

*Document Detail*


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*Approvals*

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## Artwork Specification

Rev. 4

Part Number:	0060161CO
Title	Directions for Use Manual, (DFU) – Resurge Ultrasonic Cleaner 0.8 gallon
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Binding:	Folded and Staple
Colors:	4 color
Finished Size:	5 ½ x 8 ½ inch
Languages:	English
Graphics Revision	Rev. 4 (11/17)

**Notes:**

1. Package to prevent damage.
2. Artwork is maintained by DENTSPLY Professional, York PA 17404

**Revision History:**

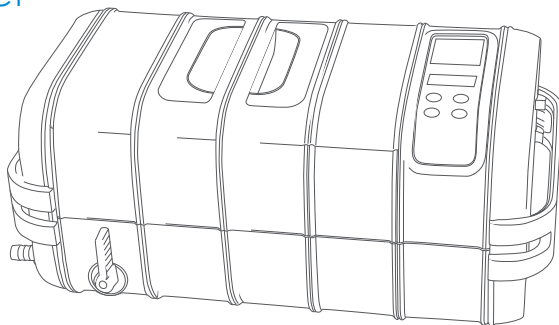
Rev	Description of Change	Author	Dept	Change No.
1	Release of English only version of DFU	R.Gross	Marketing	CHO-074631
2	Update DFU with correct diameter symbol on page 1 and 2	R. Gross	Marketing	CHO-076696
3	Update website address and add manufactured for info	R. Gross	Marketing	CHO-084008
4	Update unit images and Quick Start Section	R. Gross	Marketing	CHO - 086505

# Resurge<sup>®</sup>

## Ultrasonic Cleaner

### Directions for Use

Model # 0060100



### Features

<b>Large tank capacity</b>	Tank capacity 3 L / 0.8 gallon; Tank size 25.0x17.4x7.8 cm / 9.8inx6.9inx3.1in
<b>Control panel with capacitive sensing technology</b>	Durable, reliable, resistant to water and harsh chemicals
<b>Memory feature</b>	Recalls last timer setting
<b>Drainage valve</b>	Convenient to use
<b>Industrial grade ultrasonic transducers</b>	Uniform distribution of ultrasonic waves, strong cleaning, high durability
<b>Ceramic heater</b>	Mounted underneath the bottom of the tank for safe and even heating; durable construction
<b>3-color LED display</b>	Easy to operate, with 4 key control panel, 6 timer settings, single temperature setting
<b>Super-sized ultrasonic transducer</b>	Ø 45 mm stack transducer, about 30% more powerful than standard stack transducers
<b>Multiple circuit protectors</b>	When overloaded or improperly used, the protectors shut down the power to certain areas to protect the machine
<b>Moisture-proofed Printed Circuit Board with industrial IC</b>	PCBs are placed vertically for better moisture-proof performance. Better anti-interference
<b>Two cooling fans</b>	Improve heat dissipation and beneficial for continuous operations
<b>Multiple optional accessories</b>	Stainless steel rack and basket, single beaker holder set, indirect cleaning tank (removable cleaning chamber)
<b>Stackable low profile tray option</b>	Flexibility to load instruments
<b>Solid and advanced structural design</b>	4.5 mm thick wall housing made from engineering grade plastic with tongue in groove design for better water-proof and drop-proof performances. 60% quieter than steel housing designs, suitable for indoor uses

# Introduction

Use warm tap water. Special solutions such as Resurge Instrument Cleaner may be used.

**Important: If you switch from another ultrasonic cleaner to Resurge Cleaner, it is important that you clean the tank thoroughly. It is also recommended that you flush the drain with clean water as well to make sure no residue remains from using the previous cleaner.**

## Principles of ultrasonic cleaning

Millions of invisible air bubbles are generated within liquid by high frequency vibration. The air bubbles burst when in contact with object and dislodge the debris to achieve the cleaning effect.



- Using warm tap water is sufficient. Purified water or distilled water has the same cleaning effect as regular tap water for ultrasonic cleaning.

