



Omegasonics

**Ultrasonic Cleaning Equipment
Operation & Instruction Manual**

OMEGASONICS

Table Top Unit

2016 and Prior

Model 7850TT / 7950TT

Read all instructions thoroughly before operating this equipment

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INTRODUCTION



About the Ultrasonic Cleaning Process

Congratulations! You have purchased an Omegasonics Ultrasonic Parts Washer.

But how does Ultrasonic Cleaning work?

When ultrasonic energy is introduced into a cleaning solution, alternating patterns of low and high pressure phases occur. This process forms microscopic vacuum bubbles. During the subsequent high pressure phases, the bubbles implode violently. This is called cavitation.

Cavitation provides an intense scrubbing action that leads to an unsurpassed cleaning speed and consistency when compared with simple soaking or immersion with agitation. Additionally, the bubbles are small enough to penetrate even microscopic crevices, cleaning them thoroughly and consistently. As a result, ultrasonic cleaning is one of the most highly effective and efficient methods you can use for cleaning a wide array of items.

Omegasonics provides a complete line of quality ultrasonic cleaning washers that have been developed for industries that have historically used technology that is quickly becoming outdated. While other companies use environmentally harmful cleaning solvents, we provide state-of-the-art, labor saving, fast, efficient and environmentally safe alternatives.

WARNINGS

Failure to read these warnings may cause the unit to fail, personal injury or property damage.

- Connect the unit to a grounded shockproof socket only. Ensure that the values indicated on the nameplate of the unit must correspond with the available connecting conditions. The unit must be connected to a single phase, 120 volt AC grounded electrical outlet.
- Check the ultrasonic unit for possible transport damages before initial operation.
- In case of visible damage **do not** connect the unit to a power source, contact your supplier.
- Do not use this machine for cleaning live animals, pets or plants.
- Do not plug equipment into a power source that utilizes a GFI receptacle. Ultrasound passes a small, trickle current through the neutral which will cause GFI's to trip.
- Never plug in or operate the unit (heat or ultrasound) without the appropriate liquid level in the tank (1" from the top).
- This ultrasonic cleaning unit has been designed for cleaning items using liquid soap only.
- Any detergents or chemicals used in this equipment must be compatible with 300 series stainless steel. Do not use any chemicals that contain any strong acids i.e. hydrochloric, sulfuric or muriatic acid. These chemicals will cause permanent damage to the stainless steel welds.
- Use only biodegradable cleaning agents. Never use solvents or flammable cleaning solvents without approval from Omegasonics. Any chemistry with a flash point below 82°C should never be used with an ultrasonic cleaner.
- Ensure that sensitive surfaces are exposed to ultrasonic activity for short periods of time only. If in doubt check the cleaning progress regularly and observe the state of the surface material.
- Due to the heated liquid in the tank, use the basket to insert or remove parts from the tank. Always switch off the unit when placing items in or taking them out of the tank.
- Do not operate the unit with wet hands.
- Do not open the internal circuitry of the equipment, disassemble any part or parts, or move or remove any components or electrical devices.
- Never attempt to perform maintenance on the equipment when the unit is energized or when the cleaning solution is hot. The cleaning liquid and unit heat-up even if heat is switched off.
- Disconnect the power source when moving the unit to a new location.
- Avoid splashing water outside the tank.

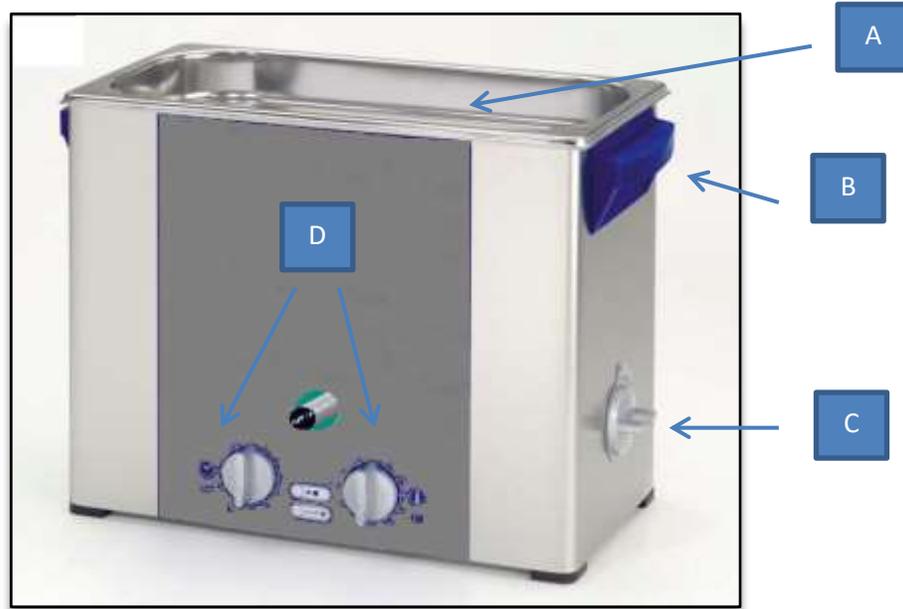
The manufacturer cannot be held liable for damages of persons, equipment or items cleaned caused by improper use. Only qualified technically trained personnel should perform any electrical maintenance on this machine.

