

# Operating Instructions

GeneralSonic / Qteck ultrasonic cleaners



Ultra Center Europe  
Greepweg 13  
8026RV Zwolle  
The Netherlands  
I. [www.ultrasoniccleaner.co.uk](http://www.ultrasoniccleaner.co.uk)  
E. [service@ultracentereurope.com](mailto:service@ultracentereurope.com)



**Read this instructions before you start operating your ultrasonic cleaner and keep this booklet at hand for all persons that might use this device.**

Many thanks that you have decided for a General Sonic ultrasonic cleaning device. These operating instructions should transmit to you important and helpful tips and safety regulations in working with your new ultrasonic-cleaner. Into relation on the choice of cleaning concentrate, cleaning temperature and duration of insonification can be entered here on grounds of the huge number of the possibilities which arise with the help of the big operational areas not on all details.

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## 1. General safety and operating information

- Devices, accessories and cleaning agent may be used only according to the operating instructions or the manufacturer's data.
- Ultrasonic-cleaning devices are not made for long-term irradiation (permanently pursued) and need short quiescence between the cleaning processes
- The device may be pursued only with the mains voltage given on the type sign (device back) in an earthed protective contact outlet
- Devices with damages may not connect to the power supply system.
- Devices and cleaning agents are to be kept away from children and not authorized persons
- For material damages or personal damages that are caused by improper use or non observance of the security terms, no liability is taken over
- By use of cleaning agents the security and application instructions of the manufacturer must be exactly considered
- High-handed doing alterations or changing the devices is not permitted; in addition, the CE-conformity expires.
- Use exclusively admitted accessories only.
- In commercial facilities the accident prevention regulations of the federation of the commercial professional association are to be followed for electric arrangements and company means.
- In schools, training centers, amateur workshops and self-help workshops the incentive is to be supervised by trained staff responsibly.
- An auditory protection is to be carried (worn) during the company (operation) for the protection of the health on constant (continuing) activity in the vicinity of less than 3 m to the device (appliance).
- Do not pursue device without or with liquid not enough.
- While in sonification of small quantities of ignitable liquids in insert vessels the guidelines are to be followed for laboratories BGR120 and the explosion protection guidelines (EX-RL / BGR104) in the each case valid version.

## 2. Commissioning

- Put the device on a steady, horizontal and flat surface.
- Fill in the tank to 3/4 with water. **Note:** The liquid temperature may not be higher than 50°C, never pursue devices without liquid.
- Add then the cleaning agent (e.g., CQ55, CQ11, CQ33) according to the information of the manufacturer in the right pouring proportion. **Note:** use only admitted cleaning agents. No ignitable liquids (e.g., petrol, solvent) and no liquids which contain chloride ions or split off (some disinfection, washing-up liquid or budgetary cleaner) use. Aggressive cleaning liquids as for example acids or salt solutions are allowed only in closed insert vessels.
- Put the power plug in an enough secure outlet.



**Tip:** Only after approx. 1-2 hours of operation the transducers (sonic generators) works with full power. Cleaning liquids and contact liquids contain relaxed gases (e.g., oxygen) that the cleansing effect negatively influences. Degas freshly filled liquid before use by insonification approx. for 10 min. Last to this process the cavitation noise becomes quieter, the loud degassing noises are cancelled and the device works noticeably more quietly. Nevertheless, this signifies nobody decrease to the ultrasonic achievement separate points the end of the degassing process.

## 3. Ultrasonic cleaning process

### Principle of ultrasonic cleaning

The transducers fixed under the liquid tank convert the electric energy into mechanical oscillations. Then the cleaning liquid is brought with 35 or 45 kHz (according to device) to swing. Besides, originates a cavitation with which small (little) vacuum vesicles implode and are thereby removed from the deepest pores pollutions. One calls (mentions) this process also „ electronic brushes “.

### Helpful tips

- Use only special ultrasonic cleaners (e.g., CQ11, CQ33 or CQ55) as an addition. Tap water without any addition cleans insufficiently. "Tip degassing follow ".
- Warm liquids raise the cleansing effect and shorten the cleaning duration.
- Heat the liquid before the insertion of the cleaning property on the desired temperature. Pay attention, on this occasion, absolutely to the filling state of the liquid, with too low filling state damages can appear in the heating. To save energy and time, you can cover the liquid tank with the lid.
- At too high temperatures the ultrasonic - cavitations decreases again, the empirical best cleaning temperature lies with approx. 50 - 60°C.
- The cavitation warms up the liquid, in addition. By long duration of ultrasonic irradiation and/or by covering the tank, the temperature of the liquid can also increase above the set value of the thermostat.
- Disinfection liquids may not be warmed up, in addition.
- Make sure that the liquid level is constant during the whole cleaning process.
- Strong dirty parts can be pre-cleaned. Insert the part with the stronger dirty side down. Do not pile.
- In hollow cavities no air bubbles may be

### Kinds of cleaning

1. Direct cleaning in the swinging tub / tank;
2. Indirect cleaning in closed application vessels.

#### 1. Direct cleaning

The ordinarily applied kind of the cleaning occurs directly in the liquid located (contained) in the tank. Moreover the cleaning objects are brought in an basket or a device holder in the prepared liquid. Basically is to be paid attention to the fact that the cleaning object is covered completely with liquid. Not overcast places are not cleaned. No accessories (basket) or cleaning goods may touch the tank ground. Put bits and pieces in an additional sieve basket.

