

## Operation manual SOL-TEC - SL

**Dosing station for the fine nebulisation of brine solution for dry rooms, e.g. Tepidariums to create a salty sea climate in the atmosphere of the room.**



### Safety instructions

- 1. Before the installation of a SOL-TEC all materials in the room have to be checked on their corrosion resistance against the saline mixture of water and air both in the adequate steam cabinet and additional and discharged air shafts.**
- 2. Use only pure, disinfected **EOS** brine solution with a salt concentration of app. 5%. EOS brine solution is delivered in a sterile condition in a closed container. Outstanding brine solution is affected by bacterial impact and so should not be used.**
- 3. Consider disinfection instructions and durability of the brine solution! (see point 4.3)**

### Overview

Obey all safety notes and warnings present on the unit.

In case of a malfunction, switch off the unit immediately and prevent a restart. Repair malfunctions promptly.

After any repair work, have qualified personnel check the safe operation of the unit.

Use original spare parts only.

Additional national safety regulations also fully apply to the operation of this unit.

### Accident Prevention Regulations



Comply with the accident prevention regulation

Accident Prevention Regulation Electrical Systems and Equipment to prevent injury to yourself and others.

### Operation of the Unit

Do not perform any work which compromises the safety of the unit.

Regularly check that all safety and monitoring devices are functioning normally.

Do not remove or disable safety devices.

### Installation, Dismantling, Maintenance and Repair of the Unit

Disconnect unit components from power supply prior to maintenance or repair work.

Attaching or installing **additional components** is permitted only with the **written consent** of the manufacturer.

### Electrical



Work on the electrical system must be performed by qualified personnel.

Disconnect unit components from power supply prior to work

In case of a malfunction in the electrical power supply, switch off the unit immediately.

Use only original fuses with the appropriate amperage rating.

Regularly check the unit's electrical equipment. Promptly repair any damage, such as loose connections or burned wiring. After proper electrical installation or repair, test all safety mechanisms (such as grounding resistance).

Installing a humidifier in a room without water discharge requires safety devices to protect against water leakages.

## 2.3 Disposal after Dismantling



**Note:** The operator is responsible for the disposal of unit components as required by law.



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## **1. Application**

The SOL-TEC-SL nebulises brine solution for dry rooms by the use of a two-component jet nozzle (compressed air and brine solution). After a short time a salty sea climate is created in the room.

Due to the variety of setting parameters it is easy to adopt the SOLDOS-SL to the site of operation. The dosing capacity depends also on the room climate (humidity, temperature) and the air circulation rate. In general useable for rooms with a floor space of app. 35m<sup>2</sup>.

### **1.1 Function**

The brine solution is primed out of an air sealed bag (Politainer) by a peristaltic pump. This bag interfolds itself when the liquid brine solution is taken out. This procedure prevents the contamination of brine solution with germs of the ambient air. The peristaltic pump conveys the brine solution to the two-component jet nozzle where it is nebulised and blown into the room by the addition of compressed air.

The compressed air for the nebulisation has a follow-up time of 10 seconds to prevent encrustation at the nozzle and follow-up dripping at the nozzle.

If the brine bag gets empty the nebulisation stops and the green-LED blinks. An electrical output for a malfunction message can be connected. The empty report is realized by an empty switch.

### **1.2 Option: additional functions**

The controller of the SOL-TEC-SL gives also the possibility to equip the unit with additional attractions such as light and sound effects (MP3 sound module). These attractions can be switched-on in parallel to the nebulisation of the brine solution. This offers the possibility to create ambience together with the salt infusion.

## 2. Technical data / components

The SOL-TEC-SL consists of:

- Control housing H200 x B300 x T120mm incl. microprocessor control board.
- Peristaltic pump with rpm-control for the adjustment of the dosing quantity and salt concentration.
- Diaphragm piston compressor.
- Disinfection set.
- Stainless Steel console for 5 l brine bag/ Politainer.
- Two-component jet-nozzle (stainless steel) with cover screen and grommet.
- Empty switch.
- Measurements H580 x W630 x D250mm.
- Dosing performance: max. 3,2 l/h in continuous operation.
- Power consumption: 400 Watt.
- Power supply: plug 230V / 50Hz.
- Sound emission of the nozzle in the room: 75 dBA.
- Sound emission of the compressor in the technical room: 70 dBA.



