

# **Controller V2 for Healing Clay Steam Bath** Treatment



Photo with kindly support of SOMMERHUBER

Original WDT operation manual in English



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### 1. Instructions for the manual

#### 1.1 Validity

This manual describes the installation, taking into operation and operation of the unit.

### 1.2 Target group

Only instructed people are allowed to operate the unit. Connection works can only be done by qualified craftsmen.

#### 1.3 Storage of the manual

The manual has to be stored in the direct surrounding of the installed unit. It has always to be accessible.

#### 1.4 Further information

For further information please contact WDT.

#### 1.5 Used symbols

	Attention! Warning of danger!
	Failure to observe this warning may result in serious injury or death and/or damage to the unit
	Every explanation of this sign has to be considered!
	Attention! Warning of hazardous electrical voltage!
	<b>Danger, Hazardous Voltage:</b> Hazardous electrical current! Failure to observe this warning may result in injury or even serious injury or death.
	Every explanation of this sign has to be considered!
l	<b>Advise!</b> This sign refers to circumstances that can affect the functioning of the unit in a positive as well as in a negative way.



### 2. <u>Safety</u>

### 2.1 Technichal safety advices

WDT does not take the liability for damages that occur due to not considering this manual. The easy and safe operation of the unit assumes a correct transport, storage and installation of the unit. Respect the following advices to minimize the risk in injury or even serious injury or death.

<ul> <li>Installation, Dismantling, Maintenance and Repair of the Unit</li> <li>Disconnect unit components from power supply prior to maintenance or repair work.</li> <li>Attaching or installing additional components is permitted only with the consent of the manufacturer.</li> <li>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.</li> <li>Use only original fuses with the appropriate amperage rating.</li> </ul>
Comply with the accident prevention regulation Accident Prevention Regulation Electrical Systems and Equipment (VBG4/BGVA2) to prevent injury to yourself and others. <b>Operation of the Unit</b> 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.
GeneralObey 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
The installation of the unit has to be done in accordance with the safety norms (e.g. DIN/ VDE) and all other relevant governmental norms and laws. During the operation all covers of the unit have to be closed. Disconnect unit components from power supply prior to maintenance or repair work.



#### 2.3 Use in accordance with regulations

The unit is only designed for the operation in the described use. Other fields of use are not allowed.

### 3. <u>Delivery</u>

- Please look after transport damage when the unit arrived.
- Do not let the goods fall down, do not throw the goods ......!
- Open package carefully!



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

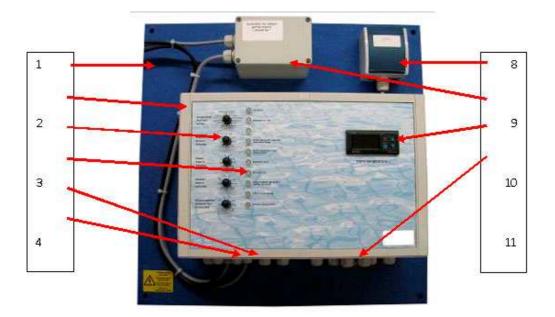


### 4. Short description

The unit controls the complete procedure of Healing Clay Steam Bath treatments in the according cabinets. The following components are controlled: Steam generator, exhaust ventilator, fragrance pump, illumination (option WDT LED RGB Spots) and sound. The controller can alternatively control also only steam room operation.

### 5. Technical description

#### **Controller:**



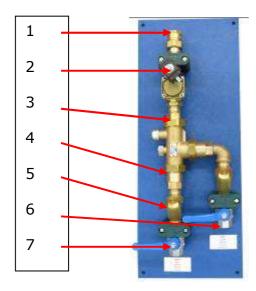
- 1) Mounting board
- 2) Control housing
- 3) Potis (Operation knobs)
- 4) LED-indication
- 5) Socket for alarm button
- 6) Socket for start button

8) Power socket for aroma pump (pump with integrated controller necessary)9) Performance control generator

- 10) Digital Thermostat
- 11) Cable ducts

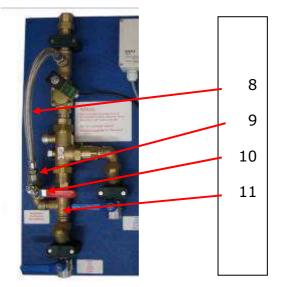


### Water part:1



- 1) Outlet to the nozzles
- 2) Solenoid valve
- 3) Themomixer
- 4) Non return valves in the supply of the mixer
- 5) Filter
- 6) Ball valve cold water
- 7) Ball valve warm water

