



NÜVE SANAYİ MALZEMELERİ İMALAT VE TİCARET A.Ş

ST 30

SHAKING WATER BATH

USER'S MANUAL



Dear Nüve User,

We would like to take this opportunity to thank you for preferring this Nüve product. Please read the operating instructions carefully and keep them handy for future reference.

Please detain the packing material until you see that the unit is in good condition and it is operating properly. If an external or internal damage is observed, contact the transportation company immediately and report the damage. According to ICC regulations, this responsibility belongs to the customer.

While you are operating the instrument please;

- obey all the warning labels,
- do not remove the warning labels,
- do not operate damaged instrument,
- do not operate the instrument with a damaged cable,
- do not move the instrument during operation.

In case of a problem contact your Nüve agent for an authorized service or maintenance.

The validity of the guarantee is subject to compliance with the instructions and precautions described in this manual.

Nüve reserves the right to improve or change the design of its products without any obligation to modify previously manufactured products.

Information contained in this document is the property of Nüve. It may not be duplicated or distributed without its permission.

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WARRANTY CERTIFICATE

1. Nüve warrants that the equipment delivered is free from defects in material and workmanship. This warranty is given for a period of two years. The warranty period begins from the delivery date.
2. Warranty does not apply to parts normally consumed during operation or general maintenance or any adjustments described in the operating instructions provided with the instrument.
3. Nüve does not accept any liability in case where the goods are not used in accordance with their proper intent.
4. The warranty may not be claimed for damages incurred during the shipment, for damages resulting from improper handling or use, abuse, fire, liquid spillage, tampering or unauthorized repairs by any persons, use of defective or incompatible accessories, exposure to abnormally corrosive conditions, use of the product in non-standard environmental conditions, including but not limited to failure to meet requirements of ambient temperature, lubrication, humidity or magnetic field influences, from the defects in maintenance, negligence, bad functioning of auxiliary equipment, in the case of force majeure or accident and incorrect power supply.
5. In the event of failure, Nüve shall be under no liability for any injury, or any loss or damage as the result of the failure other than the guarantee conditions.



BEFORE OPERATING THE INSTRUMENT THIS MANUAL SHOULD BE READ CAREFULLY.

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THE VALIDITY OF THE GUARANTEE IS SUBJECT TO THE OBSERVATION OF THE INSTRUCTIONS AND PRECAUTIONS DESCRIBED IN THIS MANUAL.



Lifetime of the device is 10 years.

PLEASE REGISTER ONLINE TO VALIDATE WARRANTY:

To register your warranty online, please visit our web page **www.nuve.com.tr** and fill in **Warranty Registration Form**.

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SECTION 1

INTRODUCTION

1.1 USE AND FUNCTION

ST 30 shaking water bath is designed to be used in microbiology, biotechnology, research and industrial laboratories mainly tissue culture, bacterial incubation, enzyme reactions, fermentation and other general and special applications.

ST 30 maintains incubation and heating temperatures between 5 °C above the ambient temperature and 99.9 °C and keeps the temperature stable within the given tolerances. Besides heating, ST 30 has a shaking function. The shaking speed can be set between 20 rpm and 250 rpm.

ST 30 has a microprocessor control system. The heating is based on PID control system. There are digital display both for heating and shaking functions. Each function for temperature and shaking has timer which can be programmed up to 99.9 hours including hold position.

Microprocessor control system will shut down the temperature sensor and in case of malfunctions that may occur in the control system, alarm system will be activated and the user is warned visually and audibly. The study data are recorded in the memory and can be transferred to external USB memory. At the same time, unauthorized persons have been blocked permission to change parameters with improved password menu.

The tank of ST 30 is made of stainless steel and all the materials in contact with liquid are made of stainless material. The tank is insulated with glass wool for operating homogenous temperature distribution.

The ST 30 water bath is manufactured according to following standards;

EN 61010-1, EN 61010-2-051, EN 50419, EN 61326.

This device is in compliance with WEEE Regulation.