### 3. Installation

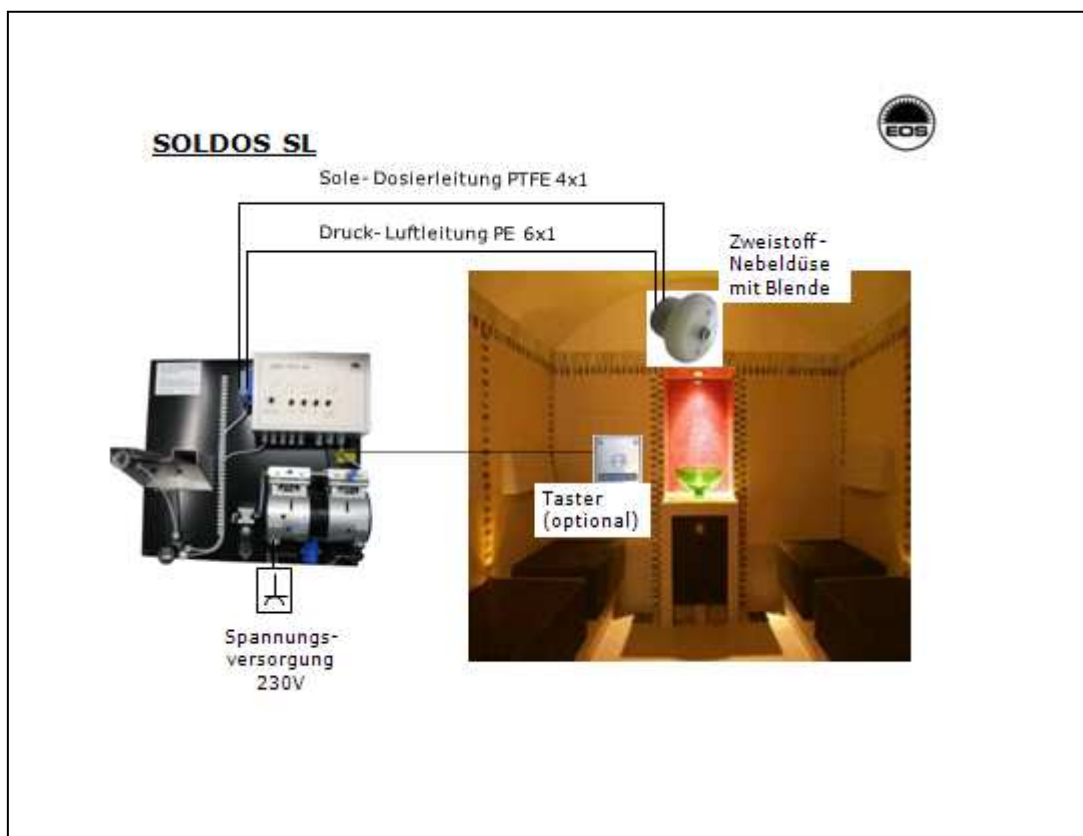
**Before the installation of a SOL-TEC-SL all materials in the room have to be checked on their corrosion resistance to brine solution!!!**

**If the SOL-TEC is used in wooden cabinets the resistance of the wood has to be checked. Additionally the wood has to be cleaned regularly.**

**For the use in Saunas the Sauna Heater has to be resistant against corrosion (stainless steel housing).**

**Attention!!! – please use only pure, disinfected EOS brine with a salt concentration of app. 5%.**

The SOL-TEC has to be installed on a capable place next to the accordant cabinet, but not directly on the back board of the wall as a disturbing noise due to vibration might come up. Electrical supply by power socket 230V/AC.



