

## Operating Instructions



### Podosonic

**Ultrasonic Cleaning Device for Cosmetics and Podiatry**



• english •

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## 1 General

The present Operating Instructions are part of the delivered equipment. They must be ready for use at any time and remain with the unit in case of resale.

We reserve the right to carry out technical modifications on the unit due to advanced development.

An operating manual cannot take account of every conceivable use. An operating manual cannot take account of every possible use. Contact your dealer or the manufacturer for further information or in the event of problems which are not covered or not sufficiently covered in this operating manual.

## 2 Important safety warnings

Please observe any additional national safety regulations that may apply.

### 2.1 Instructions for the use of the present manual

Carefully read the Operating Instructions before you operate the unit. Do not use the present electrical unit for any purpose other than described in the Operating Instructions.

#### Warning symbols used in the present manual:



This symbol warns of the risk of injury and damage to the equipment.



This symbol warns of the risk of injury caused by electricity.



This symbol warns of the risk of injury caused by explosion and/or deflagration.



This symbol warns of the risk of injury caused by hot surfaces and liquids.



This symbol marks additional information.

#### Signal words used in the present manual:

**Danger** The signal word danger warns of a potential risk of serious injury and danger to life.

**Warning** The signal word warning warns of the risk of serious injury and heavy damage to the equipment.

**Caution** The signal word caution warns of the risk of light injury or damage to the equipment.

**Attention** The signal word attention warns of the risk of damage to the equipment.

## 2.2

### Instructions for the use of the unit

<b>Intended use</b>	The present Elma ultrasonic cleaning unit has been designed for the treatment of <b>items</b> and <b>liquids</b> only. No cleaning of living beings or plants!
<b>User</b>	Operation of the unit by authorized and instructed staff only. Observe the instructions given in the manual.
<b>Mains connection</b>	For safety reasons, the present unit must be connected to a correctly grounded socket only. The technical details indicated on the nameplate must correspond with the available mains connection details, in particular those of the mains voltage and current connected value.
<b>Prevention of electrical accidents</b>	For purposes of maintenance and care of the unit, in case of suspected humidity inside the unit or in case of malfunctions and after operation pull the mains plug. The unit must be opened by authorised specialised personnel only.
<b>Cleaning liquid</b>	Fill the unit with a sufficient quantity of cleaning liquid before switch-on. Flammable liquids must not be treated by ultrasound directly in the cleaning tank: risk of fire and explosion!
<b>Hot surfaces and liquids</b>	Risk of burning and scalding! Depending on the operational period of the unit, unit surfaces, cleaning liquid, basket and cleaning items can heat up considerably.
<b>Noise emission</b>	Ultrasonic units can produce annoying sounds. Wear personal ear protection devices when working close to an ultrasonic unit which is operated without cover.
<b>Sound transmission at physical contact</b>	Do not reach inside the cleaning liquid or touch sound-carrying parts (tank, basket, cleaning items, etc.) during operation.
<b>Exclusion of liability</b>	The manufacturer cannot be held liable for damages on persons, equipment or cleaning items caused by improper use. The operator is responsible for the instruction of the operating staff.
<b>Storage and transport conditions</b>	Temperature during storage: +5 C (+41 F) to +40 C (+104 F) Temperature during transport: -15 C (+5 F) to +60 C (+140 F) Humidity and air pressure during storage and transport: 10 % - 80 % relative humidity; non-condensing Pressure range 500 hPa – 1060 hPa absolute

## 2.3

### Safety instructions on the machine



Observe operating instructions!



Observe warnings and safety instructions given in the operating manual!



This symbol warns about the risk of injury from hot surfaces and liquids.



The unit cannot be disposed with household waste! Observe regional waste regulations!

### 3

## Functioning

Today, cleaning by ultrasound is the most modern fine cleaning method.

The electric high-frequency energy created by an ultrasonic generator is transformed into mechanical energy by piezo-electrical transducer systems and is then transmitted into the bath.

This process creates millions of tiny vacuum bubbles which implode due to the variations of pressure caused by the ultrasonic activity. Highly energetic liquid jets are created. These jets remove dirt particles from surfaces and even from the smallest grooves and bores.

### 3.1

## Ultrasonic cleaning factors



#### Mechanical energy

Basically, the cleaning result depends on three factors:

Ultrasonic energy is probably the most important mechanical factor in the cleaning process. This energy must be transmitted through a liquid medium to the surfaces which are to be cleaned.

