cleaning effect is better;
▶Independently developed MCU-sweep ultrasonic generator drive, uniform and strong ultrasonic effect;
▶Independently developed industrial high Q value transducer with high ultrasonic conversion efficiency and long service life;
▶Power adjustment function, can meet different cleaning requirements;
▶Imported high strength glue, seedless nail bonding process, higher ultrasonic conversion efficiency;
▶Digital timing, cleaning time 10s-100min and digital heating control, temperature 20-80℃ arbitrary setting;
▶The inner groove adopts imported SUS304, 1.0mm stainless steel stamping, ultrasonic exchange effect is better, longer service life;
▶The washing basket is made of high quality 304 stainless steel mesh welding, surface electrolytic polishing treatment;
▶The shell is made of high quality stainless steel, with better anticorrosion effect.

Ⅳ、Technical parameter

Model	Internal Dimensions（L*W*H）	External Dimensions（L*W*H）	Volume（L）	Gross Weight(KG)	Ultrasonic Power(W)	Heating Powery (W)	Drain valve	Frequency (KHz)	Time (Min)	Heating Temperature (℃)
UC-9120	240*135*100	304*165*292	3.2	4.77	120	100	Yes	39± 1.5KHz	10s to 100 min	20~80
UC-9120L	240*135*150	304*165*292	5.0	5.4	120	200	Yes			
UC-9180	300*150*100	367*176*292	4.5	5.65	180	200	Yes			
UC-9180L	300*150*150	367*176*292	6.8	6.2	180	200	Yes			
UC-9240L	300*240*150	379*265*292	11	8.5	240	300	Yes			
UC-9360	330*300*150	409*325*317	15	11.5	360	400	Yes			
UC-9360L	330*300*200	409*325*367	20	12.5	360	400	Yes			
UC-9480	500*300*150	581*325*317	22	14.5	480	500	Yes			
UC-9600	500*300*200	581*325*387	30	16.0	600	500	Yes			

Ⅴ、Scope of Application

Industry	Describe
Instrumentation	cleaning of measuring tools and fine cleaning of precision parts prior to assembly

Electronics	Removal of rosin and welding spots on printing circuit board and cleaning of HV contacts and other electronic parts.
Medical care	Cleaning, disinfection and sterilization of medical devices and lab glassware.
Semiconductor	Fine cleaning of semiconductor chips.
Timepiece and jewelry	Removal of grease, dirt, scale and polishing paste.
Chemicals and biologicals	Cleaning of lab glassware.
Optics	Cleaning of optical components and lens.
Textile dyeing and finishing	Cleaning of spinning spindle and spinneret.
Petrochemicals	Cleaning of metal filter mesh, chemical containers and exchanger.
Machinery	Removal of oil/grease on parts and components, cleaning of engine, carburetor and automobile parts and components, filter, and filter mesh.
Surface treatment	Removal of oil and rust before galvanic coating, cleaning and phosphating process before ion plating, removal of accumulated carbon, scale and polishing paste, activation of surface of work piece.
Laboratory	Used for crushing, extraction, mixing and cleaning.

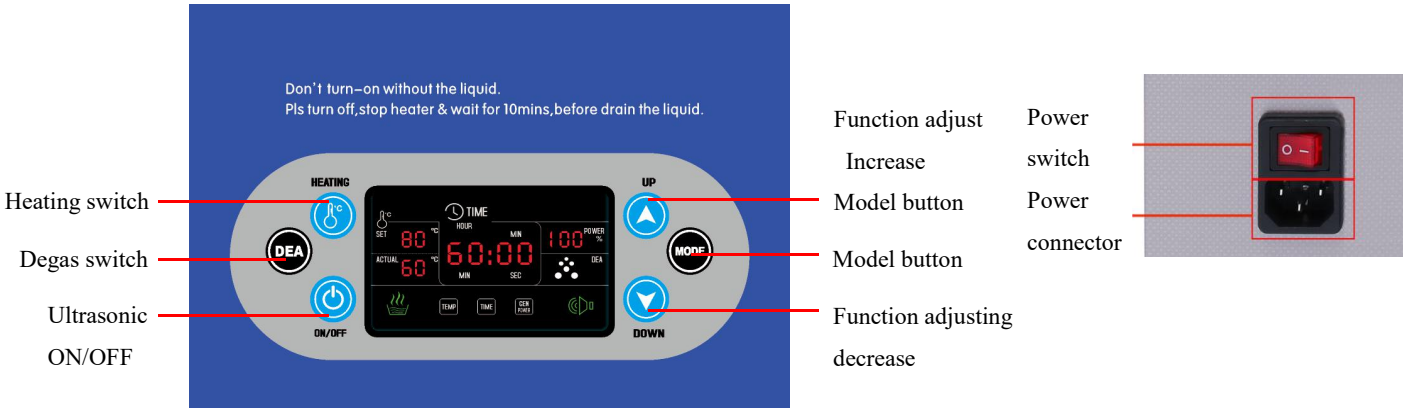
Ⅵ、Installation and Preparation

1.Place the machine horizontally at a well-ventilated and dry location.