Option: Water part with thermical disinfection



- 8) Bypass Themomixer Solenoid valve
- 9) Lockable ball valve
- 10) Locker
- 11) Connection warm water

The water parts differ according to the number of seats and so accordingly the number of nozzles in the cabinet:

- WT <sup>1</sup>/<sub>2</sub>" up to 3 seats/ nozzles.
- WT ¾" up to 6 seats/ nozzles.
- WT 1" with 2x  $\frac{3}{4}$ " solenoid valves up to 12 eats/ nozzles.

### 5.1 Measures / Weight

<b>Controller:</b> Width: Height: Depth: Weight:	50 cm 50 cm 15 cm 7,5 Kg		
<b>Water part:</b> Width: Height: Depth:	<sup>1/2</sup> " 20 cm 60 cm 13 cm	<sup>3</sup> ⁄4" 25 cm 65 cm 15 cm	1" 30 cm 70 cm 18 cm
Weight:	5 Kg	6 Kg	7,5 Kg



### 5.2 Electrical connection

230V/AC, 50Hz, 1450W

#### 5.3 Water connection

The needed water connection is according to the quantity of the installed nozzles. If WDT Drizzle Nozzles will be used you have to calculate a consumption of 6 l/min per nozzle.

### 6. Function

#### 6.1 Programme / Programme procedure

#### 6.1.1 Healing Clay Steam Bath

The unit controls the complete procedure of Healing Clay Steam Bath treatments in the according cabinets. After starting the procedure by the start push-button or optional by a key button from outside the cabinet the programme is activated.

With the activation of the programme the room/ cleaning light is switched-off and the effect light (e.g. LED RGB or fibre optic) is switched-on. At the same time the generator gets the signal to go in stand-by and to produce steam on a low performance (the steam performance for stand-by can be adjusted by the performance control on the mounting boards). This time range is called the treatment time.

After this adjustable time (5-16 min) the steam generator gets the signal to produce steam on 100% performance for further adjustable 5-16min. This time range is called the <u>steam time</u>.

Now the <u>shower time</u> starts. Red light over every seat is activated. This signalizes the end of the steam time. 5 seconds afterwards a warm Drizzle Rain sprays out of the nozzles that are installed over every seat. This shower time can be adjusted from 20-200 seconds. After the shower time the treatment is finished, the effect light is switched-off and the room/ cleaning light is switched-on again. The exhaust van is switched-on for the follow-up time. The controller is ready for a re-start.

By removing a bridge on the controller the steam production during the treatment time can be deactivated (see wiring diagram).

The room temperature during the whole procedure is controlled by the room thermostat. The exhaust ventilator is activated, when the set point temperature is reached. The aroma pumps works in parallel to the steam production.

There is the possibility to install an alarm button in the cabinet. If this button is pressed during the treatment, the programme is cancelled and the room/ cleaning light is switched-on.

As an option the technique can be equipped with an MP3 sound module.



### 6.1.1 Steam room

There is the possibility to operate the room not as a Healing Clay Steam Bath but as a classical steam room. The option can be chosen by the setting the programme switch at the controller on "steam room operation". If this function is chosen the room works as a normal steam room with steam production, exhaust ventilator and aroma. The alarm button works as described above, as an option the technique can be equipped with an MP3 sound module.

### **6.2 Function of the components**

### 6.2.1 Controller

The control board is installed in the control housing. It is operated by rotary knobs (Potis). To the right of the potis you find the LED indication. They show which control output is active. To get to the connector block where the actors can be connected according to the wiring diagram you have to open the control housing.

### 6.2.2 Start button

WDT-buttons are Piezo buttons. They are integrated in a push-button plate. From the front these buttons have IP65. They can be ordered with or without ring-illumination around the button.

### 6.2.3 Performance control

The controller has the possibility to give out a 0-10V signal to control the performance of the steam generator. This is to control the generator on low performance in the treatment time. In this operation manual the function is described at the example of a HygroMatik generator.

### 6.2.4 Power socket fragrance pump

The plug of the fragrance pump has to be pushed in the previewed power socket. This power socket is controlled by the controller in parallel to the steam production. The connected fragrance pump has to have an internal controller.



