

Before using the device for the first time, the user is required to read the instruction manual carefully. The manual is provided to inform you about the correct use of the autoclave. Use the device in accordance with the recommendations contained in this manual.



STEAM STERILIZER

AUTOCLAVE

MODEL: TANCO 8L| TANCO 12L

IMPORTER

Importer and Authorized Service Point in Poland

Activeshop Sp. z o.o.

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BASIC INFORMATION**1. Contact****information****Manufacturer**

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2. About the manual

Version	Date of changes	Reason for change
Rev. A (EN)	01.2010	First edition
Rev. B (EN)	07.2011	Updated
Rev. C (EN)	07.2017	Update
Rev. D (EN)	03.2019	Update
Rev. E (EN)	10.2020	Update
Rev. F (EN)	10.2022	Update
Rev. G (EN)	08.2023	Update

Make sure that the manual supplied with the device is the latest version of this document. The latest current version of the manual is available from the manufacturer or importer of the device. If you need the latest version of the manual, please contact your sales representative or the importer's service department

3. Legal requirements**Compliance documents:**

The contents of this manual are suitable for small steam sterilizers.

This device is classified as Class B and complies with European requirements: 93/42/EEC; 97/23/EC; EN 61010-1; EN 61010-2-040; EN 13060; EN 61326-1.

This product complies with the following legal requirements:

- Council Directive 93/42/EEC concerning medical devices:

The CE mark affixed to the product confirms compliance with the directive. The location of the CE mark is shown in this manual. **Certifications:**

The manufacturer is certified to EN ISO 9001 and EN ISO 13485.

Original documentation:

The original document was prepared in English.

Declaration of conformity

Council Directive 93/42/EEC concerning medical devices. The CE marking on the device indicates compliance with Directive 93/42/EEC. CE Certificate and EC Declaration of Conformity for the device is available from the Manufacturer or Importer.

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CHAPTER 1 INTRODUCTION**1.1. Note/Important information**

- This manual contains necessary and sufficient information for safe operation of the device, such as optimal use, safe, reliable operation, and regular and correct service requirements.
- Before using the device, read with understanding all the information that is contained in this manual. When using the device, observe all the information contained in it.
- Keep the manual throughout the use of the device. Periodically review the requirements and information on operation, safety rules and precautions contained in the manual.

1.2. Application

The device is designed for sterilization of packaged or unpackaged solid, indented type A and porous products and related items.

The autoclave is designed for use in dental, surgical, ophthalmic, gynecological offices and medical facilities (clinics), as well as in emergency rooms, laboratories and beauty salons, etc.

The device can be operated by a professional user, i.e. a doctor, as well as by a technician or other specialist with knowledge and appropriate training in the operation of this type of equipment.

1.3. Contraindications

There are no contraindications to the use of this device.

CHAPTER 2 SAFETY**2.1. Explanation of symbols**

Description of symbols used in the marking of the device:

	"CAUTION - It is necessary to read the documents that come with the product". This symbol is intended to draw the user's attention to the need to read the instruction manual or other documents if the label or nameplate cannot provide complete information.
	WARNING. Hot surface. A sign warning of the possibility of burning due to the hot surface. Pay attention to the high temperatures in the chamber and the temperature outside the device, especially during the operation of the steam system.
	Protective grounding - the device of protection class I.
	WARNING - Sign warning of electric voltage. A sign used where there is a danger/risk of electric shock.

Description of symbols used on the nameplate and on the device label:

	Manufacturer.		Authorized representative in the European Union.
	CE mark with 4-digit number of Notified Body. (symbol indicating compliance of the device with the requirements of Directive 93/42/EEC).		The symbol indicates that the user must read with the instruction manual or brochure attached to the medical device (the user must familiarize himself with the attached documents attached to the device).

	Dispose of the device in accordance with the requirements of Directive 2012/19/EC. Dispose of the used device Return it to the points of treatment of waste electrical and electronic equipment and electronic equipment, in accordance in accordance with local regulations in force in this regard.		Type B application part.
	Date of manufacture.		Serial number.

Explanation of the meaning of the inscriptions/warnings used in the manual:

IMPORTANT	Indicates information that may facilitate or be helpful in operating the device.
CAUTION	Draws attention to potential hazards caused by: inadequate conditions, actions taken or activities carried out in operating and maintaining the equipment, which may lead to: – minor (minor) injuries; – damage (destruction) to property; – damage to the device.
WARNING	Draws attention to specific (special) hazards known to exist or likely to occur. These hazards may be caused by inadequate conditions, actions taken or activities performed in connection with the operation and maintenance of the equipment, which may lead to: – severe personal injury; – significant damage (destruction) to property; – significant damage to the equipment.

CAUTION Observe all information, recommendations and safety rules provided in this manual. When using the device, take appropriate precautions to ensure the safety of the user and others.

2.2. Warnings and important safety information

- The user is responsible for the proper operation and maintenance (upkeep) of the unit, according to the guidelines in this manual.
- The autoclave is not designed to sterilize liquids.
- The device is not designed to operate in the presence of gases, explosives, open sources of heat or flammable substances.
- At the end of each cycle, the trays with sterilization input are still hot. Therefore, to avoid the risk of burning yourself, always use a special handle to remove the tray from the chamber.
- Do not open the appliance door while the sterilization cycle is running.
- Do not bring your hands or face near the lid of the water tank while the device is running.
- Do not remove any placards or labels from the device. Do not throw away the instruction manual.
- Do not spill water or any other liquid on and/or near the unit.
- Do not pour any hazardous materials, such as corrosive substances or mixtures into the water tank.
- Do not put any hazardous materials, e.g. articles, corrosive substances or mixtures into the chamber.
- Only pour high-quality distilled water into the unit.
- Disconnect the cord from the electrical outlet before servicing and maintenance.

- Only qualified technical personnel may perform any repairs and/or service, using original spare parts.
- Before transportation, completely empty the clean and dirty (used) water tanks and cool the autoclave chamber. Transport the device only when it is completely cooled. Transport only in the original packaging.
- Remove items to be sterilized with special tools if their temperature exceeds 40°C.
- To remove trays with sterilized items, always use a special handle (handle) designed for this purpose.
- When moving (changing place) or lifting, the unit must be carried by at least 2 people (hold from the bottom front and back) to avoid falling and consequently damaging the unit.
- CAUTION! Do not place the autoclave in such a place where free access to an electrical outlet will be difficult.
- Do not cover the water tank lid during use.

2.3. Protection elements

Temperature protection

Name of the part	Function
Temperature protection (steam generator)	It cuts off the power supply if the temperature of the steam generator is too high.
Temperature protection (heating ring)	Cuts off the power supply if the temperature of the heater is too high.

Electronic protections

Part name	Function
Double fuse	Breaks the circuit in case of high current flow or if the power supply is weak/unstable.
Electronic filter	Filters electromagnetic interference while the device is operating.

Mechanical safeguards

Part name	Function
Jiggle switch	Allows you to check whether the door is fully closed to avoid the occurrence of a dangerous situation.
Handle (grip) For removing the tray	It is used to remove the tool tray from the device chamber.

