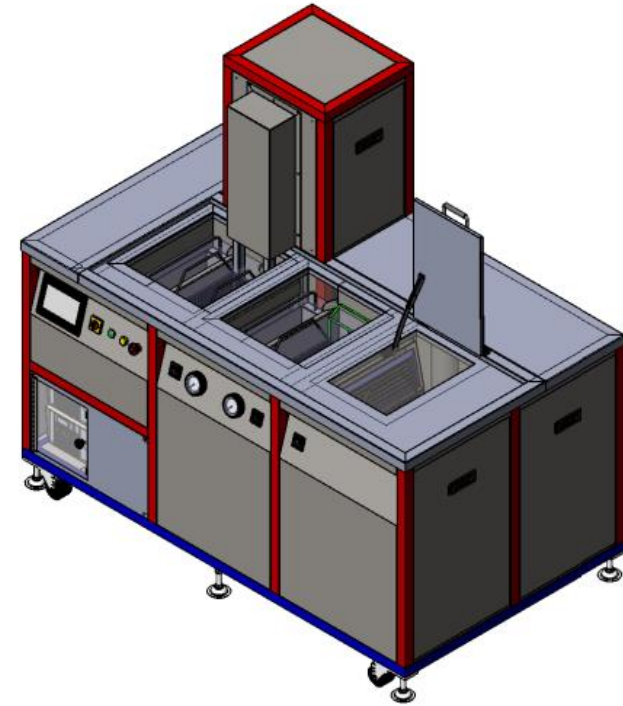


SONICTRON



**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH DRYING
MODEL: MDL**

**13688/JST
USER MANUAL**

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SAFETY PRECAUTIONS

Lack of training is a common cause of injury.

Standard operating procedure must be followed.



ALL USERS MUST COMPLETE A FULL TRAINING BEFORE OPERATING THIS MACHINE. THE USERS SHOULD FOLLOW THE PROPER SET UP AND GUIDELINES GIVEN IN THIS MANUAL

1. Do not operate this machine if you are not familiar with the function.
2. Do not operate the machine unless authorized to do so.
3. Do not operate the machine other than its intended use.
4. The machine must only be connected after proper installation.
5. Never operate this machine if it is not working properly or if you notice any unusual noise or change in the performance of the machine. 
6. Keep all equipment in proper working order and use the equipment according to the manufacturer's instructions. 
7. Wear eye protection while operating the machine.
8. Wear clothing suited for the operation, wear shoes with thick soles.
9. Never wear jewelry or unrestrained hairstyles that will be hazardous to your own personal safety.
10. Ensure that all the switches are off, fill and empty the tanks before plugging the machine into the power source.
11. Ensure that the machine and the control panel are not surrounded by spilled oil, liquid or any other liquid to avoid tripping and any other accident. Clean immediately!
12. Ensure that the machine is placed on a horizontal, stable and even surface.
13. Do not alter the unit, specifically the internal circuitry.
14. Do not operate the machine dry.
15. Do not start heating process if liquid level is below the heating element.
16. Do not operate the machine when there is a risk of causing a fire or an explosion.

17. Never operate the machine with a malfunctioning switch.
18. Ensure that all the covers are on while operating.
19. Do not touch the tanks or place your fingers into the tank while it is operating, they may be hot.
20. Do not overload the tank.
21. Do not attempt to lubricate, clean, adjust or repair the machine while it is running. Stop the machine and lock the power switch in the "OFF" position.
22. Do not leave equipment on top of the machine.
23. Only one person should operate the machine or switches.
24. Do not lean against the machine.
25. Do not leave the machine unattended when it is plugged into an electrical outlet.
26. Push the emergency button during the situation with high possibility that can cause serious injury or accidents.
27. Switch off the machine when work is completed.
28. For your own safety, use only spare parts that have been decided by the manufacturer that were based on suitable measurement for the machine.
29. Appropriate control measures should be identified before cleaning the tanks and other parts of the machine.



30. Before the cleaning activity is commenced, make sure that the machine is "off", the cord is unplugged and the unit has cooled completely.
31. Always use drain valve to empty tank.
32. Use only soap and damp cloth to clean the tanks.
33. Allow unit to dry completely before use.
34. Do not try to disassemble any part of the unit except the parts that are explained in this manual.
35. The warning, precautions and instructions discussed cannot cover all the possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product but must be supplied by the operator.