SECTION 2

TECHNICAL SPECIFICATIONS

2.1 TECHNICAL SPECIFICATIONS TABLE

Technical Specifications	ST 30
Temperature range	Ambient temperature +5°C / 99.9°C
Temperature sensor	Fe – Const.
Control System	N-Prime™
Temperature set and display sensitivity	0.1°C
Temperature variation (37 °C)	< ± 0.3 °C
Temperature fluctuation (37 ° C)	±0.1 °C
Shaking speed	20 - 250 rpm
Shaking speed adjustment sensitivity	1 rpm
Timer	1 minute – 99.9 hours + hold position
Delayed Start Timer	1 minute – 99.9 hours
Memory	3000 data*
Power supply	230 V, 50 Hz.
Power consumption	1550 Watt
Tank volume	30 lt
Internal material	Stainless steel
External material	Epoxy-polyester powder coated stainless steel
Internal dimensions (WxDxH) mm	300 x 505 x 190
Overall dimensions (WxDxH) mm	303 x 626 x 406

* Shows the number of lines for each work done. Temperature, time and if there is error code consist of 1 line.

2.2 OPTIONAL ACCESSORIES

K 04 197 plexiglass lid (Temperature resistance 60 °C)

K 52 004 stainless steel lid

TUBE RACK AND SHELVES

A 08 051 Tube rack 52xØ13 mm

A 08 050 Tube rack 30xØ16 mm

A 08 021 Tube rack 27xØ18 mm

A 08 049 Tube rack 12xØ30 mm

R 01 015 6x250 ml shelf

R 01 078 12x100 ml shelf

R 01 038 4x500 ml shelf

R 01 079 2x1000 ml shelf

R 01 036 6x100 ml shelf



SECTION 3

PRECAUTIONS AND LIMITATIONS OF USAGE

- Do not operate the instrument for purposes other than its main purpose.
- The instrument should only be used by authorized and trained staff after the instruction manual has been read carefully. Only authorized technical staff can handle the product in case of a failure.
- Only original spare parts and original accessories supplied by Nüve should be used.
- Correctly grounded power supply should be used.
Check the following carefully,
- Liquids are not heated in sealed containers;
- The samples which may liquefy and expand are not in a closed container.
- The set temperature is not higher than the boiling points of the samples;
- The sizes of the containers of the liquids which may expand during heating are so big that they do not overflow;
- The set temperature does not destroy the structure of the samples;
- The vapor and gases generated during the operation are not harmful to human health or flammable or explosive.

SECTION 4

SYMBOLS

	<p>Symbol in the operating instructions:</p> <p>Attention, general hazard area. This symbol refers to safety relevant warnings and indicates possibly dangerous situations. The non-adherence to these warnings can lead to material damage and injury to personal.</p>
	<p>Symbol in the operating instructions:</p> <p>This symbol refers to important circumstances.</p>

SECTION 5

INSTALLATION

5.1 ENVIRONMENTAL CONDITIONS

The water bath is designed to operate safely under the following conditions:

- Indoor use only
- Ambient temperature: 5°C to 40°C.
- Maximum relative humidity for temperature up to 22°C: 80%.
- Maximum altitude: 2000 m.
- Temperature for maximum performance: 15°C / 25°C.

5.2 HANDLING AND TRANSPORTATION

All handling and transportation must be carried out by using proper equipment and experienced staff. The instrument must be supported underneath and never be turned upside down.

5.3 UNPACKING

Open the packing cardboard box. Remove the nylon packing wrapped around the device. The items provided with the device are listed below, please check them.

- 1 ea. user's manual
- 1 ea. warranty certificate
- 1 ea. power cable

5.4 MAINS SUPPLY

The water bath requires 230 V, 50/60 Hz.

Please make sure that the supplied mains matches the required power ratings which are written on the name plate of the instrument located at the back of the steam sterilizer.



Always plug-in the instrument to correctly grounded sockets.



A supply fitted with a circuit breaker should be used for protection against indirect contact in case of an isolation fault.

