Manual NO. 9133

Ultrasonic Cleaner

Dual Frequency

USS-FX00030 USS-FX00031 USS-FX00032

USS-FX00033 USS-FX00033 USS-FX00035

This manual shall be made available to all users of ultrasonic cleaners. To ensure the best results and maximum durability of this U.S. SOLID LLC (hereafter U.S. SOLID or The Company) product, read and follow all instructions carefully. Failure to do so may lead to serious bodily injury and catastrophic damage to the cleaner, supplies, or surrounding area. All safety suggestions must be followed closely, and precautions must be taken to guarantee this ultrasonic cleaner is only used by qualified personnel who have understood this guide.

For questions or concerns, email: service@ussolid.com

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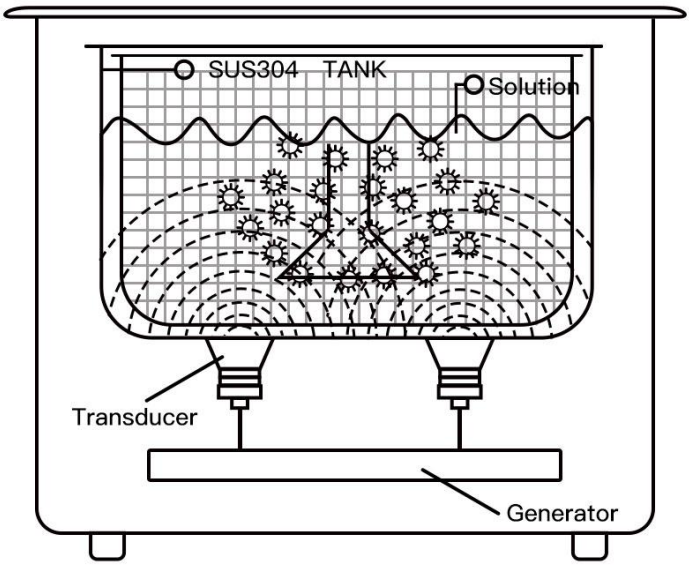
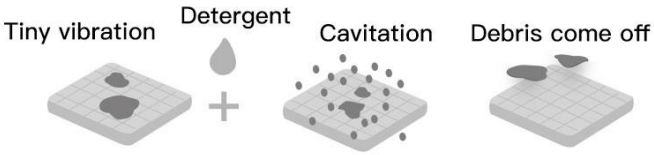
I.Operating Principles





Transducers at the bottom of the ultrasonic cleaner generate intense high-frequency sound through the solution in the tank inducing cavitation in liquid. As the cavitation bubbles collapse, high shearing energies work in all directions, attacking every surface and invading all recesses and openings to remove stains or debris on objects.

II. Getting Started

Thank you for purchasing the U.S. SOLID ultrasonic cleaner. To ensure smooth and safe operations, please review this full manual for a better working experience.

Changes in technology happen often and rapidly, which is why our team at U.S. SOLID reserves the right to modify the specifications and procedures for this ultrasonic cleaner immediately and without notice. The Company will not assume responsibility for equipment damage or malfunction due to improper operation, incorrect repairs, or use of unauthorized parts.

You have 30 days from the date of delivery to return this product. A 15% restocking fee will be applied if the returned item has been opened. We provide a 12-month warranty from the date of the sale, and we are responsible for any replacement parts caused by quality issues within the warranty window. If you want to return a defective item, please contact our customer service team to receive a free prepaid shipping label for your return. To expedite the warranty process, please describe the issue and include the following information: purchase date, order number, name of the original purchasing entity, delivery address, and serial number. After the 12-month warranty period, we offer to replace parts at the current retail cost, but complete product returns will not be accepted.

The warranty will only be in effect if all instructions in the manual are followed. The warranty does not cover damage caused by force

majeure (e.g., natural disasters such as hurricanes, floods, or earthquakes).

This manual includes basic safety precautions, installation, operation, and maintenance instructions.

