

# USER MANUAL



## **“Eins-Sci” Autoclave Sterilizer**

### **E-SA-300VF**

Please read user manual carefully before using and keep by its standards

## **AUTOMATIC AUTOCLAVE STERILIZER**

**Please read this user manual carefully prior to using your new Autoclave. Following the simple instructions contained in this user manual will help to ensure ease of use, trouble-free operation, and a longer lifespan for your Autoclave.**

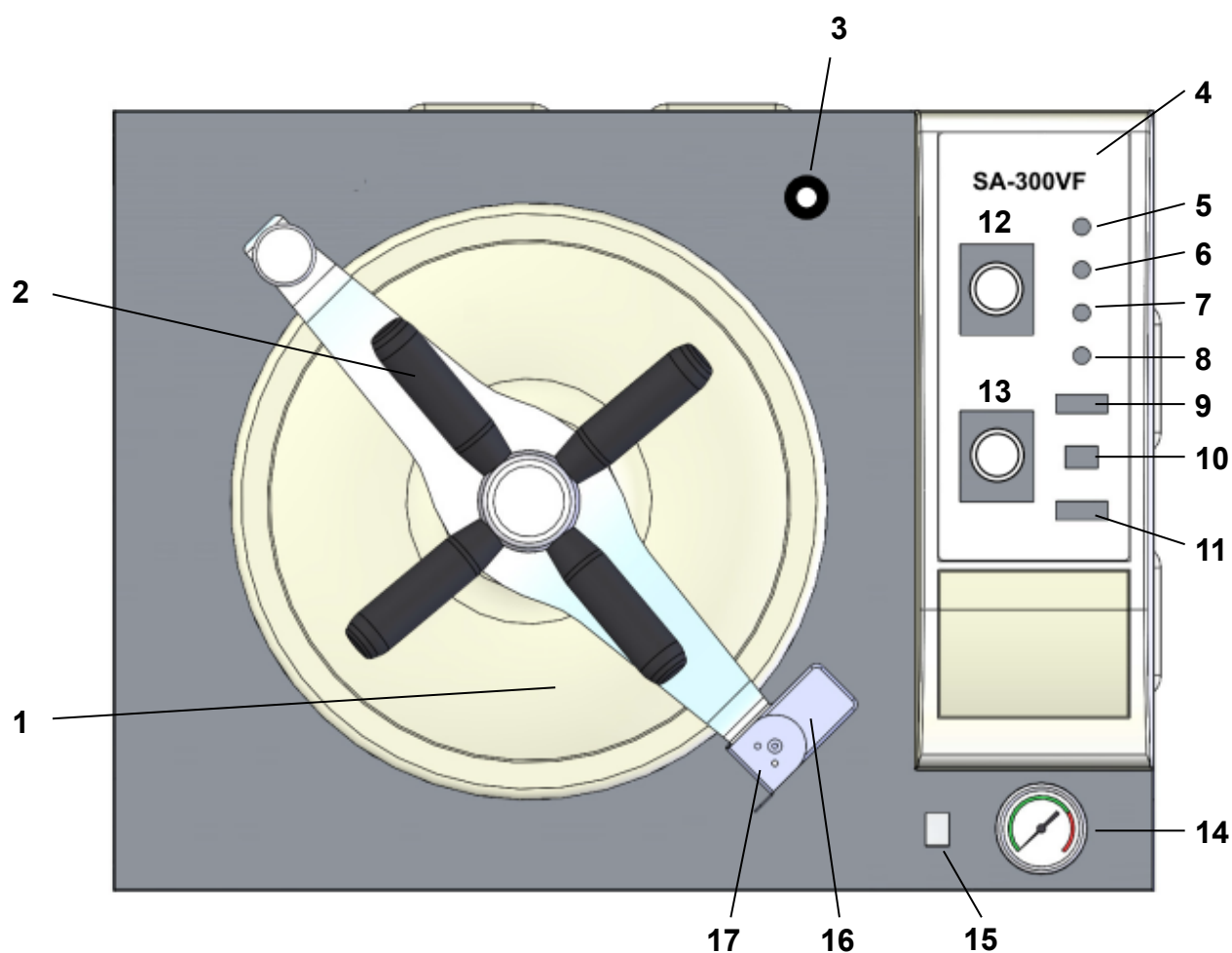
### **Contents**

CHAPTER 1. LOCATION OF CONTROLS .....	1
CHAPTER 2. SPECIFICATIONS .....	2
CHAPTER 3. PREPARATION & INSTALLATION .....	3
CHAPTER 4. BASIC STEPS OF STERILIZATION.....	4
CHAPTER 4.1. OPERATION .....	6
CHAPTER 4.2. CONCERNING THE STERILIZATION ITEMS .....	9
CHAPTER 4.3. LIQUID OPERATION .....	10
CHAPTER 5. WARNING.....	11
CHAPTER 6. APPENDIX - A.....	13
CHAPTER 6. APPENDIX - B.....	14
CHAPTER 7. TROUBLE SHOOTING.....	15
CHAPTER 8. MAINTENANCE INSTRUCTIONS .....	16

**ISO 13485 Certificated firm**

## CHAPTER 1. LOCATION OF CONTROLS

- |                                      |   |
|--------------------------------------|---|
| 1. DOOR CLOSED SCREW RING            | 10. START SWITCH                            |
| 2. DOOR HANDLE                       | 11. POWER SWITCH                            |
| 3. ADJUSTABLE TEMPERATURE CONTROL    | 12. STERILIZATION TIMER                     |
| 4. COVER                             | 13. DRY TIMER                               |
| 5. POWER INDICATOR                   | 14. PRESSURE / TEMPERATURE GAUGE            |
