Instruction Manual

for

ALT Series
Industrial Ultrasonic Cleaner

Version 4.2

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SERVICE & SUPPORT

This instruction manual is a guide to the proper handling and operating of ultrasonic generators and ultrasonic oscillation plates.
If there is any problem or question regarding the proper troubleshooting of the ultrasonic system, do contact us for support.

Specification for Model Format

Single Frequency: ALT-FFWWWW-LLLH-3

Dual Frequency: ALT-FFSS-WWWW-LLLH-3

Model Format	Specification	Remarks
FF	Working Frequency (kHz)	20 - 135
SS	Second Frequency (kHz)	20 - 135
WWWW	Ultrasonic Power Output (Watts)	300 - 2750
LLL	Tank Volume (Litres)	12 - 420
H	With Heater option	
Blank / -3 / -3NN	Input Power Supply (VAC 50/60Hz)	Blank – Single Phase 230 V -3 – 3 Phase 415 V -3NN – 4 wire, 3 x 440V/PE
	Operation Power	10~100% of Output Power
	Temperature Setting	Maximum 70°C

Checkpoints of Installation

- Install the Ultrasonic Cleaner with **proper grounding**.
- Place it in a well-ventilating area with minimal temperature fluctuations.
- Ensure the installation site has low dust, humidity, and solvent exposure.
- Avoid areas with vibration.
- Verify the correct input power source before use.
- Use the appropriate facility power supply:
    - **13A** (UK Plug) or **16A** (3-Pin Plug & Socket) for Single phase.
    - **16A/32A** (5-Pin Plug & Socket) for 3 Phase.

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SAFETY PRECAUTIONS

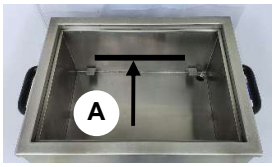
Read and understand the safety precautions to be taken before operating the ultrasonic cleaner.

- Before switching on the power, ensure there is water (or cleaning solution) in the tank, with a minimum level of 150mm above the base of the tank.

Caution!

Water level MUST be above the lines A and B (where the Internal Float Switch is located)

FIG 1



For 300-800W models, min. 100mm above base

FIG 2



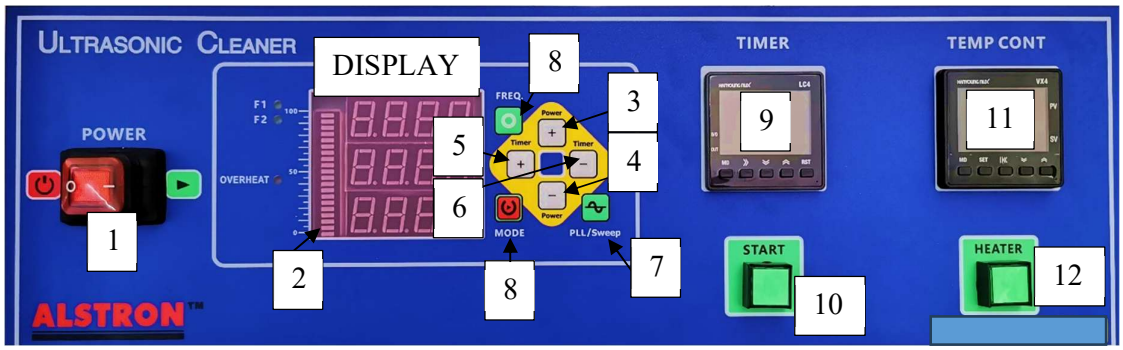
For 1000-2750W models, above the heater's cover line

- The maximum temperature set for the heater should **not exceed 70 ºC**.
- Ensure the temperature of the liquid in the tank is sufficiently cool when removing any parts. It is recommended to use **Personal Protective Equipment (PPE)** such as **protective rubber gloves** to prevent scalding, particularly when handling hot liquid or chemicals.
- Install the tank in a **well-ventilated** and **clean** environment. Do not block the ventilation holes/louvers of the tank casing, as it may cause overheating.
- Ensure there is adequate air ventilation, especially when using solvent-based cleaners.
- Maintain the input voltage within 5% of the rated voltage.
- **Do not attempt** to adjust or operate the generator while it is inside the tank.
- Prolonged usage in undesirable environments (high temperature, direct sunlight exposure, high humidity, etc.) may cause faults in the generator and reduce the lifespan of the generator cards.
- **Exercise caution** when using acidic or alkaline liquids. If it is necessary to use corrosive liquids, **perform indirect cleaning** by using an additional instrument or container.

