

# **STEAM STERILIZER**

## **OPERATION MANUAL**



**Tonsor Medical Instrument Co.,Ltd.**



# TO USER

## DEAR USERS :

Thank you for purchasing our vacuum pressure steam sterilizer!

Please read carefully before using !

## Record of machine

Name : \_\_\_\_\_ Steam Sterilizer \_\_\_\_\_

Model: \_\_\_\_\_ T&S B \_\_\_\_\_

Serial number: \_\_\_\_\_

Date of Product: \_\_\_\_\_

This manual applies to the following models:

Model	capacity (L)	pressure (kPa)	Pre-vacuum		Sterilization time (min)
			times	Vacuum saturation (kPa)	
T&S17B	17L	110、210	3	-70~-80	20、4
T&S23B	23L	110、210	3	-70~-80	20、4
T&S30B	30L	110、210	3	-70~-80	20、4

## Note :

- Before using this sterilizer, please read this user manuals to help you fully understand the functions of our sterilizer products.
- When using, please follow the operating procedures, maintain and maintain it properly.
- Please keep the user guide for future reference.
- If there is a problem with the sterilizer during use, please contact us, we will provide you with after-sales service.

User guide :

When you purchase the our sterilizer , an user manual will provide you operational and technical instructions.



### ATTENTIONS

**Warnings :** if ignored, it will result in death or serious personal injury due to incorrect equipment operation; for your safety, please pay attention to these warnings.

**Note:** if ignored, it will result in an individual due to incorrect device operation. Injury or equipment damage; for your safety, please pay attention to these precautions.

**Important:** with prohibited operation, if the operation is performed due to ignored, it will cause equipment damage, broken or quality degradation; these operations must be avoided



Ground protection



Attention to high temperature




Turn on the power



Means power off

## Safety Warnings :

Please read the safety warnings and precautions provided in this user guide to ensure that you use the sterilizer safely.

	<b>Warn</b>	If you ignore this, it may cause electric shock/fire or damage to the sterilizer.
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- 1、 Please use a separate three-hole 110VAC/10A power socket with protective grounding and confirm that the protective earthing terminal is securely connected.
- 2、 Please fully insert the sterilizer power plug into the power socket. Do not use a power source other than the specified voltage.
- 3、 Do not plug or unplug the power plug with wet hands.
- 4、 Do not damage, modify, pull, bend or twist the power cord, and do not place heavy objects on the power cord.
- 5、 Do not put the sterilizer on an unstable surface, such as a shaking table, a bevel, or a location that will vibrate.
- 6、 Please do not block or cover the sterilizer door, vent or heat dissipation window.
- 7、 Please do not place anything on the sterilizer.
- 8、 If you find that the sterilizer has abnormal smell or abnormal noise during machine working(not including the sound when the water pump starts working), please turn off the power immediately, and then contact us.
- 9、 After cycle finished, please take out the sterilized items in time and cut off the power .
- 10、 If the sterilizer is not used for a long time for various reasons, pls empty the water in water tank.

## 一、 technical parameters

machine size :     17L: L 560mm\*W 480mm\*H 420mm  
                      23L: L 670mm\*W 480mm\*H 420mm  
                      30L: L 800mm\*W 480mm\*H 420mm

Chamber size :    17L: Φ 250mm\*D 350mm  
                      23L: Φ 250mm\*D 460mm  
                      30L: Φ 250mm\*D 590mm

Power supply :    1800VA     110~121VAC     60HZ

Sterilization :    134 °C     210~212kPa  
                      121 °C     110~112kPa

\* Temperature refers to the sterilization temperature, operating at different atmospheric pressures, and the relative pressure values shown are different.

Sterilizer type: Type B (for all packaged and unpackaged solid loads, Class A cavity loads and porous osmotic loads)

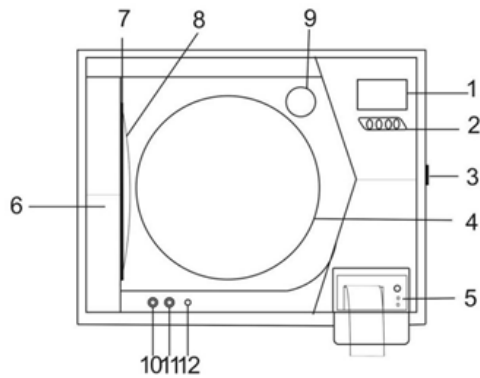
Working environment: :   a) Ambient temperature range: 5 °C ~ 40 °C;  
                                  b) Relative humidity range: ≤ 85%;  
                                  c) atmospheric pressure range: 70kPa ~ 106kPa;  
                                  d) Network power: AC 110V ± 11V; 60Hz ± 1Hz.

Water tank capacity:   5 Liters

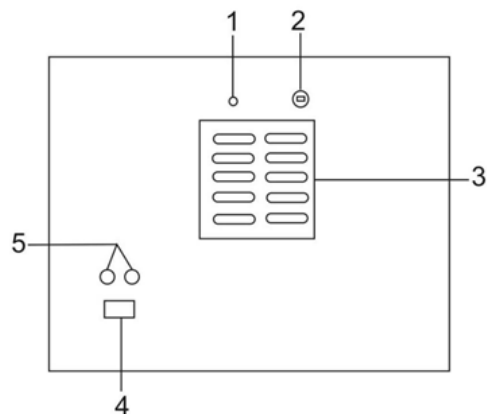
Waste Water tank capacity:   4 Liter

## 二、Introduction

### 1. Outer Appearance



No.	Name of part
1	LCD
2	KEY PAD
3	POWER SWITCH
4	CHAMBER
5	PRINTER or USB key
6	DOOR
7	DOOR SEALER
8	DOOR DISK
9	AIR FILTER
10	Quick coupling drain connection for empty waste water tank
11	Quick coupling drain connection for empty clean water tank
12	Connection for adding distiller water



No.	Name of Part
1	AIR HOSE
2	SAFETY VALVE
3	CONDENSOR
4	MAIN PLUG
5	FUSES

## 2. KEY PAD



OPEN DOOR AND ADD WATER.....



\*WHEN LACK OF WATER, THIS KEY IS FOR ADDING WATER

IN NORMAL, IT IS THE KEY TO OPENING DOOR

\*PRESS THE KEY FOR A WHILE, IT WILL TURN TO SETTING PAGE

UP.....



DOWN.....



START, STOP.....

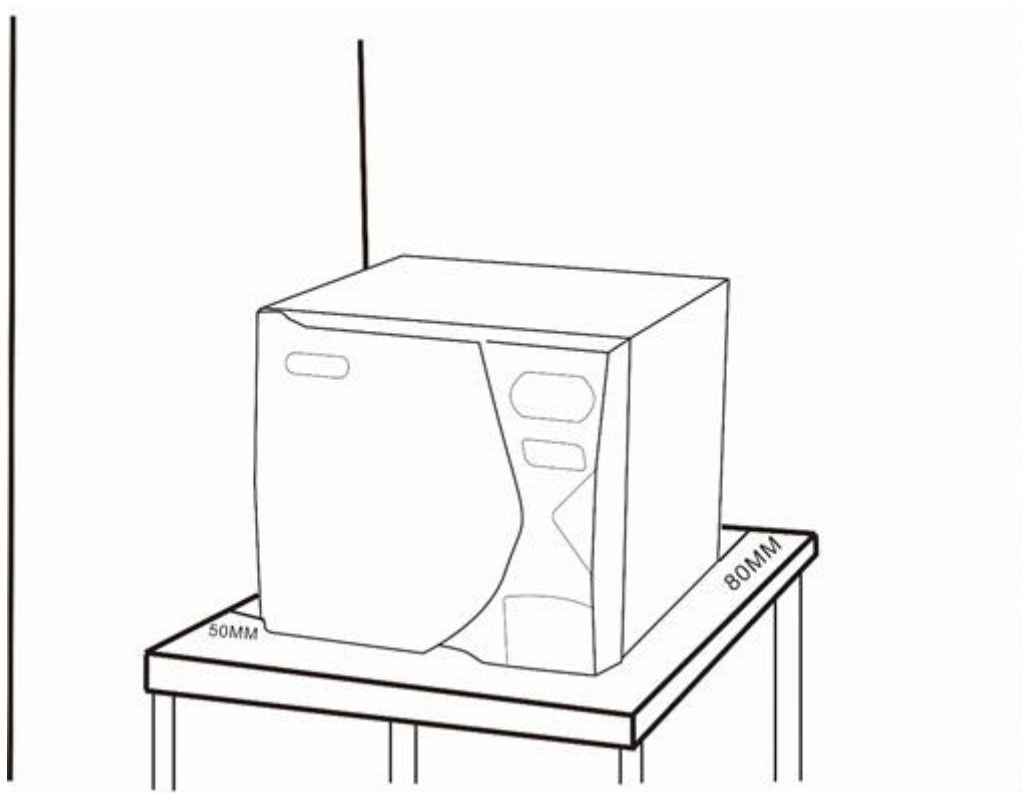


\*PRESS FOR A WHILE, IT CAN STOP THE CYCLE



### 三、 Installation and Operation

#### step 1: Placement installation

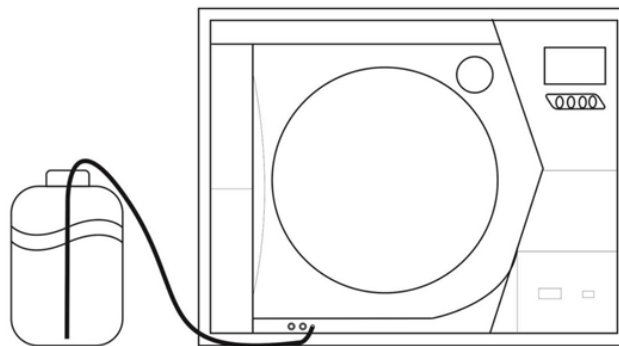
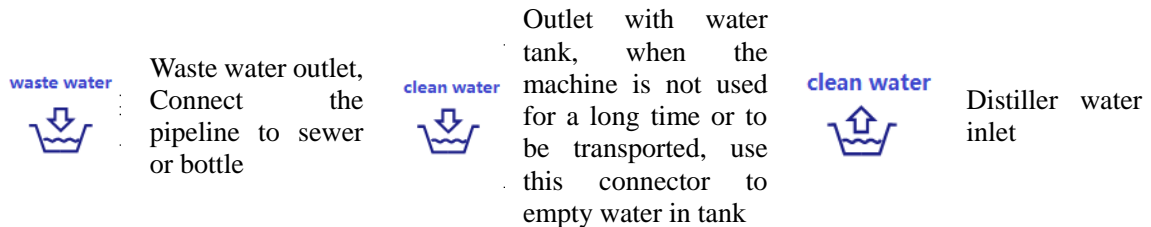


