SAFETY INSTRUCTIONS >>

• Always turn off the ultrasonic & temperature button Or disconnect power after use. A forgetfulness could cause the liquid to evaporate, damage the unit or create a fire. Do not heat permanently beyond 60 °.

• Use the lid as far as possible to limit evaporation.

• Do not operate ultrasound for more than one hour continuously. Allow a break time of at least 15 minutes every hour before each new cycle.

• Do not pour water on the control panel or on the outside of the device. Be careful when removing the basket or items, not to pour water on the unit and immediately wipe off any dripping water.

• Do not clean emerald, opal, agate, ivory and materials, porous, silver plating. Do not put live organisms or animals in the device.

• Do not immerse the device, do not disassemble the device.

• It is forbidden to dip your hand into the bath during operation.

• Do not let a child use this appliance.

• Do not touch the power cable with wet hands or if there is dripping water around the cable. In case of water leakage, cut power supply to the circuit breaker or disconnect the cable directly to the socket and especially do not touch the device while the power electric is not cut.

• Danger of burning: the liquid, the tank, the parts to be cleaned could burnt. Do not move the device when it is full, the handles will break.

• It is recommended to use acoustic protection near the device and protect yourself with appropriate glasses and gloves.

• Liability: Manufacturer, Importer, Distributors decline any responsibility for potential problems with trained people or equipment by use contrary to the provisions mentioned or by improper use handling. The buyer is responsible for training operator personnel.

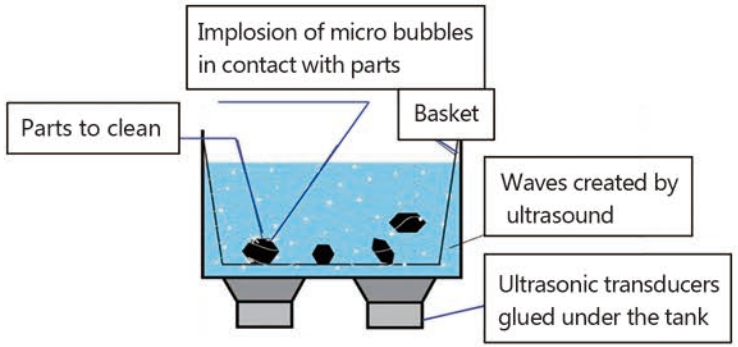
Ultrasonic Cleaner
Operation Manual

PRINCIPLE OF ULTRASONIC CLEANER >>

Ultrasonic cleaning is considered to be the most modern and efficient method in precision cleaning processes.

The basic unit is ultrasound transducers. These transducers transform electricity power into vibrations, then transmit to the cleaning bath. In the cleaning liquid, the ultrasonic waves successively trigger phases of compression and complex decompression what is called cavitation. The decompression causes the formation of a multitude of microscopic bubbles who then implode violently during the compression phase.

This action causes turbulence comparable to tiny brushes acting on the parts to be cleaned, and causes the detachment of impurities even in the inaccessible corners. At the same time, the pulsation of micro-currents generated simultaneously ensures the continuous removal of impurities from the surface of the parts to be cleaned.



The optimum ultrasound efficiency is between 45 ° and 55 °. Above 60 °C the cleaning efficiency decreases. The appliance is not designed to heat continuously at more than 80 °

Ultrasonic Cleaner is a very effective clean tool to:

- Jewelry, watch bracelet, rings, necklaces, coins, razors;
- Optical parts;
- Laboratory and medical instrument;
- Dental , surgical instruments;
- Tools;
- Fuel Injectors;
- Carburetors and motorparts;
- Gun parts, bullet.

SPECIFICATION >>

Model		TA-30 TB-30	TA-50 TB-50 TD-50	TA-100 TB-100 TD-100	TA-150A TB-150A TC-150A TD-150A	TA-150B TB-150B TC-150B TD-150B	TA-200 TB-200 TC-200 TD-200	TA-300 TB-300 TC-300 TD-300	TA-400 TB-400 TC-400 TD-400	TA-500 TB-500 TC-500 TD-500
Frequency		40KHz								
Timer		1~30'								
Heater		~80 °C								
Ultrasonic Power		60W	60W	120W	180W	180W	240W	360W	480W	600W
Out Size	L	175	175	265	325	325	325	360	530	530
	W	165	165	165	175	175	265	325	325	325
	H	160	190	225	230	270	275	275	280	325
IN Size	L	150	150	240	300	300	300	330	500	500
	W	135	135	135	150	150	240	300	300	300
	D	65	100	100	100	150	150	150	150	200
Transducer		1	1	2	3	3	4	6	8	10
Capacity		1.3L	2L	3.2L	4.5L	6.5L	10L	15L	22L	30L
Heat power		100W	150W	150W	300W	300W	300W	450W	600W	600W
Drain		N/A	N/A	N/A	N/A	YES	YES	YES	YES	YES
Weight		2.8kg	3.2 kg	3.8kg	5.2 kg	6.0 kg	8.3 kg	10.5 kg	13.6kg	15.0 kg
Power Supply		110V or 220V;50&60HZ								

