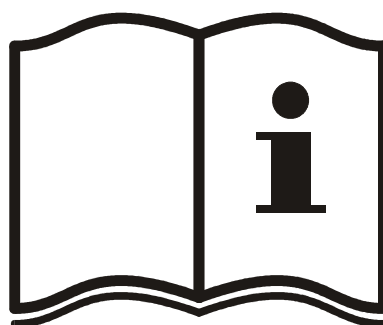


Eltropol 300

en

English



Translation of the original instructions

This unit documentation is part of the unit and must be enclosed when selling or passing on the unit.

- The unit has been designed solely for use in dental laboratories and comparable establishments for research, commercial and training purposes. The unit must only be operated by dental professionals, or they must provide supervision if trainees or other persons operate unit.
- The operating instructions must be read and understood before the device is used. This particularly applies to the **Safety information**. The warranty is void in cases of damage which is caused by non-observance of the operating instructions. We will also not accept liability for any resulting consequential damages.

- Symbols used



This symbol indicates very important information. Failure to comply with it may result in personal injury.



Use eye protection !



Use gloves!



Do not add water!



This symbol marks important information. Failure to comply with it may result in damage to the unit or the work result may be unsuccessful.



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Safety data sheet for “Wirolyt” glossing fluid

Spare parts list

Circuit diagram

Certificate of conformity

GOST Certification

Labels and stickers

Disposal advice ----- Appendix

Safety instructions

Eltropol 300 is exclusively designed for the electrolytic polishing of Co-Cr partial denture bases using Wirolt polishing solution.

Any other use is considered improper. We shall not be liable for any damage resulting from improper use.

One example of improper use is the heating of water, other liquids, or foodstuffs!

The safety instructions must be followed in order to avoid personal injury or damage to equipment. We shall not be liable for failure to comply with the safety instructions.

General safety instructions

● Place of use

The unit has been designed solely for use in dental laboratories and comparable establishments for research, commercial and training purposes. • The unit may only be installed on an adequately stable surface. • The unit must only be used in dry rooms.

● Operator and operating personnel

The unit must only be operated by dental professionals, or they must provide supervision if trainees or other persons operate unit. • Wear the protective clothing prescribed for use in dental laboratories and observe the rules of conduct. • The unit may only be operated by staff members who are familiar with and follow the instructions of this operating manual. • The operating manual must be easily accessible when the machine is operated. • Observe the national accident prevention regulations in addition to this operating manual.

● Handling the machine

Prior to connection to the power supply check whether the specifications on the rating plate correspond to the supply network. In the case of uncertainty, consult an electrician. • The unit is categorised under protection class 1 and may only be connected to properly earthed power

sources (earth contact sockets). • Modifications of the machine are not permitted. • Always keep signs and stickers such that they are easy to read. They must not be removed. • Check the machine and leads for damage regularly. The machine must not be operated if it has any defects that may result in risks for the employees or third persons. • Protect the leads against heat, oil and sharp edges. The leads must not be used to carry the machine or to pull out the mains plug.

● Care and maintenance

Always switch off the machine and pull out the mains plug before performing care, cleaning or maintenance work. • Only use dry or slightly moist cloths for cleaning. Do not spray the machine with water or immerse it in water.

● Repairs

Repairs may be carried out solely by BEGO customer service or by persons authorised by BEGO customer service. • **Metallic housings** must be grounded properly so as to prevent them from carrying current. Otherwise they are extremely dangerous because the housings may be live due to damage to the machine! Since a check to ensure that the housing is in a de-energized state is mandatory every time the machine has been opened (Germany: check in accordance with DIN VDE 0701-1), only qualified electricians may open the machine! • Only BEGO replacement and wearing parts may be used.

Special safety instructions regarding this unit

The unit is designed to be used with Wirolyt polishing solution.

CAUTION Wirolyt contains glycol and sulphuric acid!

Hazard warnings (R phrases)

R 22 Harmful if swallowed.

R 36/38 Irritating to eyes and skin.