III. Safety Instructions

Before using your Ultrasonic Cleaner, please read and understand these safety precautions thoroughly. Failure to follow them may result in serious personal injury or property damage.

To avoid electrical shock:

- This product contains hazardous voltages. Do not use it in high temperature or humid environments to avoid the risk of electric shock.
- Always make sure the machine is grounded. Do not remove the grounding prong on the line cord plug.
- Do unplug from the power source before filling or emptying the tank. Always disconnect the power supply during maintenance to avoid safety accidents.
- Do keep the control panel and the area around the cleaner clean and dry—wipe up the solution that spills over the tank brim. Water and high voltage can cause electrical shock.
- Do not remove the machine's casing while it is operating, as there

are high voltages inside that could be dangerous.

- Never immerse the cleaner or power cord in water or other liquid. DO NOT touch the unit if the machine has fallen into the water during operation. Remove the power plug from the socket first.
- Do NOT handle electric appliances with wet hands.
- If the power cord or adapter is damaged, contact the seller for a replacement immediately.
- Do not expose the machine to rain or water to avoid electric shock or fire. Avoid placing the machine in excessively high temperatures or humid environments.

To prevent personal and/or property damage:

- Keep the machine out of reach of infants and children. Place the machine properly to prevent accidents caused by improper operation by children.
- Do use water-based solutions.
- Do not use alcohol, gasoline, flammable solutions, or chlorine bleach. Doing so could cause a fire or explosion and will void your warranty. Use only water-based solutions.
- Do NOT touch the stainless-steel tank or cleaning solution as they may be hot.
- Do NOT allow the fluid temperature to exceed 80°C (176°F).
- Do NOT place your fingers or hands into the tank while the cleaner operates. Doing so may cause discomfort and possible skin

irritation. Avoid contact with solutions and provide adequate ventilation.

- Please cover the tank with the lid to reduce noise and take care to avoid the hot water and steam to prevent burning your skin while removing the lid.
- Do NOT use the machine where the following conditions exist:

A. A place where there are extreme temperature changes,
B. A place where there is high humidity that causes condensation,
C. A place where there is strong vibration that could cause the cleaner to fall,
D. A place where there are corrosive gases or dust,
E. A place where water, oil, or chemicals may splatter, or
F. A place where there are explosive and flammable gases.

To prevent damage to the cleaner:

- Before connecting the power, ensure it is within the rated range. Do not modify the machine. Note that the control panel can be corroded by organic solvents, strong acids, and strong alkalis.
- Do not drop or collide with the machine. Handle it with care during transport to avoid affecting its efficiency and lifespan.
- Do NOT cover vents on the cover. Keep the area around the machine clean and free of debris. Place the ultrasonic cleaner on a stable and level surface.
- DO NOT place the device on a soft surface where the vents could

be blocked.

- Do NOT ever use mineral acids as these could damage the tank.
- Do NOT run the machine CONTINUOUSLY for longer than 60 min. Running the cleaner for an extended time will cause temperature increases and damage the tank and transducers.
- Do keep the lid on during and after use which will prevent splashing and reduce evaporation of the fluid.
- Only use original parts from the manufacturer to ensure your safety and the best product performance.
- Ensure the power switch is placed in the O position (OFF) before starting.
- Do not operate when the tank is empty, or damage to the ultrasonic generator will occur. The liquid volume must be over 2/3 if heating is functioning.
- Do not relocate the machine while fluid is in the tank to prevent overflowing.
- The maximum running time for a single cycle is 30 minutes. Always allow a rest time of 20 minutes between cleaning cycles.
- DO NOT drop any item into the tank, as this may cause damage to the transducer. Always place items gently into the basket. Never set parts directly on the tank.
- Upon completion of the cleaning process, unplug the machine. Always clean the tank with a cloth after use.
- Do not move the equipment when the cleaning tank contains liquid to prevent spillage.

