

# User manual



**SterilElite24™ , SterilElite16™**

**AUTOMATIC STEAM STERILIZER**

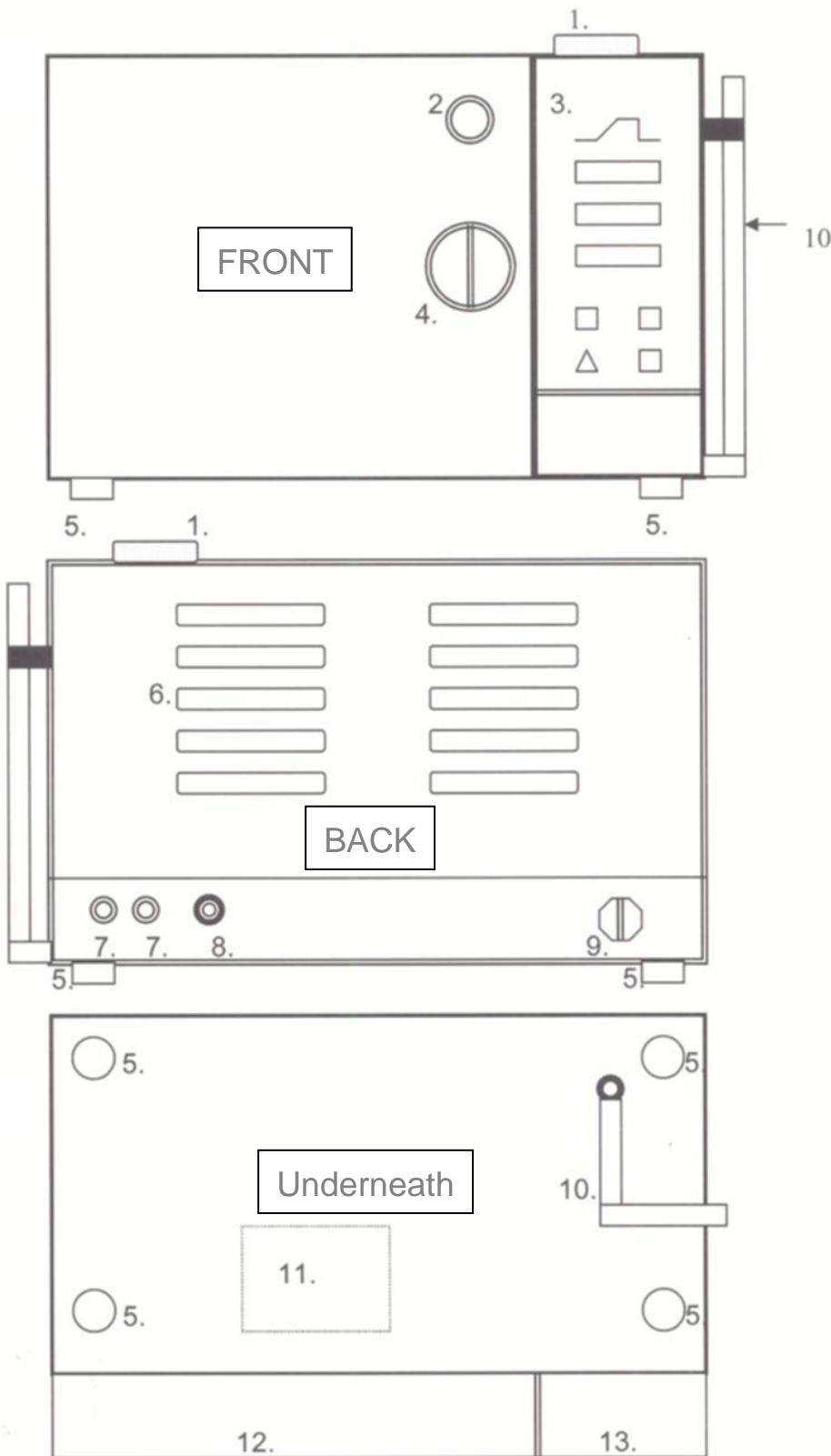
# **CONTENTS**

Please read this manual carefully prior to using your new SterilElite Autoclave. Following the instructions contained in this manual will help ensure ease of use, trouble free operation and a longer working life for your SterilElite autoclave.