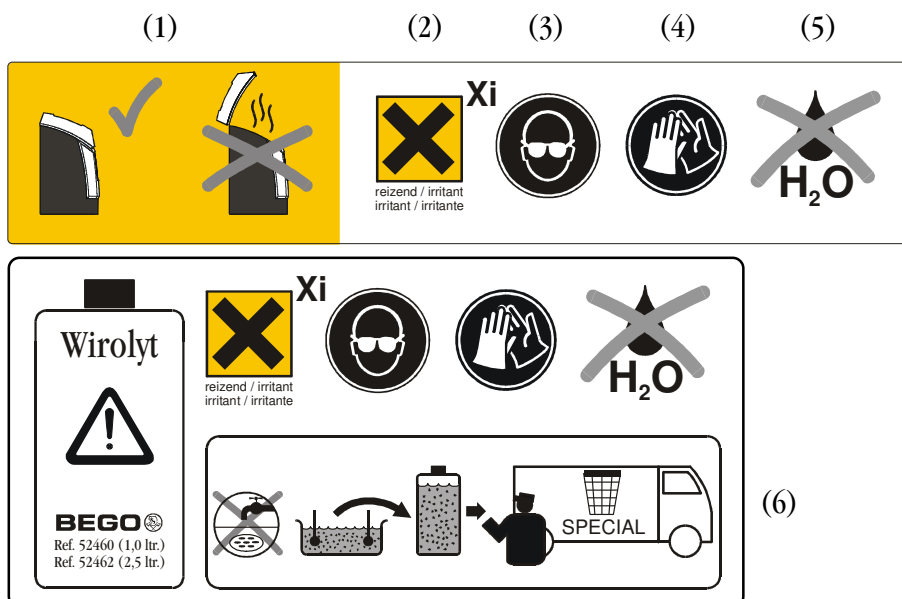
Safety instructions (S phrases)

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

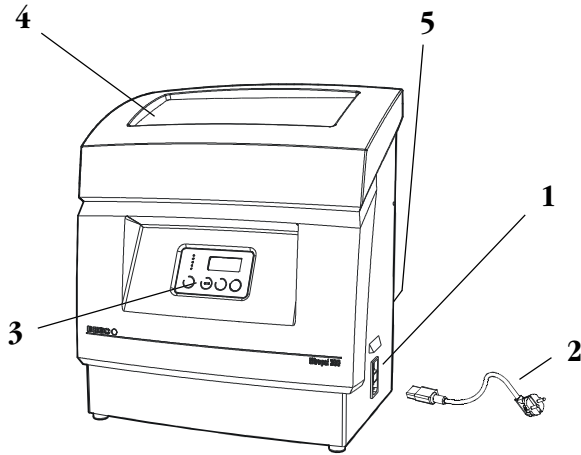
S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

- Only transport or store the unit when **empty of Wirolyt!**
- Only operate the unit when it is closed!
The fumes are a health hazard. (1)
- Wirolyt is classed under the international hazard symbol “Xi Irritant”. (2)
- Avoid contact with skin and eyes! Risk of blinding!
Wear safety glasses and safety gloves! (3), (4)
- **Never add water!**
When mixed, acid and water produce an extreme chemical reaction. (5)
Spitting acid is the consequence!
- Dispose of as hazardous waste! Used Wirolyt contains heavy metal ions – do not allow it to enter the sewer system! (6)



Unit description

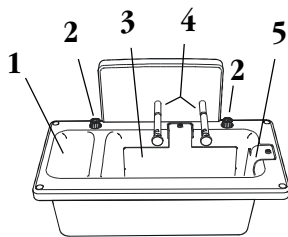


- 1 Main switch / fuse / mains connection
- 2 Power cable (EU / USA)
- 3 Control panel
- 4 Lid/cover
- 5 Voltage selector switch (230 V / 115 V)

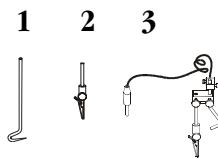
Polishing bath

- 1 Container for utensils (not for water!)
- 2 Contact for supplementary cathode
- 3 Cathode
- 4 Clips for object holder
- 5 Heating element

Polishing bath



Object holder



Object holder

- 1 Object hook
- 2 Crocodile clip with holder
- 3 Supplementary cathode

Eltropol 300 is designed for the electrolytic polishing of Co-Cr partial denture bases. One or two objects may be polished simultaneously.