5.5 POSITIONING

- Check that no damage occurred during transportation.
- Check that the positioning is suitable for the users.
- Support the water bath underneath and carry it to its place carefully.
- Make sure that the bench that the water bath is positioned is resistant to the weight of the instrument and vibration free.

- Check that the water bath is stable on its four pads.
- Check that the positioning of the water bath prevents interference with other equipment in the near surrounding.

5.6 GENERAL PRESENTATION



Figure 1

5.7 CONTROL PANEL

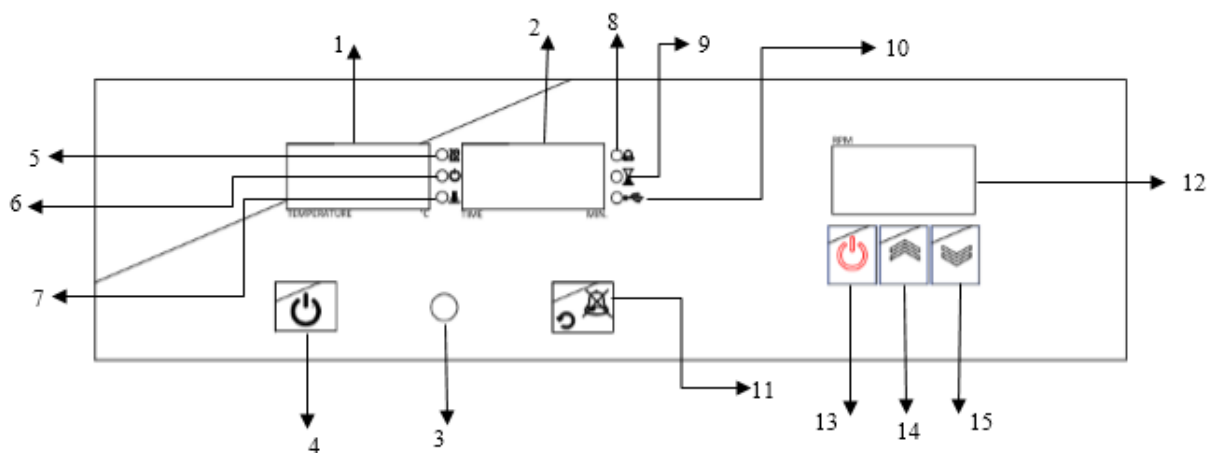


Figure 2

01- Temperature display	09- "End of the program" Lamp
02- Time display	10- Usb Lamp
03- Encoder Button	11- Back / Alarm Mute Button
04- Start / Stop Button	12- Shaking speed display
05- Heating Lamp	13- Shaking process start / stop button
06- "Operating the program" Lamp	14- Shaking speed value increase button
07- Data Transfer Lamp	15- Shaking speed value decrease button
08- Alarm Led	

5.7.1 Explanations and Functions for Display and Control Panel

01-Temperature Display

This display shows

Sterilization chamber temperature during "stand-by" and during the operation (thermometer position),

During program preparation, the temperature setting values or the alarm setting values, Failure codes,

EoF warning when power is interrupted,

The set temperature values and alarm values.

02-Time Display

This display shows the values set for time during program preparation. Also; this display shows the time values in the control of the settings.

03-Encoder Button

The encoder button has two physical movements. The button turn clockwise and anticlockwise to increase or decrease the temperature and time values of the program. Also, the button press for select / confirm.

04-Start / Stop Button

Used button to start the device to operating at set values or to stop the operation.

05-Heating Lamp

The led is "on" during heating, it indicates that the heating process is carried out.

06-"Operating The Program" Lamp

A lamp indicating that the program is running as soon as the device is started.

07-Data Transfer Lamp

The lamp indicates that the records are transferred in the memory or the file is transferred during software update.

08-Alarm Led

This led flashes when there is a warning or error on the device.

09-“End of The Program” Lamp

It is a warning lamp that indicates that the running program is finished.