IV. Applications

Ultrasonic cleaning machines can be applied in various fields such as 3D printing, electronics, electrical appliances, hardware, machinery, communications, biology, medical, eyewear, optics, jewelry, watches, chemicals, textiles, automotive, shipbuilding, aviation, industrial and mining, food inspection, biopharmaceuticals, laboratories, and universities. They are used for cleaning and maintenance tasks as well as for sample preparation, crushing, emulsification, homogenization, dissolution assistance, dispersion, extraction, defoaming and degassing, accelerating chemical reactions, and reducing liquid viscosity in analytical work.

Semiconductor

- **Workpieces, Products, and Materials to be Cleaned:** Integrated circuits, power transistors, silicon wafers, gallium arsenide, diodes, lead frames, capillaries, trays, etc.
- **Contaminants to be Removed:** Lint, etching oil, stamping oil, polishing wax, dust particles

Electronics and Electrical

- **Workpieces, Products, and Materials to be Cleaned:** Electron tube components, cathode ray tubes, printed circuit boards, quartz components, electronic components, telephone exchange equipment, speaker components, power meters,

motors/rollers/fixing pieces on water pumps, LCD glass, magnetic core iron components, computer floppy disks, video tape components, iron ring components, magnetic heads, photo masks, etc.

- **Contaminants to be Removed:** Fingerprints, powders, cutting oil, stamping shafts, iron filings, polishing materials, walnut powder, polishing wax, sticky residues, resins, dust, etc.

Precision Machinery

- **Workpieces, Products, and Materials to be Cleaned:** Bearings, sewing machine parts, typewriters, textile machines, optical machinery devices, gas valves, watches, cameras, metal filter elements, etc.
- **Contaminants to be Removed:** Machine cutting oil, iron filings, polishing powder, fingerprints, grease, dust, etc.

Optical Devices

- **Workpieces, Products, and Materials to be Cleaned:** Glasses, lenses, prisms, filters, glass devices, film, optical fibers, etc.
- **Contaminants to be Removed:** Plastics, resins, paraffin, fingerprints, etc.

Hardware and Machinery

- **Workpieces, Products, and Materials to be Cleaned:** Bearings, gears, steel balls, metal castings, tools, adjustable valves and

cylinder parts, burners, compressors, spray guns, ultracentrifuges, faucets, filters, filter elements, etc.

- **Contaminants to be Removed:** Cutting oil, iron filings, grease, polishing powder, fingerprints, etc.

Medical Instruments

- **Workpieces, Products, and Materials to be Cleaned:** Medical instruments, dentures, filter titanium rods, laboratory equipment, etc.
- **Contaminants to be Removed:** Various stains, blood stains, residues, dirt on the inner walls of containers

Electroplating

- **Workpieces, Products, and Materials to be Cleaned:** Electroplated parts, molds, stamped parts, etc.
- **Contaminants to be Removed:** Polishing iron filings, oil, black iron shells, rust, oxidized shells, iron filings, polishing powder, stamping shafts, dust, etc.

Automotive

- **Workpieces, Products, and Materials to be Cleaned:** Piston rings, carburetors, fuel pumps, flow meter housings, crankshaft bottom measurements, automotive castings, electrical components, etc.
- **Contaminants to be Removed:** Iron filings, polishing powder, oil, stamping oil, dust, etc.

Chemical Fiber

- **Workpieces, Products, and Materials to be Cleaned:** Chemical fiber or artificial fiber nozzles, filter protectors, chemical fiber texture
- **Contaminants to be Removed:** Chemical colloids, glue, other solid materials, dust, etc.

