



HWASHIN TECHNOLOGY



Model : POWERSONIC 605/610/620



HWASHIN ULTRASONIC CLEANER INSTRUCTION MANUAL

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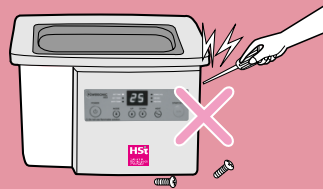


Warnings & Cautions

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

⚠ Warnings

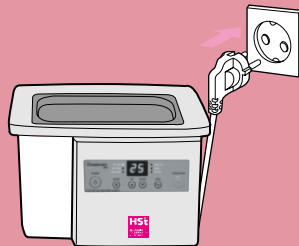
Never disassemble your cleaner – High voltage inside of the cleaner is dangerous.



Unplug from the power source before filling or emptying the bath.



Never operate the cleaner without proper grounding.

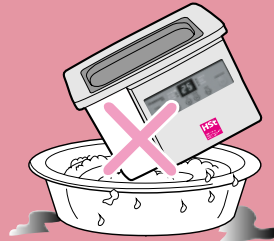




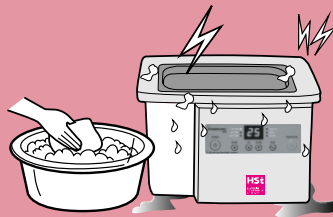
Warnings & Cautions

⚠ Warnings

Never immerse the cleaner in water.



Keep the control panel and the area around the cleaner clean and dry – Water and high voltage can cause electrical shock.



Never use alcohol, gasoline or flammable solutions. Doing so could cause a fire or explosion and will void your warranty.



Never use solvents, use only water-based solutions.





Warnings & Cautions

⚠ Warnings

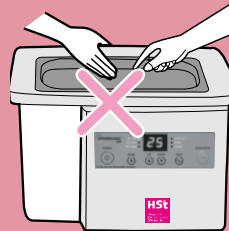
Never use mineral acids. These could damage the bath.



Never operate the cleaner with a unvented cover.



Never place your fingers or hands into the bath while the cleaner is operating. (Doing so may cause discomfort and electrical shock.)



Never touch the stainless steel bath or cleaning solution. They may be hot.

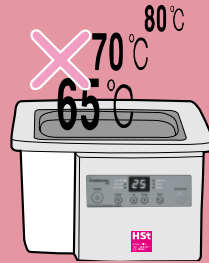




Warnings & Cautions

⚠ Warnings

Never allow fluid temperature to exceed 70°C



Never use solutions containing chlorine bleach

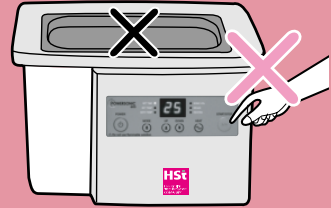




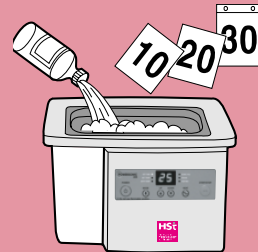
Warnings & Cautions

⚠ Cautions

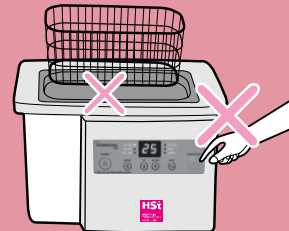
Never operate the cleaner without liquid in the bath.



Do change your solution regularly.



Never place parts or containers directly on the bottom of the cleaning bath. Use a tray or wire to suspend items. Failure to comply may cause transducer damage and will void warranty.



Never allow the solution to drop more than 1Cm below the operating line with heat or ultrasonic on. Failure to comply may cause transducer and/or heater damage.





What is the Ultrasonic Cleaning?

Ultrasonic cleaning is faster, more effective method for reducing the cleaning time and cost than any other methods – scrubbing soaking, steam and so on.

Ultrasonic sound is sound transmitted at frequencies beyond the range of human hearing. As the sound waves from the transducer radiate through the liquid in the bath, they alternate high and low pressures in the liquid.

During the low pressure stage, millions of bubbles form and grow. This process is called Cavitation. During the high pressure stage, the bubbles collapse, or implode, releasing enormous amounts of energy. They work in all directions, attack every surface and invade all recesses and openings.

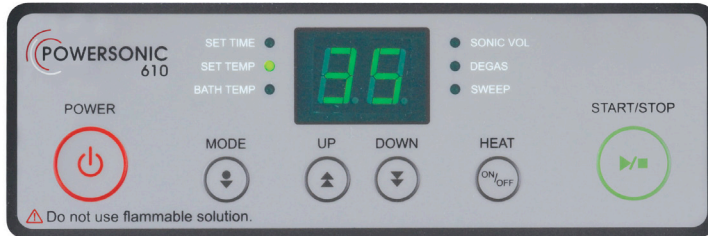
Applications

- Surgical and dental instruments
- Intricate lab glassware
- Scientific instruments and components
- Metal parts and assemblies
- Plastic parts and assemblies
- PC boards
- Electrical and electronic components
- Jewelry and watches, Clock movements
- Optical equipments
- Eyeglasses and frames
- Veterinary instruments
- Instrument part and assemblies



Name and Function of each part

Control Panel



LED Display : Indicates the operating time, set temperature, bath temperature, sonic volume, degassing time, and sweep level depending on your MODE choice.