10-Usb Lamp

This lamp is on when connected to a USB external memory.



The device supports up to **8 GB** of external memory.

11-Back / Alarm Mute Button

This button is used to silence audible alarms in case of error and cancel the changes in the menu.

12-Shaking Speed Display

Shaking speed unit is displayed as RPM.

13-Shaking Process Start/Stop Key

The key is used to start the set program and stop the running program.

14-Shaking Speed Value Increase Key

The keys are used to increase the shaking speed value on the display while adjusting the shaking speed.

15-Shaking Speed Value Decrease Key

The keys are used to decrease the shaking speed value on the display while adjusting the shaking speed.

5.8 PRIOR TO OPERATION

5.8.1 Filling Liquid

- Fill the tank with distilled water or liquid and put the samples up to the maximum line MAX (see Figure 3).



Do not run the device unless distilled water or liquid is filled up to max line.



The distilled water or liquid level above the max level may cause unexpected problems.



Make sure that the filled liquid is not flammable or explosive at the operation temperature.

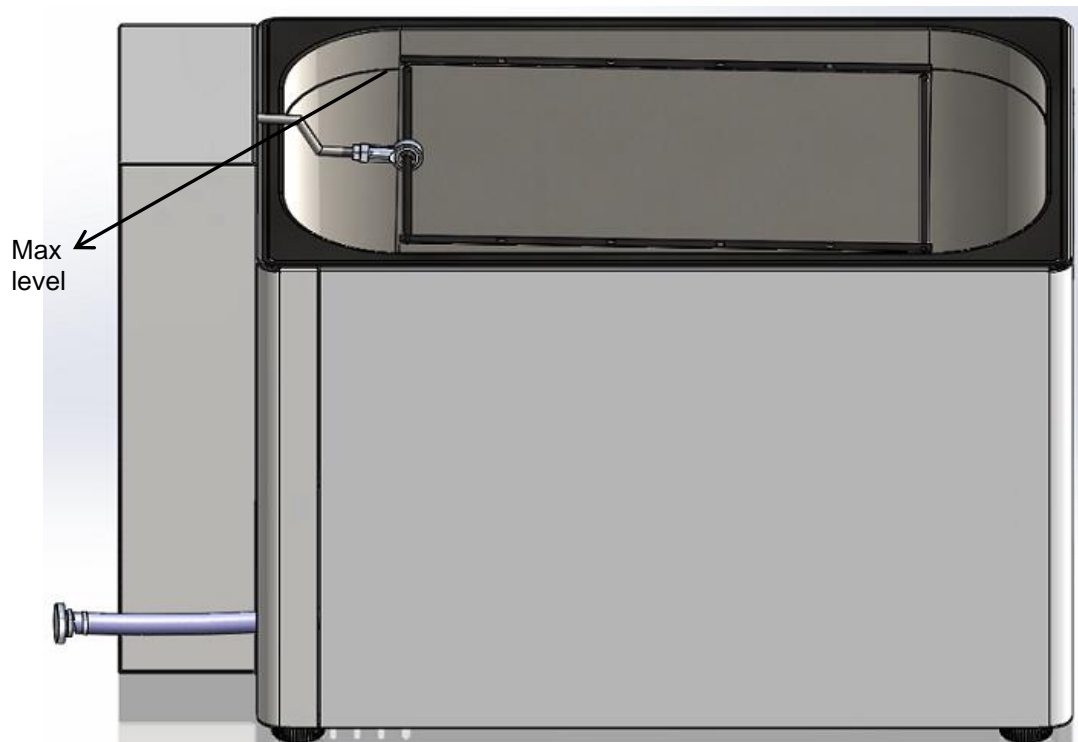


Figure 3

SECTION 6

OPERATING PRINCIPLES





6.1 OPERATING THE UNIT

- Switch on ST 30 shaking water bath by using the power switch and ensure that the power switch led is on.
- Observe that display and control is activated.
- Learn the functions of display and control panel (see. Section 5.7.1).
- Set the values and start the operation.

