Labotronics



Benchtop Ultrasonic Cleaner

LB-46BUC

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1. Safety Measures

**Keep it away from children**

This device cannot be used by individuals with limited physical knowledge, or the mentally disabled, or those lacking experiences or knowledge, such as children, unless they are supervised by an individual who can take charge of their safety or have received training in operating the device.

Warning:

- Do not run the cleaner continuously for more than one hour at a time because it can damage the internal components.
- Do not operate the unit without fluid in the tank. Always ensure that the fluid is no higher than the max mark and no lower than the minimum depth of 7cm.
- Do not drop any item into the tank because it may damage the transducer. Always place items gently into the tank and use the basket whenever possible.
- The more items you place in the cleaning bath, the less cleaning efficient you can get. Leaving enough spaces among items rather than overlapping them is recommended.
- Do keep the lid on during use. This will prevent splashes and reduce evaporation of the fluid.
- Never immerse the machine or power cord in water or other liquid.
- Do not touch the power plug with wet hands, especially when inserting or removing the plug.
- Do not touch the unit if the machine has fallen into water during operation. Remove the power plug from the socket first.
- Do not disassemble the machine if a user is not a professional.
- Unplug the power source while filling or emptying the tank.
- Do not operate the cleaner without proper grounding.
- Do not place the device on a soft surface where the vents can be blocked.
- Always turn the heater off after using as leaving it on can make the fluid evaporate and damage the internal components.
- Take care when adding or removing items from the cleaning tank as the splashed fluid is likely to be hot and damage the internal components. Any splashed fluid must be dried immediately.
- In case of emergency or failure to follow the afore mentioned items, disconnect the mains supply by removing the plug from the mains socket.

2. Introduction

Benchtop Ultrasonic Cleaner LB-46BUC features a 20L tank capacity and operates at temperatures up to 80°C. It offers an adjustable cleaning duration to accommodate different cleaning needs. It ensures effective cleaning with a stable frequency for thorough and delicate results. Our ultrasonic cleaner is equipped with a digital control panel for precise and deep cleaning across various applications.

3. Features

- User-friendly interface
- Quiet operation
- Low maintenance
- Durable construction

4. Specifications

Model No	**LB-10PMT**
Capacity	20L
Temperature Range	0 to 80°C
Timing	10s to 100 min
Ultrasonic Power	360 W
Frequency	39 ± 1.5 kHz
Power Consumption	800 W
Power Supply	AC220-204V, 50Hz or AC110V
Tank Dimension (L × W × H)	330 × 300 × 200 mm
Outer Dimension	360 × 330 × 380 mm
Gross Weight	13 kg

5. Applications

Benchtop Ultrasonic Cleaner LB-46BUC is used for efficient and thorough cleaning of delicate items like jewellery, electronic components, and medical instruments. It is widely used in laboratories, medical facilities, and industrial environments.

6. Installation

Preparation

- Carefully unpack the cleaner, remove all packing materials, and check whether any parts have become loose or damaged during transit.
- Place the cleaner on a flat, clean surface and ensure that the cooling fan will get adequate ventilation, and that all controls are set to off, and the drain tap is closed.
- Ensure that the power lead is securely plugged into the cleaner, and that no part of the lead is likely to contact with moisture.
- Make sure to fill 2/3 or at least 1/2 of the tank with a solvent solution. Based on cleaning requirements, we recommend using a small amount of cleaning solution because this will help increase the cleaning performance. Now the cleaner is ready for use.

Attention

While the machine is working normally, the syntony of the ultrasonic wave and tank gives a well-proportioned sound with no shudder on the surface of the water, but sprays are generated by the tiny bubbles. If there are discontinuous surges, kindly add or reduce a little of the washing solution in the tank to stop the surges, which is good to get a better cleaning effect.

Kindly don't make the machine work for a continuous long time (not more than 30 minutes) as as possible you can because a long-time working will raise the temperature of the case, accelerate the burn-in process of inner electronic components and parts.

7. Working Principle

Ultrasonic cleaning is based on the cavitation effect caused by high-frequency ultrasonic wave vibration in the fluid. Microscopic bubbles are formed and then implode violently, causing 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 damage to delicate parts.