● Intelligent technology

By gauging the electric current, the Eltropol 300 automatically proposes the optimum polishing time required according to object size and the temperature of the bath. If necessary, the proposed polishing time and current may be adjusted manually.

● Innovative heating concept

The polishing bath is brought to operating temperature and subsequently monitored using a unique procedure. This means that there are no unreliable heating elements and the bath heats up more quickly.

● Wear reduction measures

Due to the use of stainless steel instead of copper, the object holders are subject to considerably less decomposition in the glossing fluid than the usual

copper hooks.

Other measures designed to minimise wear are a reduction in the number of moving parts by means of a magnetic stirrer and an outer casing made of stainless steel with an additional coating of electrolyte-resistant paint.

● Simplified bath emptying

The control panel indicates when it is time to change the polishing solution. A drainage tube on the back of the unit makes it convenient and safe to drain the solution directly into a waste canister.

● Safety

The operating temperature of approx. 40°C is monitored electronically. At temperatures exceeding 60°C the unit displays an error message and cuts out. An additional independent control circuit causes the unit to shut down automatically at temperatures over 70°C. The unit may only be switched on again once it has cooled down.

Scope of delivery, accessories and consumables

Scope of delivery

- Eltropol 300 (115 / 230 V)

Ref. Nr.

26 310

Accessories (optional)

- straight cathode for the supplementary cathode



Ref. Nr.

17 003

with:

polishing bath, 2 magnetic stirrers, 2 object hooks,
10 crocodile clips, 1 supplementary cathode,
1 spare clamp with holder, 2 power cables (EU or
USA plug), documentation

Consumables

- Wirolt polishing liquid (1 litre) 52 460
(2.5 litres) 52 462

Please see the replacement parts list when
purchasing for the first time.

Technical Data

Height / width / depth 452 / 400 / 275 mm

Weight (empty) 10 kg

Capacity of polishing bath 2 litres

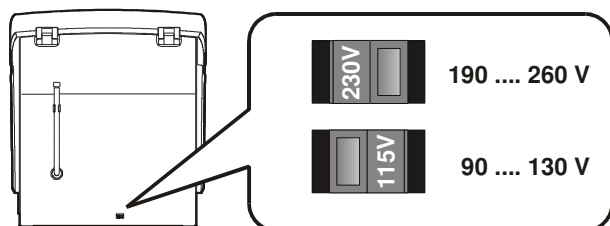
Rated voltage 115 / 230 V, 50/60 Hz

Maximum power consumption 200 W

Noise emission < 70 dB (A)

Installation

- The unit must be placed on a sufficiently stable surface.
- The unit may only be used in an enclosed space.



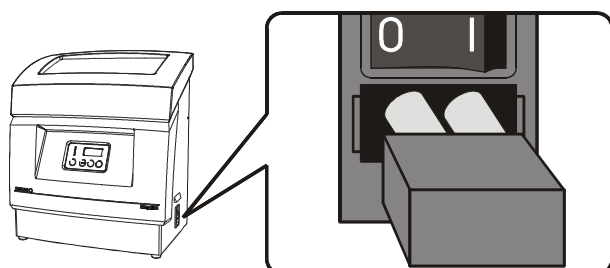
Prior to making the electrical connection, check whether the voltage selector switch (on the rear side) is in the correct position for the mains power supply. In the event of uncertainty consult a specialised staff member.

- The unit is categorised under protection class 1 and may only be connected to properly earthed power sources (earth contact sockets).
- Use the appropriate power cable (EU or USA plug) included with the unit.

Note

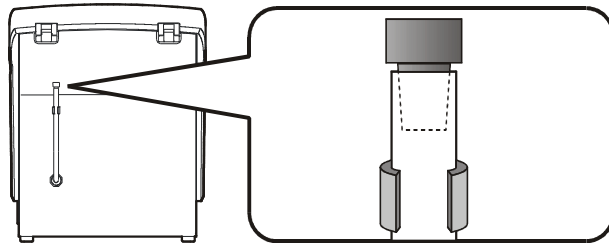
The voltage selector switch is protected in a recess approx. 5 cm inside the back wall of the unit and only visible when sufficient lighting is available. Ex works it is set at 230 V (see adhesive label).