6.2 PROGRAMMING

6.2.1 PREPARATION OF USER SETTINGS

The device has a password protected menu. The password is set to “000” when the device first starts. Follow the below steps to change the password, update current date / time information and access the operator's menu where other settings are made.







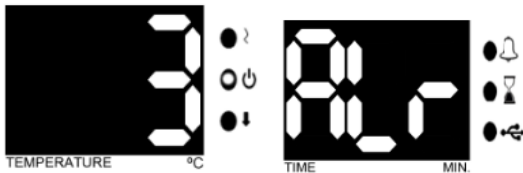

	<p>Wait by pressing the encoder button.</p>
	<p>Lift your hand when you see "oP" on the temperature display and again press the encoder button. If the device has a menu protection password, password screen "oPS" will come on the temperature display.</p>
	<p>You enter the set password to turn the encoder button right and left. (The password will not be asked if the device is newly installed.) Confirm the password by pressing the encoder button. Observe that the parameter numbers on the temperature display change with each pressing the encoder button. For operator menu parameter descriptions (see section 6.1.1). You can set the parameter values by turning the encoder button right or left on time display.</p>
	<p>Again press the encoder button and confirm the set value. Press the back button to return the work screen.</p>




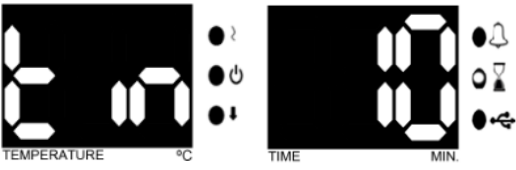


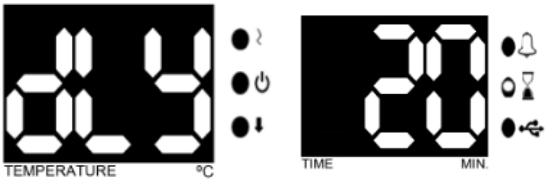


6.2.2 oP OPERATOR MENU PARAMETERS

- 1: Recording Period:** This time is recording period of temperature and error information.
- 2: Lid Alarm Time:** Not used for ST models.
- 3: Lid Alarm Range:** Not used for ST models.
- 4: Timer Set Band:** When the read temperature reaches the "Set Temperature - TIMER SET BAND" value, the time starts counting backwards.
- 5: Buzzer ON/OFF:** The alarm sound on/off 0: OFF 1: ON
- 6: Date Setting - Year:** Two digits are displayed the year information of date. If updating is necessary, change.
- 7: Date Setting - Month:** The month information of date is displayed. If updating is necessary, change.
- 8: Date Setting - Day:** The day information of date is displayed. If updating is necessary, change.
- 9: Time Setting - Hour:** The hour information of time is displayed. If updating is necessary, change.
- A: Time Setting - Minute:** The minute information of time is displayed. If updating is necessary, change.
- B: Time Setting - Second:** The second information of time is displayed. If updating is necessary, change.
- C: Date / Time Update:** 0: No change 1: Update date / time according to the entered values. The entered values are considered as current Date / Time information when 5, 6, 7, 8, 9, A parameters are changed and B parameter is set to 1.
- D: Password:** The password used to enter the operator parameters. This password used when you want to change the set values. No password if 0 is selected.

6.3 PROGRAMMING SUMMARY

You can set the steam sterilizer on stand-by. Follow the below steps to set and save the values.

	Push the encoder button
	By pushing the encoder button select SET menu.
	See that second LED flashes in the temperature display, again push the encoder button.
	See the parameter flashing on the temperature display.
	By turning the encoder button set operating temperature value.
	Push the encoder button and save set value.
	See the parameter flashing on the temperature display.
	By turning the encoder button set operating Set alarm value. If the temperature is out of Set alarm value, audible and visual alarm will be activated.