#### Attention

Do not use this power socket as a working power socket! The power socket is only to control the fragrance pump.

### 6.2.5 Digital temperature setting

The thermostat is to adjust the demanded set point room temperature for the steam production.



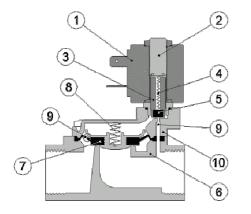
#### 6.2.6 Temperature sensor

A temperature sensor PT100 with 5m cable is included in the scope of delivery.

If the length of the cable is not enough please consider page 14 point 7.4.1 !!!

### 6.2.7 Solenoid valve

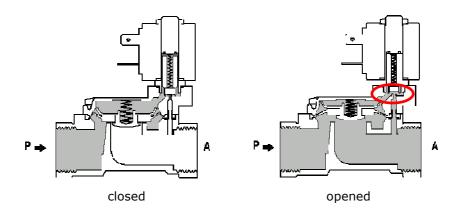
The used solenoid valves are "servo controlled". They are soft closing and opening. This has the advantage that there will be no pressure hits in the tubing.



- 1) Solenoid coil
- 2) Solenoid bush
- 3) Solenoid core
- 4) Spring
- 5) Sealing
- 6) Valve housing7) Diaphragm or piston
- 7) Diaphragm or piston
- 8) Diaphragm or piston spring9) Control- or servo opening
- 10)Valve bonnet

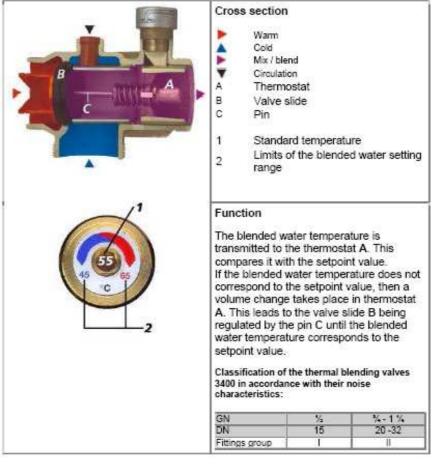
The piston as well as the diaphragm are used as sealing element. A boring connects the space over the diaphragm / piston with the outlet of the valve. The boring is closed by the anchor and the solenoid force lifts the anchor from the boring if the valve is supplied with voltage. So the space over the diaphragm / piston is released and the liquid flows through the valve.

This kind of solenoid valves need a pressure difference between the inlet and the outlet of the valve to work properly.





### 6.2.8 Thermomixer



The warm water temperature has to be at least 5 K higher than the blended water temperature.

Standard temperature set by	Limits of the blended water setting ranges	Change of the blended water temperature rotation of the key		
the factory °C	°C	GN ½-1	GN 1¼-2	DN 65 u. 80
25	20-30			
40	30-45	ca.	ca.	ca.
48	36-53	6 K	44	2 K
55	45-65	00	41	-^^

### 6.2.9 Water filter

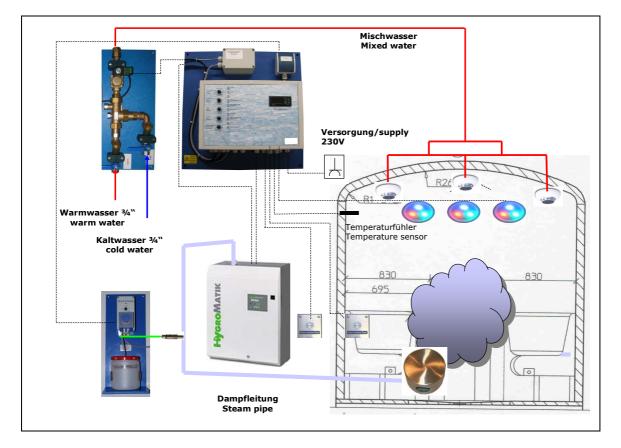
There are water filters installed in the supply lines of the water part. They are to filter particles from the supply water because these particles can disturb the proper function of the unit. These filters can be opened by a wrench and can be cleaned.

### 6.2.10 Ball valve

There are also ball valves installed in the supply to lock the unit from the water supply.



## 7. Installation



### 7.1 Place of installation

- > The unit has to be installed at an easily accessible position for the installation and maintenance.
- > The temperature has to be between +5 and +40 °C.
- The relative humidity should be max. 80 %.