**Please pay attention to the following when installing the sterilizer:**

- Install the sterilizer in a well ventilated room;
- Install the sterilizer on a horizontal table and adjust the front foot of the sterilizer slightly higher than the back foot;
- Please pay attention to the load on the table top or the countertop. The maximum weight of the sterilizer after filling with water will reach 60kg;
- When installing the machine, please leave at least 80mm or more at the rear of the machine, and leave at least 50mm or more on the left and right sides of the machine;
- Do not install the sterilizer near the sink or a place where it may be splashed by water;
- There has a safety valve in back of machine. When the pressure inside of chamber is too large, the safety valve will automatically open to release the pressure. So pls Do not cover the part with any items during installation and use.

## Step 2: Connect the power line, inlet pipeline (with distilled water)

There are 3 connectors in back of the machine. Please connect the pipes as shown:

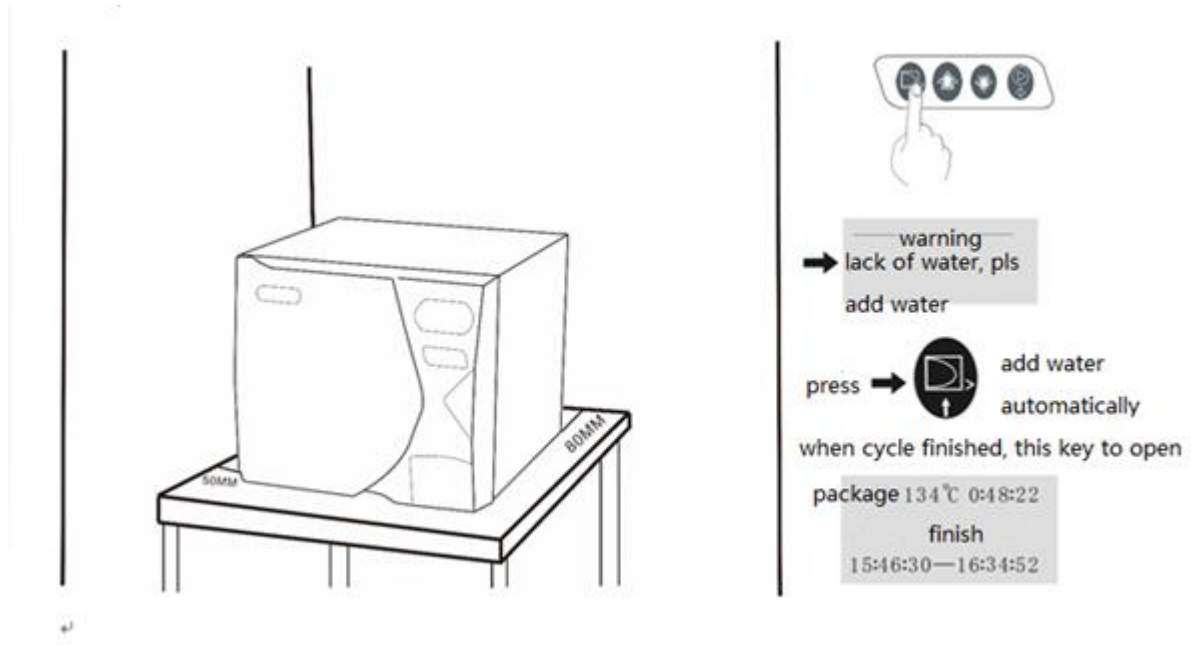


### Note :

- \* The sterilizer heating element is a high-power inductive coil, which has high static induction during operation, and the power socket must be reliably grounded.
- \* The outlet for waste water is also an exhaust pipe and needs to be fastened with a random buckle. The vented body has a higher temperature and should be connected to a safe sewer pipe or a relatively closed container to prevent gas from permeating indoors or scalding people. Do not bend the piping to prevent the exhaust from being blocked and affecting the work.
- \* The water source must be of high quality distilled or demineralized water (see Appendix VI for requirements)

### Step 3 : Open door and Add water

Turn on the power, the device will prompt “Water tank water shortage, please add water”, press the door open button, open the door, press the door open button again, the machine will start to automatically add water. The storage tank has a volume of 5 liters. Please do not use less than 5 liters of distilled water for the first use. Prepare at least 3 liters of water each time.



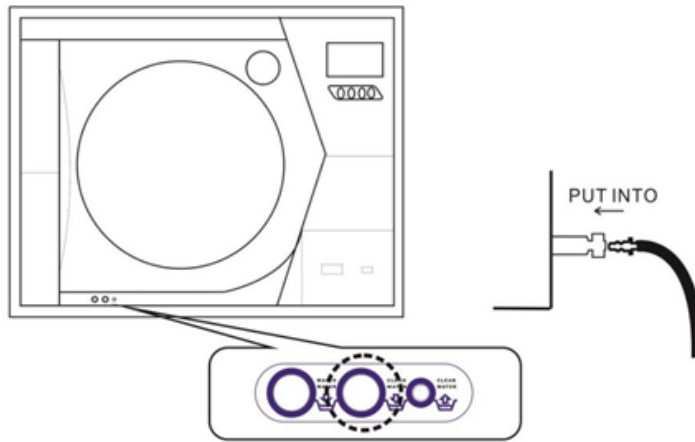
- \* When the door is closed ,you want to add water, you should press 2 times with the first key. the first time pressed is to open door, and second pressing is to start adding water
- \* Before adding water, please make sure that the inlet pipe is connected well and prepare enough distiller water, otherwise it will affect the service life of the machine.



**Note:**

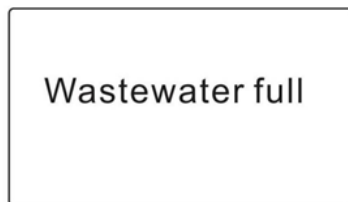
- 1. Must use distiller water**
- 2. Please prepare not less than 5 liters of distilled water for the first time, then prepare 3 liters and insert the inlet pipe into the bottom of the bucket;**
- 3. Do not dump the sterilizer after the water tank is filled with water.**

- \* If the machine is not used for more or on travelling, distiller water tank must be completely drained in order to avoid alga growth or damaged spare parts by leftover water during shipping. Use the main water tank drain connection insert the quick coupling to empty. Distiller Water will come out automatically

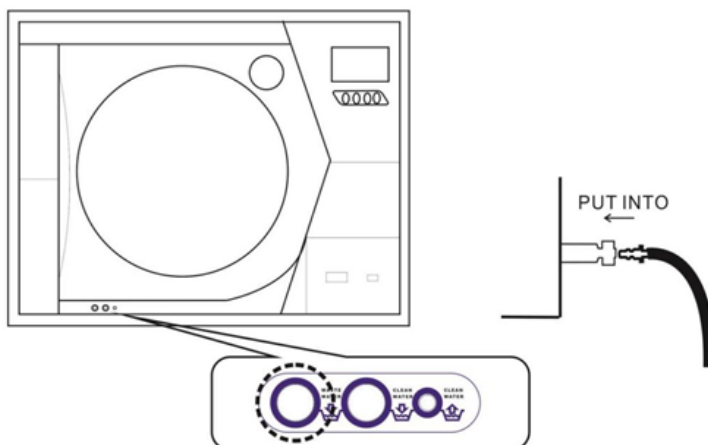


## FULL OF WASTE WATER TANK

The follow message is displayed on the screen when waste water tank is full.

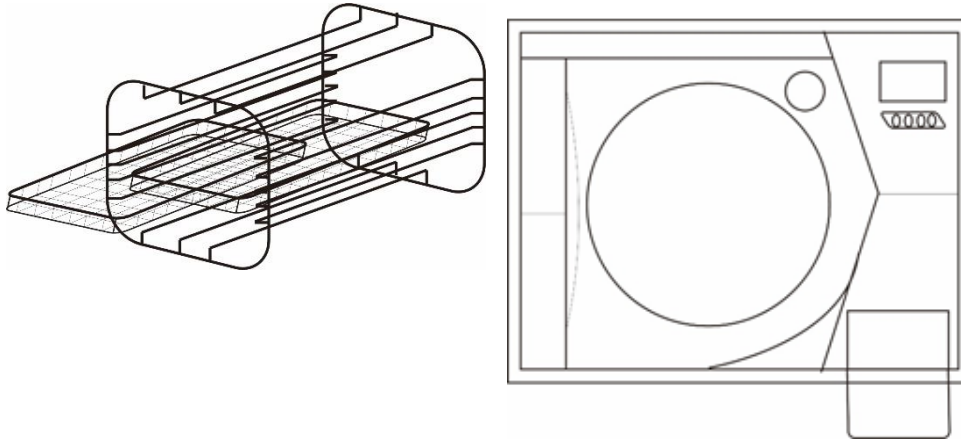


pls open door advanced if the door is closed, insert the quick drain connection into the flexible connection for waste water tank.