## Main Features

- Tank opening 25.0x17.4x7.8 cm or 9.8inx6.9inx3.1in. Longest item that can fit inside the tank is 26.6cm / 10.5in. / 0.8 gallon / 3L tank capacity.
- Multiple options for accessories, suitable for various applications.
- Industrial grade ultrasonic transducer.
- 3-color LED display, 4-key controls, 6 timer settings, simple temperature setting, simple and straightforward to operate.
- Control panel with capacitive sensing technology, durable, reliable, resistant to water and harsh chemicals.
- Memory feature recalls last timer setting. User friendly.
- Electrical circuit features:
  - (1) Super-sized ultrasonic transducer.  $\varnothing$  45 mm stack transducer, about 30% more powerful than standard stack transducers.
  - (2) Multiple circuit protectors:
    - a. Thermal switch to prevent running dry. If temperature is too high, the switch cuts off power until the temperature drops back to room temperature.
    - b. Thermal protector to prevent PCB from overheating due to overload.
    - c. Timer to prevent heater from running continuously.
- Industrial grade integrated circuit. Moisture-proofed PCB. Cooling fan.
- Drainage valve.

## Read the Manual First

The manual should be carefully reviewed before starting to use the device. Warnings should be observed carefully. Please follow the manual for operations.

# Table of Contents

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# Safety Precautions



## **Keep away from children!**

- This appliance shall not be used by children. Keep the appliance and its cord out of reach of children.
- Please store the ultrasonic cleaner where it is not reachable by children.
- Danger to children! Danger for death through suffocation! Keep the packaging material away from children.



## **To prevent life-threatening electrical shock, please observe the following:**

- Danger of electrical shock! Never immerse the device or the power cord in water or other liquid.
- Danger of electrical shock! Never touch the power plug with wet hands, especially when inserting or removing the plug.
- Danger of electrical shock! If the unit has fallen into water during operation, do not touch the unit. Remove the power plug from the socket first.
- Never operate the unit unattended.
- Danger of electrical shock! Do not spray water or liquid over the device.
- Follow the manual to operate the device.
- Do not use components unapproved by the manufacturer.
- When removing the power cord from the socket, grab the power plug not the cord.
- To protect the power cord from damage, do not cause it to get caught by things such as a cupboard door or a chair leg; do not drag across a hot surface.
- If there is damage to the power plug, cord, housing, or other parts of the device, do not use the device. Contact your dental dealer for a replacement.
- Do not disassemble the device, except by a repair professional.
- If the unit is damaged, non-operational or has fallen into water, contact a qualified service provider.
- Remove the power plug from the socket:
  - if malfunction occurs
  - before cleaning the device
  - if the device is not going to be used for prolonged period
  - after each use (recommended)
- The installation of an earth leakage circuit breaker with a rated tripping current of no more than 30 mA provides further protection against an electrical shock. The installation should only be carried out by a trained electrician.

## Safety Precautions (cont.)



### **To prevent fire hazards, please observe the following:**

- Never block the vents on the device. Keep the vents free from lint, hair and other materials. Do not place the device on a soft surface where the vents could be blocked. Observe the other warnings on the previous page.
- If the supply cord is damaged, it must be replaced by your dental dealer or its service agent or a similarly qualified person in order to avoid a hazard.

### **Other observations:**

- Do not operate the product without filling the tank with water. Running dry will damage the unit.
- Make sure the water level stays below the MAX line after loading the instruments.
- Do not plug in the power cord before adding water to the tank. Do not fill the tank above the Max line with cassettes or trays in place to avoid overspill.
- Do not use solution containing abrasive substances or strong corrosive chemical solution not recommended by the manufacturer or the supplier. Use a recommended cleaning additive such as Resurge® Instrument Cleaner.
- Place the device on a dry and flat surface for operation.
- When the device is subjected to severe electromagnetic interference, it may malfunction, stop operating or lose control functions. If this happens, unplug the power cord then reinsert it to restart the device.

