

TS4.5S Ultrasonic Cleaner – User's Manual

Features

Dual power modes for all cleaning needs

Degas function for increased solution performance

User friendly controls

Memory function

Sleep mode

LED displays for temperature and timer

High-performance transducers

Thank you for purchasing the TS4.5S Ultrasonic cleaner. Please fully read these instructions before using the machine and retain them for future reference. Failure to follow these instructions may lead to serious personal injury and damage to property.

Introduction

Ultrasonic cleaning is based on the cavitation effect caused by high frequency ultrasonic wave vibration signal in the fluid. Microscopic bubbles are formed, and they implode violently causing the cavitation which creates an intense scrubbing action on the surface of the item being cleaned. The bubbles are small enough to penetrate microscopic crevices, cleaning them thoroughly and consistently.

Ultrasonic cleaning is extremely effective at removing dirt and grime which would normally require tedious manual cleaning by hand. It has been used to clean a wide variety of instruments and mechanical parts such as carburetors, returning them to almost "like new" condition without the damage to delicate parts.

Preparation

- 1) Carefully unpack the cleaner and remove all packing materials. Be sure that all parts are included. Contents:
Main machine, Lid, Power cord, User's Manual, Basket, Drain Hose and Adapter
- 2) Place the cleaner on a flat, clean surface where the cooling fans will receive adequate ventilation. Verify that the drain valve is in the closed position.
- 3) Plug the power cord in the machine. Be sure to avoid any contact with moisture.

- 4) Fill the tank at least ½ full with the proper cleaning solution for the item being cleaned. Follow the directions that come with the cleaning solution for proper mixing. The machine is now ready for use.

Attention: When the machine is operating normally, ultrasonic and tank produces a well-proportioned sound, with no shudder on the surface of the water. If surges are detected, the solution level may need to be raised or lowered a little.

Safety Precautions

Keep away from children! This device is not intended for use by those who lack knowledge or experience in its operation. Please read the following carefully:

- 1) DO NOT run the cleaner continuously for more than one hour as doing so can damage internal components.
- 2) DO NOT operate the unit without fluid in the tank. Always ensure the fluid is no higher than the Max mark. Always be sure that there is at least 7 cm (2 3/8") of solution in the tank.
- 3) DO NOT drop any item into the tank as this may cause damage to the transducer. Always place items gently into the basket.
- 4) The more items that you place in the unit, the less efficient it will clean. It is not advised to overlap items. Always allow plenty of clear space between the items.
- 5) It is recommended have the cover in place during use to prevent splashes and reduce evaporation of the solution.
- 6) Never immerse the machine or power cord in water or other liquid.
- 7) DO NOT touch the power cord with wet hands, especially when inserting or removing the plug.
- 8) DO NOT touch the unit if the machine has fallen into water during operation. Remove the power plug from the outlet first.
- 9) DO NOT disassemble the machine.
- 10) UNPLUG the power source while filling or emptying the tank.
- 11) DO NOT get water or liquid over the device and the control panel.
- 12) DO NOT operate the unit without proper grounding.
- 13) DO NOT place the unit on a soft surface, where the vents could be blocked.
- 14) Upon completion of the cleaning cycle, turn off the machine and unplug it from the power supply.
- 15) Use caution when adding or removing items from the tank as the solution is likely to be hot and displaced solution can damage internal components. Any displaced solution must be clean up immediately.

Applications

The machine is especially designed for cleaning dental instruments, however providing the product is non-porous and can be immersed in water, almost anything can be thoroughly cleaned.

Health and Beauty - Beauty and Chiropody Institutes: scissors, scalpels, comedo removers, pincers, nippers, forceps and razors with the removal of organic tissue before sterilization treatments. **Dental Practices and Dental Technician Laboratories:** dental instruments, removing organic and blood residue, cleaning hand pieces, drills, heads for ultrasonic ablaters, glass objects and mirrors, the removal of cement from spatulas and plaster from prostheses. **Tattoo Studios:** grips, tips and needles.

Hospital and Laboratories – Hospital Wards and Analysis Laboratories: endoscopic probes, surgical instruments, glass containers in analysis laboratories with the removal of proteins, blood and organic tissue.

Goldsmith and Silversmith – necklaces, bracelets, rings, precious stones, watch casings and straps, precision mechanical movements.

Manufacturing – manufacturing, aerospace, pharmaceutical, defense, automotive, marine, filtration, moulding, food and beverage, plating and surface finishing, semi-conductors.

Optical – during edging and polishing, debris and abrasives can scratch lenses. Ultrasonic cleaning can effectively protect the lenses.

Military – reusable brass and gun parts

Regeneration – for cleaning dot matrix printers and photocopier ink cartridges.