V. Packing List

Ultrasonic Cleaning Machine	1 unit
Soundproof Cover	1 piece
Basket	1 piece
Power Cord	1 piece
User Manual	1 copy

VI. Specifications

Model	USS-FX30	USS-FX31	USS-FX32
Capacity	3 L	6 L	10 L
Frequency	28/40 kHz	28/40 kHz	28/40 kHz
Transducer	2 pcs	3 pcs	4 pcs
Heating Power	200 W	300 W	300 W
Ultrasonic Power	120 W	180 W	180 W
Working Time	0-99 min	0-99 min	0-99 min
Max. Heating Temp.	210 °F	210 °F	210 °F
Drainage	N/A	√	√
Tank size	24*14*10 cm	30*15.5*15 cm	30*24*15 cm
Unit Size	28*17*23 cm	33*18*28 cm	33*27*28 cm
Unit Weight	3.1 kg	4.7 kg	6.6 kg
Package Dimension	31*21*28 cm	40*23*34 cm	40*30*34 cm
Package Weight	3.6 kg	5.2 kg	7.1 kg

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VI. Specifications

Model	USS-FX33	USS-FX34	USS-FX35
Capacity	15 L	22 L	30 L
Frequency	28/40 kHz	28/40 kHz	28/40 kHz
Transducer	6 pcs	8 pcs	10 pcs
Heating Power	300 W	500 W	500 W
Ultrasonic Power	360 W	480 W	600 W
Working Time	0-99 min	0-99 min	0-99 min
Max. Heating Temp.	210 °F	210 °F	210 °F
Drainage	√	√	√
Tank size	33*30*15 cm	50*30*15 cm	50*30*20 cm
Unit Size	36*33*29 cm	53*33*29 cm	53*33*33 cm
Unit Weight	8.7 kg	11.2 kg	12.5 kg
Package Dimension	43*38*34 cm	61*38*34 cm	61*38*39 cm
Package Weight	9.8 kg	12.6 kg	14.6 kg

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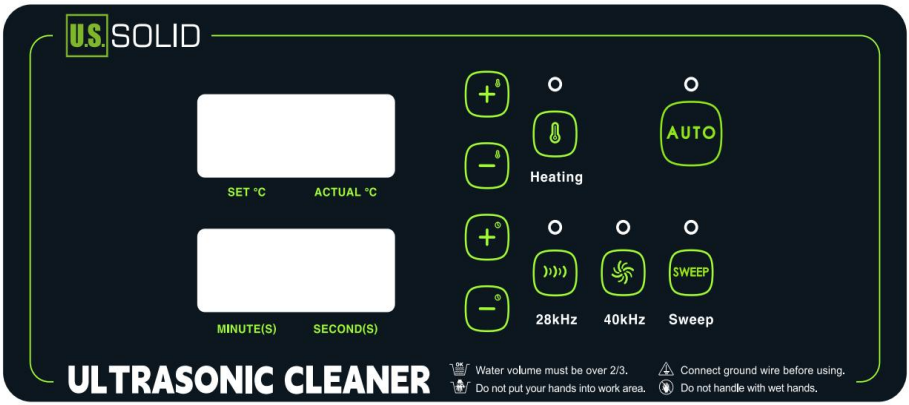
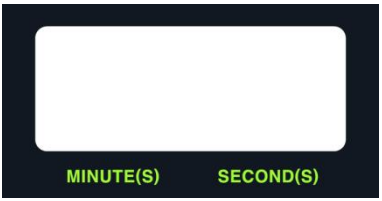
VII. Structure



Temperature display window shows both the set temperature and the real-time temperature.



Countdown display window.

Temperature adjustment button.

- Factory default setting for temperature is set to 50℃.
- Adjusting the operational temperature
  - Pressing the "+" key increments the temperature by one degree

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- Holding "+" enables continuous temperature increase.
- Pressing the "-" key decrements the temperature by one degree
- Holding "-" enables continuous temperature decrease.
- Pressing the button or key continuously to cycle the temperature setting between 0 and 99. Release the button when the desired temperature is displayed.

- The temperature setting has a memory function, so the next time you use it after a power outage, it will default to the previously set temperature.

Press this button to manually activate the heating function.

- The machine will start heating, and the heating indicator light will turn off once the temperature reaches the set point. ***Note that*** *the ultrasonic function also produces energy, which may cause the liquid temperature to continue rising even after the set temperature is reached.*
- If the set temperature is lower than the current temperature, the operation will be ineffective, and the heating function will not activate.

Time Setting Button.