| 6. HEATING & STERILIZATION INDICATOR | 15. NORMAL / LIQUID PROGRAM SELECT (OPTION) |
| 7. DRY INDICATOR                     | 16. DOOR STOPPER                            |
| 8. COMPLETE INDICATOR                | 17. SECURITY HOOK                           |
| 9. EMERGENCY EXHAUST SWITCH          |   |



## CHAPTER 2. SPECIFICATIONS

- CHAMBER SIZE                      Ø300mmx 710mm (DEPTH)
- CHAMBER CAPACITY              50 LITER
- OVERALL SIZE                    600mm(W) x1000mm(H) x450mm(D)
- POWER CONSUMPTION          230VAC / 3.1KW / 13.5A
- DESIGN TEMPERATURE        140°C
- SAFETY DEVICE
  1. PRESSURE CONTROL SWITCH
  2. DOOR SAFETY HOLDER
  3. OVER HEAT PROTECTION
  4. SAFETY VALVE
  5. ELECTRONIC CIRCUIT SAFETY SYSTEM
  6. EMERGENCY EXHAUST SWITCH
  7. DOOR SWITCH
- LIFE EXPECTANCY                7 YEARS
- STANDARD ACCESSORIES
  1. STAINLESS #304 BASKET x 2
  2. 2000cc BOTTLE x1
  3. HEATER COVER x 1
  4. EXHAUST HOSE x1
  5. CLIP x 1

## CHAPTER 3. PREPARATION & INSTALLATION

### AUTOCLAVE PRE-OPERATION CHECKLIST

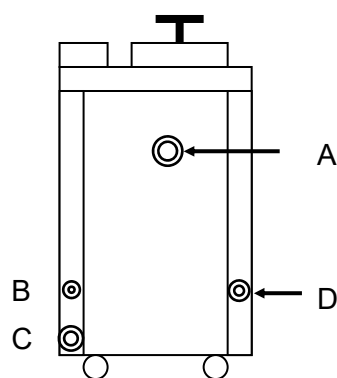
1. Ensure the autoclave is level by installing on an even floor. Keep the distance between the wall and the autoclave casing more than 5cm.
2. Check that the electrical power source is 220V~240V.
3. You are now ready to take the power cord out, and connect the wire to 1 Ø, 20 Amps. **No Fuse Breaker.**

NOTE: THE E-SA-300VF DOES NOT HAVE A FUSE INSERT, SO THE NO-FUSE-BREAKER IS NECESSARY FOR SECURITY.