## Step 4: Place sterilized items

Open the machine door, use the handle to take out the instrument tray, and place the items on the tray and then put them into the sterilizer chamber.



- \* Use the handle when handling the instrument tray;
- \* Be sure to place the sterilized items on the instrument tray for sterilization;
- \* **The load capacity of each tray should not exceed 2.0 Kg;**
- \* It is recommended to sterilize the sterilized items in a steam-sterilized special sealed bag to facilitate the storage and transportation of the items. If they are not packaged, they should be used immediately to stored, transported and applied in a clean state to prevent the items from being It is contaminated again before use.

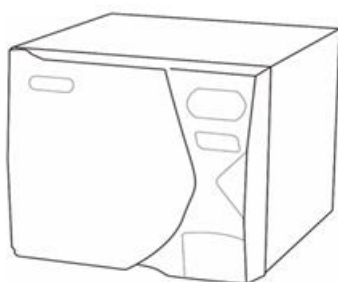
## Step 5 : start program




**After holding the door in for 5 seconds, the door will be automatically locked.**

Now use the up and down keys to select the sterilization program you need. After pressing the start button, the sterilization process will work automatically.

If you are interested and time, you can see the stage, status, and related temperature, pressure, time, and other data of the sterilizer work from the LCD screen.

LCD screen will show more data. In order to ensure high-quality sterilization, once a certain data fails to meet the standard, the loop will be automatically terminated and a certain stage or part of the error will be reported.



-  choose cycle
-  confirm, start cycle
-  finish , open door

## Maintenance

### 1. Disinfect the water storage tank with medical disinfectant water every week.

First drain the distilled water in the storage tank, add the medical disinfectant water to the storage tank, let it stand for one hour, then empty it, and then wash it again with distilled water.

### 2. Clean the surface of the sterilizer chamber with medical alcohol on a monthly basis.

### 3. Clean the filter inside the sterilizer chamber regularly every 2 months

After opening the sterilizer door, remove the filter at the bottom of the chamber counterclockwise, rinse with water and remove the impurities adsorbed on the surface with a brush. If necessary, put it in the washing machine for cleaning.

### 4. Replace the fuse

When the fuse is broken, please turn off the power supply, turn the fuse holder counterclockwise with the tool, remove the fuse, replace the fuse of the same specification, and then tighten the fuse holder clockwise with the tool.

### 5. Regularly clean the door seal ring

You should clean the door seal ring regularly to prevent impurities from remaining on the surface after long-term use and affect the seal. Dip the distilled water on a lint-free cloth and gently wipe the surface of the seal. After the above treatment, if there is still a gas leak problem, you need to remove the seal and clean it. If it is damaged, it must be replaced.

### 6. Replace the door seal ring



1. When the door seal ring aged, pinch the lip of the seal and pull it down.
2. Clean the seal mounting groove.
3. Gently press the new seal into the seal mounting groove until the whole seal enters the mounting groove. Do not use a sharp object such as a screwdriver. Just press in smoothly.



#### Note

The sealing ring must be removed before fully cooled and then operated to avoid burns. !

## 六. Transportation and storage

### 1、 Preparation before transportation and storage

Turn off and unplug, make sterilizer to cool down, and use a drain connector to empty water in the tank.

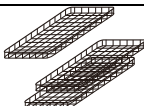
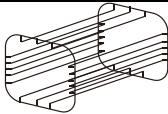
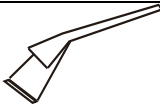
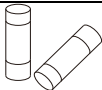

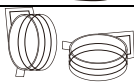





### 2、 The sterilizer should be transported and stored under the following conditions:

Ambient temperature:  $-20^{\circ}\text{C} \sim +55^{\circ}\text{C}$

Relative humidity:  $\leq 85\%$

Atmospheric pressure:  $50\text{kPa} \sim 106\text{kPa}$

## 七. Accessories:

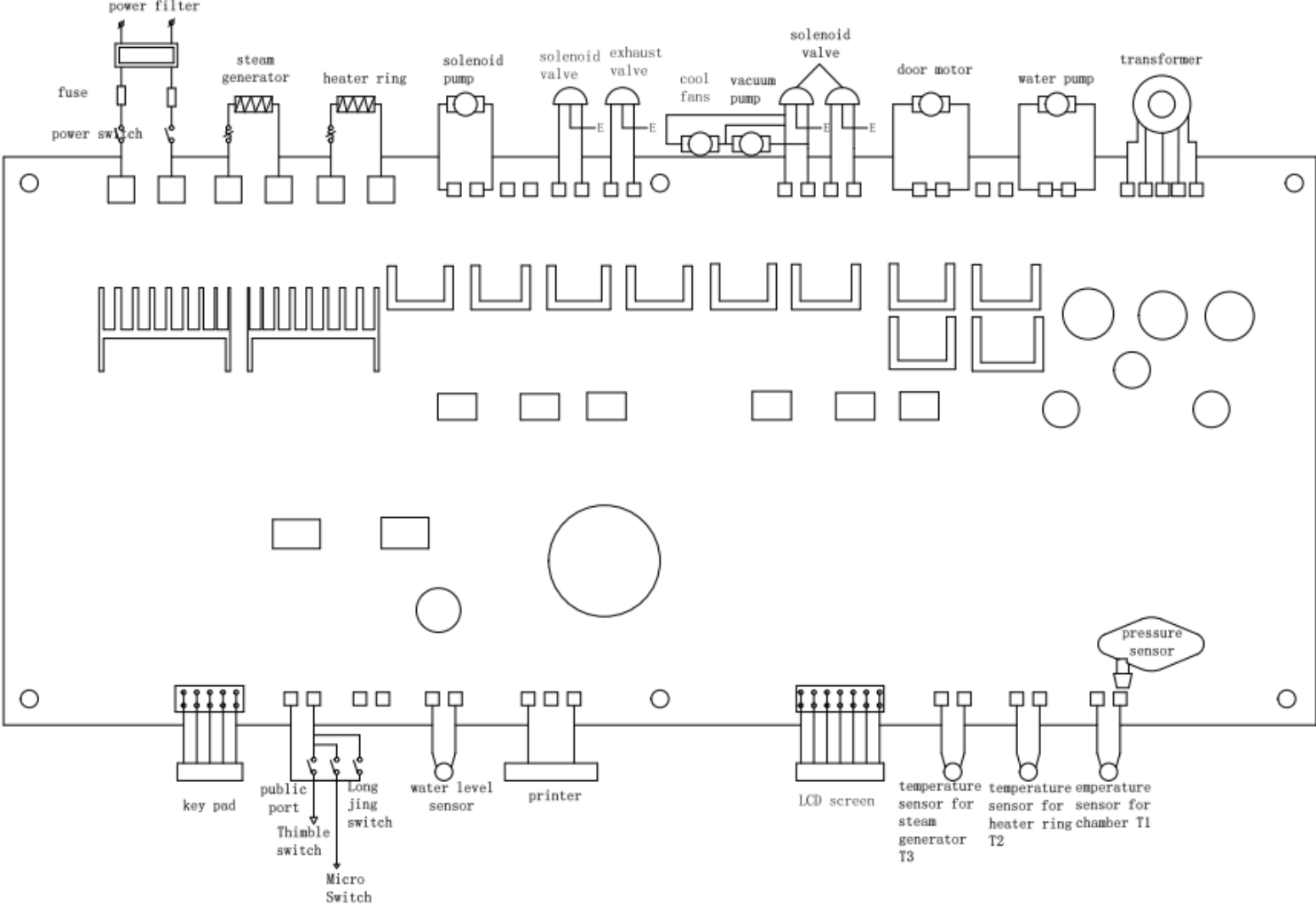
No	Spare part name	QTY	image	remark
1	Stainless steel trays	3		
2	Stainless steel frame	1		
3	handle	1		
4	fuse	2		F10A L 250V
5	Pipeline for inlet and outlet	2		
6	buckle	2		
7	Door seal ring	2		One is on machine
8	Printer paper	2		One is on machine
9	Drain connector for water tank	1		
10	power cable	1		
11	User manual	1		