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## CHAPTER 1. LOCATION



1. Water tank cover
2. Pressure gauge
3. Control display
4. Door handle
5. Feet
6. Air vent (back side)
7. Thermal overload protection
8. Power cord
9. Drain for filter water
10. Water hose to indicate water level, also used to empty water tank
11. Main heater connector cover
12. Front door cover
13. Control panel cover

## CHAPTER 2. TECHNICAL DETAILS

ITEM	<b><i>SterilElite16™</i></b>	<b><i>SterilElite24™</i></b>
Product description	Table top autoclave sterilizer	Table top autoclave sterilizer
Fill water system	Auto-Fill water system	Auto-Fill water system
Dry Function	Auto dry function	Auto dry function
Overall dimensions	580mm(D) x 510mm(W) x 410mm(H)	660mm(D) x 540mm(W) x 440mm(H)
Chamber Size	Ø230 x 410 mm (D)	Ø260 x 450 mm (D)
Chamber Diameter	Ø230 mm	Ø260 mm
Water capacity per cycle	250ml	Approx. 300ml
Water capacity of water tank	4200ml	Approx. 4200ml
Chamber capacity	Approx. 16 liter	Approx. 24 liter
Weight	48 kg	56 kg
Power supply	115V+/-10% 50/60 Hz	115V+/-10% 50/60 Hz
Temperature display	display by gauge	display by gauge
Pressure display	Analogue pressure gauge	Pressure gauge
Program (function) display	LED display	LED display
Warning indications	Door Closed, Low water, Over heat display	Door Closed, Low water, Over heat display
Max. Power consumption	1400W	1800W
Sterilization temperature	121°C / 135°C	121°C / 135°C

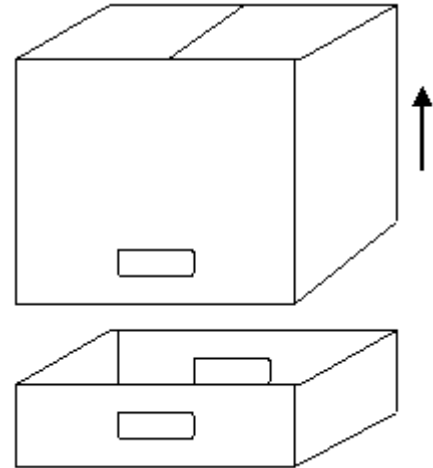
ITEM	SterilElite16™	STERILELITE24™
<b>Program for selection:</b>	121°C 135°C, wrapped or unwrapped dry or wet , Liquid special program selection	121°C 135°C, wrapped / unwrapped , dry / undry , Liquid special program selection
1. Sterilization temperature	121°C 135°C	121°C 135°C
2. Sterilization time	Liquid sterilization program	Liquid sterilization program
3. Dry function	30 minutes, fixed program	30 minutes, fixed program
<b>Safety devices:</b>		
1. Pressure safety valve	2.5 bar	2.5 bar
2. Over temperature protection	Independent Temp. protection device.	Independent Temp. protection device.
3. Electric overload protection	15 A circuit breaker	15 A circuit breaker
4. Over pressure	Pressure protection switch	Pressure protection switch
5. Door lock indication	Micro-switch with integrated door lock sensor	Micro-switch with integrated door lock sensor
6. Water tank, water level sensor	Low water level indication when when water below minimum	Low water level indication when when water below minimum
7. Chamber water level sensor	Chamber water level sensor active in "ADD-WATER" step	Chamber water level sensor active in "ADD-WATER" step
8. Door auto-lock	Pressure Lock.	Pressure lock.
<b>Optional Accessories</b>	Sterilization tray set (3 trays, Tray frame, tray holder, spring holder)	Sterilization tray set (3 trays, Tray frame, tray holder, spring holder)
Warranty	2 Years, when individually registered	2 Years, when individually registered
manufacturer license No.	CE 0434	CE 0434

## CHAPTER 3. PREPARATION & INSTALLATION

### UNPACKING CHECKLIST

To unpack autoclave from box:

1. Cut any box binding material
2. Remove top cover of the carton as shown
3. Remove foam-packing pieces
4. Take the autoclave out from the base foam