### 7.2 Electrical connection

230V/AC, 50Hz, max. 1450W via power socket.

The power supply of the steam generator is not considered here!!!

### 7.3 Water connection

The needed water connection has to be according to the no. of the installed nozzles and their consumption (see page 8).

Advise! We recommend:
Use only water with a total hardness below 6°dH.
Flush the water tubing before taking the unit into operation.
> We recommend to install an in-line strainer to protect the
water supply of the whole SPA center.



### **7.4 Installation of the components**

The whole technique has to be installed as close as possible to the cabinet.

### 7.4.1 Controller/ Temperature sensor

- > The controller has to be fixed in the technical room.
- All electrical connections have to be done according to the valid norms and regulations.
- The cable for the <u>room temperature sensor</u> must not be installed next to voltage leading cables. If the cable for the sensor has to be longer than 5m, it has to be extended by a screened cable.
- For the installation of the temperature sensor the following points have to be considered:
  - Recommended height: seat height + app. 80cm.
  - Positioning: opposite from the steam inlet, if possible close left or right to the door.



#### Attention:

Electrical works shall only be done by qualified electricians.

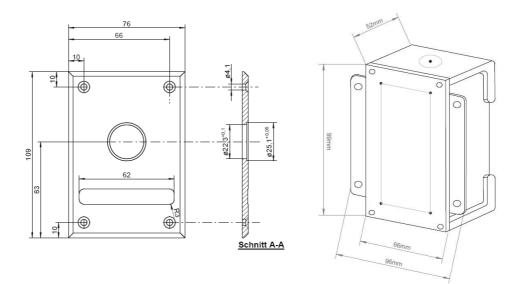
### 7.4.2 Water part

- > The water part has to be installed as close as possible to the cabinet to avoid long tubings.
- > If possible the warm water tubing has to be circulated.
- > All water connections have to be done by a qualified plumber.

### 7.4.2 Push-button

- We recommend using the WDT bonnet for flush mounting for the installation of the buttons.
- > The bonnet has to be mounted according to the enclosed manual.
- The empty-conduit for the button cable has to have an internal diameter of 25mm. The min. bending radius should be 30cm.
- The cable for the button is ready-made and has a plug on both ends. The length of the cable is 7m. On demand the cables can be extended.
- If the push-button plate is installed in humid rooms it has to be sealed against the wall. This has to be done with an elastic sealing kit such as silicon. The executive person is responsible for the sealing.





### 7.5 Connection steam generator

At the example HygroMatik

### 7.5.1 Requirements to the steam generator

- > A steam generator without own temperature control is needed.
- The steam generator is switched on-off by a non-volt contact from the controller.
- > The performance control is realized by a 0-10V signal.

Example: Hygromatik Basic type generator.



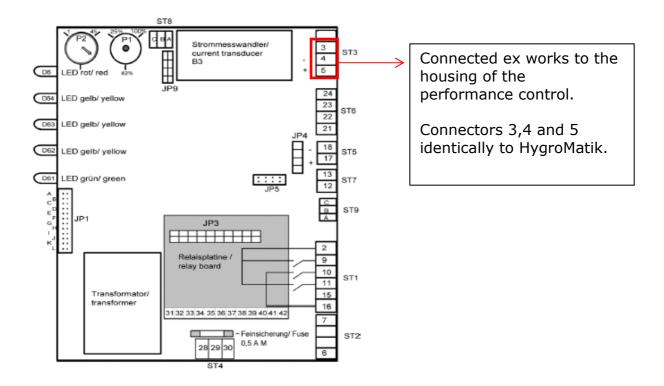
### **7.5.2** Control contacts and their connections

#### Control contact "on-off" (Interlock/ on-off remote)

The interlock / on-off remote is connected on the connectors 1 & 2 of the Hygromatik generator. On this connector there are 230 V/AC. The cable that has to be installed is connected to the connectors 4 + 5 of the controller.

#### Control contact 0-10 Volt

The performance control is connected to the connectors 3, 4 and 5 on the Hygromatik controller. On the connectors 4 and 5 there are 24 V/DC. Connector 3 is the input for the 0-10V signal. The other end of the cable is already connected to the performance control at the controller.