Voreinstellung	: 230 V
preattunement	: 230 V
préreglage	: 230 V
preajuste	: 230 V
preimpostazione	: 230 V

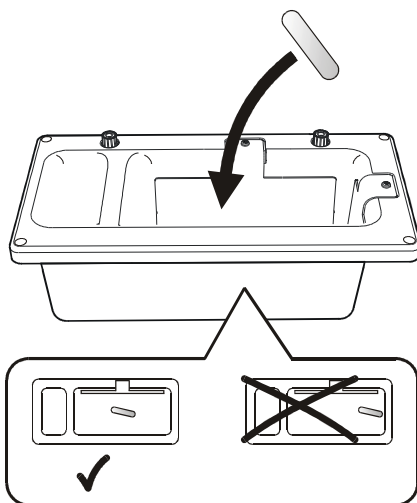


The two 3.15 A fuses secure the entire voltage range from 90 V to 260 V.

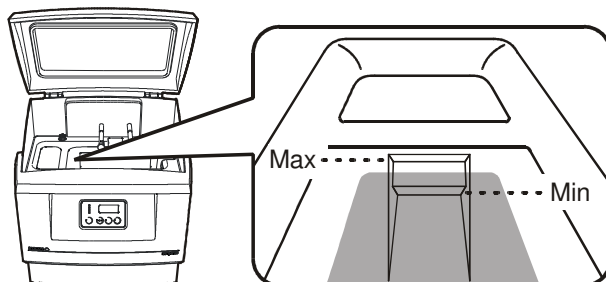
Filling



- The drainage tube must be closed and securely clamped!



- Open the unit cover and position the magnetic stirrer **in the centre** of the polishing bath – only then can the stirrer function properly. (Magnetic stirring only takes place during heating or polishing.)



- Fill the polishing bath (the large bowl) with approx. 2 litres of Wirolyt. The fill level must be between the marks for maximum and minimum.

! If the solution level is too low the unit electronics malfunction!



CAUTION

Wirolyt contains glycol and sulphuric acid!

Avoid contact with skin and eyes!

Risk of blinding!

Wear safety glasses and safety gloves!

Never add water!

When mixed, acid and water produce an extreme chemical reaction. Spitting acid is the consequence!



Only transport or store the unit when **empty of Wirolyt!**

Securing objects



Avoid contact with skin and eyes!
Risk of blinding!
Wear safety glasses and safety gloves!

Never add water!



Polishing only works on clean, oxide-free metal objects. If necessary, blast objects prior to polishing.

