# OPERATION MANUAL

## POINTER- Automatic control series

422-04028 v.04 17 April 2019

# OPERATION INSTRUCTION

# POINTER- Automatic control

## AUTOMATIC AUTOCLAVE STERILIZER

## CONTENTS

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

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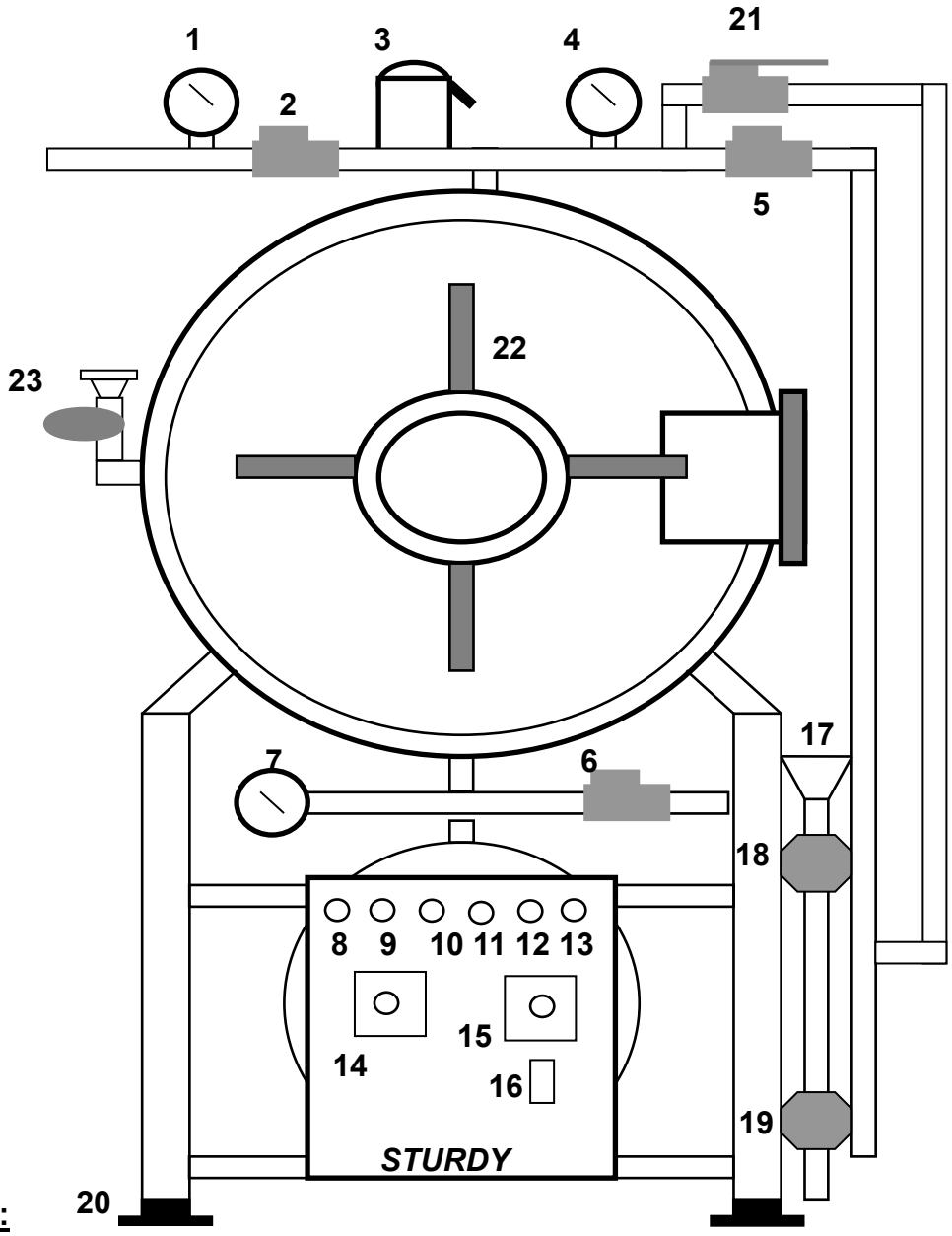
# CHAPTER 1. LOCATION




