

Pulsator™ Digital Ultrasonic Cleaner

Instructions




Safety Precautions

Keep away from children!

- This device is not intended for use by individuals with restricted physical, sensory or mental capacities, or those with a lack of experience and / or knowledge including children, unless they are supervised by an individual who is responsible for their safety or have received training in operating the device
- Please store the ultrasonic cleaner where it is not reachable by children
- Keep the packaging away from children as the material can cause suffocation

To prevent being electrocuted, please observe the following:

 **CAUTION!** Never touch the power plug with wet hands, especially when inserting or removing the plug

 **CAUTION!** Never immerse the device or the power cord into water or other liquids. If the unit has fallen into water during operation, do not touch the unit. Remove the power plug from the socket first

 **CAUTION!** Do not spray water or liquid onto the device

- Never operate the device unattended
- Follow the manual to operate the device
- Only use components provided by the manufacturer
- When removing the power cord from the socket, grab the power plug not the cord
- Do not allow the power cord to get caught on objects such as cupboard doors or chair legs; do not drag across a hot surface
- Do not use the device if there is damage to the power plug, cord, housing, or other parts of the device
- Do not disassemble the device
- Do not use if the unit is damaged, non-operational or has fallen into water

Remove the power plug from the socket:

1. If malfunction occurs
 2. Before cleaning the device
 3. If the device is not going to be used for a long period of time
 4. After each use (recommended)
- The installation of an earth leakage circuit breaker with a rated tripping current of a maximum 30 mA provides more protection against electrical shock. The installation should only be carried out by a trained electrician
 - The device may come with a polarized plug (one blade is wider than the other) for certain countries. As a safety feature, this plug will only fit into a polarized outlet in one direction. If the plug does not fit fully in an outlet, reverse the plug. If it still does not fit, contact a qualified electrician

To prevent fire hazards, please observe the following:

- Never block the vents on the device. Keep the vents free from lint, hair and other materials
- Do not place the device on a soft surface, such as a bed or a couch, where the vents could be blocked

Other observations

- Do not operate the product without filling the tank with water or damage will occur
- Do not plug in the power cord before adding water to the tank. Do not fill the tank above the max line to avoid spilling
- Do not use solution containing abrasive substances, or strong corrosive chemical solutions not recommended by the manufacturer or the supplier
- Place the device on a dry and flat surface for operation
- When the device is subjected to severe electromagnetic interference, it may malfunction, stop operating, or lose control. If this happens, unplug the power cord then re-insert it to restart the device

Operational Guidelines

Operating Instructions

1. Place the unit on a stable and flat working surface
2. Before connecting the power cord, add cleaning solution to the tank, and completely immerse the items to be fully cleaned. Place the items in the stainless steel basket for cleaning and place the basket in the tank
3. Replace the cover and connect the power cable. There is no dedicated power switch. When the unit is plugged in, it is on. You are now ready to set the temperature and time

4. Setting the temperature:

- When power is connected, press the “on/off” button on the left, the red “HEATING” light will illuminate. The temperature of the cleaning solution in the tank is displayed in the “Actual °C” window
- Press the button “TEMP +” to increase or “TEMP-” to decrease the desired temperature. The “Set °C” window shows the temperature settings

NOTE: Excessive heat or prolonged cleaning times can cause damage to your machine

5. Setting the timer

- Press the “on/off” button on the right, the red “TIMER” light will illuminate
- Press the button “TIME +” to increase or “TIME-” to decrease the desired cleaning time. The “Minute & Second” window shows the cleaning time settings

NOTE: You can also press the “OFF” button during the cleaning process to stop the unit from operating. When timer is turned off the time doesn’t automatically reset. The time will continue from last setting. Press the button “TIME +” to increase or “TIME-” to decrease to set new time

6. Cleaning

- Unplug and empty the unit after using (do not keep water in the tank for a prolonged period of time)
- If equipped, attach hose to water output valve. Turn ball valve to let water flow out by gravity
- Allow cleaning solution to cool
- Use only plain water for general cleaning
- Wipe the tank and housing with dry towel (do not wash the unit with water in order to avoid electric shock)

Enhanced Cleaning

- When the item is excessively dirty, please add about 5-10 ml of detergent into the water to enhance cleaning result

Do not wash the unit with cleaning solution. Store in a cool, dry place

Dirt elimination process through ultrasonic technology

- Many tiny bubbles are generated under the action of ultrasonic cleaning
- Bubbles are imploded constantly under the action of ultrasonic cleaning to impact the surface of the item
- The impact splits up the dirt into granules and separates them from the surface of the item. The granules are then removed from the item and dispersed into the water

Items Not Suitable For Ultrasonic Cleaning

Soft Jewelry

Pearls, emerald, ivory, coral, agate, sea turtle shells, etc.

These items are not hard, so scratches may occur during cleaning

Welded, Plated and Glued Items

Welded or plated metal items, glued items

Ultrasonic cleaning may increase the gas inside the welded joints, plated coating or glued items, and may cause separation

Watches

Except diver’s watches with depth rating over 50m (150ft)

Due to the strong penetration capability of the ultrasonic waves, water may get into the watches if they are not truly waterproof.