SET TIME : To set the operating time (Allows timer to be set from 1 to 99 minutes)

SET TEMP : To set the bath temperature (Allows the required bath temperature to be set from ambient to 70°C)

BATH TEMP : Displays the current solution temperature.

SONIC VOL : To set the strength of ultrasonic wave (3 steps – 01, 02, 03)

DEGAS : To set the degassing time (allows timer to be set from 1 to 10 minutes, but the first degassing time is set for 5 minutes)

SWEEP : To set the sweep function (3 levels – 01, 02, 03)

POWER : Press to activate/deactivate power to the cleaner.

MODE : Select each function indicator.

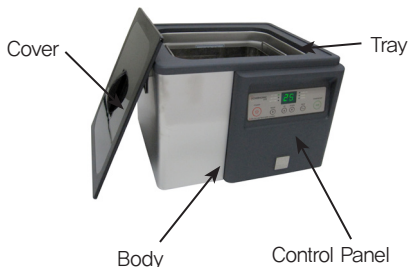
UP : To heighten time, temperature, ultrasonic power, degassing time and sweep level.

DOWN : To lower time, temperature, ultrasonic power, degassing time and sweep level.

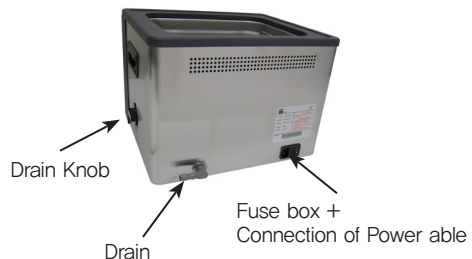
HEAT : Heater operation on/off (When the heater is on, a tiny lamp on the right lower corner of LED screen flickers on and off)

START/ STOP : Using operating and stopping of the cleaner.

Front View



Rear View





Operation Method

1. Place the cleaner on a flat surface.
2. Connect a hose to the drain at the rear side of the unit.
3. Fill the bath with water. The liquid should come to within 3Cm from the top of the bath, considering the volume of items to be cleaned.
4. If necessary, add cleaning solution to water.
5. Plug the cleaner into its power source and turn the main power switch on at the rear side. And press POWER button on control panel.
6. Select DEGAS by MODE button and let the unit run for 5 min. to eliminate dissolved gas in water.
7. Place the items into a tray and slowly lower the tray into the bath.
8. Select SET TIME by MODE button and set the operating time from 1 to 99 minutes by UP/DOWN button.(You can hear the alarm sound when the cleaning is finished.)
9. Select SET TEMP by MODE button and set the temp. from ambient to 70°C by UP/DOWN button.
10. Select BATH TEMP by MODE button and monitor the current solution temperature.
11. Select SONIC VOL by MODE button and control the ultrasonic power by UP/DOWN button. (3 steps are available – 1, 2, 3)
12. If necessary, select SWEEP by MODE button and set the level by UP/DOWN button (This optional sweep function provides an optimal distribution of cleaning power by modulation of the frequencies / 3 levels are available – 1,2,3)
13. If the temp set is higher than the current temp of solution in the bath, the heater is on and if lower, it is automatically off.
14. After inputting all parameters, press START button to run the unit.
15. When the cleaning is done, press STOP button and POWER button in sequence.
16. If necessary, rinse cleaned items with clean water and dry.



Cleaning Methods

There are two methods of cleaning – direct and indirect. Each has advantages and disadvantages. when in doubt, run test samples using both methods to decide which one produces best results.

(1) Direct method

The advantages of this method are simplicity of operation and cleaning effectiveness.

- All removed soil remains in the bath.
 - Only one solution can be used at a time.
 - Highly acidic or caustic solutions can erode the bath surface.
 - ▶ Fill the bath with warm water and cleaning solution.
 - ▶ Place the items to be cleaned in the tray and lower them into the bath.
- You can also suspend items on a wire and then immerse them in the solution.

(2) Indirect method

The advantages of this method are

- Removed soil stays in the beaker or tray(solid) so you can easily examine, filter or discard it.
- You can also use one or more solutions at the same time.
- Cleaning solution in your bath needs to be changed less often.
 - ▶ Fill the bath with warm water and a cleaning solution.
 - ▶ Pour your solution medium into one or more beakers or into the solid tray.
 - ▶ Place the beakers in a beaker positioning cover or the solid tray to fit your cleaner. Beakers should not touch the bath bottom.



Optimum Condition for the best results

Overload : Do not rest any items on the bath bottom. Weight on the bath bottom dampens sound energy and will cause damage to the transducer.
(Use a tray and / or beaker positioning cover.)