**LOCATION:**

1. PRESSURE GAUGE OF CHAMBER
2. SOLENOID VALVE BETWEEN CHAMBER & JACKET
3. SAFETY VALVE
4. PRESSURE GAUGE OF JACKET
5. EXHAUST SOLENOID VALVE OF JACKET
6. EXHAUST SOLENOID VALVE OF CHAMBER
7. TEMP. OF CHAMBER
8. POWER LAMP
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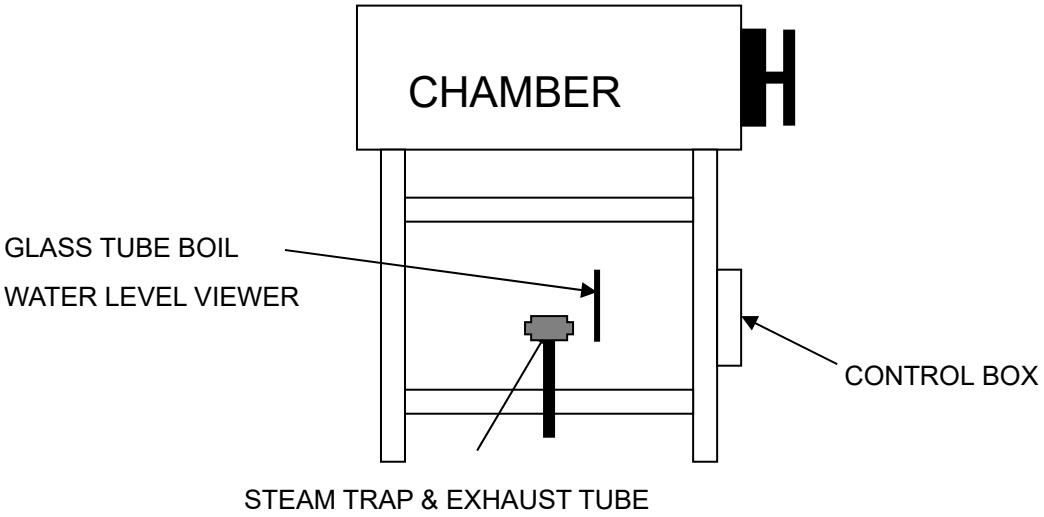
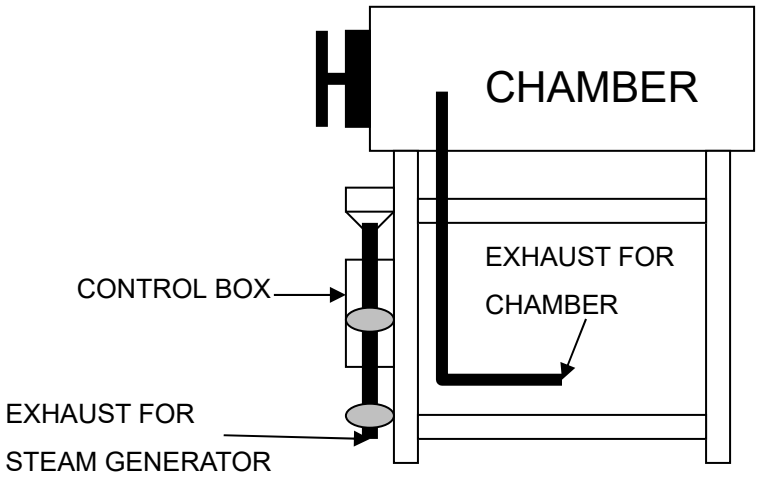
11. STERILIZATION LAMP
12. DRY LAMP
13. END LAMP
14. STERILIZATION TIMER
15. DRY TIMER
16. START SWITCH
17. MANUAL WATER FILL INLET
18. ADD WATER VALVE
19. BOILWATER EXHAUST VALVE
20. EQUIPMENT LEVEL ADJUST SCREW
21. EMERGENCY VALVE
22. DOOR HANDLE
23. VACUUM RELEASE VALVE

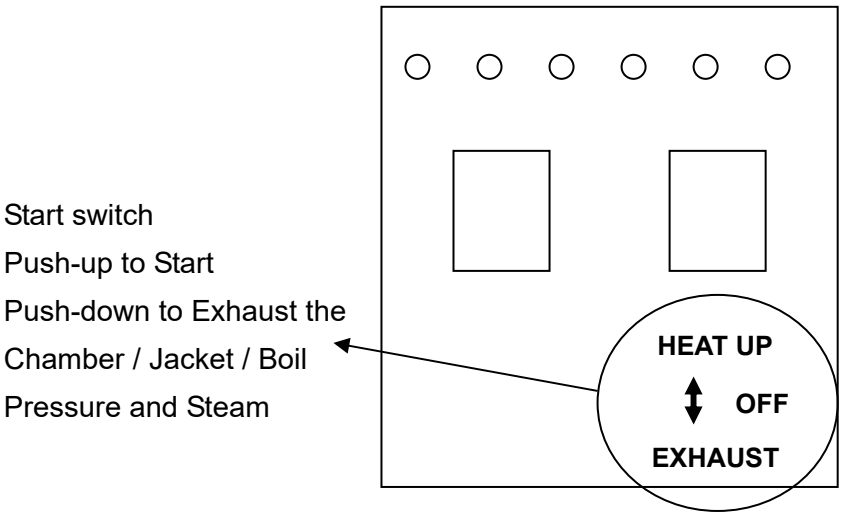
## Left Side




## Right Side




## Control Panel



# CHAPTER 2. SPECIFICATION

| MODEL NO. | SA-400A | SA-450A | SA-500A | SA-600A |
|---|---|---|---|---|
| CHAMBER SIZE (mm) | $\phi$ 400 * 750 | $\phi$ 450 * 900 | $\phi$ 500 * 1000 | $\phi$ 610 * 1200 |
| CHAMBER CAPACITY | 94 liter | 143 liter | 196 liter | 350 liter |
| HEATING POWER | 7.0KW 50/60HZ | 7.0KW 50/60HZ | 9.0KW 50/60HZ | 12.0KW 50/60HZ |
| CONSTRUCTION | STAINLESS STEEL #304 | | | |
| DESIGN TEMPERATURE | 140°C | | | |
| USING PRESSURE / TEMP. | 1.4 kgf/ $cm^2$ ABOUT 122°C | | | |
| Life Time | 7 Years | | | |
| SAFETY DEVICES | TEMP. CONTROL SWITCH, PRESSURE CONTROL SWITCH, PRESSURE SAFETY VALVE, LOW WATER INDICATOR, EMOGENCY EXHAUST VALVE, | | | |
| STANDARD ACCESSORIES | STEAM COVER (STAINLESS STEEL #304) * 1 pc, GLASS TUBEFOR LEVEL WATER VIEWER * 1 pc | | | |
| OPTIONAL ACCESSORIES | Please check the optional accessories and function list. **P4** | | | |
| SAFETY STANDARD | ISO 13485 APPROVAL QA SYSTEM | | | |
| OPTIONAL FUNCTION | Please check the optional accessories and function list. **P4**. | | | |

#. FOR REFERENCE : 1 kgf/ $cm^2$ = 0.98 bar = 14.2 psi

#. PS : FOR LIQUID STERILIZATION USE, PLEASE MAKE NOTE IN YOUR PURCHASE ORDER

#. PS: " A " TYPE MODEL WITH OPTIONAL AUTOMATIC FUNCTION.

