Sturdy
Wellell Group

SERVICE MANUAL

SAT-500DW

AUTOMATIC AUTOCLAVE STERILIZER

TABLE OF CONTENTS

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 into the chamber, Or not, the low-water protector will 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 autoclave off at the mains power point.
12. Please keep the chamber clean, anytime.
13. Movement: This machine over than 350KG to 750KG. Anytime, move this machine must by 6 people at least.

14.  Caution! Hot surface.

15  Grounding terminal.

16. “ ○ “ This label is meaning that indicator for power off.

17. “ ▌ “ This label is meaning that indicator for power on.

18.  Consult instructions for use

19. 

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.

20. 

Date of Manufacture. EX: 0108 is mean January / 2008.

21. 

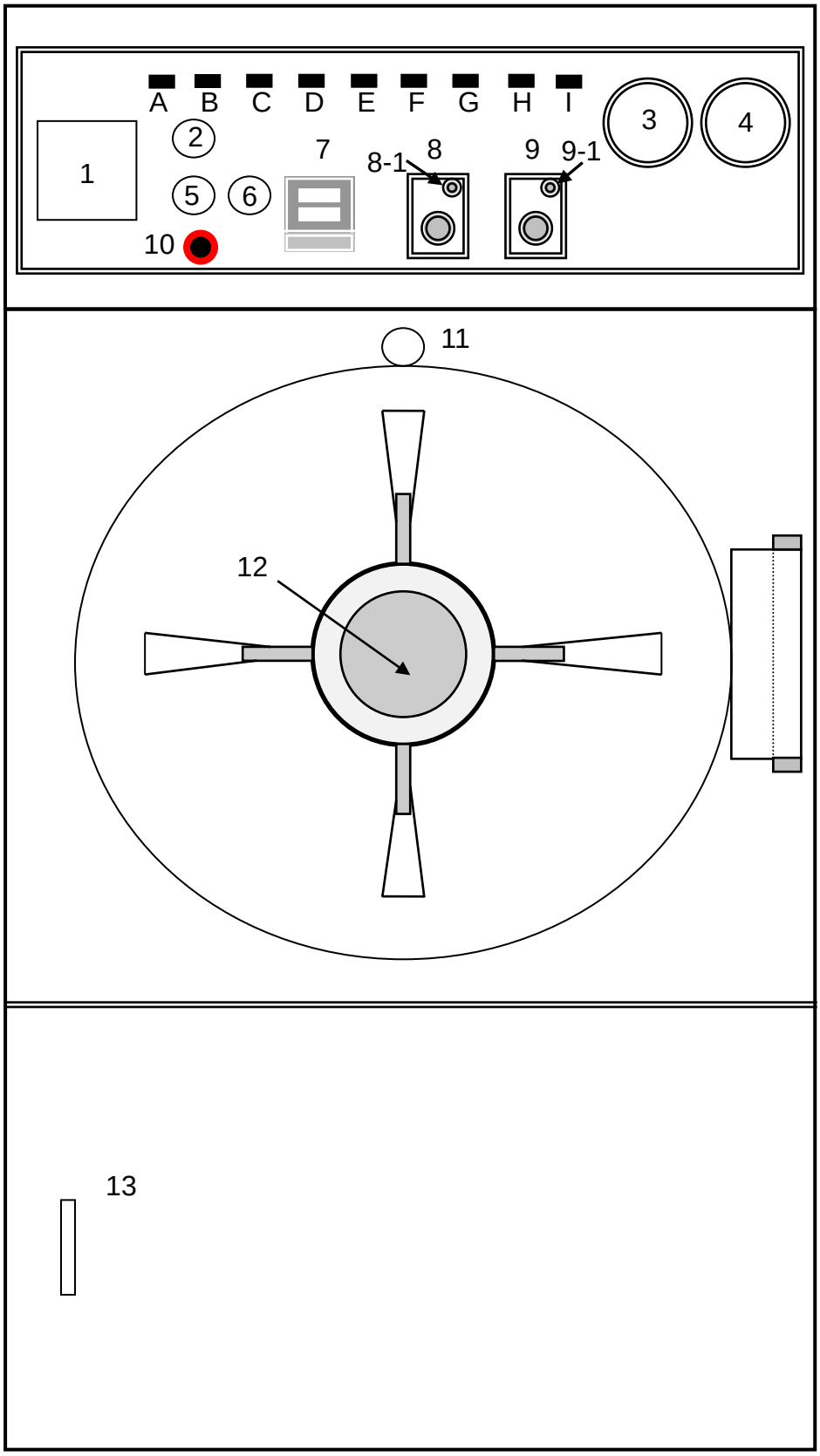
Authorized Representative at europe.

22. 
MANUFACTURER.

23. STORAGE ENVIRONMENT: TEMPERATURE:-10℃~+50℃ / HUMIDITY: ≤ 80%
24. WORKING ENVIRONMENT: TEMPERATURE: 5℃~+40℃ / HUMIDITY: ≤ 80%
25. TRANSPORTATION ENVIRONMENT: TEMPERATURE: -10℃~+60℃ / HUMIDITY: ≤ 80%

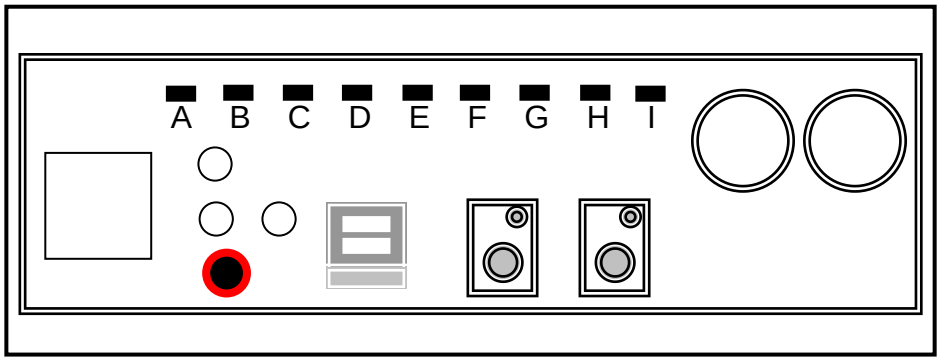
GENERAL INFORMATION

◎FORNT LOCATION



1	Print recorder (optional device)
2	Sterilization program selection switch
3	Chamber pressure gauge/ vacuum gauge
4	Jacket pressure gauge
5	Stand by switch
6	Start switch
7	Temperature controller
8	Sterilization timer
8-1	Sterilization timer indicator
9	Dry timer
9-1	Dry timer indicator
10	Emergency exhaust bottom
11	Door open/close micro switch
12	Door handle
13	Maintains door

◎LAMP LOCATION



A	Power indicator lamp
B	Add water indicator lamp
C	Heating-up indicator lamp
D	Pre-vacuum indicator lamp
E	Sterilization indicator lamp
F	Exhaust indicator lamp
G	Dry / vacuum indicator lamp
H	Vacuum release indicator lamp
I	Complete indicator lamp

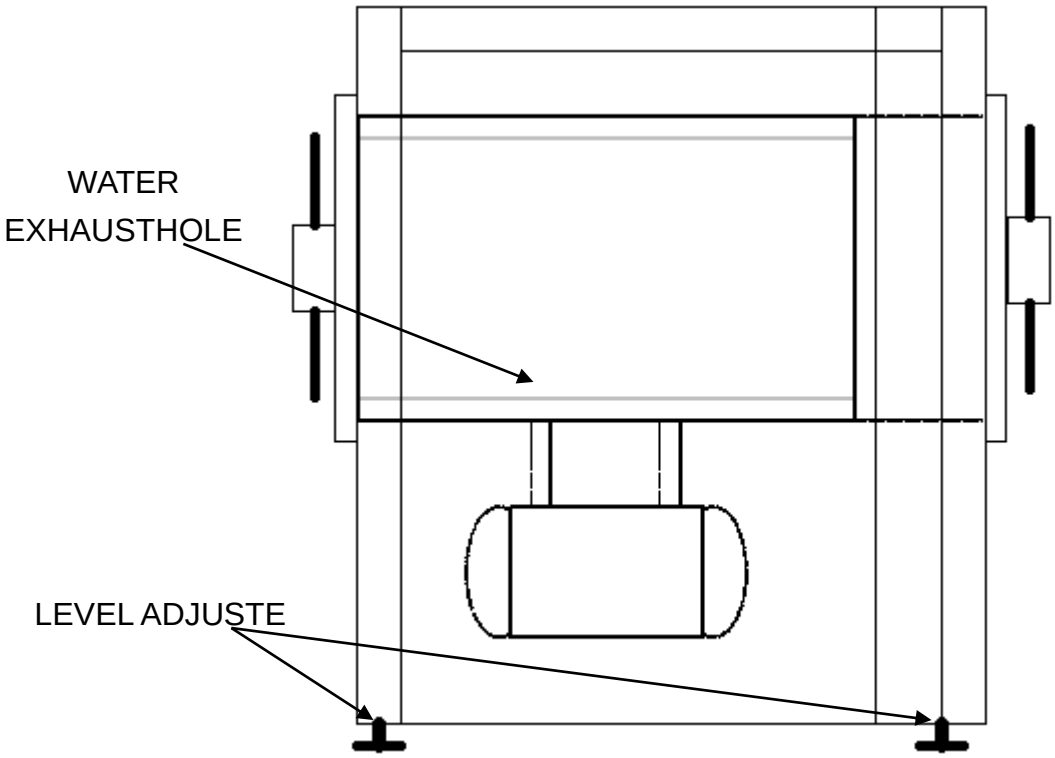
◎SPECIFICATIONS

MODEL NO.	SAT-500
Chamber Size	500mm(ϕ)X1000mm(D)
Overall	8000(W)X1800(H)X1350(D)mm
Chamber Capacity	196 LITER
Heating Power	9.0KW 50/60HZ
Standard Accessories	ST.ST.#304 TRAY * 1 PC. VIEWER TUBE X 2PCS
Control System	PLC Control System with Digital Temperature Display Temperature Control System
Construction	St. St. #304 Housing, frame, door, chamber and jacket
Design Temperature	140ºC
Chamber Design	ASME Standard
Chamber Material Stainless Steel #304	Standard
Chamber Material Stainless Steel #316	Optional
Automatic Add-Water	Yes
Using Temperature	105ºC - 136ºC ≒ (0.2 - 2.3kg/cm^2) 221ºF - 277ºF adjustable
Dry Function	Yes
Electric Voltage	230V or 380V or 415V or 440V 3 Phases
Optional Accessories	St. St. Basket × 2 pcs. & Transportation Cart
Pressure Control Switch	Yes/1 pc.
Water Level Control Switch	Yes
Temperature Control Switch	Yes
Pre-Vacuum Function	Yes
Dry-Vacuum Function	Yes
Liquid sterilization function	Yes
Temperature Recorder	Yes
6Points Temperature Recorder	Can be optioned

Double Door	Can be optioned
Door Pressure Auto-Lock	Yes
Sliding Door Construction	Can be optioned
Safety Device	Pressure Protection Switch, Temperature Control Switch Low water alarm/indication/cut-off, Safety Valve. Door indication light on, pressure door auto-lock
Estimate Life Time	7 Years

◎PLACEMANT

As to the good dry function, please check the level installation.



If the dry is not so well, please check the ground level and adjust the level adjust screws as our suggestion;

Adjust the backside leg's screw to make back side higher or adjust the front side leg's screw to make front side lower.

Normally the back will higher than front side about **1 to 2 degree.**

◎OPERATION

PLEASE CHECK AT FIRST.

1. Open the door and put the sterilized instruments into the chamber. Than closed the door.

   PLEASE DON'T FORGET TO PUT THE STERILIZATION INDICATOR INTO CHAMBER.

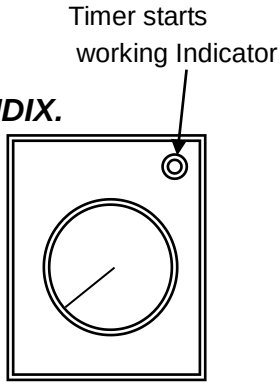
2. Set-up the sterilization temperature 121ºC or 135 ºC.

3. Sep-up the sterilization time.

   AS TO THE TIME SET, PLEASE REFER THE ENCLOSED APPENDIX.

4. Sep-up the dry time.

   AS TO THE TIME SET, PLEASE REFER THE ENCLOSED APPENDIX.



Timer

5. After the chamber temperature up-to the you set-up,
   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.

6. The LED of dry timer turn to "flash" that means the dry timer start work and the 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 "complete" indicator lamp light on.

7. About 40 seconds buzzer will report you, " MY DEAR MASTER! YOUR COMMAND HAVE BEEN COMPLETED." Please check the COMPLETE indicator. It must be light on. If not that means this cycle is fail. Please re-sterilize again.

8. SAT series is control by micro processor (PLC). SO she can help you to check the working steps automatically.

⚠CAUTION

◎BEFORE OPENING THE DOOR ENSURE THE PRESSURE GAUGE IS AT "ZERO" POSITION.

◎PLEASE DON'T FORGET THE CHECK THE STERILIZATION IDICATOR, AFTER STERILIZATION CYCLE.

TESTING & TROUBLESHOOING

◎BASIC TESTING OF STERILIZING

PUT INSTRUMENTS INTO CHAMBER, CLOSE THE DOOR THEN PUSH ON THE STAND BY SWITCH.

⇩

SELECT THE STERILIZATION TEMPERATUER.

⇩

SELECT WAPPED /UNWRAPPED/ LIQUID STERILIZATION MODE.

⇩

SET STERILIZATION TIME.

⇩

SELECT DRY TIMER OR NON-DRY.

