



DOUBLE ADJUSTABLE FREQUENCIES ULTRASONIC CLEANER

ULC18-10



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1. Brief introduction

Ultrasonic Cleaner is modified, improved, designed base on the world category similar product. The medical digital controlled ultrasonic washing machine adopts the international modern integrated circuit, the transistor, microprocessor, the protected circuit and the digital code display. It broke through the traditional form of single-frequency in the one machine for the decades. The two types of 45 KHz, 80 KHz can make frequency conversion and switch settings automatically, which let work piece cleaned by the rough washing, careful washing by two frequencies, so that the work piece get a full range of cleansing, at the same time, it makes one equipment function instead of two equipments authentically. Its application is widely spread in the fields of hospital, school, scientific institute, petrol-, chemical-, light-, metallurgical industry, communication, and etc. Washing apparatus and instrument, electric apparatus, semi-conductor silicon plate, circuit plate, electroplating part, optical lens, high-frequency magnetic head, polyester fiber flitting core, emulsion die, medical apparatus, clock/watch part, high precision hardware. In particular, it is suitable for the part with deep hole, blind hole or groove. The medical digital controlled ultrasonic washing machine can are also applied to use as the degassing, the mixture, the broken of cell at the laboratory of the biochemistry, the physics, the chemistry, the medicine, the scientific research, the universities and colleges.

2. Operating principal

The principal of the said ultrasonic washing machine is that ultrasonic generator produces high frequency shaking signal, and then it is to be conversed by a energy-exchanger to high-frequency machinery vibration propagating into the washing liquid. The ultrasonic wave radiates forward in a manner of density and sparsity, generating hundred of thousand of bubbles in small size, which are generated and grown in the negative pressure area formed by the longitudinal radiation of ultrasonic wave. Then the bubbles generated close immediately in the positive area, which is so called hollowing effect, producing more than 1,000 atmospheric pressure instantaneously. The continuously high pressure generated by the bubbles likes a series of small explosion impacting the surface of the article being washed, making the dirty either on the surface or in the crevices come off, so that the article is to be cleaned.

3. Specifications

1. Operating frequency: 45KHz、80KHz
2. Ultrasonic output power: 300W
3. Digital code display adjustable power: 40%-100%
4. Heater power: 400W
5. Digital code display Control temperature range: 10°C-80°C
6. Digital code display Water level range: 30-120mm
7. Digital code display Control temperature: the liquid temperature is exceed 80°C, the machine will cut off the heater and ultrasonic automatically
8. Frequency conversion time range: 1-999s
9. Digital code display work time set: 1-480min
10. Duration of operation: more than 8h
11. Digital code display accumulative work time : 999999h

12. Volume of washing vessel: 300×240×150mm (10L)
13. Power source: 220V/50Hz
14. Working condition: environment temperature 0-40°C
15. Relative humidity: 10%-85%
16. Dimension of body: 320×264×320mm
17. Weight: 12kg
18. Net Weight: 10kg
19. Drainage: 1/4 stainless steel ball valve
20. Material of body: Stainless steel

4. Main performance and characteristic

1. Control panel seal diaphragm switch and display function of digital function.
2. Display the date of the shipped equipment, logical actualization “two guarantees”.
3. Display the memory what the accumulative working time, logical actualization “two guarantee”.
4. Display the memory that set the ultrasonic working time
5. Display the memory that set the ultrasonic frequency switch time automatically.
6. Display the memory that set the ultrasonic power.
7. Display the memory that set the ultrasonic power.
8. Display the memory what set the heating temperature and the actual temperature in the current vessel
9. The automatic protection of the over-controlled temperature range conforms to the automatic reset of the controlled temperature.
10. Display the memory that set the water level and current actual water level in the vessel.
11. The heating stops automatically at exceeding the set up temperature and starts at lowering set up temperature automatically.
12. To protect automatically at exceeding the state-specified voltage and recover at the correct voltage automatically.
13. To protect automatically when the instrument what stated electricity at exceeding 30%, recover automatically after the electricity goes back to normal.
14. To protect automatically when there is no the solution in the washing bath to prevent the instrument from damage.
15. To protect automatically at less than standard water lever and recover the standard water lever.