## 八. Cycle List

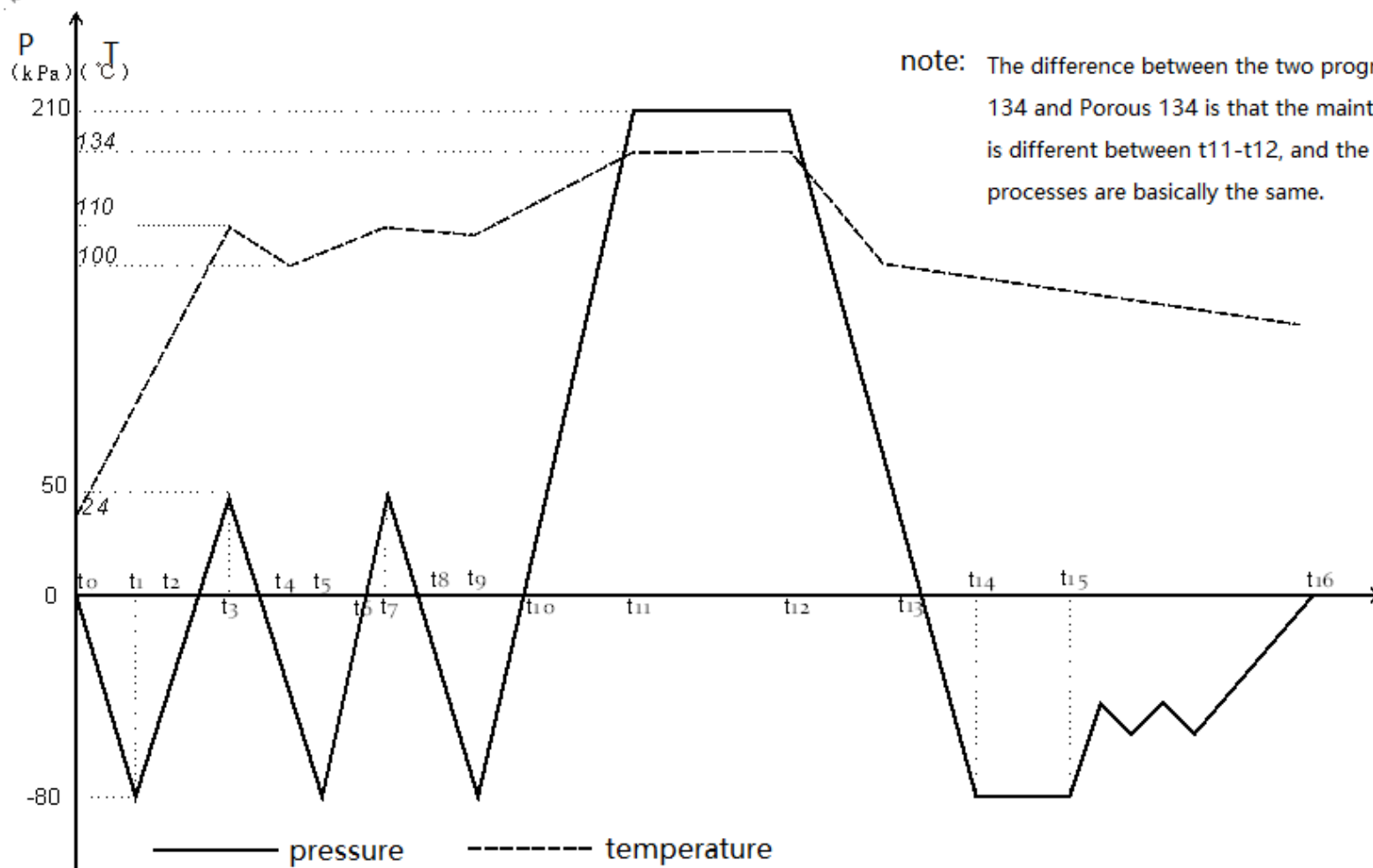
Cycle	Tem.	Pressure	Sterilization time	Vacuum times	drying	Total time	Maximum load weight Fabric/instrument	Sterilized item
Porous134	134	210	4	3	Yes	30-45	1.5/4.5Kg (17L) 2.0/6.0Kg (23L)	Unwrapped fabric Single/double layer packaging fabric Single/double layer packaging hollow instrument
Hollow134	134	210	4	3	Yes	30-40	-/4.5Kg (17L) -/6.0Kg (23L)	Unpackaged hollow instrument Single layer packaging hollow instrument
Package134	134	210	4	3	yes	35-45	-/4.5Kg (17L) -/6.0Kg (23L)	Single layer packaging solid equipment
Solid134	134	210	4	3	Yes	35-40	-/4.5Kg (17L) -/6.0Kg (23L)	Unpackaged solid equipment
Porous121	121	110	20	3	Yes	45-58	1.5/4.5Kg (17L) 2.0/6.0Kg (23L)	Unwrapped fabric Single/double layer packaging fabric Single/double layer packaging hollow instrument
Hollow121	121	110	20	3	Yes	45-55	-/4.5Kg (17L) -/6.0Kg (23L)	Unpackaged hollow instrument Single layer packaging hollow instrument
Quick134	134	210	4	1	No	16-20	-/4.5Kg (17L) -/6.0Kg (23L)	Unpackaged solid equipment
Prion 134	134	210	18	3	Yes	50-58	1.5/4.5Kg (17L) 2.0/6.0Kg (23L)	Unwrapped fabric Single/double layer packaging fabric Single/double layer packaging hollow instrument
BD test	134	210	3.5	3	Yes	30	-	-
Vacuum test	-	-80	-	-	-	18	-	-



**Attachment 3. Board connection diagram**

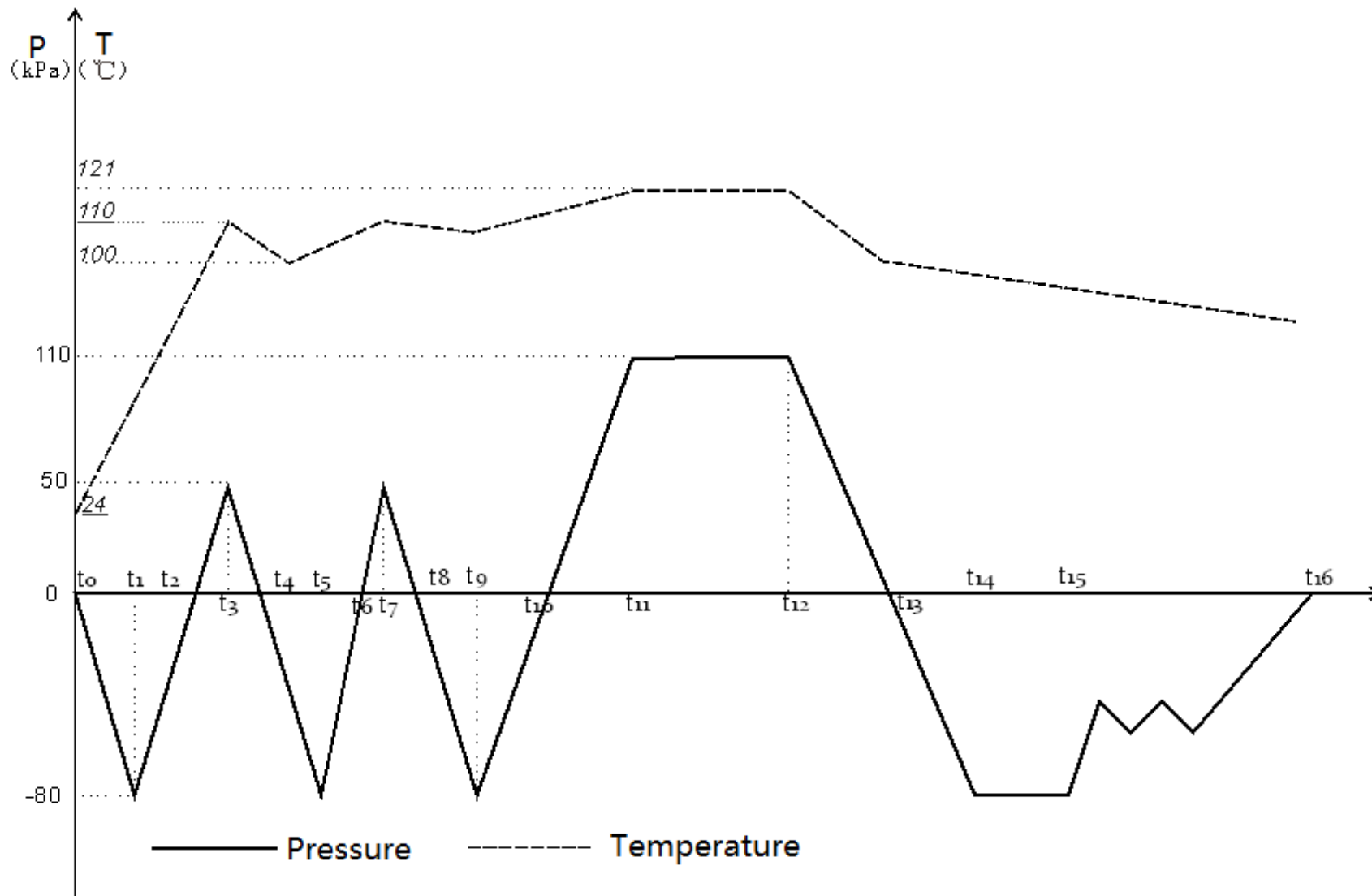


## Attachment 4 . Process graph



note: The difference between the two programs of Prion 134 and Porous 134 is that the maintenance time is different between  $t_{11}$ - $t_{12}$ , and the other processes are basically the same.

note : The main difference between the Porous 134 and the hollow, packaging, and solid 134 programs is that the drying time between  $t_{14}$ - $t_{16}$  is different, and the other processes are basically the same



\*Note: The main difference between the two procedures of Porous 121 °C and hollow 121 °C is that the drying time between  $t_{14}$  and  $t_{16}$  is different, and other processes are basically the same

## Attachment 5 printer paper Description

### Report

Model: T&S-B  
 S/N: 00000001  
 Counter: 00003  
 Program: Porous 134°C04'  
 Cycle start: 2011-06-04

15:16:19

time	Status	T1	P
00:00	CS	028.4	+000
02:32	PH	032.6	+000
04:54	PV1	035.8	-087
08:36	PP1	109.6	+051
11:13	PV2	074.6	-080
13:32	PP2	109.2	+051
16:09	PV3	084.3	-075
21:15	PP3	134.7	+213
21:15	SS	134.7	+214
25:15	SE	135.6	+210
26:11	DS	123.7	+010
30:11	DE	095.3	-082
38:22	CE	094.7	-004

Sterilizer Time : 15: 37: 35  
 -15: 41: 35

Max 135.3°C  
 Min 134.7°C

Cycle end: 15: 54: 42  
 Total time: 00: 38: 22  
 Sterilization : Positive

Operator:  
 .....