The present Podosonic unit is fitted with the innovative sweep function device: electronic oscillation of the sound field (sweep function) prevents the formation of zones of low performance in the ultrasonic bath.

#### Cleaning media

For saponification and removal of the dirt particles a suitable cleaning agent is required. Elma has a large range of cleaning media on offer.

Cleaning chemicals are also necessary to reduce the surface tension. This increases considerably the efficiency of the ultrasonic activity.

For Elma cleaning products please observe the instructions given on the label or the product information leaflets.

#### Cleaning period

The cleaning period depends on the degree and the kind of contamination and on the correct selection of ultrasonic energy, cleaning agent and temperature.

## **4 Product description**

### **4.1 Podosonic product features**

- cleaning tank made of cavitation-resistant stainless steel
- casing made of stainless steel, hygienic and easy to clean
- high performance sandwich transducer systems
- preset cleaning programmes
- alternatively: manual setting of cleaning time
- LED temperature display indicates the actual temperature of the liquid in different colours (Podosonic 3 and 4+)
- automatic switch-off in case of excess temperature in the cleaning bath (Podosonic 3 and 4+)
- sweep function for an optimised sound field distribution in the cleaning liquid
- quick-drain valve on the back of the unit
- plug-in mains supply
- Turning knob
- splash-water-proof operating panel
- plastic carrying handles (Podosonic 3 and 4+)
- automatic switch-off after 12 h operation to prevent unintended permanent operation

### **4.2 CE conformity**

The present Elma ultrasonic unit is in compliance with the CE marking criteria.

The declaration of conformity is available from the manufacturer.

### **4.3 Delivered equipment**

- Ultrasonic cleaning unit
- Mains cable
- Hose connection socket with hose clamp (Podosonic 3 and 4+)
- Operating Instructions

Accessories:

- Cover
- Cleaning basket

## 4.4

### Unit front view / side view

#### Podosonic 1



Fig. 4.4 1. Front view / side view Podosonic 1

#### Podosonic 3 and 4+



Fig. 4.4.2. Podosonic 3 and 4+ front view

- A Operating panel** for the control of the operating functions. Description see section 4.7.
- B Filling line (min.)** indicates the recommended minimum filling level, see technical details (Podosonic 4+).
- C Filling line (max.)** this level should not be exceeded even with cleaning items inside (Podosonic 3 and 4+).  
Podosonic 1: the optimum filling level is approx. 2/3 of the tank height (this corresponds to approx. 5-6 cm from the tank bottom).
- D Plastic carrying handles** for the safe transportation of the unit even with hot casing (Podosonic 3 and 4+ only).

- E Turning knob for draining the tank (Podosonic 3 and 4+)**  
Description see section 4.6.

## 4.5

### Unit back view

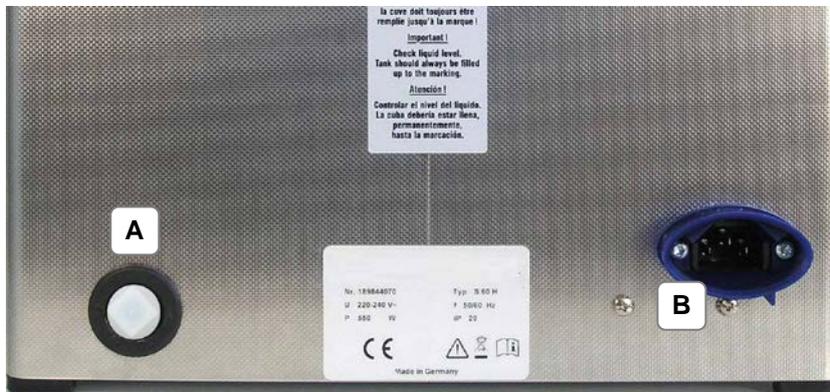


Fig. 4.5 Unit back view (as delivered) (Podosonic 3 and 4+)

- A Drain duct** for draining the tank (Podosonic 3 and 4+)
- B Mains supply socket** for quick and easy removal of the mains cable e.g. for transportation purposes