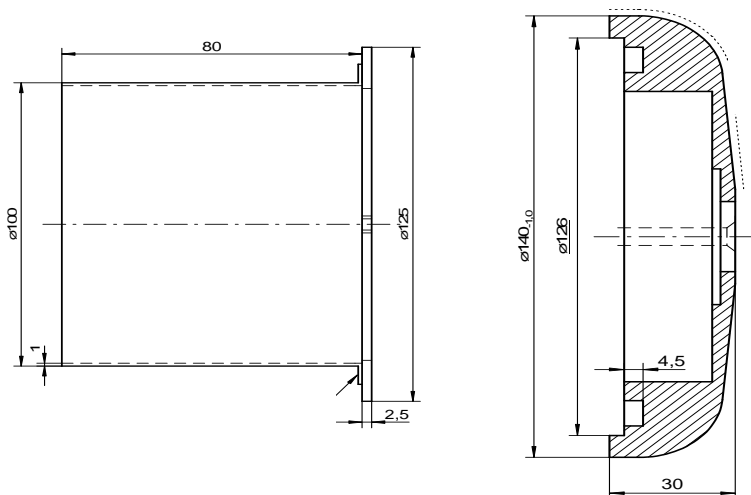
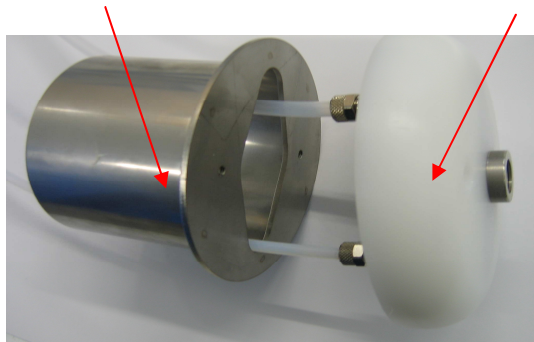
We recommend to install the hose pipe for the brine solution and for the the compressed air in a standard empty conduit d20.

Minimum installation radius of the empty conduits should be 20cm.

#### 4. Assembly of the nozzle

For the installation of the nozzle and the covering screen, a borehole (100 mm) has to be done through the wall of the room (see picture). The grommet/ mounting sleeve has to be glued-in diffusion resistant, in order that the cover screen of the nozzle rests on the cabin surface with the sealing. For the final assembly, the hose lines are directed from the dosing unit through the mounting sleeve and connected on the hose connections of the two-component jet nozzle. Now the cover screen is put onto the mounting sleeve and fixed with the incl. screws.

Grommet/ mounting sleeve      cover screen



When connecting the hose connections, please consider that the compressed air piping and the brine dosing tube are not interchanged. The difference between both hoses helps you here. For the compressed air piping, a PE hose is used – with inside diameter of 6 mm and wall thickness of 1 mm. The saline dosing connection consists of PTFE material – with inside diameter of 4 mm and wall thickness of 1 mm. Therefore, the dosing unit as well as the nozzle is provided by the fitting hose connectors.

**We recommend you to pass the dosing pipes by protective material (insulation). Please consider that the lines are flexible (backwards), for a possible dismounting of the nozzle.**

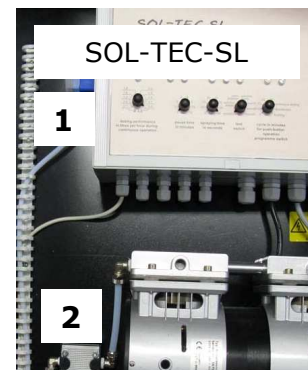
### Connection of the dosing tubes

For the connection of the dosing lines

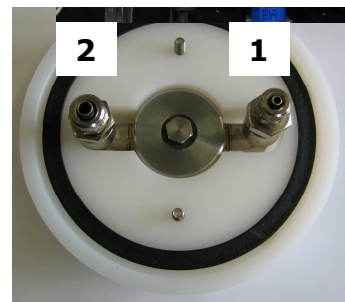
1= brine dosing tube PTFE 4x1mm

2= compressed air piping 6x1mm

Attention: do not crack the dosing tube at the installation the piping!