**<<VERY IMPORTANT>>**

4. Install the exhaust hose: One end should be fixed on the pipe connector “D” and the other end must be attached to a drain exhaust pipe or a discard bottle.

- A. Steam exhaust from safety valve
- B. Power cord
- C. Water filter
- D. Pressure / water exhaust outlet

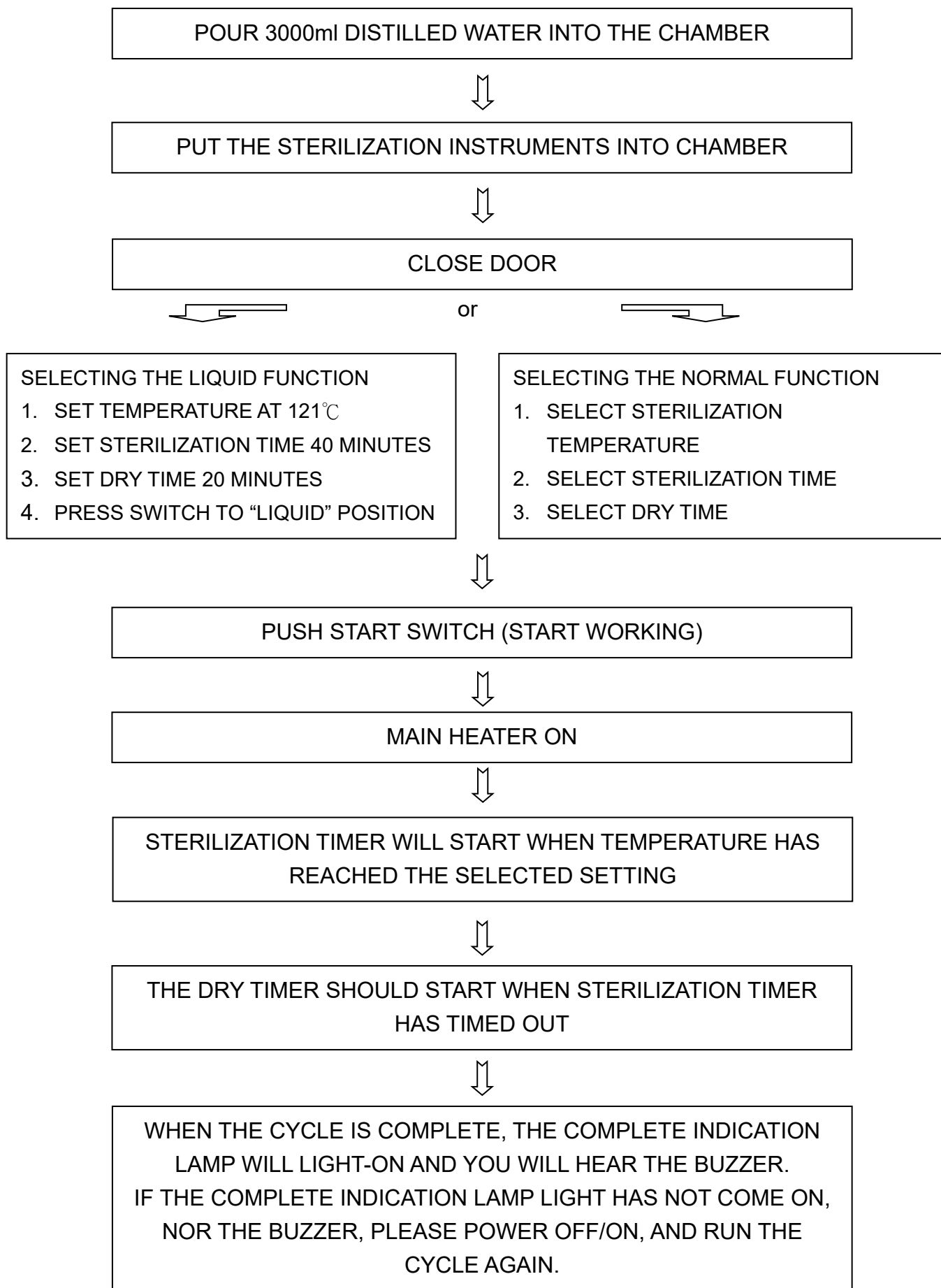


**REAR VIEW**

**Caution:** Waste water should be drained into the public sewer in accordance with the local rules or requirements.

5. Push the power switch-on, if the power indicator light is on, it means the autoclave has power and is ready to use.
6. Pour about 3000ml of water (DISTILLED WATER ONLY) into the chamber. (One and half of bottle if supplied)
7. After completion of preparation above, the autoclave will be safe and ready for operation.