⚠ The capacity is calculated by maxim L/W/H, the actual capacity is around 3/4 of show above.

PRECAUTIONS >>

Read this leaflet carefully and mainly the precautions below and the safety instructions. Failure to comply with these instructions will void the warranty.

IMPORTANT !!
Never connect the device without water or less than 2/3 of water in the tank, it may cause irreparable damage to the device.

1) Never connect the appliance without water. Use the appliance with the tank filled to at least 2/3, or will damage the electronic component.

2) Use suitable detergent for ultrasound. Common household products can oxidize the tank under the effect of ultrasound. Do not fill the tank directly with aggressive chemicals or acid (PH <2), if necessary use a glass container placed in the basket in a water bath.

3) Do not place objects directly in the bottom of the tank, this will irreparably damage the transducers. Also a risk of perforation of the vessel by vibration of objects in contact therewith. The guarantee would not work. Use the delivered basket or suspend objects so as to leave a minimum of 2 to 3 cm between the bottom of the tank and the parts to be cleaned. Be careful the shock of an object falling into the tank will damage the device.

4) Do not stack items to clean for effective cleaning.

5) Do not operate ultrasound for more than one hour continuously. Allow a break time of at least 15 minutes every hour.

6) The appliance is not designed to heat continuously more than 80 °

7) After use, turn off and unplug the appliance. Wait until the water is less than 35 ° to drain (the heating elements may be damaged by thermal shock). Empty, clean with a soft cloth and dry the tank when the appliance is no longer used (some residues may oxidize the stainless steel).

HOW TO USE ULTRASONIC CLEANER >>

1) Close the drain and add water to the tank (warm preferably) to the correct level. The minimum water level should not less than 2/3 of the capacity (4 liters of water for a 6 L tank). Risk of deterioration irremediably the transducers if water level below 2/3 !!!

2) Tap water is the basic solvent. In order to optimize the cleaning effectiveness, dilute a specific ultrasonic detergent and adapted to the cleaning material is favorable. Change the bath as soon as it becomes opaque black for good efficiency.

3) Place the cleaning objects in the basket and then immerse the basket into tank. basket is strongly recommended. Never place objects directly into the bottom of the tank, this will irreparably damage the transducers, also a risk of perforation of the tank by the vibration of objects in contact with it. The basket facilitates removal of objects and allows a space of about 2 to 3cm between the bottom of the tank and parts to clean. Suspension of objects is possible.

4) Before connecting the power supply (earthed socket) , make sure that the power of machine is OFF (the switch is located at the rear of the unit) .Put the appliance on a stable and flat surface. Be careful that the unit is well ventilated and do not obstruct the ventilation air intakes. The power cable must be disconnected after use.

Plug machine to socket , and the control board will light on.

5) Temperature setting and working time setting. **(Pictures In Next Page)**
For faster heating you can activate the ultrasound during heating and use the lid.

ANALOG: Turn the knob clockwise to adjust the time and temperature , 45-55 °C is recommended.

DIGITAL: Press the +/- buttons to adjust the temperature and time, then press the "on / off" button. The associated red LED goes out when the time & set point of the bath is reached.

ADJ: with extra power adjust function. Turn the knob clockwise to adjust the ultrasonic power from min to max (20% ~ 100%).

DEGAS: With degas function and half wave function.

Degas(vacuum)- Cleaning solution contains micro air bubbles that reduce the cleaning efficiency. Degas help vent the air out. After diluting the detergent in the tank, it is advisable to degas the bath by operating the ultrasound for 10 minutes. Take advantage of this period to warm up the bath.

Degas model: working 6 seconds stop 3 seconds.

Half Wave: a gentle cleaning model for fragile parts.