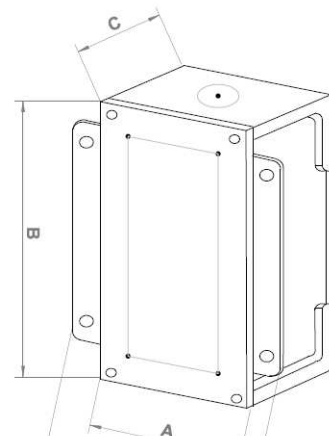
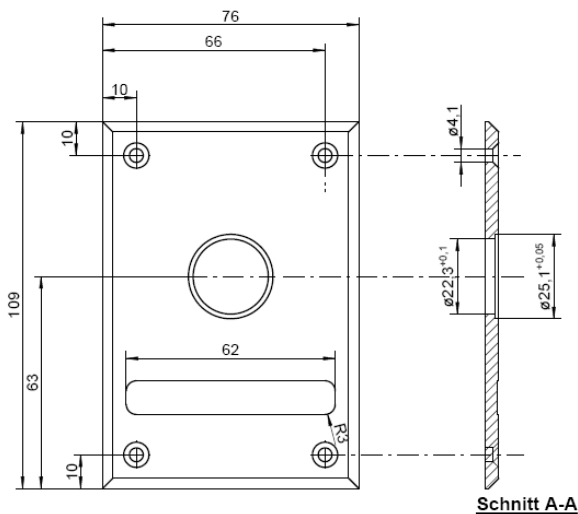


Two-component jet nozzle



### 5. Installation of the push-button (option)

Optionally the SOL-TEC-SL can be operated with a push-button that has to be ordered separately. As an option there are also bonnets for the different push buttons available. In the following you find the measures of the bonnets and of the push-button plates:



	A	B	C	D
UP-Gehäuse 1-fach	66 mm	99 mm	52 mm	96 mm



## 6. Taking the unit into operation

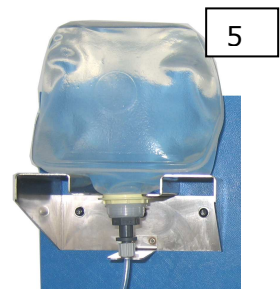
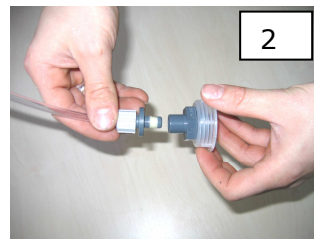
### 6.1 Attaching the brine reservoir to the unit

Before taking the unit into operation the brine solution reservoir has to be attached to the unit. At the programme switch the dosing performance is adjusted by the pause- and spraying time. The programme switch is to set up the type of operation, the test programmes and the cycle time for the push-button operation.

When you take the unit into operation we recommend to set the pause- and spraying time on a middle position (pause time 4 minutes/ spraying time 25 seconds). Starting from this values the times have to be adapted according to the basic conditions at the point of use (measures of the room, steam quantity). The unit has to be switched-on with the main switch on the right sight of the controller before it can be taken into operation.

#### **Attaching the brine reservoir:**

1. Screw-off the original lid of the brine reservoir.
2. Pull out the special lid from the nipple of the suction tube of the SOL-TEC.
3. Screw the special lid onto the brine reservoir.
4. Push the suction tube with nipple into the special lid.
5. Pull the connected reservoir into the console. Pay attention that the flange ring sits correctly in the guiding.