5. Equipment installation

1. After unpacking first read carefully the operation manual and check if the parts in the accessory list appended to the last page of manual are completed and the equipment is damaged at transportation, and if the parts are found damage or lost, contact our Company immediately.
 2. The instrument shall install on the flat, dry and ventilation place.
 3. The power cable is connected into the 220V/50Hz switch gear box provided with the earthing device.
- Seedtime:

Make the two frequency ultrasonic cleaner's power cable to connected into the 220V/50Hz electrical source if two cores, when the middle of green light is bright on the panel, it means that the instrument has been electrified, it can work now.

Cleaning process:

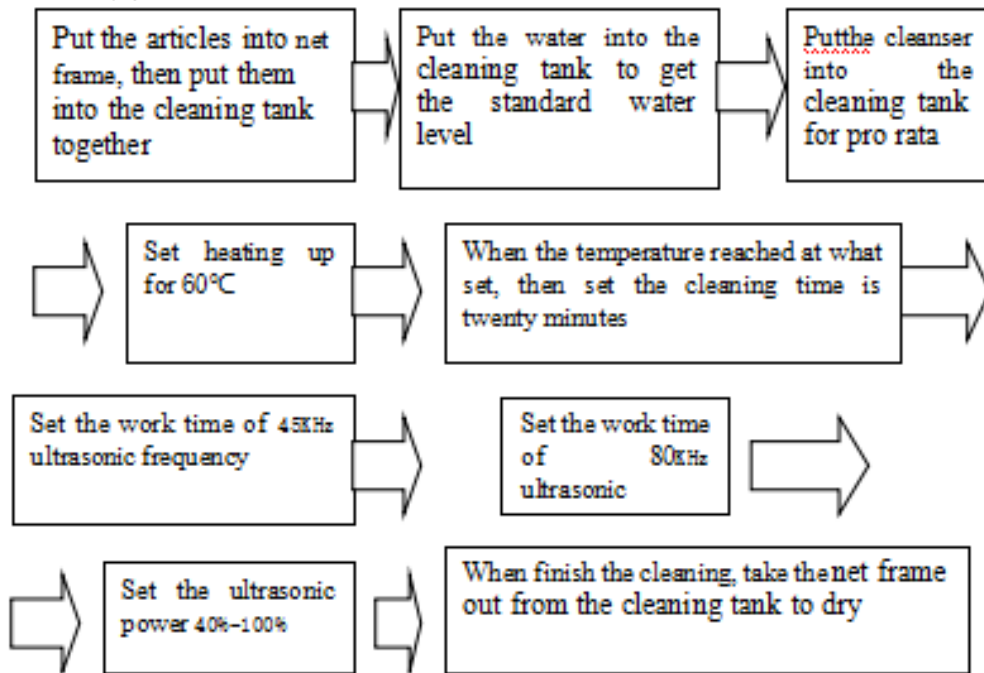


Figure 1

1. Put the articles need to be washed to the washing net frame and then put the washing net frame into the cleaning tank, do not put the articles directly into the cleaning tank, otherwise it can affect the out-performance and damage the instrument meanwhile.
2. Put the cleanser into the cleaning tank for pro rata
3. After pressing the power key, which will show 008 005 004 000 000 or other figures on the displaying screen of temperature, water level, time, frequency, power, and also showing the shipment (year date month), however after 3 sec, a buzz goes off, at same time 000 000 000 000 008 or other figures display the temperature, water level, time, frequency, power on the screen, which means the accumulated working time for 8 hours. In general the unit is tested not exceed 50 hours before shipment out of manufacturer.
4. When the water or solution filled into the washing bath achieves at setting water level, the equipment has a special buzz goes off again, when the solution in the washing bath is lower than 10°C, the light will coruscate on the screen, it means that the water temperature is lower than 10°C, which needs to heat the water and increase the temperature of water. Except for the heating function, all of the setting function keys of the instrument close the protection automatically
5. When cleaning tank has no liquid in this circumstance, the display of water level will glitter, and it

means that there is no liquid or lower standard water level in the cleaning tank. In this situation, any function of work key will automatic close and protection, this should put water or liquid into the tank.

