

Instruction Manual

Autoclave

LFSS12AD Class B Pro 12L

LFSS18AD Class B Pro 28L

LFSS23AD Class B Pro 23L

From firmware version DISP_MAIN_2022_01



Dear Doctor,

Thank you for purchasing a Steri24 product – a brand of CertoClav Sterilizer GmbH. As a family business, we have been focusing on the development, production, and trade of products for sterilization and practice hygiene since our foundation in 1961. Through our constant pursuit of quality, function, safety, and service, we have become a leading supplier in the field of autoclaves.

We are aware that you expect optimal product quality and product reliability from us. Through our experience and high quality standards, we ensure that we meet these requirements. The autoclave you purchase is manufactured under a certified quality management system according to ISO 13485 and is monitored annually by TÜV SÜD in audits lasting several days.

1 Revision

User Guide Version 1.01

Valid for class B autoclave LFSS12AD, LFSS18AD, LFSS23AD

Manual Revision 2 – 12.04.2021 – Author MD – Version 1.01

2 Foreword

Thank you for choosing to purchase a Class B autoclave through Steri24. The autoclave is shipped with this user manual. Depending on the model, the autoclaves differ in the external dimensions and the capacity of the boiler.




Device name: In this manual, the class B autoclaves models LFSS12AD, LFSS18AD and LFSS23AD are named autoclave for simplicity reasons.

Avoidance of dangerous situations: Read all safety instructions carefully before using the autoclave.
















Before using the autoclave, please read this user manual as it contains important safety instructions. Keep the manual carefully near the autoclave, as it is part of the product.

3 List of symbols

3.1 Symbols in this instruction manual

Symbol	Meaning	Explanation
	Health hazard	This symbol indicates a dangerous situation. Ignoring this situation can result in minor to life-threatening injuries.
	Attention	This symbol indicates a dangerous situation. Ignoring this situation can lead to damage to the instruments, the practice equipment or the autoclave.
	Information	This symbol indicates an important piece of information.

3.2 Symbols on the autoclave

Symbol	Explanation
	This symbol indicates that the safety instructions in the user manual must be observed for the operation of the autoclave.
	Symbol for GND (Earth)
	Indicates a hot surface. Do not touch areas marked with this symbol on the device during operation. Allow the device to cool down at the end of the program. If the radiator fan fails, the radiator fins can get hot.
	The device must not be disposed of with household waste. It must be disposed of properly and professionally via the distributor. By marking an appliance with this symbol, the manufacturer also declares that it meets all the requirements of the Act on the Placing on the Market, Return and Environmentally Sound Disposal of Electrical and Electronic Equipment. If you want to shut down your device permanently after many years of operation, the prescribed disposal can be done by the dealer. Please contact your dealer.
	Manufacturer of the medical device
	By marking with this CE mark, the manufacturer declares that the medical device complies with the essential requirements of the Medical Devices Directive. The four-digit number indicates that an approved certification body monitors this.
	Date of manufacture of the medical device
	Serial number icon
	Symbol for the European Representative
	Marking for the orientation of the autoclave in the packaging
	This symbol indicates the avoidance of direct rain on the packaging.
	This symbol indicates the avoidance of rolling the packaging.
	This symbol indicates the maximum number of 3 autoclaves to stack
	Symbol for a temperature limit between 5°C and 40°C.
	Symbol for a maximum relative humidity of 80%

4 Important safety instructions



Follow these safety instructions for the operation of the autoclave. Further safety instructions are contained in the following chapters.

Wearing the autoclave	<ul style="list-style-type: none"> • Use the included fabric ribbons for carrying the autoclave. • Lift and carry the autoclave with two people
Malfunctions	<ul style="list-style-type: none"> • If error messages occur repeatedly during operation of the autoclave, note the error codes and turn off the autoclave. • Maintain the autoclave by authorized persons only.
List	<ul style="list-style-type: none"> • Have the autoclave set up, installed and installed only by people which are authorized by the manufacturer. • Only operate the autoclave in non-hazardous areas. • Only have the electrical connection and the connections for the optional automatic supply of water set up by a specialist. • The documentation media (USB-stick) must be placed in such a way that they cannot come into contact with liquids. • Place the autoclave only on a table or work surface that is suitable for the weight of the autoclave. • Keep the necessary safety distances to the sides of the device. • Use the autoclave only with a grounded socket with 230 VAC, 50 – 60 Hz. The phase should be used exclusively for the autoclave.
Power cord	<ul style="list-style-type: none"> • Never damage or alter the power cord. • Never operate the autoclave if the power cord or power plug is damaged. • Never pull the power cord to unplug the power outlet. Always touch the power plug directly. • Never fix the power cord with sharp objects.
Processing of textiles	<ul style="list-style-type: none"> • Follow the instructions of the textile manufacturers for the preparation and sterilization of textiles. • Please act according to the requirements for the preparation and sterilization of textiles relevant standards and guidelines of your country.
Preparation of instruments	<ul style="list-style-type: none"> • Only use packaging materials and systems suitable for use in EN13060 compliant Class B autoclaves.
Sterilization of liquids	<ul style="list-style-type: none"> • Do not sterilize liquids with this autoclave. Failure to do so may cause burns and scalds due to boiling liquid.
Abortion	<ul style="list-style-type: none"> • Note that when opening the door after a program termination, depending on the time of program termination, hot steam may escape from the chamber or door. • Depending on the time of a program cancellation, the load could be non-sterile. Note the error code on the display. If necessary, sterilize the load again.
Sterile goods removal	<ul style="list-style-type: none"> • Never open the door by force. • Use a tray removal tool to remove the trays. Never touch the sterile goods with unprotected hands after sterilization because the surface can be very hot. • Check the packaging of the sterile goods for damage when removing them from the autoclave. If a package is damaged, sterilize the sterilized material again with a new packaging.
Maintenance	<ul style="list-style-type: none"> • Only have maintenance performed by authorized persons. • Maintain the specified maintenance intervals.