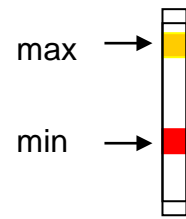
### BEFORE FIRST TIME USE CHECKLIST

1. Please make sure that all possible included accessories are accounted for and removed from the autoclave chamber
2. Put autoclave on the dedicated workbench, allowing at least 2" to 3" distance between the wall and the unit itself to allow sufficient airflow. It is important that the unit is set up in **level** condition.  
**Make sure that the air vents at the back of the unit are free of any obstructions.**
3. Check for correct power supply. Power source 115VAC

4. Fill water (**DISTILLED WATER ONLY**) into the water reservoir until the water level is near the max level sign in the water reservoir.

**Please make sure that the water level is not outside these marks**

**Remark:** After the sterilization process, condensate from the chamber will be pressed back into the reservoir by the remaining chamber pressure.



## BEFORE FIRST TIME USE CHECKLIST - continued

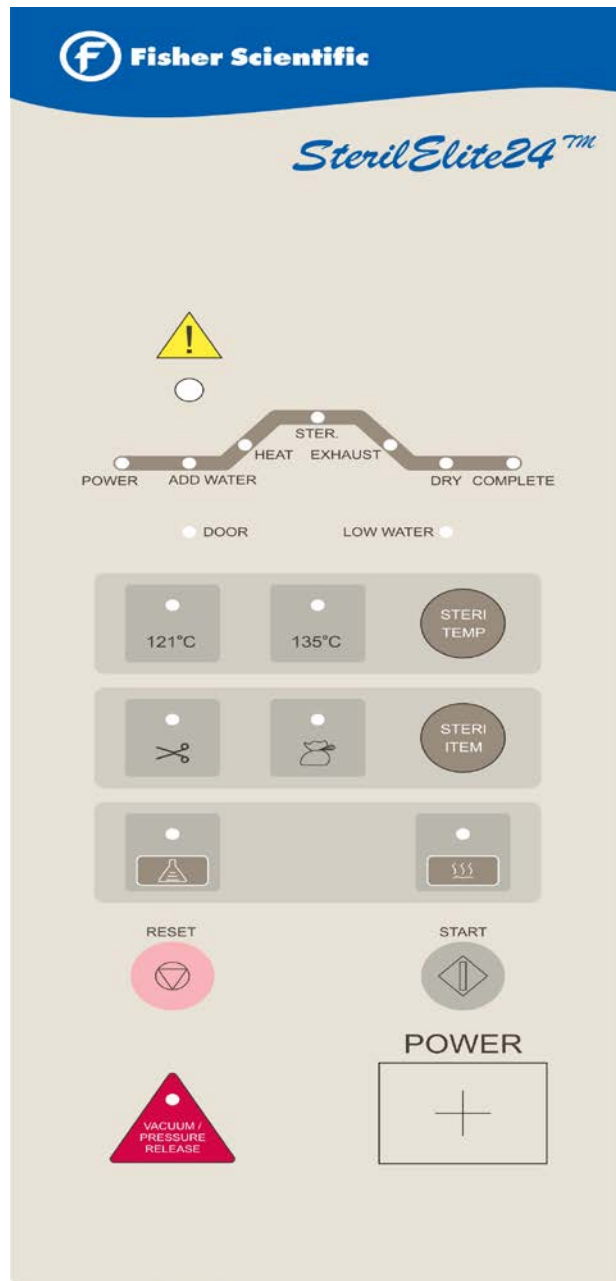
5. Take the power cord out and plug the male end into a standard single and grounded AC outlet.

**CHECK:** POWER SOCKET 115VAC 20A, only the original supplied power cord should be used, it is imperative that the unit is appropriately grounded.