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ◎ Optional Function | | | | | | | △ Standard Function | | | | | |
| SA-XXX**A** | **A** | B | | | | K | L | | V | | W+B | | |
| | △ | ◎ | | | | ◎ | △ | | ◎ | | ◎ | | |

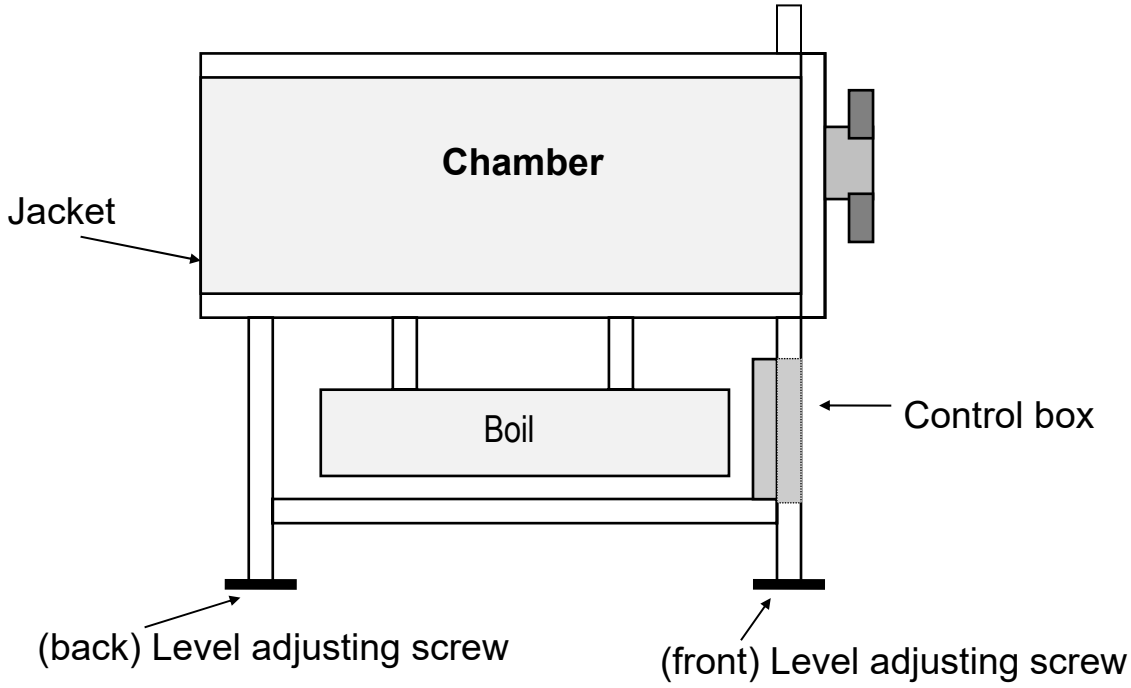
| | | | | | |
|---|---|---|---|---|---|
| Function Code | **A**.: Fully automatic control from Sterilization to Dry. With Water level switch. | | | **B**.: Automatic add water function | |
| | **C** : Double door device | | **F**.: Square chamber with elec. sliding door. | | **K**.: Pressure door lock device |
| | **L**.: Water level switch | | **T**.: Temperature control switch | | **V**.: Dry vacuum function |
| | **R**.: Pre-vacuum / Dry-vacuum function. | | **W**.: Add water pump device | | |
| | **X**.: Temperature recorder (with single sensor record) | | | **Y**.: Temperature recorder (with 6 sensor record) | |

| | |
|---|---|
| Accessories code | **0** = Steam cover only **1** = Sterilization plate x 2 + Plate frame x 1 (For chamber ø 400～700mm only) |
| | **7** = Chamber rail + Sterilization basket x 2 (For chamber ø 400～500mm only) |
| | **4** = Chamber rail + Sterilization basket x 3 (For chamber ø 600～700mm only) |
| | **2** = Chamber rail + Cart + Sterilization basket x 2 (For chamber ø 400～500mm only) |
| | **3** = Chamber rail + Cart + Sterilization basket x 3 (For chamber ø 600～700mm only) |
| | **6** = Chamber rail + Cart |

| | | | | | | |
|---|---|---|---|---|---|---|
| ELEC. VOLTAGE | (1Ø) | A=AC-100V | B=AC-110V | C=AC-120V | D=AC-200V | F=AC-220~240V |
| | (3Ø) | H=AC-220~240V | | J=AC-380V | K=AC-415V | L=AC-440V |
| | | **PS.** Function **V**, Function **R**, = **3 phase only.** | | | | |

# CHAPTER 3. INSTALLATION

1. Please attention the chamber level adjustment, when you install the autoclave:




PS: The front sight must be a little lower than back sight. And adjusted by above two screws.

2. Please don't forget to install the ground (earth) wire, and "No Fuse Breaker".

| | | | |
|---|---|---|---|
| SA-450, SA-450A / 7KW | 1 Phase / 220V / 50A | 3 Phases / 220V / 30A | 3 Phases / 380V / 30A |
| SA-500, SA-450A/ 9KW | 1 Phase / 220V / 50A | 3 Phases / 220V / 30A | 3 Phases / 380V / 30A |
| SA-600, SA-600A/ 12KW | 1 Phase / 220V / 75A | 3 Phases / 220V / 50A | 3 Phases / 380V / 50A |
| SA-700, SA-700A/ 15KW | 1 Phase / 220V / 80A | 3 Phases / 220V / 50A | 3 Phases / 380V / 30A |

3. Function Test:
   Operation one cycle as our operation manual to test the complete cycle function.

4. Please make notes to the user:
   - **a.** Please check the water in the boil, before working.
   - **b.** Please check the indicator, after the working cycle.

⚠ **CAUTION:** The autoclave MUST BE earthed!

⚠ **CAUTION:** The circuit-breaker is also serves as a disconnect device for disconnecting the power, it should be so located that the circuit-breakers are not blocked by any other devices.

# CHAPTER 4. Placement of Items To Be Sterilized

NOTE: Refer to infection control, such as sterilization and sterility assurance in health care facilities of your local authority, for load placement guidelines.