Malfunctions

- Should fault messages be repeated during operation of the autoclave, do not use the autoclave. Contact your distributor to solve the problem.
- Only have the autoclave maintained by authorized persons.
- If the user hears unusual noises or unusual smell during operation, turn off the device and contact your dealer.



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6 Performance specification

6.1 Intended use

Application	The autoclave is intended for use in the medical field, e.g. in general medical practices, veterinary practice, dental practices, and clinics.
Sterilization tasks	According to DIN EN 13060, this autoclave is a class B steam sterilizer. As a class B autoclave is suitable for demanding sterilization tasks. For example, you can sterilize naked, packed and double-packed instruments– and larger quantities of textiles.
	Do not sterilize liquids with this autoclave. To do so may cause burns and scalds due to boiling liquid.
	<ul style="list-style-type: none"> • Use the autoclave only for the applications specified in the technical documents and only in conjunction with the accessories and components recommended by the manufacturer. • Like the previous instrument reprocessing, the sterilization of instruments and textiles with this autoclave according to §2 of the MPBetreibV is only to be carried out by competent personnel. • When sterilizing, only use instruments, packaging and textiles that are suitable for steam sterilization according to the manufacturer's instructions.
Application	<ul style="list-style-type: none"> • Due to the fractional vacuum process, the autoclave ensures complete and effective wetting or penetration of the sterilized material with saturated steam, which is possible for the sterilization of all loads occurring in a medical practice.

6.2 Sterilization process

Venting: The autoclave uses the fractional vacuum process before sterilization, which ensures that the sterilized material is completely and effectively impregnated and penetrated with saturated steam. To generate the sterilizing steam, the autoclave uses a separate steam generator. When the program is started, steam is generated and fed into the sterilization chamber, resulting in a defined pressure and a predetermined temperature. The sterilization chamber is protected against overheating to protect the instruments. Large quantities of instruments or textiles can be sterilized in a short time one after the other and very good drying results can be achieved.

Preheating function

If preheating is activated, the chamber is heated to the required preheating temperature of the respective program before the start of a program or maintained at that temperature between two program runs. This leads to a reduction in program times and a reduction in condensation, which improves drying results.

Keep-warm function

If the keep-warm function is activated, the chamber is also preheated to 50°C in stand-by by means of electric jacket heating. The keep-warm function ensures that the duration of preheating is as short as possible.

6.3 Safety features

The autoclave has all the safety precautions prescribed by EN13060.

Door lock

The autoclave continuously monitors the pressure and temperature and prevents the door from opening in case of overpressure in the boiler.

Automatic process monitoring

In the autoclave, there is an integrated process evaluation system in the electronics that compares process parameters such as temperatures, times, and pressures during a program. It monitors the parameters with regard to their limit values during control and regulation in order to ensure safe and successful sterilization. A monitoring system also checks the device components of the autoclave for their functionality and plausible interaction. If one or more parameters exceed the specified limits, the autoclave issues warnings or fault messages and cancels the program if necessary. It is important to follow the instructions on the display after a program termination. In addition, the autoclave with electronic parameter control optimizes the total operating time of a program depending on the load.

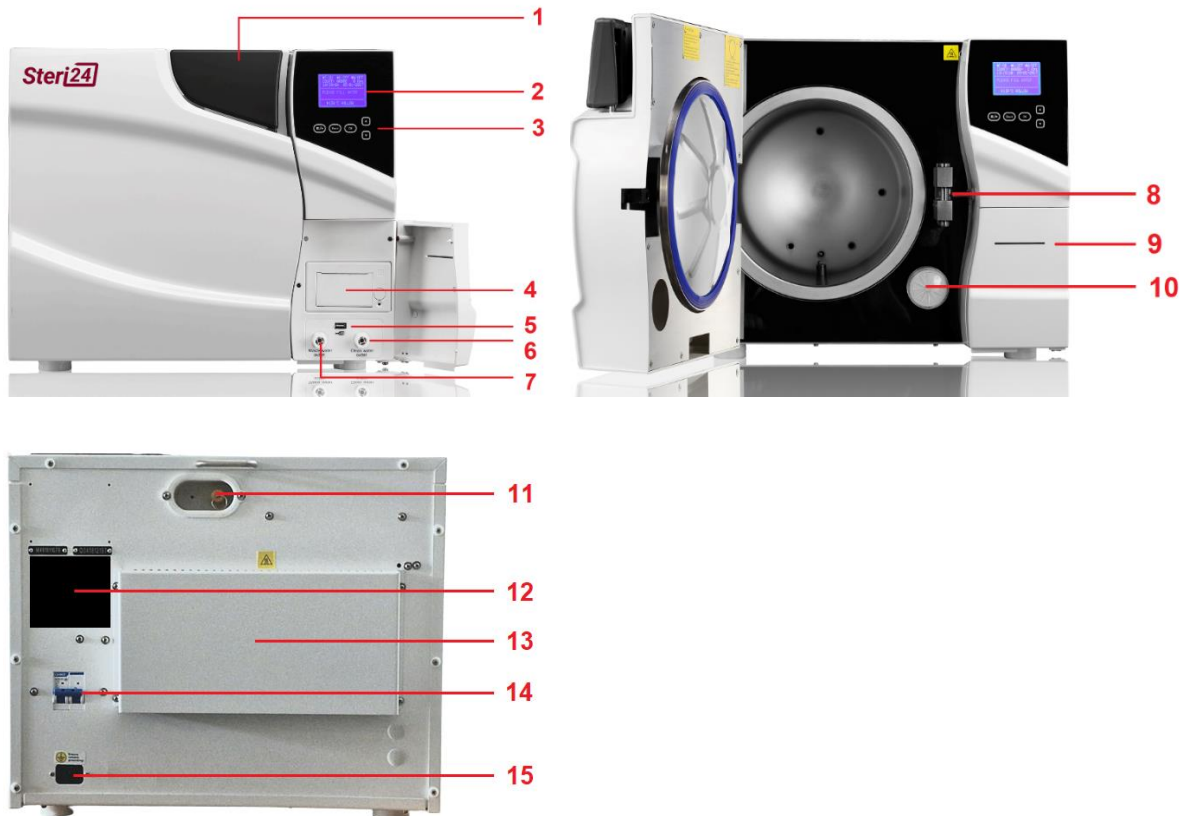
The sterilizer uses an intelligent microprocessor control system and a user-friendly control panel to enable simple, safe, and reliable operation. To ensure reliable sterilization, the device performs self-tests and automatically protects itself in the event of overheating or overpressure situations.