## 6.2 Operation modes

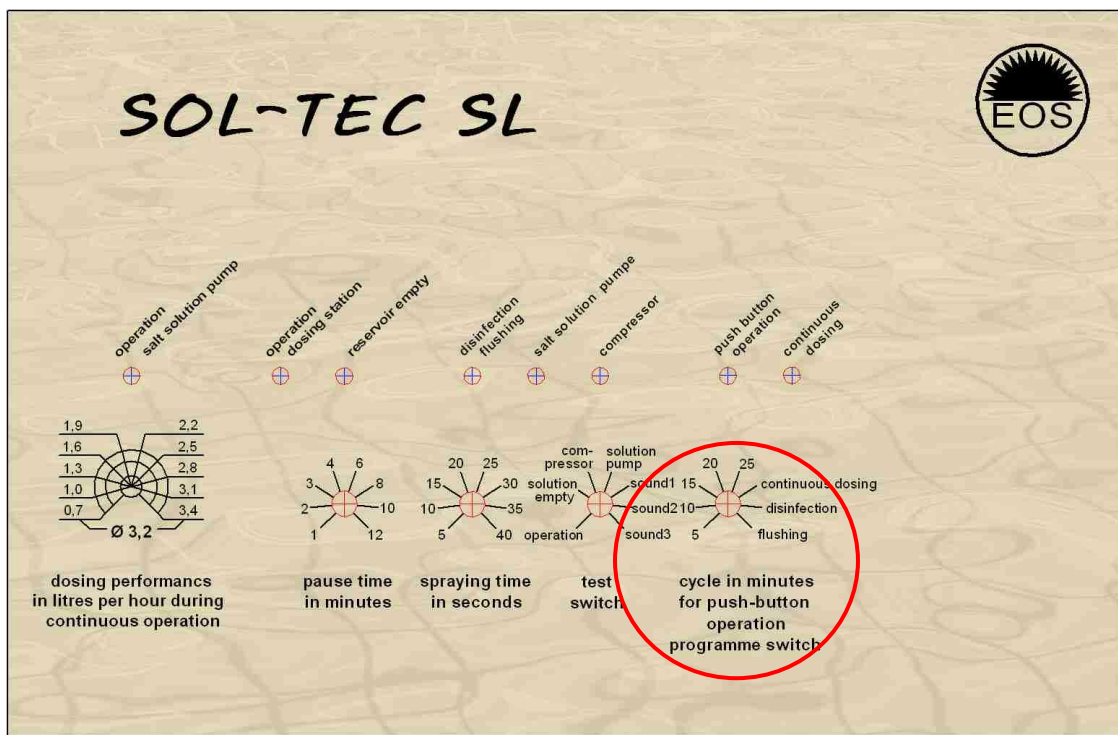
The programme switch is to set the demanded programme. There are 2 general operation modes:

### 6.2.1 Interval operation - „continuous dosing“

At the continuous dosing the programme starts after the unit has been switched-on. The **spraying time** is adjustable by a rotary knob on 5-10-15-20-25-30-35 or 40 seconds. The **pause time** between the single sprays is adjustable on 1-2-3-4-6-8-10 or 12 minutes. This cycle is repeated until the unit is switched-off.

Put the programme switch on „continuous dosing“. The LED „continuous dosing“ shines. Adjust now the spraying- and the pause time.

Example: pause time 4 minutes, spraying time 20 seconds  
The unit sprays brine solution every 4 minutes for 20 seconds.



### 6.2.2 Push-button operation

The push-button has to be connected according to the wiring diagram. The demanded cycle time is adjusted at the programme switch. The LED "push-button operation" shines.

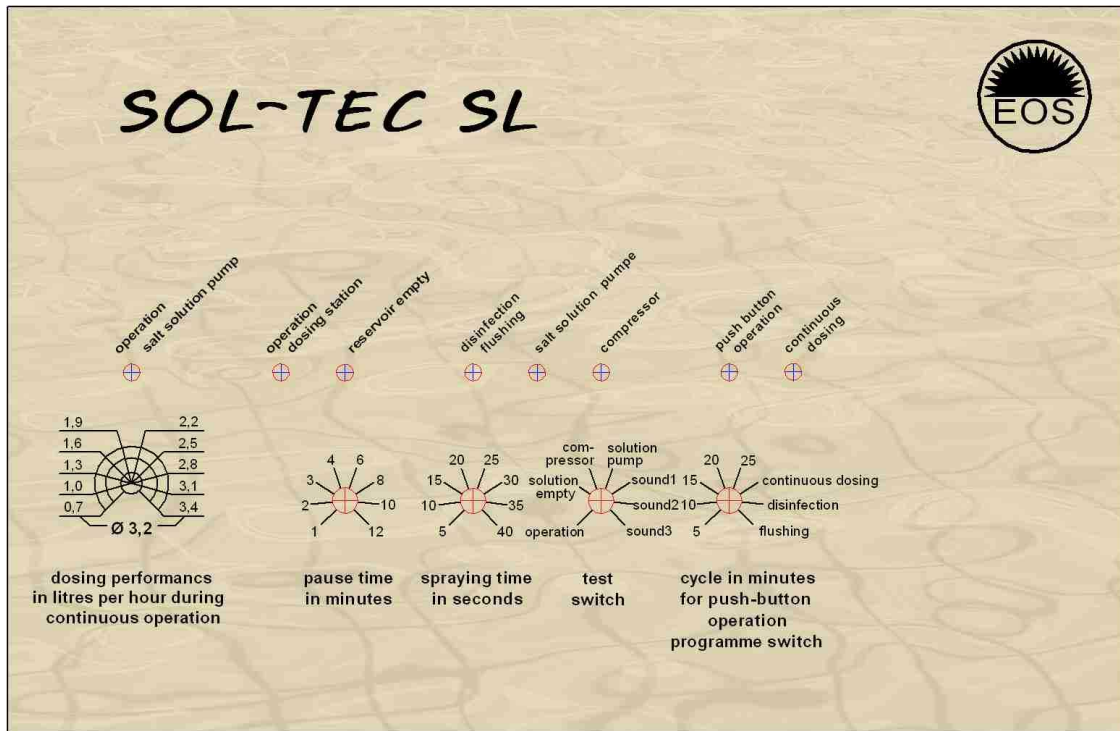
After pressing the connected push-button the same procedure as described above ("continuous dosing") starts. After the lapse of the adjusted cycle time on 5 – 10 – 15 – 20 or 25 minutes the dosing stops and the SOL-TEC is ready for a restart.