NOTE: Please place items to be sterilized on the tray properly in order to have the best sterilization and/or drying result.

WARNING: Be careful when removing the sterilized items as the metal surfaces might still be hot. Always wear suitable hand protection to remove the box or use the appropriate aids (tray holder) to lift the trays.

NOTE: It is recommended not to exceed 70% of pooch if pooch are used for sterilization.

WARNING: To sterilize absorbent cotton or woolen, please wrap it with sterilizing pouch to avoid piping clog. Place a chemical indicator for

WARNING: If implements are packed with sterilizing pouches, please make sure not to pile them up.

Figure 1

1. Before loading, ensure instruments are cleaned and rinsed.
2. Be sure there will be enough space between each wrap for better air flow as shown in Figure 2.

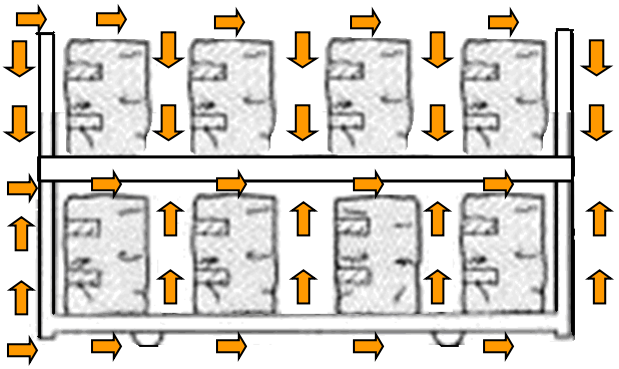


Figure 2

3. If implements are packed with sterilizing pouches and placed inside a sterilization box, make sure to display items as shown in Figure 3.

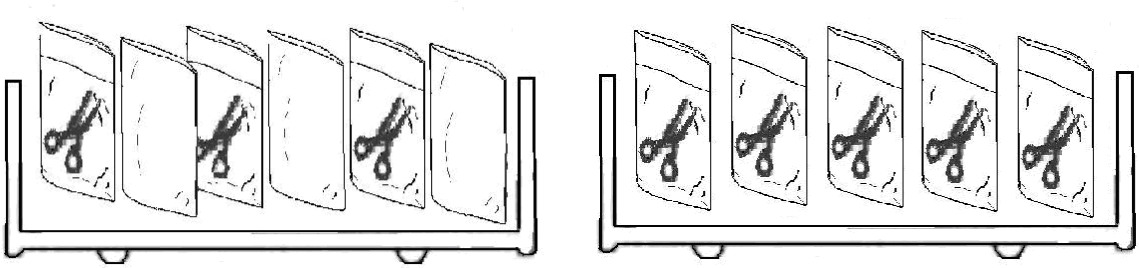


Figure 3

4. If implements are treatment plate, make sure to arrange items as shown in Figure 4.

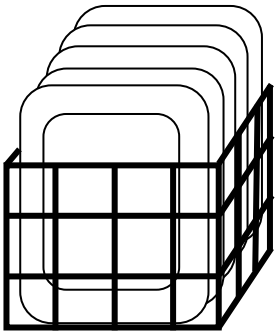


Figure 4

5. If compound items, such as solid loads and porous loads, are packed at the same wrapped, be placed them at the lowest side of the chamber to prevent condensation drops.

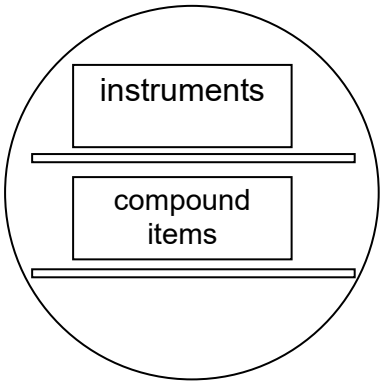



Figure 5

6. Do not exceed to its maximum limit and/or touch the walls of the chamber; and make sure there are enough space for free circulations of steam penetration.
7. Uniform placing of objects that do not overlap.
8. Place tubes or hollows loads horizontal to tray without overlapping. When place sterilizing pouch on the sterilization box or tray, make sure the medical grade paper is facing upward.

9. Round pans, trays, pots pan, etc., should be opening upside down as shown in Figure 6.

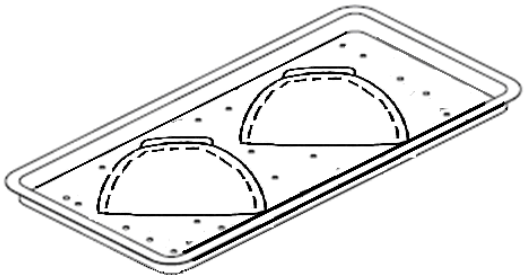


Figure 6

10. Detach caps from can-like items and separated them for sterilization work.

11. If implements are packed with sterilizing pouches, please make sure not to pile them up.

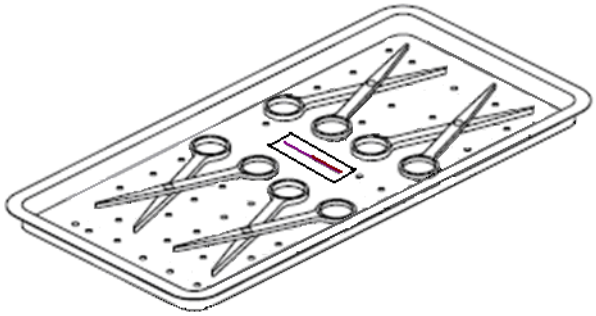


Figure 7

12. Follow the instruction of the instrument to clean and wash the hollow instruments prior sterilizing work, and wipe excess detergents or water. Keep the double ended hollow instrument as straight as possible while keeping two ends opened.