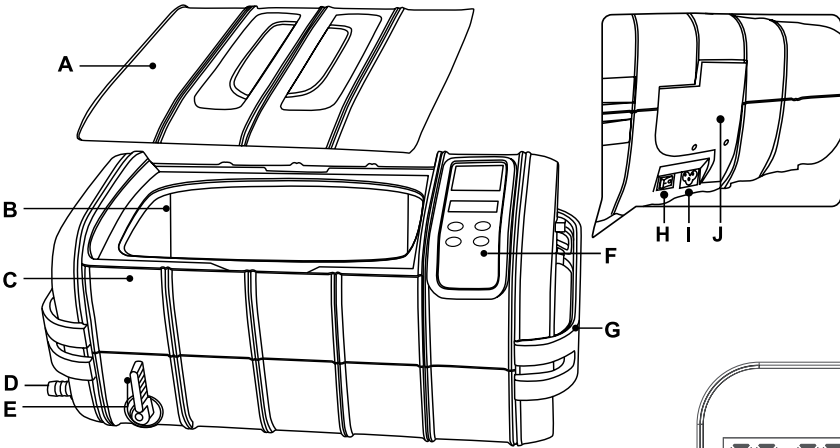
## Important Safety Instructions



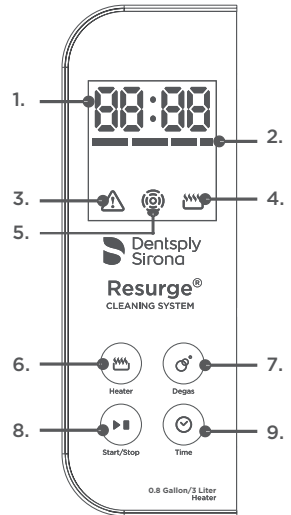
### **When using electric appliances, basic precautions should always be followed, including the following:**

- Read all the instructions before using the appliance.
- Only use attachments recommended or sold by the manufacturer.
- Do not use outdoors.
- To disconnect, turn the power switch on the back of the unit to the off (O) position, then remove plug from outlet. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord. Unplug from outlet when not in use and before servicing or cleaning.
- To reduce the risk of electrical shock, do not put the appliance in water or other liquid. Do not place or store appliance where it can fall or be pulled into a tub or sink.
- All servicing of this product, including transducer replacement, is to be conducted by qualified service personnel.
- Do not operate any appliance with a damaged cord or plug, or after the appliance malfunctions or is dropped or damaged in any manner.
- Return appliance to the nearest authorized service facility for examination, repair, or electrical or mechanical adjustment.

# Product Structure and Accessories

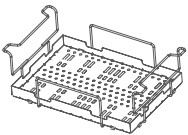


- |                                 |                         |
|---------------------------------|-------------------------|
| <b>A.</b> Top cover             | <b>F.</b> Control panel |
| <b>B.</b> Stainless steel tank  | <b>G.</b> Handles       |
| <b>C.</b> Housing               | <b>H.</b> Power switch  |
| <b>D.</b> Drainage pipe fitting | <b>I.</b> Power socket  |
| <b>E.</b> Drainage valve handle | <b>J.</b> Cover holder  |

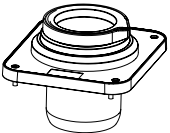


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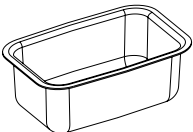
## Optional Accessories:



Stainless steel rack and tray



Single beaker holding set



Indirect cleaning tank

## Standard Accessories:



Power cord



Hose



# Control Panel and Operations

## Indicator Lights



**Working Time Display:** It counts down after work is started.



**Multistage Thermometer:** Solid green light indicates that the water temperature is 0-30% of the set temperature. Solid orange light indicates that the water temperature is 30-60% of the set temperature. Solid red light indicates that the water temperature is 60-90% of the set temperature. Flashing red light indicates that the water temperature is close to the set temperature. All lights indicate that the water temperature is at the set temperature (90-100%).