## CHAPTER 4. BASIC STEPS OF STERILIZATION



## **PLEASE NOTE**

1. THE DOOR CAN'T OPEN IF CHAMBER IS IN A VACUUM CONDITION AFTER THE CYCLE. PLEASE PUSH THE "EMERGENCY SWITCH" TO RELEASE CHAMBER VACUUM.
2. AFTER THE CHAMBER VACUUM IS RELEASED, THE DOOR CAN BE OPENED.

### **CAUTION**

1. CHECK THE PRESSURE GAUGE HAS RETURNED TO "ZERO" BEFORE THE DOOR CAN BE OPENED.
2. WHEN YOU NEED TO DO THE NEXT CYCLE. PLEASE TURN OFF/ON THE POWER SWITCH TO RESET SYSTEM.
3. TO USE THE UNIT CONTINUOUSLY, BE SURE TO OPEN THE DOOR AND ALLOW THE UNIT TO COOL OFF FOR AT LEAST 20 MINUTES.

## CHAPTER 4.1. OPERATION

### BEFORE CONTINUE MAKE SURE TO SEE CHAPTER 3 FIRST

1. Open the door and pour the water into the chamber with enclosed bottle (one and half bottles, about 3000ml for each cycle). Then put the sterilization instruments inside basket/s. (All the sterilized instruments must be put in the basket for sterilization. If you don't use basket, the instruments will burn).

