



## **“Sturdy” Autoclave Sterilizer**

**SA-300VF**

## **Instruction Manual**

Please read manual carefully before using and keep it well.

**CE**<sub>2460</sub>



# OPERATION MANUAL

## SA-300VF

### AUTOMATIC AUTOCLAVE STERILIZER

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

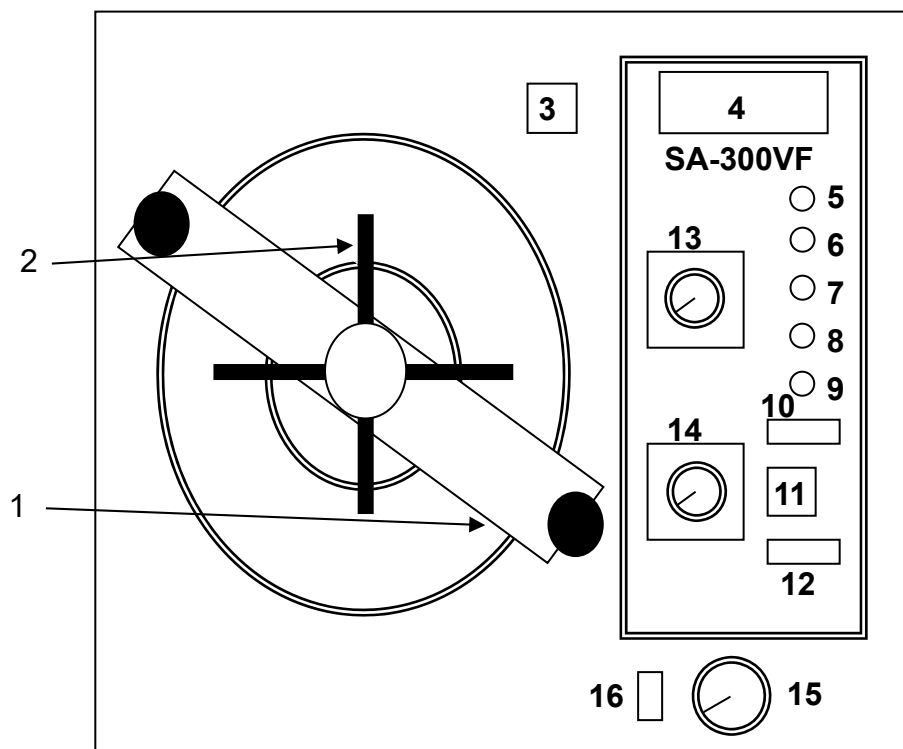
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ISO 13485 Certificated firm

## CHAPTER 1. LOCATION OF CONTROLS

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



## CHAPTER 2. SPECIFICATION

- CHAMBER SIZE                      Ø300mmx 700mm(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
- ELECTRIC OVELOAD PROTECTOON
  - 1.15AMP. NO FUSE BREAKER x 2
- LIFE TIME                        7 YEARS
- STANDARD ACCESSORIES
  1. STAINLESS #304 BASKET x2
  2. 2000cc BOTTLE x1
  3. HEATER COVER x 1
  4. EXHAUST HOSE x1
  5. CLIP x 1
- Quality Approval                 Approved By DNV
- QA System                        ISO 13485 Approved By DNV

## CHAPTER 3. PREPARATIONS & INSTALLATION

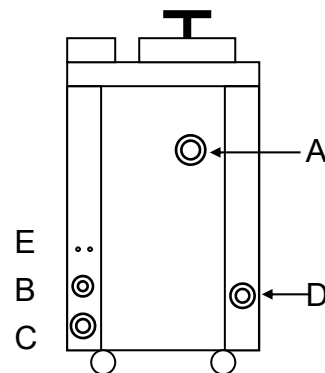
### CHECKLIST BEFORE USE THIS AUTOCLAVE

1. Put this autoclave on the level floor, and keep the distance more than 5cm between the wall and the case. And keep this autoclave in level condition.
2. Check the elec. Power source 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: SA-300VF WITHOUT FUSE INSERT, SO THE NO-FUSE-BREAKER IS NECESSARY FOR SECURITY. <<VERY IMPORTANT>>

4. Install the exhaust hose: One end to be fixed on the pipe connector “D”. And another end must be fixed on the connector of the water exhaust piping system.