**Overheat protection warning light:** If the unit is working improperly or has been running for too long, the red warning light will illuminate, indicating the unit is under overheat protection. The unit can not be operated until idling for 15 to 20 minutes. The warning light then turns off and the operation can be resumed. You do not need to turn unit off.



**Heater Status:** When illuminated, indicates heater is on.



**Normal Cleaning Status:** When illuminated as solid light, it indicates that normal cleaning is underway. When illuminated as flashing light, it indicates that degas is underway.

## Functional Buttons



**Heater Button:** Touching Heater key twice, flashes, indicating the heater is turned on. To cancel heating, touch Heater key twice again, dims, indicating the heater is turned off.



To prevent accidentally turning on or off the heater, the Heater key needs to be touched twice within 6 seconds to turn it on or off. Heater Status light flashes, indicating the heater is on. When the water reaches the set temperature, the heater will turn off automatically.

**IMPORTANT: Do not turn on the heater without water in the tank,** as this will damage the unit.



**Degas:** Degassing is recommended each time you add fresh solution to maximize cleaning efficiency. Touch the key twice to activate Degas. Cycle will run for 3 minutes. The time display will count down to 00:00 at which point the degas process is complete.



**Start/Stop Button:** After powering on, the LED displays the last timer setting, and the unit is ready under normal cleaning mode. Touch Start/Stop key twice and the cleaning starts. The cleaning stops when the timer counts down to 00:00. If the unit needs to be stopped before the timer runs out, touch Start/Stop key twice.

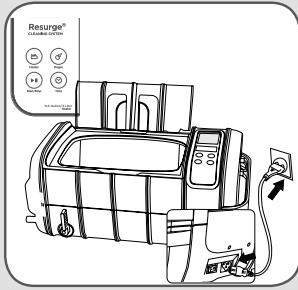


To prevent accidentally turning on or off the unit, the Start/Stop key needs to be touched twice within 6 seconds to turn it on or off.



**Timer Quick Set Button.** Touch the Time key, LED display shows the last timer setting. Each touch increases the time by 5 minutes. The system has a memory and will retain the timer setting for the next use.

# Operation Guidelines - Quick Start



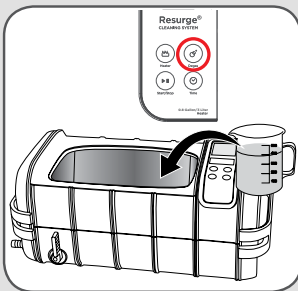
## 1 Unit Set-Up

- Connect the power cord to the back of the units and to an outlet.
- Turn the power switch found on the back of the unit to the on position.
- LED** displays the last timer setting. If the timer needs to be adjusted, touch **Time** button. After first use, timer will remain set to same time unless changed.
- Select desired time setting by touching Time button.

Please consult your instrument cleaner instructions as well as your instrument directions for use for proper automated cleaning.

Prolonged cleaning time may result in:

- Loosening of the screws if used.
- If items are plated and have existing cracks, the cracks may become more pronounced.
- Coating with preexisting damages may experience more peeling.

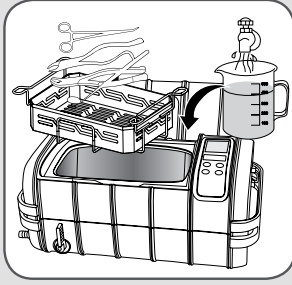


## 2 Degas Procedure

- Add warm water to below the max fill line.
- Add Resurge Instrument Cleaning Solution per the instructions for use.
- Touch the degas key and allow it to operate for 3 minutes.

It is best to remove the gases from the solution to maximize the cavitation energy. If you do not degas, the cavitation energy can be blocked by the gases making the cavitation energy less.

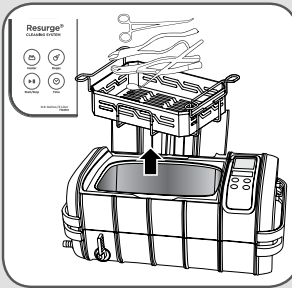
# Operation Guidelines - Quick Start, cont.