⇩

PUSH START SWITCH ON. (START WORKING)

⇩

THE VACUUM PUMP STARTS WORKING THREE (3) TIMES FOR WRAPPED WHEN THE PRESSURE OF JACKET ARRIVED SET.

⇩

STERILIZATION TIMER START WORKING,
WHEN TEMPERATURE OF CHAMBER ARRIVED SET.

⇩

THE CHAMBER PRESSURE EXHAUST, WHEN STERILIZATION TIMER-OFF.

⇩

THE DRY TIMER & VACUUM PUMP START WORKING, WHEN THE CHAMBER PRESSURE EXHAUST COMPLETED.

⇩

AFTER 40 SECONDS BUZZER ON, THEN IT CUT OFF THE ELE.
POWER AUTOMATICLLY.

⇩

THE COMPLETE INDICATOR LAMP TURNS LIGHT ON.
IF NOT LIGHT ON PLEASE RE-CYCLE AGAIN.

⇩

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

⚠CAUTION

◎HECK THE PRESSURE GAUGE RETURN TO "**ZERO**" POSITION BEFORE THE DOOR OPENED.

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

◎IF YOU NEED DO THE NEXT RUN. FIRST TURN THE "START" SWITCH TO "OFF" POSITION THEN TURN OFF THE POWER SWITCH AGAIN TURN ON THE POWER SWITCH TO RESET MACHIN.

◎TROUBLESHOOING

1. POWER LAMP IS NOT LIGHT ON:

1. Power supply is not properly connected.
   / 1. Try to connect power supply until power indicator goes on.
2. Breaker broken. / 2. Replace the breaker with 50A type.
3. Bulb broken. / 3. Replace the bulb.
4. Power switch fuse broken. / Replace the fuse.

2. HEATING-UP LAMP IS NOT LIGHT ON:

1. Lamp Broken. / 1. Replace the bulb.
2. Heater broken. / 2. Replace the heater

3. DRY LAMP IS NOT LIGHT ON:

1. Lamp broken. / 1. Replace bulb.
2. Dry timer broken. / 2. Replace the dry timer.

4. LOW WATER (OVER HEAT) INDICATION AND ALARM:

1. Water is not enough. / 1-1. Check water source.
2. Water level sensor surface dirty and non-conductive / 2-1.Call service.
3. Check the water pipe leakage or other problem.

PS: THE FILTER MUST BE CLEAN PER EACH SEASON.

5. PRESSURE IN THE CHAMBER CAN‘T EXHAUSE AUTOMATICALLY AFTER STERILIZATION:

1. Filter is not clean. / 1-1. Clean it.
2. Check solenoid valve for chamber exhaust / 2-1. The valve broken, replace it.
3. Check the power for solenoid / Call service

6. PRESSURE CAN‘T UP:

1. Steam solenoid unclean. / 1. Clean the filter.
   1-1Clean the solenoid, or replace it.

7. DRY FUNCTION NOT PERFECT :

Please open the door in 15 minutes, after alarm.If still have same problem, please call engineer.

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 maintenance on the trap it must be isolated from both the supply line and return line and any pressure allowed to safely normalize to atmosphere. The trap should then be allowed to cool. When reassembling, ensure that all joint faces are clean.

Please see figure 1.

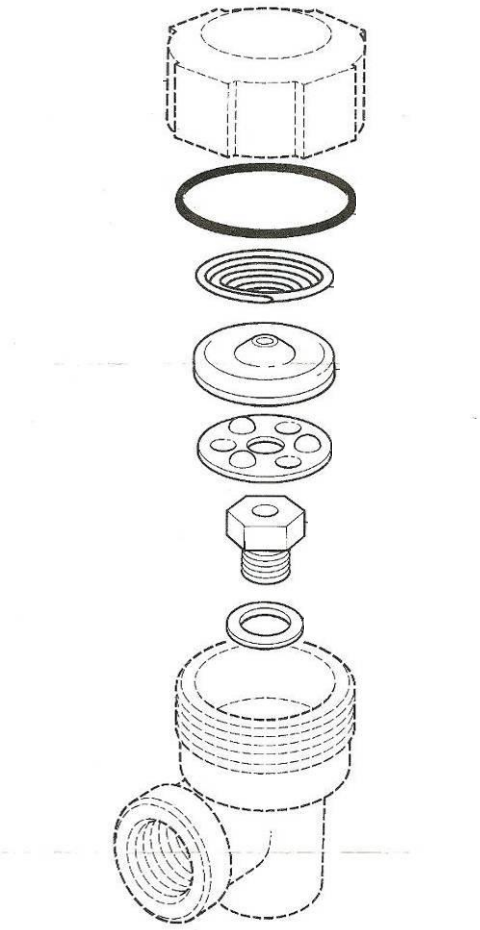


Figure 1

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.

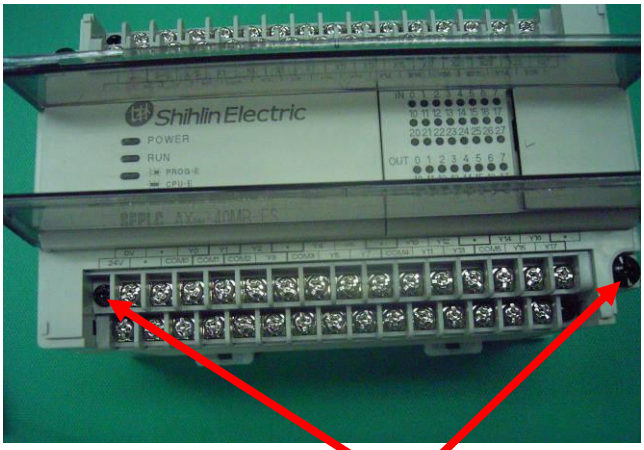
Fig. 2

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

8. PLC CAN NOT WORK : (CHANGE THE PLC)

8-1. Take out both side transparent cover.

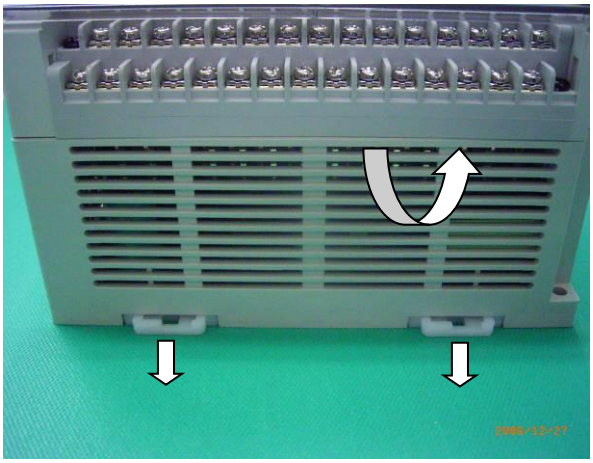
8-2. Take out both screw with screw drive. Same as other side.



screw

8-3. Take out the terminal. Same as other side.

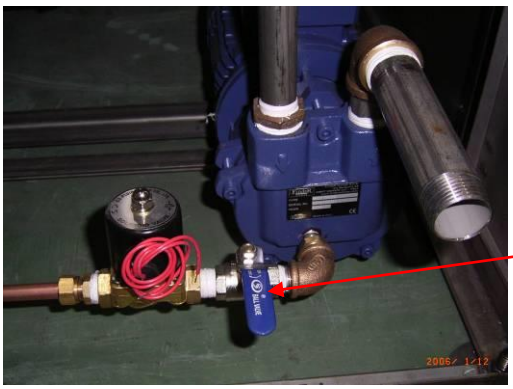
8-4. Pull out writ stop with screw drive. same time pull out PLC body .



9. ADJUST VACUUM PUMP NOISE:

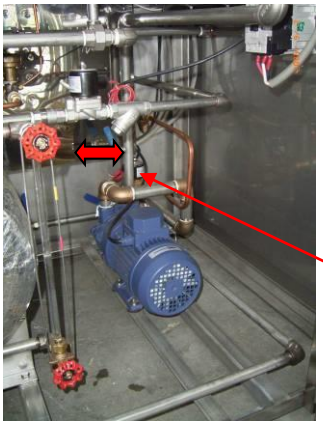
9-1. To find the pump water valve reference

9-2. Set valve at middle position.



valve for water in

9-3. To find the parts is same as inside of machine.



Valve for adjust noise.

9-4. One finger put air inlet hold to feeling suck the air . Other hand to adjust the valve to small and same time finger can feel a small suck. The noise of pump will reduce.

9-5. Now to adjust the water inlet of pump. To adjust valve of pump inlet to check the water flow of water outlet of vacuum pump to minimum.

⚠Caution

The vacuum pump will damage when the valve of water in is close.

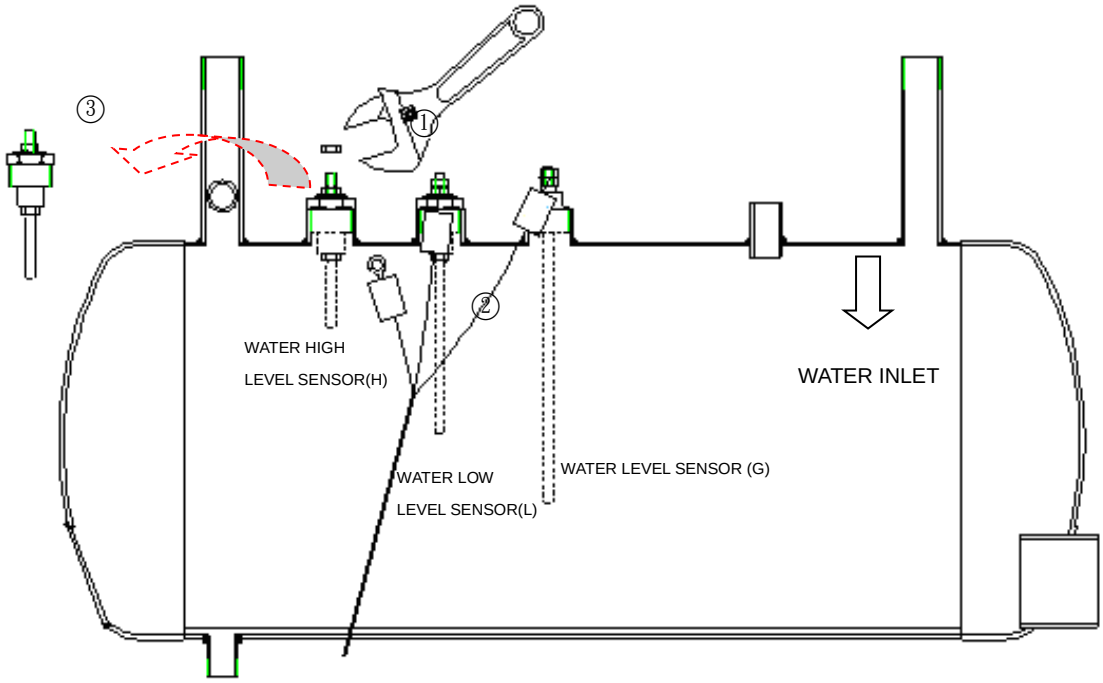
10. CLEAN WATER LEVEL SENSOR:

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

10-1. Marking and record the wiring number for subsequent restoring works. Do not mix the High Level sensor, Low Level sensor and Ground sensors.

10-2. Disconnect the three wirings counter-clockwise by using a No. 10 wrench.

10-3. Loosen the two sensors nuts (High Level and Low Level sensors) counter-clockwise by using a No. 27 wrench, and then loosen the Ground screw nut counter-clockwise by using a No. 17 wrench.



10-4. Disassemble the High Level and Low Level sensors .

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

10-5. Disassemble the High Level and Low Level sensors and Clean each part vey careful to remove the scale and deposit with clean water, a small brush or scrub sponge may help to the cleaning works.

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

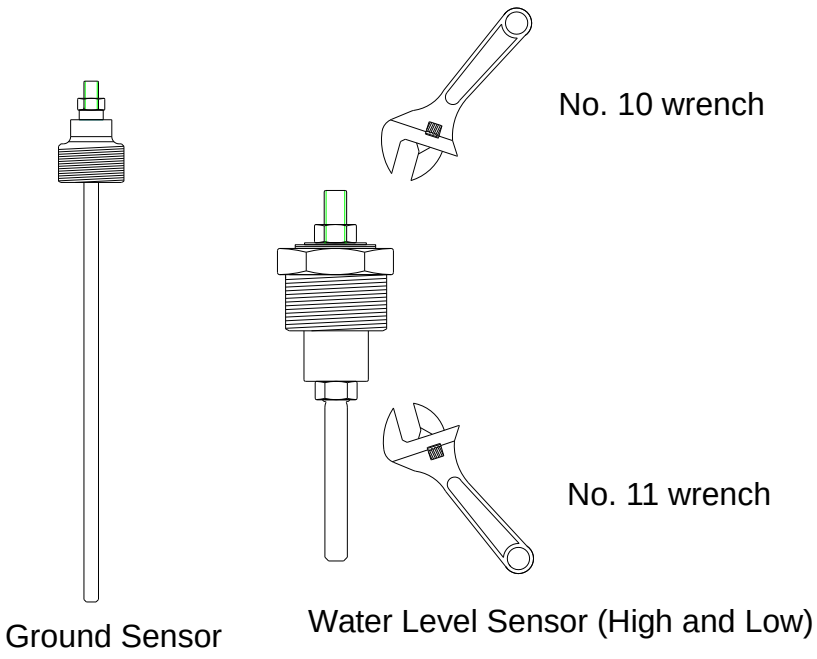
10-6. Dry all of the components after the cleaning work. Wrap the screw thread of the

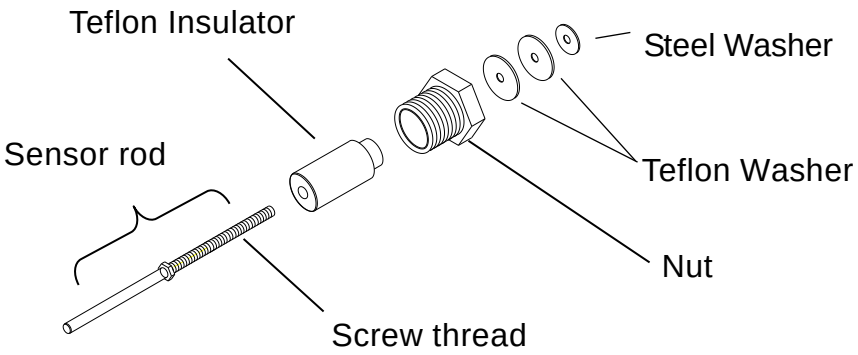
High Level and Low Level sensors rods with sealing tape so that they can be tighten with Teflon Insulators.