Integrated water quality sensor and water level sensor

An integrated water quality and water level sensor continuously checks the quality and quantity of the feed water.

7 General information

Description of the components:



No.	Description	No.	Description
1	Handle to open and close the door	2	Display
3	Control panel	4	Thermal printer paper tray
5	USB interface for USB stick	6	Drain for the freshwater tank
7	Drain for the used water tank	8	Door sensor
9	Protocol paper feed through	10	Bacteria filter
11	Safety valve	12	Nameplate
13	Air cooling	14	Resettable fuse
15	Power supply socket for mains connection		

The water tank to refill the distilled water is accessible on the top of the autoclave via a blue transparent cover.

8 Programs

The following programs are already set up from the factory setting:

Name	Vacuum steps	Sterilization time	Sterilization temperature	Sterilization pressure	Vacuum persistence time	Drying time
121°C Solid	1 *	20min *	121°C	110kPa		3 *
121°C Porous	3 *	20min *	121°C	110kPa		7 *
121°C Hollow	3 *	20min *	121°C	110kPa		10 *
134°C Solid	1 *	4min *	134°C	210kPa		3 *
134°C Porous	3 *	4min *	134°C	210kPa		7 *
134°C Hollow	3 *	4min *	134°C	210kPa		10 *
Custom	3 *	5min *	134°C *	210kPa		10 *
B&D/Helix	3	3.5 min	134°C	210kPa		7
Vacuum test				-80kPa	15min	
Cleaning	3	5min	105°C	20kPa		10
Prions	3	19min	135°C	210kPa		

The parameters marked with * symbol can be adjusted by the user if necessary. The values can be adjusted as follows:

Vacuum steps	1 – 3
Sterilization time	1 - 60 minutes
Sterilization temperature	105°C – 134°C
Drying time	1 – 25 minutes

Common applications and their programs in factory settings

	134°C hollow	134°C solid	121°C Porous	Prions
Programme description	Universal program	Quick Program	Schon-Program	Prion Program
Program type according to DIN EN 13060	Class B	Class B	Class B	Class B
Dynamic pressure test of the sterilization chamber	X	X	X	X
Air leakage	X	X	X	X
Empty chamber test	X	X	X	X
Massive loading	X	X	X	X
Porous partial loading	X	--	X	X
Porous full load	X	--	X	X
Simple hollow body (type B)	--	X	--	--
Hollow body (type A)	X	--	X	X
Single packed	X	--	X	X
Multi-packed	X	--	X	X
Drying of solid solids	X	X	X	X
Drying with porous loading	X	--	X	X
Sterilization temperature	134°C	134°C	121°C	134°C
Sterilization pressure	2.1 bar	2.1 bar	1.1 bar	2.1 bar
Sterilization time	5 min	4 min	20 min	19 min

X = Compliance with DIN EN 13060

The class B programs described above cover all functions of a typical class S program.

9 Control panel

9.1 Menu navigation

- The ► character is the cursor. In the main menu, the cursor appears in the form of a white rectangle too.
- Use the ▲ key and the ▼ key to move the cursor to the next or previous position.
- If the cursor is at the height of the desired option, you can confirm with the OK button.

9.2 Main menu

P/ON	K/OFF	W/ON
COUNT: 00001		-1 kPa
13:05:45		01-12-2020

USER	ADV	SERV

134°C Porous		

Figure 9-1: Main Menu Appearance

- P/ON or P/OFF indicates that the printer port is enabled or disabled.
- K/ON or K/OFF indicates that the “keep temperature” is activated or deactivated.
- W/ON or W/OFF indicates that the “preheating” function is enabled or disabled.
- COUNT: 00111 indicates that 111 sterilization programs have been completed.
- -1 kPa indicates the pressure difference between the sterilization chamber and the external environment.
- 13:05:45 displays the current time in the format hh:mm:ss.
- 01-12-2020 displays the current date in the format dd-mm-yyyy.
- The ▲ and ▼ keys allow you to select different options. These options are USER, ADV, and SERV. At the bottom of the screen, you can directly launch the last program performed.
- In the "User" menu you can select and start programs.
- In the "Adv" menu you can access the advanced settings.
- The "Serv" menu is for external service personnel only.

9.3 Program selection, program start and stop

Use the ▲ button and the ▼ button to select the USER menu and press OK.

In the USER menu you can select a program of your choice with the ▲ key and the ▼ key. The Cursor ▶ displays the currently selected program.