**Note:** PLEASE DON'T FORGET TO PUT THE STERILIZATION INDICATORS INTO CHAMBER.

2. Place the baskets into the chamber as following Figure 4.1:

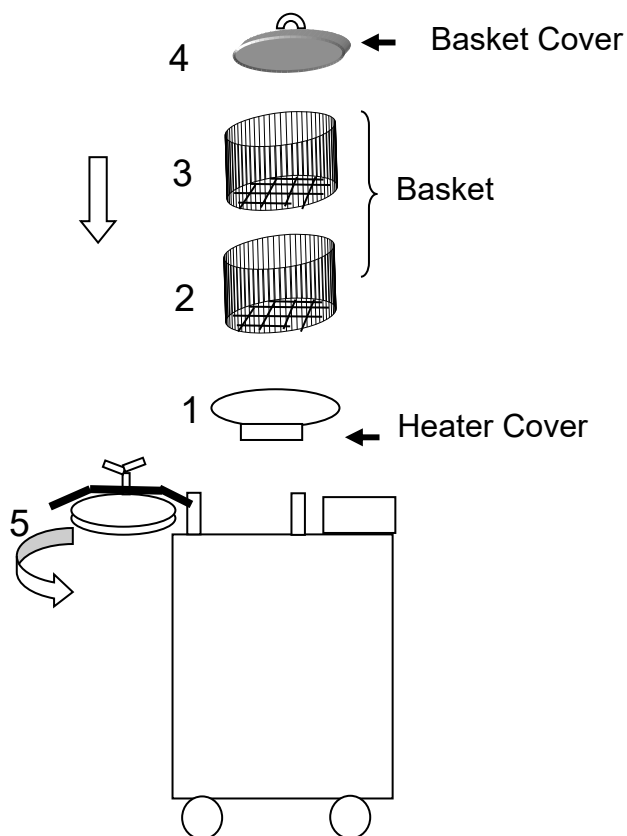
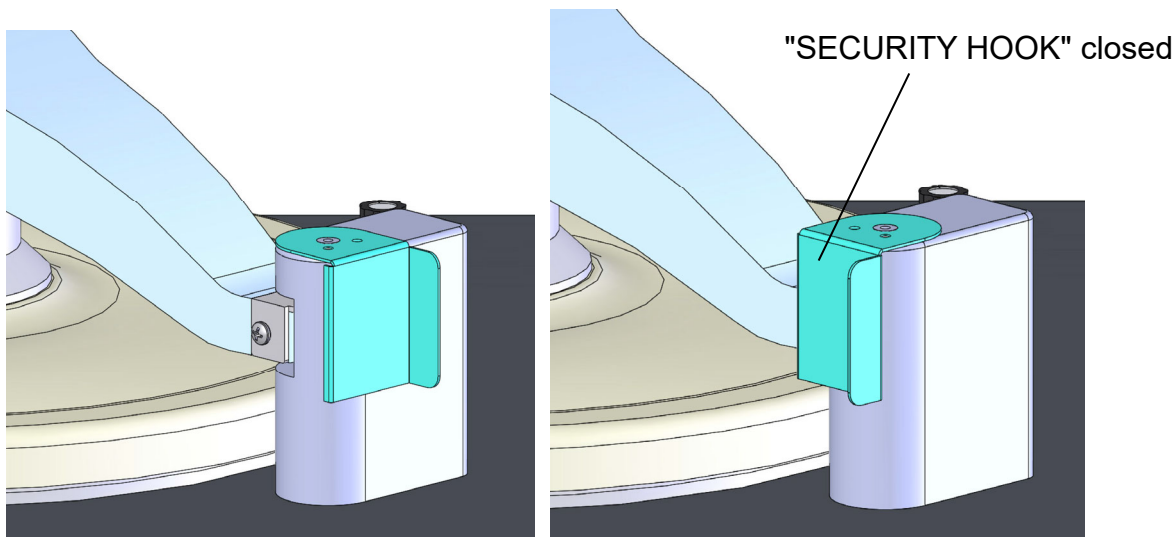


Figure 4.1



3. Make sure that the SECURITY HOOK is in an open state and then close the door until positioned in the DOOR STOPPER. Turn the Security Hook clockwise until a clip sound is heard.



4. Set up the programs as you want (Push on the power switch at first.)
  - a. Set-up the temperature to 121°C or 134°C using the pressure adjustment
  - b. Set-up the sterilization time.
  - c. Set-up the dry time to at least 40 min for instruments.
5. The cycle will start when “START” switch is pressed. After the chamber temperature has reached the set temperature, the sterilization timer LED will start to “flash” which means the sterilization timer has started. The LED will stop flashing and stay on meaning the sterilization timer has finished and the dry timer has started.
6. The dry timer LED will start to “flash” which means the dry timer is running. When the dry timer is finished the LED will stop flashing and stay on and the buzzer will start.
7. The autoclave will alarm you when the cycle has been completed with the buzzer. Check the pressure/ temperature gauge. Only when the gauge has returned to the “zero” position, you can turn the hand to open the door.