10-7. Assemble the components and Wrap the screw thread of the nut with sealing tape for assembly purpose.

10-8. 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 .

10-9. Restore the power.

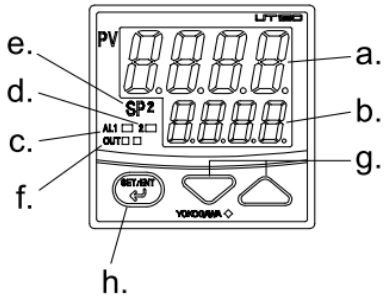




11. CALIBRATION TEMPERATURE CONTROLLER：(CHANGE TEMPERATURE CONTROLLER)

11-1 UT150 LOCATION：

1. PV：TEMPERATURE OF CHAMBER (RED)
2. SV：SETTING STERILIZATION TEMPERATURE (GREEN)
3. LED LAMPS:
   - “AL 1” LAMP (RED): PV=SV.
   - “OUT” LAMP(ORANGE): CONTROL



NO	NAME	FUNCTION
a.	PV display (red)	Indicates PV (measured value) and character information such as parameter codes and error codes.
b.	SP display (green)	Indicates SP (target setpoint) and parameter values.
c.	Alarm 1 (AL1) lamp (red)	Lit when alarm 1 is activated.
d.	Alarm 2 (AL2) lamp (red)	Lit when alarm 2 is activated
e.	SP2 lamp (green)	Lit when SP2 is being used for control operation.
f.	Output (OUT) display lamps UT150: (Left: orange; right: green)	Lit while control output is being output. ・ The left (upper) lamp is lit in orange during control output of standard type. ・ In heating/cooling control, the left (upper) lamp lights up in orange when the heating-side output is active; while the right (lower) lamp lights up in green when the cooling-side output is active.
g.	Data change keys (Indicated as simply the ▼ and ▲ keys hereafter.)	・ Changes SP and the parameter values. ・ Pressing the ▼ key decreases the data value and pressing the ▲ key increases it. Holding down the key will gradually increase the speed of the change.
h.	SET/ENT key (data registering key) (Indicated as simply the key  hereafter.)	・ Registers the data value changed using the data change keys. ・ Switches between operating displays or parameter setting displays sequentially. ・ Pressing the key for 3 seconds or longer in the operating display retrieves the operating parameter setting display.

11-2 PARAMETER LIST

Item	Action	PV Display	SV Display	Remark
1	Power on system			
2	Hold "SET" key 3 second			
3		A1	0	
4	Press "SET" key	A2	OFF	used "OFF"
5	Press "SET" key	CTL	PID	
6	Press "SET" key	AT	OFF	
7	Press "SET" key	P	4	
8	Press "SET" key	I	4	
9	Press "SET" key	D	10	
10	Press "SET" key	CT	2	
11	Press "SET" key	FL	OFF	
12	Press "SET" key	BS	0	
13	Press "SET" key	LOC	Modify to " -1"	
Now you can enter to level 2 (two)				
14	Press "SET" key	IN	17	
15	Press "SET" key	SPH	136	
16	Press "SET" key	SPL	0	
17	Press "SET" key	UPR	OFF	
18	Press "SET" key	DNR	OFF	
19	Press "SET" key	TMU	0	
20	Press "SET" key	AL1	3	
21	Press "SET" key	AL2	OFF	
22	Press "SET" key	HY1	2	
23	Press "SET" key	HY2	2	
24	Press "SET" key	SC	ON	
25	Press "SET" key	DR	0	
26	Press "SET" key	IN	Go to item 14	

Remark：Please change the value of "0" at item 13 when you finish you job.

11-3. UT-150 AUTO-TUNING SETTING：

POWER ON，WAIT 5 SEC

⇩

1. **SET STERILIZATION TEMPERATURE：**
PRESSING ▼ or ▲ TO SET STERILIZATION TEMPERATURE 135ºC.

⇩

2. SET “AL1” PARAMETER，DATA AND STERILIZATION TEMPERATURE AT 135ºC.

⇩

3. PRESSING ***SET/ENT*** ABOUT 3 SEC ，LED DISPLAY PV ……. AL1
↵ SV ……. 135ºC

⇩

4. PRESSING▼ or ▲ **TO SET** “AL1”DATA，
“AL1” DATA EQUAL STERILIZATION TEMPERATURE BE SAME

⇩

5. PRESSING ***SET/ENT*** ， DISPLAY PV …… CTL
↵ SV …… PID

⇩

6. PRESSING ***SET/ENT*** ， DISPLAY PV …… AT
↵ SV …… ON

SETTING “AT” (ON) START AUTO-TUNING.

⇩

7. PRESSING ***SET/ENT*** . ABOUT 3 SEC、RETURN THE SET MODE.
↵

OUT lights, The “PV” temperature slowly increased interaction with the AT lamp will still blink. When the PV display to set the temperature exceeds 135ºC, SV, AL1 lights, the temperature continues to rise OUT lamp.
When AL1 lights about 2 minutes, PV show that the temperature will no longer interact with the AT light flashing.

> **⚠Caution**
>
> When sterilization temperature at 121ºC,retrun to setting step1-step7, please.

11-4. ADJUST CHAMBER TEMPERATURE DATA

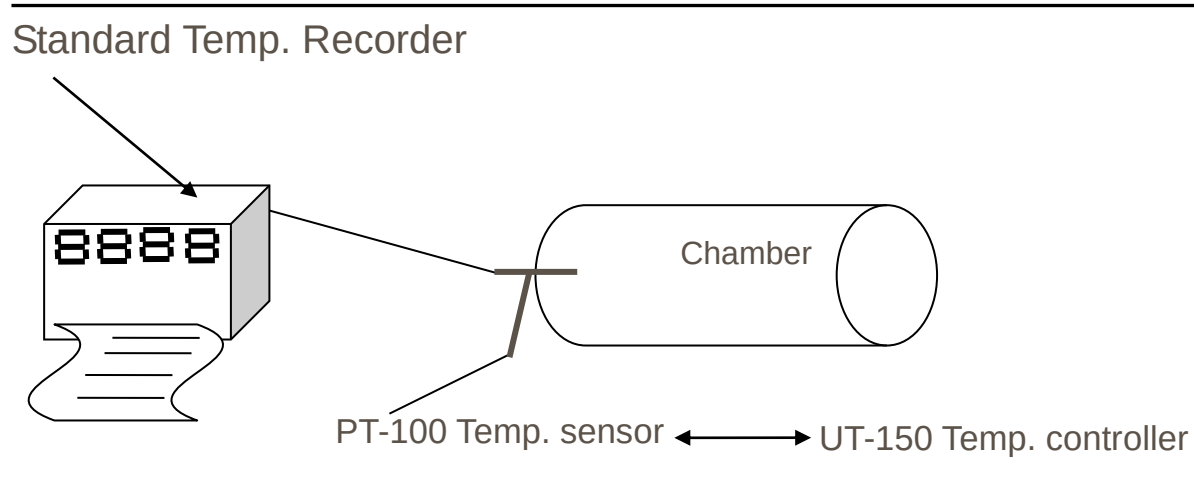
11-4-1. Standard temperature recorder and temperature sensor connected chamber,(wiring see fig.)

11-4-2. Pressing the Start switch (waiting about 5 sec.)and set the required temperature correction of the sterilization temperature (121ºC or 135ºC) (at temperature controller)

11-4-3. When the device into the set of the sterilization temperature than temperature controller (UT150) to confirm the temperature record values .

11-4-4. Temperature controller to enter the set state (BS) and adjusted controller (UT150) with the recorder temperature difference between the value.

11-4-5. And then adjust the recorder and controller to confirm the value, if there are differences, please retune to step 4, Reset BS value.



◎Error Display during Operation ：

(1) If the controller displays one of the following, carry out the appropriate remedy for the particular error.

Display	Error content	Remedy
P.Er P.Er	The parameter is abnormal	Check the settings of all the parameters and set them at their proper values.
b. o B.o	Input burnout	Check the sensor wiring and correct it.
ooo OOO	PV over-scale (PV exceeds its effective range.)	Check the input type and range settings and correct them.
UUU UUU	PV under-scale (PV falls below its effective range.)	
Flashing period on PV display	Communication failure (for /RS option only)	Press any key to stop the flashing.

(2) The controller needs to be repaired if any of the indications in the table below appear. In these cases, do not try to repair the controller yourself. Order a new controller or contact us for repair.

Display	Error content	Display	Error content
Unknown (at power-on)	CPU failure	Flashing "Err" (at power-on)	RAM or ROM failure
All extinguished (at power-on)	Power source failure	Flashing "Err" (during operation)	A/D converter failure, RJC failure, or EEPROM failure
"Err" (at power-on)	Calibration abnormal		

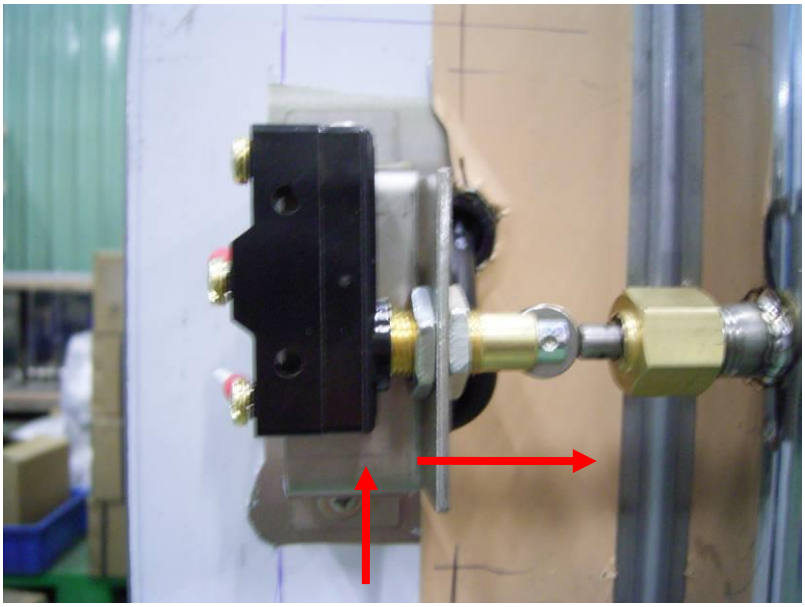
12. ALIGNMENT DOOR SWITCH

⚠Caution：Disconnect the power prior to the maintenance works.

12-1. Check gap between the micro-switch and actuator.

12-2. Alignment the micro-switch

12-3. Alignment the support of micro-switch



micro-switch

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 SOURCE.

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 kg/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 PUSH-ON THE POWER SWITCH TO 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.

☺ EXHAUST ALL WATER FROM STERILIZATION GENERATOR. AND TAKE OUT SENSOR OF WATER LEVEL FROM THE TOP OF STERILIZATION GENERATOR (Before you take out the sensor, Please make the maker at the side) THAN CLEAR THE SENSOR OF WATER LEVEL. AFTER THE CLEAN, REINSTALL THE SENSOR OF WATER LEVE BACK TO STERILIZATION GENERATOR.

YEARLY: (CHECK BY ENGINEER)

☺ REMOVE, CLEAN AND REPLACE THE WIRE MESH FILTER AT INSIDE OF THE HOUSING. THEN, FIX RETURN 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.)

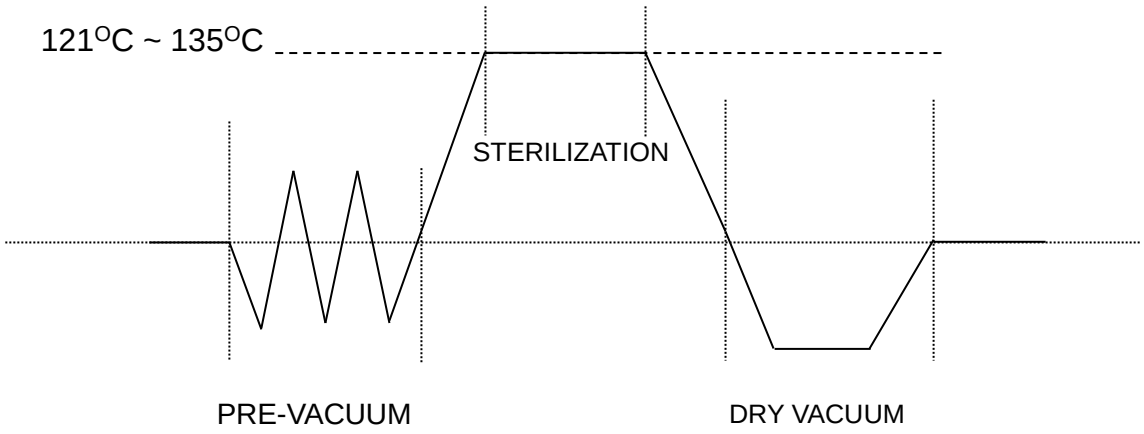
☺ CHECK THE FUNCTION OF THE SAFETY VALVE.