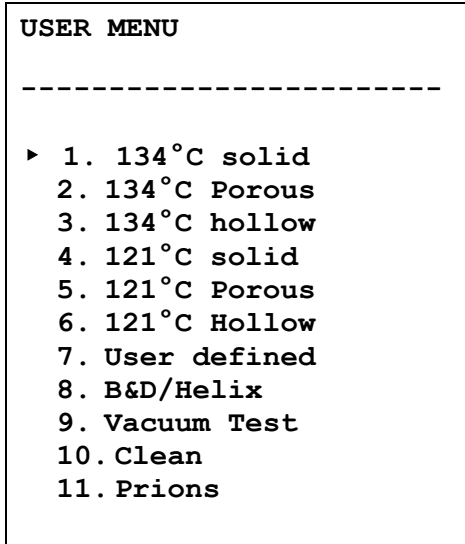


Figure 9-2: Display of the user menu

Confirm your selection with the OK button. After confirming with the OK button, you will automatically return to the main menu.

Program start: To start the selected program, select the program name in the main menu with the cursor and press the START/STOP button.

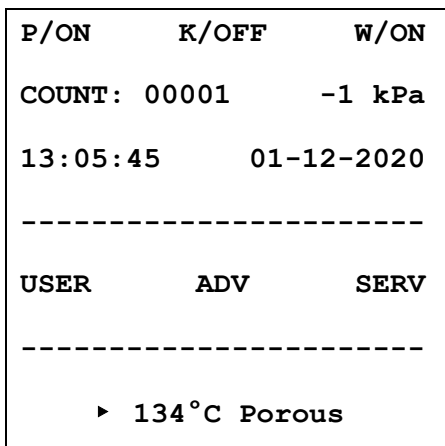


Figure 9-3: Display of the main menu with selected program

Program Stop: While the program is running, press and hold the Start/Stop button for 5 seconds to cancel the program.

9.4 Advanced Settings

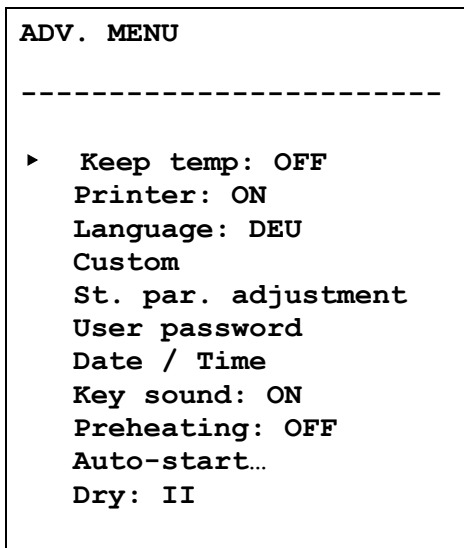


Figure 9-4: Display of advanced settings with selected Keep Temp entry

9.4.1 Keep temp function

If the "Keep Temp" function is OFF, the sterilization chamber and the steam generator are preheated. If the sterilization chamber is open or 8 hours have passed, preheating is automatically stopped. A preheated chamber reduces the duration of the next sterilization cycle.

9.4.2 Printer

To activate the log printer on the front panel of the autoclave, navigate with the cursor to the printer entry and press the OK button until "Printer: ON" appears. To disable the printer, select Printer: OFF. You can exit the menu with the back button.

9.4.3 Language

To change the display language, navigate to the "Language" entry and press the OK button until the desired language is displayed. "DEU" stands for German, "ENG" stands for English.

9.4.4 Customization of the custom program

To change the sterilization parameters of the custom program, navigate to the "Custom" entry and press OK. You can adjust the following program parameters:

Vacuum steps	1 – 3
Sterilization time	1 - 60 minutes
Sterilization temperature	105°C – 134°C
Drying time	1 – 25 minutes

9.4.5 Adaptation of standard programs

To change the sterilization parameters of the default programs, navigate to the entry "Ster. Par. Customization" and press OK. In the following menu, select the desired program you want to change and press OK. The following program parameters can be changed for all fixed, hollow, and porous programs:

Vacuum steps	1 – 3
Sterilization time	1 - 60 minutes
Drying time	1 – 25 minutes

9.4.6 Password

To set a custom login password for the autoclave, navigate to the User Password setting and press the OK button. The user has the possibility to enter a 5-digit PIN as the user password.

As soon as the user has set a user password and set "Enabled" to "ON", user management is active. When the user turns on the sterilizer, he is prompted to enter the 5-digit PIN. Only if the PIN is correct, the user can use the sterilizer.

9.4.7 Date and time setting

If the cursor is in front of the "DATE/TIME" option, press the OK button. A new menu will appear to set the current date and time.

The date format is dd-mm-yyyy, the time format is hh:mm:ss.


Use the ▲ key and the ▼ key to set the appropriate calendar day and press the START/STOP button to move to the next digit. As soon as the date and time have been set correctly, press the OK entry with your cursors and confirm with the OK button to save the setting.

9.4.8 key sound

If the key sounds are muted, navigate to the "Key Sound" entry and press OK until "Key Sound: OFF" is displayed. To activate the button sounds, press the OK button until "Key Sound: ON" appears.

9.4.9 Preheat

If the "Preheat" function is activated, the sterilization chamber is preheated to 50°C immediately after program start. After that, the desired sterilization program starts automatically. If the keep-warm function is disabled, this extends the time until a program is terminated.

	We recommend activating the preheat function
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9.4.10 Time-controlled automatic start (auto-start)

Navigate to the entry "Auto Start..." and press OK. A menu will appear in which you can set when the autoclave starts automatically. Here you have two choices:

- 1) Timer: Enter the date and time at which a program should be started automatically
- 2) Countdown: The input of a time delay measured by the current time at which a program should be started automatically.

After setting the time, the user must select the desired program to be started. The user can confirm the program with the OK button. The program and the countdown are then displayed in the format hh:mm:ss.