## 4.6

### Turning knob for draining the tank (Podosonic 3 and 4+)

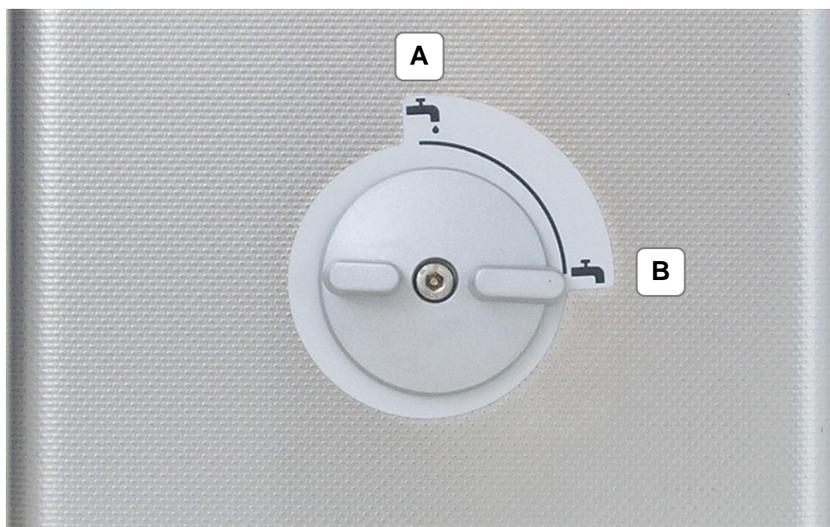


Fig. 4.6 View turning knob for draining the tank

- A Vertical position:** drain open (for draining)
- B Horizontal position:** drain shut (cleaning operation)

## 4.7

### Description of operating elements

#### Podosonic 1

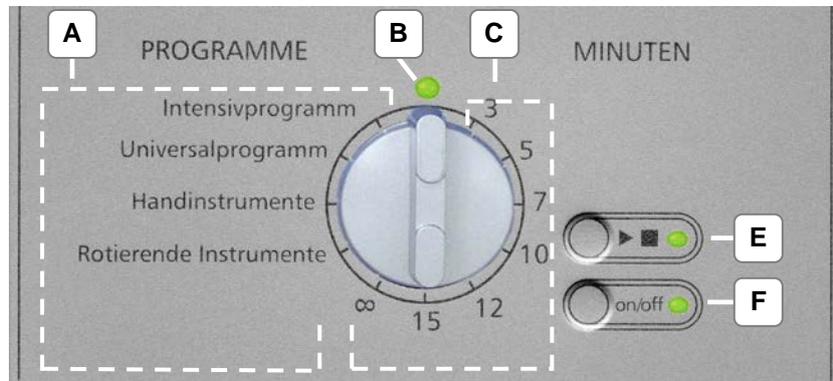


Fig. 4.7.1. Operating elements Podosonic 1

- A Preset cleaning programmes** operate by specifically defined combinations of various operating modes: degas – normal – sweep. The various modes can be distinguished by different levels of noise produced during operation. When the selected programme is finished, the ultrasonic operation is automatically switched off.

Available programmes:

Intensive cleaning programme = Intensivprogramm  
 Universal cleaning programme = Universalprogramm  
 Manual instruments = Handinstrumente  
 Rotating instruments = Rotierende Instrumente

Cleaning programmes	Time (minutes)	Temp. (°C)	Ultrasonic-modi
Intensivprogramm	12	0 - 55	Degas/Normal/Sweep
Universalprogramm	10	0 - 55	Degas/Normal/Sweep
Handinstrumente	7	0 - 55	Degas/Normal/Sweep
Rotierende Instrumente	8	0 - 55	Degas/Normal/Sweep

- B LED ultrasound** is on during ultrasonic operation (flashing in case of choosing any setting by the turning knob, lights when the ultrasonic process starts up).
- C Manual setting of cleaning time at ultrasonic mode sweep**  
 Available settings for short-time operation: 3; 5; 7; 10, 12 or 15 minutes (automatic switch-off).  
 ∞ for continued operation (switch-off by hand).  
 For reasons of safety, the unit automatically switches off after 12 h permanent operation.

- D Turning knob** for selecting the programme or for setting the cleaning time.
- E Key Start / Stop** for starting or stopping the ultrasonic operation in the selected cleaning programme or during timer or continued operation.
- F Key on/off** for switching the unit on and off  
The green on/off LED turns on when the unit is switched on.