- Note 1.** Please don't forget to check the sterilization complete indicator when you finish each cycle.
- Note 2.** When the chamber temperature is cooling down, the chamber will be in vacuum condition. Press EMERGENCY exhaust valve until the pressure gauge has gone down to 0 bar (kgf/cm<sup>2</sup>). The vacuum will be released and you can open the door smoothly.
- Note 3.** To use the unit continuously, be absolutely sure to open the door and allow the unit to cool off for at least 20 minutes.
- Note 4.** Please turn off and on the power switch to reset system if you need do another run.

## CHAPTER 4.2. CONCERNING THE STERILIZATION ITEMS

### Step 1



Open the door of autoclave. Take out the baskets and basket cover from chamber.

### Step 2



Put the sterilization items into baskets. The sterilization items shouldn't go over the basket.

### Step 3



Put baskets into the chamber. Do not forget to put the sterilization indicators into chamber.

### Step 4



Put the basket cover on top of the basket after one or two baskets has been put into chamber. Now close the door and tighten

## CHAPTER 4.3. LIQUID OPERATION

**This section is for “LIQUID” function only (option).**

1. Open the door and pour the water into the chamber with enclosed bottle (one and half bottles, about 3000ml for each cycle). Then put the sterilization instruments inside basket/s. (All the sterilized liquids / media must be put in the basket for sterilization. If you don't use basket, the liquid / media will burn).

**Note:** PLEASE DON'T FORGET TO PUT THE STERILIZATION INDICATORS INTO CHAMBER.








2. Please reference the figure 4.1 for how to put baskets into the chamber.
3. Set up the programs as follows (Firstly switch power on.):
  - 3-1 Set the sterilization temperature to 121°C using the pressure adjustment
  - 3-2 Set the sterilization time to 40 minutes
  - 3-3 Set the dry time to 0 minutes
  - 3-4 Press the “**LIQUID/NORMAL**” select switch to “**LIQUID**” position.
4. Press the “START” switch to start machine
5. When the cycle is complete, the buzzer will sound for about 40 seconds and the COMPLETE indicator light will be on. Please check that the chamber pressure gauge needle points to “zero” and then it is safe to open the door. If not please wait until the chamber gauge has reached zero.

### **CAUTION:**

**Don't forget to press “LIQUID/NORMAL” switch to “NORMAL” position if you primarily use the autoclave for non-liquid cycles.**

## CHAPTER 5. WARNING

1. Always check the pressure gauge, if the pressure is more than 0 bar (kgf/cm<sup>2</sup>) Please don't open the door.
2. **"USE ONLY DISTILLED WATER"** for E-SA-300VF. If not, we can't offer the quality guarantee service.
3. Please don't forget to pour water into chamber before sterilization. If not, the temperature protection switch will cut the power to the element and sound the buzzer at the same time.  
**Note:** Please switch-off the power (Location No. 11) and pour water into the chamber with the enclosed bottle (one and half bottles, about 3000ml for each cycle). Then close door and switch-on the power again.
4. Please note high temperature on the door cover when in operation.
5. The door needs to be turned tight when you close the door.
6. Ensure the heater element inside the chamber is covered with water prior to commencement of the sterilization cycle.
7. Use only a dedicated power supply with 20A No-Fuse-Breaker.
8. The silicon rubber gasket on the inside of door at the top of the chamber should be kept clean.
9. The filter / sieve over the drain hole inside the chamber should be cleaned at least once a week.
10. We recommend the use of chemical indicator strips or biological indicator ampoules to check for sterility result. These strips may also be kept as a record of sterilization.
11. In the event of an emergency immediately press the "EMERGENCY SWITCH" to Exhaust the water and pressure.
12. Each time when you pour water into the chamber, please use the enclosed bottle, each time with one and half bottles, about 3000ml for each cycle.
13. The autoclave will not be started until the security-hook is secured in position. The door must be closed completely during sterilization cycle.