2. Select appropriate detergent, cleaning water or other solution based on properties of work piece to be cleaned.

3.Properly and firmly connect the plug to a three-pin power socket which is grounded reliably to ensure safety.

Ⅶ、Operation Instructions



Ⅷ、Operation Instructions

UC-9000-I button function description

1. ON/OFF button Ultrasonic start/stop button, after pressing this button, the washing machine will

start ultrasonic cleaning, the LCD display will light up the ultrasonic cleaning icon, press this button again, the washing machine will stop the ultrasonic cleaning work, and the LCD display will turn off the ultrasonic cleaning icon.

2. DEA button Ultrasonic degassing button. After pressing this button, the washing machine will start ultrasonic degassing. The LCD display will light up the ultrasonic degassing icon. Press this button again, the washing machine will stop the ultrasonic degassing work, and the LCD display will turn off the ultrasonic degassing icon.

3. HEATING button Washing tank heating button. After pressing this button, the washing machine will start heating, and the LCD display will light up the heating icon. Press this button again, and the washing machine will stop heating. (When the set temperature of the washing machine is not reached, the icon is flashing. After the washing machine is heated to a temperature greater than or equal to the set temperature, the icon is always on, and the heating stops at this time)

4. MODE button Temperature adjustment mode/time adjustment mode/power adjustment mode switch button, press this button to switch between temperature adjustment, time adjustment and power adjustment three modes

①In temperature adjustment mode, the TEMP icon lights up and the set temperature flashes. At this time, you can use the UP/DOWN button to increase or decrease the preset heating temperature. The adjustment range of the temperature is (20-80 degrees Celsius).

②Time adjustment mode, the TIME icon is on, the working time of ultrasonic cleaning flashes, and you can press UP /DOWN to add or subtract the preset ultrasonic cleaning time. The adjustment range of the time is (10 seconds-100 minutes).

③In power adjustment mode, the GEN POWER icon lights up, and the percentage of ultrasonic cleaning power flashes.And you can press UP /DOWN to increase or decrease the ultrasonic cleaning power. The power adjustment range is (0-100%).

5. UP button increase button, only valid after the MODE button is pressed, you can add operation to adjust the value, each time you press it, add one unit, long press this button, you can quickly increase the value (except for power mode).

6. DOWN button decrease button， it is only valid after the MODE button is pressed, and the adjustment value can be reduced. Each time it is pressed, it will decrease by one unit. Long press this button to quickly decrease the value (except in power mode).

7. During ultrasonic work, the ultrasonic working time cannot be set, and during heating work, the heating temperature cannot be set.

Operation Steps:

1. Connect to the power supply, turn on the power switch, and after the display interface lights up, press the MODE button to set the heating temperature, ultrasonic working time, and ultrasonic power.
2. Pour the cleaning solution into the cleaning tank, and put the objects to be cleaned into the cleaning tank.
3. Press the HEATING button, and the cleaning fluid in the cleaning tank will start to heat (if the cleaning object does not need to be heated, skip this step).
4. After the temperature in the cleaning tank reaches the set temperature, press the ON/OFF button, and the cleaning machine will start ultrasonic cleaning.
5. If the cleaning effect is not good, or there are too many bubbles in the cleaning liquid, press the DEA

button to degas the cleaning liquid (if not, skip this step).

6. After the ultrasonic cleaning time is up, the cleaning machine stops the ultrasonic work, press the HEATING button to cancel the heating, and take out the cleaned objects, pour out the cleaning liquid, do the cleaning in the cleaning tank and wipe dry.

IX、Factors Influencing Performance

1.Ultrasonic power density:Higher power density results in better cleaning performance and higher cleaning speed. Higher power density is appropriate for cleaning of work piece with stubborn dirt, and lower power density is suitable for any precision work piece (generally ultrasonic power density ranges between 0.01-0.02w/ml).

2.Ultrasonic Frequency: Lower frequency results in better cavitation performance. Higher frequency contributes to better refraction/ reflection performance. Lower frequency should be applied for cleaning of simple surface while higher frequency for cleaning of complex surface with deep or inaccessible hole. (80KHz, 120KHz)

3.Cleaning temperature: Ultrasound wave will present the best cavitation performance at a temperature range between 40~50℃.Higher cleaning temperature facilitates breakdown of dirt, while a temperature above 70℃~80℃ may impair effect of ultrasound wave and deteriorate cleaning performance.

4.Cleaning duration:Longer cleaning duration presents better cleaning performance (except for special material).