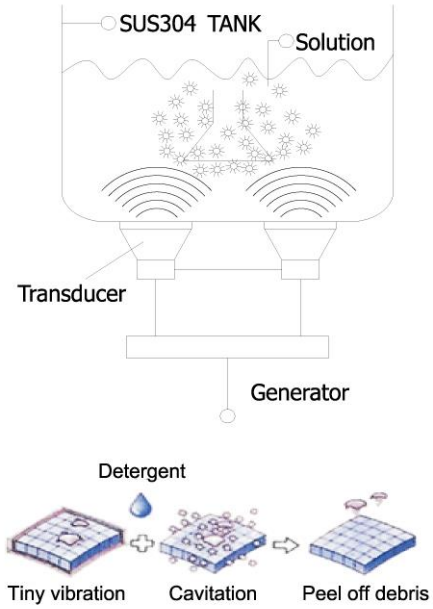


Figure-1

8. Operations

1) Fill the stainless steel tank with cleaning solution. Plug the power lead into a grounded outlet. After powering on, the temperature displays the actual environmental temperature, LED displays 0 minutes (default ultrasonic time).
2) **Working Time Setting:** Turn on the power switch, the Led display shows the working time "00". Press the time button ▲ once, the time will increase by 1-minute, long-time pressing will increase the needed working time continuously; Press the time button ▼ once again, the time will decrease by 1 minute. Long-time pressing will decrease the needed working time continuously.
3) **Temperature Setting:** When powered on, the Led display shows the set temperature as "00" and the actual temperature separately. Pressing the temperature button ▲ once will increase 1℃, long-time pressing will increase the needed temperature continuously, pressing the temperature button ▼once again will decrease 1℃, and long-time pressing will decrease the needed temperature continuously. When the setting temperature is lower than the actual temperature, the heater does not work. When the temperature reaches the setting temperature, the heater indicator light goes out. When ultrasonic works, the temperature display shows the setting temperature and the actual temperature separately.
   Note: Heater only works when presupposed temperature is higher than current temperature
4) The left **ON/OFF** key is for the heater, and the right **ON/OFF** key is for the ultrasonic cleaning and degassing.
5) **Degassing Mode:** Long-time pressing the ultrasonic cleaning **ON/OFF** key for 5 seconds until it emits a drip, degassing mode works. If needed, long-time pressing again to switch to normal ultrasonic cleaning mode.
6) Empty the tank and clean both the outside and inside of the cleaner with a clean and dry cloth for next use.
   Note: Do not pour water out until it's cooled, Hot water will hurt you and damage the machine itself.

9. Maintenance

1) Different ways of cleaning

General Cleaning: Use only water to clean at a temperature of about 50℃.
Enhanced Cleaning: Add a few drops of standard cleaning solutions, liquid soap, or detergent, or any other non-acidic cleaning agents.
Extensive Cleaning: Removing tarnish, carbon & rust from non-plated metals, it is recommended to use a specific cleaning solution associated with ultrasonic cleaners.

Warning: Strong acid or alkaline cleaning solutions will cause corrosion, rust, and even puncture of the tank or machine body. To solve this problem, kindly dilute the solution to a mild PH or use a special tank made of a specific-graded stainless steel, like SUS304.

The cleaning solution will deteriorate in effectiveness over time and use. It is important to regularly change the fluid and carefully wash the inside of the cleaning tank in order to preserve the effectiveness and longevity of the cleaner. Do not use corrosive or abrasive cleaning tools to clean the tank, which must be wiped down and dried before it can be re-connected to the electrical supply.

Note: If the machine starts to spark, smoke, smell of burnt electrics or displays any other fault, the operator must immediately stop the machine, isolating it from the electrical supply. It is dangerous to use it after that.

2) For better Cleaning Effect

- Immerse the cleaned stuff well into the water. (below the “MAX” mark)
- A small amount of cleaning solution is added.
- Make sure that there is enough space around each staff in the tank. The more stuff you place in the tank, the less efficient you can get. It is not advised to overlap stuff because the ultrasonic cleaning system cannot work well with layered stuff.
- Use a basket. Do not put stuff directly into the bottom of the tank because that is harmful to the inner tank. So, it is better to use a suitable basket. Especially a metal basket only absorbs about 8% of ultrasonic energy.
- Choose a suitable temperature: Generally, the higher the temperature is, the better cleaning effect the ultrasonic cleaner can make. However, when the temperature exceeds 70℃～80℃, the cleaning effect will be affected. So, the best temperature we suggest is 40℃～60℃.