Attention the action of ultrasound seriously increases the temperature of the bath (even without operating the heating). The cleaning of proteins or blood must be carried out with a temperature always lower than 42 °.

6) The more objects you clean and the less effective the cleaning will be. Avoid overlapping objects. Always leave space around objects to clean.

7) End of the cleaning cycle: Remove the basket from the bath and rinse the parts thoroughly under running water in order to eliminate the residue of the detergent, then dry with a blower or a hair dryer.

8) After use: Turn all the buttons OFF, turn off the power and disconnect the power supply. Drain the tank after the bath temperature is low (<35 °). Never leave the appliance connected to a power socket when the tank is empty.

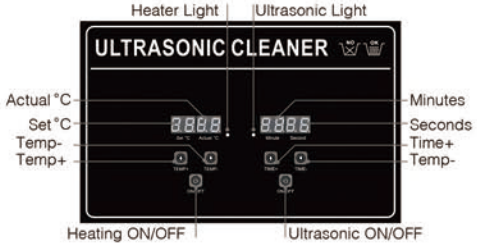
The particles detached from the cleaned objects piles in the bottom of the bath, decreasing the action of the next cleaning and have a risk of oxidize the tank or pierce it with the vibrations. Always empty and clean a tank that contains metal deposits.

Empty and clean with a soft cloth then cleanly dry the tub when the device is no longer used (at least every night to avoid a oxidation of stainless steel). This will also ensure that you always have a clean bath when you use it again. Some models have a drain tap on the side, always make sure that this tap is closed during the next filling.

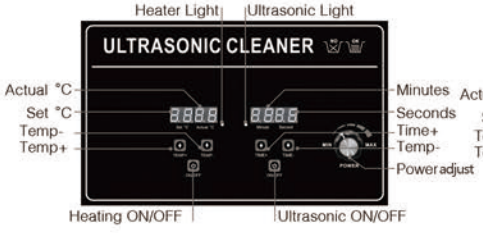
Control Board as follows >>

ANALOG MODEL

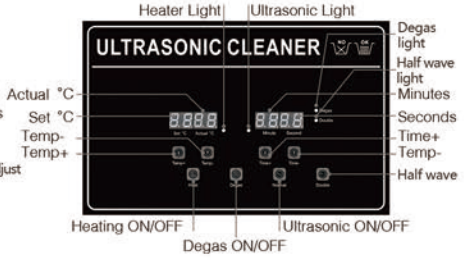
DITIGAL MODEL



POWER ADJUSTABLE MODEL



DEGAS MODEL



USAGE TIPS >>

• During the operation the noise of ultrasound must be regular and the surface of the bath must not be strongly agitated, only a very slight undulation must be visible on the surface. If there is heavy agitation or irregular noise, add or reduce the liquid a little, to optimize cleaning.

• The setting of the time depends on the parts to be cleaned and their degree of soiling. Generally a cleaning cycle does not exceed 15-30 minutes (3 minutes for fragile parts). If the parts are not properly cleaned then restart a new cycle by changing the orientation of the parts in the basket. For complex parts several rotations are sometimes necessary. The waves are transmitted from bottom to top.

• It is preferable to select a short time, to check the status of cleaning and to prolong the ultrasounds work time if necessary.

• Avoid 45 to 60 minutes continuous working as the bath temperature may increase over the setup temperature. Too high temperature or continuous working could damage delicate materials. Always perform preliminary tests for fragile objects or sensitive materials.

• If the cleaning is not perfect, check that the detergent is suitable for your application (materials and deposits to eliminate), if the dosage is correct and the recommended T °, the objects are should not stacked or too close to the walls .

• Do not operate ultrasound for more than 1 hour continuously risk of damaging the device. Allow a break of at least 15 minutes every hour of operation.

SAFETY INSTRUCTIONS >>

• Some highly acidic or strongly alkaline detergents may cause corrosion on a stainless steel tank or even on the outside of the tank (acid vapors). To avoid these problems use a medium alkaline PH lye.

Article on corrosion of stainless steel http://en.wikipedia.org/wiki/Stainless_steel

- Never place the appliance without water in the tank
- DO not place objects directly in the tank
- Always disconnect the power supply during filling or emptying.
- Do not use the device without grounding.
- Never leave the device running without supervision.

• Never use solvents or flammable products, only aqueous base detergent because of the significant risk of vapor ignition.