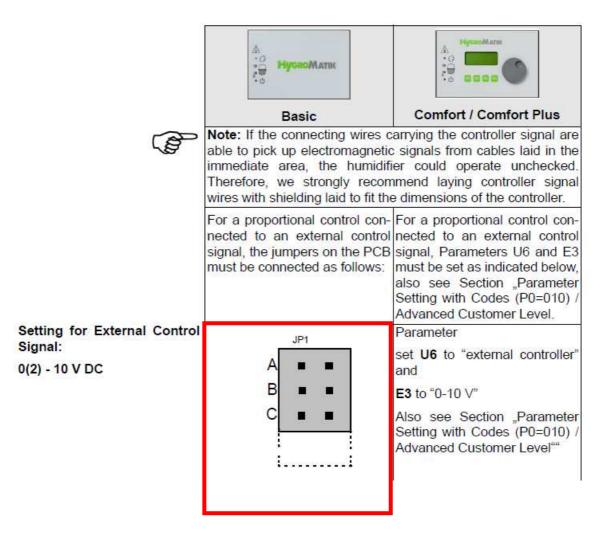
### 7.5.3 Programming of the steam generator

If the performance control is used the steam generator has to be adjusted on the work with this 0-10V signal.

At a HygroMatik Basic series the adjustment has to be done with jumpers as described below.

At a HygroMatik Comfort series the adjustment has to be done by the parameters at the discplay.

Exzerpt from the HygroMatik operation manual:

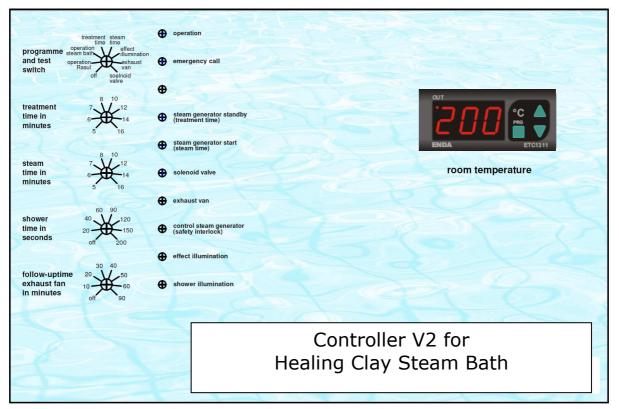




### 8. Operation

All adjustments of the controller, except the performance control can be done at the front plate of the control housing.

### 8.1 Settings



**Programme and Test switch:** This switch is to test every single function of the controller. The according function is indicated by a yellow LED to the right. For **"Healing Clay Steam Bath" operation** the switch has to be set on "clay operation".

**Treatment time in minutes:** This switch is to define the time of the treatment time from 5-16 minutes.

**Steam time in minutes:** This switch is to define the time of the steam time from 5-16 minutes.

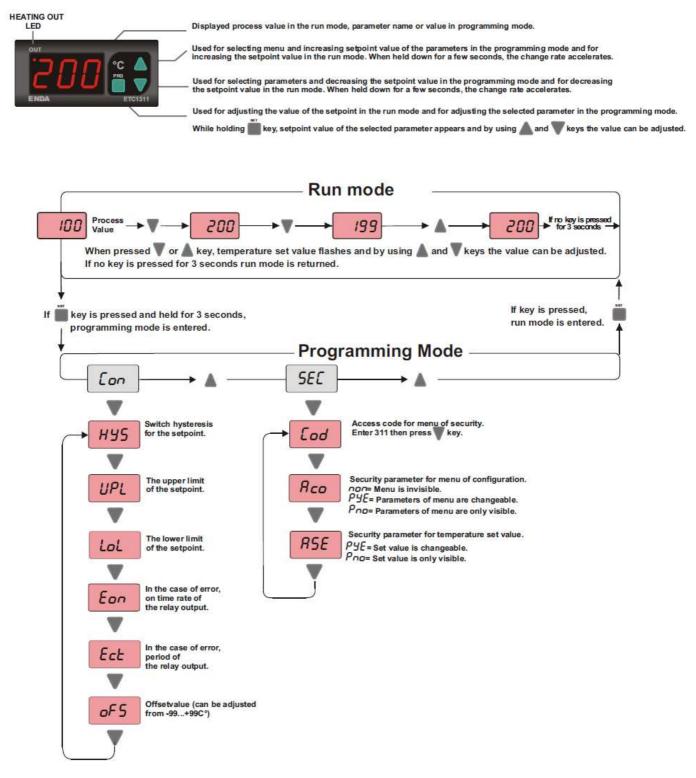
**Shower time in seconds:** This switch is to define the shower time from 20-200 seconds.

