

Ultrasonic Cleaner Operation Manual



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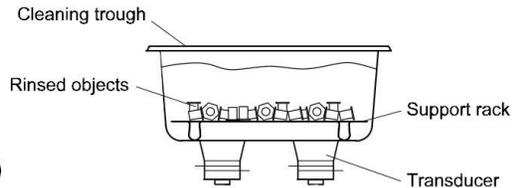
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Troubleshooting

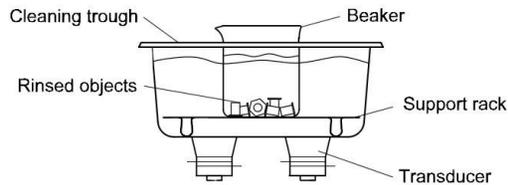
Problem	Reason	Action
Long alarm after power plugged in. Whole screen display or non-display	The instrument is not ready.	Unplug the power plug and plug in after 6 seconds
Can't turn on ultrasonic or heating function.	Power not plugged in	Plug in
	The receptacle has no power	Find a receptacle with power
Weak ultrasonic effect.	Fuse blown	Call qualified maintenance personnel
	Without degas process, the solution is easier to produce bubble after heating.	Turn on for at least 5 minutes
	Higher liquid line after putting in rinsed object	Lower the liquid line to the recommended liquid level
	Dirt covers the trough bottom	Empty the trough and clean the bottom.
Incorrect status after pressing button	Cleaning solution loses effect after long use.	Replace solution.
	Switch failure	Shutdown and restart the instrument

Method of Cleaning

Ultrasonic sound is sound transmitted at frequencies generally beyond the range of human hearing. In your ultrasonic cleaner, ultrasonic sound (sonics) is used for cleaning materials and parts.



(Figure 1)



Direct

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(Figure 2)

Indirect cleaning (refer to figure 2)

Place water and detergent into the cleaning trough, and put all the chemicals into a beak or other suitable container and then put the work piece into the liquid. Now put the container of the chemical detergent and work piece into the trough.

Caution: do not let the container touch the bottom of the trough.

The direct and indirect cleaning methods both have advantages and disadvantage. If you are not sure which one to choose please carry out some test first before making a choice. The advantage of the direct cleaning method is that the cleaning is very efficient and easy to operate. The indirect cleaning also has advantages, which are that the dirt being cleaned off can be clearly seen in the beak or the container, and then it can be filtered out or disposed of. Also at the same time we can use two or more than two types of cleaning solvents.

Before you start cleaning:



WARNING

- Don't place parts or containers directly on the bottom of the cleaning tank; use a support rack, wire or beaker cover to suspend items.
- The water surface should not be lower than "MIN.LEVEL".
- Don't ever use alcohol, gasoline or flammable solution. Doing so could cause a fire or explosion. Use only water-based solutions.
- Don't ever use mineral acids or bleaches. These could damage the tank.

Step

1. Select your cleaning solution.
2. Allowing for the volume of the parts you will be cleaning and cleaning solution, fill the tank with warm tap water to the operating level line.
3. Add cleaning solution to the tank water.
4. Plug the cleaner into a grounded outlet.

Cleaning items:

Step

1. Set the TIMER for the amount of time you wish the items to be cleaned.
2. Place the items into a basket or beakers in a positioning cover.
3. If using beakers, add cleaning solution to beakers to cover the items.
4. Slowly lower the basket or beakers into the tank. Do not allow items to contact the tank bottom. Do not stir the solution.
5. When items are clean, slowly remove them from the cleaner.
6. Rinse the clean items with clean water and dry them, if necessary.

Notes:

Safety Pre-Cautions

Before using your Ultrasonic Cleaner, please read and thoroughly understand these warnings. Failure to follow them may result in serious personal injury or property damage.

1. **To avoid electrical shock**



- We can only use the cleaner while there is a good grounding connection.
- Do unplug from power source before filling or emptying the tank.
- Don't disassemble your cleaner-high voltage inside the cleaner is dangerous.
- Don't immerse the cleaner in water.

2. **To avoid personal injury and property damage**



- Don't use alcohol, gasoline or other flammable solvents to avoid explosion or fire.
- Cleaning trough or detergent may be hot, don't touch with hand.
- Don't let the temperature of the cleaning liquid to go over 70 degrees Celsius.