INTRODUCTION

**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH
DRYING**

PROJECT ID: 13688/JST

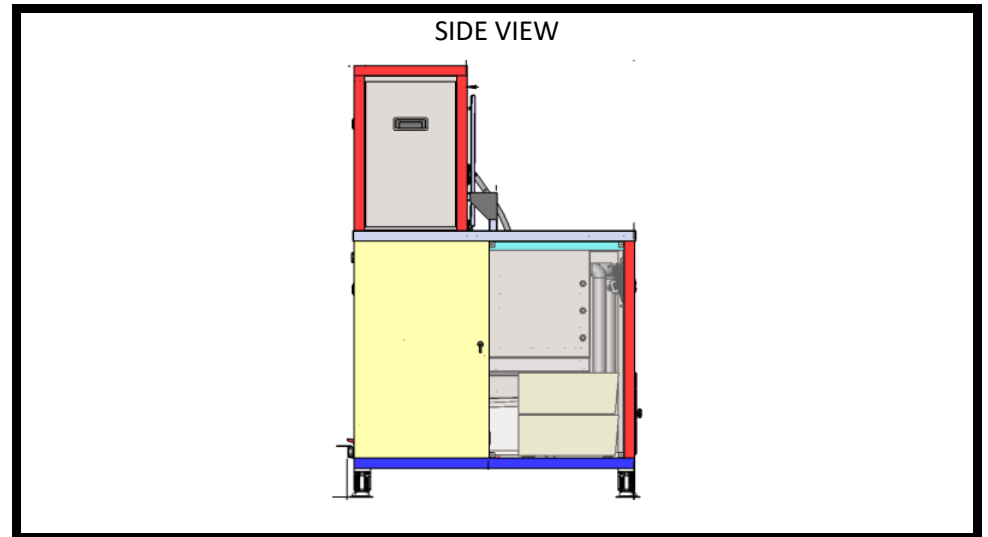
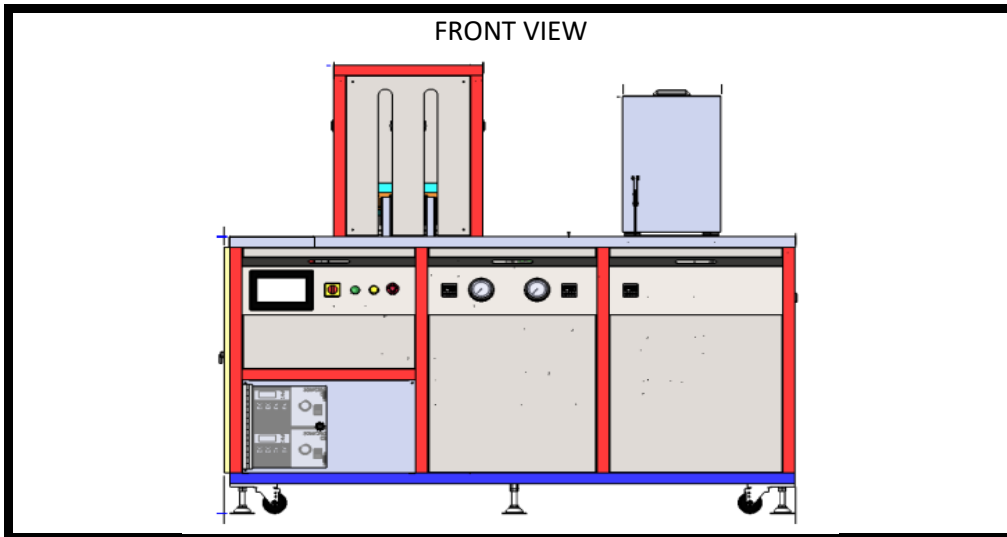
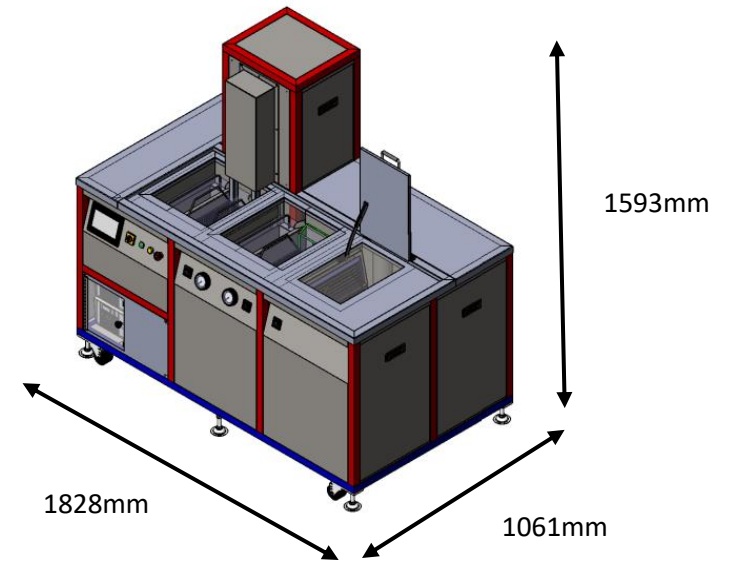
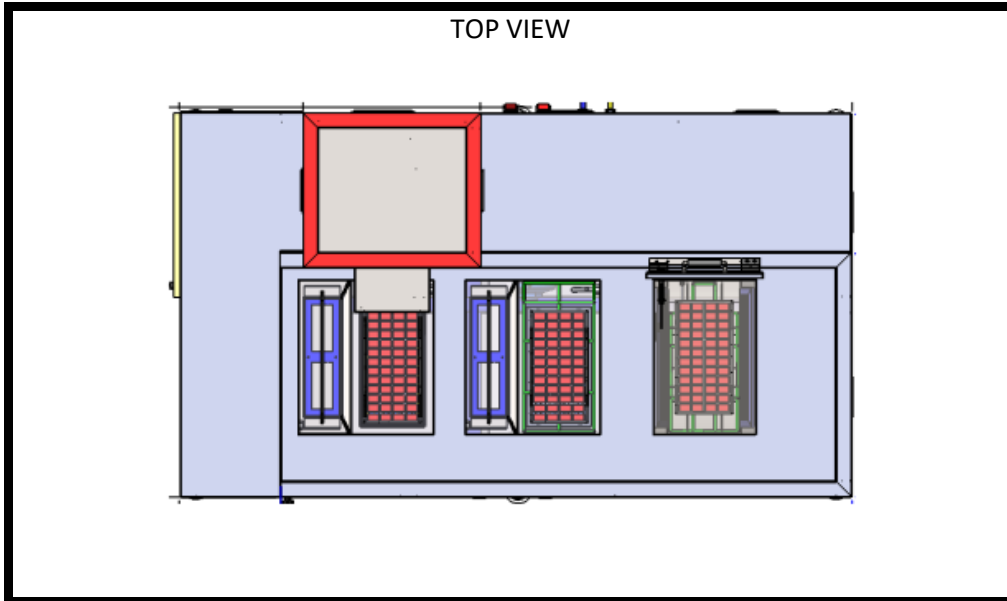
1.0 INTRODUCTION