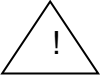
**IMPORTANT:** Before the plug is connected, the power switch must be in the OFF position

6. Press the power switch. If the green light comes on, your unit is ready for operation.

## CHAPTER 4. CONTROL PANEL

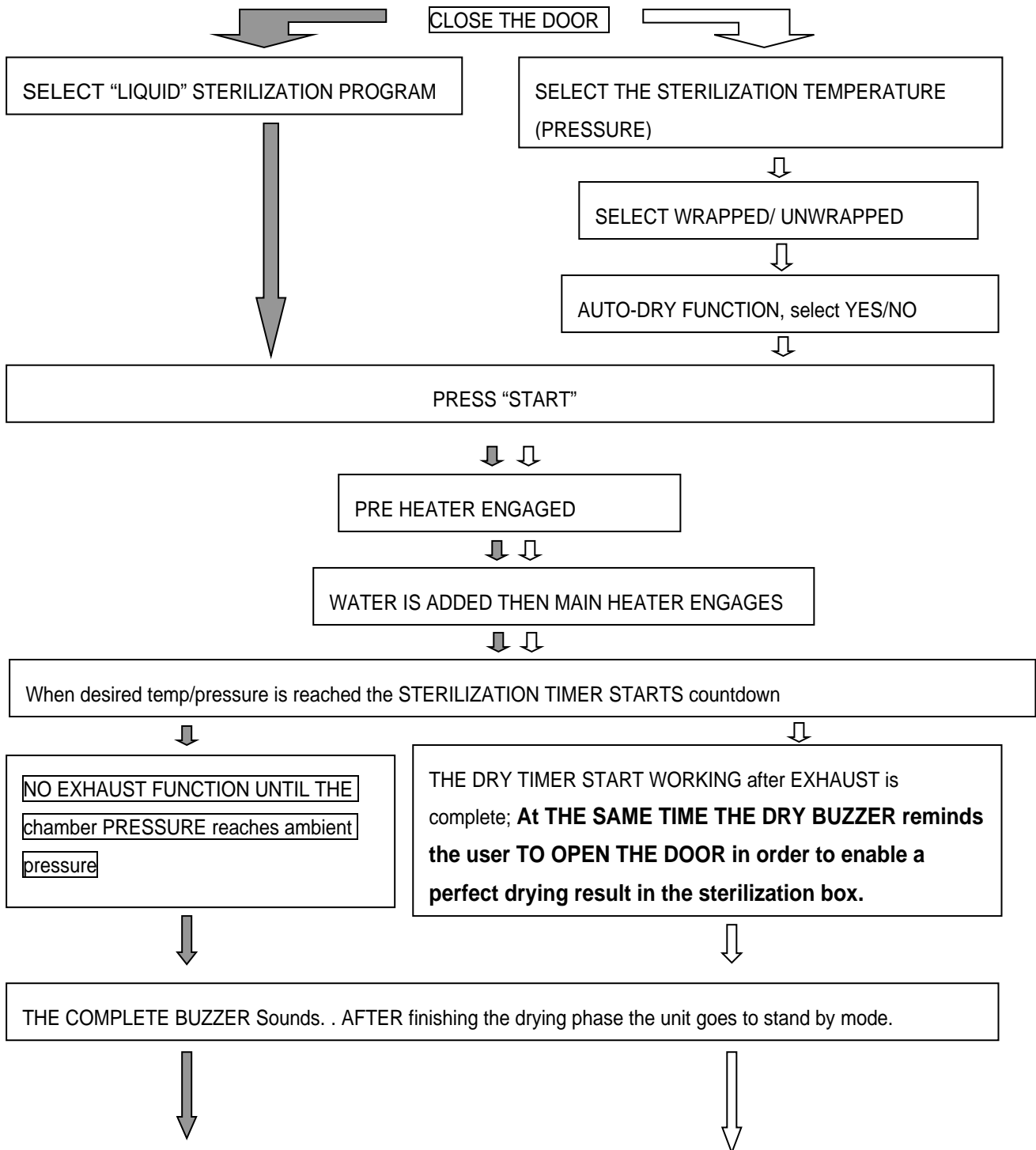


## Reference and legend to the Control Panel

1.  : Alarm for over temperature or over pressure.
2. POWER: Green light indicates that unit has power
3. ADD WATER: when light illuminates, water is being added into the sterilization chamber
4. HEAT: when light illuminates, chamber is being heated up, this takes approx. 20 minutes
5. STERI: when light illuminates, the unit started the sterilization process
6. EXHAUST: when light illuminates, the sterilization step is complete and the air lock valve is opening to release pressure and steam, water in the chamber is being pressed back into the water reservoir
7. DRY: when light illuminates, drying cycle has started, only when drying step was chosen
8. COMPLETE: when light illuminates the entire sterilization cycle is complete and the unit goes in stand-by mode
9. DOOR: when light illuminates, the door is not properly locked, closed
10. LOW WATER: when light illuminates, the water tank has not enough water, water needs to be added, but be careful to stay within the min/max indication and consider the amount of water that will be returned from the chamber to the tank after sterilization in order to prevent overflow. This light can also illuminate when during the add water step there isn't water getting into the chamber after a delay of 5 minutes.