13. An additional temperature sensor and recorder are required for liquid sterilization program as shown in Figure 8.

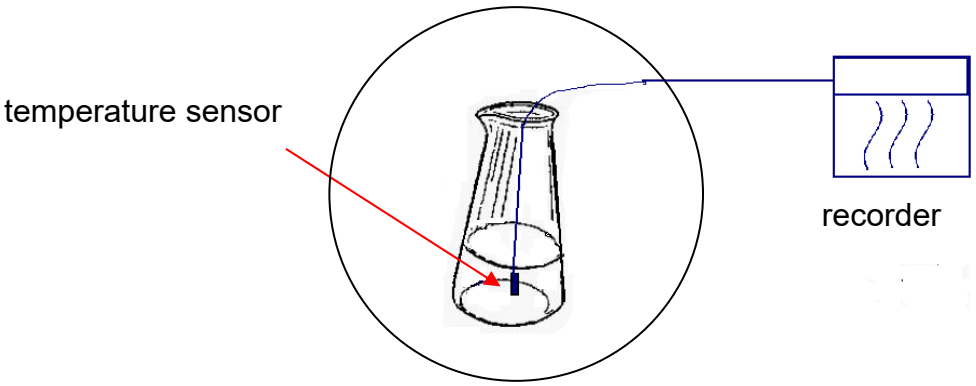



Figure 8

14. Make sure that the items to be sterilized are placed in proper position and then closed the door for sterilization works.

# CHAPTER 5. OPERATION

**PLEASE CHECK CHAPTER 3. AT FIRST.**

1. Open the door and put the sterilized products into the chamber. Than closed it.
   ***PLEASE DON'T FORGET TO PUT THE STERILIZATION INDICATOR INTO CHAMBER.***

2. Sep-up the sterilization time and dry time.
   ***PLEASE REFER THE ENCLOSED APPENDIX.***

3. Turn-OPEN the valve #18, add water into the boil until the yellow sign of the viewer Glass tube. And then turn-CLOSE the valve #18. Turn-up the start switch.
   For "**B**" or "**W**" optional function type, will auto-add water, when you turn-up start switch to "HEAT-UP" position. The heater will start working after the add-water step completely.

HEAT UP

**START Switch** ⇕ OFF

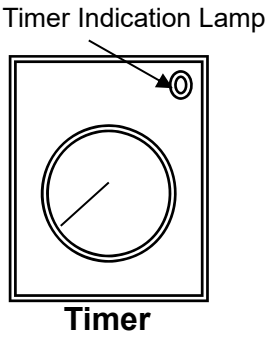
EXHAUST

**PS**: Start switch turn-up to heating up

Turn-down to exhaust chamber / jacket / boil pressure

4. After the jacket pressure up-to 1.4 kgf/cm², the solenoid Valve #2 open. The jacket pressure start into the chamber.

5. After the chamber pressure up-to set-up pressure,
   The LED of sterilization timer turn to "flash" that means the sterilization timer starts work. Then the LED turns light on. This means the sterilization timer finished working then the the dry-timer start working.



**Timer**

6. The LED of dry timer turn to "flash" that means the dry timer start work and the "DRY" Indication lamp will be light on. **Meanwhile the jack steam pressure will be exhausted to make the chamber vacuum**. The LED turns light on. This means the dry cycle is finished. Then, the dry-timer stop working, and the "END" (complete) indication lamp light on.

7. About 40 second's buzzer will report you, "MY DEAR MASTER! YOUR COMMAND HAS BEEN COMPLETED."

**CAUTION:** For "**B**" or "**W**" optional function type, you can Turn-OFF the power switch and turn-UP again. The next cycle will be started again.
For normal type, you must add water (like item No.3) before program start.

# CHAPTER 5-1. BASIC STEP OF STERILIZING

**PLEASE CHECK CHAPTER 4. OPERATION AT FIRST**.

PUT THE STERILIZED INSTRUMENTS INTO THE CHANBER. CLOSED THE DOOR.

⇩

ADD WATER IN THE STEAM GENERATOR (BOIL) / '**B**' & '**W**" CAN AUTO-ADD WATER.

⇩

SET-UP THE STERILIZATION TIMER AND DRY TIMER.

⇩

TURN-UP POWER SWITCHES TO "HEAT UP" POSITION, TO START THE PROGRAM.

⇩

'**B**' & '**W**" CAN AUTO-ADD WATER, AFTER "START" AND THEN THE MAIN HEATER WORKING.

⇩

STERILIZATION TIMER START WORKING, WHEN JACKET PRESSURE is 1.4 kgf/cm². SOLENOID VALVE #2 TURN-OPEN TO PASS THE JACKET PRESSURE TO CHAMBER. WHEN THE CHAMBER PRESSURE ARRIVED SET UP, THE STERILIZATION TIMER START WORKING.

⇩

THE CHAMBER PRESSURE EXHAUST, WHEN STERILIZATION TIME-OFF

⇩

DRY TIMER START WORKING, WHEN THE CHAMBER PRESSURE EXHAUST COMPLETED

⇩

40 SECONDS BUZZER, THE "COMPLETE" INDICATION LAMP LIGHT ON.

⇩

IF THE COMPLETE INDICTION LAMP NOT LIGH ON PLEASE RE-CYCLE AGAGIN.

NOTE

FOR STERILIZER IS EQUIPPED WITH VACUUM PUMP, PLEASE TURN ON THE VACUUM RELEASE VALVE WHEN THE STERILIZATION CYCLE IS COMPLETED. THEN, PLEASE OPEN THE DOOR AFTER THE PRESSURE FOR CHAMBER RETURN TO ZERO.