14.  Caution! Hot Surface.
-  Grounding terminal
15. “○” This label indicates that the power switch is in OFF position.
16. “|” This label indicates that the power switch is in ON position.
17.  Please read the user manual carefully
18.  Disposal of Electrical & Electronic Equipment (WEEE):  
This product should be handed over to an applicable collection point for the recycling of electrical and electronic equipment.  
For more detailed information about the recycling of this product, please contact your local city office, household waste disposal service or the retail store where you purchased this product.
19.  0108 Date of Manufacture. i.e.: 0108 mean January / 2008.
20.  Manufacturer
21.  Authorized Representative at europe.
22. Storage environment temperature :  $-10^{\circ}\text{C} \sim + 50^{\circ}\text{C}$  / humidity  $\leq 80\% \text{ RH}$
23. Working environment temperature :  $1^{\circ}\text{C} \sim + 40^{\circ}\text{C}$  / humidity  $\leq 80\% \text{ RH}$
24. Transportation environment temperature :  $-10^{\circ}\text{C} \sim + 50^{\circ}\text{C}$  / humidity  $\leq 80\% \text{ RH}$

## CHAPTER 6. APPENDIX - A

### SETTING UP THE STERILIZATION TIME:

Temperature at 134°C / 273°F    Approx. 2.1 bar(kgf/cm<sup>2</sup>)

WRAPPED	Select <b>15 Min.</b> sterilization time
UNWRAPPED	Select <b>4 Min.</b> sterilization time

Temperature at 121°C / 250°F    Approx. 1.2 bar(kgf/cm<sup>2</sup>)

WRAPPED	Select <b>30 Min.</b> sterilization time
UNWRAPPED	Select <b>22 Min.</b> sterilization time
LIQUID	Select <b>40 Min.</b> sterilization time

DRY TIME: 40 MINUTES.  
FOR LIQUID DRY TIME: 0 MINUTES

#### **SPECIAL SELECTION RANGE:**

TEMPERATURE SELECTION RANGE : 118°C ~ 134°C

STERILIZATION TIME SELECTION RANGE : 0 ~ 60 MINUTES

DRY TIME SELECTION RANGE : 0 ~ 60 MINUTES.

- **FOR REFERENCE : 1 kgf/cm<sup>2</sup> = 0.98 bar = 14.2 PSI.**
- **Sterilization instruments must be made with metal without plating, autoclave plastic or rubber material.**
- **Liquids sterilization is available, but the venting system must be adjusted by our engineer. So, for liquid sterilization you must note it accordingly on your purchase order.**

## CHAPTER 6. APPENDIX - B

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

1. Turn off the **POWER** and unplug the power cord.
2. Drain all water from the autoclave. Make sure the inside of the chamber is completely dry.
3. Place all accessories into the chamber. Close the door firmly.
4. Cover the autoclave with the plastic bag.
5. Place the bottom of the Wooden-case / Pallet onto the floor.
6. Move and place the autoclave on bottom piece, ensuring that these four castors are fixed already.
7. Place the cardboard sides over the autoclaves.
8. Insert all foam padding on the corners and top of the autoclave.
9. Put on the top cover of the cardboard box.
10. Strap box and autoclave to the bottom wooden pallet.
11. Please don't forget to write down the shipping mark, product name and model No. at the same time.

**IMPORTANT** : We strongly recommend that all packaging materials including the carton should to be kept properly for reuse in case the unit needs to be transported again anytime.



## CHAPTER 7. TROUBLE SHOOTING

- **Power lamp does not come on:**

1. Check if the power supply is connected and switched on.
2. No-Fuse-Breaker tripped.
  - 2-1 Press it back and try again.
  - 2-2 Replace it.
3. Bulb broken  
Replace it

- **HEATING & Sterilization lamp is not coming on.**

- Lamp broken                      Replace it.

- **DRY LAMP IS NOT COMING ON.**

- Lamp broken                      Replace it.