\*CS- Cycle Start  
 PH- pre-heat  
 PV- pre-vacuum  
 PP- Air exhaust and steam in  
 SS- start sterilization  
 SE- sterilization end  
 DS- drying start  
 DE- drying end  
 CE- cycle end  
 MAX- the highest temperature when sterilization  
 MIN- the lowest temperature when sterilization

In the printed result, the values of 1PV, 2PV, and 3PV are the time, temperature, and pressure at the end of 3 vacuums, where the pressure is a critical value, generally between -700 and -900 kPa;

The values corresponding to 1PP and 2PP are the time, temperature and pressure at the end of the second pulsation boosting, and the temperature is generally between 105 and 112 °C, and the pressure is about 50 kPa;

The values corresponding to SS and SE are the time, temperature and pressure at the start of sterilization and the end of sterilization. The temperature and pressure will be different according to the selected procedure. The 121 degree program is between 121 and 124 °C, and the pressure is 105. Between -130 kPa; 134 degrees between 134-138 °C, pressure between 210-240 kPa;

The values corresponding to DS and DE are the time, temperature and pressure at the

beginning of drying and at the end of drying;  
MAX and MIN correspond to the sterilization maintenance phase, the highest temperature and the lowest temperature in the sterilization chamber, respectively.

## Precautions for use

1. The sterilizer should be placed on a horizontal workbench.
2. Always use distilled water to extend the life of the sterilizer.
3. The heat dissipation window of the sterilizer housing should not be blocked by foreign matter.
4. Sterilization equipment should be placed on the instrument tray, and there should be gaps between the instruments to facilitate air circulation in the sterilizer.
5. When opening the sterilizer door, do not lean too close to the door to avoid burns.
6. Discharge the sealing ring before disconnecting the power supply and then fully cooling before operation to avoid burns.
7. Do not get close when the safety valve is opened to avoid burns.
8. Please use the trailer or double hand when transporting, and do not drag during handling.
9. The power supply must be grounded reliably.

## Manufacturer Contact Information:

Tonsor Medical Instrument Co.,Ltd.  
Add: Chenjia Road, Zhangqi Industrial Park, Cixi City 315313,Zhejiang,China  
Tel: 86-574-63742742  
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Skype: tonshuoeasy@hotmail.com  
Whatsapp/Wechat: 86-15958858661



# Setting Instructions







# Setting Instructions

In the main page “Welcome to use”, press the first key for 5 secs, then turn to the setting page, see the following page



1---time setup ,press the confirmation key to setting time page



up-down to adjust the time ,date, then confirm

2—print record, if you want to print the former record, use this function, press the last key confirmation to choose which record you want to record



Up –down to choose, 1 means the last one record, 2 means the last 2 records, it can make a record with many times.....



3---Ambient pressure—when alarm the pressure is not in safe, press the last key (confirmation key) to reset the local pressure..



4— dry setup, The dry setup range is 20~90, the data is bigger, means the dry temperature is higher

when cycle finished, if you find the instruments is wet, you want to make it dry, 3 ways to make it dry

a...make the front 2 machine feet little higher than the back feet, run cycle to check the dry ,if still wet, so the next step

b---clean the chamber filter, run cycle then after check dry ,still wet, then to the third way , setting dry data



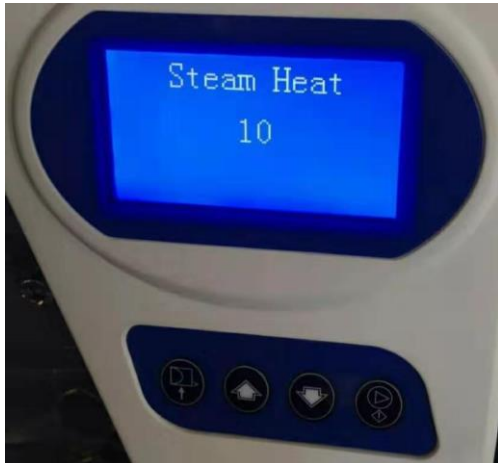
The initial data is 30, then you can change it to 35, press up key adjust, then confirm, if still wet, change to 38...



5---steam heat, when chamber temperature is too low or too high, you can adjust this data

The setting range is 0~20, if the chamber temperature is too low, then turn down the data, make it smaller, if the chamber temperature is too higher ,then turn up the date, make it bigger data..

The initial data is 10



6—machine information , it shows serial number, counter ..



- |                     |            |           |           |            |
|---------------------|------------|-----------|-----------|------------|
| 7. initial language | 8.English  | 9.Spanish | 10.Frensh | 11.Italish |
| 12.Germany          | 13.Russian |           |           |            |

For languages, we can add more... but all need customers to help translation, because customers know well using with their local languages ...


# STEAM STERILIZER

## SERVICE MANUAL





Here we had listed the common problems we met, usually you can follow these solutions to resolve .....

alarm show	Reasons	Solutions
FILLING PROBLEM	Add distiller water too long time	<ul style="list-style-type: none"> <li>① First check the pipelines connected in right position</li> <li>② Then check distiller water is enough or not, Usually for first adding ,should prepare more than 5 Liter distiller water</li> <li>③ Inlet pipeline whether insert the bottom of bottle</li> <li>④ The filter connected with inlet pipeline whether blocked or not</li> </ul>
LOCKER PROBLEM	Has errors when Open /close door	<ul style="list-style-type: none"> <li>① press the first key(open door key),hear the sound of door motor, but door is not open, later screen shows locked problem, pls contact the manufacturer to check the door motor whether broken or not</li> <li>② the door sealer will be thinned during machines working, there will be a slight leak. Under the guide of manufacturer to adjust the door disk.. turn the big screw in door disk clockwise, the total distance is no more than 6-7 cycle. If too much cycles, it makes the door toot tighten, at this moment, you should Anticlockwise rotation a little, till the door can open and close normally...</li> </ul> <div data-bbox="751 987 1235 1442" style="text-align: center;">  <p style="color: red; font-weight: bold;">better distance 6-7 cycle</p> </div> <p style="text-align: right; font-weight: bold;">Photo 1</p> <ul style="list-style-type: none"> <li>③ If the above 2 points are both not appeared, then you should check the 3 door switches, pls contact manufacturer</li> </ul>
PP TIMEOUT	temperature and pressure can not reach the data within the specified time.	<ul style="list-style-type: none"> <li>① Pls first check the instruments in chamber is too much or not. If there is too many instruments inside of chamber, it will affect the sterilization time...just take out some instruments in chamber</li> <li>② <b>open the top cover with machine (the fixed 2 screws are in back of top cover), restart a cycle ,when the screen shows Rising , this moment pls check the L9 light on main board and L4 light are shinning at the same time. If the LED light shinning some times, then hear sound of water pump only one time, means the components is broken, pls contact manufacturer</b></li> </ul>

PP TIMEOUT

temperature and pressure can not reach the data within the specified time.

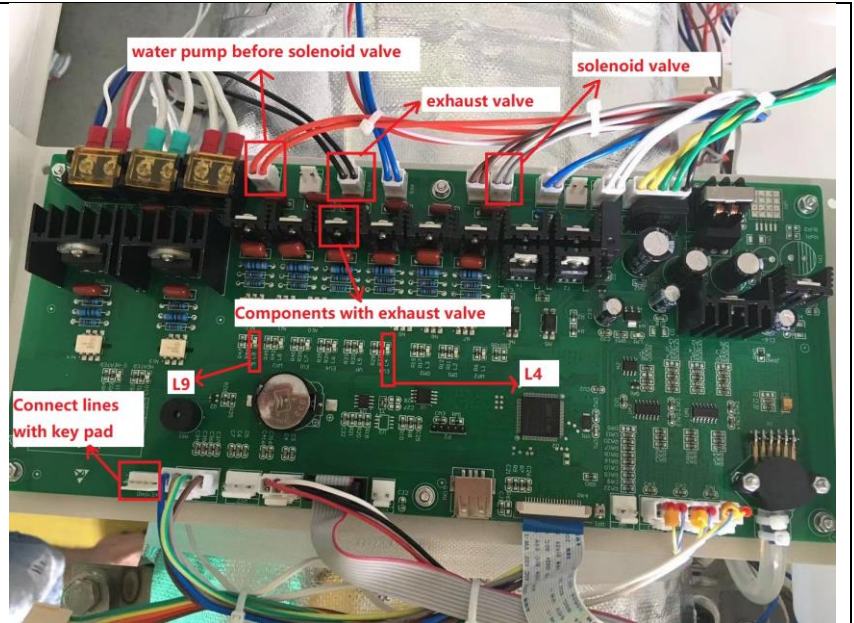


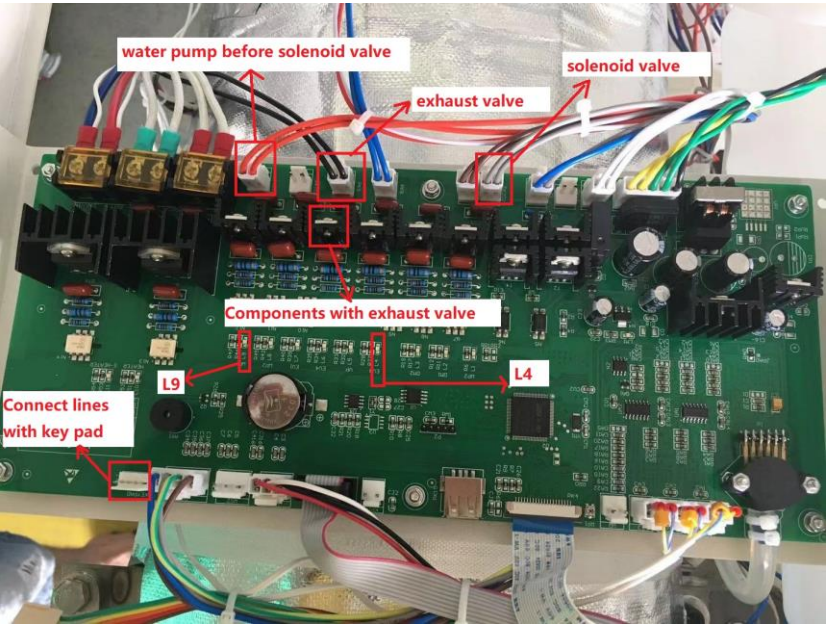
Photo 2

- ③ When rising, means steam injected, in normal there is no hot air out from outlet pipeline. If your machines has this matter (hot air comes out from outlet pipeline ), pls open the left cover ( face to machine door, in your left hand side cover), find the solenoid valve for vacuum and exhaust valve , to feel pipelines whether hot or not (photo 3 ), hot pipelines means the connected valve is leaking... then open the leaking valve to check whether has the dusty inside of valve, you should clean it...