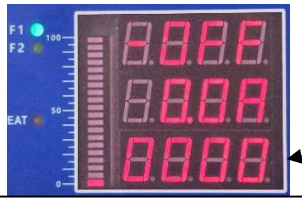
- Allow at least a **15-minute break interval** when using a cleaning agent. Continuous operation for extended periods may lead to overheating of the electronics and reduce the lifespan of the ultrasonic cleaner.
- **Avoid sudden impacts** and/or strong mechanical shocks to the base of the cleaning tank.
- If any abnormality (such as unusual sounds, fumes, smells, etc.) is detected, **immediately turn off** the power, and determine the cause. Refer to the fault diagnosis and troubleshooting procedures.
- If the cleaning tank is not in use for a long time, store it in a place with low humidity.
- Leaving corrosive chemicals in the ultrasonic tank after use may reduce the lifespan of the cleaning tank.
- Do not use bare hands to remove any parts inside the tank while the ultrasonic process is running;
    - If you need to remove parts from the tank, ensure the ultrasonic operation is fully stopped;
    - Use the basket provided or an appropriate tool for removal.
- Ensure the **Power Switch** button is **switched off** when the machine is not in use or after its cleaning operation.
- It is **recommended** to use **earplugs** during operations, as repeated exposure to the sound produced can cause long-term irritation or damage to the ears.

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Overview of the Control Panel



Function Buttons	
1. Main Power Switch	**2. Ultrasonic Power Intensity Bar**
3. Power Intensity (increase)	**4. Power Intensity (decrease)**
5. Setting + (DO NOT PRESS/ADJUST) *(For ALSTRON Personnel Only)*	**6. Setting – (DO NOT PRESS/ADJUST)** *(For ALSTRON Personnel Only)*
7. Sweep Function (Toggle Continuous or Sweep)	**8. FREQ / MODE (DO NOT PRESS/ADJUST)** *(For ALSTRON Personnel Only)*
9. Process Timer	**10. Ultrasonic Function (START / STOP)**
11. Temperature Controller	**12. Heater Control (ON / OFF)**



Default Display Window

Note: If buttons 5 or 6 are pressed by accident, make sure last row digits are '0000'.

Frequency Sweeping

Press the  **PLL/Sweep button** to activate the sweeping ultrasonic effect.

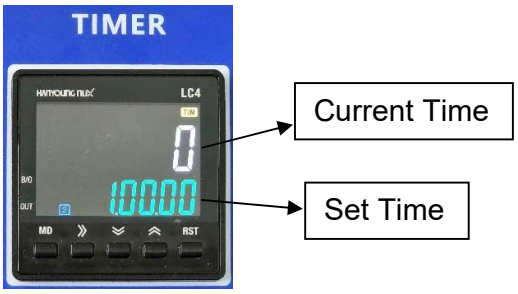
Note: This alternates the frequency of the sound waves and optimises cleaning for different contaminants and enhances effectiveness.

However, this mode may cause damage to certain sensitive parts; use it where appropriate.

Power Intensity Adjustment

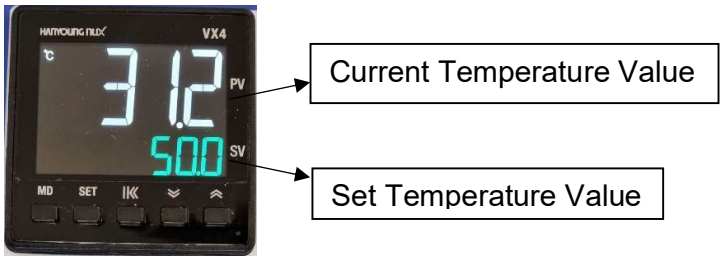
Press **Power Intensity Button (increase ▲ or decrease ▼)** to set the desired power intensity output (10 – 100%). The ultrasonic cleaner will save the set value within 10 seconds during the normal operating mode.

Timer Setting



1) Press  to commence setting, blue digits will flash to indicate that the setting mode is active. Press the button again to shift the position of the digit.
2) Press  to increase/decrease the value (the format is in HH.MM.SS).
3) Press  to complete the setting.

Temperature Setting



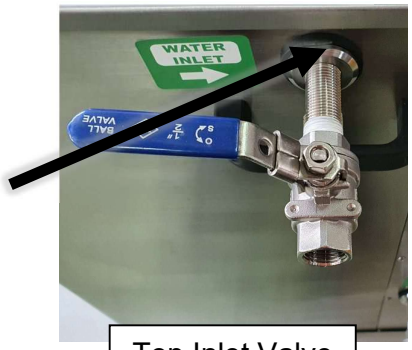
1) Press  to change the “Set Temperature” value.
2) Press  to move to the next digit.
3) Press  to increase/decrease the temperature value.
4) Press  to complete the setting.

(Note: The setting temperature will not exceed 70 ºC.)