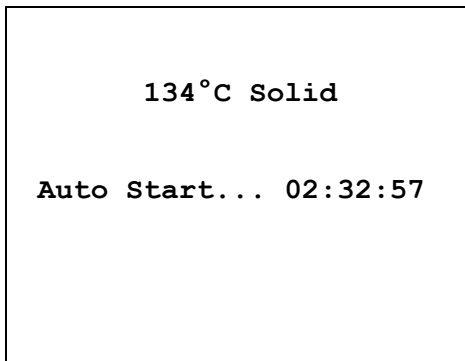


Figure 9-5: Auto-Start Menu Appearance

9.4.11 Drying mode

To change the drying mode, navigate to the "Dry" entry and press the OK button to choose between mode I, II or III.

Mode	Drying temperature	Drying
Dry I	160°C	According to program settings
Dry II	200°C	According to program settings
Dry III	200°C	According to program settings + 5 minutes

10 Installation of the autoclave

This autoclave comes in a wooden carton. You can open this box with pliers or other suitable tools. Lift the autoclave out of the wooden box only in pairs. Use the included slings. Wear suitable work shoes.

Lift the autoclave with two people onto a suitable table that can carry the weight of the autoclave. Please keep at least 10 cm of free space around the autoclave. At the ventilation slots on the back of the autoclave, keep at least 20 cm of free space. Make sure that the room is well ventilated.



Before installation, make sure that the table can support the weight of the autoclave plus 30 kg of additional weight.

10.1 Pressure sensor adjustment

Since the atmospheric pressure at each location has a specific value, the pressure sensor must be calibrated each time there is a change of location. This should be done by trained and authorized service staff.



This autoclave may not work if you do not adjust the pressure sensor.

10.2 Connecting the power cord

Connect the IEC power cord to the back of the autoclave. This autoclave operates at 230VAC, 50 – 60 Hz.



- Never damage or alter the power cord.
- Never operate the autoclave if the power cord or power plug is damaged.
- Never pull the power cord to unplug the power outlet. Always touch the power plug directly.
- Never fix the power cord with sharp objects.

10.3 Date and time setting

9.4.7

11 Operation

11.1 Filling the water tank for distilled water

If the message "Refill water" flashes on the screen, there is not enough distilled or demineralized water in the feed water tank for the next sterilization run. An acoustic signal alerts the user to this error message. The user must fill the tank with new feed water before a new sterilization cycle can be started.




This device has a quality inspection system for water set to a threshold of 30 $\mu\text{S}/\text{cm}$. If the water quality is poor, the display shows "Poor water quality" and blocks the start of a new program. The user must drain the water from the distilled water tank using the supplied Quick-Connect hose and ensure that the water added to the tank is good enough. The limit value for sufficient water quality is 30 $\mu\text{S}/\text{cm}$.

The volume of tanks:

Volume autoclave	Volume of the pure water tank	Volume of waste water tank	Minimum required feed water level to start the autoclave
12 liters	3.5 liters	3.5 liters	500 ml
18 liters	4.0 liters	4.0 liters	600 ml
23 liters	4.0 liters	4.0 liters	600 ml

If the message "Refill water" appears on the screen during a sterilization run, you do not have to cancel the sterilization run. It is sufficient to refill the feed water before the next sterilization cycle.

1. The inlet to the water tank is located on the lid of the autoclave. The user can lift the handle of the blue transparent lid with his hand to open the water tank. New distilled water can then be refilled by hand via a bottle or canister.
2. While distilled water is filling the tank, a beep sound can be heard, which acknowledges the error message "Refill water". There is now enough water for another sterilization cycle in the tank. More water can be filled for up to 5 sterilization cycles.
3. After you have filled distilled water into the water tank, please empty the waste water from the waste water tank too.

	Only distilled or demineralized water is suitable for this autoclave as tank filling. If no distilled water is used, problems arise with the steam generator and with the solenoid valves. Neither the manufacturer nor your dealer is liable for damage caused by the use of distilled water.
	Do not overfill the distilled water tank. Fill the tank up to a maximum of 2 centimeters in front of the top edge of the water tank.
	Before filling distilled water into the water tank, please turn on the autoclave and make sure that your autoclave is horizontal.

11.2 USB stick for logging

You can use a USB stick to digitally store the sterilization protocols. Please insert a USB stick into the USB port of the autoclave before starting a sterilization cycle. A log file is continuously updated on the USB stick during a log run.


11.3 How to start a sterilization cycle

Place your load in the sterilization chamber. Do not overload the autoclave. The following table lists the maximum total weight, maximum total volume and weight per piece.


12 liter autoclave	Instruments	Textiles
Maximum weight per piece	2 kg	1.5 kg
Maximum total weight	5 kg	1.5 kg
Maximum total volume	8.4 litres	8.4 litres

18 liter autoclave	Instruments	Textiles
Maximum weight per piece	2 kg	2 kg
Maximum total weight	6 kg	2 kg
Maximum total volume	12,6 liters	12.6 liters

23 liter autoclave	Instruments	Textiles
Maximum weight per piece	2 kg	2 kg
Maximum total weight	7 kg	2.5 kg
Maximum total volume	16.1 litres	16.1 litres

	<ul style="list-style-type: none"> • Make sure that the total volume of the loads is less than 70 percent of the volume of the sterilization chamber. • Leave at least 10 mm of clearance between the load and the sterilization chamber wall. • When you run the "B&D/Helix" program, place the test paper or test device in the middle of the sterilization chamber. Or on the most critical location. • When placing and removing the load in and out of the sterilization chamber, use the hand tool provided so that your hands cannot be injured by the high surface temperature of the sterilization chamber wall and tray.
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Close the door of the autoclave using the door handle.