Components of the control board - control

Part name	Function
Temperature sensor (inside the chamber)	Used to measure the temperature inside the chamber.
Temperature sensor (heating ring)	Used to measure the temperature of the heating ring.
Temperature sensor (steam generator)	Used to measure the temperature of the steam generator.
Pressure sensor	Used to measure the pressure in the chamber.
PCB controller/controller	Used to control the entire sterilization process.

WARNING The manufacturer is not responsible for any arbitrary repairs, modifications, alterations structural or disassembly of the device, carried out by an unauthorized person

or an unqualified technician. Any repairs to the device can only be performed by an employee of a warranty and post-warranty service company authorized by the Manufacturer.

2.4. Operational risk

Use caution when using the device to avoid a hazardous situation.

Risk of burns

- Each time a cycle is completed, keep a sufficient distance when opening the door to avoid the risk of being burned, as there is still high temperature steam in the chamber.
- When opening the door after each cycle, be careful due to the high temperature of the inner surface of the door and chamber. Do not touch them to avoid the risk of getting burned.

Risk of contamination

- Thoroughly clean the chamber of any debris after each use.

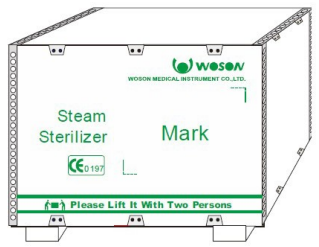
2.5. Protective measures

Product name	Function
Protective gloves Made of plastic or fabric	Useful for inserting and removing the sterilization load from the chamber to prevent burns.

CHAPTER 3 ACCEPTANCE AND INSTALLATION

3.1. Checking the contents of the package

Upon receipt of the device, carefully inspect the package. Any tampering and/or damage to the packaging, may indicate damage to the device.

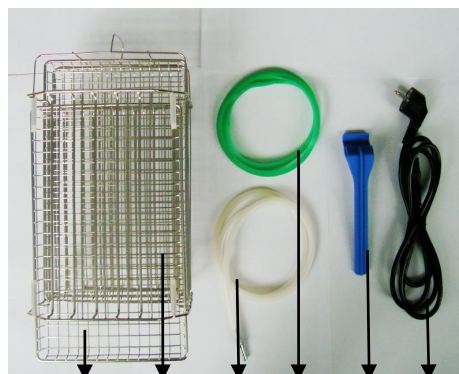
	Dimensions and weight of the device in the package	Autoclave Model: TANCO 8L	Autoclave Model: TANCO 12L
	Package dimensions (mm):	652 x 549 x 486	652 x 549 x 486
	Gross weight (kg):	45	48

3.2. Unpacking accessories

Open the box and remove the device. Remove the protective film, then open the door and remove all accessories from the appliance compartment.

Check that all items are present according to the following list:

- | | |
|--|----------|
| 1. tray/tray rack | x 1 pcs. |
| 2. trays/trays for sterilization | x 3 pcs. |
| 3. handle (grip) for removing the tray | x 1 pcs. |
| 4. water drainage hose | x 1 pcs. |
| 5. power cord | x 1 pcs. |
| 6. door seal | x 1 pc. |
| 7. instruction manual | x 1 pcs. |



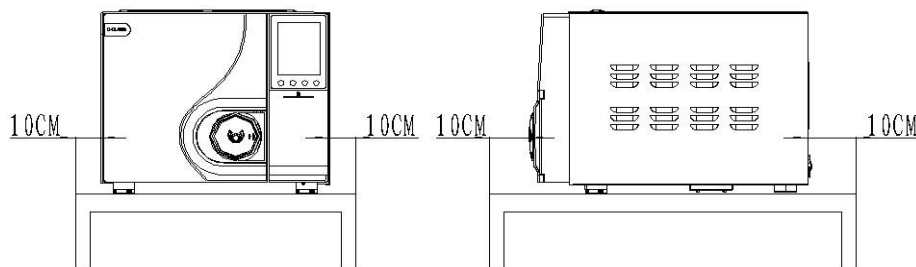
3.3. Additional equipment

Name	Model	Quantity	Appearance
Built-in printer ^{*)}	D8	1	
USB memory card ^{*)}	1G	1	

^{*)}Optional.

3.4. Installation environment requirements

Place the autoclave on a level stable surface, so as to provide at least 10 cm of free space on each side, and at least 20 cm above the unit, as shown in the drawings below:



- Place the unit in a room with adequate ventilation.
- Ambient temperature: +5 C°~ +40° C.
- Ambient relative humidity: ≤ 85%.
- Atmospheric pressure: 860 hPa~ 1060 hPa.
- Connect the device to a grounded electrical outlet only.

CAUTION Do not place any objects near the device that can easily get hot or melt.

3.5. Setting method

- Place the autoclave on a level stable table or other surface, with the front slightly higher than the back.
- Do not cover, clog or block the vent and cooling area of the unit.
- Do not place any objects on the appliance.
- Do not place any objects in front of the appliance to avoid the risk of an accident when opening the door.
- Do not place any corrosive chemicals or objects containing corrosive materials near the appliance to avoid the occurrence of an accident or other dangerous situations.

3.6. Connecting to a power source

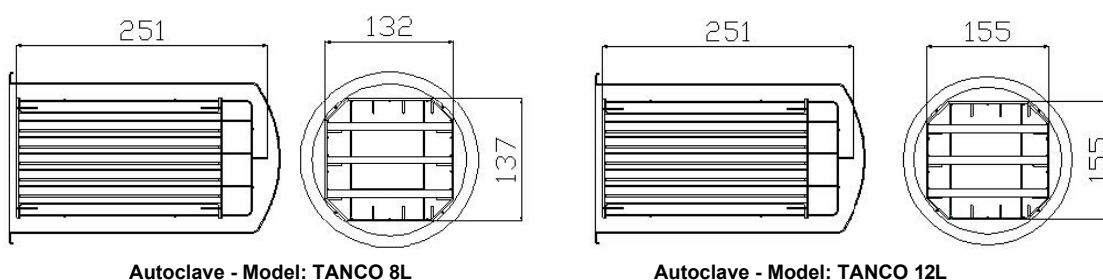


- Connect the autoclave to a stable and separate power source.
- The power socket is located on the back of the device.
- Before using, make sure that the mains parameters match the values indicated on the unit's nameplate. Always use a grounded electrical outlet and use a power supply that complies with the requirements.

- WARNING**
- Do not coil, bend or twist the power cord to avoid damage.
 - Do not place any heavy objects on the power cord to avoid damage to it.
 - Do not use a power cord other than the one supplied to avoid damaging the device.
 - Do not add other power cords to avoid accident or other dangerous situations.