When the unit is taken into operation we recommend to set the spraying- and pause time on a medium setting (Pause time 4 minutes, Spraying time 25 seconds, Dosing time peristaltic pump app. 1,6l with hose 3,2). On the basis of these values the settings have to be adapted to the situation on site and the demanded salt intensity by trial.

For taking the unit into operation the unit has to be switched on with the main-switch in the right side of the control housing.

### 6.3 Settings

The single operation parameters can be adjusted at the front plate of the SOL-TEC-SL.



#### **Dosing performance in l/h during continuous operation:**

This stepless Poti is to set the dosing performance of the peristaltic brine pump in l/h. Due to tolerances of some components of the rpm-control and the dosing hose the effective dosing performance can vary +/- 15% of the adjusted dosing performance.

#### **Pause time in minutes:**

Pause time in between the nebulisation intervals.

#### **Spraying time in seconds:**

This rotary knob is to set how long the spraying shall last. During this time the peristaltic pump and the compressor works.

Attention: After the spraying time the follow-up time of 10 seconds of the compressor is activated (see page 4).



**Test switch:**

To test all functions/ components of the SOL-TEC-SL.

**Cycle in minutes for push-button operation – programme switch:**

This switch has several functions:

- 1) Choice of the operation mode (see page 10 – point 6.2).
- 2) Activation of the disinfection resp. flushing (see page 13 – point 7).

## 7. Disinfection instruction

**The disinfection has to be done at every exchange of the brine bag, at least monthly (Before the initial operation, the disinfection has to be done as well)**

**The disinfection has to be done preferably before or after the operation when no bathers are in the room!**

**A disinfection tablette is always included in delivery!**

### Disinfection:

#### Step 1:

Wash out the empty politainer by drinking water, fill up the measuring bottle (200 ml) by cleaned water und add one tablet. Lock up the measuring bottle and shake it until the tablet is solubilized.

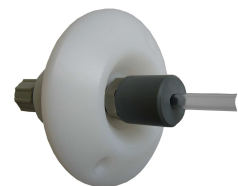


#### Step 2:

Fill in the brine solution into the empty, cleaned politainer and draw up the politainer again.

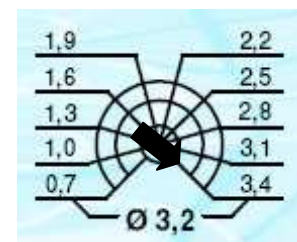
#### Step 3:

Draw up the nozzle adaptor on the nozzle in the room (PVC compact with PE downpipe hose) in order to receive the disinfection and brine solution. By using the downpipe hose, pipe the solution directly into the gully if possible. This is to avoid that the solutions are atomized within the room.



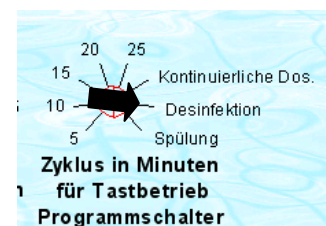
#### Step 3.1

Before starting the disinfection, the dosing performance of the hose pump has to be upgraded to the highest performance in order to assure a complete filling of the hose pipe.