☺ CLEAN THE SURFACE OF THE WATER LEVEL CENSOR.

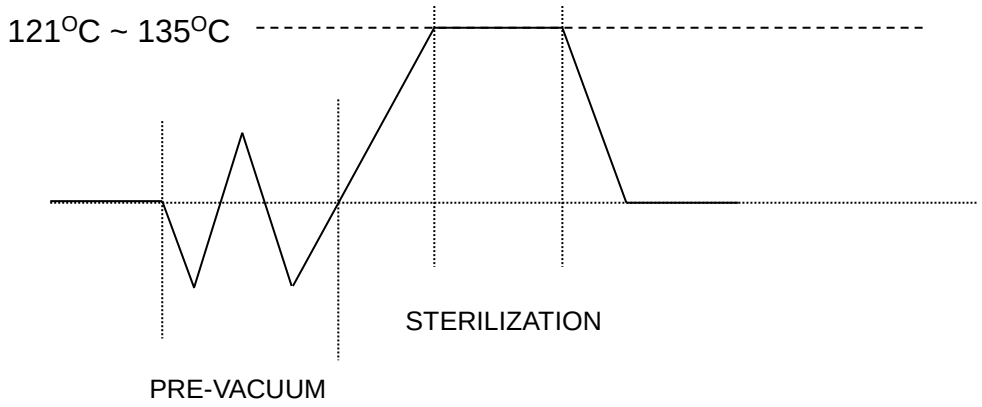
SCHEMATICS AND DIAGRAMS

THE STERILIZATION MODE:

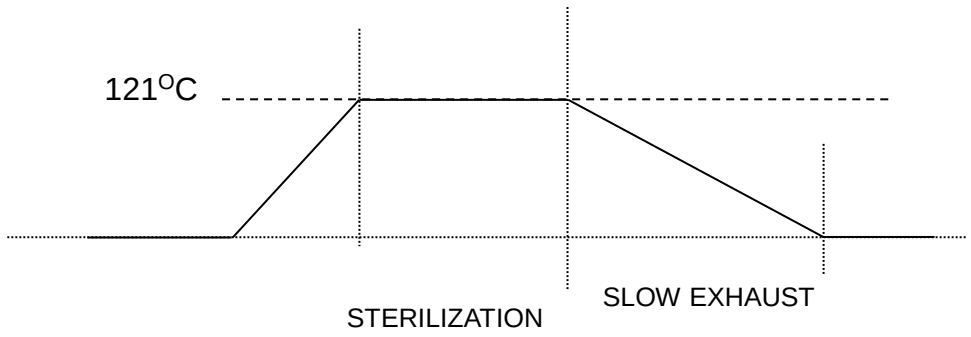
WRAPPED STERILIZATION MODE:



UNWRAPPED STERILIZATION MODE:



LIQUID STERILIZATION MODE:



INSTALLATION PLAN

1.ALL THE OUTLETS MUST BE INSTALLED ACCORDING TO LOCAL APPLICABLE NORMS.

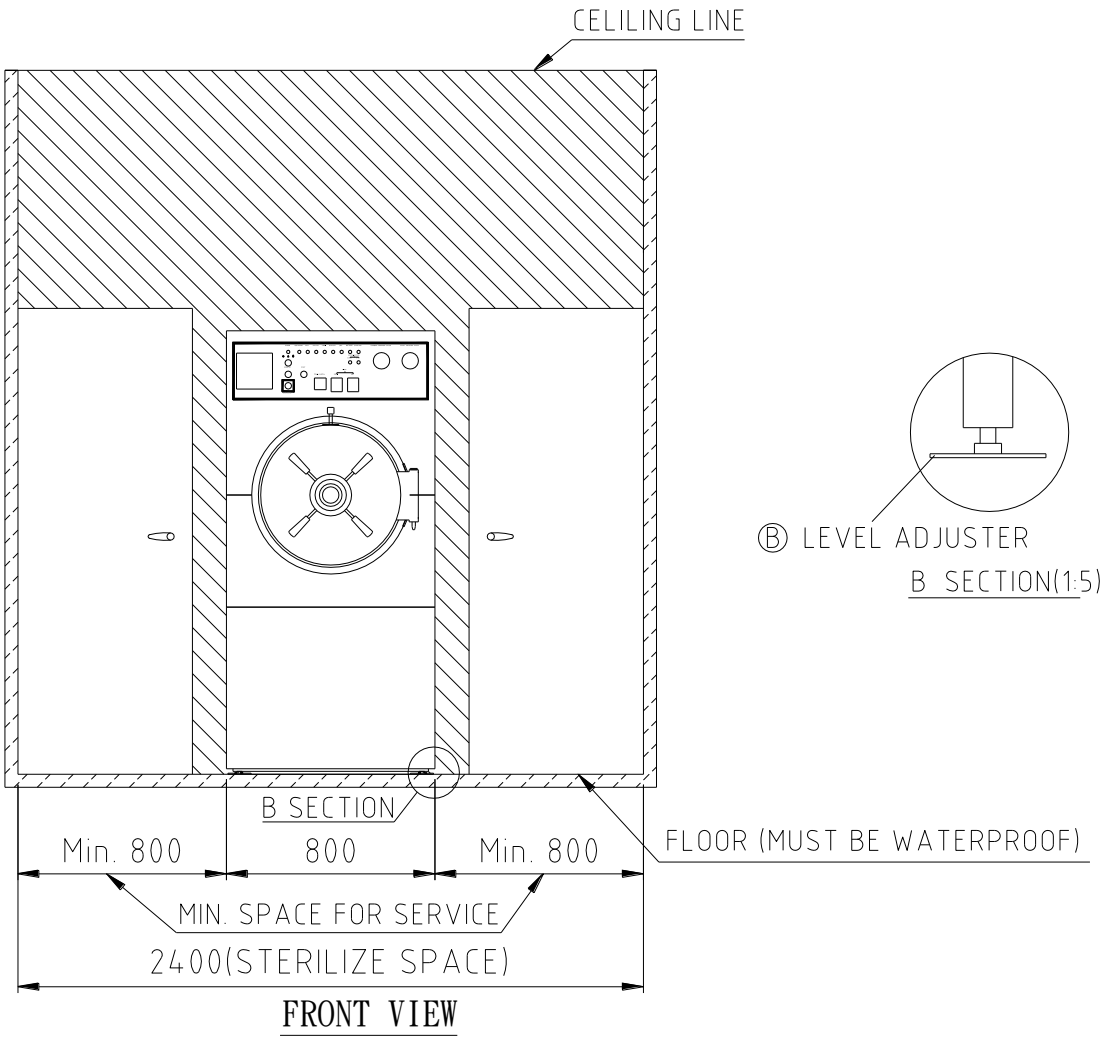
2.IF THERE IS NO FALSE CEILING, THE AIR EXTRACTION, MUST BE INSTALLED IN THE WALL, AND HAVE THE SAME CAPACITY AS THOSE OF THE FALSE CEILING, SO THE AIR CAN BE CARRIED OUTSIDE OF THE BUILDING. IT ALSO NEEDS TO BE EQUIPPED WITH A GRILLE.

3.THE INSTALLATION UP TO THE MACHINE AS WELL AS THE SUPPLY OF ACCESSIBLE KEY ACCORDING TO THE SPECIFICATIONS INDICATED IN THE DRAWING, ARE CHARGEABLE TO THE PURCHASERS.

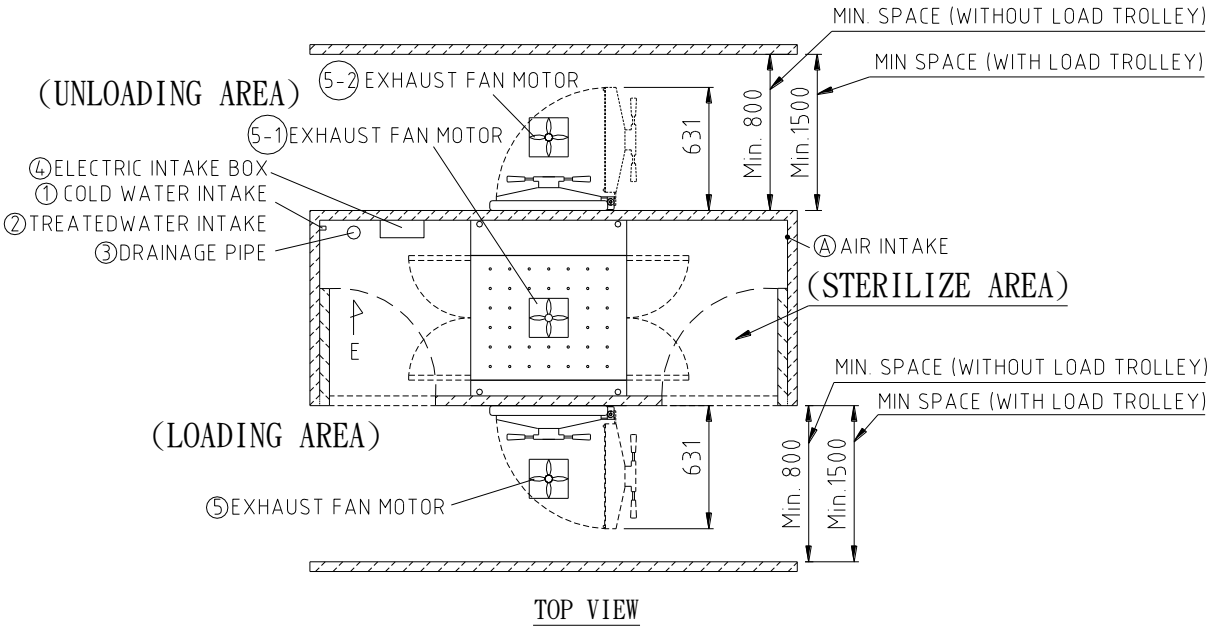
4.IF THERE IS ANY KIND OF PROBLEM DURING INSTALLATION FOR THE VARIOUS INTAKES NOT INDICATED IN THE DRAWING, PLEASE CONTACT OUR TECHNICAL SERVICE DEPT. FOR FURTHER ASSISTANCE.

5.THE MEASUREMENTS OF THIS DRAWING ARE CONSIDERING FINISHED WALLS.

6.THE SPACES OF MAINTENANCE MUST BE SUFFICIENTLY ILLUMINATED.



AIR INTAKE FREE OF IMPURITIES ϕ1/4", FILTERED AND REGULATED AT A PRESSURE OF 6-7 bar, FLOW OF 0.0083 Nm^3/min, APROX. CYCLE CONSUMPTION 0.005 Nm^3/min, PLACED THE WALL WITH BUILT-IN AND ACCESSIBLE KEY.
(THIS INTAKE WILL BE PROVIDED ONLY IF THE CUSTOMER HAS AIR NETWORK.)



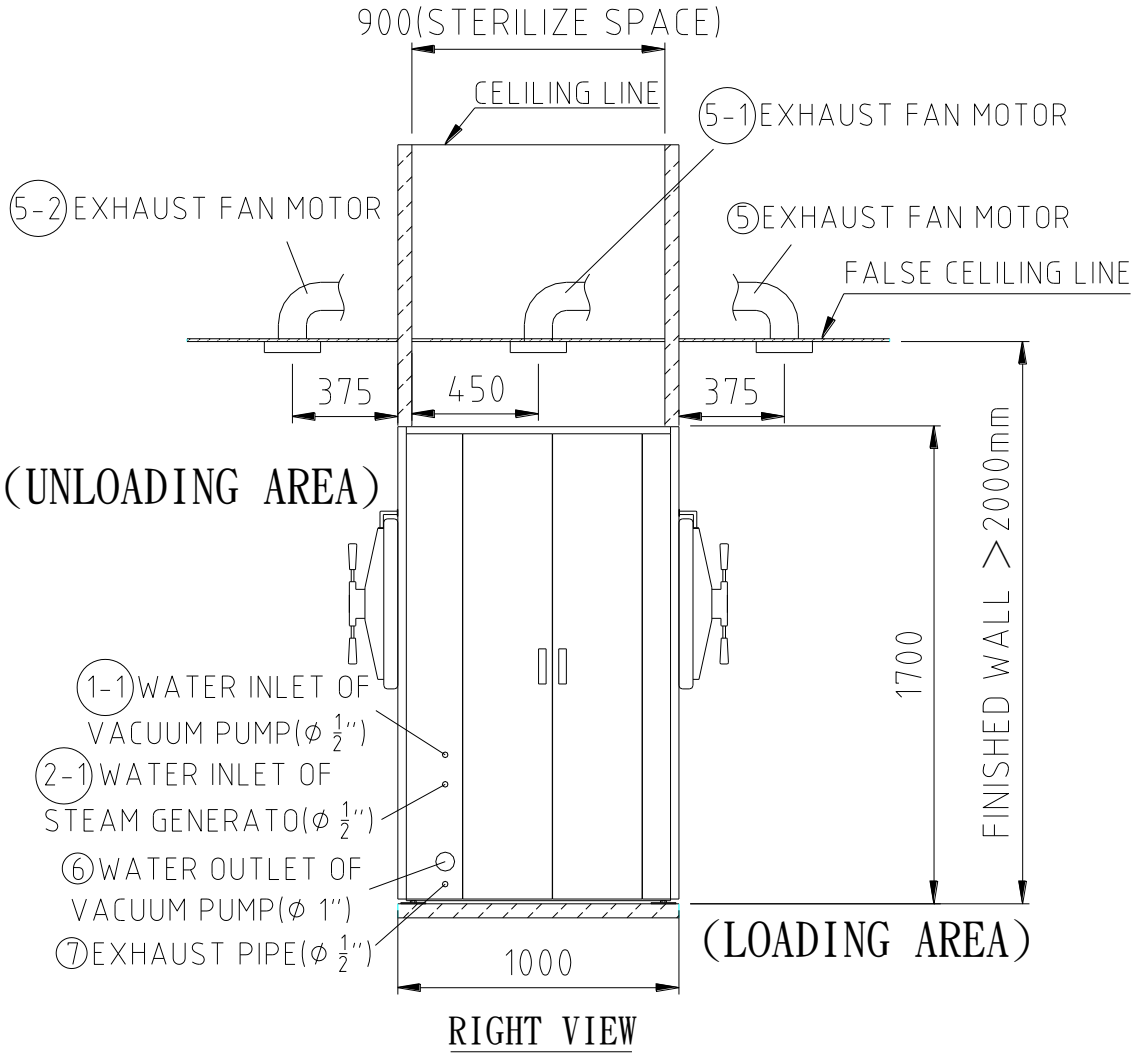
TOP VIEW

⚠IMPORTANT

ENVIRONMENT CONDITIONS IN THE STERILE AREA：

◎THE STERILE AREA TEMPERATURE MUST BE ≦40ºC；HUMIDITY ≦85%RH

◎TO KEEP THESE CONDITIONS IN THE STERILE AREA AND DEPENDING ON THE Kcal. LOST BY THE EQUIPMENT INDICATED IN THE ITEMS 5 & 5-1, WE SUGGEST THAT THE EXTRACTOR AND THE DIAMETER OF THE EXTRACTION TUBE ARE CALCULATED AND MADE BY A SPECIALIZED COMPANY.