## 3 Add Instruments

- Put items in cassettes or stainless steel basket or trays provided.
- Lay the cassettes or basket trays in the stainless steel rack.
- Lower the rack into the cleaning tank.
- Confirm that the water level is between MIN and MAX and above the area to be cleaned.
- If not, add warm water to the tank.

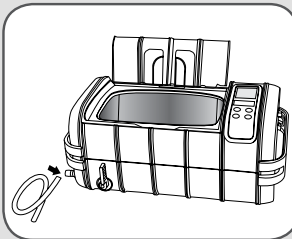
The unit can become damaged if there is no water in the tank.



## 4 Cleaning

- Make sure the lid is closed. Touch the Time key to set the timer to desired time.
- Touch the Start/Stop key twice to activate the cleaning cycle.
- When cleaning cycle is completed, open the lid and retrieve the tray(s) or cassettes.

**IMPORTANT:** When moving rack to sink or counter for drying, avoid water from dripping onto the control panel. If water gets on panel gently remove the water with a paper towel or cloth.



## 5 Draining Tank

At the end of the day, the tank should be drained and fresh water and cleaning agent added.

- Turn off unit.
- Connect the hose to the drainage pipe as shown.
- Turn the drainage valve handle clockwise to open the drain and remove the dirty water.
- Clean and wipe the tank dry.
- Close the drainage valve.

# Operation Guidelines - Quick Start, cont.

## 6 Memory Operations

This unit is equipped with advanced power off memory capability. It memorizes the last timer setting once the cleaning cycle is started.

- a. 5 seconds after the timer counts down to 00:00, the last timer setting will reappear. Press the Start/Stop key twice, it will repeat the last cycle with the same timer setting.
- b. Once the timer counts down to 00:00, touch the Start/Stop key within 5 seconds will recall the last timer setting. Touch it again will repeat the last cycle with the same timer setting.
- c. If power is turned off during the cleaning cycle, once it is powered on again, the last timer setting will reappear.
- d. If the timer setting is changed during the cleaning cycle and the timer counts down to 00:00, the new timer setting will reappear as in A, B or C.
- e. If the timer setting is changed but the cleaning cycle is not started, it will stay until the cleaning cycle is started. It will not stay if the power is turned off.
- f. If the Start/Stop key is touched twice during the cleaning cycle, the cycle will stop and the timer setting will stop running. It'll resume the original cycle once the Start/Stop key is touched twice again.
- g. If the power is turned off while degas is running, once it is powered on again, the remaining degas time will resume.

**NOTE:** To prevent accidental lockups of the touch-sensing control panel, please observe the following:

1. Do not touch two or more keys at the same time.
2. Do not leave water or solution on the control panel.
3. Do not push the control panel with too much force. Only light touch is needed.

If the control panel is locked, do the following to reset it. If the first step does not work, move on to the next step.

1. Turn off the power switch.
2. Turn off the power switch multiple times.
3. Unplug the power cord and wait for 5-10 minutes.
4. Leave the unit unplugged for several hours.

# Common Cleaning Methods

## Regular Cleaning

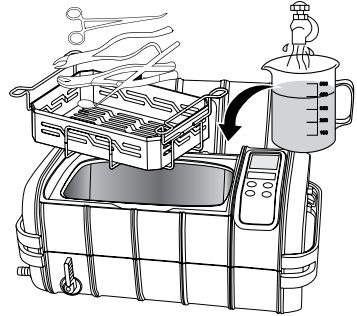
Only warm tap water is needed. You may add an instrument cleaner. We recommend Resurge Instrument Cleaner. Follow the manufacturer's instructions for use.

### Suitable Locations:

Dental, medical offices and labs.

### Cleaning Method:

1. Put the items to be cleaned inside the basket or cassette and place into the rack. **Do not stack the instruments as this can reduce the effectiveness of the ultrasonic cleaner.**
2. Lower the rack inside the tank.
3. Add warm water to the cleaning tank to a level between "MIN" and "MAX" lines and above the area to be cleaned.
4. Turn on the power switch, found on the back of the unit. Touch the Time button to set the timer to 5-15 minutes. Consult your cleaner and/or instrument Directions for Use, for proper time. Touch Start/Stop button twice to start cleaning.