Photo 3



<p>PP TIMEOUT</p>	<p>temperature and pressure can not reach the data within the specified time.</p>	<p>④ Injecting steam, pay attention whether the water pump is normally injecting steam into the steam generator.. if not, pls check L9 ( photo 2 ) on main board,</p> <p>If not shining, L9 is damaged. If shining, pls check the water pump and solenoid valve, also check the connectors in main board are well or not.( photo 2 )</p>  <p>Photo 2</p>
<p>ATM TIMEOUT</p>	<p>Exhaust air/down pressure too long time</p>	<p>① Power off, you can see there is a safety valve in back of machine, pay attention to hot temperature, pull the ring of safety valve to let the air exhausted fully, then can open the door.... Late to check the filter in chamber to clean it, it may block when use a long time...(photo 6 )</p>

ATM TIMEOUT

Exhaust air/down pressure too long time



Photo 6

- ② Open the left cover and top cover of machine, when in exhaust, pls disconnect and connect the plug on main board of exhaust valve(photo 2), to hear whether has the sound DIDIDI...if no sound, means the exhaust valve is not open, components with exhaust valve is broken.. if hear the sound, means the exhaust valve is good working... pay attention to hot temperature, you can unplug the inlet pipeline before exhaust valve(photo 4) , if hot air comes out, that means the filter before exhaust valve has blocked (photo 5) or filter in chamber is blocked (photo 6)

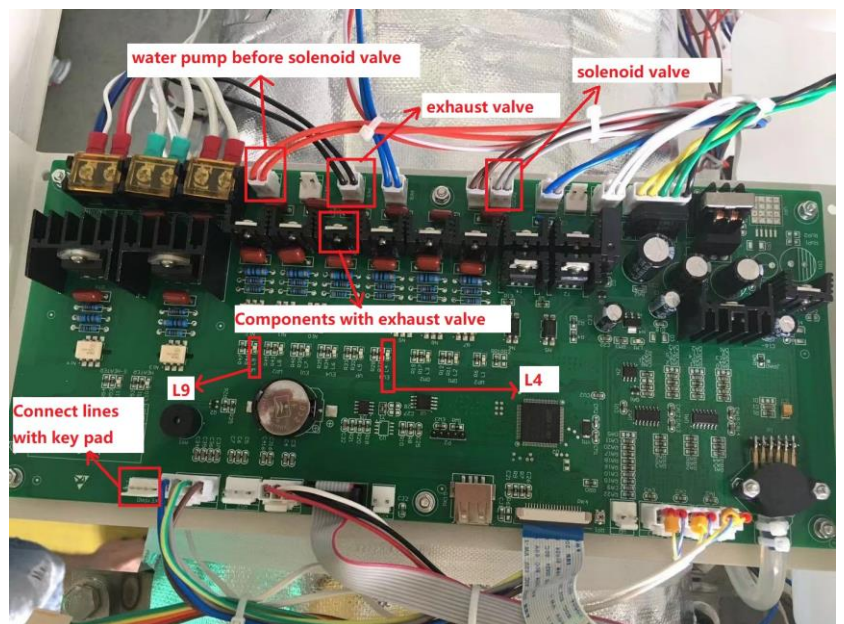
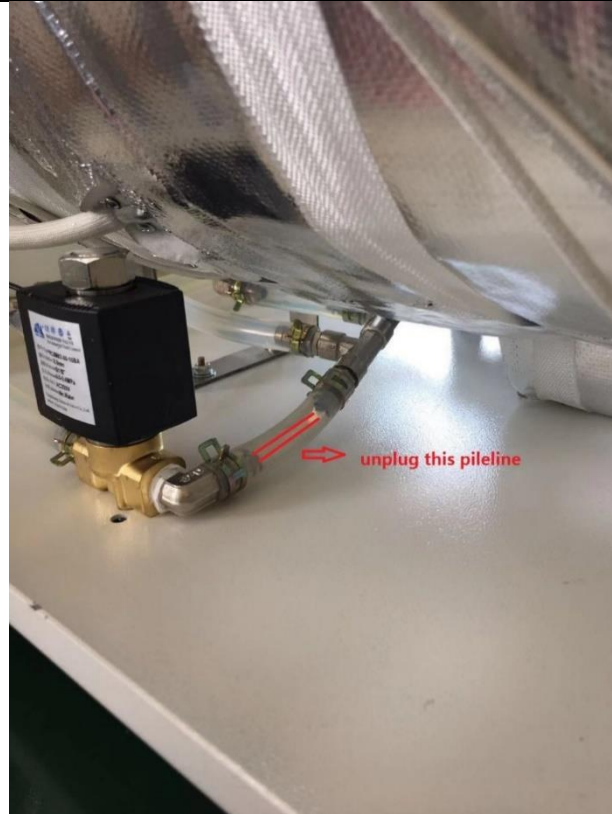


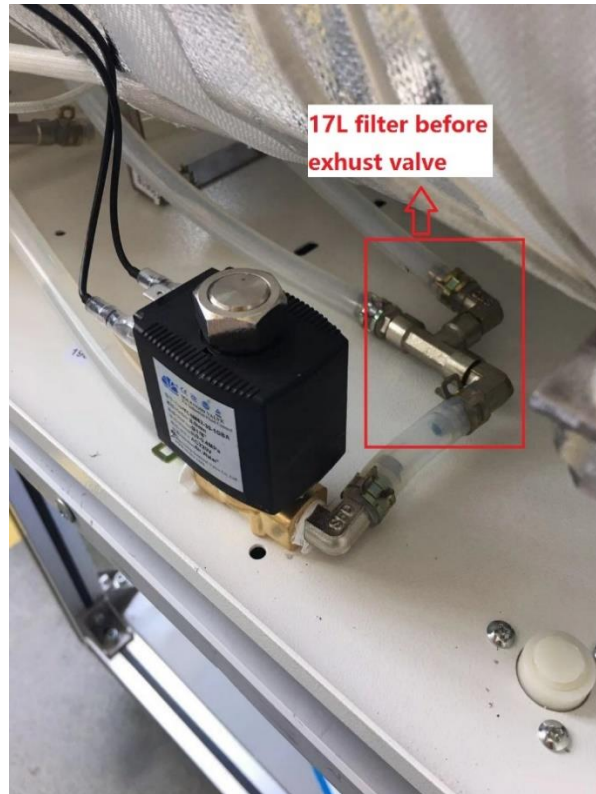
Photo 2

ATM TIMEOUT

Exhaust air/down pressure too long time



Phone 4



Phone 5

ATM TIMEOUT

Exhaust air/down pressure too long time

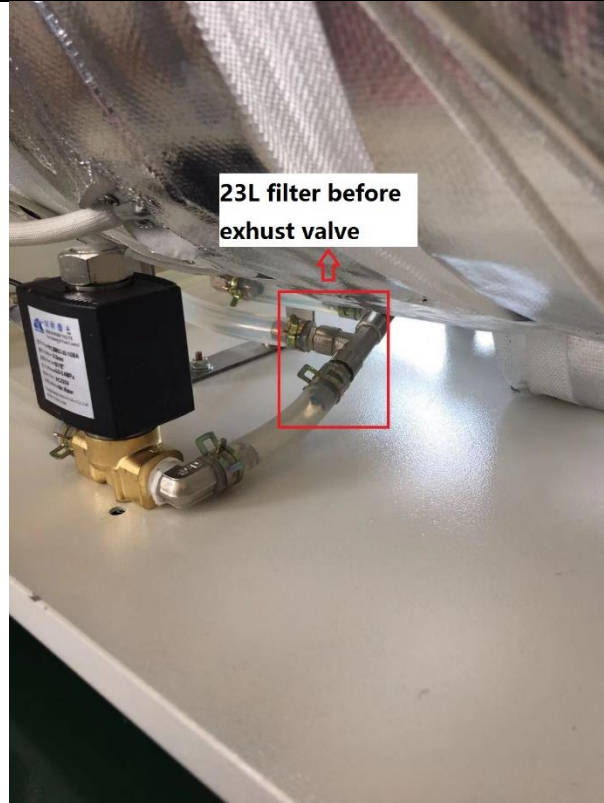


Photo 5



Photo 6

- ③ If connect the wrong way with inlet pipeline and outlet pipeline, or the pipelines inside of machine are fold, it will cause poor exhaust, then alarm ATM TIMEOUT

PV TIMEOUT

During specific time, vacuum data can not reach the standard pressure

- ① Pls check the filter in chamber (photo 6) whether it is blocked or not, long time use will cause it blocked ,you can remove it and clean then install again...



