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# **Ultrasonic Cleaner Machine**

## **Instruction Manual**

**Model: F-300/ 40KHZ**

Please read the manual carefully before operation.

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## (1).Working Conditions

- Please ensure correct power and switch connect before starting the equipment. Be careful that the control panel will be corrosive under the condition of organic solution, strong acid and strong base.
- Do not use the product under condition of :
  - Where temperature fluctuate strongly
  - Where it has high humidity and especially dew
  - Where vibration or shock is strong
  - Where corrosive gas or dust exist
  - Where water, oil or chemicals splash.
  - Where is easy to cause explosion.
- **Machine Features:**
  - Power supply: Machine **AC220V**
  - Room temperature:  $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$
  - Room humidity:  $35 \sim 85\%$
  - **Machine No:2020F18**

## (2).General:

### 1. General:

Single tank ultrasonic cleaner are industrial models in industrial field, made of high quality SUS stainless steel plate, corrosion resistance and long lifespan, adopt with high technology ultrasonic transducer and advanced adhesive technology, high electro-acoustic conversion efficiency and strong ultrasonic power output.

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Equipped with automatic constant temperature heating device, heating range:  
room temperature~95°C.

Ultrasonic cleaner widely applied to industry of precision electronics, painting, semi-conductor, filter system, watch-clocks, glass, metal, jewelry, and medical instruments cleaning etc.

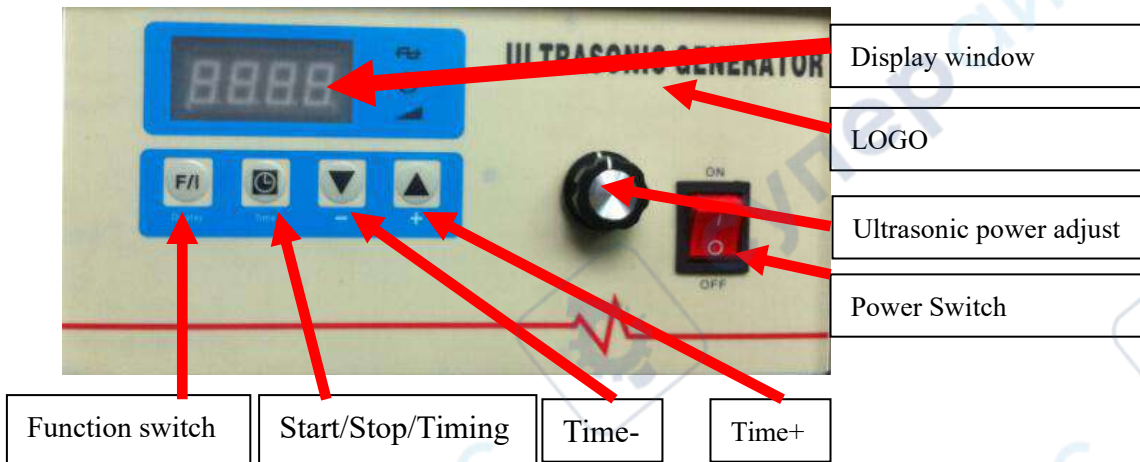
## 2. Structure & Function:

- Ultrasonic generator: output frequency is 40 KHz (40/68/80/120/132KHZ are available for customized model). Equipped with sweep function and compensation circuit, strong anti-interference ability, high output frequency precision.
- Transducer: Convert electric power into Hi-Fi mechanical vibration energy, with broad band frequency, high power and high stability.
- Heating system: Automatic constant temperature heating systems, made up of heating panel, digital timer and temperature switch.
- Machine structure: with separate generator control
- Timer: timer can be set by customer upon requirement 1-99min
- Temperature: set temperature based on your demand, 20 °C ~ 80 °C can be setted.
- Ultrasonic control:
  - A. ultrasonic tank: equipped with 40kHz 30pcs transducers,1500W.
  - B. Ultrasonic tank: equipped with 3KW HEATING.
  - C. Generator structure:

## Function instruction:

**(Note: The generator parameters have been set before shipment. Please don't**

operate the buttons except the power switch and the power adjust knob if there is no professional guidance.)



Picture 1: generator control panel

**F/I: Function switch:** Continuously press the button, the display window will switchover current/frequency/mode.

(1) **Current display:** X.XXA, A displays amps.

(2) **Frequency display:** FXXX or FXX.X, F displays frequency.

(3) **Mode display:** it has three cases: timer mode, normally open mode and remote control mode.