11. STERI. TEMP KEY: Select sterilization temperature.
12. STERI. ITEM KEY: Select sterilization , “wrapped” or “unwrapped”, time.
13. LIQUID KEY: Single function for liquid program.
14. DRY TIMER KEY: Select dry time or un-dry time. The build in drying time is 30 minutes.
15. RESET KEY: Stops the program and sends the unit to stand by mode.
16. START KEY: Start program.
17. VACUUM RELEASE KEY: Releases air lock valve
18. POWER KEY: Power on machine.

## CHAPTER 4 BASIC STEPS OF STERILIZATION





When the drying buzzer sounds, open door slightly in order to achieve a perfect drying result.

**THE DOOR CAN'T be OPENED IF THE CHAMBER is under VACUUM.  
PLEASE PRESS THE "VACUUM RELEASE" button TO RELEASE THE CHAMBER VACUUM.**

**CAUTION**

1. BEFORE OPENING THE DOOR ENSURE THAT the pressure gauge shows "zero".
2. **ALLOW THE UNIT TO COOL OFF FOR a minimum of AT LEAST 20 MINUTES in between cycles.**

Remark:

At the end of a cycle, the unit emits two different acoustic signals:

- 1) Acoustic signal for DRYING PHASE is a row of beeps in short succession.
- 2) Acoustic signal for COMPLETION is a continuous beep of 40 seconds.

## CHAPTER 4 OPERATION

1. Open the door and put the products to be sterilized on the trays or sterilization box, or spring holder, etc. Then, push the power switch ON.

**We recommend to put sterilization indicator stripes with the products to get an additional confirmation of a good sterilization result.**

2. Close the door and turn the door handle 90° to latch the door completely.
3. Set-up the programs as your protocol requires, i.e.
  - 121°C (1.2 bar) or 135°C (2.2 bar)
  - WRAPPED or UNWRAPPED / DRY or UN-DRY

**Please refer to APPENDIX A for more information on programs.**

### **Reminder:**

**When choosing the “LIQUID” program, no other parameters can be set, this is a fixed program for liquid sterilization use only.**

- **Sterilization temperature: 121°C (1.2 bar)**
  - **Sterilization time: 40 minutes**
  - **No Dry and Exhaust function in this program.**
4. Push the **START** key, then the autoclave will start working and run the set program automatically.
  5. The autoclave will sound an acoustic alarm once the sterilization cycle is complete. Make sure that the green light indicator above **COMPLETE** is illuminated. If not, the sterilization cycle has failed and needs to be repeated.

**CAUTION 1: BEFORE OPENING THE DOOR ENSURE COMPLETE  
DEPRESSURIZATION OF THE CHAMBER (ZERO INDICATED ON THE  
PRESSURE GAUGE)**

**CAUTION 2: PLEASE DON'T FORGET TO CHECK THE STERILIZATION INDICATOR,  
AFTER EVERY STERILIZATION CYCLE.**

**CAUTION 3: THE "VACUUM RELEASE" SWITCH, CAN BE PRESSED AT ANYTIME YOU  
WANT TO STOP THE PROGRAM OR RELEASE THE VACUUM OR  
PRESSURE FROM THE CHAMBER.**

## Important to remember when working with the sterilization box

Figure 1 :



All Items need to be put into the sterilization box. Make sure that items are level or below edges of the sterilization box so that the lid can be properly closed.