CHAPTER 4 DESCRIPTION AND SPECIFICATION

4.1. Dimensions of the appliance compartment



4.2. Technical Specifications

4.2.1. Technical specifications

Rated voltage:	AC 220V~ 240V, 50 Hz
Rated power:	1600W
Fuse:	F12AL
Operating temperature:	+5°C~ +40°C
Maximum plate load:	4000 N/m ²
Volume level:	< 50 dB
Maximum tray load:	1000 g
Maximum load test duration:	90 min
Maximum energy of radiation thermal radiation in conditions from +20 °C~ +26° C:	< 2000 J

4.2.2. Technical data of the chamber

Material:	Stainless steel (for medical applications)
Maximum working pressure:	250 kPa (2.5 bar)
Minimum operating pressure:	90 kPa (-0.9 bar)
Maximum operating temperature:	145 °C
Dimensions of the chamber (nominal diameter x depth):	Φ170 mm× 320 mm (applies to model: TANCO 8L) Φ192 mm× 320 mm (applies to model: TANCO 12L)
Cargo dimensions:	132 mm× 137 mm x 251 mm (applies to model: TANCO 8L) 155 mm× 155 mm x 251 mm (applies to model: TANCO 12L)
Maximum load weight:	2.56 kg/cm ⁽²⁾ (applies to model: TANCO 8L) 2.85 kg/cm ⁽²⁾ (applies to model: TANCO 12L)
Operating pressure/temperature range:	110 kPa~ 130 kPa / 121°C~ 122°C (1.10 bar~ 1.30 bar / 121°C~ 122°C) 210 kPa~ 230 kPa / 121°C~ 122°C (2.10 bar~ 2.30 bar / 134°C~ 135°C)
Water consumption per 1 cycle:	0.35 L (min.)~ 0.40 L (max.)

4.2.3. Safety valve

Valve release pressure:	245 kPa (2.45 bar)
Maximum operating temperature:	160 C°

4.2.4. Tank capacity

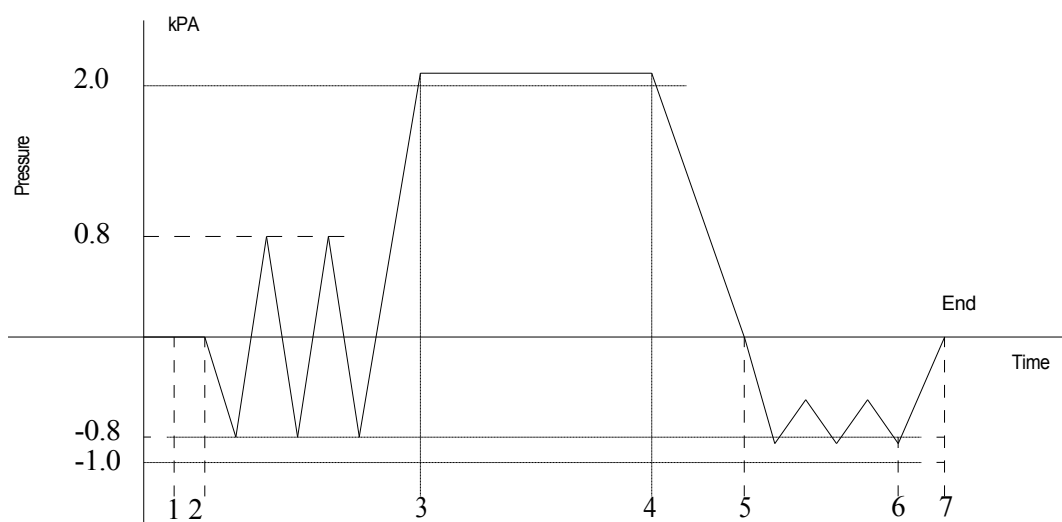
Distilled water tank capacity:	4,5L
Used water tank capacity:	4,5L

WARNING Pour only distilled water into the tank. The water temperature must not exceed 40°C.

4.2.5. Test programs

The following test programs can be carried out:

- Vacuum Test (Vacuum Test),
- B&D Test (B&D Test),
- Helix Test (Helix Test).

4.3. Course of the sterilization cycle

Range 1-2: Heating phase. Range 3-4: Sterilization phase. Range 5-6: Drying phase. Range 1-7: Duration of the entire cycle.

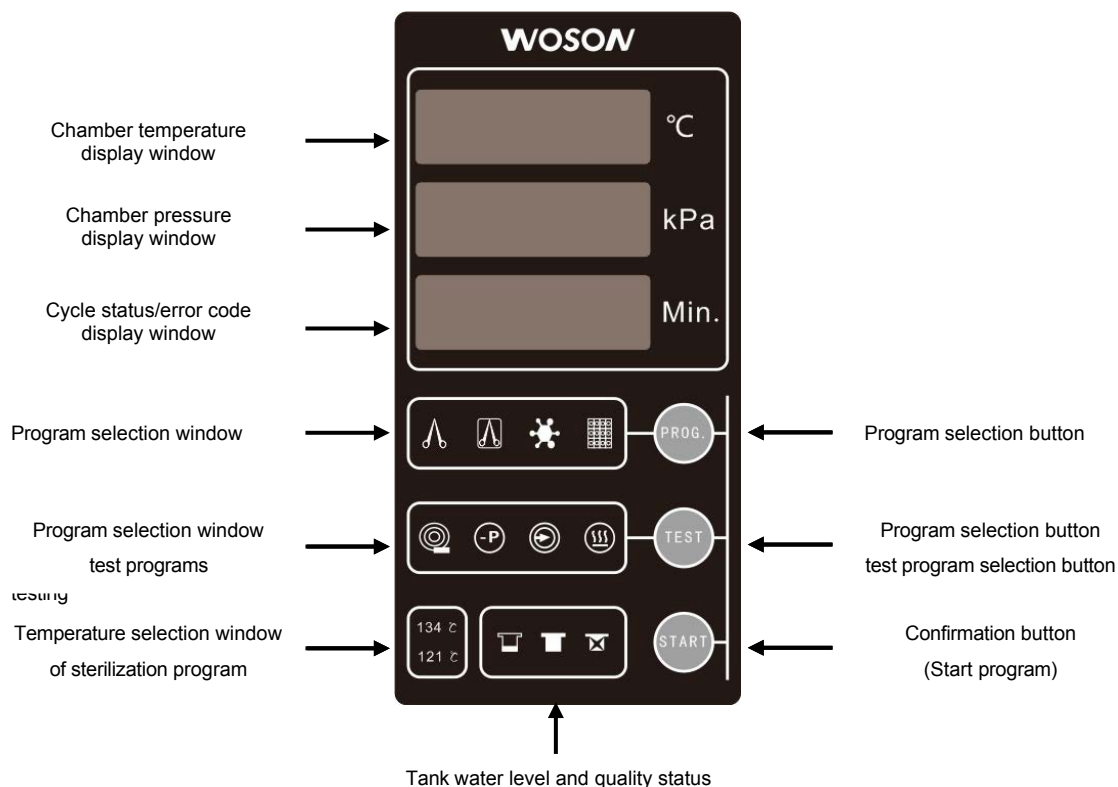
Range 2-3: Vacuum (vacuum generation) phase. Range 4-5: Release (removal) of air. Range 6-7: Pressure equalization (stabilization) phase.

Table - Types of sterilization cycles

Type	Description of use
B	Sterilization of all packaged and unpackaged, solid, indented type A objects and porous objects represented by the test loads specified in EN 13060.
S	Sterilization of items specified by the sterilizer manufacturer, including unwrapped solid items and at least one of the following: porous objects, small porous objects, Type A hollow charges, Type B hollow charges, packaged individually or in multiple layers.
Note 1	The description identifies the range of test objects and test loads.
Note 2	Unpackaged items are intended for immediate use after sterilization. Such items may not be stored, transported or used in non-sterile conditions (e.g., to prevent the spread of infection - cross-infection).

