

Ultrasonic Bath Principle

Ultrasonic waves are the term used to describe waves having a frequency above the audible range of humans. Whenever high intensity ultrasound is applied to a liquid, the result is millions of tiny bubbles (or cavities) in a liquid. Cavitation is produced by the alternating high and low pressure waves generated by high frequency (ultrasonic sound). During the low pressure phase, these bubbles grow from microscopic size and during the high pressure phase, these bubbles are compressed and implode known as cavitation.

General Instructions

- Please check for any physical damage of Ultrasonic bath, internally or externally, when you unpack for the first time. If you find any damage please inform the supplier and do not put the equipment in operation.
- Change the cleaning solution periodically. Whenever the cleaning solution is changed allow it for degassing before starting / restarting cleaning.
- Surface activity on liquid varies according to liquid level in the tank and also depends on the surface tension of the liquid. Cleaning efficiency remains the same, irrespective of visible surface activity seen at different levels of liquid.
- Do not operate the ultrasonic bath without liquid level in the tank. It may damage the transducer or heater permanently.
- Do not overload the tank with objects to be cleaned. It may be faster to clean several small load batches than one big load at a time. Also you may achieve better & effective cleaning.
- Put the Ultrasonic bath in SWITCHED OFF mode, when it is not in use.

Caution

- Disconnect (Unplug) Mains before emptying / filling the liquid.
- Do not operate Ultrasonic Bath without Proper Earthing.
- Maintain minimum liquid level of 3/4th of the tank.
- Do not drop liquid inside the generator or inside the tank housing.
- Allow atleast 10 minutes for degassing of liquid before starting cleaning operation.
- Do not drop heavy objects in the tank directly.
- Do not load object directly on the base of tank.
- Do not dip your finger / hand / any body parts in the cleaning liquid while the ultrasonic bath is ON.
- Do not use flammable liquids, use only water based cleaning solutions.
- Do not use Carbon Tetrachloride (CCl_4), as it decomposes with Ultrasonic Bath & produces POISONOUS GAS.
- Do not use acids.
- Do not operate Ultrasonic bath continuously for more than 90 minutes. For Longer operation, an idle time of 10 minutes is recommended, after every continuous cycle.
- Temperature of liquid should not exceed 65 degree Celsius.
- Keep empty space after the ventilation area / window provided for the ultrasonic bath. Do not enclose it in a box. Heat generated during operation must be vented off, otherwise it may damage parts permanently
- Do not immerse the Ultrasonic Bath in water.
- Keep the control panel and area around the bath Clean and Dry.
- Disconnect the Mains supply before opening any panel, for maintenance.

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Aneer Engineers Pvt. Ltd.

DIN EN ISO 9001 : 2008 Organisation

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Specification

Electric Supply	:	230 V +/- 15%, 50 Hz +/- 3 Hz
Ultrasonic Frequency	:	33 KHz +/- 3 KHz
Ultrasonic Power	:	Depends on Model, See Chart Below
Tank Capacity	:	Depends on Model, See Chart Below
Tank Material	:	304 Stainless Steel
Tank Size	:	Depends on Model, See Chart Below
Transducer	:	PZT Sandwich Type bonded on base of Stainless Steel Tank
Ultrasonic Generator	:	MOSFET base Technology
Construction	:	Ultrasonic Generator & Stainless Steel Tank are housed in one tank
Timer	:	Two Digit Electronic Timer
Heater	:	(Optional) provided to rise the temperature of liquid upto 60 Degrees Centigrade
Basket	:	Provided, Size depends on Model, See Chart Below

Standard Ranges of Ultrasonic Bath

Model	Power (W)	Tank Inner Size (mm) (L x W x H)	Basket Inner Size (mm) (L x W x H)	Capacity (Litres)
L-60	60	228 X 140 X 100	200 X 100 X 20	2.0
L-100	100	300 X 150 X 100	250 X 100 X 60	4.5
L-150	150	300 X 150 X 150	270 X 100 X 100	6.5
L-250	250	300 X 228 X 150	270 X 190 X 100	10

Operating Instructions

1. Fill the tank with liquid upto 3/4 th of the tank
2. Add Cleaning agents to the required percentage
3. Allow 10 Minutes to de-gass the liquid before starting the cleaning operation
4. Connect the 230 V AC Single Phase supply with proper earthing. Switch on the Mains.
5. Set the cleaning time by UP key
6. Load the basket containing objects to be cleaned and place in the tank. Ensure that all the objects are fully immersed
7. Your ultrasonic bath is ready for operation. Press the ON button of the Ultrasonic bath

Timer Settings & Operation

Step	Action
1	With Power ON Set the Timer by UP & DOWN Key for the amount of time you wish the item to be cleaned.
2	Press the ON Key, Green LED & the Ultrasonic Cleaner will ON.
3	Timer will show down counting. Ultrasonic Cleaner will stop after completion of the time cycle & Timer display will show '00' & the Red LED will be ON.
4	To repeat the same cleaning cycle press the ON key once again. This cleaning cycle time will remain in memory until you turn OFF the power to the cleaner
5	To reset the time during the cycle or after cycle press the OFF key the Red LED will be ON then set the time by UP & DOWN key & press the ON Key.

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Degassing

Fresh solutions contain many dissolved gases (usually air), which reduce effective ultrasonic action. Although solutions will naturally degas over time, using degas mode speeds up the degassing process. Solutions that have been kept in Bath in unused condition for 24 hours or more, may reabsorb some gases.

Auto Degassing

Step	Action
1	After power ON if necessary press DOWN Key for auto degassing. Default degas time is 10 minutes
2	After completing the degas time, you are ready to use..

Standard Warranty Terms

The Ultrasonic Baths have been manufactured under strict quality control norms and tested & passed accordingly to industry standard. The equipment is warranted for a period of one year from the date of invoice. The electronic parts however will not be included in the standard warranty. Aneer Engineers Pvt. Ltd.'s sole responsibility is towards repair of the equipment free of charge within the warranty period if the equipment found defective in workmanship or material of construction. The warranty condition does not apply in case of damage to the equipment or any other parts due to improper installation, abuse or mishandling during operation. Aneer Engineers Pvt. Ltd., however, can not be held liable for consequential loss, damage to property or person, or any other inconvenience caused. The customer shall not try to open or repair the equipment. In case the equipment supplied by Aneer Engineers Pvt. Ltd. develops any defect or malfunctions, the customer should inform and send the equipment at the supplier's workshop for its free repair. This warranty is subjective to the Installation and operation of the Ultrasonic Cleaner set being carried out as per instructions contained in the User Manual. Warranty will be void if the equipment is found opened or serviced by unauthorised agencies / persons, not directly authorised by Aneer Engineers Pvt. Ltd, through a written agreement. Ultrasonic Baths does not have any on-site warranty. The customer will have to send the equipment to our works and arrange to collect it back from our works, at their own cost.

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