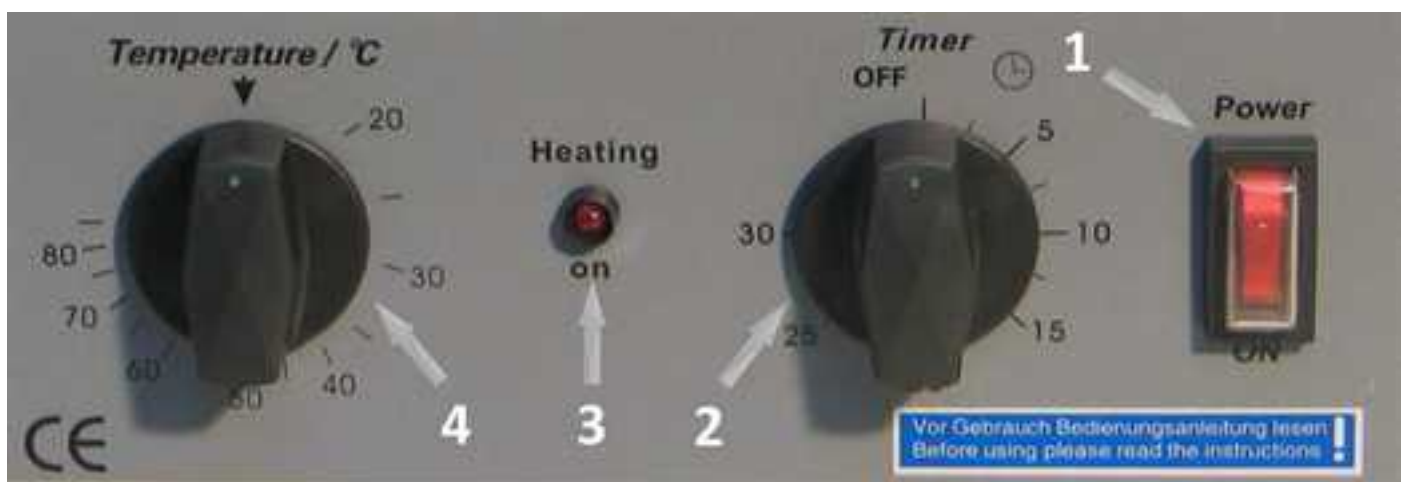


## 2. Indirect cleaning

An indirect cleaning in closed application vessels is carried out with:

- Application from chemically aggressive (e.g., acids) or ignitable (e.g., petrol) cleaning liquids.
- Distance of chemically aggressive soiling.
- Distance of abrasive soiling (e.g., polishing pastes, quartz, and sand).
- Concurrent use of different cleansing liquids

## 3.4 Operating elements



- 1 Power switch.....switch on and off the Unit
- 2 Timer switch.....to adjust time of procession / start ultrasonic
- 3 Pilot lamp .....shows heating works
- 4 Temperature switch.....to adjust heating temperature

## Cleaning procedure

- Switch on the device at the power switch.
- Turn the temperature selector switch on the desired cleaning temperature. (the controlling light (3) begins with some delay), the heating works.
- After the cleaning temperature is reached lay the cleaning objects in the basket and hang up this carefully in the tank. Attention: There is the danger of scald by splash, in the liquid do not touch. Cleaning objects turn around perhaps with tools to avoid air bubbles inside. With the bringing in of the basket pay attention to the fact that the tank is not too full, or overruns. In that case, liquid must be taken out accordingly.
- Turn up the timer for the maximum time and then back for the desired insonification time. **Tip:** Choose the insonification time so briefly as possible. According to soiling, size and used cleaning liquid the cleaning duration amounts experience to approx. 5 - 15 min.
- With parts (sections) sensitive to warmth follow temperature (distortion danger).
- At the ends of the insonification time take out the cleaning objects with the basket (care combustion danger). Let the cleaning objects cool down and rinse it under fluent water.
- If necessary repeat cleaning process
- With the indirect cleaning the cleaning object is laid (put) in an e.g. glass application (as accessories available) and is covered with cleaning liquid and put (arranged) in the basket. (Or with the matching hold ring in the hole



lid (as accessories available, for 2 glass applications, for the use of different cleansing liquids) hung up.

**Attention:** overcrowding danger.

- The application vessels must dip min 3 cm deep into the contact liquid.
- You can use as a tank filling either the available (in existence) cleaning liquid or special contact liquid for ultrasonic – transference (transmission).