- The default factory time setting is 5 minutes (factory preset time: 0500).
- Adjusting the Ultrasonic Working Time:

- Each press of the key "+" increases the time by one minute.
- Holding down the key "+" continuously increases the time.
- Each press of the key "-" decreases the time by one minute.
- Holding down the key "-" continuously decreases the time.
- When continuously holding down the "+" or "-" button, the time setting cycles through 0-99-0-99 until the desired working time is selected and then release the button.
- The time setting includes a memory function, so upon power loss and subsequent use, it defaults to the last set working time.

There are 4 operational modes.

In this mode, the machine operates at a frequency of 28kHz, with an output power approximately 60% of the power specified in the specifications table. This mode is ideal for general cleaning tasks where moderate cleaning effectiveness is adequate, and there is no need for high ultrasonic intensity or penetration. It is also designed to be gentle on the equipment.

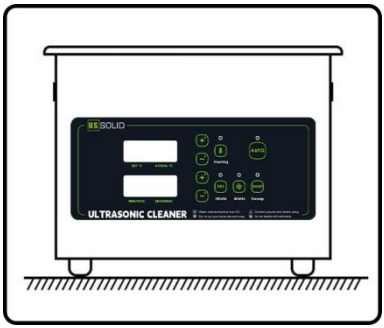
In this mode, the machine operates at a frequency of 40kHz, which is an enhanced mode compared to 28kHz, with a power output approximately 110% of the power specified in the specifications table. This mode is particularly suitable for cleaning highly challenging products.

Sweep, also known as Degas, functions in a frequency sweeping mode where the machine alternates continuously between 28kHz and 40kHz. This mode is suitable for objects requiring high cleanliness standards, challenging-to-clean items with blind holes (e.g., screw holes), high sterilization rates, and high-standard laboratory applications such as deaeration, defoaming, solubilization aid, alcohol extraction, emulsification, and extraction.

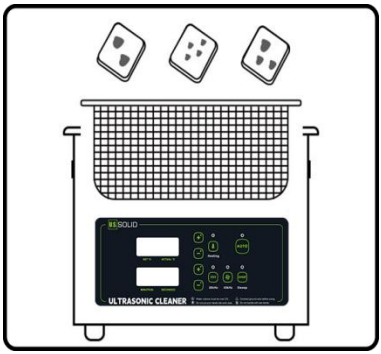
In Auto mode, the working frequency is 40Khz and the default ultrasonic working time is 10 minutes. Heating function is not automatically activated in this mode; if heating is required, the heating switch must be manually turned on. Auto mode is widely suitable for general cleaning, suitable for cleaning the majority of items.

VIII. Operation

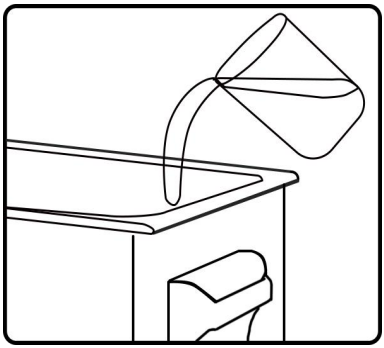
Preparation



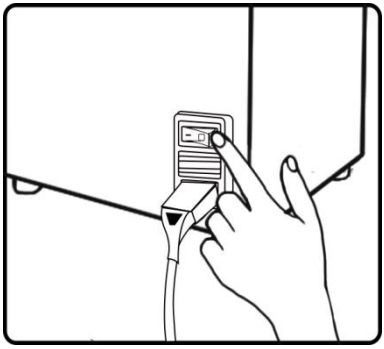
1. Place ultrasonic cleaner on a flat, stable surface. When connecting the power plug, make sure the power supply is properly grounded.



2. Put items to be cleaned inside the basket and gently place the basket inside the tank. DO NOT PLACE THE ITEMS directly on the bottom of the tank.