5.Other influential factors include type and properties of cleaning fluid and the dirt to be removed.

X、Maintenance

This machine shall be used, maintained by dedicated personnel and a full check on the equipment shall be performed regularly.

1. Check the power supply and line connections for any looseness, overheating, damp absorption or poor contact.

2.Inspect sealing of the bottom board of cleaning tank for any leakage.Check the joint between drain pipe and cleaning tank for leakage.

3.For looseness of ultrasound wave converter or burnout of power tube, contact the manufacturer immediately.

4.The ultrasound wave equipment shall be operated and stored at well-ventilated, dry and clean place to facilitate good performance and long service life.

XI、Malfunctions and Solutions

malfunctions	solutions
Failure of Ultrasonic Wave	(1) Check whether the power cable has been connected properly (by inspecting operation of power indicator lamp). (2) Check whether PCB has been connected properly to the power socket.

	(3) Check whether the fuse tube is broken
Weak ultrasonic wave	(1) Check whether the power voltage is normal. (2) Inspect whether the energy converter get loose or there is any shock absorption material or work piece under the tank. (3) Check whether cleaning fluid temperature is normal (recommended operating temperature is higher than 30 degree) or there are many air bubbles in the fluid or on the tank wall (repeated power-on/off will reduce the bubbles). (4) Check whether the solvent is added excessively.
No heating	(1) Check whether target temperature is too lower (lower than current actual temperature). (2) Check whether the heater cable is disconnected or gets loose. (3) Check whether heater is broken (due to shortage of cleaning fluid)
Electric leakage	(1) Check whether the machine has absorbed damp or corroded. (2) Check whether cable tray to each component is damaged, loosened or broken. (3) Check whether the earthing wire is in good condition.

If the problem cannot be removed, contact our service center or return the equipment to the HQ or your local office for handling.

XII、 Application Safety

Safety Considerations

1. Warns: This product contain dangerous voltage, so do not start it at a high-temperature or humid location to avoid electric shock.
2. Do not impose great impact to this machine, and handle it with care to prevent impairment to performance or life span of it.
3. Locate this machine properly to avoid any accident resulted from children's access to it.
4. Perform any maintenance operation only after the power supply is disconnected to avoid any safety accident.
5. The machine contain high voltage during operation, so do not dismantle its enclosure to avoid any hazard.
6. For any damage to the power cable, contact your service center or your dealer for replacement.
7. Clean the enclosure with soft dry cloth after disconnecting the power cable.
8. Protect the machine from splash of rain or water to avoid electric shock or fire, and keep it away from any location with high temperature or humidity.
9. For reason of personal safety, do not dismantle the enclosure for repair or change on your own.

Safety Considerations

1. During normal operation of ultrasonic generator, a consistent sound is resulted from the harmonic oscillation of the tank body impacted by ultrasound wave, and no agitation but ripple is caused on the surface of cleaning fluid by explosion of cavity. In case of discontinuous oscillation, increase or reduce the cleaning fluid by a small quantity to eliminate such oscillation to facilitate cleaning of work piece.
2. While ensuring adequate cleaning of work piece, keep the generator operating intermittently, as long-term consecutive operation may result in high temperature insides and accelerate aging of electronic components in it.
3. Absolutely do not use any inflammable detergent.
4. When there is no cleaning liquid in the cleaning tank or the cleaning liquid has not been added above the minimum water level, it is forbidden to turn on the heating or ultraso

nic function; or otherwise the machine may be burnt out or even result in fire.

5. Prevent splash of cleaning fluid or water into the machine or energy converter, which may cause electric leakage or short circuiting, and thereby damage to the converter.
6. Any foreign matter falling into the tank shall be taken out immediately.
7. Before changing or discharging the cleaning fluid, make sure the fluid is at normal temperature and the ultrasonic wave generator is shut down and the power supply is disconnected.
8. Remove any dirt in the tank after operation.
9. Keep the external surface of the machine clean.

XIII、 Warranty

1. Validity of warranty: One year from the date of purchase
2. Please keep this after-sale service card properly, or otherwise the warranty will be invalid.

Warranty will be invalid in any one of the following cases:

- The machine fails or is damaged due to improper use or unauthorized disassembly of the product by user.
- The machine is damaged due to force majeure (e.g. fire, flood, earthquake).
- The machine is damaged due to failure to operate the machine in accordance with the instructions.
- The machine is damaged due to improper repair by anyone other than our technician.
- The warranty card and/or purchase invoice is unavailable or be altered without authorization.

Warranty Card			
User Information			
Customer Name		User's Telephone	
User's Address			
Product Information			
Product Model		Attached Number	
Purchase Date		Dealer Name	
Dealer's Telephone		Dealer's Seal	
Dealer's Address			