- A. Steam exhaust from safety valve
- B. Power cord.
- C. Water Filter
- D. Pressure / water exhaust outlet
- E. No Fuse Breaker



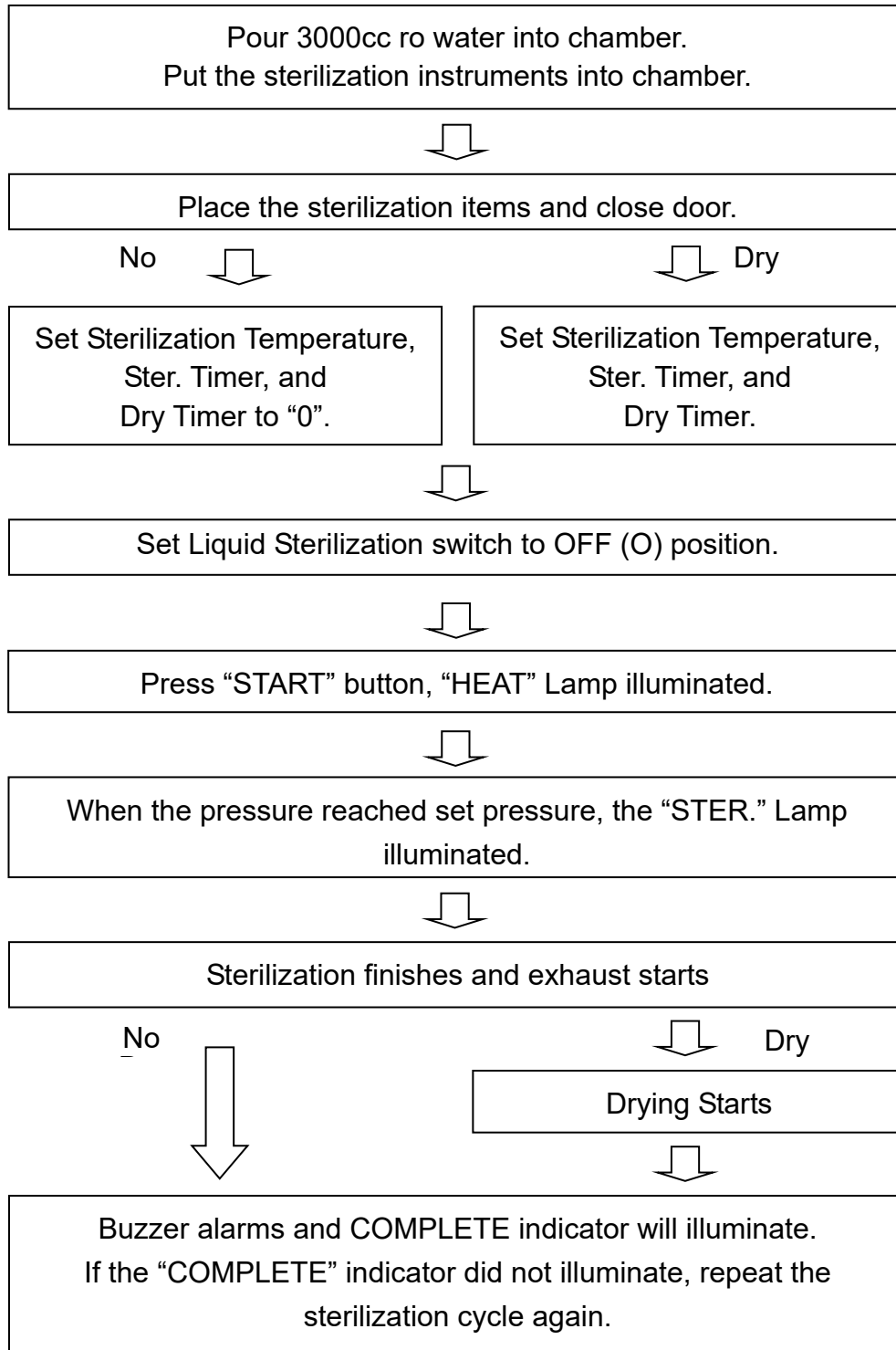
REAR VIEW

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

5. Push the power switch-on, if power indicator is light on, that means the power is already to use now.
6. Pouring about 3000cc water (DISTILLED WATER ONLY) into the chamber, (As our enclosed one and half of bottle water.)
7. If you can complete above preparation, she'll be more safety and she'll be your best partner.