6. Temperature setting: Pressing the heating ON key and pressing again the heating OFF key. Set up based on the necessary temperature by means of punching once the setting key “↑up” or “↓down”. Based on the necessary temperature is to be 10-80°C selecting the temperature. In general, the work piece needs the temperature of about 60°C, and once the temperature is selected press the heating ON key and the heating indicator is ON showing the heating starts, as well as the displaying screen shows the measured real temperature in the present container and the set up temperature. When the temperature achieves to the setting temperature, the temperature, water level, time, frequency, power displaying 060 080 020 045 100, the red heating indicator will be OFF and the temperature heating will stop as well. When the temperature is lower than the setting temperature, the temperature, water level, time, frequency, power displaying 059 080 020 045 100, the temperature heating unit starts heating automatically and the red heating indicator is ON. When the water temperature excess 10°C in the cleaning tank, the temperature, water level, time, frequency, power displaying 011 080 020 045 100, it means that it can turn on ultrasonic work, when the water temperature excess the regulate temperature of 80°C, the heating indicator will coruscate, the equipment will automatically protect (turn off the ultrasonic work), when the water temperature is lower than 80°C, it will stop coruscate, it means that it can ultrasonic cleaning. Setting temperature is set under the circumstance of no-starting position. Otherwise, it's invalid in temperature setting. Please be cautious that microprocessor can memorize the last the input of set temperature.

7. Water level protection: press the water level key of OFF, based on the necessary operate water level by means of punching once the setting key “↑up” or “↓down”, setting key of operating water level which is ranged 30-120mm., the cleansing water level is nearly setting for 80mm. So far as setting, press the water level key of ON, the water level indicator light will be bright, the temperature, water level, time, frequency and power displaying 036 080 020 045 100, which show that the actual water level in the current container. When there is not water in the container, the water level display will glitter, ultrasonic and heating will be locked, here need to add water into the tank, when the ultrasonic water level is lower than 30mm, ultrasonic can not be turn on, when the heating water level is lower than 30mm, the heating can not be turn on. when the water level achieve at (30-120mm), issued specific beep sound, it means that current water level has been achieved at what you set water level, when it exceeds the highest water level 150mm, ultrasonic and heating will be locked. The water level will be set before turning on the ultrasonic and heating, or else the setting key of water level will be abated. Please be cautious that microprocessor can memorize the last the input of set water level.

8. Frequency setting: supply the types of working frequency are 45KHz 、 80KHz Press the key of enactment conversion, which the working frequency displays the number is 045, the red indicator of frequency will not be bright, here the equipment's working frequency is 45 KHz. Press the key of enactment conversion, which the working frequency displays the number is 080, the red indicator of frequency will not be bright, here the equipment's working frequency is 80KHz. press the key of automatism, the red indicator of frequency will be bright, here the equipment's working frequency is 45 KHz.

9. Total working time setting: press the key of OFF or ON, timing unit can be set up based on the necessary washing time by means of punching once the setting key “↑up” or “↓down” only and a punching shows increasing 1 minute or decreasing 1minute by the timing unit, setting range of the timing unit can be selected freely between 1-480 minutes. In general, the cleansing time is nearly setting for 20 minutes. The setting time will turn on before setting the start ultrasonic. Otherwise the key of time setting will be invalidation. But when turn off the power supply, and then turn on the power supply again, the number of 020 is displayed on the time screen and can be done only by pressing the key of time OFF again. The attention is taken to the last inputted