CHAPTER 5 CONTROL PANEL

5.1. Control panel



5.1.1. Integrated display

1. Displays the temperature in the chamber, unit: C.°
2. Displays chamber pressure, unit: kPa.
3. Displays cycle time/status/error code: interchangeably displays cycle time and status (see section 5.5) and the error code, which will raise an alarm. If problems or malfunctions occur during operation, an alarm will sound and the corresponding error code will be displayed (see Appendix 2). If you have difficulty solving the problem, contact the manufacturer or an authorized service center.

5.2. Functional buttons

5.2.1. Program selection button



In standby mode, briefly press the button , to start program switching. When the button is pressed, the indicator of the corresponding program will be highlighted:

5.2.1.1. Unpacked/Unpacked



A program designed to sterilize unpacked items. Program parameters: 134° C; 210 kPa; 1-time vacuum; sterilization time: 4 minutes; drying time: 9 minutes.

5.2.1.2. Packed/Packaged



Program designed to sterilize packed items, tips (handles), etc. Program parameters: 134° C; 210 kPa; 3-fold vacuum; sterilization time: 5 minutes; drying time: 9 minutes.

5.2.1.3. Prion/Prions



A program designed to inactivate prions, bacteria and viruses, etc. Program parameters: 134° C; 210 kPa; 3-fold vacuum; sterilization time: 18 minutes; drying time: 9 minutes.

5.2.1.4. Porous/Porous

Program designed for sterilization of cotton materials and similar articles. Program parameters: 121° C; 110 kPa; 3-fold vacuum; sterilization time: 20 minutes; drying time: 18 minutes.

5.2.2. Test program/Test program

In standby mode, briefly press , to start switching to the corresponding test program. When the button is pressed, the indicator of the corresponding program will be illuminated:

5.2.2.1. B&D Test (B&D Test)

A program designed to perform the Helix test or B&D test. Program parameters: 134° C; 210 kPa; 3-fold vacuum; sterilization time: 3.5 minutes; drying time: 3 minutes. When the program is selected, the program indicator will be highlighted.

5.2.2.2. Vacuum Test

A program designed to evaluate vacuum generation performance and leakage test.

5.2.2.3. Automatic Pipe Cleaning.

A program designed for regular maintenance and automatic pipe cleaning.

5.2.3. Drying Function.

The function meets the drying requirements of a higher standard. It can also be used for drying according to individual needs.

5.2.4. Button

The  button is used to start the selected program. Emergency termination of the cycle (if necessary): while the program is running, hold down the  button for about 3 seconds, at any time, to stop the running cycle.

5.3. Water level and quality indicators

5.3.1. Distilled water low level indicator

If there is too little distilled water in the tank, the low water indicator will light up. If this indicator is illuminated during the process, do not worry about it, because the remaining amount of water is enough to complete the current cycle. On the other hand, when the process is completed, you should refill the water to the required level. For how to fill the clean water tank, see section 6.2.

5.3.2. Full used water tank indicator

If this indicator is illuminated, it means that the used water tank is full and should be emptied, as described in section 6.3.

5.3.3. Water quality control indicator

The device has a distilled water quality control function. If the water used for the device is of inadequate quality this indicator will be illuminated. In this situation, immediately empty the tank and replace the water with water of suitable quality. Inadequate water quality will significantly shorten the life of the appliance.

WARNING

If any problems or malfunctions occur during the operation of the device, an alarm will sound and will be the corresponding error code is displayed (see Appendix 2). If you have difficulty solving the problem, contact the manufacturer or an authorized service center.

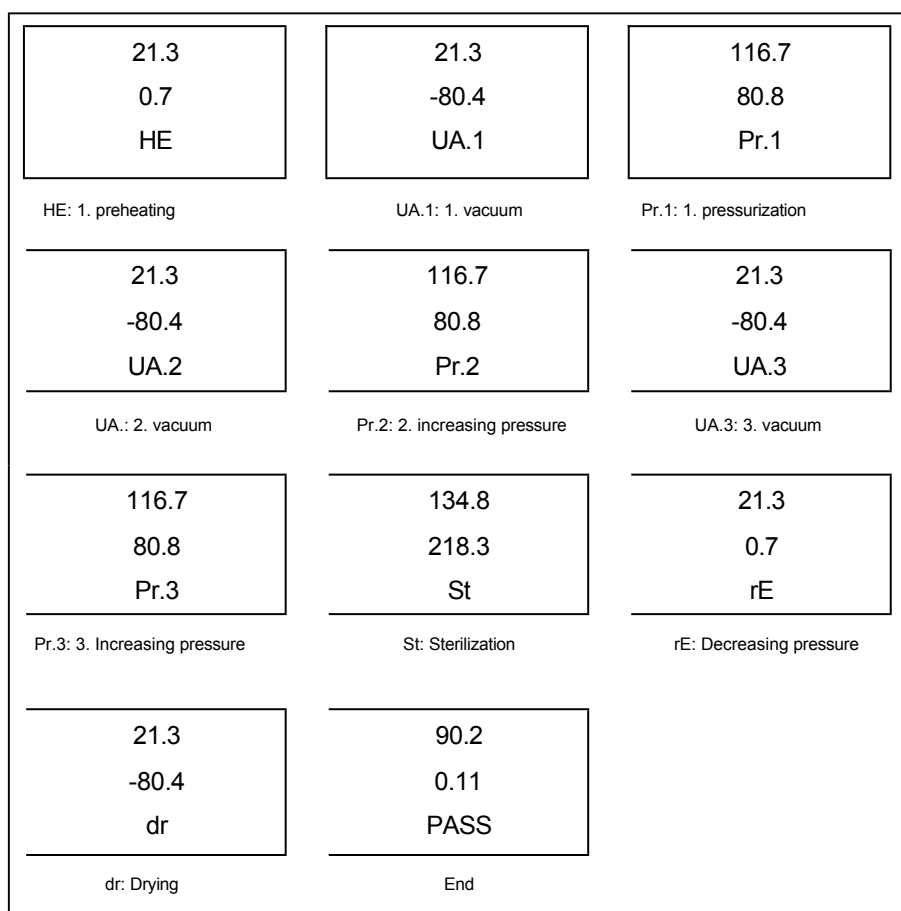
5.4. Sterilization programs

If the device is turned on, the following programs can be selected with the corresponding parameters:

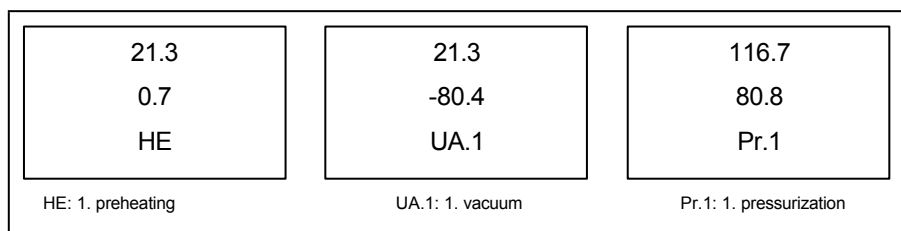
Program	Temperature	Pressure	Multiplicity vacuum	Time sterilization	Time drying time
UNPACKED/UNPACKAGED	134 C°	210 kPa	1	4 min	9 min
PACKED/PACKAGED	134 C°	210 kPa	3	5 min	9 min
PRION/PRIONY	134 C°	210 kPa	3	18 min	9 min
POROUS/POROUS	121 C°	110 kPa	3	20 min	18 min

5.5. Window of the process flow (cycle)

3-fold vacuum generation, example for the program: **PACKED 134°C (PACKED 134°C)**:



1-fold vacuum generation, example for the program: **UNPACKED 134°C (UNPACKED 134°C)**:



134.8 218.3 St	21.3 0.7 rE	21.3 -80.4 dr
St: Sterilization	rE: Depressurization	dr: Drying
90.2 0.11 PASS		
End		

5.6. Time setting

In standby mode, press and hold the  button for 8 seconds to enter the time setting mode.