	<p>If the temperature and pressure in the sterilization chamber are high, the door of the autoclave is difficult to close. In this case, please wait 30 seconds before closing the door.</p>
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Select a sterilization program and press START. More information on how to select a program can be found in Chapter 9.3

The entire sterilization cycle is performed automatically and automatically terminated. You don't have to take extra actions. The duration of the entire sterilization cycle depends on the starting temperature and type of charge as well as the amount of charge and the preheat setting.

Once the sterilization run is complete, the screen displays "Program End" and three beep sounds indicate the program end. Now you can open the door and take out the sterile load with the supplied tool.

	<p>Use the supplied tool to remove the trays from the sterilization chamber. Do not pull the door handle with a lot of force. The door cannot be opened until the pressure difference between the sterilisation chamber interior and the exterior is in the range of -5 kPa to 5 kPa.</p>
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	Recommendation for dental practices and clinics: To check the effectiveness of the sterilization runs, always place a Helix test device or bag with indicator together with the load in the sterilization chamber. Follow the RKI recommendation (Robert Koch Institute) for documentation of instrument reprocessing or ask your dealer. A guide for the documentation for instrument reprocessing can be supplied by your distributor.
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11.4 Empty used water from the wastewater tank

If the screen shows "Please drain water from wastewater tank", then the Bflue water tank is full. Please empty the used water from the consumption water tank with the supplied quick-connect hose.


	The used water can be hot
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12 Error handling

If an error occurs during a program run, the autoclave throws an audible alarm and displays an error code on the screen. In addition, the autoclave automatically releases the pressure inside the sterilization chamber and automatically switches off the heating. This security system ensures the safety of users.

Instructions for action in case of an error message:

1. Read the error code on the display and note it in your documentation. If you use the log printer or a USB stick for recording, the error code is already documented.
2. Leave the door of the autoclave closed.
3. Wait until the pressure in the sterilization chamber interior is in the range of -5kPa to 5kPa and then acknowledge the failed cycle by pressing the OK button.

	Please contact your dealer to find the cause of the error.
---	--

List of all error messages:

Error code	Description
E2	The pressure in the sterilization chamber is 40 kPa above the expected value during program execution. Examples: During a "134°C" program run, the pressure inside the sterilization chamber is more than 250 kPa. During a "121°C" program run, the pressure inside the sterilization chamber is more than 150 kPa.
E31	The temperature in the sterilization chamber is more than 150°C.
E32	The temperature outside the heater is more than 280°C.
E41	After 8 minutes of preheating, the temperature of the heater is less than 100°C.
E42	After 8 minutes of preheating, the temperature of the steam generator is less than 100°C.
E5	After 10 minutes of drying time, the pressure inside the sterilization chamber is more than 50 kPa.
E51	The temperature in the sterilization chamber is less than 0°C.
E52	The temperature outside the heater is less than 0°C.
E6	During a program run, the door is open.
E61	During a "134°C" program run, the temperature in the sterilization chamber is more than 140°C. During a "121°C" program run, the temperature in the sterilization chamber is more than 127°C.
E62	The temperature outside the heater is greater than 190°C.
E63	The temperature of the steam generator is less than 0°C or more than 230°C.
E7	The atmospheric pressure is less than 70kPa.
E8	During the heating phase, the temperature in the sterilization chamber rises by less than 3°C in 5 minutes.
E9	During a "134°C" program run, the pressure inside the sterilization chamber does not exceed 180kPa. During a "121°C" program run, the pressure inside the sterilization chamber does not exceed 80 kPa.
E10	The electromagnet is in the wrong position.
E11	The electromagnet is open during a program run.
E12	The vacuum in the sterilization chamber interior does not sing below -70kPa in the first two of three vacuum sealing cycles.
E99	Data transmission error within the autoclave.

13 Maintenance

Please follow the manufacturer's recommendation for the maintenance of certain device components:

Component	Specialist	Schedule
Cleaning of the fresh water tank	Trained staff	On request, at least every 3 months
Cleaning of the chamber	Trained staff	Once a month
Cleaning of the sealing ring	Trained staff	In case of error (error 08)
Cleaning of the drain filter	Trained staff	In case of error (error 02)
Replacement of the bacteria filter	Trained staff	Every 150 cycles, at least once a year
Replacement of the door seal	Trained staff	At least every 2 years
Printer Paper Replacement	Trained staff	As required
Resetting the fuse	Trained staff	As required
Cleaning of the custom water tank	Qualified maintenance personnel	At least every 2 years
Adjustment of doorcontact pressure	Qualified maintenance personnel	At least every 2 years
Replacement of the safety valve	Qualified maintenance personnel	At least every 2 years

13.1 Cleaning of the freshwater tank

Use ethyl alcohol to disinfect and clean the water tank surface.

13.2 Cleaning of the chamber

Use ethyl alcohol to disinfect and clean the sterilization chamber.

13.3 Cleaning of the sealing ring

The sealing ring should be cleaned regularly. Please use distilled water to clean the sealing ring. If leaks still occur after cleaning, the sealing ring may need to be replaced or the door adjusted.

13.4 Cleaning of the drain filter

It is necessary to clean the dirt filter in the chamber during maintenance. Open the autoclave flap to access the filter. Rotate the filter counterclockwise to remove it. Then rinse the filter with distilled water to dissolve any possible contaminants. Then screw the filter back down the drain.



13.5 Replacement of the bacteria filter

Every 150 cycles we recommend replacing the germ-proof filter.

13.6 Replacement of the door seal

Tools needed

- Flat screwdriver: 1 pcs.