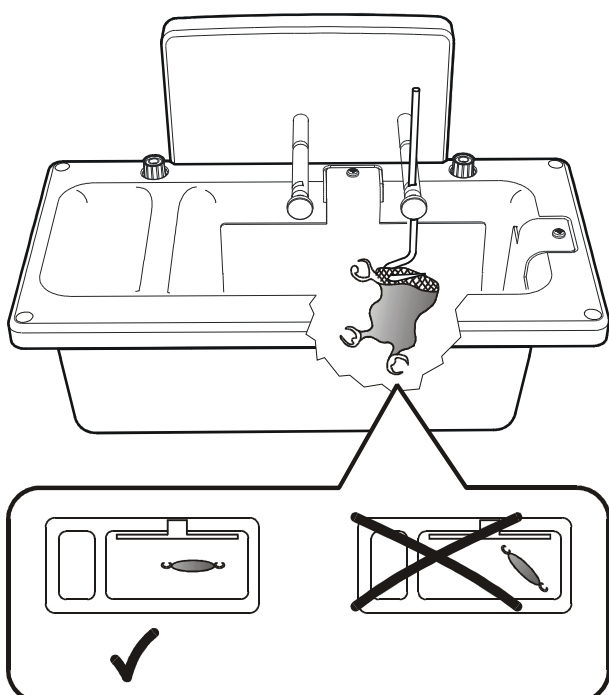


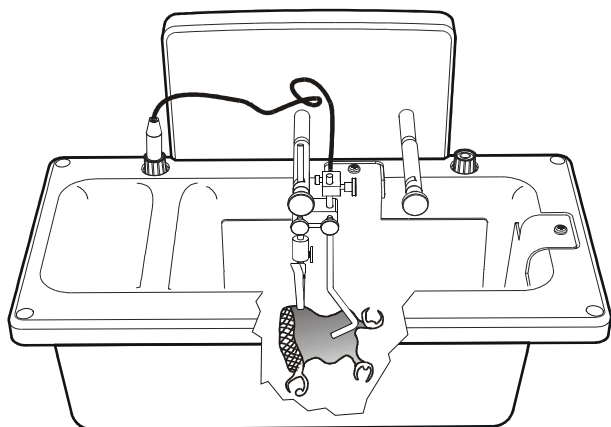
Only use the electrolyte-resistant object holder included with the unit! Copper object holders wear down during polishing and produce sediment, which impedes the magnetic stirring process.



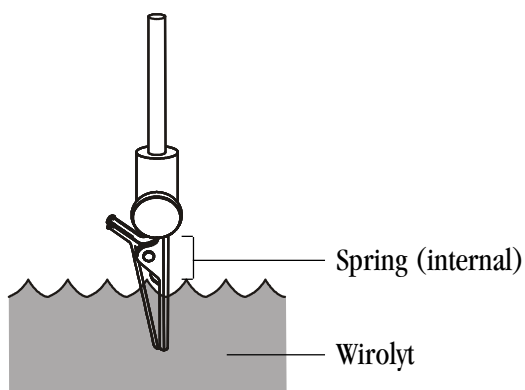
To protect against severe wear during glossing, the tips of the clamps should be covered with masking lacquer.

- One or two objects may be secured and polished simultaneously.
- Securing the polishing object to the object holder: use the retentions to hang it on the hook, or secure the base with the crocodile clip.
- Insert the object holder into the unit and tighten the screws. Please ensure that:
 - the object is fully immersed in Wirolyt. (The springs of the crocodile clip are not permanently electrolyte-resistant and should therefore not be immersed.)
 - sufficient space remains at the bottom of the polishing bath for the magnetic stirrer.
 - the base surfaces of the polishing objects must be aligned **parallel** to the longitudinal sides of the bath. Exposed clasp tips must never point directly towards the cathode, as this would cause too much material to be removed from them!
 - object and cathode must not touch each other (error message E 10).





- The electrolytic polishing current cannot reach deep palates due to screening effects. These spots generally remain matt. The **supplementary cathode** provides the solution. It is mounted as shown, so that the point of the bent rod points as far as possible into the deep palate, without actually making contact.



Note

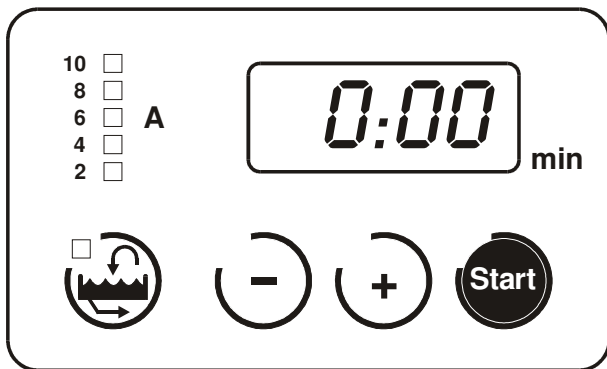
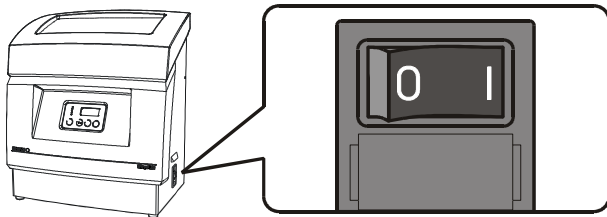
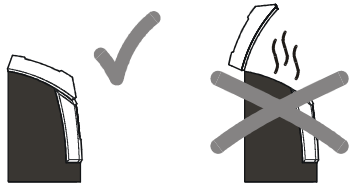


The spring of the crocodile clip is not permanently electrolyte-resistant and should therefore not be immersed.