## CAUTION

1. CHECK THE PRESSURE GAUGE (CHAMBER) RETURN TO "**ZERO**" POSITION BEFORE THE DOOR OPENED.

2. OPEN THE DOOR, IN 10 MINUTES, AFTER ALARM TO MAKE THE DRY FUNCTION IN GOOD CONDITION.

3. IF YOU NEED DO THE NEXT RUN? FIRST TURN THE "POWER" SWITCH TO "OFF" POSITION, AND SET-UP THE PROGRAM AGAIN.THEN TURN ON THE POWER SWITCH TO "HEAT-UP" POSITION, THE NEXT CYCLE RE-START AGAIN.

4. IN EMERGENCY CONDITION OR YOU WANT TO STOP THE CYCLE IN WORKING. YOU CAN PUSH DOWN THE POWER SWITCH TO "EXHAUST" POSITION. IN THE SAME TIME THE HEATER POWER WILL BE CUT-OFF IMMEDIATELY AND SOLENOID VALVE #5, #6 WILL BE OPENED TO EXHAUST THE CHAMBER AND JACKET PRESSURE IMMEDIATELY.

   ※ **IF THE ELEC. POWER WAS CUT-OFF, THE SOLENOID VALVE WILL NO FUNCTION. PLEASE TURN-OPEN OF THE MANUAL VALVE #21. THE CHAMBER / JACKKET / BOIL PRESSURE WILL BE EXHAUST IMMEDIATELY.**

5. THE DOOR HANDLE WILL BE LOCKED WHEN THE CHAMBER PRESSURE OVER THAN 0.3 kgf/cm². (FOR "**K**" TYPE OPTIONAL FUNCFTION.

# CHAPTER 6. WARNING

1. Anytime check the pressure gauge, if the pressure over than 0 kgf/cm$^2$.
   Please don‘t open door.
2. **“USE ONLY DISTILLED or SOFT & FILTERED WATER”** Or not, we can’t offer the quality guarantee service.
3. Please keep open the water source, or not, the low-water protector wills cut-off the elec. power.
4. Please attend the high temperature on the door of the chamber. When she is working.
5. The door handle must be closed well, when the unit is in sterilization.
6. **Please install the No Fuse Breaker, between the elec. Power source and autoclave.**
7. Use only a dedicated power supply.
8. The silicon rubber gasket on the inner door and 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 strips as a check for sterility. These strips may also be kept as a record of sterilization.
11. In the event of an emergency immediately turn the power off, and then, turn open the exhaust valve #21.
12. Please keep the chamber clean, anytime.
13. Movement: This machine over than 200kg to 450kg. Anytime, move this machine must by 6 people at least.

14. The sign of caution and indication:


Caution! Hot surface.


Grounding terminal.


This label means indicator for power on


This label means indicator for power off


Consult instructions for use

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.


Date of Manufacture: EX: 2008-01 is mean January / 2008.


Authorized Representative at europe.

Manufacturer.

Caution, risk of electric shock.

15 STORAGE ENVIRONMENT: TEMPERATURE:-10°C~+50°C / HUMIDITY ≤ 80%

16 WORKING ENVIRONMENT: TEMPERATURE: 5°C~+40°C / HUMIDITY ≤ 80%

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

# CHAPTER 7. APPENDIX

SETTING UP THE STERILIZATION TIME:

* PRESSURE ON 1.4 kgf/cm² (APPROX. 126 ℃ / 260 ℉)

| | |
|---|---|
| UNWRAPPED | Set-up 22 minutes sterilization time. |
| WRAPPED | Set-up 30 minutes sterilization time. |
| LIQUIDS | Set-up 40 minutes sterilization time. |

Liquids sterilization need special optional device. By order request.

* **DRY TIME:** 30 minutes

* SPECIAL SELECTION RANGE:

STERILIZATION TIME SELECTION RANGE 0 ~ 60 minutes

DRY TIME SELECTION RANGE 0 ~ 60 minutes

※Please don't set-up the dry time over than 30 minutes.

**# FOR REFERENCE:** ***1 kgf/cm² = 0.98 bar = 14.2 psi.***

# ***Sterilization instruments must be made by metal, or autoclaveble plastic or rubber material.***

# CHAPTER 8. TROUBLE SHOOTING

## * POWER LAMP IS NOT LIGHT ON:

1. Cause: Power supply is not properly connected.
   Solution: Try to connect power supply until power indicator goes on.
2. Cause: No Fuse Breaker broken.
   Solution: Replace the No Fuse Breaker.
3. Cause: Bulb broken.
   Solution: Replace the bulb.
4. Cause: Start switch broken.
   Solution: Replace start switch.

## * HEATING-UP LAMP IS NOT LIGHT ON:

1. Cause: Lamp Broken.
   Solution: Replace the bulb.
2. Cause: Heater broken.
   Solution: Replace the heater
3. Cause: Power relay broken
   Solution: Replace the power relay

## * LOW WATER (OVER HEAT) INDICATION AND ALARM:

1. Cause: Water is not enough.
   Solution: Check the water level
2. Cause: Water level sensor surface dirty and non-conductive
   Solution: Clean the sensor
3. Cause: Water level sensor switch broken
   Solution: Replace the switch
4. Cause: Check manual valves #21, #18, #19 are closed completed, or valve leaking
   Solution: If valve leaking, please replace it.
5. Cause: Check the solenoid valve #2, #5, #6 have lock function or not, and valve leaking
   Solution-1: If no lock function, please check the elec. wire system and valve coil.
   Solution-2: If valve leak, please replace it, If coil burn down, change the coil.

***PS: THE FILTER MUST BE CLEAN PER EACH SEASON.***

## * PRESSURE IN THE CHAMBER CAN'T EXHAUSE AUTOMATICALLY AFTER STERILIZATION:

1. Cause: Check solenoid valve #6, Ifno function
   Solution: The valve broken, replace it.
2. Cause: The wire system broken
   Solution: Repair the wire system.