Figure2 :



Close the sterilization box with the supplied lid

It is very important that side vents are opened before sterilization for a proper steam penetration and close them after sterilization to prevent contamination

Figure 3 :



Please make sure that the heater cover is put in place correctly to prevent damage to the heater coil and assure proper performance

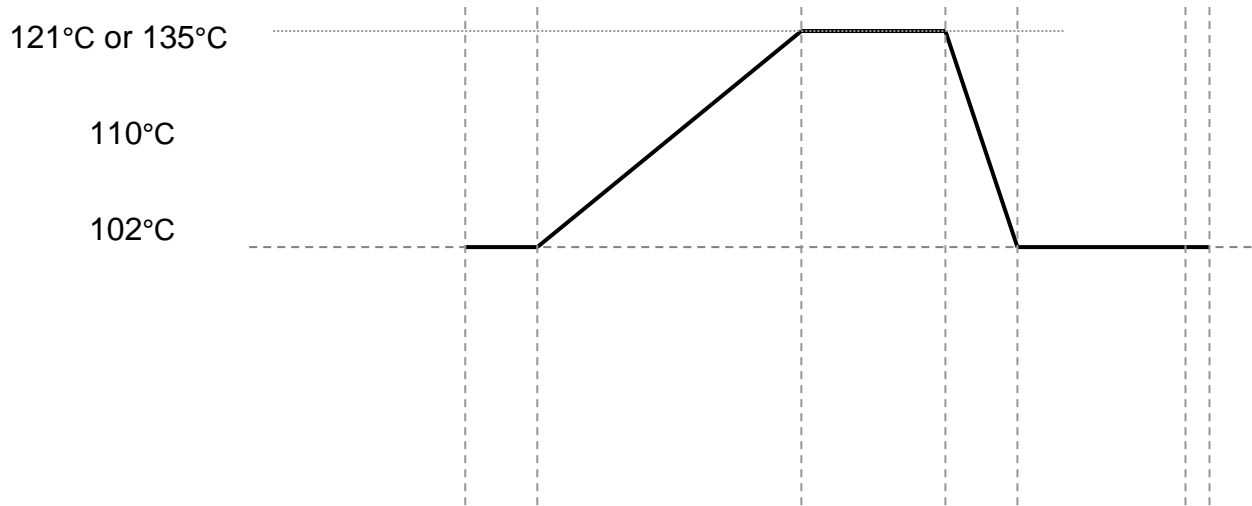
Figure 4 :



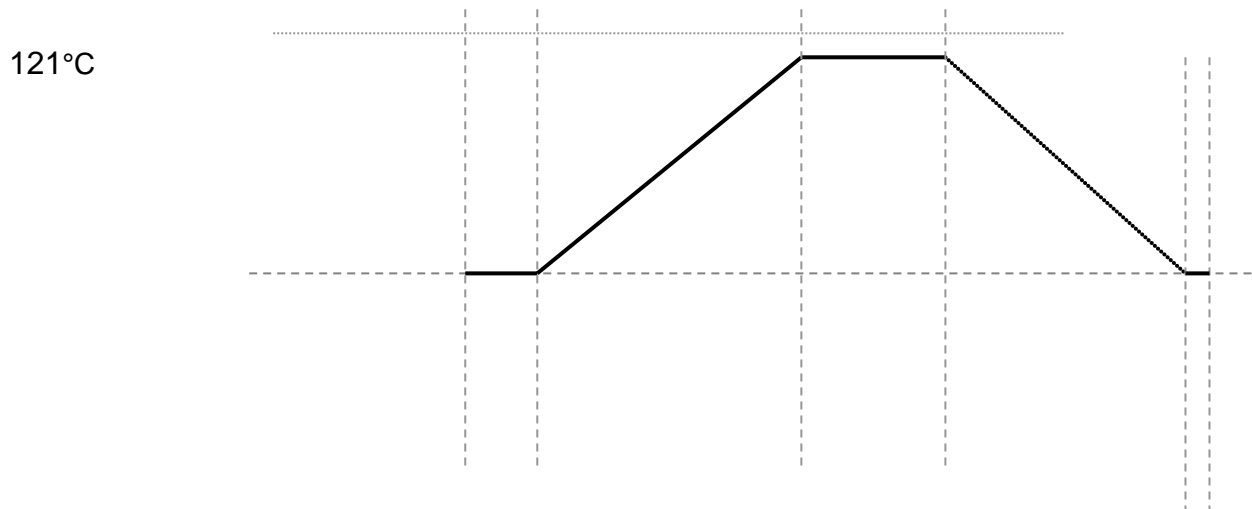
Please check the heater cover and sterilization box are put in place as shown to ensure proper operation of the autoclave