GETTING TO KNOW YOUR UNIT

Delivered Equipment

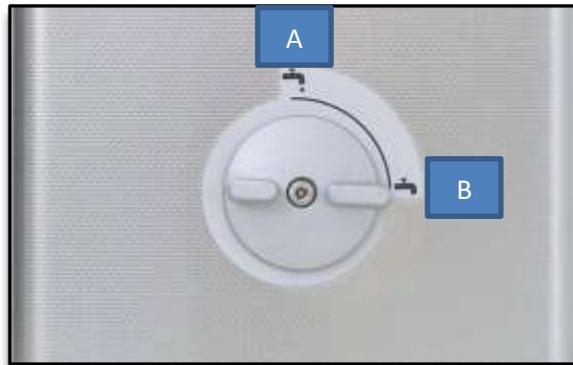
- Ultrasonic cleaning unit
- Lid
- Electrical Power Cable
- Tube socket with tube clamp
- Operating Instruction Manual
- Basket

Front View / Side View



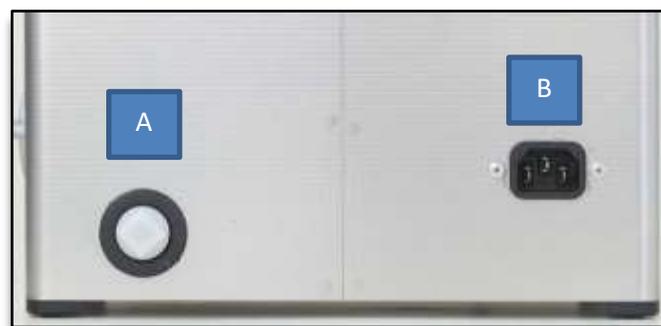
- A. **Filling Line** indicates the recommended maximum liquid level. This should not be exceeded even with cleaning items are inside.
- B. **Plastic Carrying Handles**
- C. **Turning Knob** which controls tank draining.
- D. **Operating Panel** for the control of the operating functions (splash/water-proof).

Side View



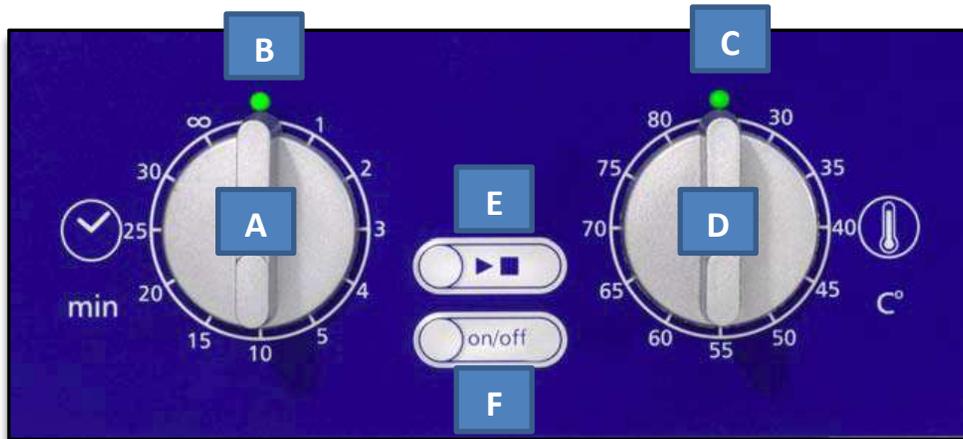
- A. **Vertical Position:** drain open
- B. **Horizontal Position:** drain shut

Back View



- A. **Drain Outlet** for draining the tank
- B. **Electrical Power Cord Socket** for quick and easy removal of the cable (i.e. for transportation purposes).