	Push the encoder button and save set value.
	Turn the encoder button to the right.
	See that second LED flashes in the time display, again push the encoder button.
	See the parameter flashing on the time display.
	By turning the encoder button set operating time value (01 minute to 99 hours 54 minutes or Hold).
	Push the encoder button and save set value. See 'dLY' in the temperature display.
	By turning the encoder button set operating delay time value. If 'Off' is selected, heating will start without delay. If any numerical value is selected; After pressing Start, it starts heating after the set delay time (01 minute to 99 hours 54 minutes).
	Push the encoder button and save set value.
	Push 'the start button' and start the program.



In order to display the set values during the operation, push the encoder button once. The values set on the temperature display and the time display of the device will appear for 5 seconds.



The set time start to count after the device reaches the set temperature.

6.4 COMPLETION OF THE OPERATION

- Observe that the set program is completed (See “End” and “End of the program lamp”).
- Push the **heating process stop** key in order to stop the heating. If the device functions with shaking, push the **shaking process stop** key to stop the shaking process.
- Take the samples out at the required temperature and time.
- When the device is unloaded, remove the undesirable effects which are caused by the samples.
- You may leave the device at stand-by position or switch it off.
- Operating records are transferred to the usb port attached a USB memory.



Check the liquid level in the tank during long operations and refill to the max line if necessary.



The usb led and the data transfer led on the control panel turn on during transfer of data in memory and the transfer process starts automatically. Do not remove external memory from usb port without the data transfer led turn off and the audible alarm finished.



Records are transferred to external memory when external memory is connected to the Usb port. For get the records without program ending, Usb memory, hold down the "Mute" button for 3 seconds until "Data Transfer Lamp" lights up, then remove from Usb port.

SECTION 7

PERIODICAL MAINTENANCE AND CLEANING

7.1 PERIODICAL MAINTENANCE

The shaking water bath does not require any periodical maintenance.

7.2 CLEANING

- Prior to cleaning please unplug the device and clean the device at the room temperature.
- A piece of wet cloth may be used in order to remove the dust and dirt from the device.
- Mild detergent use is recommended to remove difficult dust and dirt.
- Please be aware of the undesirable effects of the chemicals and be careful while applying them.
- Protect the device against rust from outside. Please clean the rust as soon as possible when it is detected.
- After all work has been completed, drain all fluid from bath reservoir.

SECTION 8

DISPOSAL MANAGEMENT CONCEPT

The user is responsible for the proper disposal of each individual component. All parts which may comprise potentially infectious materials have to be disinfected by suitable validated procedures (i.e. autoclaving, chemical treatment) prior to disposal.

SECTION 9

TROUBLESHOOTING

If the device fails to operate, please check the followings:

- The power switch is on;
- The fuse is not blown;
- The plug is plugged-in properly;
- The plug is not defective;
- The installation of the plug is not defective;
- The mains supply is present.

9.1 ERROR CODES AND EXPLANATIONS

Err0:

- Motor thermal is off. Contact to the authorized service.

Er1:

The temperature sensor endings are broken. The error code flashes on the temperature display and an audible alarm sounds.

Er2:

An electronic failure occurs in the microprocessor. The error code flashes on the temperature display and an audible alarm sounds.

Er3:

The temperature sensor measures a temperature higher than 147°C. The error code is shown on the temperature display and an audible alarm sounds.

Er4:

The temperature sensor endings are connected in reverse. The error code flashes on the temperature display and an audible alarm sounds.

EoF:

This error code appears if any probable power cut causes when the sterilization phase “EoF” flashes and the audible alarm sounds on the temperature display.



If an error occurs, please contact to an authorized NÜVE AGENT to seek technical help.