3. **Avoid damaging the facility**



- Don't operate the cleaner dry.
- Don't use strong acid or alkali or other corrosive solution to avoid damaging the cleaning trough.
- Only water soluble detergent can be used.
- The cleaner shall not be started while there is no cleaning liquid in the trough.
- The water surface should not be lower than "MIN LEVEL" to prevent damage.
- Don't directly place the work piece on the bottom of the trough, they shall be suspended or placed on a support rack so as to avoid damaging energy converter.
- The cleaning liquid shall be changed regularly; otherwise the dirt deposit will form at the bottom of the trough therefore affect the cleaning results of ultrasonic cleaning. Moreover, many types of detergent lose potency in time; therefore detergent should be added periodically.



WARNING

Do not use corrosive solutions, such as bleaches, strong acids or powerful caustics, in ultrasonic tanks, or you will void the warranty. Only use non-flammable solutions and water-based solutions.

Solution types:

Water-based solutions are either slightly acidic or alkaline. They include detergents, soaps and industrial cleaners designed to remove specific soils.

Acidic water-based solutions:

Remove rust, tarnish or scale. They range from mild solutions that remove tarnish, to concentrated, and inhibited acidic solutions that remove investment plaster, milk-stone, zinc oxide and rust from steel and cast iron as well as smut and heat-treat scale from hardened steel.

Alkaline water-based solutions:

Include carbonates, silicates and caustics. These cause emulsifying action, which keeps soil from re-depositing on the cleaned surface, and improves cleaning action in hard water.

Change the cleaning solution periodically. Cleaning solutions can become contaminated with suspended soil particles which coat the tank bottom. This coating dampens the ultrasonic action and reduces cleaning efficiency. Certain solutions will cavitate better than others.

Heat and cavitations: increase the chemical activity of cleaning solutions. Some materials may be damaged by this stronger chemical action. When in doubt, test run samples of items to be cleaned.

Caustic solutions: used to remove rust from steels, metal alloy corrosion and a variety of tenacious contaminate.

Solution amounts: Solution amounts may vary. The amount you use depends on the detergent and the type of soil to be removed. Follow instructions on the solution container and refer to the table below for the effects of solutions on metals. Free hydrogen may be released if solution comes in contact with reactive metals.

Warranty Statement: 1- Year from time of dealer invoice

All of our products sold are guaranteed to be free from defects in workmanship and materials for one year from date of purchase, unless otherwise stated. TPC will repair or replace any defective part at no charge. TPC will not be responsible for labor charges or shipping charges to / from the TPC facility. This guarantee does not cover normal wear or stains on surface finish. The guarantee does not cover damage resulting from improper installation, misuse or accidents incurred in shipping and handling. All claims against the freight carrier must be initiated at the time the damaged items are received. The claim is the responsibility of the customer. We are improving our products on a continuous basis. We reserve the right to make modifications without the need for prior notification and are not obliged to modify previously manufactured items. Bulbs and batteries are not covered under any type of warranty.

Tanks:

Cleaning - check the tank for contamination whenever you change solution. if necessary, remove contaminants with a nonabrasive cloth and water.

Emptying - always unplug the cleaner before emptying the tank. Empty the solution into a waste disposal unit.

Filling - always unplug the line cord before filling the tank. Fill the cleaner to the operating level (1 inch from the top with beaker/support rack in place), using warm tap water.

Low solution level - will cause the cleaner to fail. When you remove heavy or bulky loads from the cleaner, the solution level may drop below the operating level. If so, be sure to replace lost solution and degas, if necessary, depending on the amount used.

Overload - do not rest any items on the tank bottom. Weight on the tank bottom dampens sound energy and will cause damage to the transducer. Instead, use a support rack and/or beaker positioning cover to support all items. Allow at least 1 inch between the tank bottom and the beaker or receptacle for adequate cavitation.

Covers - allow the cleaner to heat up faster, to a higher temperature, and avoid excessive liquid evaporation.

Shell:

Cleaning- The ultrasonic cleaner may be cleaned using a dry soft towel. Do not use liquids to clean.

Solution:

Solution activity- the amount of visible activity is not necessarily related to optimum cavitation for cleaning.