*** PRESSURE CAN‘T UP:**

1. Cause: Check solenoid valve #2, Ifno function
   Solution: The valve broken, replace it.
2. Cause: The wire system broken
   Solution: Repair the wire system.
3. Cause: Check Heater function, if it is broken
   Solution: Replace the heater
4. Cause: Check the power relay, if it is broken
   Solution: Replace the power relay
5. Cause: Water level switch broken, to cut the power for heater
   Solution: Replace the switch

*** DRY FUNCTION NOT PERFECT:**

1. Please open the door in 10 minutes, after alarm. If still have same problem, please call engineer.
2. Check the chamber vacuum condition, if the pressure can’t under -0.6 kgf/cm², Please call engineer. **(For optional function “V” type only.)**

*** DOOR CANNOT BE OPENED:**

1. Cause: Air filter clogged with dusts.
   Solution: Replace with a new air filter.
2. Cause: Vacuum release vale not in half-open position.
   Solution: Adjust vacuum release valve in half-open position.
3. Cause: Malfunction of check valve.
   Solution: Replace with a new check valve.

*** For optional function “K” type only.**

Due to the “PRESSURE DOOR LOCK DEVICE”, so if you can’t open the door after work finished, please do following step:

a. Please turn the handle “ ” to tight the door ◦.
b. Then, turn the handle “ ” back to open it.◦

*** The sterilization indicator can’t change the color completely.**

1. Cause: The steam traps no function
   Solution: Replace the steam trap.
2. Cause: The steam trap dirty inside
   Solution: Clean the steam trap as Figure 1.

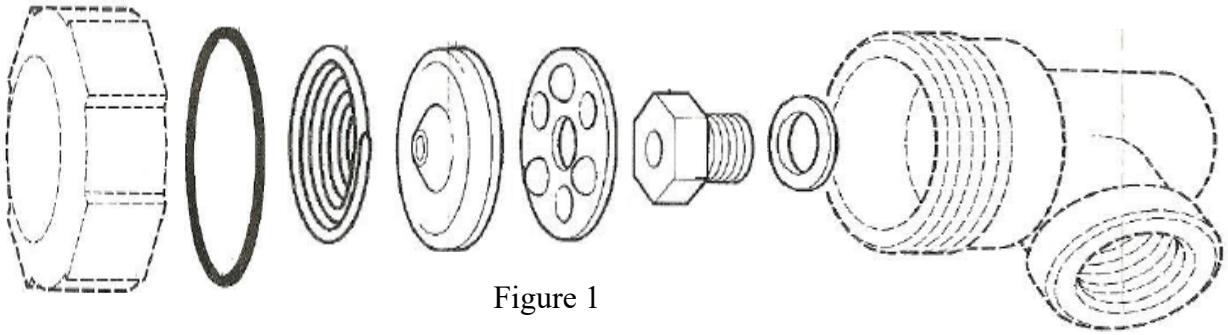


Figure 1

**Note 1: Early spacer plates were uni-directional (see Fig. 2) and must be fitted with the high points uppermost. This does not apply to later models.**

Fig. 2

3. Cause: The chamber or jacket pressure control switch out of order to make chamber In low pressure and low temperature.
   Solution: Replace it.

*** For "B" or "W" function type only:**

1. Cause: No auto-add water function
   Solution: Add water solenoid valve broken, replace it.
2. Cause: Water pumps broken
   Solution: Replace it.

***PS: ANY PROBLEMS PLEASE CHECK THE WIRE CONNECTION AT FIRST.***

# CHAPTER 9. MAINTENANCE REQUIREMENTS

**DAILY:**

- WIPE THE INSIDE OF THE CHAMBER AND THE INSIDE OF THE DOOR WITH A NON LINT CLOTH SUCH AS A WETTEX.
- CHECK WATER LEVEL.

**WEEKLY:**

- CLEAN THE RACK AND TRAYS.
- CLEAN THE FILTER IN THE CHAMBER. (ON THE EXHAUST HOLE)

**MONTHLY:**

- AFTER STERILIZATION, WHEN THE CHAMBER PRESSURE STILL OVER THAN 0 kgf/cm², PLEASE TURN-OPEN THE JACKET EXHAUST VALVE KNOB. THEN, THE PRESSURE WILL EXHAUST THE BALANCE WATER AND STEAM FROM THE JACKET AND THE BOIL. THIS WAY WILL KEEP THE JACKET AND BOILER CLEAN. AND REFILL THE WATER. TO THE BOIL AGAIN. AFTER 10 MINUTES, PLEASE PUCH-OFF THE POWER SWITCH, AND TURN-OPEN THE EXHAUST VALVE (KNOB) AGAIN. AFTER 2-3 TIMES, THE BOIL AND JACKET WILL BE CLEAN WELL.

**YEARLY:** (CHECK BY ENGINEER)

- REMOVE, CLEAN AND REPLACE THE WIRE MESH FILTER AT INSIDE OF THE HOUSING. THEN, FIX RETURNS THE FILTER.
- 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.)
- CHECK THE FUNCTION OF THE SAFETY VALVE.
- CLEAN THE SURFACE OF THE WATER LEVEL CENSOR.
- CHECK IF AIR FILTER CLOGGED WITH DUSTS.

# Cleaning Steps to the Water Sensors of the Steam Generator – Model SA-A Series

**Warning**: Danger of Electric Shock! Disconnect the power prior to the maintenance works.

1 Mark and record the wiring number for subsequent reinstallation works. Do not mix the High-Level-Sensor, Low-Level-Sensor and Ground sensors.

2 Disconnect the three wirings counter-clockwise by using a No. 10 wrench (or an adjustable wrench), as shown in Fig- 1

3 Loosen the two sensors nuts (High-Level-Sensor and Low-Level-Sensor) counter-clockwise by using a No. 27 wrench (or an adjustable wrench), and then loosen the Ground screw nut counter-clockwise by using a No. 17 wrench (or an adjustable wrench).