**Follow up time oft he exhaust fan:** This switch is to define the working time of the ventilator after the whole treatment is finished. This is necessary to dry out the cabinet.



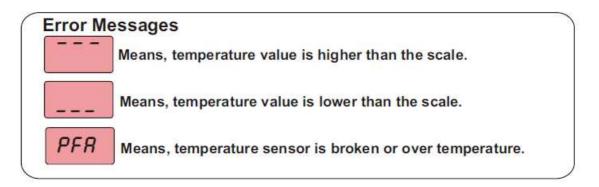
#### 8.2 Setting of the room temperature

The room temperature is set by the thermostat at the front panel of the control housing.





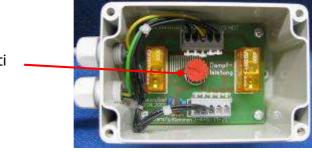
	PARAMETER TABLE				
Con	Menu of Configuration parameters	MIN	MAX	UNIT	DEF.SET
HYS	Switch hysteresis for the setpoint. (When temperature falls to SET-HYS, output relay becomes active.)	1	20	°C	1
UPL	The upper limit of the setpoint.	LoL	600	°C	600
LoL	The lower limit of the setpoint.	0	UPL	°C	0
Eon	In the case of error, on time rate of the relay output.	0	100	% Ect	0
Ect	In the case of error, period of the relay output.	10	250	sec	30
oFS	Offsetvalue (can be adjusted from -99+99C° to a desir	ed value	;)		1
SEC	Menu of Parameter security				
Aco       Security parameter for menu of configuration.         non= Menu is invisible.         PYE= Parameters of menu are changeable.         Pno= Parameters of menu are only visible.					
RSE	Security parameter for temperature set value. PYE= Set value is changeable. Pno= Set value is only visible.				



### 8.3 Adjustment of the performance control

For the adjustment of the lower performance of the steam generator during the treatment time you have to open the housing of the performance control. In the interior of the housing you find a Poti to adjust the performance.

Poti







#### Advise!

This adjustment has to be checked over a longer period of time.

Please consider that the adjustment must not be choosen to low.

### 9. Taking into operation

Pre-conditions for taking into operation:

- > All electrical connections have to be done properly and doublechecked.
- > The connections to the steam generator have to be connected.
- > The steam generator has to be programmed on external control.
- > The water pipes have to be flushed.
- > The water connections have to be done properly.
- All connected components have to be installed according to the operation manuals.

If all pre-conditions are fulfilled the units can be supplied with voltage. Switch the controller on by the main switch on the right side of the control housing. While booting the green operation LED blinks. Now the settings at the front plate can be done. Now we recommend testing the components by the test switch. The test functions are time limited. If the tests have been successfully the treatment can be started by the push-button.

### 10. Taking the unit out of operation

When the unit is taken out of operation the following points have to be considered:

- > Close the ball valves of the water supply.
- > Empty all water tubings.
- > Switch the controller of by the main switch.



### 11. Maintenance

The technique has to be maintained annually. At a maintenance the following protocol has to be considered:

	Markey work II		↓ to be do	ne!	
1.	<u>Water part</u> ↓		1		
<u>1.1</u>	check solenoid valves in test function	OK	ù	exchange	[]
1.2	solenoid valve diaphragms all every two years	OK		exchange	[]
1.3	clean pre-filter	OK	[]	clean	[]
1.4	filter pressure gauge	OK	[]	clean	[]
1.5	check tube cutter	OK			
1.6	check function of thermo mixer	OK			
2.	Fragrance pump				
2.1	function	OK	[]	exchange	
2.2	valve inserts of the pump every two years	OK		exchange	[]
2.3	diaphragms of the pump every two years	OK	[]	exchange	[]
2.4	function of the dosing valve 3/8"	OK	[]	clean	[]
2.5	check dosing tubes	OK	[]	exchange	[]
<u>2.6</u>	function empty switch	OK	[]	exchange	[]
3.	Nozzles				
<u>3.1</u>	spraying pattern in test function	ок	[]	clean []	
3.2	view of the nozzles	OK	[]	clean []	
4.	Controller				
4.1	Test all functions	OK	[]		
4.2	All knobs present?	OK	[]		
4.	Miscellaneous				
	Clean the whole unit		[]		