Others

Glass, ceramic, camera filters with pre-existing cracks

If an item such as glass, ceramic, camera filters has a pre-existing crack, the Ultrasonic Cleaner may increase the cracks on those items. However, if there is no crack on the items, no problem will occur

Applications

1. Metal Decoration Manufacturers and Jewelry Makers

- With the use of tap water only, the Pulsator™ can remove grease or abrasive power from work-in-process metal items, keeping them clean
- Jewelry made with investment casting often has wax layer in addition to debris. Turning on the heater will raise the water temperature, melting the wax and improving the cleaning process

2. Optical Labs

- During the process of edging and polishing, debris and abrasives can scratch the lenses. The Pulsator™ can effectively protect the lenses. If debris exists in the crevices of the frames during processing and polishing, use tap water with the Pulsator™ to easily remove the debris

3. Biology, Chemical Laboratories

- Laboratories can use the Pulsator™ to clean test tubes and other glass or metal containers to remove residual chemicals and debris that are affected by the accuracy of the test results

4. Medical Instrument Disinfection Rooms

- Non-disposable medical instruments may have blood or organic tissues left after use. These need to be removed with the Pulsator™ before disinfecting

5. Dental Clinics

- Dental clinics can use the Pulsator™ to clean dental instruments and to remove blood or small particles left on the instruments before disinfecting

6. Electrical Component Manufacturers

- Terminals on AC contactors and relays need to be kept clean to prevent sparks and to prevent contact. Ultrasonic cleaning is the most effective method to keep these parts cleaned

7. Watch and Precision Metal Part Manufacturer

- Machine watch components and other precision metal parts often have coolant and debris left on the surfaces. The Pulsator™ can remove the debris and keep the parts clean

8. Shooting Clubs

- Adding special solution can make the brass cartridges useable and look brand new again
- Cleaning guns after shooting is time-consuming. With the use of special solution in the water, the Pulsator™ will clean better, quicker, and easier than traditional methods

9. Special Education Institutes / Kindergartens

- Speech therapy tools or small toys that are reused need to be cleaned to prevent the growth and spread of bacteria
- The Pulsator™ can clean thoroughly by removing debris hidden inside small holes and crevices before disinfection

10. Golf Clubs

- Cleaning the heads of golf clubs is a time-consuming job. Utilizing the Pulsator™ and enhanced cleaning method can improve the effectiveness and efficiency

11. Mobile Phone and Electronics Service Shops

- PCB renewal: Non-operational electronics or non-operational keypads that fall into water can be cleaned with ultrasonic cleaners using pure alcohol to recover the functions. Use the Indirect Cleaning method for small-sized PCBs

12.Homes

- It's difficult to clean debris hidden in the patterns of silverware, silver, copper or brass decorations with regular methods. Using Ultrasonic Cleaners with 50 ml (3 tablespoons) of dish soap will clean the debris quickly
- For silver, copper or brass items with oxidation which has darkened the items, add a small amount of special solution to remove oxidation and the Ultrasonic Cleaner will restore the shine

Children's Toys

- Debris left in the small holes and crevices are difficult to clean, thus causing bacteria and mold to grow. Use Ultrasonic Cleaner to deep clean the items before disinfection

Crystal glasses, decorations and chandeliers

- The Ultrasonic Cleaner can bring back the sparkles and make them look brand new again

Jewelry, eyewear, watch bands, and razors

- The Ultrasonic Cleaner can clean the debris in the crevices, making it quick and convenient

NOTE: This model has a stainless steel basket. When cleaning small items, please put the items in the basket before cleaning

Features

Time Set	0-99 min with digital timer
Temperature	Adjusts from 20-80°C (68-176°F) with digital control
Material	Stainless steel SUS304
Drainage System	6L (1.6 gal), 10L (2.6 gal) and 22L (5.8 gal) are installed with a drainage ball valve
Heat Dissipation	10L (2.6 gal) and 22L (5.8 gal) and above are installed with a cooling fan

Specifications

TYPE	13-3600	13-3601	13-3602	13-3603
Ultrasound Power	50-120W	80-180W	100-240W	200-480W
Heater Power	100W	300W	500W	500W
Frequency	40KHZ	40KHZ	40KHZ	40KHZ
Power Supply	AC110V 60Hz	AC110V 60Hz	AC110V 60Hz	AC110V 60Hz
Timer	0-99 min	0-99 min	0-99 min	0-99 min
Capacity	3 L (0.8 gal)	6 L (1.6 gal)	10 L (2.6 gal)	22 L (5.8 gal)
Product Size	11 in x 5.5 in x 8.7 in 28 cm x 14 cm x 22 cm	13 in x 7 in x 11 in 33 cm x 18 cm x 28 cm	13 in x 11 in x 11 in 33 cm x 28 cm x 28 cm	21 in x 13 in x 11 in 53 cm x 33 cm x 28 cm
Tank Size	9.5 in x 5.3 in x 4 in 24 cm x 13.5 cm x 10 cm	12 in x 6 in x 6 in 30.5 cm x 15 cm x 15 cm	12 in x 9.5 in x 6 in 30.5 cm x 24 cm x 15 cm	19.7 in x 12 in x 6 in 50 cm x 30.5 cm x 15 cm
Weight	8.8 lbs (4 kg)	11 lbs (5 kg)	17.6 lbs (8 kg)	31 lbs (14 kg)