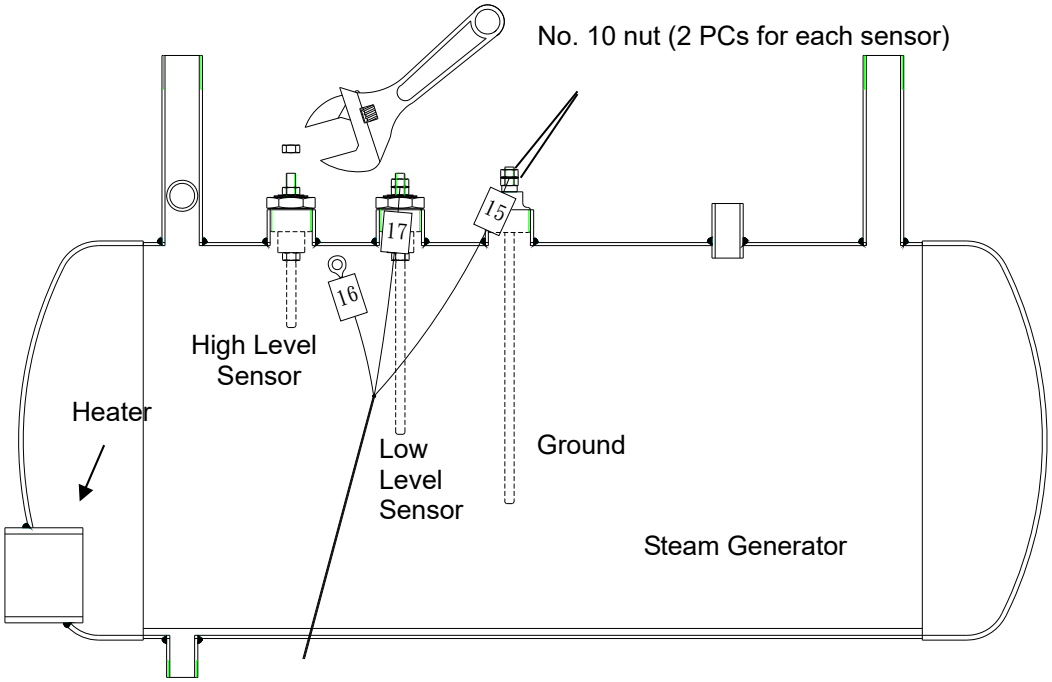



**Fig- 1 Layout**

4 Disassemble the High-Level-Sensor and Low-Level-Sensor as shown in Fig - 2 and Fig - 3.

5 Clean each part very careful to remove the scale and deposit with clean water, a small brush or scrub sponge may help to the cleaning works. Also clean the Ground Sensor Rod as described above.

**Note**: Each part must be clean completely; there should be no dirt on the surface of the Teflon Insulator.

6 Dry all of the components after the cleaning work. Wrap the screw thread of the High-Level-Sensor and Low-Level-Sensor rods (Fig- 3) with sealing tape so that they can be tighten with Teflon Insulators.

7 Assemble the components as shown in Fig- 2 and Fig- 3

8 Wrap the screw thread of the nut with sealing tape for assembly purpose.

9 Install the three sensors and their associated wiring with the tools used in step 1. Visual inspect that the position and wiring identification are match to Fig-1.

10 Restore the power.

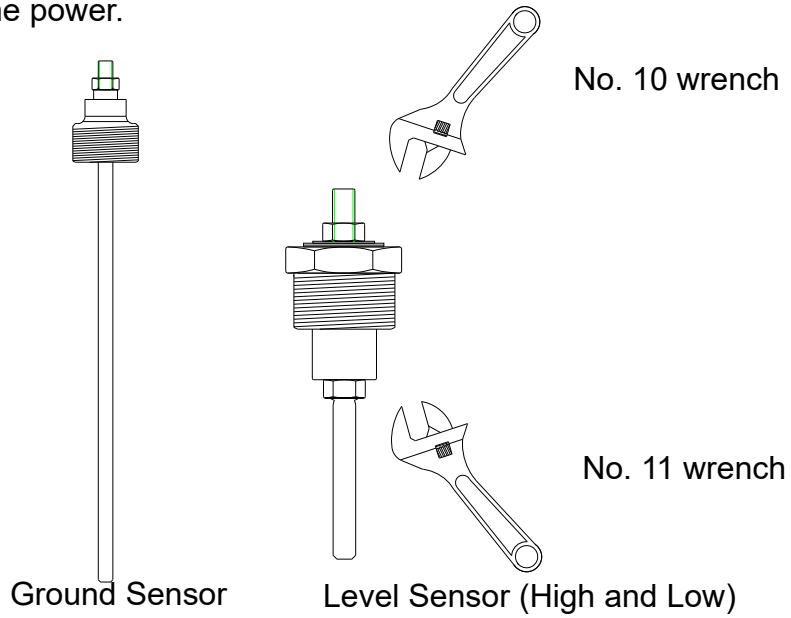



**Fig- 2 Sensors**

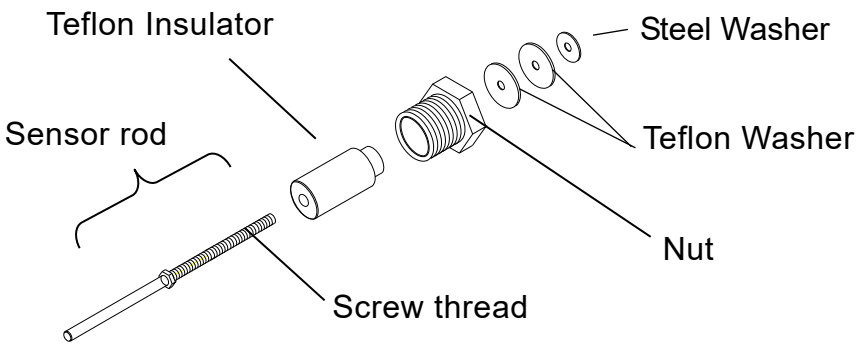



**Fig- 3 Sensor Assembly**