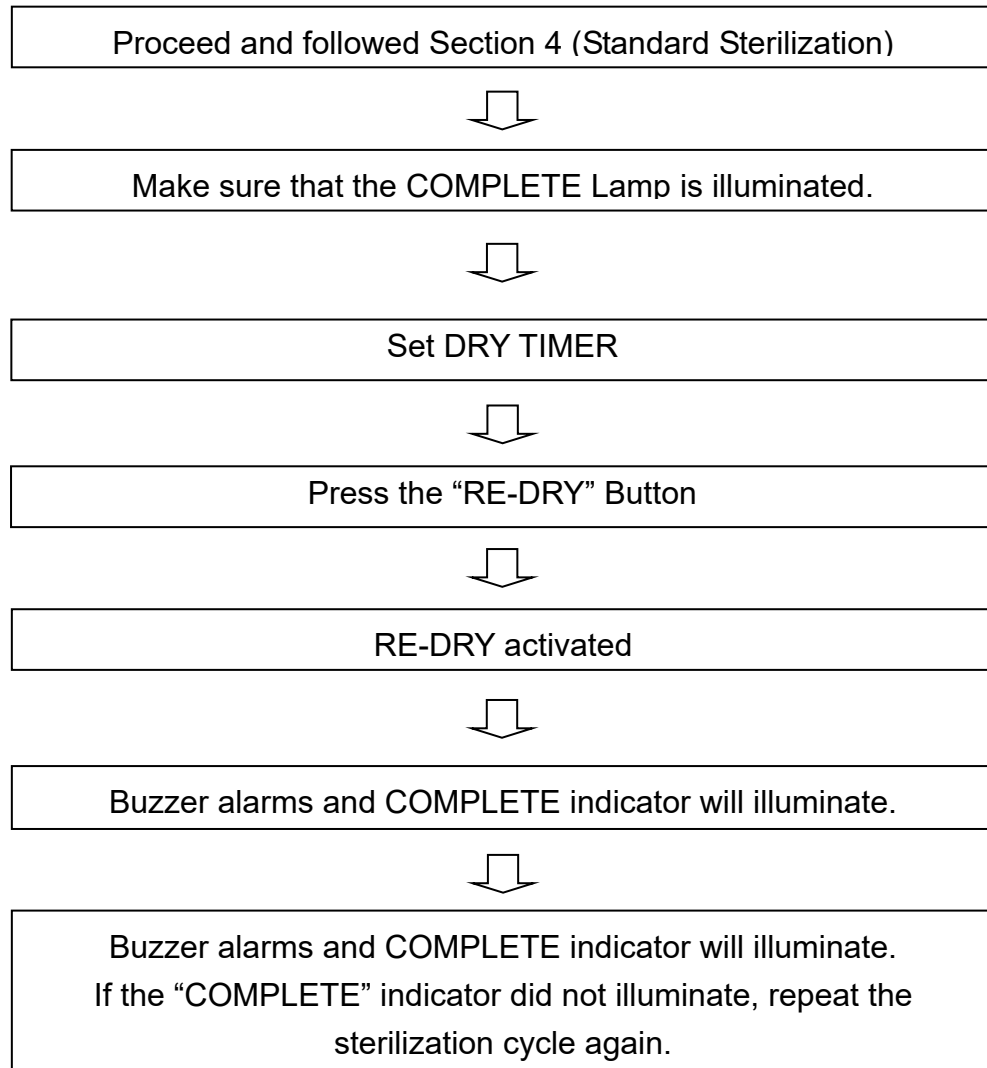
## CHAPTER 4. BASE STEP OF STERILIZATION