## CHAPTER 4. OPERATION – PROGRAMS

Standard Programs ( 121°C / 135°C Wrapped / un-wrapped dry / un-dry )




LIQUID Programs ( 121°C Sterilization time: 40 Minutes dry: 0 Minutes )



## CHAPTER 5. REMINDERS, WARNINGS & CAUTION

1. **USE DEDICATED POWER ONLY. See technical data sheet**
2. Please check the pressure gauge prior to opening the chamber door.  
**Don't open the door if gauge indicates more than "ZERO" If you have a vacuum indication, please use the Vacuum release key to equalize pressure before attempting to open the door. This will prevent damaging the door gasket.**
3. **USE ONLY DISTILLED WATER. Warranty is voided when other liquids such as tap water are used.**
4. When locking the door for operation, the door handle must be turned completely to the stopping point.
5. **Warning**, during operation the top portion of the housing might be hot.
6. We recommend the use of biological indicator strips as a check for sterility. These strips may also be kept as a record of sterilization.
7. In the event of an emergency or maintenance, please turn-off the main power switch and disconnect the unit from power supply immediately.
8. Do not fill the water tank over its capacity, check indicators min/max
9. When the **ADD WATER** indicator light is on, the chamber is being supplied with water. Please don't confuse this with the low water indication.
10. If the **"DOOR"** Indicator light is on, the door has not been closed completely.
11. If the **"LOW WATER"** indicator light is on, the water level in the water reservoir needs to be checked, please proceed as follows:



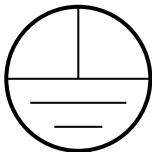


## CHAPTER 5. WARNING & CAUTION

- a) If the level in the water reservoir is not sufficient, please add water. In order to prevent overflow of the water reservoir, please consider the water amount already in the chamber which will be pressed back into the reservoir after sterilization.
  - b) If the water level is OK then either the chamber level- or the reservoir level-sensor might be dirty or has a contact problem. Please clean the surface of either sensor and try again. If the indicator light is still on, please call our technical support to troubleshoot.
13. If the  **DANGER (OVER HEAT / PRESSURE )** indicator light is on, there is a problem with the heater or pressure or both. The autoclave will shut down immediately. In addition please pull out power plug and call technical support to check your unit.
14. Always keep chamber -collar and -gasket clean to prevent steam leaking from the unit and jeopardizing the sterilization process.
15. Don't forget to ensure that the sterilization stripes show SUCCESS after sterilization.
16. Reminder:.In order to assure a long life time of your SterilElite, read and make sure you follow the check-list in CHAPTER 8. MAINTENANCE REQUIREMENTS.
17. If the necessity of moving your SterilElite arises, remember that the unit should always be moved by at least two persons to prevent personal injury.

The filter inside the chamber should be cleaned once per month at least.

## CHAPTER 5. WARNING & CAUTION

### 18. CAUTION LABELS AND OTHER IMPORTANT INDICATION LABELS:

				
CAUTION: Please check our Operation manual.	CAUTION: Hot, Please don't Touch it.	INDICATION: Ground	INDICATION: POWER-OFF	INDICATION: POWER-ON

19. STORAGE ENVIRONMENT: TEMPERATURE:-10C~+50C / HUMIDITY: ≤ 80%

20. WORKING ENVIRONMENT: TEMPERATURE: 1C~+40C / HUMIDITY: ≤ 80%

21. TRANSPORTATION ENVIRONMENT: TEMPERATURE: -10C~+60c / HUMIDITY: ≤ 80%



# LIQUID STERILIZATION PROGRAM: Sterilization time: 40 minutes

Sterilization temperature: 121°C / 250°F

PS: No Auto-exhaust function.

# FOR REFERENCE:  $1 \text{ KG/CM}^2 = 0.98\text{bar} = 14.2\text{psi}$ .

# Sterilization instruments must be made from metal, not plated or galvanized or autoclavable plastic or silicon rubber material.

## CHAPTER 6. APPENDIX – B

※ RE-PACKING INSTRUCTIONS: TO PACK AUTOCLAVE INTO CARTON  
(PLEASE REFER CHAPTER 1. LOCATION.)