### Notes on using the basket:

1. A tray or cassette can reduce the friction between the items and the tank. Stainless steel basket absorbs approximately 8% of ultrasonic energy, plastic basket absorbs about 35% of ultrasonic energy. This significantly reduces the cleaning effectiveness.
2. During cleaning, dirt will come off like a cloud and the water will become murky over time. This is debris being removed from the instruments and indicates the instruments are being cleaned.

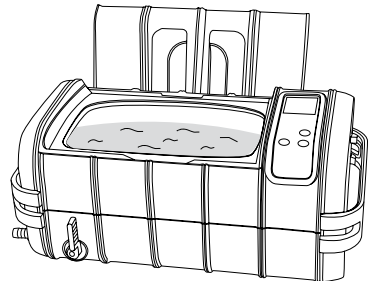
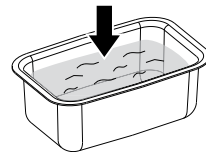
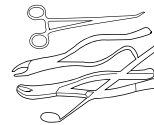
## Indirect Cleaning

Put the items in a separate container such as a glass beaker or metal tub both offered as available accessories. See page 3 for more information. Use ultrasonic waves to penetrate the container to do the cleaning.

### Suitable Locations:

Medical and dental instrument sterilization rooms. Different applications use different fluids to be used inside the container.

1. Small instruments - Keep them separate from the main instrument cleaning.
2. Multiple patients' dentures or impressions. Disinfect the container after each patient.
3. Instruments using corrosive solutions, such as cement remover.



# Common Cleaning Methods (cont.)

## **Cleaning Method:**

1. Put the items to be cleaned in the recommended container. Add your instrument cleaning solution. We recommend Resurge Instrument Cleaner. Make sure you follow the instrument cleaning solution instructions for use.
  2. Place the container in the tank directly. Add water to a level between MIN and MAX at least half inch or 13 mm above the bottom of the container but, not over the container.
  3. Turn the power switch on. Touch Time key to set the timer to 10 minutes. Consult your cleaner and/or instrument Directions for Use, for proper time. Touch Start/Stop key twice to start cleaning. Ultrasonic waves will penetrate the container and clean the items.
- 

## Selection of container

1. Stain less steel containers - Absorbs about 8% of ultrasonic energy.
  2. Plastic containers - Plastics are soft and will absorb about 30-40% of ultrasound energy and reduce the cleaning effect.
  3. Aluminum containers - Absorbs about 20% of ultrasonic energy.
  4. Glass beakers - Absorbs about 15% of ultrasonic energy.
-

# Care and Maintenance

## 1 Do not turn on the unit or heater without water in the tank.

Even though the unit is designed with multiple protections, if it is turned on for over 30 seconds without water in the tank, it may damage the unit or heater or severely reduce the life of the unit.



A thermal switch is attached to the bottom of the cleaning tank. If the unit is turned on accidentally without water in the tank, the ultrasonic energy will not be transferred out through the liquid and instead will be concentrated on the tank, the temperature of the tank will continue to rise. If the heater is turned on at the same time, the temperature of the tank will rise rapidly. This will trigger the thermal switch to cut off power to stop the ultrasonic transducer and the heater from running, hence to prevent damages to the unit and fire hazard. The switch cuts off power until the temperature in the area is dropped back to room temperature then reconnect the power automatically.

## 2 Do not run the unit for extended time or continuously.

The unit is designed with overheat protection. If the unit has been running for 45 minutes, it is recommended to stop the unit for about 20 minutes to prolong the life of the unit.

## 3 Do not keep water in the cleaning tank at the end of the day.

After cleaning is completed, open the drainage valve to drain the dirty water. Clean and wipe the tank dry.

## 4 Do not spray water over the housing.

Use a towel to wipe the tank and the housing dry.

## 5 Do not expose the unit under direct sunshine for a long time.

Keep the unit in a dry, cool and ventilated area.