Steps

1. Hold the sealing ring by one hand and gently hold a screwdriver with the other hand to separate the door and sealing ring. Then slowly remove the sealing ring.
2. After the sealing ring is removed, clean and check it, if it is damaged, the user must replace it.
3. After the sealing ring has been cleaned with distilled water, put it back.
4. Caution: If the user finds it difficult to reinsert the sealing ring, gently press it with the screwdriver until it is finished.

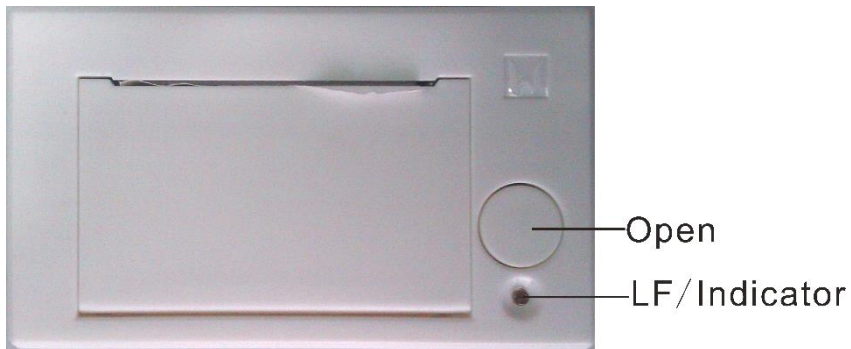


Figure 1

13.7 Printer Paper Replacement

Turn off the autoclave at the power switch.

Press the Open button next to the printer to open the paper tray.



Change the paper as shown in Figure 11 and manually close the paper tray until it clicks into place.



Figure 11

Printer paper feeder check:

Turn on the autoclave at the power switch. Press the LF (line feed) button to run some paper out of the printer. If the paper does not get stuck on the sides of the printer tray, you have successfully changed the paper. If the paper jams, change the paper and test the export again.

If the printer paper has been changed correctly, but no data can be read on the paper during protocol print, then turn the thermal paper roll once to print on the opposite side of the paper. The printer paper has only one printable side. Therefore, only one side can be printed.

14 Transport and storage

14.1 Preparations

Allow the autoclave to cool and unplug it from the wall outlet.

14.2 Emptying of water tanks

Empty all internal water tanks by connecting the QuickConnect hose to the fresh water drain and the sewage drain and draining the water.



14.3 Storage conditions

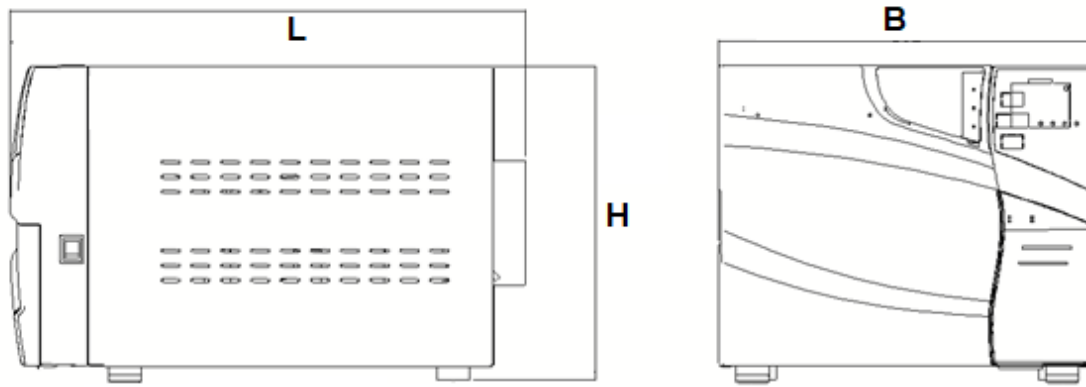
The autoclave should be stored at a room temperature between 5 °C and a maximum of 40 °C. The relative humidity must not be higher than 80%. Make sure that the bearing is well ventilated and does not contain corrosion causing gases.



Do not drop the autoclave during transport.

15 Specifications

Product Model	LFSS12AD	LFSS23AD
Product Name	Steri24 Class B Pro 12 L	Steri24 Class B Pro 23 L
Water supply	Stand-alone with integrated water tanks.	Stand-alone with integrated water tanks.
Documentation	TXT file compliant as EN13060 via USB stick	TXT file compliant as EN13060 via USB stick
	EN13060 compliant paper printing via the integrated printer	EN13060 compliant paper printing via the integrated printer
Product dimensions (LxWxH)	61.5 x 44.0 x 36.0 cm	65.0 x 51.0 x 43.5 cm (Fits on a standard countertop)
Volume of feed water tank	4 liters	4 liters
Volume of service water tank	4 liters	4 liters
Water connections	Quick-Connect hose connections for manual emptying of fresh and service water tanks	Quick-Connect hose connections for easy manual emptying of the fresh and service water tank
Language User Guide	German	German
Chamber volume	12 liters	23 liters
Number of trays	3	5
Dimensions of the trays	31 x 15 x 1.5 cm. (L x W x H)	31 x 15 x 1.5 cm. (L x W x H)
Chamber dimensions	Ø 20 cm x 35 cm	Ø 20 cm x 35 cm
Dimensions	61.5 x 44 x 36 cm (L x W x H)	61.5 x 44 x 36 cm (L x W x H)
Documentation	USB and thermal printers	USB and thermal printers
Average sterilization time	32 minutes	37 minutes
Drying	Dual drying by means of vacuum and jacket heating	Dual drying by means of vacuum and jacket heating
Batch throughput	Keep-warm function for higher batch throughput	Keep-warm function for higher batch throughput
Preheat	Preheating function for reproducible sterilization results	Preheating function for reproducible sterilization results
Power supply	230V AC, 50 Hz	230V AC, 50 Hz
Achievement	1800 watts	1800 watts
Net weight	39 kg	60 kg