**Podosonic 3 and 4+**

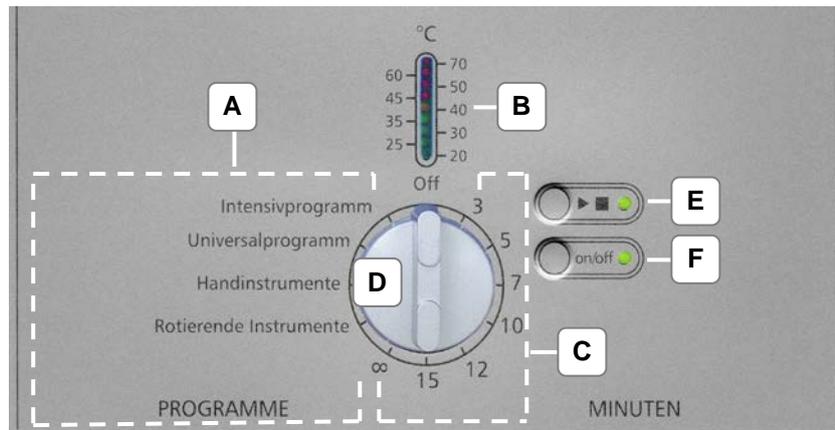


Fig. 4.7.2. Operating elements Podosonic 3 and 4+

- A Preset cleaning programmes** operate by specifically defined combinations of various operating modes: degas – normal – sweep. The various modes can be distinguished by different levels of noise produced during operation. When the selected programme is finished, the ultrasonic operation is automatically switched off.

Cleaning programmes	Time (minutes)	Temp. (°C)	Ultrasonic-modi
Intensivprogramm Intensive cleaning programme	12	0 - 55	Degas/Normal/Sweep
Universalprogramm Universal cleaning programme	10	0 - 55	Degas/Normal/Sweep
Handinstrumente Manual instruments	7	0 - 55	Degas/Normal/Sweep
Rotierende Instrumente Rotating instruments	8	0 - 55	Degas/Normal/Sweep

- B Temperature indication** shows the actual temperature in the cleaning bath.

Temperature range 20°C – 35°C: green LED  
 Temperature range 40°C: yellow LED  
 Temperature range 45°C – 70°C: red LED

Flashing LEDs indicate that the temperature for the selected cleaning programme has been exceeded – the ultrasonic operation is automatically switched off. Let the cleaning liquid cool down or exchange it.



Due to a physical process the ultrasonic energy heats up the cleaning liquid. For certain cleaning tasks the temperature of the cleaning liquid may be too hot which will have an adverse effect on the cleaning result.

- C Manual setting of cleaning time at ultrasonic modi sweep**  
Available settings for short-time operation: 3; 5; 7; 10 or 15 minutes (automatic switch-off).  
∞ for continued operation (switch-off by hand).  
For reasons of safety, the unit automatically switches off after 12 h permanent operation.
- D Turning knob** for selecting the programme or for setting the cleaning time
- E Key Start / Stop** for starting or interrupting the ultrasonic operation in the selected cleaning programme or during timer or continued operation. The green LED turns on when the ultrasound is switched on.
- F Key on/off** for switching the unit on and off  
The green on/off LED turns on when the unit is switched on.

## 5 Initial operation

**Packing** Please keep the original packing or dispose of it according to the relevant waste disposal regulations. You can also return the packing to the manufacturer free destination (to your account).

**Check for transport damages** Check the unit for possible transport damages before initial operation. In case of visible damage do not connect the unit to the mains. Contact your supplier and forwarding agent.

**Placement** For operation, place the unit on a dry and solid surface. Ensure that the workplace is sufficiently ventilated!

Do not use a soft surface (e.g. a carpet) as this may impede the ventilation of the unit.



**DANGER**

Risk of electrocution due to humidity inside the unit!  
Protect the unit from entering humidity.

The unit inside is splash-water-proof. Keep workplace and casing dry in order to prevent electrical accidents and damages on the unit.

- 
- Ambient conditions**
- Allowed ambient temperature during operation: +5°C - +40°C
  - Allowed relative humidity of air during operation: max. 80%
  - In-door operation only

## 5.1 Set up of the liquid drain (Podosonic 3 and 4+)

On the delivered unit, the drain duct for the cleaning liquid is closed off with a plastic screw cap.

For setting up the liquid drain fix the delivered tube socket to the drain duct.

- Proceed as follows**
1. Unscrew (anti-clockwise) the plastic screw cap (see fig. 5.1)
  2. Screw the tube socket (included in delivery) onto the inside thread of the drain duct (clockwise).
  3. Turn the tube socket into the required drain position (see fig. 5.2).

The plastic thread is self-sealing when the socket has been screwed in by hand as far as possible.

**Note:** Unscrewing the tube socket (anti-clockwise) can cause a leak of the thread.

4. The drain duct is now ready for connection to a customer-provided discharge system. Use a standard tube (dia 1/2"). Push the tube onto the socket and fix it with the clamp included in the delivery.