If necessary, rinse the crocodile clip with water after use. Dry thoroughly afterwards!
Never add water to acid!


Polishing



Avoid contact with skin and eyes!
Risk of blinding!
Wear safety glasses and safety gloves!
Never add water!



Only operate the unit when it is closed.
The fumes are a health hazard.

- Switch on the unit using the main switch:
 - 1 alarm tone;
 - display briefly shows the software version, then 0:00;
 - heating the bath: the 5 LEDs light up in succession – “chaser” effect. After a maximum of 25 minutes the operating temperature of approx. 40°C is reached: the LEDs go out.
 - Secure object to be polished.
 - Press the Start button:
 - the display indicates the polishing time calculated by the unit (according to object size and bath temperature).
The polishing time can also be altered using the plus or minus keys.
 - Start polishing: press the Start button again:
 - the remaining polishing time is indicated on the display (countdown meter);
 - the strength of current during polishing is indicated by the 5 LEDs.
The current strength can also be altered using the plus or minus keys as required.
 - After polishing:
 - triple alarm tone;
 - display shows 0:00.
 - Remove the object holder with the polishing object and rinse off under running water.
- 

If the object is to be polished a second time, allow to dry thoroughly!
Never add water to acid!
- As a general rule, polishing must be effected in two stages. The polishing object must be positioned anew in the bath each time (rotate 180°).
 - If the unit is not needed for longer periods, switch it off.

Note

- Polishing can start before the operating temperature is reached. After 15 minutes, the Wirolyt has already reached approx 30°C. The bath continues to heat up during polishing.
- The necessary polishing time and current strength are both calculated by the unit. These are influenced by the size of the object and the bath temperature. If required, the settings may be adjusted manually:
 - a) The polishing time may be set anywhere between 60 seconds (00:60) and 12 minutes (12:00).
 - b) During polishing the current strength is indicated by the LEDs (ammeter function). In the default setting (level 3 = 100%) the current may attain a maximum of 10 A, however this is only the case when polishing two large objects in a hot bath. The current may be manually limited to 70% (level 2) or 50% (level 1) of the calculated current. The number of LEDs illuminated changes according to level. – After each polishing the unit automatically returns to level 3!
- The polishing process can be interrupted by pressing the Start button.

Press again to call up the polishing time calculated at the outset (not the remaining polishing time). This may now be altered manually. Press the Start button again to start polishing with this setting.
- Uninterrupted polishing may cause the permitted bath temperature to be exceeded. The unit then displays the error message “E30”. Having switched off the unit, wait approx. 1 hour before switching it on again to resume polishing.
- An integrated fan switches on automatically, as necessary, to cool down the unit electronics.

Changing the polishing solution



The more it is used, the less effective the polishing solution becomes. The unit calculates and displays the optimum point at which to renew the solution.

- LED blinks: change solution soon.
- LED lights up: change solution now.



CAUTION

Wirolyt contains glycol and sulphuric acid!

Avoid contact with skin and eyes!

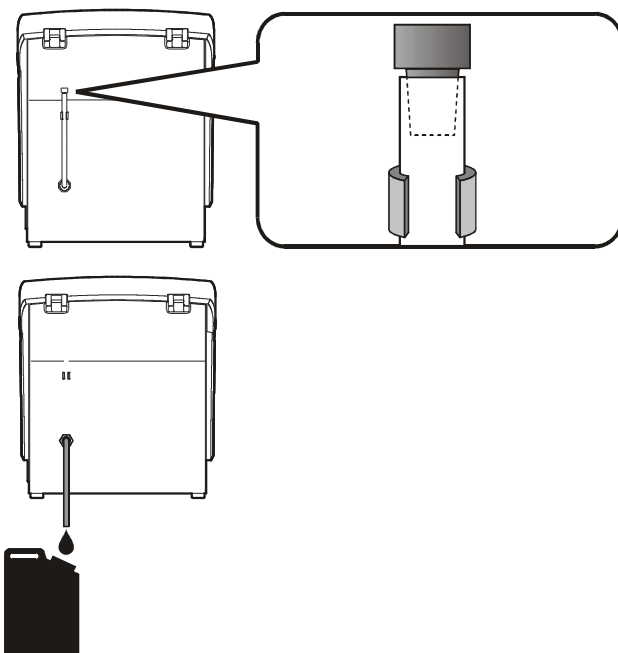
Risk of blinding!