### Standard Sterilization



## **Sterilization with Re-Dry Function (optional)**

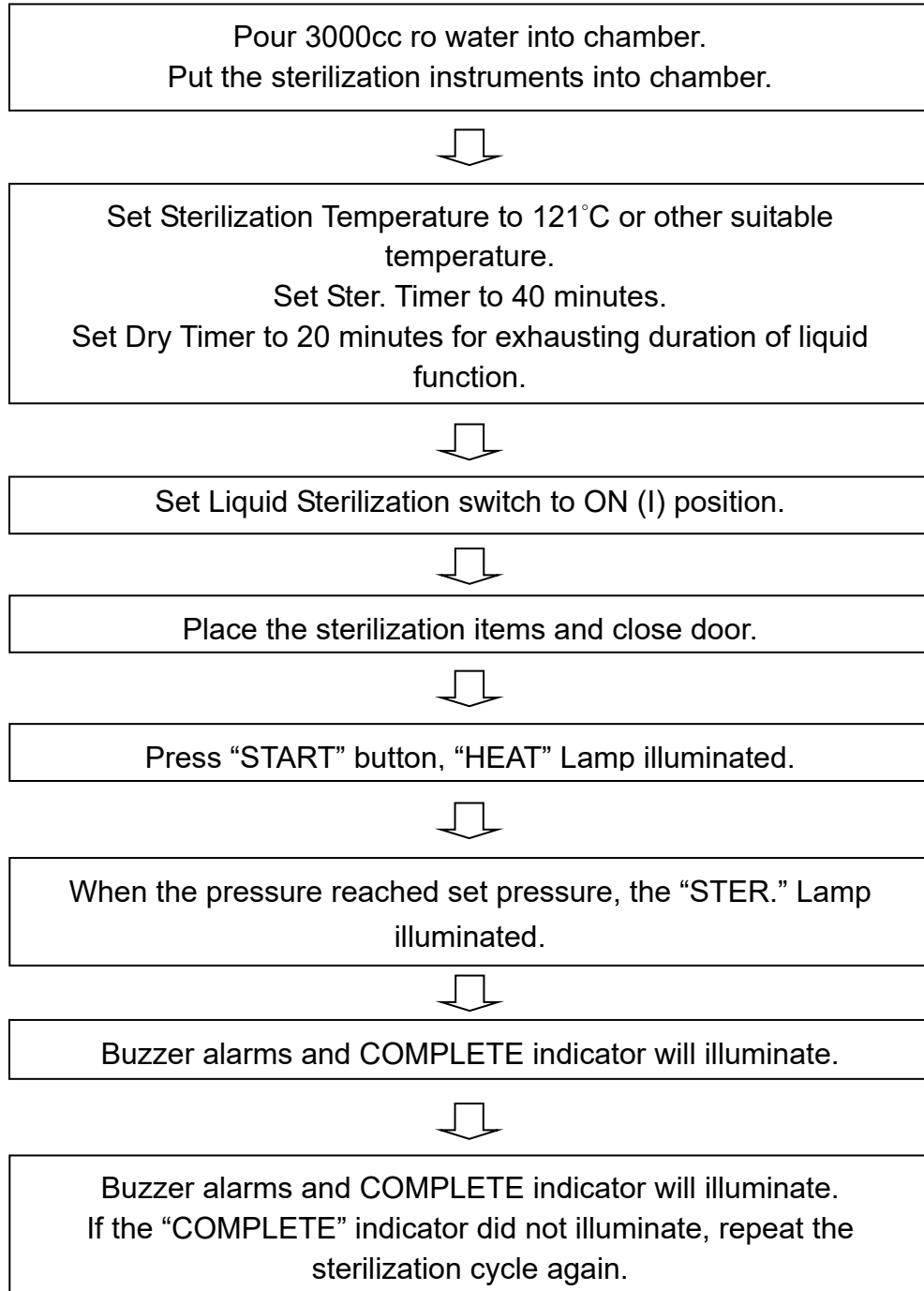
**Note:** The RE-DRY function is an optional by special order. Skip this section if not applicable.





## Sterilization with Liquid Function (optional)

**Note:** The Liquid function is an optional by special order. Skip this section if not applicable.



**Warning:** The liquid container should be filled less than 70% of its capacity to preventing over spilled during sterilization.

1. The door can't open, if chamber in vacuum condition. Please push the "emergency switch" to release chamber vacuum.
2. After the chamber vacuum was released, then the door can be opened.

### **CAUTION**

1. Check the pressure gauge return to "zero" position, before the door opened.
2. if you need do the next run. Please turn off/on the power switch to reset system again.
3. to use the unit continuously are absolutely sure to open the door and allow the unit to cool off for at least 20 minutes.

## CHAPTER 4-1. OPERATION

### PLEASE CHECK CHAPTER 3 AT FIRST

1. Open the door and pour the water into with enclosed bottle (One and half of bottle about 3000cc for one cycle use). Then put in sterilization instruments inside basket. (All the sterilized instruments must be put-in the basket for sterilization. If you don't use basket, the instruments will easy to be burned down.)