THE EQUIPMENT SHALL BE ADJUST TO A ANGLE OF 1˚~2˚ WITH REAR SITE HIGHER THAN FRONT SITE FOR THE PROPER OPERATION OF DRY AND DRAINAGE.

⚠NOTE

EACH TIME THE STEAM GENERATOR IS EMPTIED FOR CLEANING OR MAINTENANCE, A FURTHER 15 LITER OF WATER ARE NEEDED TO FILL IT UP AGAIN.

1.COLD WATER INTAKE OF φ1/2", TEMPERATURE OF WATER 25ºC, CONSUMPTION PER CYCLE 10~300 LITERS. (WATER CONSUMPTION DETERMINED BY DRYING TIME) THE VACUUM PUMP 10 L/MIN. PRESSURE OF WATER 0.5-10 bar、HARDNESS OF WATER 0.9ºfH(0.09mmol/L)、pH 7-9、THE CHLORIDES LEVEL WILL ≦0.1 mg/l, PLACED THE WALL WITH BUILT-IN AND ACCESSIBLE KEY.

2.COLD TREATEDWATER INTAKE OF ϕ1/2"G, SUPPLIED AT TEMPERATURE OF 25ºC, CONSUMPTION PER 13L/CYC, PRESSURE OF WATER 0.5~10 bar、HARDNESS OF WATER≦0.2ºfH(0.02mmol/L)，pH 5~7 AND WITH CONDUCTIVITY ≦15μS/cm , PLACED THE WALL WITH BUILT-IN AND ACCESSIBLE KEY.

3.DRAINAGE PIPE ϕ≧1" METALLIC PIPE, CORROSION RESISTANCE 2"G. AND A TEMPERATURE OF 100 ºC ABOVE.

4.ELECTRIC INTAKE 3ϕ, 4W 380VAC，9kW，WIRE 4m LONG. (GENERAL POWER SUPPLY TO THE STERILIZER).

5.CEILING MOUNTED AIR EXTRACTION WITH GRILLE DRAW 200 Kcal/h (LOADING / UNLOADING AREA).

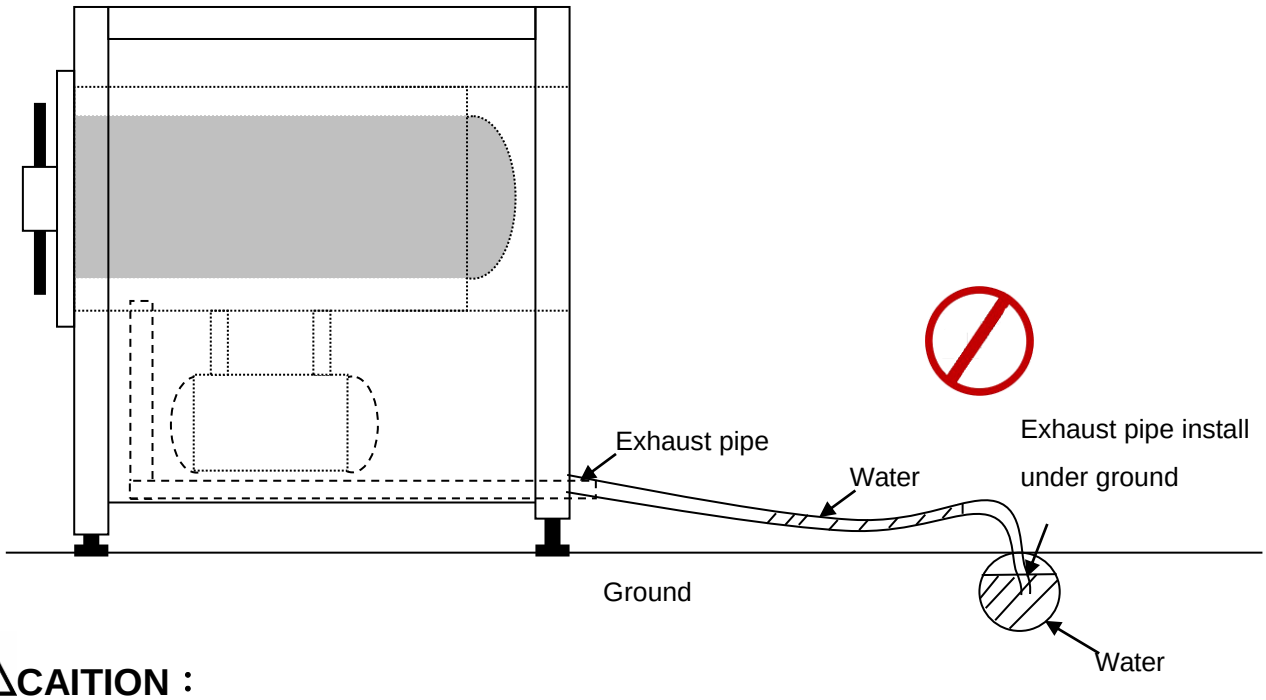
5-1.CEILING MOUNTED AIR EXTRACTION WITH GRILLE DRAW 400 Kcal/h (STERILIZE AREA).

6. A CHECK VALVE SHALL BE FITTED AS INDICATED IN THE DRAWING (6) and (7).

NOTE

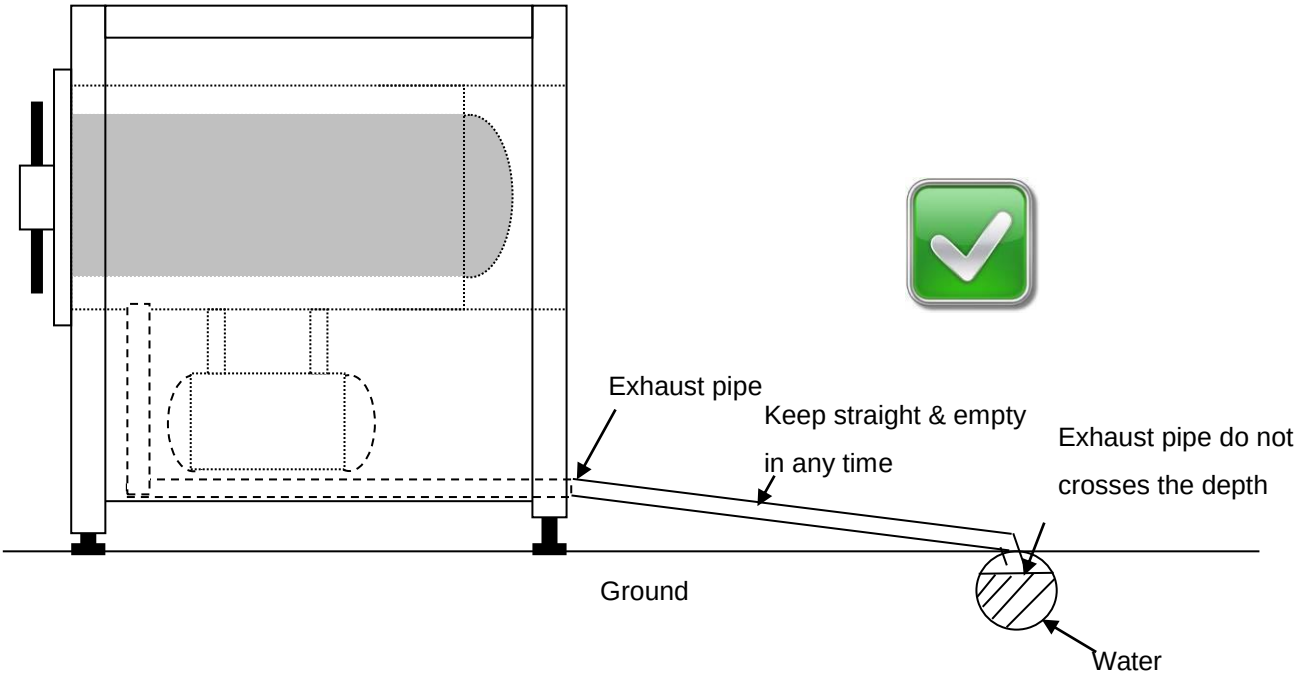
WASTE WATER SHOULD BE BROUGHT INTO THE PUBLIC NET IN ACCORDANCE WITH THE LOCAL RULES OR REQUIREMENTS I.E.

◎Exhaust pipe

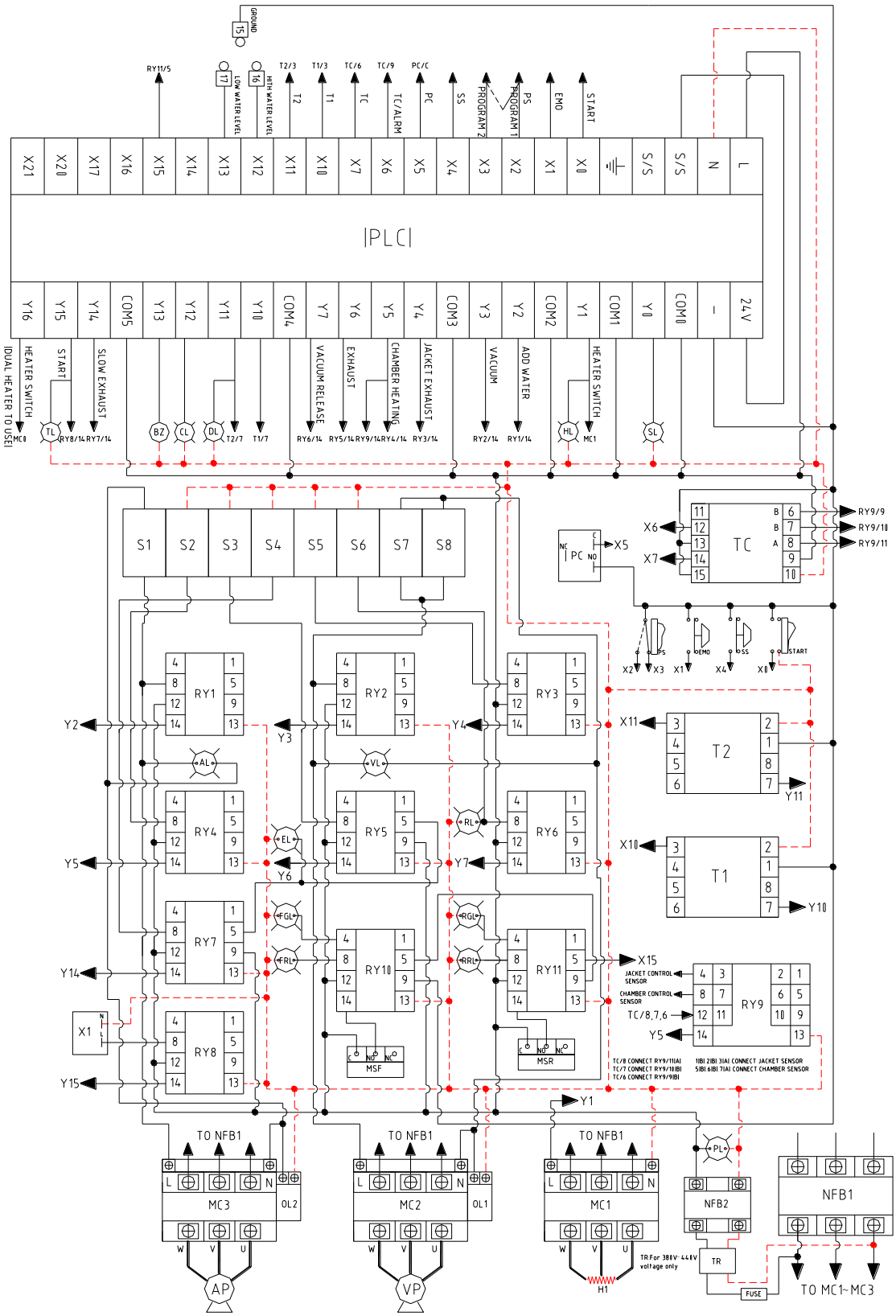


⚠CAITION：

The balance water in the tube or pipe, it'll make the vacuum release function fail (because it just a little vacuum in the chamber only).Exhaust pipe installation by this way, it will keep the straight and empty in any time.