Description of Operating Elements



- A. **Cleaning Period Turning Knob** Setting options for short-period operation (in minutes). Using a numerical option will result in an automatic switch-off once the desired time has been completed. Use the permanent position ∞ for continued operation. This requires that the unit be switched off by hand. For safety reasons, the unit is automatically switched off after 12 hours of permanent operation.
- B. **Ultrasound LED Display** is lit when ultrasound is switched on.
- C. **Temperature LED Display** is lit when heating is switched on; the light turns off when set temperature is reached.
- D. **Temperature Turning Knob** The temperature can be set in increments of 5° in a range of $30^{\circ} - 80^{\circ}\text{C}$.
- E. **Ultrasonic Start/Stop Key** Use this button to initiate or stop ultrasonic operation.
- F. **Unit On/Off Key** Turns the unit on and off.

To set the value of either the time or heat, turn the knob clockwise. To reset the value, turn the knob counter-clockwise.

CLEANING SOLUTION LIMITATIONS

Flammable

Never use flammable liquids or solvents directly in an ultrasonic cleaning tank.

Their use increases the risk of fire and explosion.

Ultrasound increases the volume of vaporization of liquids and creates a very fine mist that can catch fire on any ignition source at any time.

Aqueous Cleaners

Do not use aqueous cleaning media with pH values in the acid range ($\text{pH} < 7$) directly in the ultrasonic tank if fluoride (F), chloride (Cl) or bromide (Br) ions can be taken in by the removed dirt or through the cleaning chemical. These can destroy the stainless-steel tank by crevice corrosion within a very short period of ultrasonic operation.

Other media which can destroy the stainless-steel tanks when used in high concentrations or with high temperatures during ultrasonic operation are: nitric acid, sulfuric acid, formic acid, hydrofluoric acid (even diluted).

The above limitations for the use of chemicals in an ultrasonic bath also apply for the aforementioned chemicals when these are brought into an aqueous (particularly distilled water) bath through entrainment or from the removed dirt.

The limitations of use also apply to the standard cleaners and disinfectants if these contain the above mentioned compounds.

For a list of Soaps offered by Omegasonics, please refer to page 18.

SET-UP

- Place the unit on a dry and solid surface.
- Ensure that the workplace is sufficiently ventilated.
- Do not use a soft surface (i.e. carpet) as this may impede the ventilation of the unit.
- Operation should only occur indoors.
- Close the drain valve before filling the tank (turn the drain knob on the tank to the horizontal position).
- Fill the cleaning tank with a sufficient quantity of a suitable cleaning liquid and water before turning-on the unit.
- The marked maximum filling level of the tank indicates the recommended filling level with items to be cleaned in the tank.
- To quickly heat up the liquid in the tank and to prevent unnecessary energy losses, we recommend use of the lid.
- Do not exceed a temperature of 80°C inside the tank.

CLEANING

Timed

- Select the required temperature.
- Set the required ultrasonic cleaning period.
- When the set cleaning period has run down, the ultrasonic activity switches off automatically. The heating continues operating at the set temperature.

Continuous

- For permanent operation turn the turning knob clockwise into ∞ position. In this operating mode there is no automatic switch-off. The ultrasonic activity must be switched off by hand. After the cleaning process has been finished, press the ►■ key to switch off. Alternatively, turn the knob back into “0” position.
- In order to avoid unintended permanent operation, the Omegasonics units are equipped with a safety switch-off automatically. The unit switches off completely after 12 hr. of permanent operation. If you wish to continue the operation, start the unit again.

SPECIFIC CLEANING PROCEDURES

Carburetors

- In the ultrasonic bath, preheat 1 part OmegaSupreme with 10 parts clean water to a temperature of 66°C.
- Remove float bowls and jets from the carburetor to be cleaned.
- Hoses and gaskets do not need to be removed.
- Using a basket, lower the part into the bath and clean for 15 minutes
 - Longer time is necessary for carburetors with extreme corrosion.
- Remove carburetor and blow out all ports, ensuring that air flows freely.
- Jets should be placed in a strainer and cleaned in the tank, by themselves, for the same amount of time.
 - Jets that are extremely corroded or plugged will likely need to be replaced.