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

2. Place the baskets into the chamber is as following Figure 4-1:

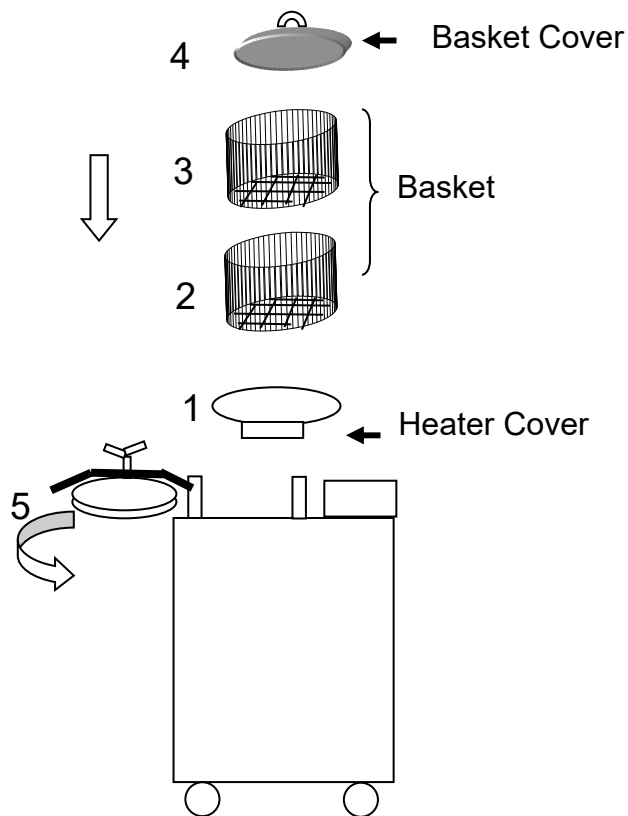


Figure 4-1

3. Closed the door and turn the door handle tight.
4. Set up the programs as you want (Push on the power switch at first.)
  - a. Set-up the temperature 121°C or 134°C.
  - b. Set-up the sterilization time.
  - c. Set-up the dry time. Then the program is starting working when press "START" switch.

After the chamber temperature up to the temperature you set-up. The LED of sterilization timer turn “flash” that means the sterilization timer starts work. The LED turns on when the LED stop to flash. That means the sterilization timers finished working and starts to dry timer.

5. The LED of dry timer turn “flash” when dry timer starts working. The LED turns on when the LED stop to flash. That means the dry timers finished working and start to buzzer.
6. This autoclave will alarm you, when she finishing work. To check the pressure/ temperature gauge must be returned at “zero” position. Then, you can turn open the door.

**Note 1.** Please don't forget to check the sterilization indicator when you finish each cycle.

**Note 2.** When the chamber temperature is cooling down, the chamber will be in vacuum condition. Press EMERGENCE exhaust valve until the pressure gauge going down to 0 kgf/cm<sup>2</sup>. Then the vacuum will be release. 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 / on the power switch to reset system if you need do next 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. But the sterilization items don't over the basket.

### Step 3



Put baskets into the chamber. Please don't forget to put the sterilization indicators into chamber.

### Step 4



Put the basket cover at top basket after one or two baskets puts into chamber. Now close the door and tight door.

## CHAPTER 4-3. OPERATION

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

1. Open the door and pour the water into with enclosed bottle (One and half of bottle about 3000cc for one cycle use). Then put in sterilization instruments into the basket. (All the sterilized instruments must be put-in the basket for sterilization. If you don't use basket, the instruments will easy to be burned down.

**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 is as following (Push on the power switch at first.):
  - 3-1 Set-up the sterilization pressure is 121°C
  - 3-2 Set-up the sterilization time 40 minute
  - 3-3 Set-up the dry time 20 minutes.
  - 3-4 Press the “**LIQUID/NORMAL**” select switch to “**LIQUID**” position.
4. Press the “START switch “ to start machine
5. About 40 seconds buzzer will report you, The COMPLETE indicator turn on. Please check the chamber pressure gauge (That needle point to “zero”) then you can open the door. If not please wait unit the chamber gauge to zero.

**CAUTION:**

**Don't forget to press “LIQUID/NORMAL” switch “to “NORMAL” position.**

## CHAPTER 5. WARNING



**Caution:** Please install, operate and maintain the sterilizer in accordance with this Instruction Manual. Failure to do so could result in serious injury or damage to the unit.