Maintenance – mobile phones, bicycle gears, air purifiers. It cleans out debris in tiny holes and crevices effectively.

Items Not Suitable For Ultrasonic Cleaning – **Soft Jewelry:** such as pearls, emeralds, ivory, coral, agate, sea turtle shells, etc. **Welded, Plated and Glued Items:** welded or plated metal items, glued items. **Watches:** except diver's watches with depth rating over 50m (150ft). **Others:** ceramic, camera filters with preexisting cracks.

Unit Front View/Side View Back View Front Panel

(photo of machine with call-out for parts and features)

A: LED display – temperature

B: LED display – cleaning time

C: Heating Button – press this button to start or stop heating (note: the machine will display the ambient temperature when first started)

D: Increase Temperature – press this button to set the temperature. Press it once to increase 1 degree C and hold the button down to increase by 10 degrees C

E: Decrease Temperature – press this button to set the temperature. Press it once to decrease 1 degree C and hold the button down to decrease by 10 degrees C

F: Degas – fresh solutions may contain trapped air which reduce the effectiveness of the ultrasonic action. Using the degas function speeds up the degassing process and improves cleaning efficiency.

G: Sweep (Soft power) - runs at 60% power for delicate applications.

H: Turbo (normal power) – 100% power to the tank for normal applications.

I: Timer Increase – press this button to set the cleaning time. Press it once to increase 1 minute and hold the button down to increase by 10 minutes.

J: Timer Decrease - press it once to decrease 1 minute and hold the button down to decrease by 10 minutes.

Operation Guidelines

- 1) Select your cleaning solution and fill at least ½ of the tank. Do not exceed the maximum fill line. Note: Never use alcohol, gasoline or flammable solutions. Doing so could cause a fire or explosion. Use only water based solutions.
- 2) Place the items to be cleaned into the basket and slowly lower it into the tank. Do not allow items to contact the tank bottom. Solution should fully cover the items.
- 3) Plug the machine into a grounded outlet. Note: After turning the machine on, the temperature that you see is the environment temperature. Time and temperature default to the last settings. (3 minutes is the default time for initial use.)

Timer – Press +time or -time to set the cleaning time. When the timer counts down to 00:00, the ultrasonic action will stop. Note: the memory function will return to the last temperature used.

Heating – Press heating to start or stop heating. Press +heating or –heating to set the temperature. Note: Best cleaning usually results with a temperature of 40 -60 degrees C. Warm water and dish washing liquid can soften grease and improve cleaning results.

When the temperature is set, if the solution temperature is below the set temperature, press the heating key. This will turn on the heater and the heating indicator light will come on. If the solution temperature is higher than the set temperature, heating will stop and the indicator light will go out. The machine will remember the last temperature setting and return to it when next used.

Degas Mode

After setting the time and temperature, press degas and the indicator light will come on and the degas function will start. The unit will cycle on for 6 seconds and off for two seconds. It will continue to repeat this cycle. To switch to a normal cleaning mode, press full power turbo or reduced power sweep. The degas cycle will end and the degas indicator light will shut off, while the indicator for the selected power level will turn on and the select power operation will start. If you want to stop the unit, press degas again and both the ultrasonic action and heating will stop.

Turbo Mode

After setting the timer and temperature, press the turbo key to start the full power ultrasonic action. The indicator light will come on and the time will start to count down. If you would like to switch to a different mode, press degas or sweep key. If you would like to stop the machine, press the turbo key again and both the ultrasonic action and heating will stop.

Sweep Mode

After setting the timer and temperature, press the sweep key to start the reduced (soft) power ultrasonic action. The indicator light will come on and the time will start to count down. If you would like to switch to a different mode, press degas or turbo key. If you would like to stop the machine, press the sweep key again and both the ultrasonic action and heating will stop.

Cleaning Complete

When the cleaning is completed, unplug the power cord, lift off the cover, and retrieve the basket and parts. Empty the tank using the drain valve and the supplied drain hose. Clean

the inside and outside of the unit with a clean dry cloth for the next use. Return the drain valve to the closed position.

Warning: Strong acid or alkaline cleaning solutions will cause corrosion, rust and could lead to perforations in the tank. To overcome this problem, dilute to mild Ph solution.

Specifications

Model – TS4.5S

Tank Size (LxWxH) - 240 x 140 x 150mm (9.5" x 5.5" x 5.9")

Overall Size (LxWxH) – 315 x 215 x 270mm (12.4" x 8.5" x 10.6")

Capacity – 4.5 L (4.75 quarts)

Power – 120W

Heating Power – 100W

Frequency – 33/40 KHz

Timer Range – 1 to 99 min

Heating – 0 to 80 °C