#### Step 4:

Switch on the programme „**disinfection**“. The pump is dosing the solution for 4 minutes now. Within this time, all parts are filled with disinfection solution. Afterwards, the SOL-TEC is disabled for 11 minutes, in order to provide the disinfection solution enough residence time. Meanwhile, the LED for both disinfection and flushing is lighting.

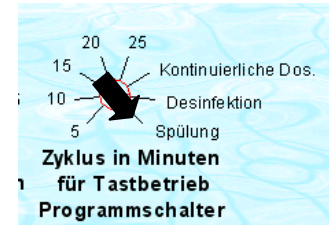


***This procedure complies with the Ö-Norm 6222 part 1.  
The SOL-TEC is securely disinfected.***

### **Flushing:**

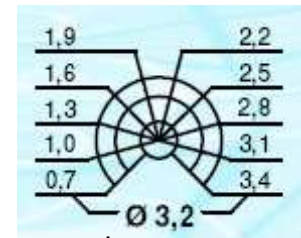
#### Step 5:

Remove the canister (with disinfection solution) and draw the new brine canister with germfree brine solution. Turn the programme switch to "**flushing**". Now, the brine solution is dosing for 4 minutes in order to completely flush out the disinfection concentration.



#### Step 5.1

After the rinsing process, the dosing performance of the hose pump has to be reseted to the performance before the disinfection process.



#### Step 6:

Remove the PVC compact (with the PE downpipe hose) from the nozzle. The SOL-TEC is ready for operation again, when the programme switch is turned back to the initial position.

#### Step 7:

Every disinfection has to be written down in the following protocol.

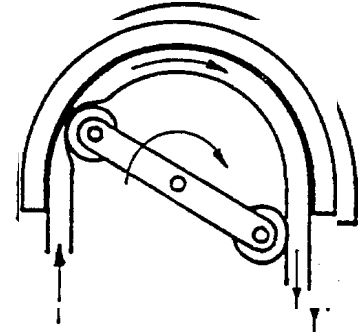
### **Durability**

On every canister, the expiration date is stated. Furthermore, every canister should be consumed within 4 weeks after opening.

## 8. Peristaltic pump

### 8.1 Function principle

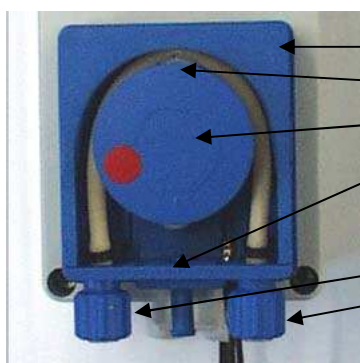
This type of peristaltic pump will reliably meter a chemical solution to the injection point particularly when low dosing rates are required with products which 'gas off' (i.e. self priming). The advancing roller occludes the tube which, as it recovers, draws in fluid that then becomes trapped by the next roller and later expelled from the pump. The technique offers the following advantages:



- No contamination of the fluid or the pump as the fluid is contained in the tube
- Gentle pumping action with accurate flow rates
- The pump is self priming and can run dry
- The pump is quiet running and very simple to handle

### 8.2 Changing the dosing hose

For transport and storage, the peristaltic hose kit is not fitted into the pump to prevent deformation of the hose. For fitting push in the hose holder into the slides at bottom of the pump housing, turn the roller so that the hose comes to the flat part, push the hose into the housing by turning through the roller. After some turns the hose is in the right working position. Then fit the safety disc onto the shaft and the protection cover onto the housing



Pump housing  
 Roller  
 Safety disc  
 Hose holder with tube connectors  
 Suction side  
 Pressure side

**Note**

Do not twist the hose during assembly



## 9. Maintenance

Please consider:

- Change the dosing hose of the peristaltic pump yearly.
- Check the pump head with the roller always when you exchange the brine bag. Check if there 's corrosion or other signs of wear. The rollers have to be even and must not show grooving.
- Check the hose connections if they are seal.
- Check and clean the air filter of the compressor monthly.