1. Anytime check the pressure gauge, if the pressure over than 0 kgf/cm<sup>2</sup>. Please don't open the door.
2. **"USE ONLY DISTILLED WATER"** for SA-300VF. Or not, we can't offer the quality guarantee service.
3. Please don't forget pouring the water into chamber. Before sterilization. Or not. The temperature protection switch will cut –off the power and buzzer on the same time.









**Note:** Please push-off the power switch (Location NO 11.) And pour water in the chamber with the enclosed one and half of bottle water about 3000cc. Then close door and push-on the power switch again.

4. Please attend the high temperature on the door cover when she is working.
5. The door need turn to 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 inner door at the front of the chamber should be kept clean.
9. The filter valve inside the chamber should be cleaned at least every season.
10. We recommend use of chemical indicator strip a 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 pouring water into the chamber, please use the enclosed 3000cc bottle, each time with one full bottle.

13.



Caution! Hot Surface.

14.  Grounding terminal
15. “  “ This label is meaning that indicator for power off.
16. “  “ This label is meaning that indicator for power on.
17.  Please careful read the operation
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. EX: 0108 is mean January / 2008.
20.  Manufacture
21.  Authorized Representative at europe.
22. Storage environment: temperature :  $-10^{\circ}\text{C} \sim + 50^{\circ}\text{C}$  / humidity  $\leq 80\%$  RH
23. Working environment: temperature :  $1^{\circ}\text{C} \sim + 40^{\circ}\text{C}$  / humidity  $\leq 80\%$  RH
24. Transportation environment: temperature :  $-10^{\circ}\text{C} \sim + 50^{\circ}\text{C}$  / humidity  $\leq 80\%$  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: 30 MINUTES.  
FOR LIQUID DRY TIME: 20MINUTES

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

TEMPERATURE SELECTION RANGE : 118°C ~ 134°C

STERILIZATION TIME SELECTION RANG : 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 by metal without plate, or autoclave plastic or rubber material.**
- **Liquids sterilization is available, but it must adjust the venting system by our engineer. So, for liquid sterilization must be noticed by you purchase order.**

## **CHAPTER 6. APPENDIX - B**

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

- 1. Turn off the POWER and unplug the power cord.**
- 2. Draining off all water from the autoclave.**
- 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, and ensuring that these four castors are fixed already.**
- 7. Place wall pieces of the wooden case to connection the bottom piece of carton, one by one.**
- 8. Place the heavy wooden bar to fix the top of the autoclave, between each wall pieces.**
- 9. Putting on the top cover of the wooden –case.**
- 10. Please don't forget to write down the shipping mark and products name, model No. on the same time.**

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

## CHAPTER 7. TROUBLE SHOOTING

- **Power lamp is not light on:**

1. Try to connect power supply until power indicator goes on.
2. No-Fuse-Breaker broken.
  - 2-1 Press it back and try again.
  - 2-2 Replace it.
3. Bulb broken  
Replace it

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

Lamp broken	Replace it.
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- **DRY LAMP IS NOT LIGHT ON.**

Lamp broken                      Replace it.

- **Buzzer on and power lamp.**

1. **Water is not enough :**  
Pour the water into the chamber. (Caution : Each cycle need one and half of bottle about 3000cc water into chamber.)
2. **Forget pouring water into chamber :**  
Pouring water into chamber, and try again.

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

**Steam solenoid valve unclean.**

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

- **Pressure can't up.**

**Steam solenoid valve unclean.**

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

- **Dry function not perfect.**

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

**NOTE: ANY PROBLEMS PLEASE CHECK THE CONNECTION AT 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 BE CLEANED AFTER CYCLE FINISHED.

### WEEKLY:

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

### MONTHLY:

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

### ANNUALLY: (Please contact your distributor for maintenance.)

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

## **WARRANTY**

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Your “**STURDY**” 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 Sturdy Industrial Co., Ltd. is limited to repair or replacement and under no circumstances shall “**STURDY**” 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 Sturdy Industrial Co.,Ltd. whom are responsible for the sales of this equipment. The customers are responsible for shipping expense.

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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>	Sturdy Autoclave Sterilizer		
<b>Model</b>	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" data-bbox="276 1711 368 1749"> <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		

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