1. press the  button briefly to switch (forward):

Year	Month	Day	Hour	Minute	Second	Exit
------	-------	-----	------	--------	--------	------

Set parameter	Year	Month (Month)	Day (Day)	Hour (Hour)	Minute (Minute)	Second (Second)	Out (Output)
Display method	t. Set -0- -23-	t. Set -1- -08-	t. Set -2- -30-	t. Set -3- -15-	t. Set -4- -45-	t. Set -5- -55-	t. Set -6- -out-

Setting method:

Press , to increase the value. Press , to decrease the value.

Exit setting: press  button to confirm and save the parameters, then return to standby mode.

Temp.

6	5	5	6
---	---	---	---

 °C

Press.

-	1	-
---	---	---

 kPa

Time

1	5
---	---

 Min.

CHAPTER 6 WORKFLOW

6.1. Turning on the device

Press the power button (it will light green when pressed) and leave the door open, the display will show the flashing word Load. After placing items in the compartment, close the door (Load will be displayed continuously).



6.2. Refilling the clean water tank

If, when the power is turned on, the symbol , lights up on the display, it means that the water level in the clean water tank is too low to start heating and it will not be possible to start the program. It is necessary to refill the water

distilled water to the required level until the  symbol is no longer displayed.

Filling the clean water tank is done manually. The tank is located in the upper part of the device. Open the lid of the tank and then pour distilled water to the designated level, about 2 cm from the tank lid.

**CAUTION**

**Use only distilled water for the device, this will significantly extend the life of the device.
Do not tilt the unit when the tanks (for clean water and used water) are full.**

6.3. Alerting when the level in the used water tank is high

If the  indicator lights up on the display during a running program, it means that the waste water tank must be emptied. Used water drainage: Connect the hose (cable) to the used water drain port (indicated by the arrow in the photo below) to start automatic used water drainage.

**Drain port (for
draining)
used water**



The maximum temperature of the discharged water should not exceed 70°C. If the temperature of the drained water is higher, check that the fan is working properly or contact an authorized service center.

6.4. Program selection

Before selecting the appropriate program, check that the display does not show an about the error code. When the correct program is selected, the corresponding program indicator will light up.

6.5. Placing the load in the chamber

Arrange items on trays with appropriate spacing to ensure free steam penetration between them. Always use a special holder (handle) to remove the trays to avoid the risk of burning yourself.

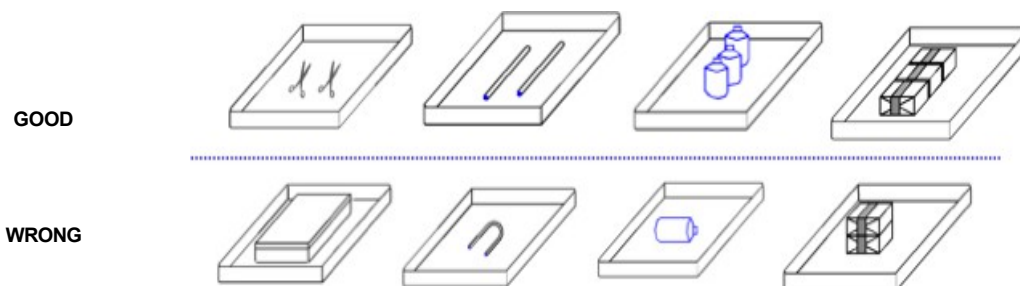
How to place items on the trays:

Read and follow the information below when placing a load in the chamber:

- Items made of different materials must be separated and placed on separate trays.
- For materials made of unalloyed (carbon) steel, place a layer of foil-reinforced tissue paper or a paper towel on the tray to avoid direct contact.
- All items must be sterilized in the open position.
- Instruments must not touch each other, and there must always be adequate space between them. Do not stack items.
- Do not overload trays. Observe the maximum weight of the load.



The method of stacking is shown in the following figures:



NOTE

Thoroughly clean all items before placing in the chamber.

If the room temperature is below 10°C, turn on the autoclave for about 5-10 minutes to begin heating the chamber before starting the program.

6.6. Closing the door

After placing items in compartment, close the door. When the door is closed properly, the LoAd (Load) will be displayed continuously. If the autoclave chamber is still hot and steam is coming out, in this situation, a strong resistance will be felt when closing the door. The handle should then be pressed firmly and latched completely. You can also open and close the door several times to close it smoothly.



WARNING

The door must be tightly closed before starting the program to avoid dangerous situations occurring.

If the door is improperly closed, the LoAd (Load) symbol will flash on the display. If the door is opened during a cycle, the display will show the error code "Er06".

CAUTION

In this situation, press the button , to cancel the alarm, and then close the door to restart the program.

6.7. Starting the program

Close the door properly, then press , to start the selected program. The autoclave will automatically start heating, sterilizing and drying the items. The entire cycle takes about 20 - 50 minutes.

The duration of the process depends on the type and number of items, on the initial temperature and on the selected program.

CAUTION

Do not place any objects near the machine. Do not cover any openings, to ensure adequate heat dissipation.

WARNING

If the unit is unable to cycle properly at a high altitude (greater than 500 meters above sea level), contact the manufacturer or authorized service center.

6.8. End of cycle

When the entire sterilization cycle is complete, a sound will be heard and the display will show PASS and Full cycle time. Only then can the door be opened and items removed.

WARNING

Do not open the door until the pressure in the chamber has decreased to a safe level below 10 kPa.

When the door is opened, the program will return to the initial state and, at the same time, heat will be maintained in the chamber all the time, in anticipation of the next cycle. The appliance will be kept warm all the time before a new cycle begins.

CAUTION

Always use a special handle (grip) to remove trays with items from the chamber, to avoid the risk of burning yourself.

6.9. Power off

When the process is complete, if the unit is no longer in use, press the power button to turn off the autoclave. When the green light of the power button goes out, close the door, but in such a way that it is not completely locked. If the unit will not be used for a long time, remove the power cord from the electrical outlet.

6.10. Abnormal exit (program pause)

If a running program is interrupted by an error or paused by pressing and holding the



the button, it will cause an abnormal program exit. A long beep will then sound (see Appendix No. 2) and the pressure will automatically be lowered to below 10 kPa.

In this case, the safety valve will open and the air will be completely released. Press  to cancel the error message and return to the previous display state.

WARNING

Do not open the door until the pressure in the chamber has decreased to a safe level below 10 kPa.

CHAPTER 7 IMPORTANT INFORMATION

Make sure the autoclave is operating properly before starting the program. Strictly follow the information in the following sections and regularly perform the necessary maintenance according to the guidelines in this manual.