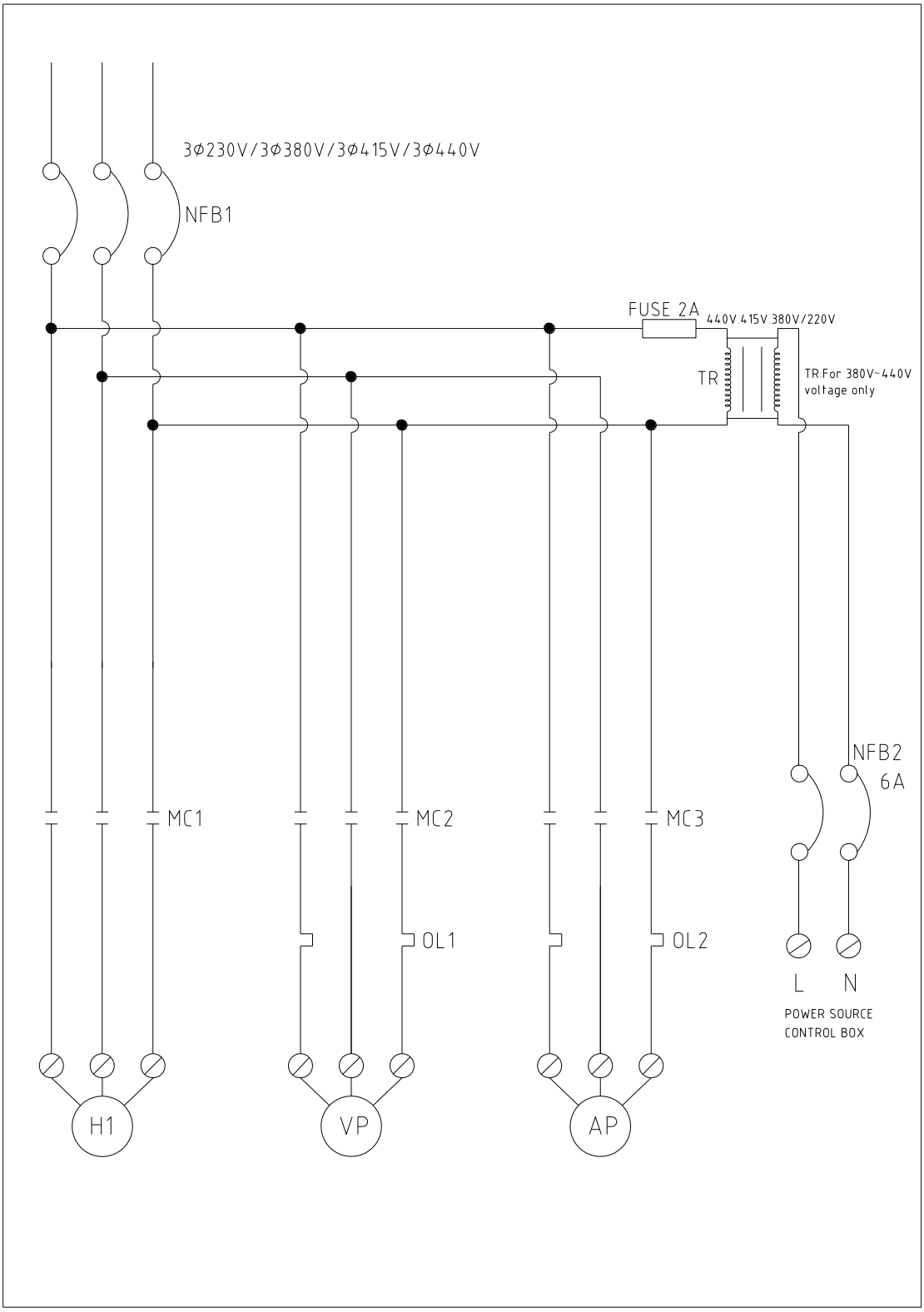
WIRING DRAWING



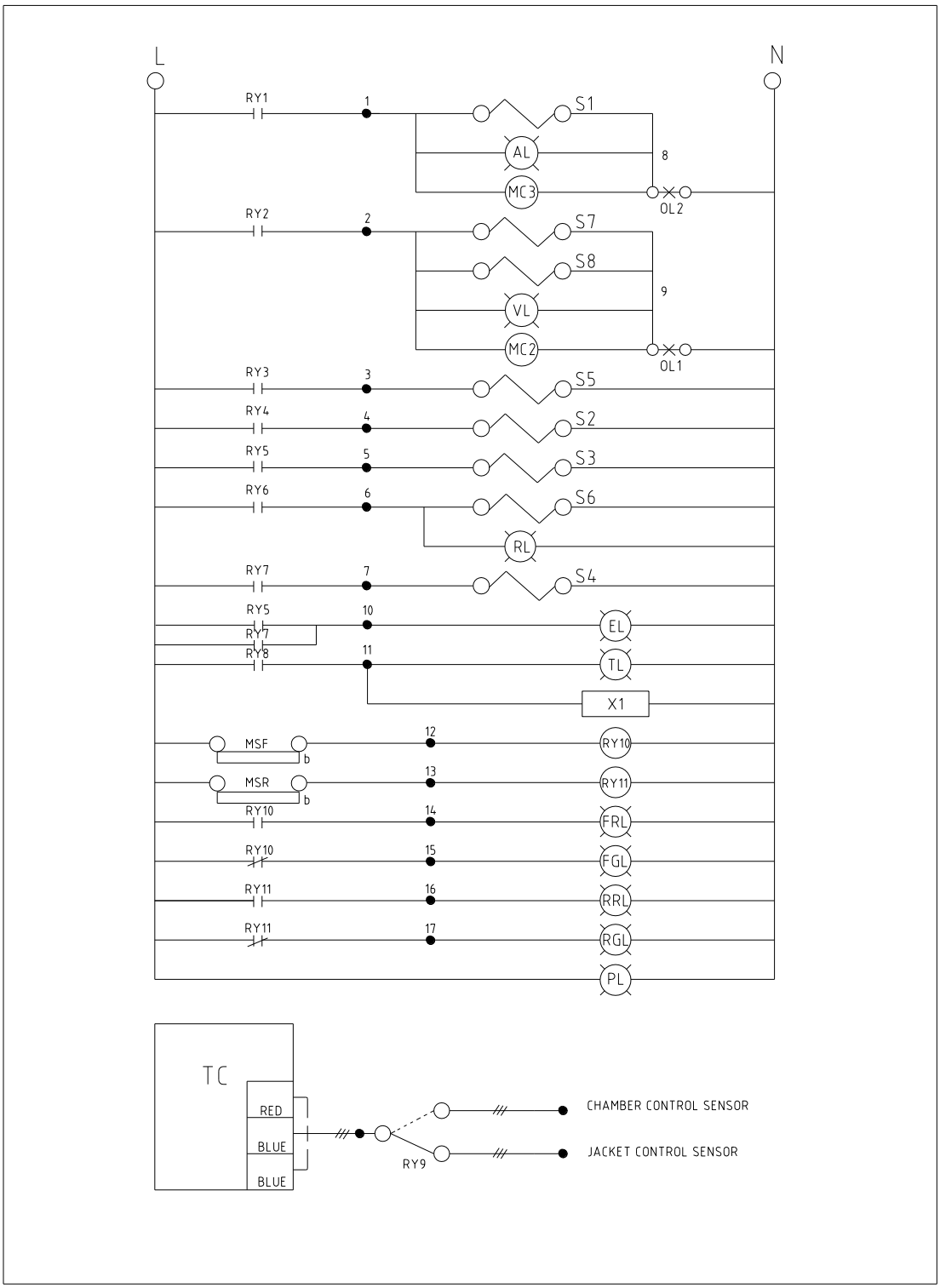
WIRING DIAGRAM

SYMBOL	NAME	SYMBOL	NAME
START	START SWITCH	PC	PRESSURE CONTROLLER
EMO	EMERGENCEY BOTTOM	TC	TEMPERATURE CONTROLLER
SS	STAND BY SWITCH	TR	TRANSFORMER
RY1~ RY8	2P RELAY	NFB1~ NFB2	NO FUSE BREAKER
RY10~ RY11	2P RELAY	OL1~ OL2	OVER LOAD SWITCH
PLC	PROGRMMABLE LOGIC CONTROLLER	MC1~ MC3	MAGNETIC SWITCH
RY9	4P RELAY	MSF	SENSITIVE SWITCH FRONT
PS	PROGRAM SWITCH	MSR	SENSITIVE SWITCH REAR
VP	VACUUM PUMP	FGL	FRONT DOOR CLOSE LAMP
AP	ADD WATER PUMP	FRL	FROT DOOR OPEN LAMP
BZ	BUZZER	RGL	REAR DOOR CLOSE LAMP
H1	HEATER	RRL	REAR DOOR OPEN LAMP
X1	SINGLE CHANNEL RECORDER	PL	POWER LAMP
T1	STERILIZATION TIMER	TL	START LAMP
T2	DRY TIMER	AL	ADD WATER LAMP
S1	ADD WATER SOLENOID	HL	HEATING LAMP
S2	STERILIZATION SOLENOID	VL	VACUUM LAMP
S3	CHAMBER EXHAUST SOLENOID	SL	STERILIZATION LAMP
S4	LIQUID PROGRAM EXHAUST SOLEUOID	EL	EXHAUST LAMP
S5	JACKET EXHAUST SOLEUOID	DL	DRY LAMP
S6	VACUUM RELEASE SOLEUOID	RL	VACUUM RELEASE LAMP
S7	PRE-VACUUM SOLENOID	CL	COMPLETE LAMP
S8	PUMP COOLING SOLENOID		