**Note:** Regularly check the attachment tube and tube nozzle for leaks!

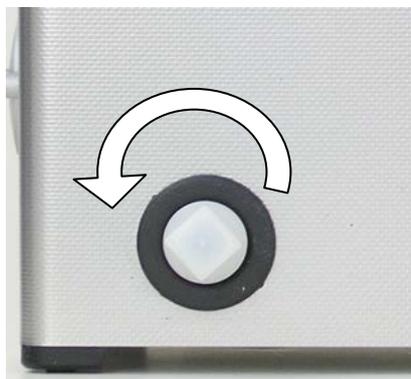


Fig. 5.1  
Drain with plastic screw cap

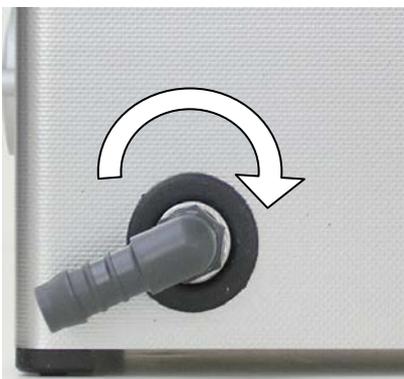


Fig. 5.2  
Drain fitted with standard tube

## 5.2 Connecting the unit to the mains

**Required mains conditions** Earth grounded socket:  
1 phase (220-240 V); 1 N; 1 PE protective earth.

**Connect mains cable** Use the plug-in mains cable delivered with the unit. 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.

## 6 Putting unit into operation

### 6.1 Filling of the unit

- Shut the drain** Shut the drain duct before filling the tank. (Turning knob for draining of the tank into horizontal position (see *section 4.6*).
- Observe filling level** Fill the cleaning tank with a sufficient quantity of a suitable cleaning liquid before switch-on.
- Podosonic 1:** The optimum filling level is approx. 2/3 of the tank volume.
- Podosonic 3 and 4+:** The marked maximum filling level of the tank indicates the recommended filling level with cleaning items in the bath (see also *section 4 Fig. 4.4.2*).
- Suitable cleaning agents** Ensure that the chosen cleaning agent is suitable for treatment in an ultrasonic bath and observe the instructions on dosage and the compatibility of the material.  
We recommend the use of the cleaning agents listed in *section 8.3*.
- Prohibited cleaning agents** Flammable products are generally not allowed for use in an ultrasonic bath. Observe the safety warnings given in *section 8.1*.



DANGER

Risk of fire and explosion!

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

Use the cleaning chemicals listed in *section 8.3*.



Ultrasonic activity increases the vaporisation of liquids and creates a very fine mist which can catch fire on any ignition source.

Observe the instructions on limitations of use given in *section 8.1*.



ATTENTION

Risk of damage to the transducer tank!

Do not use any acid cleaning agents (pH value < 7) directly in the stainless steel tank if the cleaning items or the contamination of the cleaning items contain halogenides (fluorides, chlorides or bromides). The same applies to NaCl solutions.

Use the cleaning chemicals listed in *section 8.3*.



The stainless steel tank can be destroyed by crevice corrosion in a very short time. Substances that cause crevice corrosion can be contained in household cleaners.

Observe the instructions on limitations of use given in *section 8.2*.

For queries please contact the manufacturer or your supplier.

## 6.2

### Placement of cleaning items

**Caution!** The ultrasonic bath has been designed for the ultrasonic treatment of items and liquids only.  
Do not clean living beings or plants!

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Do not reach inside the tank during ultrasonic operation!

Cell walls can be damaged by prolonged exposure to ultrasonic activity.

For placing and taking out the cleaning items always switch off the unit.

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**No cleaning items on the bottom of the tank**

Do not place the cleaning items directly onto the bottom of the cleaning tank, as this might lead to damages to the unit or damages the cleaning items.

**Use cleaning basket**

Place the cleaning items into the stainless steel cleaning basket (accessory equipment).

**Acid tank**

For the use of cleaning chemicals which might destroy or damage the stainless steel tank use a separate container. For the special plastic cleaner tank for acid chemicals please contact your supplier (Podosonic 3 and 4+ only).

## 7

### Ultrasonic cleaning process

Please observe the following instructions before starting the ultrasonic cleaning process.

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Risk of scalding by hot surfaces and cleaning liquid!