#### **After the cleaning process**

After every cleaning process the tank should be cleaned. On the ground of the tank mature dirty leftovers reduce the ultrasonic achievement and can lead to damages on the tank ground. Cleaning liquids can be used according to soiling several times, but they cannot be refreshed by recent addition of cleaner again. Spent cleaning liquids have a lower cleaning effect and have to exchange.

#### **Preparation of medical instruments**

- If use the ultrasonic - cleaner in connection with disinfection preparations (medicine product class IIa) in addition to support the disinfection effect or to accelerate as accessories to a medicine product and is to be arranged even as a medicine product class I.
- In case of cleaning or disinfection of medical instruments, the hygienic security is to be guaranteed after the utilisation. The cleaning and disinfection has to be carried out by the operator, according to the hygiene guideline (plan) under using a e.g. VAH/DGHH certified surface disinfectant.

## **4. How to clean the device**

- Before cleaning every device disconnect from power supply system.
- By devices without draining cock pour out the tank contents over the corner (backside left), besides, splashes avoid to the device ground or the cable connection.
- Devices do not wash up or dip into water.
- Rinse the tank thoroughly and rub dry, no steel wool, scratches, scrapers use or similar.
- Edges and remains in the tank are to be removed with a customary high-grade steel cleaner without abrasive addition. **Tip:** Remaining metal parts on the stainless steel surface as well as rust particle from the water pipe system or the cleaning property can penetrate the passive protective coating of the stainless steel, "activate" the stainless steel and it starts to rust. This foreign rust causes pitted areas and the tank becomes leaking.
- Wipe case outside to the cleaning only humid, use when required a customary high-grade steel cleaner without abrasive addition.



## 5. Functional disorder

Problem	Possible cause	Remedy
weak uneven insonification, noise is too loudly or uneven	liquid is not degassed	10 min. insonification
	too much cleaning parts	take some parts out
	uneven noise	change filling state
Liquid does not become warm	filling state to low	fill up liquid
	heating damaged	customer service
pilot lamp does not shine	lamp or heating damaged	customer service
liquid to hot	warm by cavitations	put down temperature
	tank covered	remove lid
Device cannot be switched on	electricity supply discontinuous	check, produce electricity supply
no insonification	electronic problem	customer service



## 6. Technical specification

Device type	GS-2	GS-3	GS-4	GS-6
Tank content ml	2000	3000	4200	5500
Power input Watt	250	450	500	550
Protection class	IP 20	IP 20	IP 20	IP 20
Ultrasonic power HF Watt	140	210	280	300
Ultrasonic transducers	2	3	4	3
Frequency kHz	35	35	35	41
Heating adjustable -°C	20 – 80	20 - 80	20 - 80	20 – 60
Heating Watt	150	300	300	300
Timer min.	1 – 30	1 - 30	1 - 30	1 – 20
Case	RVS	RVS	RVS	RVS
Case measures mm	260 x 150 x 210	263 x 162 x 235	325 x 178 x 230	325 x 178 x 314
Tank measures mm	230 x 120 x 80	240 x 138 x 100	300 x 150 x 100	300 x 155 x 150
Device type	GS-13	GS-20	GS-27	
Tank content ml	14500	20000	27000	
Power input Watt	750	1140	1000	
Protection class	IP 20	IP 20	IP 20	
Ultrasonic power HF Watt	500	640	800	
Ultrasonic transducers	6	8	10	
Frequency kHz	41	41	41	
Heating adjustable -°C	20 - 60	20 - 60	20 – 60	
Heating Watt	450	450	450	
Timer min.	1 - 20	1 - 20	1 – 20	
Case	RVS	RVS	RVS	
Case measures mm	360 x 330 x 310	550 x 330 x 310	550 x 330 x 310	
Tank measures mm	350 x 320 x 150	495 x 295 x 150	495 x 295 x 190	





**Information for use as a medical product**

Denotation	Ultrasonic cleaning device
UMDNS - nomenclature (ECRI)	14-263
Purpose determination	ultrasonic-disinfection and cleaning of medical and dental instruments
Classification (Medical device directive 93/42/EEC, appendix IX)	class I, active, non invasive, not implantable  medical product
Device specification	see type plate on device backside

## 7. Warranty

The warranty duration for material defect liability on our devices is 12 months. The warranty duration begins with the purchase or the introduction of the device (depending on which case enters earlier). Defects are to be indicated immediately by writing statement and the device must be put except work. In the warranty case the manufacturer reserves himself, in any case, the right on finishing touches. An occurred exchange, whether on the whole or partially extended not the warranty duration. For the damages on the device or cleaning objects which are caused by improper use, use of inexpedient cleaners or chemicals no warranty exists.

**Many damages are mostly to be led back on operating mistakes. Please, note:**

- Damages in electronics / ultrasonic generators = too long irradiation times / the longest allowed time in one piece is 30 min..
- Distortion of the cleaning objects = too high temperature
- Heating defect = filling state too low, purposed with not enough liquid
- Corrosion (rust) in the tank = bad, insufficient cleaning of the device, wrong cleaners, aggressive liquid directly applied.
- Damages by liquid in the electronics = tank leaking, humidity from the outside, penetrated in by device cleaning.