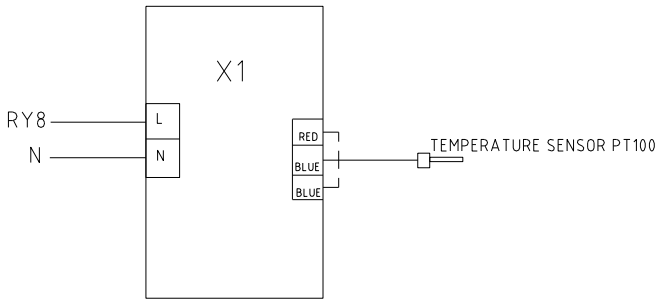
CIRCUIT DIAGRAM



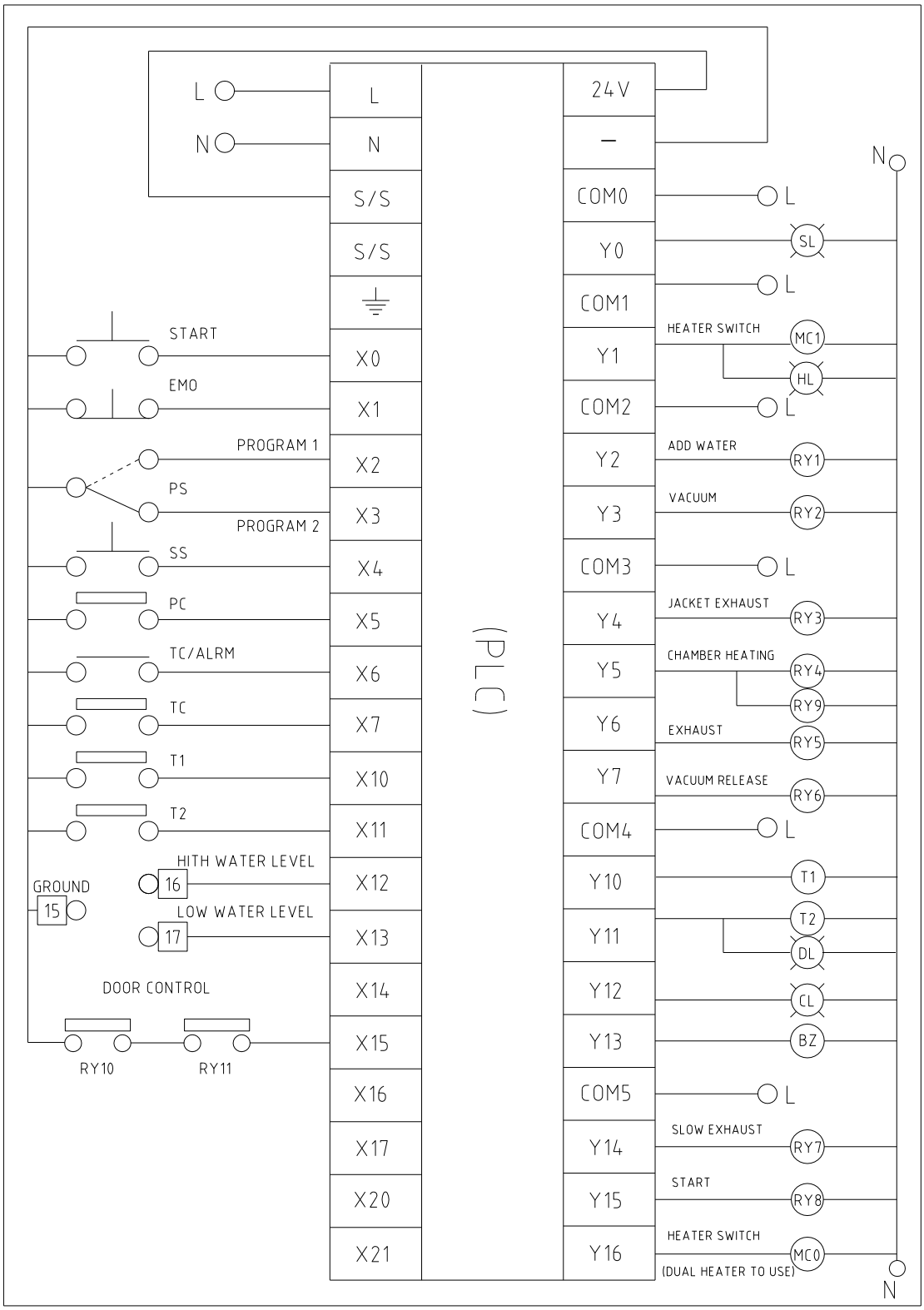
POWER CIRCUIT DIAGRAM



CONTROLL CIRCUIT DIAGRAM -1

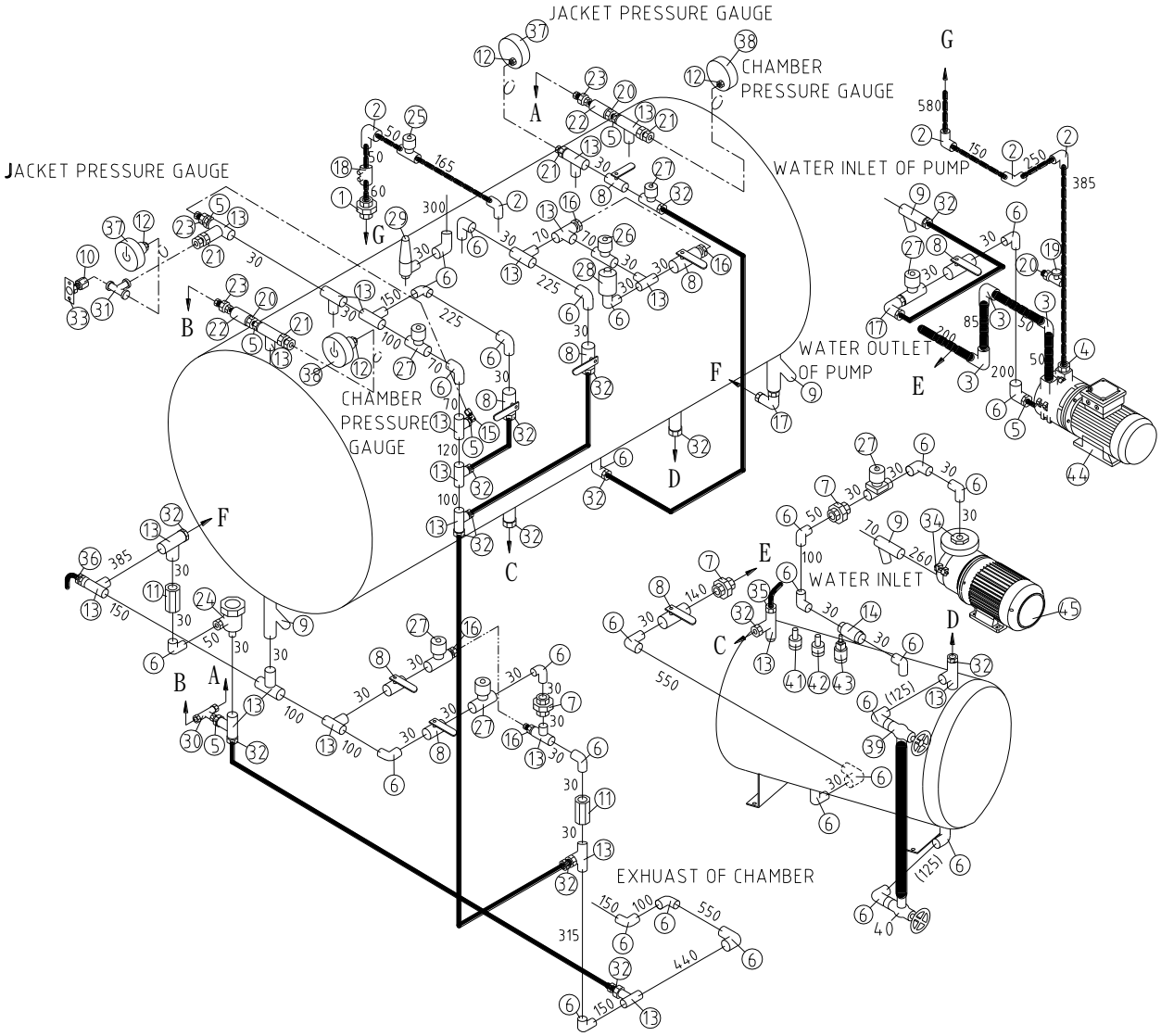


CONTROLL CIRCUIT DIAGRAM -2



PLC CIRCUIT DIAGRAM

PIPELINE DIAGRAM

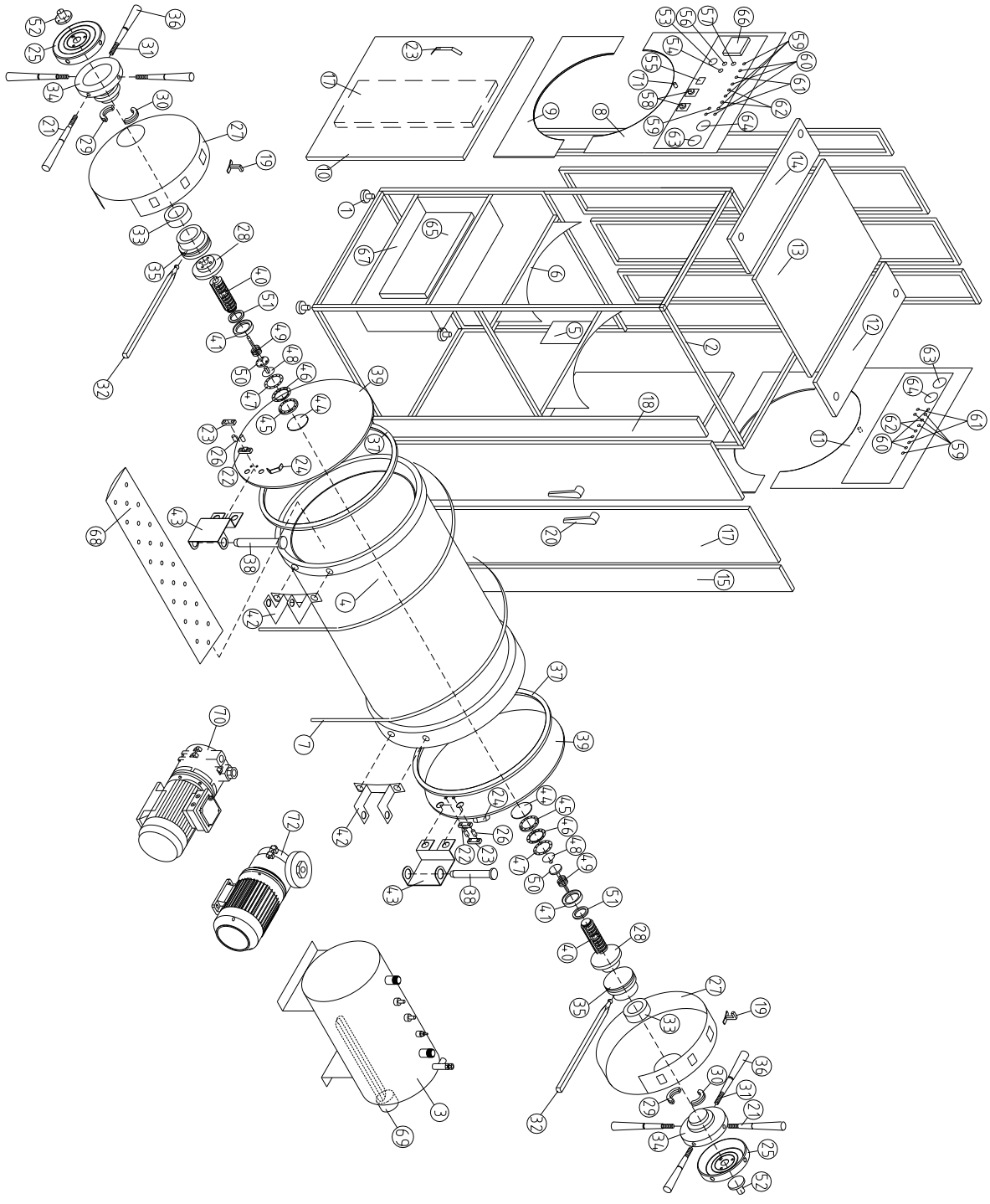


PIPELINE DIAGRAM

Item No	Part No.	Name / Spec.	Unit.
1	201-09002	UNIONS F&F 3/4" PT(STAINLESS STEEL)	1
2	101-04003	90ºELBOWS BANDED EQUAL 3/4" PT	5
3	101-04004	90ºELBOWS BANDED EQUAL 1"PT	3
4	101-01018	REDUCER BUSHING 1"PTx3/4"PT	1
5	101-01012	REDUCER BUSHING 1/2"PTx1/4"PT	6
6	101-04002	90ºELBOWS BANDED EQUAL 1/2"PT	29
7	201-09001	UNIONS F&F 1/2"PT(STAINLESS STEEL)	2
8	106-04003	BALL VALVE 1/2"	8
9	106-08001	BRONZE Y 1/2" STRAINES	4

Item No	Part No.	Name / Spec.	
10	103-08001	FLARE NUT 1/4"H	1
11	106-03004	CHECK VALVE 1/2"PT	2
12	102-02001	FEMALE THREAD SLEEVE CONNECTOR 1/4"PSx1/4"S	4
13	101-06005	TEES BANDED EQUA 1/2"PT	22
14	106-03009	CHECK VALVE 1/2"PT	1
15	102-06001	90º1/4"PT ELBOW MALEx1/4"S(SLEEVE)	1
16	102-01007	MALE THREAD SLEEVE CONNECTOR 1/2"PTx3/8"S	4
17	102-06004	90º1/2"PT ELBOW MALEx1/2"S(SLEEVE)	2
18	106-03005	CHECK VALVE 3/4"PT	1
19	106-09001	FLOW CONTROL VALVE	1
20	106-03008	CHECK VALVE 1/4"PT	3
21	102-01010	MALE THREAD SLEEVE CONNECTOR 1/2"PTx1/4"S	4
22	201-05008	DOUBLE FEMALE THREAD 1/4"PTx24mm(STAINLESS STEEL)	2
23	908-01001	STEAM TRAP	3
24	106-07001	1/2" STEAM TRAP	1
25	008-01006	SOLENOID VALVE	1
26	008-01007	SOLENOID VALVE	1
27	008-01005	SOLENOID VALVE	6
28	411-01002	AIR FILTER	1
29	106-02004	1/2" SAFETY VALVE	1
30	102-08001	BRANCH TEE FLARE CONNECTOR 1/4"PTx1/4"S	1
31	102-07001	EQUAL TEE FLARE CONNECTOR 1/4" S	1
32	102-01005	MALE THREAD SLEEVE CONNECTOR 1/2"PTx1/2"S	16
33	003-09002	PRESSURE SWITCH	1
34	101-01010	REDUCER BUSHING 1" PT * 1/2" PT	2
35	012-01006	SENSOR SINGLE LINE	1
36	012-01021	SENSOR DOUBLE LINE	1
37	217-01008	PRESSURE GAUGE	2
38	217-03006	PRESSURE / VACUUM GAUGE	2
39	106-04004	BRONZE WATER GAUGE VALVE	1
40	106-04008	BRONZE WATER GAUGE VALVE WITH EXHAUST	1
41	911-02002	WATER SENSOR (LONG)	1
42	911-02003	WATER SENSOR (SHORT)	1
43	911-02005	WATER SENSOR (GROUND)	1
44	011-02003	VACUUM PUMP 1.5HP (3ϕ)	1
45	011-03003	ADD WATER PUMP 0.5HP 1" (3ϕ)	1

ASSEMBLE DIAGRAM



COMBINATION DIAGRAM

Item No	Part No.	Name / Spec.	Unit.
1	910-02001	LEVEL ADJUST SCREW SET	4
2	905-05006	FRAME ASS'Y OF CHAMBER	1