1. It is imperative that the following rules be followed:

- Read and always follow the information in the instruction manual.
- Always make sure that the items to be sterilized can be sterilized on the selected program.
- Ensure each time that the items to be sterilized can be sterilized at the selected temperature (always sterilize according to the manufacturer's recommendations and guidelines).
- Before sterilization, check that the items have been well cleaned, washed, disinfected and rinsed with clean water to avoid leaving any contaminants and chemical residues in the autoclave.
- Before sterilization, check that the items are properly arranged on the tray ribs (to facilitate drainage), that they do not adhere to each other or come into contact with other items on the same or another tray, and that they do not touch the surface of the top of the chamber.
- Use only high-quality distilled water for the autoclave.
- Place the autoclave in a well-ventilated room.
- Do not place the device in an enclosed space (e.g., in a closet).
- If the autoclave will not be used for a long period of time, empty the tanks completely and leave the door ajar.
- Only qualified personnel may service the device. Service may be performed only by an employee of a company authorized by the Manufacturer.
- Keep and store the original packaging for transportation of the device.

2. During operation, do not:

- Discard or lose this manual.
- Use any chemicals, and use water other than the required water for the sterilizer.
- Sterilize chemicals, volatile, materials toxic or other unsuitable batches.
If in doubt, contact the manufacturer or importer.
- Expose the device to direct sunlight.
- Place the device on heat-sensitive surfaces.
- Use unsuitable cleaning agents.
- Drop the device or subject it to severe shocks and impacts.
- Use the device in the presence of gases, explosives, flammable substances or open sources of heat.

CHAPTER 8 MAINTENANCE**8.1. Maintenance schedule**

Period	Activity	Person responsible
Daily	Cleaning the door seal	User
	Cleaning the chamber	User
Weekly	Cleaning the chamber, trays and rack	User
	Cleaning the water drain filters	User
Com monthly	Cleaning the water tank	User
Annually	Full inspection	Authorized service only
If necessary	Door seal replacement	User
	Washing and cleaning	User

8.2. Daily maintenance**Cleaning the door seal**

The door seal and the joining surface, should be wiped daily with a clean, damp cloth. Do not use strong abrasive cleaners for this purpose. In the case of heavy significant dirt, use a solution of warm soapy water. Thoroughly clean the gasket and surface of soap residue with a clean, damp and dust-free cloth.

WARNING Designate a properly trained person to clean the appliance. Never use a wire brush, steel, wool or abrasive materials, or agents containing chlorine compounds to clean the door and chamber. The symbol "Caution hot surface. Avoid contact," means that before cleaning, you should make sure that the autoclave is completely cooled down to avoid the risk of burns.

Cleaning the chamber after sterilizing items with admixture of liquids

During venting, objects with biological material tend to boil at a higher speed than other liquids, causing the material to splash inside the chamber. Therefore, when items containing biological material are sterilized in the autoclave, it is mandatory to clean the inside of the chamber thoroughly every day, as follows:

1. Leave the unit until it has completely cooled down.
2. Wipe the chamber and the door including its seal thoroughly with a clean damp cloth.

WARNING Failure to follow the guidelines for keeping the interior of the stainless steel chamber clean may result in a significant reduction in the service life or failure of the appliance. In particular, residue deposits and contaminants organic may lead to faster wear and tear of the appliance.

8.3. Weekly maintenance (or more often if necessary)**Cleaning the chamber, trays and rack**

At least once a week, or more often if necessary, clean the trays, rack and chamber thoroughly. Any dirt on their surfaces should be removed. Use only antibiotic cleansers to clean the trays, rack and chamber (especially the surface of its lower part). Wipe off all residues from these surfaces with a clean, damp and dust-free cloth.

WARNING Use distilled water for the device in strictly specified manner, to prevent accumulation of mineral impurities and the occurrence of corrosion of the chamber. Always clean the chamber if salt solutions have been sterilized.

Cleaning the drain filter

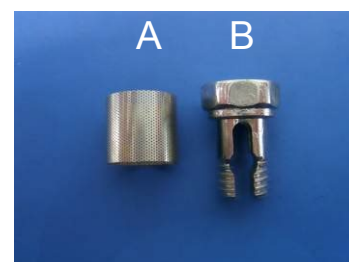
With long-term use of the device, the drain port filter may become clogged, such as dust, dirt or other contaminants, resulting in adverse effects on vacuum generation and drying.

During prolonged use of the device, fine impurities can settle on the filter and clog it, which consequently affects the effect of vacuum generation and water drainage.

Such contaminants may come from sterilized instruments or may be the result of calcifications (calcium ions) in the water.

In order to extend the life of the filter, the cleaning process of the chamber should be carried out

1. Use high-quality distilled water.
2. Items to be sterilized must be thoroughly cleaned beforehand; use special sterilization packaging especially for items contaminated with oil, grease, etc.; always check that the packaging is properly closed and tight.
3. Unscrew the filter, consisting of the fine mesh filter element (A) and the filter holder (B), from the bottom of the chamber, then thoroughly clean the filter elements from all dirt (use an ultrasonic cleaner for this purpose) and screw them into the bottom of the chamber in the correct order.



8.4. Monthly maintenance Cleaning the water tank.

If distilled water remains in the tank for too long, it can lead to the formation of various types of impurities or some toxins. Therefore, the tank should be emptied and cleaned regularly. To do this, unscrew the screws with a blunt-ended screwdriver, open the lid and clean the inside of the tank.



WARNING Use only high-quality distilled water for the device to prolong its lifespan.

WARNING Do not perform violent actions near the autoclave if the tanks (for clean water and used water) are full.

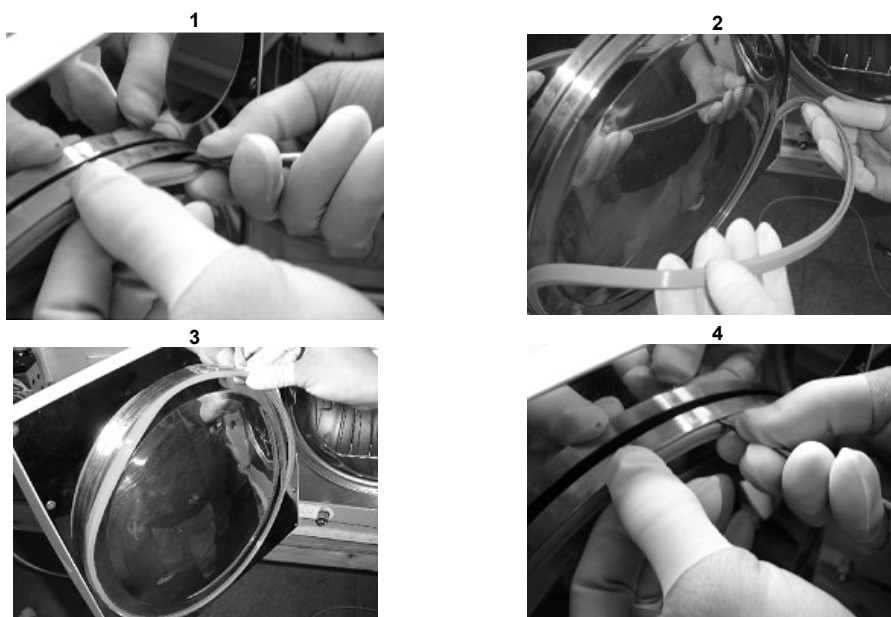
After cleaning the tank, do not pour more than 7 liters of water into it.

