Ultrasonic cleaner

SB-5200DTD

Operation Instruction

1. General

DTD Series Ultrasonic Wave Washing Machines have been designed by technicians through long-time research and development with advanced technology and devices introduced from developed countries. They have complete functions, new appearance and reliable characteristics, with different functions , central microcomputer control, person-machine dialogue, ultrasonic time, power and internal temperature setting, data save and etc. They have passed examination of Technical and Supervision Bureau.

DTD Series Ultrasonic Wave Washing Machine have been extensively used in hospitals, pharmaceutical industry, schools, R&D, Petrochemical Industry, Chemical Industry, Light Industry, Metallurgy, Mechanical Industry, Transportation, National Defense Industry, which are applicable for deep cleaning of instrument, apparatus, electronic components, circuit boards, semi-conduct silicon pieces, magnetic material, electric plating components, hardware, optical lens and components, audio-magnetic head, terylene filter core, spinneret, latex moulds, medical devices, glassware, bijouterie, horologe components, precise hardware, bearings, nozzle tips, grease pumps and mechanic components and components with complex shapes, especially, they are ideal washing machine with high efficiency and precision for dirt in deep bores,   blind bores, rough surfaces. With relevant washing agent,   washing effectiveness will better.

2. Principles

Super-audio signals created by ultrasonic-wave generator of ultrasonic-wave washing machine will convert into same-frequency mechanic vibration through piezoelectric inversion effect of energy conversion machine, which will create tens of thousands of small bubbles by radiating forward in washing solvent in the form of super audio vertical wave(ultra audio vertical waves transfer interactively in negative pressure area and positive pressure area). All bubbles take into form and grow in negative pressure area, and close rapidly ,

i.e. explode transiently in positive area, and attack the surfaces, clearance and cavities of the articles to be washed, so that dirt will be peeled off rapidly(this is the cavity effect specially provided by the ultrasonic wave washing machine), and the dirty surfaces will be cleaned up.

3. Main technical indexes

Model No.：SB-5200DTD

Internal barrel	300× 240×150 mm	Freq	40KHz
power	240W	Heat. Power	500W
Temp. Adjust	Room Temp.-80 ℃	Capacity	10L
PC Timing	1-999 min	Total Digital Time	99999h
Power Adjust.	40-100%	Rack	yes
Buffer cover	yes	Drainage	yes

Note: Internal barrel and external shell are made of high quality stainless steel, with use temperature: Room Temp.＋5°C—80°C.

4. Use Method

(1) Add cleaning agent in cleaning barrel(water and cleaning agent), with same level as upper edge of screen basket. When cleaning, please add cleaning agent as per different cleaning requirement to improve cleaning effectiveness. Cleaning agent selected shall not corrode internal barrel and conform to the requirement of the machine, and strong acid and alkali are forbidden to be used as cleaning agent.

(2) Put the articles to be washed in the cleaning barrel with screen basket.

(3) Insert the power plug of Ultrasonic Wave Washing Machine into 220V/110V three-core power socket(phase wire, zero wire and ground wire), and push the switch(operation interface is shown in following figure).

Button and Interface Introduction

Notes: knob rotation speed is accelerated, then the digital increase or decrease is accelerated.

(1) Rotate the right knob: total time (minutes) addition and subtraction (automatic effect, no need for additional confirmation)

Click the right knob: "ultrasonic" ON/OFF, and "ultrasonic" displays red is ON/white is OFF;

(2) Rotate the left knob: ultrasonic power addition and subtraction (automatic effect, no need for additional confirmation)

Click the left knob: "heat"ON/OFF, and "heat" shows red is ON/white is OFF.

(3) Degassing Setting: press the right knob for more than 3 seconds , degassing will blink then enter the setting : interface display "H" (H mean ultrasonic working) turn right knobs set "H" working time, when complete, click the right knobs, to enter the next step: interface display "L" (L mean ultrasonic stop), turn right knobs set "L" working time, when complete, press the right knobs more than 3 seconds, save the data then exit Degassing Setting.(note: if you stay for more than 10 seconds in the degassing setting step, it will automatically return to

the starting page, which needs to be reset)

(4) "Temperature" Setting: press the left knob for more than 3 seconds , the temperature will blink then enter the temperature setting: rotate the left knob to add/subtract the "temperature" value.Finished setting, press the left knob for more than 3 seconds, save the data and exit the temperature setting, the temperature setting completed.When the temperature reaches the set value, it will automatically stop heating.(note: if you stay for more than 10 seconds in the temperature setting step, it will automatically return to the starting page, which needs to be reset.)