Photo 6

- ② While vacuum, if the fans of condenser are working, but the machines has no vibration sound, this means the starting capacitor of vacuum pump is broken ( photo 7) ,pls contact manufacturer.. after change this part, vacuum pump is still not work ,then means the vacuum pump is broken ...

PV TIMEOUT

During specific time, vacuum data can not reach the standard pressure

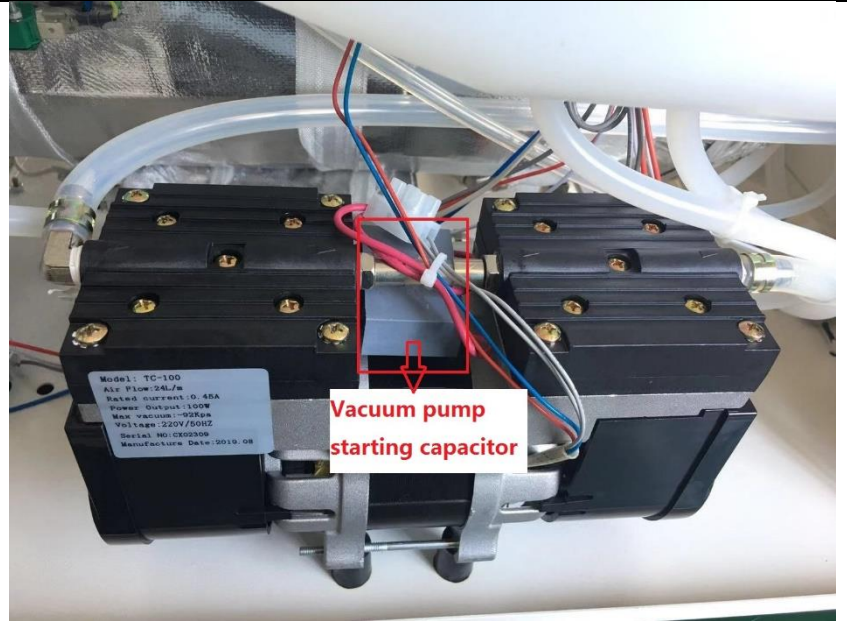


Photo 7

- ③ solenoid valve for drying should be closed during the vacuum process. If the air filter always has the sound of the intake air, means that the solenoid valve for drying which connected with the air filter (photo 8) is not closed (photo 9), because the air enters the chamber. The negative pressure can not be decreased down, this moment you should change this solenoid valve can solve the problem.



Photo 8

PV TIMEOUT

During specific time, vacuum data can not reach the standard pressure

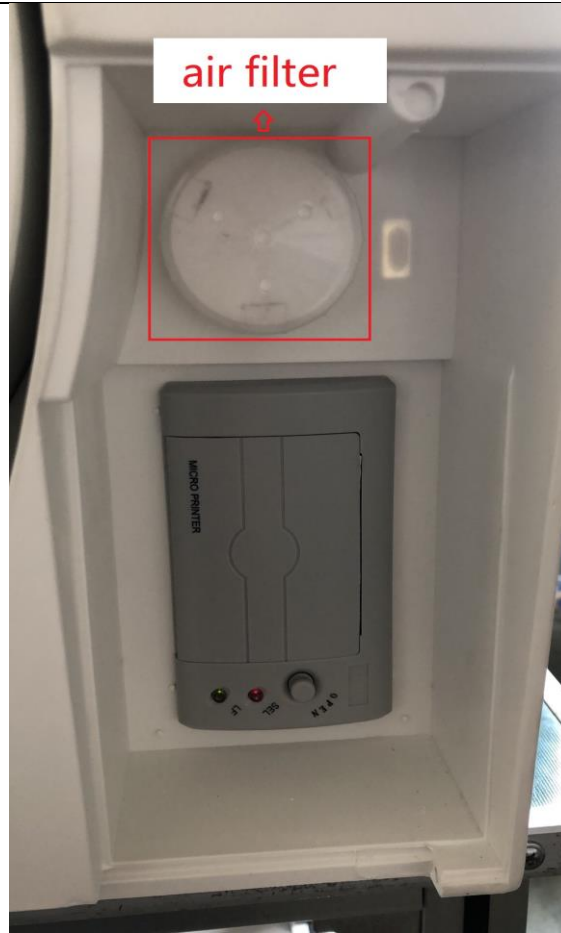


Photo 8

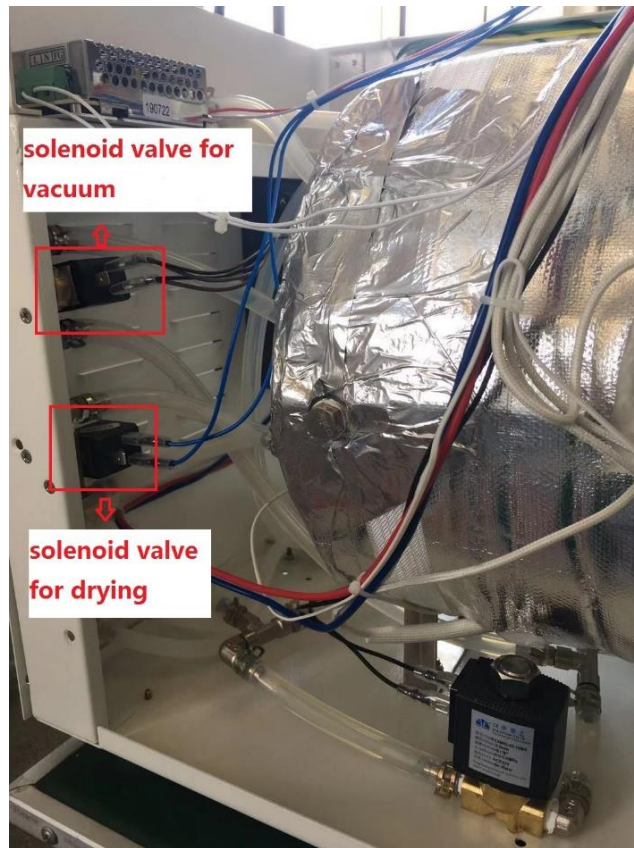

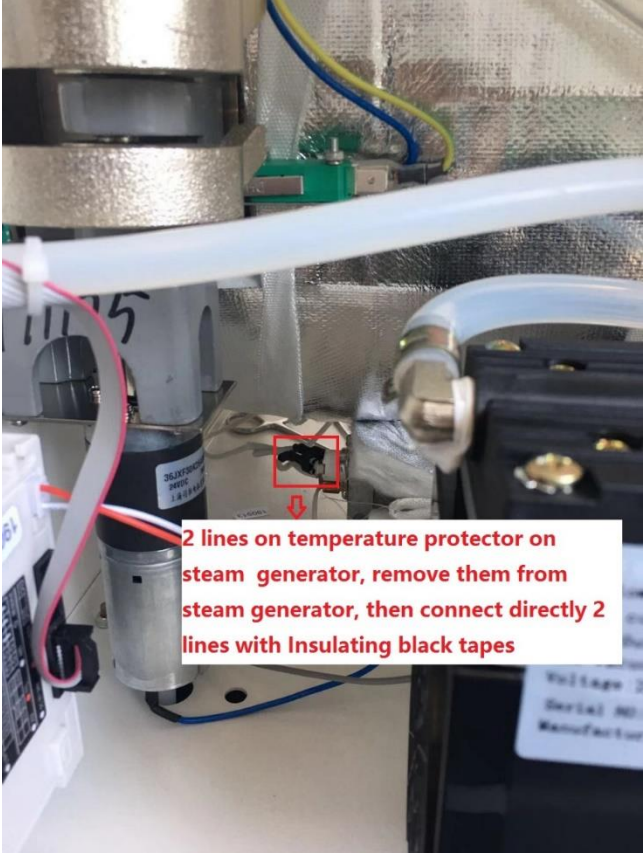



Photo 9

<p>PV TIMEOUT</p>	<p>During specific time, vacuum data can not reach the standard pressure</p>	<p>④ If the above points are not appeared, now you should check the door sealer, because door sealer will be aged with long time use. If aged, pls change it... after changing, the problem is not resolve, now you can adjust the door disk to the proper position...remove the door plastic cover, find big screw in door disk, use tool to rotate it clockwise to proper position ( here manufacturer suggest the proper position is 6-7 <b>screw threads</b></p>  <p style="text-align: right;">Photo 1</p>
<p>OVERPRESSURE</p>	<p>During sterilization, pressure is over set valve</p>	<p>① Restart cycle to check the negative pressure can be reached at each vacuum time . If vacuum is not enough, it will also cause high pressure.</p> <p>② When using one time vacuum program, pls try to use it at normal temperature to avoid continuous use.</p>
<p>P/T UNDER LIMIT</p>	<p>During sterilization, the temperature is lower or higher than the set temperature</p>	<p>In sterilizing stage, if the temperature and pressure decreased slowly, it means the temperature with steam generator is not maintained well, pls check the temperature protector is good or broken, following the fast ways to check : 2 lines on temperature protector on steam generator ( photo 10 ), remove them from steam generator, then connect directly 2 lines with Insulating black tapes , later start a new cycle</p>