# 12. Trouble shooting

Fault	Possible reason	Solution
- "LED operation"	-no voltage supply?	-check voltage supply
does not burn	-main switch off?	-check switch
	-fuse defect?	-check fuse, see wiring diagramme
<ul> <li>Controller without</li> <li>function</li> <li>"LED operation"</li> <li>blinks</li> </ul>	- test switch on test function?	-check settings at the front plate
<ul> <li>one of the three times (treatment, steam, shower) not working</li> </ul>	<ul> <li>potis for the time adjustment on "0"?</li> </ul>	-change settings
<ul> <li>fault of the temperature adjustment</li> </ul>	<ul> <li>temperature sensor (PT 100) defect?</li> </ul>	-change sensor
	-thermostat defect?	- change thermostat
- controller does not	- cabling of the sensor	-repair
react to push button	defect? - push button defect?	-change
- components do not react	- control output/ does relais in the housing switch/ close?	-change
<ul> <li>steam generator not working</li> </ul>	<ul> <li>internal fault of the steam generator?</li> </ul>	see manual steam generator
	<ul> <li>wiring of "interlock/ on- off remote" see page 16 correct?</li> </ul>	check and repair if necessary
	<ul> <li>performance control not working?</li> </ul>	check and repair if necessary
	-performance too low?	check settings
- solenoid valve (SV) does not work	-SV has control voltage?	- check
correctly	-SV coil defect?	<ul> <li>check and change if necessary</li> </ul>
	-SV polluted?	<ul> <li>check and change if necessary</li> </ul>
	-SV-diaphragm defect?	<ul> <li>check and change if necessary</li> </ul>



Fault	Possible reason	Solution
<ul> <li>water temperature too hot/ cold</li> </ul>	-thermomixer polluted/ calcification at the mixer?	-change
	-defect in the warm/ cold water supply?	-check/ repair
	<ul> <li>pressure difference</li> <li>between warm and cold</li> <li>water higher 0,3 Bar?</li> </ul>	- check/ repair

### 13. <u>Wiring diagramme</u>



**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.

You find a wiring diagramme of each controller in the attachment and in the control housing.

### 14. <u>Spare parts</u>

Use original WDT spare parts only.

Part no	Description
Controller	
21701	Controller complete in housing
18840	Control board ED-S1-V5 A 10-outputs 230V/AC
	Attention SL 12 + 13 equipped
	Thermostat ENDA_ETC1311
	Temperature sensor PT100
16502	Performance control in hosuing
16503	Control board – Steam
16841	Fuses 2x250mA
16842	Fuses 2x1,25A
17355	Fuses 2x6,3A
	·
Button	

19011 Pu	Push button plate 1-fold
18741 pt	oush button with ring illumination 24 VDC, blue
21030 Pu	Push-button housing 1-fold, in-wall housing 99x66x52

Water part	
21699	Water part 1/2" complete up to 3 nozzles
16511	Water part 3/4" complete up to 6 nozzles
21699	Water part 1" complete up to 12 nozzles



Options	
21083	Thermical disinfection (WT $\frac{1}{2}$ " + $\frac{3}{4}$ ")
21085	Thermical disinfection (WT 1")
10423	Ball valve G 1/2"
10424	Ball valve G 3/4"
11479	Filter Ms 1/2"
12887	Filter Ms 3/4"
14680	Solenoid valve Ms 1/2" - 230VAC 2/2
17146	Solenoid valve Ms 3/4" - 230VAC 2/2-Wege
13082	Solenoid valve plug with LED with cable 1,5m
17444	Thermomixer 1/2" DN 15 range 30-45°C complete
	with 3 screwings (2 with non return valves)
17808	Thermomixer 3/4" DN 15 range 30-45°C complete
	with 3 screwings (2 with non return valves)
13527	Drizzle nozzle 70°
13878	Cover screen for Drizzle nozzle - white
13878-1	Cover screen for Drizzle nozzle - black

#### 15. Contact

#### **WDT**

Werner Dosiertechnik GmbH & Co. KG Hettlinger Str. 17 D-86637 Wertingen – Geratshofen

Tel.:	+49 (0)8272/ 98697- 0
Fax:	+49 (0)8272/ 98697- 19

E-Mail:	<u>info@werner-dosiertechnik.de</u>
Website:	http://www.werner-dosiertechnik.de