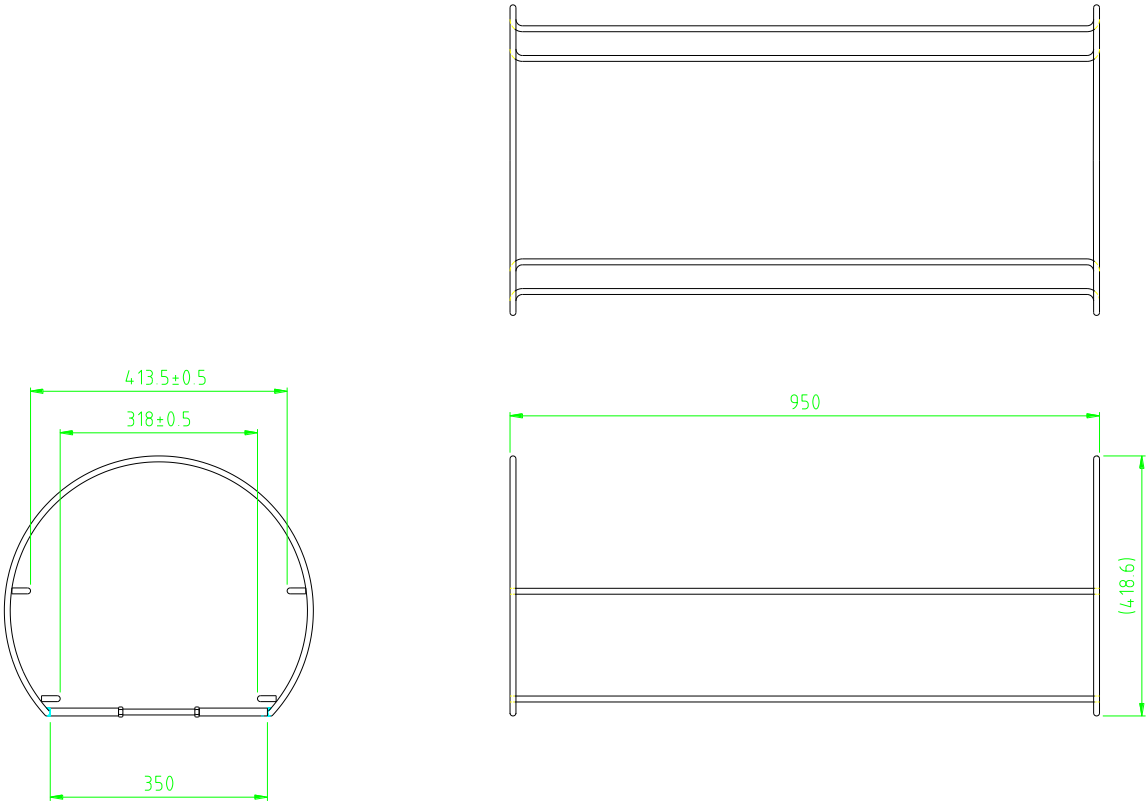
Item No	Part No.	Name / Spec.	Unit.
3	903-05001	WATER TANK ASS'Y	1
4	901-05007	CHAMBER ASS'Y	1
5	224-01007	HOLDER OF MAGNETIC CONTACTOR	1
6	224-02004	HORIZON SEAT ADJUSTMENT	2
7	205-01008	HOSE CLAMP	2
8	202-16114	HOUSING-FRONT PART (No-1)	1
9	202-16039	HOUSING-FRONT PART(No-2)	2
10	202-16022	HOUSING-FRONT PART(No-3)	2
11	202-16113	HOUSING-BACK (No-12)	1
12	202-16154	HOUSING-COVER PART(No-4)	1
13	202-16115	HOUSING-COVER PART(No-5)	1
14	202-16054	HOUSING-COVER PART(No-4)	1
15	202-16026	HOUSING-SIDE PART(No-7)	2
16	202-16116	HOUSING-DOOR PART(No-7)	4
17	202-16030	REINFORCEMENT FOR HOUSING-FRONT PART	2
18	202-16056	HOUSING-SIDE PART(No-7)	2
19	911-05001	SENSITIVE-SWITCH DOOR LOC SENSER FRAME	2
20	211-02008	HOUSING-DOOR PART	4
21	107-01001	TUBE HANDLE 1/2"x35L	8
22	204-02001	WASHER	40
23	211-02005	BARRICADE	1
24	204-03042	DOOR COVER SUPPORTER	16
25	209-06003	AIRTIGHT KNOB CASE	2
26	213-01011	STAINLESS STEEL TUBE	40
27	301-02006	DOOR COVER	2
28	305-04005	DOOR LACTH MOUNTING	2
29	305-04011	IRON PANEL (DOWN/TWO THIN)	2
30	305-04012	IRON PANE L(UP/TWO THIN)	2
31	308-02012	SCREW 1/2" x120	4
32	311-01004	DOOR LATCH	40
33	313-01006	BEARING ASSY,LOCK SHAFT	2
34	315-03009	NUT, DOOR	2
35	316-01003	DOOR LATCH HOLDER	2
36	401-02005	REVOLVING HANDLES	8
37	409-02014	DOOR GASKET	2
38	911-04001	HINGE PIN	2
39	209-01017	DOOR COVER,CHAMBER	2

Item No	Part No.	Name / Spec.	Unit.
40	308-01008	SCREW SECURE DOOR	2
41	910-01004	SUPPORT METAL SECURE DOOR	2
42	215-02002	DOOR FEMALE HINGE	2
43	215-02007	DOOR MALE HINGE	2
44	202-10003	THE COVER OF PRESSURE DOOR LOCK DEVICE	2
45	108-01001	FIX RING OF PRESSURE DOOR LOCK DEVICE	2
46	204-05003	SPRING SHEET OF PRESSURE DOOR LOCK DEVICE	2
47	403-01012	WASHER	2
48	204-03020	FIXING PLATE	2
49	207-01006	STAINLESS SPRING	2
50	911-04003	STAINLESS SPRING	2
51	317-01001	TAB WASHER	2
52	317-01004	KNOB COVER	2
53	003-01001	PRESS BUTTON SWITCH ϕ25(RED)	1
54	003-01003	PUSH BUTTON ϕ25(GREEN WITH LIGHT)	1
55	004-06006	TEMP. CONTROLER AC85~250V	1
56	003-01002	PUSH BUTTON ϕ25(GREEN)	1
57	003-02001	SELECTOR SWITCH ϕ25(BLACK)	1
58	004-01011	TIMER	2
59	005-01009	12ϕ(GREEN) INDICATOR 220V	8
60	005-01011	12ϕ(WHITE) INDICATOR 220V	6
61	005-01010	12ϕ(RED) INDICATOR 220V	4
62	005-01012	12ϕ(ORANGE) INDICATOR 220V	4
63	217-01008	PRESSURE GAUGE	2
64	217-03006	PRESSURE/VACUUM GAUGE	2
65	309-01005	CONTROL PLATE	1
66	004-07003	TEMP. RECORDER (SINGLE CHANNEL)	1
67	212-04002	ELECTRIC BOX	1
68	202-09014	HEATER COVER	1
69	009-01022	HEATER 2" 9KW(AC 230V THREE PHASE)	1
	009-01040	HEATER 2" 9KW(AC 380V THREE PHASE)	
	009-01030	HEATER 2" 9KW(AC 415V THREE PHASE)	
	009-01043	HEATER 2" 9KW(AC 440V THREE PHASE)	
70	011-02003	VACUUM PUMP 1.5HP (3ϕ)	1
71	003-05002	DOOR SWITCH	1
72	011-03003	ADD WATER PUMP 0.5HP 1" (3ϕ)	1

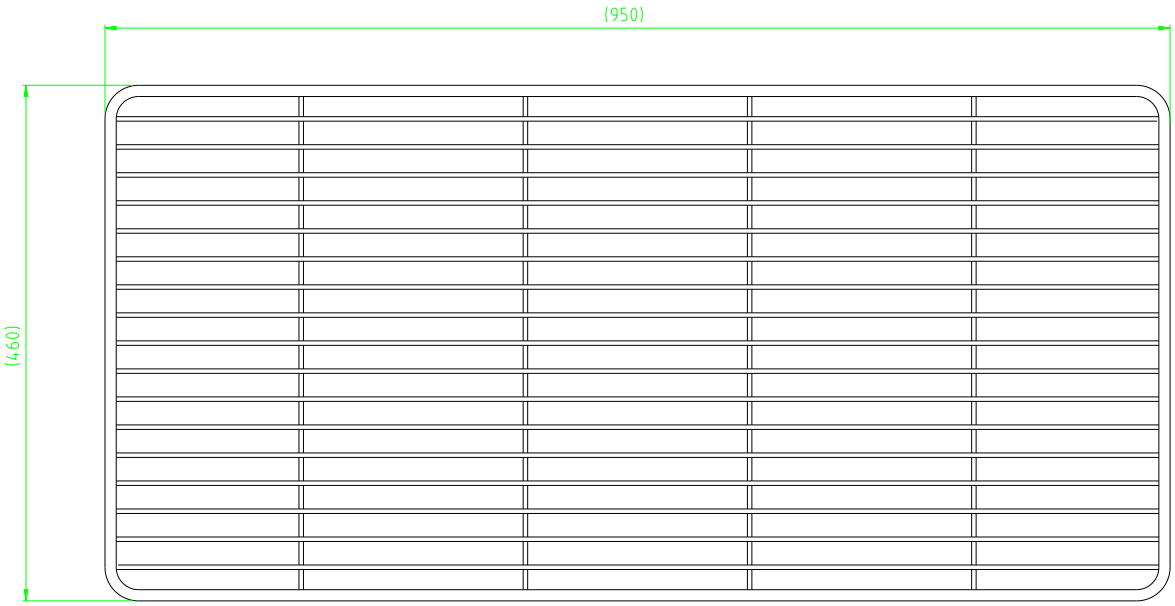
※Refer to relative power input for correct installations.

FITTING

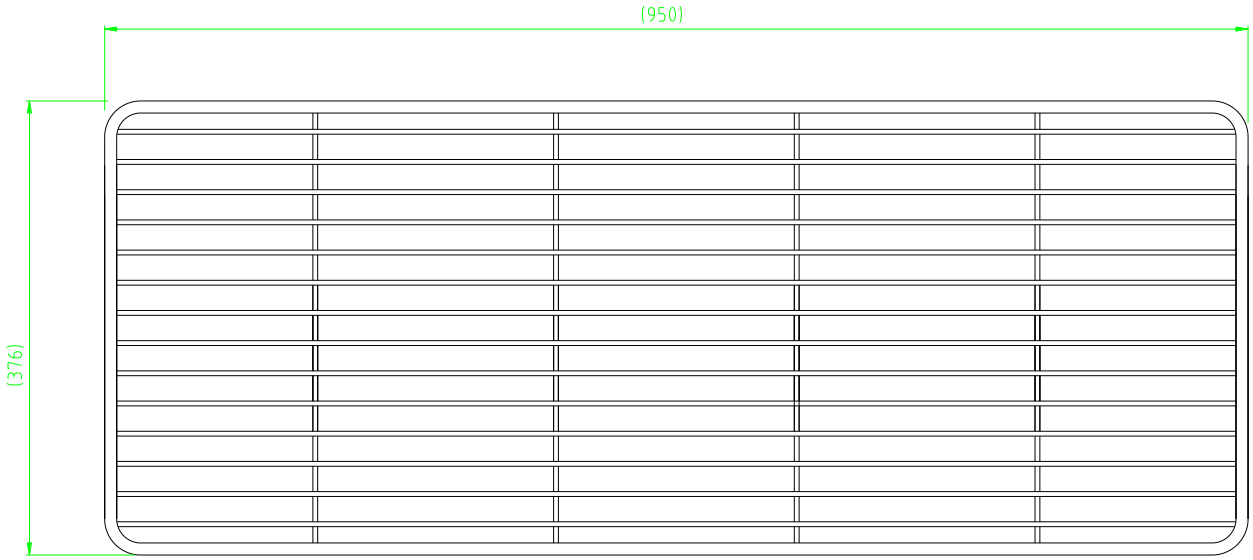
1. TRACK ASSEMBLY (203-02015)



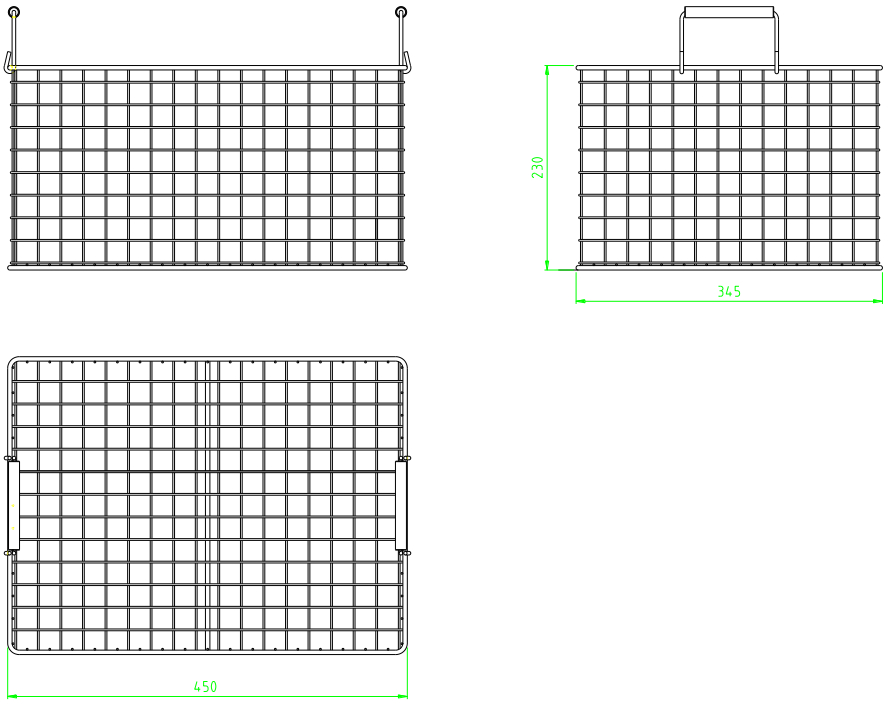
2. NET TRACK TOP (212-02010)



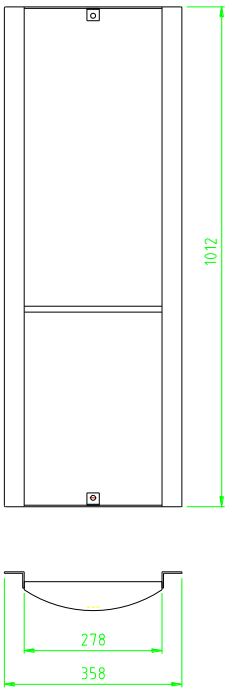
NET TRACK BOTTOM (212-02019)



3. NET (212-03010)



4. TRACK ASSEMBLY (909-08011)



5. TORELLY ASSEMBLY (918-01005)