Wear safety glasses and safety gloves!

Never add water!



Dispose of as hazardous waste! Used Wirolyt contains heavy metal ions – do not allow it enter the sewer system!

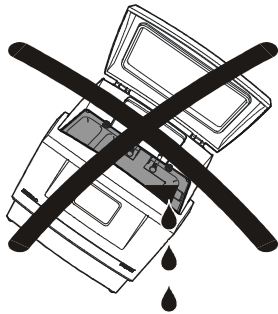


- **Switch off the unit at the main switch and pull the plug out.**
- Carefully turn the unit around without tipping it in order to reach the drainage tube on the back of the unit.
- Pull the drainage tube out of the clamp, hold it upright and remove the stopper. Lower the tube into a suitable canister with a capacity of at least two litres and allow the polishing solution to drain off. Use a funnel if necessary.



Risk of scalding!

The operating temperature of Wirolyt can reach 40-60°C!



Do not tilt the device to empty it!

Injuries are possible.

The device will be damaged.

- Having drained the tube, replace the stopper and fasten securely with the clamp.



Never use water to clean the empty polishing bath!

Rinse out with Wirolyt if necessary.



- Fill the polishing bath with approx. 2 litres Wirolyt - see section "Filling".
- Switch the unit on at the main switch:
The bath begins to heat up. (If the walls of the polishing bath are still warm it can take a few minutes for the heating process to begin.)
- After filling, the monitoring of the polishing solution needs to be reactivated. Press the button and keep it depressed until you hear a long alarm tone.



Care and maintenance

- Wipe the outside of the unit down with a damp cloth as necessary.
- If the bath is empty, the inside of the unit may also be cleaned using a dry cloth. Caution! Polishing solution dregs contain acid and destroy the cloths used!



Avoid contact with skin and eyes!

Risk of blinding!

Wear safety glasses and safety gloves!

Never add water!



Troubleshooting



Switch off the unit before troubleshooting! (exceptions: see *)

Problem	Cause	Solution (pages)
Unit switched on but no display	No electricity “Emergency cut-out”	<ul style="list-style-type: none"> * Connect power lead (8). * Switch on main switch (12). * Electricity supply intact? <ul style="list-style-type: none"> • Set voltage selector switch (8). • Check unit fuse (8). <p>The unit switches off automatically at temperatures over 70°C, and may only be switched on again after approx. 1 hour.</p>
No display, “SOS” alarm tone (3x long, 3x short, 3x long)	Display defective	Contact customer service.
E 10 display	Short circuit	Re-position the object to be polished so that it doesn't touch the cathode (10, 11).
E 20 display	Temperature sensor defective	Contact customer service.
E 30 display	Bath too hot	Switch on unit after approx. 1 hour (13).
E 40 display	Stirrer is stuck	Hang the object higher to ensure the stirrer is able to rotate (10).
Polishing is ineffective	Only one polishing stage Bath is cold Wirolyt is old Too little Wirolyt Polishing current is weak Stirrer missing or not in the right position Object with deep palate	<ul style="list-style-type: none"> * As a general rule, polishing must be performed twice. (12) * Only begin polishing when the bath has heated up sufficiently (13). • Change polishing solution (14). • Top up Wirolyt (9). * Increase polishing current (12, 13). • Check whether the stirrer is lying in the polishing solution (9). * Use the supplementary cathode (11).
Polishing is too effective	Object too close to cathode Polishing current is too strong	<ul style="list-style-type: none"> * Align object in parallel (10). * Protect the clamp tips with masking lacquer (10). * Reduce polishing current (12, 13).