<p>P/T UNDER LIMIT</p>	<p>During sterilization, the temperature is lower or higher than the set temperature</p>	 <p>2 lines on temperature protector on steam generator, remove them from steam generator, then connect directly 2 lines with Insulating black tapes</p> <p>Photo 10</p>
<p>OVERHEATING T1</p>	<p>Internal temperature sensor over the set value</p>	<p>Pls open machine door to check the instruments in chamber whether touch the temperature sensor , which is inside of chamber bottom.. if touch the sensor, pls place the instruments in right position, then start cycle again...after that , If the problem is not resolved, please contact the after-sales service.</p>
<p>OVERHEATING T2</p>	<p>External temperature sensor over the set value</p>	<p>Restart the machine, then start a new cycle again. If the problem is not resolved, please contact the after-sales service.</p>
<p>OVERHEATING T3</p>	<p>Temperature with steam generator are over the set valve</p>	<p>Restart the machine, then start a new cycle again. If the problem is not resolved, please contact the after-sales service.</p>
<p>1-no alarm, but can not open the door 2-finishedwell, press first key, you can</p>	<p>Pipeline insert the level of waste water</p>	<p>If you use bottle to collect waste water, when cycle ends, but don't open door at once, maybe open door for some hours later, it may cause the waste water sucked into chamber ....you can pull the safety valve to exhaust air fully, later press the first key(open door key) to open door.... Pls pay</p>

<p>hear sound of door motor rotation, but locked automatically</p>		<p>attention there will be hot water out from chamber... be careful</p>
<p>When power off, can not open the door</p>	<p>Fast way to open door when power off</p>	<p><b>Stand before machine door, in right down side, you can find a small white tube ( photo 11 ), anticlockwise rotation of this small tube for 2-3 mins to open the door</b></p>  <p style="text-align: right;">Photo 11</p>
<p>Check the key pad-1</p>	<p>Key for adding water( first key) is broken, other 3 keys are normal</p>	<p><b>open the top cover with machine (the fixed 2 screws are in back of top cover),then find the connector plug ( it is in the left down side, the first plug with 5 needles) in the main board ,remove the key pad lines ( photo 12) , use tweezers to touch the needles, this time touch the first and second needles in right (photo 13) , touch one time is ok. Machine starts to add water....It is instead of the first key to add water</b></p>

Check the key pad-1

Key for adding water( first key) is broken, other 3 keys are normal

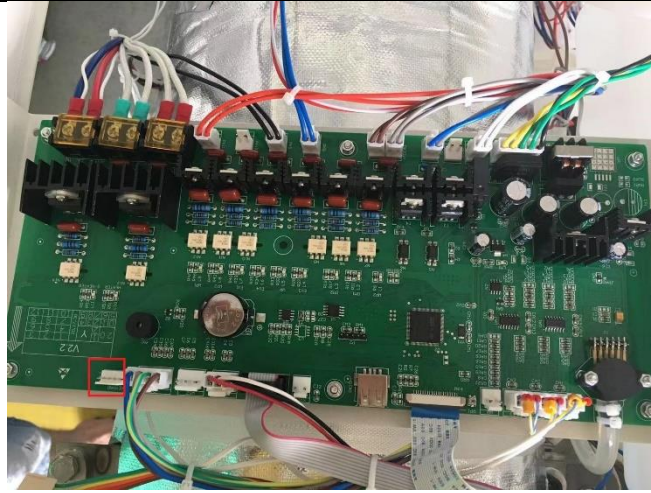


Photo 12

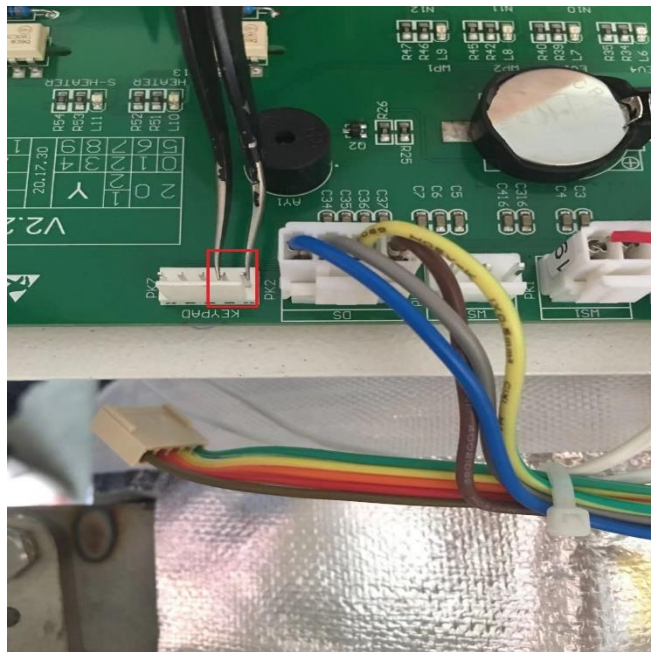


Photo 13

Check the key pad-2

The last key / Confirmation key is broken, fast solutions

**Unplug the connector of key pad on main board, use tweezer to touch the needles, this time touch the first in right and first needles in left (photo 14) , touch one time is ok. It is instead of confirmation key, If in the welcome screen, you should touch 2 times, it is instead of confirmation key**

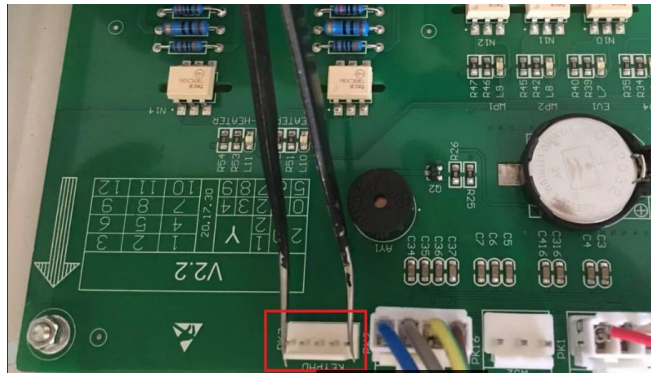
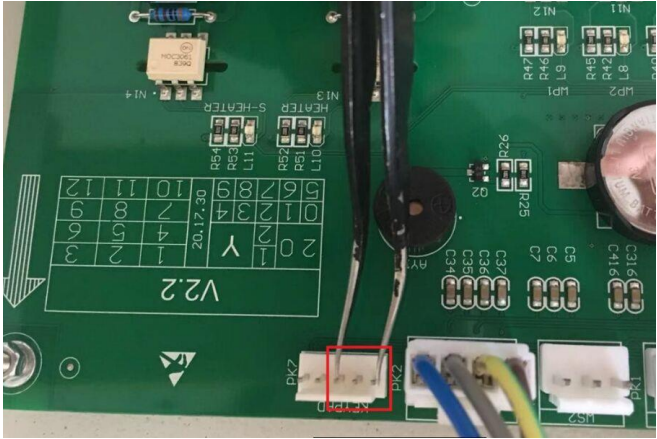
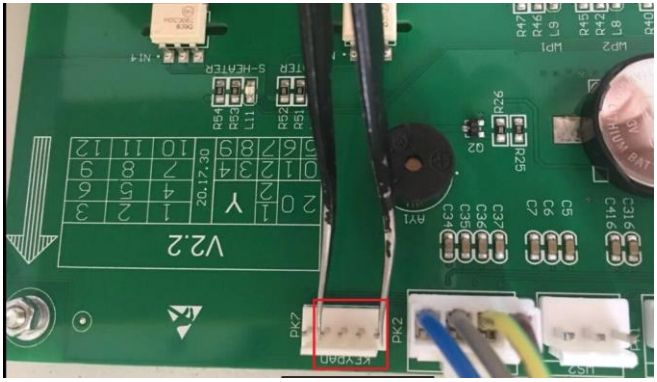


Photo 14

<p>Check the key pad-3</p>	<p>Up/down key is broken, fast solutions</p>	<p><b>Unplug the connector of key pad on main board, use tweezers to touch the needles, this time touch the first and third needles in right (photo 15) , this is instead of up key to choose cycle, touch the first and fourth in right (photo 16), this is instead of down key to choose cycle. The above operations should be in selection program</b></p>  <p><b>Phone 15</b></p>  <p><b>Phone 16</b></p>
<p>Thimble switch is broken ,can not open the door</p>	<p>Press the thimble switch, can not hear DIDIDI sound</p>	<p>When press the thimble switch, can not hear DIDIDI sound (photo 17), first pls check the position of thimble switch is in center position, if the in center position, it means the thimble switch is broken, pls contact the manufacturer.. in this moment, you want to close the door, there has another fast way, pls follow my steps: use tweezers <b>to touch the 2 needles as my photo 18 shows, then can close the door....if not in center position, it caused the thimble switch blocked the Stuck by the surrounding plastic, then you should adjust the position</b></p>

Thimble switch is broken ,can not open the door

Press the thimble switch, can not hear DIDIDI sound



Photo 17

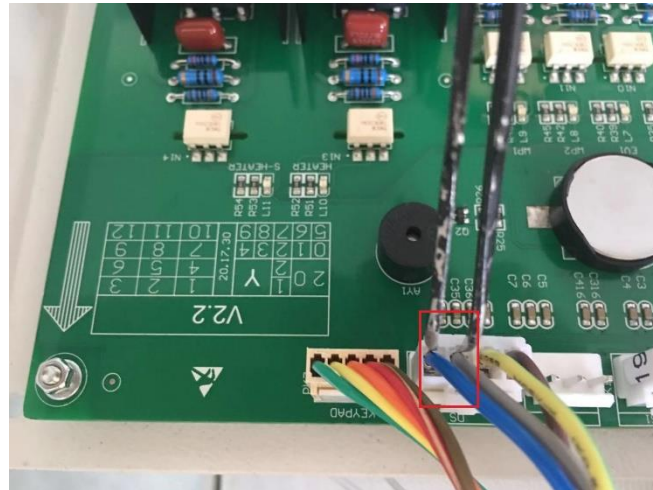


Photo 18