10. When the working time setting in the 45KHz (or 80KHz) : press the frequency key of enactment conversion, if the frequency display 045 (or 080) in the screen, press the key "↑up" or "↓down", and a punching shows increasing 1s or decreasing 1s by the timing unit, setting range of the ultrasonic timing unit can be selected freely between 1-999s. In general, the cleaning requirement the frequency conversion time is nearly setting for 30s
11. Time memory: when the power supply is switch on, time memory can memorize the accumulated working time and the memory of the accumulated as 999999 hours.
12. Ultrasonic power setting: pressing the ON key, the light will become yellow and subjects to the requirement of the article washing capacity press the setting key "↑up" or "↓down", and the desired operating ultrasonic power allowed by the setting key is between 40%-100%. Each press that means the setting ultrasonic power increase or decrease 10%W, general articles require to set the cleaning power at 100%. For what cleaning articles are easy to break up or some are used test、degassing、extracting、smashing powder and cell in the laboratories of biology and chemistry, physics, medicine , academy of sciences and think factory which setting at 40%-100% . The setting-up of ultrasonic power shall be performed under being ultrasonic ON and otherwise, the ultrasonic setting key is invalid, the attention is taken to the last inputted set up ultrasonic power to be memorized by the microprocessor.. Please be cautious of the microprocessors, which memorize the last ultrasonic power.
13. When 060 080 020 045 999 are displayed on the screen of the temperature, water level, time, frequency and power, and showing that the voltage exceeds state-specified one of 245V or the current exceeds more 30% of the total one used for the instrument, all of the function key will be closed due to self-protection can not be started; and the voltage is lower than 245 V or the current is lower than 30%, when the voltage is lower than 180V, only the equipment's green indicator of power supply will be bright, all of the others will crush out. After several minutes, press the power supply of the ON key, heating ON key, ultrasonic ON key, it is working.
14. After the washing completed, the ultrasonic power is closed automatically. When the second washing starts and if correction is needed can then repeat mentioned above procedure; and press the ultrasonic ON key if it is not need to correction.
15. After the washing is completed for 20 minutes and the instrument is operated by no anyone the power supply will be closed automatically; and if work again, press the power ON key and press again the ultrasonic ON key.
16. When the washing is completed, take the net frame out off the cleaning tank and spray it with warm water or put it into the rinsing tank to rinse, and using the hot wind to dry, at the same time put not cleaning thing into the tank of ultrasonic, press the NO key.
17. The solution in the washing bath can be used repeatedly and the using limit is dependent on the dirty level of the article to be washed. Due to the emitted wave is saturated by the solution, which then is drained as waste.
18. After the washing is completed and when the waste solution in the washing bath needs to be drained open the valve and close the valve again after its full drayage.

6. Safety matters

1. When using the Ultrasonic Cleaner, make sure power supply has device of grounding, otherwise, our Company does not take any responsibility for the unexpected accidents.
2. During the period of washing, the articles should be put to the washing net frame, which is put to sink instantaneously. Under no circumstances should this article be put into the bottom of sink directly and hit the energy-converter on the bottom.
3. When using the appropriate chemical washing reagent, make sure that it matches with the sink made by stainless iron. Do not utilize strong acid, alkali or volatility and causticity etc.
4. Make sure no water solution or any other corrosive liquid goes into the inside of the machine. Otherwise, when any damage of the device occurs, our Company does not bear any responsibility
5. When washing a new article, you have better to make a sample test before washing any articles.
6. In the process of washing, any solution contact with eyes or was eaten, rinse plenty of water or consult the medical immediately.
7. Cleaning fluid should be changed regularly, otherwise washing down the dirt convergent synthesis of particles deposited on the bottom; this will weaken the role of ultrasonic cleaning, so that a lot of the solution will lose cleansing effect in the certain period of time. Need to add in time.
8. The heating of equipment adopts import film patch, when the heating function turns on, the water level can not be lower than 3cm, or else the heating patch is easy to shatter because of dry burn. When new equipment turn on the heating function, some smelly it is a normal phenomenon
9. This equipment has a temperature-controlled ultrasonic control of some protective devices, when it is over-temperature will stop ultrasonic, after cooling, it will automatically ultrasonic.

7. Warranty

We declare hereafter the terms of quality warranty for our ultrasonic washing machine. Our company will be fully responsible for repairing and replace any damaged part for the complete machine accrued by materials used, except housing and connectors which are easy to be damaged, within the 12 months of guarantee period, if the user operates the machine properly according to the operation manual and the machine is in normal ambient condition. But the warranty does not cover the freight fare. In any case, no matter the after sale service or other additional conditions, our liability for compensation of repairing or replacing the damaged parts shall not exceed the total price of the machine. We are not responsible for any damages not being anticipated.

8. Packing List

No .	Name	Qty .
1	Main machine	1
2	Power line	1
3	Washing net frame of the stainless steel	1
4	User manual	1
5	Warranty card	1
6	Certificate	1

LABSTAC

Labstac LLC

82 Wendell Avenue, STE 100, Pittsfield, MA, 01201, USA

Email: contact@labstac.com | Website: labstac.com