16 Warranty

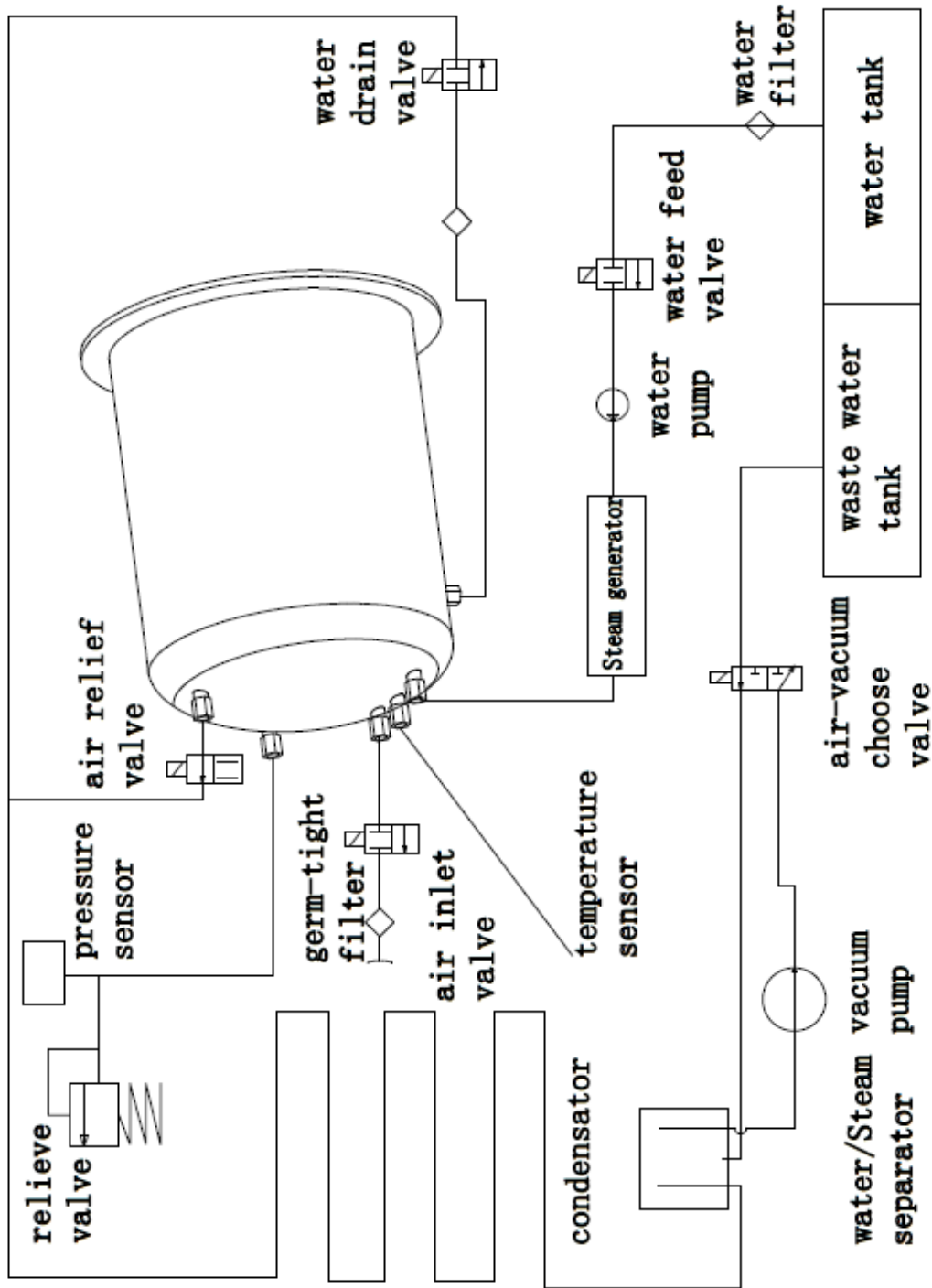
The warranty, except for using parts, is a period specified by the dealer (chapter 19) from the date of purchase and is valid upon presentation of proof of purchase. The warranty claim expires if at least one of the following circumstances applies in an assessment of the dealer:

- 1) The damage was caused by improper installation by an unauthorized person.
- 2) The damage is caused by a fall, impact, or similar carelessness.
- 3) The damage was caused by the installation of the customer without acceptance by trained personnel of the dealer.
- 4) The damage was caused by independent repair attempts by the customer or a third non-authorized company.
- 5) The damage was caused by force majeure such as fire.
- 6) The damage is caused by the use of the autoclave outside the intended use.

17 Accessories

Position	Order number	Description
1	1300824	Hose with Quick-Connect coupling
3	8500479	Tray-Set 12 liters device with 3 drawers incl. tray holder
4	8500480	Tray-Set 18 liters device with 5 drawers incl. tray holder
5	8500481	Tray-Set 23 liters device with 5 drawers incl. tray holder
4	1300001	Operating instructions
6	1300754	Power Cables
7	8500498	10 rolls of thermal paper for the protocol printer. Not included.

18 Annex 1 Structure diagram



19 Specific device data

Model: _____

Serial number: _____

Warranty from Date of Purchase: _____

European Representative

Caretechion GmbH

Niederrheinstrasse 71

40474 Düsseldorf, Germany

Manufacturer

Ningbo Haishu Life medical Technology Co., Ltd.

1 Jinghui road, Hengjie town, Haushu,

Ningbo, Zhejiang, China 315181

Dealer EU

Steri24 – a division of

CertoClav Sterilizer GmbH

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4060 Leonding, Austria