Ultrasonic energy is physically transformed into heat.

The unit and the cleaning liquid in the tank heat up during ultrasonic operation even with the heating switched off. During permanent operation with cover temperatures exceeding 60°C can be reached.

During permanent operation with cover and heating temperatures exceeding 80°C can be reached.

Do not reach inside the bath.

Wear protective gloves to touch unit and/or basket!

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Ultrasonic units can produce annoying sounds.

Wear personal ear protection devices when working close to an ultrasonic unit which is operated without cover.

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Ultrasonic energy is physically transformed into heat.

The unit and the cleaning liquid in the tank heat up during ultrasonic operation even with the heating switched off. During permanent operation with cover temperatures exceeding 60°C can be reached.

For the cleaning of temperature-sensitive items please take into consideration the heating-up of the cleaning liquid.

Please observe that the temperature of the cleaning media remains below 42°C when cleaning parts contaminated with fresh protein or blood.

---

It is the user's responsibility to check the cleaning results.

The manufacturer cannot guarantee cleaning process and cleaning results.

## 7.1 Starting the cleaning process

Add a suitable cleaning agent depending on the cleaning programme and on the cleaning task.

### Programme operation

Plug in the mains plug. Note the connected loads on the rating plate.

Switch on the machine by pressing the on/off button. The green LED lights.

Select the requested cleaning programme at the turning knob.

The machine is operational when the green LED next to the ►■ button flashes (Podosonic 3 and 4+); for Podosonic 1, the LED above the rotary knob flashes.

Press the ►■ key to start the ultrasonic program. The LED lights green during the cleaning program operation.

When the selected programme is finished the ultrasound is switched off automatically.

### Time operation

For cleaning tasks that are not covered by the available cleaning programmes, set the turning knob to the required cleaning time or to continued operation ∞.

There is no automatic switch-off for the continued operating mode ∞. In this mode, the ultrasonic operation must be switched off by hand, either at the key ►■ or by turning the knob back into off position.



In order to avoid unintended permanent operation, the Podosonic units are equipped with an automatic safety switch-off. The unit switches off completely after 12 h permanent operation. In case you wish to continue operation start the unit again. The time operation has no overheating protection.

### Excess temperature protection Podosonic 3 and 4+

If the actual temperature in the cleaning bath is too high for the selected cleaning programme, the programme cannot be started due to the integrated excess temperature protection. All LEDs up to the LED showing the actual bath temperature are flashing.

In order to start the required cleaning programme, the bath temperature must cool down. Wait until the bath has cooled down or fill new water plus cleaning agent.

**The temperature display** shows the actual temperature in the cleaning bath.

Temperature range 20°C – 35°C: green LEDs

Temperature range 40°C: yellow LED

Temperature range 45°C – 70°C: red LEDs

There is **no** overheating protection on the **Podosonic 1**.

## 7.2

### After the cleaning

#### Follow-up treatment of cleaning items

When the cleaning process is finished rinse the cleaning items, e.g. under the tap.

#### Drain the unit

- Drain the liquid as soon as it is dirty or when the unit is not operated over a prolonged period of time.
- Let cool down the cleaning fluid before emptying.
- Certain residues and types of contamination may destroy or damage the stainless steel tank.

#### Podosonic 1

Emptying the unit in which you slowly empty the liquid.

#### Podosonic 3 and 4+

Use the quick-drain duct to drain the cleaning tank (see chapter 4.6)

## 8 Cleaning media



The cleaning chemical to be used must be suitable for the use in an ultrasonic bath to prevent damage to the tank or injuries to the user. Use the recommended cleaners mentioned in *section 8.3*. Observe the restrictions to cleaners containing solvents and aqueous cleaners mentioned *in sections 8.1 and 8.2*.

For queries please contact the manufacturer or your supplier.

### Exclusion of liability

Damages caused by non-compliance with the instructions given in *sections 8.1 and 8.2* will not be covered by the manufacturer's warranty!

## 8.1 Limitations of use of cleaners containing solvents



Never use flammable liquids or solvents directly in an ultrasonic cleaning tank. Risk of fire and explosion!

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

Do **not** fill potentially explosive substances and flammable solvents

- marked in compliance with the EEC directives by symbols and safety warnings R 1 to R 9
- or E, F+, F, O or R 10, R 11 or R 12 for flammable substances

into the stainless steel tank for ultrasonic treatment.