8.5. Other maintenance activities

Replacing the door gasket.

Tools: flat screwdriver (do not use a sharp screwdriver).

Turn off the unit and disconnect it from the power source. Make sure the autoclave is cooled down and is not under pressure.



1. Gently hold the edge of the gasket with one hand, and then with the other hand insert a screwdriver into the gap between the gasket and the door. Slowly remove the gasket.
2. First remove a small part of the gasket, and then you can slowly pull out the entire gasket. After removing the gasket, clean it thoroughly, especially its groove. Check for damage. If damaged, replace the gasket with a new one immediately.
3. Put the clean gasket back in place. Caution: the gasket should be correctly and evenly inserted into the groove. Initially insert the gasket at 4 points, and then press evenly around the perimeter of the door.
4. Caution: During insertion, the inner side of the gasket may be curled inward; in this situation, carefully correct the gasket with a blunt screwdriver.

CHAPTER 9 SERVICING THE APPLIANCE BY AN AUTHORIZED SERVICE CENTER

Servicing of the autoclave is necessary to ensure proper operation of the autoclave and efficiency of the sterilization process. It is required to perform an annual (every 12 months) inspection of the device. Only qualified personnel of an authorized service center may perform servicing.

List of activities and parts to be checked during the inspection:

1. Checking the solenoid valves.
2. Checking the water pump.
3. Checking the vacuum pump.
4. Check distilled water and used water drain valve.
5. Checking the safety valve.
6. Checking the safety system in the door.
7. Checking the pressure and temperature sensor.
8. Checking the water level sensor.
9. Checking electrical connections.
10. Checking the hydraulic connections.
11. Checking the safety thermostat.
12. Cleaning of the sterilization chamber.
13. Cleaning of trays and tray removal handle.
14. Cleaning of the tanks.
15. Replacing the water filter.
16. Replacing the air filter.
17. Replacing the gasket in the door.

CHAPTER 10 STORAGE AND TRANSPORTATION

10.1. Preparation for transportation and storage

Turn off the unit with the power button, unplug the power cord and wait for the unit to cool completely.

10.2. Emptying the tanks

Completely drain the water from the tanks and the condensate collector. To do this, connect the end of the connection to the outlet, and then connect the hose (cable) supplied with the unit (the port on the left is for draining used water, while the port on the right is for draining clean water).



10.3. Storage and transportation conditions

Temperature: from -5°C~ +55°C. Relative

humidity: ≤ 85%.

Atmospheric pressure: 500 hPa~ 1060 hPa.

10.4. Packaging

Packaging is used for safe transportation, convenient delivery and sale of the device. The conditions that the packaging should meet during transportation:

1. The device must not protrude from the package. Ensure that the packaging is of sufficient size so that the device does not exceed ¼ of its capacity.
2. The device should be firmly fixed inside the package to prevent it from moving.
3. The packaging should be higher than the device, by at least 6 mm.

Appendix No. 1 Procedure for preparing items for sterilization

Procedure for preparing items (instruments) for sterilization:

1. Thoroughly clean and dry the items to be sterilized.
2. Package items in sterilization bags or sleeves (if necessary).
3. Place items in an appropriate manner on trays.
4. Start the appropriate sterilization program.
5. After the cycle is complete, remove the sterilization load and store under appropriate conditions.

NOTE Before sterilization, make sure that all items are in good condition.
When the cycle is finished, the sterilized items are still hot, they cannot be overlapped (stacked), bent or pressed to remove residual steam.

Appendix 2 List of error codes

If there are any problems in the operation of the device or malfunctions, the display will show the corresponding error message, as below:

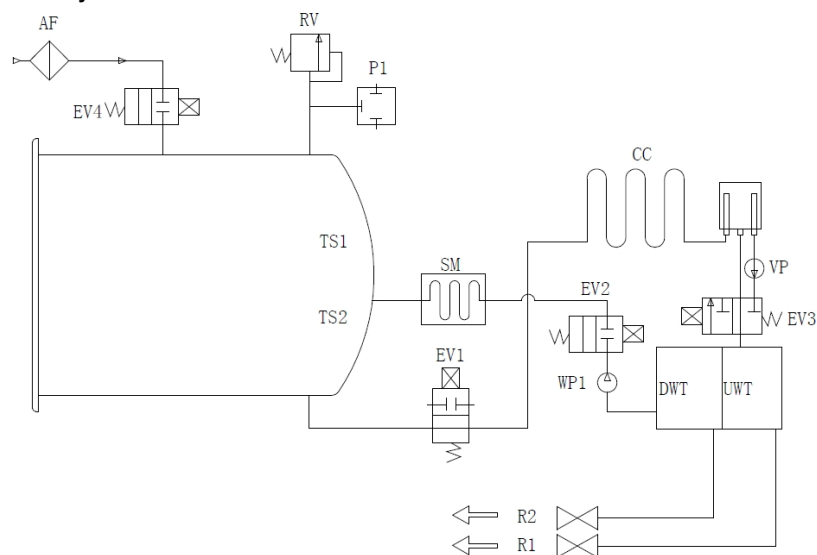
1.0
112
Er01

Explanation of error message designations:

L.p.	Error code number	Meaning
1.	Er01	The temperature of the steam generator is too high.
2.	Er02	Heating ring temperature too high.
3.	Er03	Too high temperature inside the chamber.
4.	Er04	Temperature and pressure maintenance failed.
5.	Er05	Lowering the pressure has failed.
6.	Er06	Open door during sterilization cycle.
7.	Er07	The cycle time is longer than set (it is too long).
8.	Er08	The pressure is too high.
9.	Er09	Defective temperature sensors in the chamber - too high or too low temperature (dual sensors only).
10.	Er10	Inadequate temperature and pressure.
11.	Er12	Vacuum generation has failed.
12.	Er14	Large differences in the indications of the temperature sensors in the chamber (dual sensors only).
13.	Er98	No power supply during cycle.
14.	Er99/Er00	Incorrect output.