Electrical Components

- In the ultrasonic bath, preheat 1 part Omega AquaClean with 64 parts clean water to a temperature of 46°C. A higher dilution may be required depending on the severity of contamination.
- If it exists, excess water should be removed as quickly as possible.
- UnWet CPDL should be used to stabilize the components if moisture exists, prior to cleaning.
- Vacuum excess soot with a HEPA-style vacuum prior to placing in bath.
- Pre-spray the outside of the components with a 1 part OmegaSmoke, 64 parts clean water mixture. Let sit for 2 – 5 minutes depending on the degree of the exterior soot.
- Place components in basket, do not stack, and clean for 2 minutes.
- Remove the basket from bath and rinse with free flowing de-ionized water.
- Blow off excess water with compressed air.
- Place a bowl of 1 part Omega Deodorizer and 1 part clean water at the bottom of the drying chamber and dry the electronics for 10 hours at 49°C.
- Ensure that the items are dry before connecting to a power source.

Pistons

- In the ultrasonic bath, preheat 1 part OmegaSupreme with 10 parts clean water to a temperature of 68°C.
- Place the piston, face down, in the basket and submerge the basket into the bath.
- Presoak for 10 minutes. Once this is done, activate the ultrasound for 15 minutes.
- Remove the piston and use a wire brush to knock off any heavy carbon deposits.
- Submerge the basket into the bath gain, and clean for another 15 minutes.
- Rinse thoroughly
- NOTE: If aluminum scarring is present, stop the ultrasonic cleaning process.

Metal Parts

- In the ultrasonic bath, preheat 1 part OmegaSupreme with 10 parts clean water to a temperature of 66°C.
- Place the metal parts into the basket with the cavity containing heaviest residue facing the bottom of the basket.
- Submerge the basket into the bath and rotate the housings (if applicable) keeping them underneath the surface to allow air bubbles to be removed from the part.
- Clean the part for 5 minutes.
- Once completed, rotate the part 180° if the part facing opposite the ultrasonic transducers is heavily soiled.
- If necessary, clean the part for an additional 5 minutes.
- Once the part is cleaned, remove from the bath and rinse using water that is 150°F.
- Blow off the excess water using compressed air.
- Due to the heat of the metal, after being removed from the bath, it will dry quickly, on its own (“flash dry”).

Firearms

- In the ultrasonic bath, preheat 1 part OmegaBlue with 32 parts clean water to a temperature of 46°C.
- Disassemble the firearm into its major components. If it is equipped with a scope, it can be left attached.
- Spray the components with a spray bottle containing 1 part OmegaBlue, 21 parts clean water solution. Let sit for 1 – 3 minutes.
- Rinse off the residue loosened by the solution.
- If the stock is synthetic, it can be cleaned with the other metal parts. If it is wooden, use a basket to submerge it into the bath and clean for 1 -2 minutes.
- Using a basket, submerge the components into the bath and clean for 1 – 5 minutes, until all residues are removed.
- You may spot clean using the spray bottle solution and a 3M pad that is green or light in color.
- Rinse all components with de-ionized water that is 46 - 49°C.
- Blow off excess moisture with compressed air and dry using a hand-held hot air dryer.
- Lubricate using light gun oil or silicone spray.
- Test using industry standards.

Bicycle Parts

- In the ultrasonic bath, preheat 1 part OmegaSupreme with 10 parts clean water to a temperature of 60°C for aluminum, or 66°C for chains, derailleurs and gears.
- Place the items into the basket with the cavity containing heaviest residue facing the bottom of the basket.
- Clean the part(s) for 5 minutes.
- Once completed, rotate the part 180° if the part facing opposite the ultrasonic transducers is heavily soiled.
- If necessary, clean the part for an additional 5 minutes.
- Once the part is cleaned, remove from the bath and rinse using hot water.
- Blow off the excess water using compressed air.
- Due to the heat of the metal, after being removed from the bath, it will dry quickly, on its own (“flash dry”).
- Note: If your aluminum parts develop any type of scarring or starbursts on the surface, lower the bath temperature to 54°C.