Liquid Level : Fill the cleaner to the operating line using warm water.

Low Solution Level : When you remove heavy or bulky loads from the cleaner, the solution level may drop below the operating line. (It may cause the heater to fail)

Flammable Solution : Never use solvents. Vapors of flammable solutions will collect under the cleaner, where ignition is possible from electrical components.

Temperature : Approximate stabilization temperatures with ultrasonic and heat running continuously : 50°C

Rinsing : Rinse away chemicals which adhere to items after cleaning. A highly effective method of rinsing is using a clean water bath in your cleaner.

Cleaning : Check the bath for contamination whenever you change solution. If necessary, remove contaminants with a nonabrasive cloth and water.

Cover : Allow the cleaner to heat up faster, to a high temperature, and avoid excessive liquid evaporation. However, obstructing the cover vents will cause the cleaner to overheat.

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

Corrosive Solution : Never use corrosive solutions such as strong acids or powerful caustics directly in the bath.

Heater : The heater may cause some discoloration of the bath wall. This is normal and will not affect the performance of the unit.



Cleaning Solutions

Caution

Do not use alcohol, gasoline, bleach, mineral acids, solutions with a flash point, semi-aqueous or combustible liquids in a bath.

Only use non-flammable solutions and water-based solutions.

Hwashin cleaner was designed to operate only with the water-based solutions and non-flammable solutions. Water-based solutions fall into two categories – acidic and alkaline. They include detergents, soaps and industrial cleaners designed to remove specific soils



Cleanion Solutions

Acidic water-based solutions : remove rust, tarnish or scale.

Alkaline water-based solutions :

Mild : Light oils, greases, cutting oils, coolant compounds.

Mild to strong : Heavy greases and oil, waxes, vegetable oils, inks, milk residues.

Heavy-duty : Mill scale, heat-treat scale, corrosion or oxides.



Troubleshooting Guide

If your cleaner does not operate satisfactorily, please check the tables below for possible causes before calling your service center.

Problem	Cause	Solution
Unit doesn't start	<ol style="list-style-type: none"> 1. Unit not plugged in properly 2. Power button not on 3. Faulty start button 4. Faulty fuse 	<ol style="list-style-type: none"> 1. Plug into electrical outlet 2. Press power button on 3. Call nearest service center 4. Replace new fuse (located on back of the unit/ fuse box)
Unit operates but does not heat solution	Faulty heater elements	Call nearest service center
Unit operates but time/temp display does not function	Faulty time/temp elements	Call nearest service center
Decreased ultrasonic activity	<ol style="list-style-type: none"> 1. Solution is spent or dirty 2. Solution level is too low 3. Liquid level is incorrect for load 4. Bath bottom is covered with soil particles 5. Solution is not degassed 	<ol style="list-style-type: none"> 1. Change solution 2. Add more solution 3. Adjust level with load until activity increase 4. Clean bath with warm water and wipe with a nonabrasive cloth 5. Make sure that bath was filled with water and has run 5 minutes
Clogged drain	Clogged drain or hose	Call nearest service center



Specifications

Model	605	610	620
Transducer	Industrial BLT Type		
Time Range	1~99min (Digital)		
Temp. Range	Ambient~70°C (Digital)		
Frequency	40 KHz		
Housing Material	SUS 304 + PP		
Bath Capacity	5.7 L	10.0 L	20.7 L
Bath Dimensions	W300 x D155 x H150mm	W300 x D240 x H150mm	W500 x D300 x H150mm
Overall Dimensions	W385 x D255 x H270mm	W385 x D345 x H270mm	W590 x D405 x H275mm
Tray Dimensions	W240 x D120 x H100mm	W250 x D200 x H100mm	W440 x D250 x H100mm
Required Power	350 watt	400 Watt	700 watt
Net Weight	6.1 kg	7.3 Kg	11.8 kg
Voltage	Available from 100 to 240V, 50/60Hz		
Accessory	Lid, Power Cable, Hose (1m), Instruction Manual		



Warranty & Service

Warranty

Hwashin ultrasonic cleaners, when used in accordance with manufacturer's instructions and under normal use, are guaranteed for one year after date of shipment. Within the period guaranteed, Hwashin tech Co., Ltd will repair or replace free of charge, all parts that are defective because of material or workmanship.



Warranty & Service

Service

Warning

**You will void warranty if you disassemble your cleaner.
High voltage inside the cleaner is dangerous.**

With normal use, your ultrasonic cleaner should not require servicing. However, if it fails to operate satisfactorily, first try to diagnose the problem by following the suggestions in the Troubleshooting Guide.

If you find that your cleaner needs repair, return it to our service center. Do not disassemble it – High voltage inside the cleaner is dangerous.

Carefully pack and send your cleaner to a service center with all transportation charges prepaid.



A decorative border with floral motifs in the corners and double-line borders on the top, bottom, left, and right sides.

MEMO



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