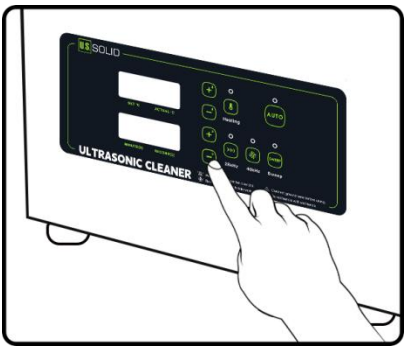
3. Add solution according to the object to be cleaned. Ensure that the volume of the solution is over 2/3 when the heating is on. **It is forbidden to heat if you use flammable liquids because prolonged vibration will increase fluid temperature, which may lead to a fire.**



4. Plug the cleaner into a grounded outlet. Click the power switch at the back. "O" is off, and "-" is on.

Set Working Time

The default factory time setting is 5 minutes (factory preset time: 0500). You can also adjust the Ultrasonic Working Time on you own.



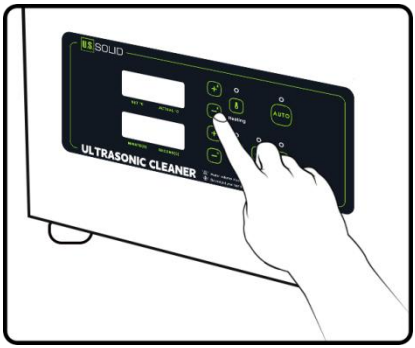
- Each press of the key "+" increases the time by one minute.
- Holding down the key "+" continuously increases the time.
- Each press of the key "-" decreases the time by one minute.
- Holding down the key "-" continuously decreases the time.
- When continuously holding down the "+" or "-" button, the time setting cycles through 0-99-0-99 until the desired working time is selected and then release the button.

When the machine starts working, the timer begins to count down, and the cleaner will automatically stop working when the time reaches 00:00.

The time setting includes a memory function, so upon power loss and subsequent use, it defaults to the last set working time.

Set Working Temperature

Factory default setting for temperature is set to 50℃. You can also adjust the operational temperature on you own.



- Pressing the "+" key increments the temperature by one degree.
- Holding "+" enables continuous temperature increase.
- Pressing the "-" key decrements the temperature by one degree
- Holding "-" enables continuous temperature decrease.
- Pressing the button or key continuously to cycle the temperature setting between 0 and 99. Release the button when the desired temperature is displayed.

The temperature setting has a memory function, so after a power outage, it will default to the previously set temperature the next time you use it. Once you press the heating button, the machine will start heating, and the heating indicator light will turn off when the temperature reaches the set point.

If the set temperature is lower than the current temperature, the operation will be ineffective, and the heating function will not activate.

The heating function must always be manually activated.

Note that the ultrasonic function also produces energy, which may cause the liquid temperature to continue rising even after the set temperature is reached.

Choose a Mode

Choose the appropriate operating mode based on your needs and press the button(28kHz/40kHz/Sweep/AUTO) to **start or pause** the machine.

Notes:

1. When the timer shows 0000, only the AUTO mode can be activated. Upon activation, the timer automatically resets to 1000 and starts counting down. When the timer shows 0000 again, the AUTO mode operation is completed. For other modes (SWEEP, 20kHz, 30kHz), the ultrasonic function cannot be activated unless the timer shows a value higher than 0000. Once a mode (SWEEP, 20kHz, 30kHz) is selected and activated, the countdown begins and runs until the timer resets to 0000, signaling the end of the operation.
2. The heating function cannot be activated if the set temperature is lower than the liquid sensor temperature (real-time temperature). It can only be activated when the set heating temperature is higher than the liquid sensor temperature (real-time temperature).
3. The machine's factory settings are a temperature of 50 degrees Celsius and a time of 0500. After use, if the machine is powered off and then on again, it will retain the temperature and time settings from the last use. However, the on/off status of the heating function does not have a memory feature and must be manually turned on each time.

Unplug the machine

Press ON/OFF to stop working, unplug the machine, empty the tank, and clean the unit with cloth for subsequent use.

Contact Information

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