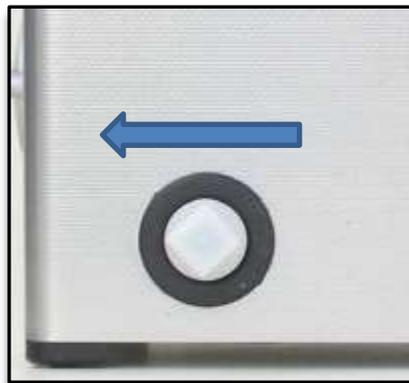
EQUIPMENT MAINTENANCE

General

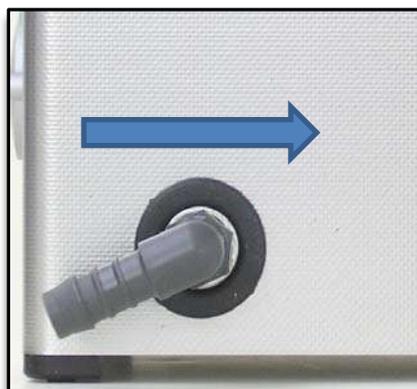
- Keep the bath free of oils, grease and any foreign materials.
- Skim off oil and grease residue periodically, if necessary.
- Cleaning agents should be changed periodically depending on usage.
- The Omegasonics unit is maintenance-free. Check the casing and the main electrical cable for damage regularly in order to prevent electrical accidents.

Draining Tank

- Turn equipment off and unplug the power cord.
- Wait at least twenty (20) minutes after the heat is turned off before emptying the tank. Permanent damage to the heater elements will occur if the tank is drained too soon after the heaters are turned off.
- Unscrew (counter-clockwise) the plastic screw cap.



- Screw (clockwise) the tube socket (included in the package) onto the inside thread of the drain outlet.



- Turn the tube socket into the required drain position. The plastic thread is self-sealing when the socket has been screwed in by hand as far as possible. (**Note:** Unscrewing the tube socket counterclockwise can cause a leak of the thread.)
- Rinse the inside of the tank with clean water.
- Buff the inside of the tank with a clean, soft cloth. Do not use steel wool cleaning pads as they are too abrasive and will scratch the tank surface.
- Lime deposits on the stainless-steel tank can be cleaned gently with an acidic soap (operate the unit with acidic soap concentrate + water).
- Regularly check the fan guard on the fan at the bottom of the unit. Remove any debris to allow sufficient ventilation inside the unit
- **Do not put the unit in or under water.**
- If the unit is used for medical and sanitary purposes it is necessary to disinfect the transducer tank and the surfaces regularly (using standard surface disinfectants).
- If the tank will not be used for a long period of time, wipe the inside and the outside of the tank dry with a dry, clean, soft cloth.
- Close the lid on the cleaning tank. The lid should remain closed when the equipment is not in use to keep dust and debris from accumulating.
- This tank cleaning procedure should be performed every time the bath is changed. Always thoroughly inspect drain areas for leaks.

When discharging bath and waste, follow all environmental and regulatory requirements. A reputable and licensed waste transportation firm should perform removal of all waste materials. Omegasonics is not liable for improper handling of waste materials.

Service Life of the Transducer Tank

The transducer tank and particularly the ultrasound transmitting surfaces wear down over time. The changes on the surfaces that occur after a certain operating period are visible first as grey areas and later on as abrasions, the so-called cavitation erosion.

Omegasonics already uses highly cavitation-resistant special steel. To prolong the service life of your ultrasonic unit even more we recommend observing the following instructions:

- Regularly remove any cleaning residues, in particular metal particles and rusty film.
- Use suitable cleaning chemicals, with particular caution concerning the kind of remove contamination.
- Exchange the cleaning medium before it is too heavily contaminated.
- Do not operate the ultrasound unnecessarily; switch off after the cleaning process

Repair

Repair and maintenance which require the unit to be opened must be carried out by authorized and specialized personnel only.

In case of failure of the unit to operate, please contact the manufacturer or your supplier.

Trouble Shooting

Fault	Possible Cause	Remedy
No operating functions; all LED displays dark	Main cable not plugged in	Plug in main cable
	Socket dead	Check socket and fuse
	Main cable damaged or interrupted	Replace main cable
	Faulty electronics	Return unit to supplier or manufacturer
No ultrasound; LED display ultrasound dark	Turning knob for ultrasound in position, "0"	Switch on ultrasound at turning knob
	Unit is switched	Switch on the unit at on/off key
	Key (ultrasound) not pressed	Switch key on
	Faulty electronics	Return unit to supplier or manufacturer
No ultrasound; LED display ultrasound is blinking rapidly = fault indication ultrasound	Unsuitable filling level	Change filling level, switch unit off and on
	Faulty electronics	Switch unit off and on if fault occurs again: return unit to supplier or manufacturer
Cleaning result not satisfactory	Possibly no cleaning medium or wrong cleaning medium used	Use suitable cleaning medium
	Possibly cleaning temperature not suitable	Change temperature
	Possibly cleaning period too short	Repeat cleaning interval