**Timer mode:** TXX.X, in minute. Press +/- button can set the time. Press TIME to start the timer and machine will automatically off.

**Normally open mode:** it will displays ON. Press the TIME and + button at the same time to set it.

**Remote control mode:** Press the Time and – button at the same time to set it.

If need to switch over the machine to timer mode when the machine is under normally open mode and remote control mode, please press + and – button at the same time.



- Label
- Remote control
- Ultrasonic Power Output
- Power port
- Cooling fan

**D. Operation panel:**



**3. Ultrasonic cleaning principle:**

The ultrasonic cleaner uses transducers to generate sound waves; frequency is 40KHz. When the sound waves travel through the liquid, millions of tiny bubbles

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form and burst continuously. This process is called a “**cavitation**” effect. The bursting bubbles scrub everywhere the liquid can penetrate. Intricate surfaces and difficult access areas, such as burs, endodontic files, serrated instrument handles, and hinged instruments, are cleaned more thoroughly and rapidly but no damage to cleaning objects. The cavitation is basic theory of ultrasonic.

ultrasonic cleaner suits for aqueous solution, neutral liquid is suggested. Strong acid, strong alkali and flammable liquids are forbidden.

#### **4. Cautions before start the machine:**

- Place all buttons on “OFF”.
- Cleaning liquid is ready in tank, Empty tank working is forbidden!
- Don't let the liquid splash into the electronic parts, especially transducers.
- Start the ultrasonic when liquid temperature reaches we set.
- Don't start heating if no liquid or liquid level is lower than work level, or heating pad will be damaged.
- Don't contact the bottom directly (vibration plate), may damage the transducers.
- Keep the machine in dry and cool environment.
- **Generator power supply is 220V 50HZ and should be earthing.**
- Cover the lid to reduce noise and attention to liquid drop and evaporation.
- Wash the tank if there is much deposit in the tank
- Don't pull inside liquid out if liquid temperature is not close to room temperature, to avoid the side tank which equip with heating tube deform.
- Don't move the machine when there is liquid inside tank to avoid splash.
- Machine power supply is **AC220V** must be grounded.

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## 5. Main parameters:

Model	Tank size	Ultrasonic power	Heating power	Ultrasonic frequency	Capacity	Voltage
F-300	L600*W450*H400MM	1500W	3KW	40kHz	108L	Machine220V

## 6. Instructions:

- Keep machine on the flat floor and must be grounded
- Connect power wire and ultrasonic cable correctly.
- Connect the drain pipe with factory drainage system
- Put into cleaning liquid to the working surface.
- Set temperature based on requirement and turn on the heater switch.
- Adjust ultrasonic power to Min., then start ultrasonic and adjust ultrasonic power to requirement after normal vibration.

## 7. Maintenance:

- Use high-pressure blast to clean dust of the control system regularly
- Clean the tank once a week at least

## 8. Trouble clearing:

Item	Questions	Possible reasons	solutions	remark
1	No ultrasonic	A、 Power supply not connect B、 Fuse broken C、 Cable short circuit D、 Transducer short circuit E、 Other reasons	Check and plug power switch Check fitted power supply and fuse Connect fitted cable or replace a new Inquiry our after service engineer Inquiry our after service engineer	
2	Not well cleaning	A、 Not strong ultrasonic cleaning B、 Too high too low liquid surface C、 Too high too low temperature D、 Not suitable cleaning liquid E、 Other reasons	Connect ultrasonic button and adjust Adjust liquid into the best surface Adjust temperature into the most fitted Stop and switch off power supply, replace suitable liquid after the previous liquid cool down. Inquiry our after service engineer	Suggestion 50-60°C
3	No heating	A、 Heating power switch bad linkage B、 Fuse broken C、 Other reasons	Check heating plug to correct connect Check outlet line with multimeter: if OK and resistance value is few hundreds then replace fuse. If not OK,it's short circuit, replace heater. Inquiry our after service engineer	Suggestion 50-60°C
4	Temperature control failure	A、 Thermostat loosen B、 Thermostat tube broken C、 Other reasons	Fasten the thermostat header replace thermostat Inquiry our after service engineer	
5	Timer control failure	A、 Timer knob out of control B、 Timer failure C、 Other reasons	Loosen or tighten the screw Replace timer or digital panel Inquiry our after service engineer	
6	Electric leakage	A、 Customer side not grounded B、 Machine not grounded	To ensure grounded Check if machine earth wire loosen	