Installation of Piping to Valves

When additional fittings are connected to the valves, mark their original positions (see arrows in the picture below) and ensure they are securely tightened at all times. Rotating them could loosen internal fittings, potentially causing water leakage.

Marking areas are indicated by the arrows:



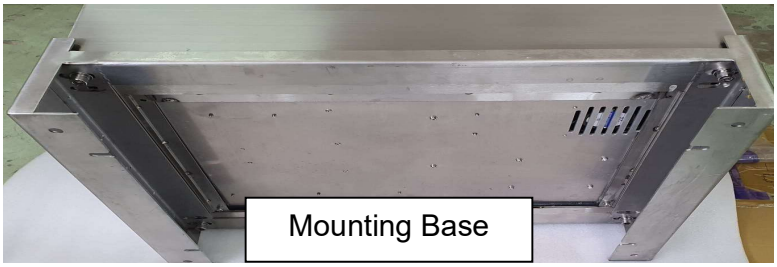
Top Inlet Valve



Bottom Drain Valve

Mounting Base (For Models with Base Mount)

The mounting base is specially designed for secure and easy attachment of the cleaner to the floor, particularly for marine applications. It ensures good ventilation and prevents unwanted movement or sliding on the deck.



Mounting Base

To secure the base, fasten the bolts at the 4 corners with M10 cap screws and 8 mm Allen key.



Bolt fastened at corners of base



Fasten with Allen key

Operation

1) Ensure the drain valve is **fully closed**. Fill the tank with water or cleaning solutions, ensuring the water level is **above the minimum required**.
   Refer to Pg 4 (FIG 1 and FIG 2) for the correct water level.
2) Load the items to be cleaned into the basket and place the basket into the cleaning tank.
3) Toggle the main power switch to turn on the cleaner, then set the digital timer to the required duration for the cleaning process.
4) Set the desired temperature for the heater.
5) Press the 'HEATER' button to initiate heating. The button will illuminate, and the heater will begin warming the tank. (To speed up heating, cover the tank with the lid.)
6) Press the 'START' button to begin ultrasonic cleaning. The button will illuminate, and the ultrasonic process will start.
7) Press the 'START' button again to stop the operation.

Tower Light Status (if applicable)



GREEN + ORANGE
Ultrasonic operation is running normally.



RED
Ultrasonic operation cannot run. Check Troubleshooting Procedures.



ORANGE
Ultrasonic operation has completed and is in standby.

Maintenance Procedures

Before operating:

1) Inspect the water level in the tank and ensure it remains above lines A and B (as illustrated in FIG 1 and 2 on Page 4).
2) Check for any visible signs of wear or damage to the tank, heater, or other components.

Post operating:

1) After each use, empty the tank and rinse it thoroughly with clean water to remove any residual cleaning agents or debris (especially if corrosive substances have been used.) This helps prevent buildup and corrosion.
2) Dry the tank and its components completely to avoid moisture-related issues.
3) Inspect and clean the external ventilation holes/louvers to ensure proper airflow. Blocked ventilation can cause overheating and reduce the lifespan of the unit.
4) Check and clean the float switch to ensure it is functioning correctly. Remove any debris that may obstruct its operation.
5) Inspect and tighten any loose connections or fittings in the unit. This includes electrical connections and mechanical components.
6) Test the temperature and timer functions to ensure they are operating correctly. Replace any faulty components as necessary.
7) If the ultrasonic cleaner is not in use for an extended period, store it in a dry, low-humidity environment to prevent corrosion and degradation.

Schedule Annual Maintenance:

Contact Alstron's Technician to perform a detailed check-up and servicing of the ultrasonic cleaner.

This will ensure it operates within the manufacturer's specifications, and to promote the longevity and effective performance of the cleaner.

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Troubleshooting Procedures

Faults	Remarks
No ultrasonic oscillation	• No power supply: Check the power supply, ensuring connections are properly plugged in and secure; • Check if the water level is above the float switch; • Check if the timer is set correctly.
MCB / ELCB Trip	• Check for electrical shorts; • Ensure electrical contacts are dry; • Contact Alstron for support.
"ErXX" appears on Display	• This is the machine error code. Contact Alstron with the error code for support.
Damaged Power Cable	• Contact Alstron for support
Power Switch Button on but no display	• Contact Alstron for support
Heater not working	• Check if the temperature setting is correct; • Ensure the heater start button is pressed; • Check if the water level is above the minimum level.

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WARRANTY

Warranty will be void under the following conditions:

1. Running the unit without solution/water;
2. Using highly corrosive and volatile solutions without consultation;
3. Improper usage contrary to safety and normal operation procedures.

Please feel free to approach **Alstron's Technical Team** for any queries and technical feedback.

For any enquiries/support, please contact:

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