### Exception

In compliance with the general regulations on the protection of labour, certain limited volumes of flammable liquids (max. 1 litre) can be used in an ultrasonic cleaning unit under the following conditions: these liquids must be filled into a suitable separate vessel (e.g. beaker) with sufficient ventilation; this vessel (beaker) can then be put into the stainless steel tank which is filled with non-flammable liquid (water with a few drops of surfactant).

## 8.2

### Limitations on 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 ( $\text{F}^-$ ), chloride ( $\text{Cl}^-$ ) or bromide ( $\text{Br}^-$ ) 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.

#### Acids and alkaline solutions

Other media which can destroy the stainless-steel tanks when used in high concentrations or with high temperatures during ultrasonic operation are: nitric acid, sulphuric acid, formic acid, hydrofluoric acid (even diluted). (Completeness of list not guaranteed.)

Risk of damage to the unit: do not use cleaning solutions containing more than 0.5 mass % alkali (KOH and/or NaOH) in an ultrasonic cleaning tank.

#### Entrainment of chemical substances

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.

#### Acid-resistant tank

For the ultrasonic treatment with the above mentioned media use an acid-resistant tank (available as accessory equipment).

#### Disinfectants

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

#### Safety regulations

Observe the safety warnings indicated by the manufacturer of the chemicals (e.g. goggles, gloves, R and S phrases).

For queries please contact the manufacturer or your supplier.

## 8.3

### List of recommended cleaning media

Elma has a large range of suitable cleaning products on offer developed by chemical engineers in the Elma laboratory. Please contact your supplier to find the most suitable cleaning chemical for your application.

#### Environment – friendly products

The organic detergents contained in the elma clean cleaning concentrates are biodegradable. Product information and safety data sheets are available from the manufacturer.

### 8.3.1 Podiatry instruments

- elma clean 10** Universal cleaning concentrate for the cleaning of instruments and laboratory equipment made of plastic, ceramic, stainless steel, rubber and glass.
- elma clean 55d** Aldehyde-free cleaning concentrate for instruments made of stainless steel. For the hygienic removal of amalgam remains, blood, tissue, etc.; with anti-corrosion effect.
- elma clean 60** Acid cleaning concentrate for instruments made of stainless steel, glass and plastic. Removes corrosion, rust films and mineral deposits.

## 9 Maintenance

### 9.1 Maintenance / Care



ATTENTION

**Pull the mains plug before carrying out any maintenance works!**

- Electrical security** The present Podosonic unit is maintenance-free. Check the casing and the mains cable for damage regularly in order to prevent electrical accidents.
- Care of transducer tank** Lime deposits on the stainless-steel tank can be cleaned gently with softening agents e.g. elma clean 40 or elma clean 115C (operate the unit with concentrate + water).
- Care of casing** Residues of cleaning media can be wiped away with a household cleaner or decalcifier depending on the kind of contamination. **Do not put the unit in or under water!**
- Disinfection** If the unit is used for medical and sanitary purposes it is necessary to disinfect the transducer tank and the surfaces regularly (standard surface disinfectants).

## 9.2

### Service life of the transducer tank



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

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

- Regularly remove any cleaning residues, in particular metal particles and rust films.
- Use suitable cleaning chemicals, with particular caution concerning the kind of removed contamination (see instructions *section 8.2*).
- Exchange the cleaning medium before it is too heavily contaminated.
- Do not operate the ultrasound unnecessarily; switch off after the cleaning process.

## 9.3

### Repair

**Opening by  
authorised  
specialised  
personnel only**



**DANGER**

Repair and maintenance works which require the unit to be connected and opened must be carried out by authorised and specialised personnel only.

---

Risk of electrocution due to live parts inside the unit!

Pull the mains plug before opening the unit!

The manufacturer cannot be held responsible for any damage caused by unauthorised maintenance or repair works on the unit.

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In case of a break-down of the unit please contact the manufacturer or your supplier.