Trouble Shooting

Fault	Possible cause	Remedy
Unit does not heat up; LED display temperature dark	turning knob temperature in position „0“	switch on turning knob temperature
	Unit is switched off	Switch on unit at on/off key
	Faulty electronics	Return unit to supplier or manufacture
No heating; LED display temperature is blinking rapidly = fault indication heating	Faulty electronics	Switch unit off and on; if fault occurs again; return unit to supplier or manufacture
Heating period not satisfactory	Loss of heating energy	Use cover
	No revolution of cleaning liquid	e.g. switch on ultrasound
Unit produces boiling noise during heating up	No revolution of cleaning liquid	e.g. switch on ultrasound
Set temperature is exceeded	Temperature sensor does not measure the average temperature (no revolution)	Revolve liquid by hand or by means of ultrasound
	Set temperature too low, ultrasonic energy heats up the liquid more than required (physical process)	For low set temperatures do not switch on heating
		Switch on ultrasound for short periods only
No operation functions; displays of LED ultrasound and LERD temperature are blinking rapidly = fault indication program control	Faulty electronics	Switch unit off and on if fault occurs again; return unit to supplier or manufacturer

CLEANING AGENTS - OMEGASONICS

Omegasonics carries a full line of cleaning agents. Each cleaning agent has a unique cleaning specialty and use. Some of the products are as follows.

- **OmegaSupreme** – Heavy-duty degreaser removes carbon, oil, dirt, grease and dirt from a variety of metals. It is excellent for cleaning and brightening ferrous and nonferrous metals. Product may cause aluminum to scar if left in contact with aluminum part for an extended period of time. Product contains a short-term flash rust inhibitor.
- **OmegaClean** – General to heavy-duty degreaser which will remove carbon, oil, grease and dirt from a variety of metals and will not harm aluminum finishes. Especially formulated for the aerospace industry as well as for automotive applications. Has built in conditioners for hard water (high calcium and magnesium content) sources and good quality rust inhibitors.
- **OmegaZyme** – Ideal for industrial applications cleaning oil and grease from aluminum, stainless steel and titanium parts. Does not remove carbon. Will cause cast iron and cold rolled steel parts to rust if not used in conjunction with silicate, nitrate or trisodium phosphate rust inhibitors or with another cleaning agent containing rust inhibitors.
- **OmegaCitriSurf 2250**– Designed for industrial and aerospace applications where stainless steel passivation (the removing of free iron from the surface) is required. Also useful in removing calcium deposits from a variety of metals including brass and steel.
- **Omega DeScaler** - A unique product formulated to remove rust, corrosion, heat scale and mineral deposits from a variety of metals. Excellent when used in an ultrasonic tank to remove rust from metal components exposed to extreme moisture and water. Effectively used to remove mineral deposits from heat exchangers
- **Omega Mold Release** - A high pH concentrated cleaning agent used successfully to remove burnt-on crystalline rubber, plastic and food from molds, dies and other metal surfaces
- **OmegaBlue** - Designed to remove ink and ink residue from metal and rubber components including Anilox rollers.
- **Omega Aqua Clean LPH** – A reduced pH solution designed to clean electronic and electrical components. Also effective at removing solder flux residue. It is safe on all surfaces that can be cleaned in water and any surfaces that may be damaged in a high pH solution.

The above products are concentrates. These products are formulated to be used at a 10 to 1 ratio. Ten 10 parts water one part cleaning detergent

LIMITED WARRANTY

Omegasonics warrants the 7850TT and 7950TT ultrasonic cleaner for a period of one (1) year from the date of delivery, when used in accordance with the manufacturer's instructions. During the warranty period, Omegasonics will repair or replace free of charge at an authorized repair service center all parts that are defective because of material or workmanship. Freight charges to an authorized service centers are the responsibility of the user.

This warranty does not include damage or product failure, which results from cavitation erosion, misuse, abuse or transportation damage. This warranty is limited to the original purchaser and is not transferable. Total liability for any reason whatsoever, shall not in any case exceed the cost of repair or replacement of the defective part. In no case shall Omegasonics be responsible for any incidental or consequential damages.

CE Conformity

The present Omegasonics ultrasonic unit is in compliance with the CE marking criteria according to the EMC directive 89/336/EEC, and the low voltage directive 73/23/EEC. The declaration of conformity is available from the manufacturer.

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