1. Turn the power switch to the OFF position and unplug unit from power source.
2. Place all accessories into the chamber. Close and lock door.
3. Drain all water from the chamber and reservoir through the water hose
4. Cover the autoclave with the plastic bag.
5. Put the bottom of the carton containing the packing piece No.1 onto the floor.  
Place the foam set in the bottom case.
6. Place the autoclave into bottom case fitting well in the bottom foam set.
7. Put 4 pieces of angle hard paper on each corner of the carton.
8. Put the top carton piece on.
9. Put top foam (4 pcs.) on around the top of the autoclave.
10. Close the top of the carton, and seal with tape.
11. Bind the box for adequate transportation safety

**IMPORTANT:**

We strongly recommend that all packing material, including the carton to be kept for re-use in the event that the unit needs to be transported at any time.

## CHAPTER 7. TROUBLE SHOOTING

**\*POWER Light indication doesn't come on:**

1. Power supply is not properly connected.	Try to connect power supply until power indicator goes on.
2. Circuit breaker out	Wait 3minutes then press it back in and check if power light comes on
	If circuit breaker can't be recycled, unit has to be serviced
3. Bulb or switch defect	Replace bulb or switch.

**\*LOW WATER INDICATOR LIGHT is ON AND ALARM sounds:**

1. Water level is low:	Add water in the water reservoir. make sure that the water level stays under "FULL" sign, as there might still be water in the chamber.)
2. Water level sensor in the chamber, unclean:	Clean the water level sensor and try again.
3. Steam solenoid valve unclean:	Clean the filter.

**\*WATER IN CHAMBER CAN'T RETURN TO WATER RESERVOIR AUTOMATICALLY:**

1. Steam solenoid coil broken:	Replace it.
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**\* CHAMBER PRESSURE DOES NOT INCREASE:**

1. Steam solenoid valve unclean.	Clean filter and solenoid valve. Try again.
	Replace solenoid valve.
2. Main Heater defunct.	Replace main heater.
3. Steam pressure over exhaust.	Steam trap leaks, Call technical support
	Steam Piping system leaks. Call technical support

## CHAPTER 8. MAINTENANCE REQUIREMENTS

- **DAILY:**
  - WIPE GASKET; CHAMBER RIM AND CHAMBER AND DOOR INSIDE WITH A DAMP CLOTH. **ATTENTION! HOT SURFACES!**
  - CHECK WATER LEVEL IN RESERVOIR AND SUPPLEMENT WITH DISTILLED WATER ONLY.
  
- **WEEKLY:**
  - CLEAN RACK AND TRAYS.
  - CLEAN FILTER AT THE EXHAUST PORT IN THE CHAMBER.
  - CLEAN THE WATER LEVEL SENSOR IN THE CHAMBER (AFT SIDE ; 1 INCH ABOVE BOTTOM).
  - EXCHANGE FEEDING WATER (DISTILLED WATER ONLY)
  
- **MONTHLY:**
  - EMPTY THE WATER TANK :FLUSH TWICE WITH BOILING WATER. REFILL WITH DISTILLED WATER.
  - CLEAN WIRE MESH FILTER AT BOTTOM REAR SIDE OF HOUSING
  
- **YEARLY:**
  - REMOVE, CLEAN AND REPLACE THE WIRE MESH FILTER AT DOWN SIDE OF THE CASE.
  - CHECK THE ELECTRIC WIRE SYSTEM, FUSE, AND CONNECTORS.
  - CHECK THE TUBING SYSTEM.
  - CLEAN THE SOLENOID VALVE.
  - CHECK THE INDICATION LAMPS, AND ALL CYCLE FUNCTION.
  - CHECK THE DOOR GASKET. (SUGGESTION: REPLACE IT PER YEAR.)

## Warranty

Your SterilElite laboratory autoclave has a one (1) year warranty on defective materials and workmanship under normal use from the date of purchase.

This warranty does not apply to any product damaged by accident, misuse, abuse, neglect, improper line voltage, drip, fire, flood, unauthorized alterations of the product or repairs executed by anyone other than qualified and authorized service personnel.

The liability of the manufacturer is limited to repair and replacement and under no circumstances shall the manufacturer or authorized distributor be liable for any collateral consequential damages or loss.

In case of any questions please contact Fisher Scientific Customer service line at 1-800-766-7000