## 10 Technical details

	Tank max. volume (pprox. litre)	Tank effective volume (pprox. litre)	Tank internal dimensions W x D x H (pprox. mm)	Unit external dimensions W x D x H (approx. mm)	Basket internal dimensions W x D x H (pprox. mm)	Weight (pprox. kg)
<b>Podosonic 1</b>	0.9	0.7	190x85x60	206x116x178	177x73x30	2.0
<b>Podosonic 3</b>	2.75	1.9	240x137x100	300x179x214	198x106x50	3.3
<b>Podosonic 4+</b>	6,2	min. 3,5 max.4,5	286x226x99	363x306x186	255x200x20	5,8

	Mains voltage unit variants (Vac)	Ultrasound frequency (kHz)	Power consumption total (W)	Ultrasonic maximum peak power* (W)	Overheating switch-off	Drain
<b>Podosonic 1</b>	220-240	37	30	240	-	-
<b>Podosonic 3</b>			80	320	x	x
<b>Podosonic 4+</b>			200	800	x	x

\*Podosonic 1: impulse wave form; Podosonic 3 and 4+: standard sine-wave modulation  
 The choice of the waveform has been matched to the relevant tank size. The signal form of the wave results in a factor 4 or 8 for the ultrasonic peak max., depending on the modulation of the wave.

## 11 Trouble shooting

Fault	Possible cause	Remedy
Casing damaged	<ul style="list-style-type: none"> <li>• damage by third party, transport damage</li> </ul>	<ul style="list-style-type: none"> <li>• return unit to supplier or manufacturer</li> </ul>
Mains cable damaged	<ul style="list-style-type: none"> <li>• damage by third party, transport damage</li> </ul>	<ul style="list-style-type: none"> <li>• obtain original spare mains cable from manufacturer or supplier</li> </ul>
No operating functions; all LEDs dark	<ul style="list-style-type: none"> <li>• mains cable not plugged in</li> </ul>	<ul style="list-style-type: none"> <li>• plug in mains cable</li> </ul>
	<ul style="list-style-type: none"> <li>• socket dead</li> </ul>	<ul style="list-style-type: none"> <li>• check socket/fuse</li> </ul>
	<ul style="list-style-type: none"> <li>• mains cable damaged/interrupted</li> </ul>	<ul style="list-style-type: none"> <li>• replace mains cable</li> </ul>
	<ul style="list-style-type: none"> <li>• fault of electronics</li> </ul>	<ul style="list-style-type: none"> <li>• return unit to supplier or manufacturer</li> </ul>
No ultrasonic function; LED ultrasound dark	<ul style="list-style-type: none"> <li>• turning knob for ultrasonic operation in „0“ position</li> </ul>	<ul style="list-style-type: none"> <li>• switch on the turning knob for ultrasonic operation</li> </ul>
	<ul style="list-style-type: none"> <li>• unit is switched off</li> </ul>	<ul style="list-style-type: none"> <li>• switch on the unit at key on/off</li> </ul>
	<ul style="list-style-type: none"> <li>• key ►■ (ultrasound) not pressed</li> </ul>	<ul style="list-style-type: none"> <li>• press key ►■</li> </ul>
	<ul style="list-style-type: none"> <li>• fault of electronics</li> </ul>	<ul style="list-style-type: none"> <li>• return unit to supplier or manufacturer</li> </ul>
Unsatisfactory cleaning results	<ul style="list-style-type: none"> <li>• cleaning time too short</li> </ul>	<ul style="list-style-type: none"> <li>• repeat cleaning process</li> </ul>
	<ul style="list-style-type: none"> <li>• no or unsuitable cleaning medium used</li> </ul>	<ul style="list-style-type: none"> <li>• use suitable cleaning medium</li> </ul>
No ultrasonic function; LEDs flashing alternately (Podosonic 3 and 4+) („running light“) or flashing (Podosonic 1)	<ul style="list-style-type: none"> <li>• fault of electronics</li> </ul>	<ul style="list-style-type: none"> <li>• switch unit off and on if fault is again indicated: return unit to supplier or manufacturer</li> </ul>
	<ul style="list-style-type: none"> <li>• unfavourable fill level</li> </ul>	<ul style="list-style-type: none"> <li>• change fill level</li> </ul>

## 12 Putting out of action and waste disposal



The unit can be taken to metal and electronics recycling stations or returned to the manufacturer.

## 13 Manufacturer's contact address

### Elma Schmidbauer GmbH

Gottlieb-Daimler-Str. 17, D-78224 Singen

Phone +49 (0) 7731 / 882-0

Fax +49 (0) 7731 / 882-266

[info@elma-ultrasonic.com](mailto:info@elma-ultrasonic.com)

[www.elma-ultrasonic.com](http://www.elma-ultrasonic.com)

Do you have any queries or suggestions concerning the present unit, its operation or the Operating Instructions?

Please contact us, we will be glad to assist:

### Technical Support

Phone +49 (0) 7731 / 882-280

Fax +49 (0) 7731 / 882-253

[support@elma-ultrasonic.com](mailto:support@elma-ultrasonic.com)