Surface tension - can be reduced by adding a wetting agent of surfactant to the bath. Reduced surface tension will increase cavitation.

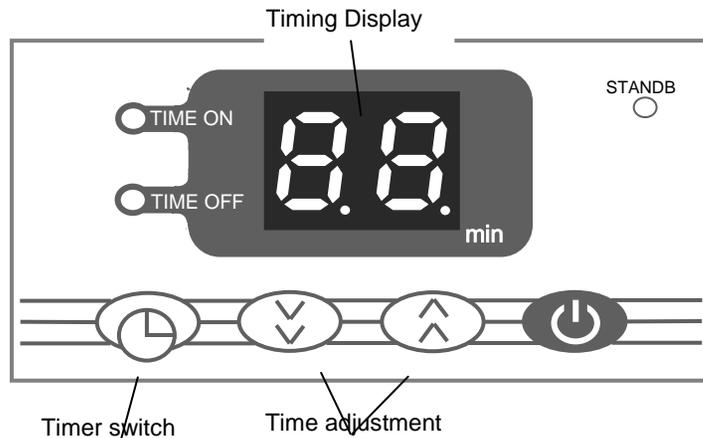
Solvents - never use solvents. Vapors of flammable solutions will collect under the cleaner, where ignition is possible from electrical components.

Renewal - replace cleaning solutions often to increase ultrasonic cleaning activity.

Solutions, as with most chemicals, become spent over time. Solutions can become contaminated with suspended soil particles which coat the tank bottom, inhibiting ultrasonic activity.

Operating Your Cleaner with Ultrasonic Feature

MODEL:



Explanation of controls:

1. Plug in the power supply, “**STANDBY**” light is on.
2. Turn on the power switch, “**STANDBY**” light is off, cleaner start to work for 15 minutes as default, “**TIME ON**” light is on.
3. Time can be reset during operation to 1-99 minutes. Press the time adjust key and hold for more than 2 seconds, the number displayed will increase or decrease. To stop, press the timer key for over 1 second, the cleaner will resume work.
4. If the time does not need to be set, press the timer switch until the number displayed disappears and “**TIME ON**” light is off.
5. If the unit is turned off when it is in operation and the power is not removed, it will restore the status and setup of the last operation when it is turned on again.
6. There will be 6 buzzes as notification after the set time has expired.

Application Hints

Choose the cleaning method:

Direct cleaning: place the support rack, water, detergent, and work piece into the trough, or suspend the work piece in a bracket and submerge them into the cleaning liquid. It is strictly prohibited to put alcohol, propylene, gasoline or other flammable solvent, or strong acid or alkali, or other corrosive liquid into the trough. If the above mentioned solvent is necessary then we recommend the use of indirect cleaning method.

Indirect cleaning: put water and detergent into trough, put all necessary chemicals into the beaker or other proper container, and submerge them into the cleaning liquid. Then put all the chemical detergent and work piece into the trough.

The cleaner is powered by connecting the mains plug to a standard socket-outlet, always place the cleaner in such a way that it is easy for the operator to unplug the mains plug in emergency.

Position your cleaner within easy reach of a standard grounded electrical outlet. Do not place the cleaner on a circuit which could become overloaded.

This cleaner is **NOT** floor standing equipment. Always use the cleaners on tables, work benches, and other similar surfaces.

Always use the cleaners in an environment of good ventilation. Special care should be taken not to block the bottom fan vent of the relevant models.

Please always keep the liquid level between the “**MAX. LEVEL**” and “**MIN. LEVEL**”.

Adjust the timing to proper time. Work pieces of different types require different cleaning times. Most of them only need about a few minutes while others might take a bit longer. The details can be decided via testing.

It is faster and more efficient to run several small loads rather than few big loads.

Turn power on, wait 10 minutes to let the cleaner liquid to purge the gas, the process of which is only required at the beginning of every day cleaning or after the change of solvent.

When you first fill your unit, or refill it with fresh solution, use warm water for the solution. Turn on the ultrasonic (press the SONICS), add the cover and the solution will heat quickly to temperature.

Rinse, drying and lubrication:

Rinse the parts to remove the chemicals which adhere to the parts after cleaning. Dry the parts with clean compressed air, hot air blower or in an oven. Re-lubricate parts that need lubrication.