When the unit is taken out of operation we recommend a flushing of the whole system with distilled water, to prevent incrustations. Afterward take out the roller of the pump head to discharge the dosing hose.

When the unit is taken into operation again we recommend to do a disinfection.

**Tap water contents calcium that would block the very fine boring of the nozzle**

### Maintenance of the rooms

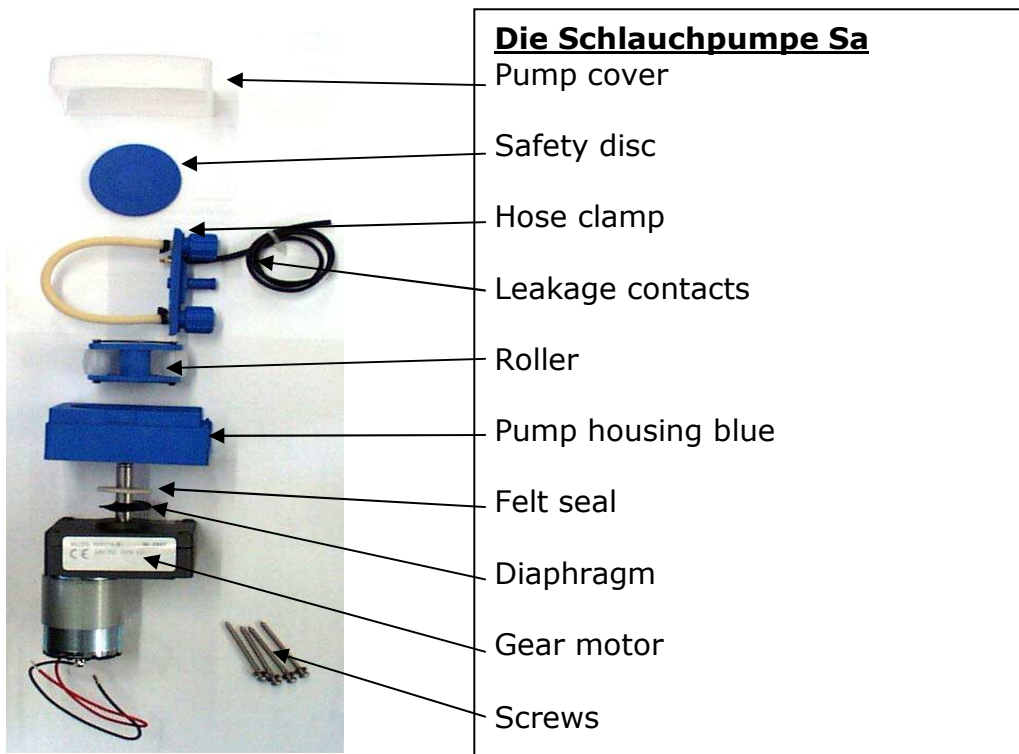
The interior of the room has to be cleaned out with a wet towel at the end of a day, so no deposits or incrustations will come up.





## 11. Spare parts list

20230	Controller SOL-TEC-V2 complete
18840	Control board ED-S1-V5
12764	Main switch 2p A-E 16A d20
10080	Pressure switch Pak-Mini / SOL-TEC 60mm
10083	Protection cover for pressure switches M16
17386	Adapter d50-M10X1 for pressure switch SOL-TEC
20233	Solenebeldüse komplett incl. Blende und Wanddurchführung
20086	Pneumatic nozzle stainless steel
20228	Compressor 230V SOL-TEC SL
10432	Dosing tube PTFE 4x1mm -1m
10435	Dosing tube PE, 6 x 1mm -1m
17437	Canister coupling for SOL-TEC



13557	Pump gear motor Sa
14140	Pump housing Sa blue
13039	Pump roller Sa blue
13633	pump safety disc blue for roller Sa
13260	Dosing hose kit 3,2
13411	Dosing hose kit 1,6
13413	Dosing hose kit for pump 3,2x1,6
13412	Dosing hose kit for pump 1,6x1,6
17519	Brine solution 5% ig 1 kg in politainer
17613	Brine solution 5% ig 5 kg in politainer
17669	Package: 6xbrine solution 1Kg
17667	Package: 6xbrine solution 5Kg
19871	Disinfection tabs for SOL-TEC