## 6 To clean the outside of the unit, use a non-abrasive cleaner and soft cloth.

## 7 Do not add cold water when heater is on.

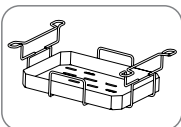
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# Optional Accessories

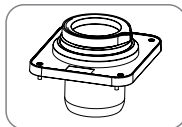
## Stainless Steel Rack and Tray

The rack can be used to support 2 layers of cassettes on top of each other. The basket or tray can be used in place of the cassette. The tray is stackable so multiple layers of trays can be used.

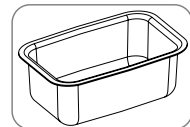
Rack and tray



Single beaker holding set



Indirect cleaning tank  
(removable cleaning chamber)



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# Specifications

<b>Description</b>	Resurge Ultrasonic Cleaner
<b>Model</b>	0.8 Gallon - 0060100
<b>Tank Capacity</b>	3 L / 0.8 gallon (US) Max. 2.5 L / 0.65 gallon (US) Min. 1.5 L / 0.4 gallon (US)
<b>Tank Size</b>	25.0x17.4x7.8 cm 9.8inx6.9inx3.1in
<b>Longest Item Fit Inside Tank</b>	26.6 cm 10.5in
<b>Power Supply</b>	170W ( AC 100-120v 50Hz) 170W (AC 220-240V 50/60Hz) 150W (AC 100V 50/60Hz)
<b>Digital Timer Settings</b>	↶ 10min > 15min > 20min > 25min > 30min > 5min ↷
<b>Drainage</b>	Drainage valve
<b>Ultrasonic Frequency</b>	35,000 Hz
<b>Tank Material</b>	Stainless Steel SUS304
<b>Housing Material</b>	ABS
<b>Net Weight</b>	5.1 kg / 11.3 lb
<b>Gross Weight</b>	6.1 kg / 13.4 lb
<b>Unit Size</b>	45.5x27.5x21.0 cm / 17.9"x10.8"x8.3"
<b>Inner Carton Size</b>	49.0x31.5x28 cm / 19.3"x12.4"x11"
<b>Qty per Master Carton</b>	1 pcs/ctn
<b>Master Carton Size</b>	61.5x41.0x37.0 cm / 24.2"x16.1"x14.6"

## Warranty

Dentsply Sirona's Infection Control products are designed expressly for dental use, and this warranty is not applicable to other uses. The products are warranted against defects arising from faulty materials or workmanship from date of purchase for a period of 2 years. Parts will be repaired or replaced at the discretion of Dentsply Sirona.

This warranty extends to Resurge Ultrasonic Cleaner products purchased from an authorized Dentsply distributor, and only to the original purchaser. The Warranty is subject to the following conditions:

- The online product registration must be completed online within four (4) weeks of date of purchase.  
**Go to [www.dentsplysirona.com/resurgeultrasonic](http://www.dentsplysirona.com/resurgeultrasonic).**
- Any servicing of the Resurge Ultrasonic Cleaner must be performed by Dentsply Sirona's service personnel. Contact tech support at 1-800-637-8586.
- Any warranty repair must be performed by Dentsply Sirona's service personnel.
- Customer is responsible for shipping both ways outside of the continental USA, one way within. Contact us first, then send the unit with a copy of the original invoice or receipt back to:

Dentsply Sirona  
1301 Smile Way, York, PA 17404 USA  
800-637-8582

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. DENTSPLY neither assumes, nor authorizes any person to assume for it, any other liability in connection with the sale or use of its products. DAMAGES ARE LIMITED STRICTLY TO REPAIR OR REPLACEMENT OF PARTS. DENTSPLY EXPRESSLY DISCLAIMS LIABILITY FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCTS.

Claims covered by this warranty will be honored when presented through your DENTSPLY Sirona distributor within thirty (30) days from discovery of defect within the applicable warranty period.



Manufactured for:  
Dentsply Sirona  
1301 Smile Way  
York, PA 17404 USA