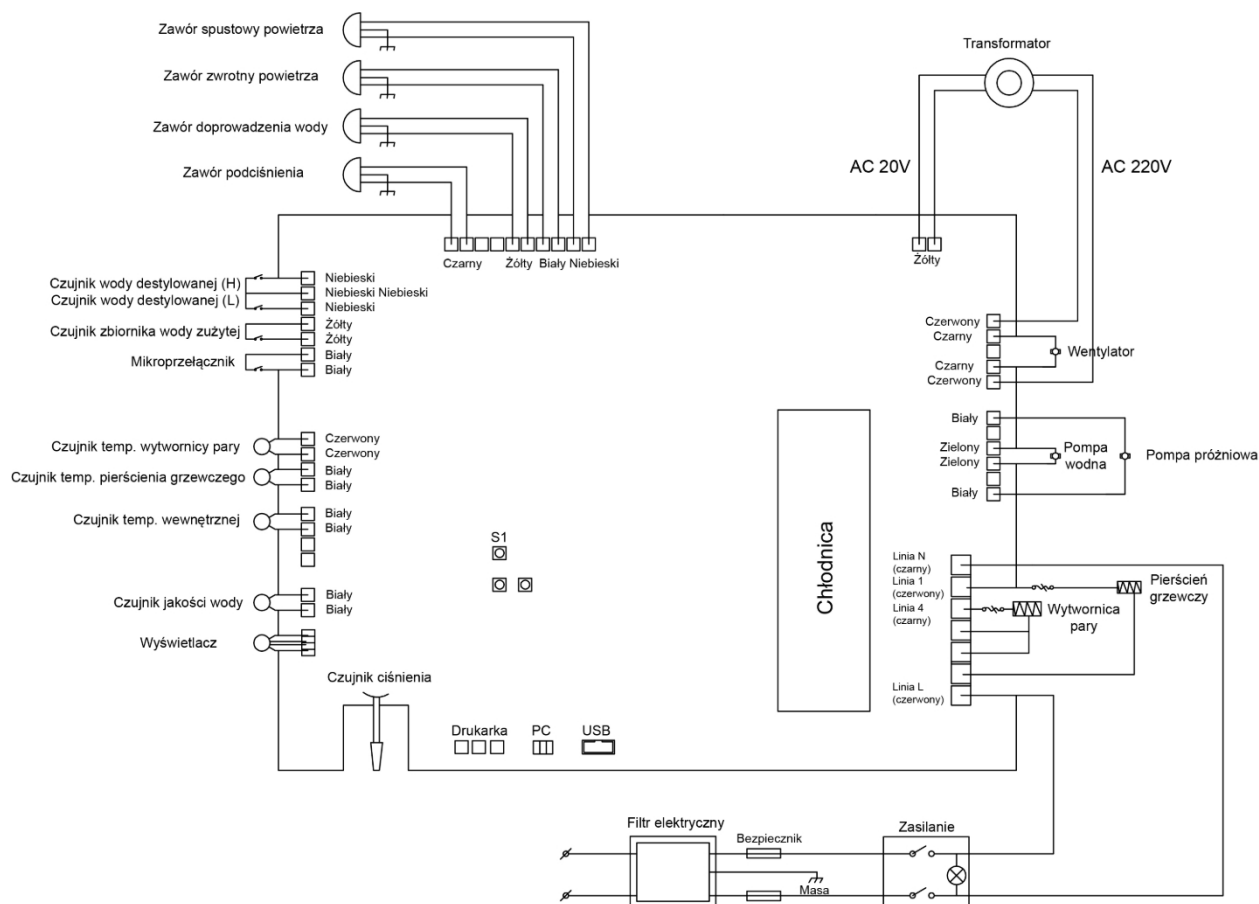
Appendix No. 3 Hydraulic and electrical system diagram

1. Diagram of the hydraulic system



AF - air filter	EV4 - air check valve	RV - safety valve
UMT - used water tank	P1 - pressure sensor	R1 - distilled water drain valve
DWT - distilled water tank	CC - condensate collector	R2 - used water drain valve
EV1 - vent valve	WP1 - main water pump	TS1 - temperature sensor
EV2 - inlet valve	SM - steam generator	
EV3 - vacuum valve	VP - vacuum pump	

2. Diagram of the electrical system



Appendix No. 4 Checklist for evaluating the requirements for the device

L.p.	Part that needs to be checked	Requirements
1.	Appearance/Chassis of the device	The device should be clean, without any deformation or damage such as bends, dents, indentations, scratches/beats, sharp edges, etc.
2.	External cover/casing	If the unit is repaired, there should be free access for easy removal of the casing.
3.	Legibility of the displayed inscriptions	Inscriptions on the display should be legible.
4.	Galvanized components	Should meet the requirements of YY0076-1992 class 2.
5.	Printer components	Should meet the requirements of YY1055-1999 class 2.
6.	Security system in the door	W normal conditions use, program not can be started, if the autoclave door has not been closed properly.
7.	Pressure in the chamber	The safety mechanism used in the door should prevent its opening, if the pressure in the chamber is greater than 0.027 MPa.

8.	Safety valve	The device must be equipped with a safety valve. The valve is opened when, when the pressure value is about 0.27 MPa± 0.01 MPa. If the pressure reaches the set value, the safety valve will automatically open and reduce the pressure.
9.	Sterilization program	The autoclave must be equipped with factory-set programs for sterilizing items (dressings, instruments) at 121°C and 134°C.
10.	Control system	The autoclave should have a control system to limit the amount of steam in the chamber, which should be controlled according to the highest average temperature value, within ±3°C according to a fixed point. The control system must ensure that the temperature value is consistent with the controlled pressure value.
11.	Time control	The autoclave must have the function of controlling the time of the sterilization and drying phase, and the error must not be greater than 10% of the set value.
12.	Buttons and switches	The buttons and switches used in the unit should be flexible and stable.
13.	Display and indicators	The display and indicators should show the exact course and parameters of the sterilization cycle. Under normal conditions, the device should show: a - temperature of the chamber; b - pressure in the chamber; c - the status of the process flow; d - water level status; e - status of the door.
14.	Leakage test conditions	Under vacuum conditions - 0.07 MPa, the autoclave should show no leaks (leaks or leaks) for a period of 10 minutes at 0.013 MPa.
15.	The tightness of the system (Leakage or leakage is not allowed).	No leakage outside or leakage inside the unit during pressurized operation is allowed.
16.	Impedance of grounding	The impedance between the protective ground point of the power input and the protective ground protective ground should allow all metal parts to touch and must not exceed 0,1 Ω.
17.	Successive leakage current at operating temperature	a) Ground leakage current under normal conditions: ≤ 0.5 mA; single fault condition: ≤ 1 mA. b) Sheath leakage current under normal conditions: ≤ 0.1 mA; single fault condition: ≤ 0.5 mA.
18.	Resistance dielectric strength at operating temperature operating temperature	a) A-a1: Should be able to withstand tests with sinusoidal alternating voltage, 50Hz, 1500V, between the power input socket and the protective ground, it should be possible to touch all metal parts. The test lasts 1 minute, there should be no phenomena such as cracking or spark jumping. b) A-a2: It should be able to withstand the test with alternating sinusoidal voltage, 50Hz, 1500V, between the power input socket and the housing, which lacks grounding. The test lasts 1 minute, and there should be no phenomena such as cracking or spark jumping.
19.	Without charge (no charge)	For all batches except for indented Type A batches, the presence of saturated steam in the load and in the service space is considered achieved if, throughout the storage period, all temperatures measured in the service space and in the load: - are not lower than the sterilization temperature; - are not higher by more than 4 K than the sterilization temperature; - do not differ from each other, by more than 2 K; - the temperature of the usable space, without the load, must not exceed the range of the highest temperature. Note: theoretically, the steam temperature is calculated by measuring the pressure, which can be considered For the test temperature.

20.	Depressed charge	Checking saturation vapor water w during sterilization indented batches type A and type B, shall be distinguished by changing the color of the chemical indicators and checking whether this corresponds to the requirements of the indicator manufacturer.
21.	Dry, solid, packaged batches	In the case of packaged batches, residual moisture, should not lead to wetting of the packages, and should not adversely affect the sterilization batch. Any vapor residue formed on the inner part of the package (on the side of the film layer) should evaporate within 5 minutes.
		For solid batches, the moisture content should not exceed 0.2%.