5. Indicator light display instructions:

(1) "ultrasonic" is red, indicating that the ultrasonic function is ON

(2) "heating" is red, indicating that the heating function is ON

(3) "temperature" is red, indicating during heating;"Temperature" white indicates pause heating

(4) "degassing" is green, indicating degassing (ultrasonic pause)

(5) "setting" is white, "degassing" flashing indicates entering the corresponding working time setting state

(6) "power" is white, and flashing indicates that the power setting is zero

Note:

If the liquid level is lower than the water level, please add the liquid in time, otherwise it will damage the equipment;

If the total ultrasonic time is "000", the ultrasonic cannot be turned on, and the setting time shall not be 0;

6. Parameter Setting：

A. The total time (0-999 minutes) can be set at will in the non-setting state;

B. Set ultrasonic working time: please continuously set two parameters: degassing ON (0-999 seconds) and degassing OFF (0-999 seconds).The total working time of ultrasonic includes: continuous cycle working time of degassing

ON and OFF.

C. Set the degassing off time to zero means "turn off" this function.

D. If there is no operation for a long time during the setting process, the original page will be automatically returned.

7. Precaution issues for safety

(1) Before using the machine, please carefully read the operation instruction manual;

(2) Before using the machine, make sure it has been earthed reliably.

(3) Kindling and fire are forbidden in work place, and the machine shall not be put directly under the sun.

(4) When using alcohol, acetone, gasoline and other flammable liquid, the machine shall be covered, and heating is not allowed.

(5) Make sure that the cleaning agent temperature is bellow 70°C, generally, the articles shall be washed at normal temperature or 40-50°C.

(6)Not turn on the machine and heating function when there's no liquid in the barrel, which may damage the machine.

8. Reference table of washing agents

Articles and scales to be cleaned	Washing agent	Concentration of washing agent
Mechanic components	Industrial washing agent Industrial ultrasonic washing agent Industrial Oil	（5-10）% 或 or based on cleaning requirement
Hardware		
Carbon powder		
Cutting oil		
Residual oil		
Tallow oil		
Light oil		
Metal chip		
Metal oxidate		
Rust mark		
Watch belt	Washing agent	（5-10）%
Work piece		
Dust		
Imprinting		
Brightener	Washing agent Brightening material	（5-10）%
Iron red powder		
Bermeal		
Electronic components	Washing agent of Electronic component	（5-10）%
Circuit board		
Optical apparatus	Washing agent of optical apparatus	（5-10）%
Optical glass		
Magnetic material	Washing agent of magnetic material	（5-10）%
Gold & silver	Washing agent of jewellery	（5-10）%
Jewellery		
Platinum		

There are many factors effecting cleaning efficiency by ultrasonic washing machine, mainly including:

1). Power density of ultrasonic wave： The high power density is, the more efficient the cavity effect is, the better washing efficiency is and the more quickly the article can be washed.

2) Frequency of ultrasonic wave: the lower the frequency is, the better the air would be, and the higher frequency is, the better the catadioptric effect is.

3). Washing temperature**:** Cavity is best when ultrasonic wave is between 40℃ ~ 50℃.　Higher temperature is helpful for dirt to discompose, however,

when temperature reaches 70℃ ~ 80℃, it will impact the power of ultrasonic wave, and washing efficiency will be lowered.

4). Washing time**:** The longer washing time is, the better the washing efficiency is, except special material.

9. Maintenance and repair

The machine is precious equipment, which shall be used, maintained and kept by special persons. Regular inspection of the machine is required.

a) Inspect the power supply and output wire, to see if there're any loose, overheating, moisture and poor contacts.

b) Inspect power supply of ultrasonic and mesh enclosure of cooling air blower, and clean the dust on the surface.

c) Inspect sealing condition of bottom plate of washing barrel, to see if there's any leakage.

d) If you find that vibration generator pulled out or power tube burnt, please contact the manufacturer.

10. Packing list：

Main machine	1 set
Rack	1pc
Buffer cover	1 pc
Operation manual	1copy