- **Buzzer on and power lamp.**

1. **Water is not enough :**  
Pour the distilled water into the chamber. (Caution : Each cycle needs one and half bottles, about 3000ml).
2. **Forgot to pour water into chamber :**  
Pour distilled water into chamber, and try again.

- **Water in chamber can't exhaust automatically.**

**Exhaust solenoid valve is blocked.**

1. Clean the filter.
2. Replace the solenoid.

- **Pressure not going up.**

**Steam solenoid valve dirty.**

1. Clean the filter.
2. Replace the solenoid.
3. Replace the main heater.

- **Dry function not perfect.**

Please open the door 15 minutes after alarm. If it still has same problems, please call engineer.

**NOTE:** ANY PROBLEMS PLEASE CHECK THE POWER CONNECTION FIRST.

## CHAPTER 8. MAINTENANCE INSTRUCTIONS

### DAILY:

- WIPE THE INSIDE OF THE CHAMBER, DOOR AND THE GASKET WITH A DAMP, LINT-FREE CLOTH.
- ENSURE THE BASKET/S IS CLEANED AFTER EVERY CYCLE FINISHED.

### WEEKLY:

- CLEAN THE RACK AND TRAYS.
- CLEAN THE WATER FILTER AT CENTER OF THE CHAMBER, OTHER WATER FILTER AT REAR SIDE IF PRESENT.

### MONTHLY:

- RELEASE THE CASTERS BREAK AND MOVE OUT THE AUTOCLAVE TO CLEAN THE FLOOR UNDER THE AUTOCLAVE.
- CLEAN THE CHAMBER AND PIPING SYSTEM WITH “**CHAM-MATE**”.

### 6-MONTHLY: (Please contact your distributor for maintenance.)

- REMOVE, CLEAN AND REPLACE THE WIRE MESH FILTER AT BOTTOM SIDE OF THE CASE. THEN FIX AND RETURN THE FILTER.
- CHECK THE ELECTRIC WIRE SYSTEM, FUSE AND CONNECTORS.
- CHECK THE PIPING SYSTEM AND EACH CONNECTOR FOR LEAKS.
- CLEAN THE SOLENOID VALVE.
- CHECK THE INDICATOR LAMPS AND ALL CYCLE FUNCTIONS.
- CHECK THE TEMPERATURE PROTECTION SWITCH.
- CHECK THE DOOR GASKET (SUGGESTION: REPLACE IT PER YEAR).

## **WARRANTY**

---

Your “**Eins-Sci**” product has a one (1) year guarantee of defective in 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, drop, fire, flood. Or the products were altered or repaired by anyone other than qualified service personnel.

The liability of Eins-Sci c.c. is limited to repair or replacement and under no circumstances shall “**Eins-Sci**” be liable for any collateral consequential damages or loss. This guarantee specifically excludes the expendables and consumable.

All warranty claims must be directed to the distributors or agents authorized by Eins-Sci c.c. whom are responsible for the sales of this equipment. The customers are responsible for shipping expense.

---

User's Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_


Country: \_\_\_\_\_ Tel: \_\_\_\_\_ Fax: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_ Model No.: \_\_\_\_\_

Series No.: \_\_\_\_\_

Distributor: \_\_\_\_\_

Manufacturer: Sturdy Industrial Co.,Ltd. (ISO 13485 Certificated Firm)

<b>Name</b>	Eins-Sci Autoclave Sterilizer		
<b>Model</b>	E-SA-300VF		
<b>Manufacturer</b> 	Sturdy Industrial Co. Ltd.		
<b>Address</b>	168, Sec. 1, Zhongxing Rd., Wugu District, New Taipei City, 24872, Taiwan		
<b>EC Representative</b> <table border="1"><tr><td>EC</td><td>REP</td></tr></table>	EC	REP	APEX MEDICAL S.L. Elcano 9, 6 <sup>a</sup> planta 48008 Bilbao. Vizcaya SPAIN
EC	REP		