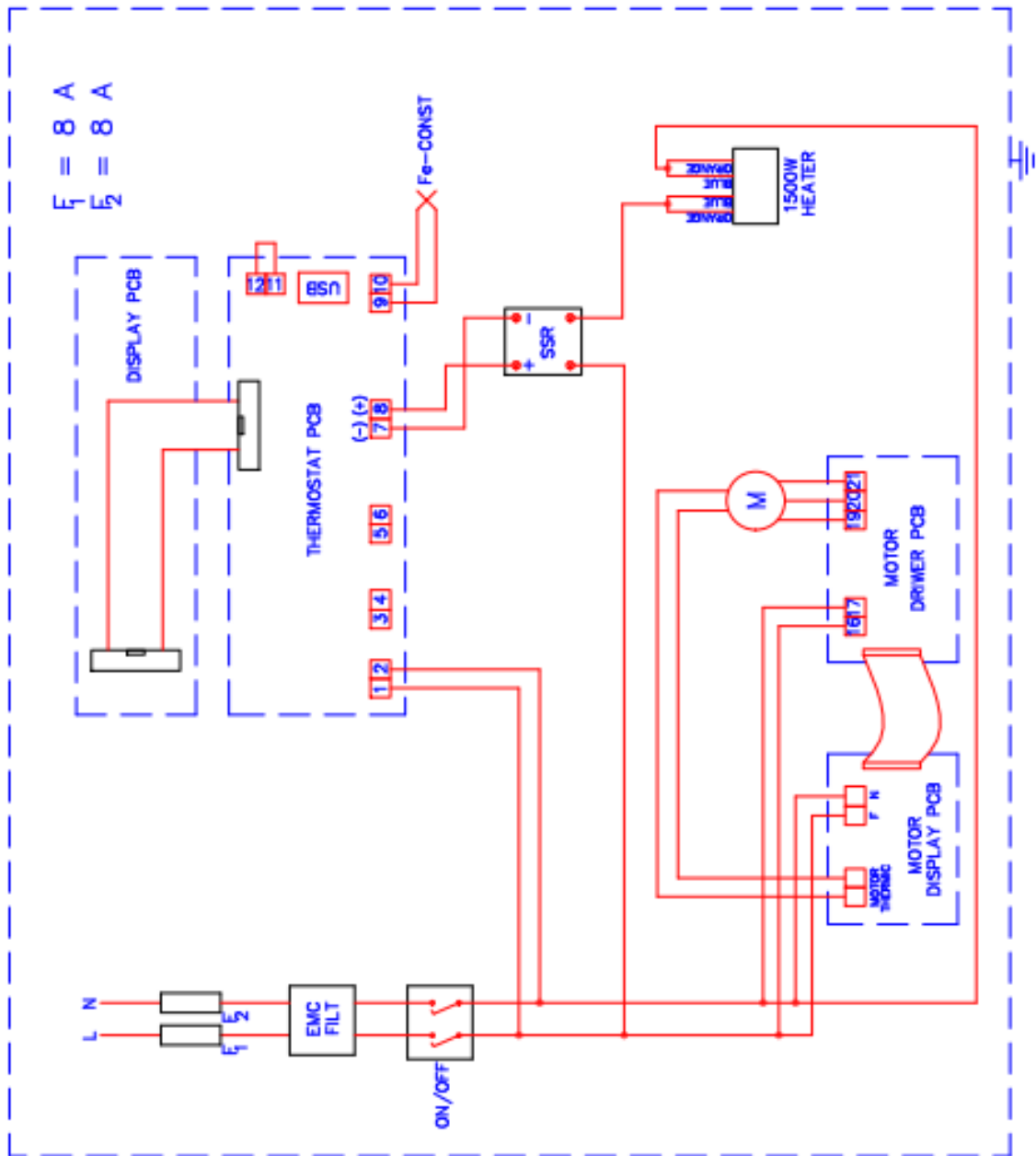
IN CASE OF ANY ERROR, THE PROGRAM IS STOPPED AUTOMATICALLY AND IMMEDIATELY.

9.2 FUSE REPLACEMENT

The fuses shall be always be replaced by the authorized personnel.

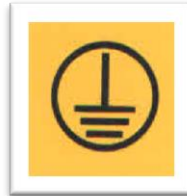
SECTION 10

ELECTRICAL CIRCUIT DIAGRAM



SECTION 11

WARNING LABEL



ST 30
FUSES (2 x 10A)