Thank you for choosing our company to fulfil your requirements.

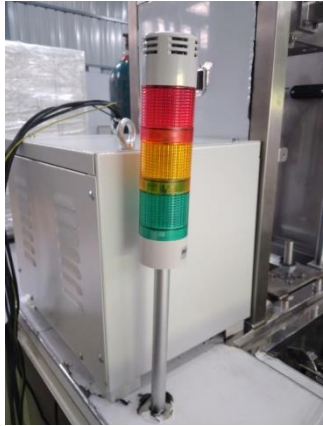
Before using this machine, you are advised to carefully read the manual, follow the safety instructions to avoid injuries and study the manual for correct operation in handling and servicing the machine. Once you have finished reading the manual, place the manual somewhere near the machine for future reference.

MDL machine is designed to remove foreign matters and dirt found on the surface of the parts, which uses ultrasonic process to detach the foreign matter and dirt from the surface of the component to be cleaned. This machine manually operates as it requires human labor to manage part of the process.

1.1 MACHINE OVERVIEW AND DIMENSION



1.2 MACHINE PARTS



TOWER LIGHT



PP BLUE FILTER HOUSING



ULTRASONIC VIBRATOR



ULTRASONIC GENERATOR



CENTRIFUGAL PUMP



PRESSURE GAUGE



HMI TOUCH SCREEN



PRE FILTER



HYPONIC MOTOR



TRANSFORMER



HOT AIR GENERATOR



HEPA FILTER



ACTUATOR VALVE



THERMOCOUPLE



BASKET



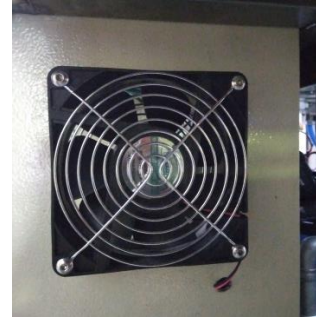
PP LEVEL SENSOR



FLOW METER



AIR FILTER REGULATOR



FAN



THERMOSTAT



DIGITAL TEMPERATURE CONTROLLER



PVC BALL VALVE

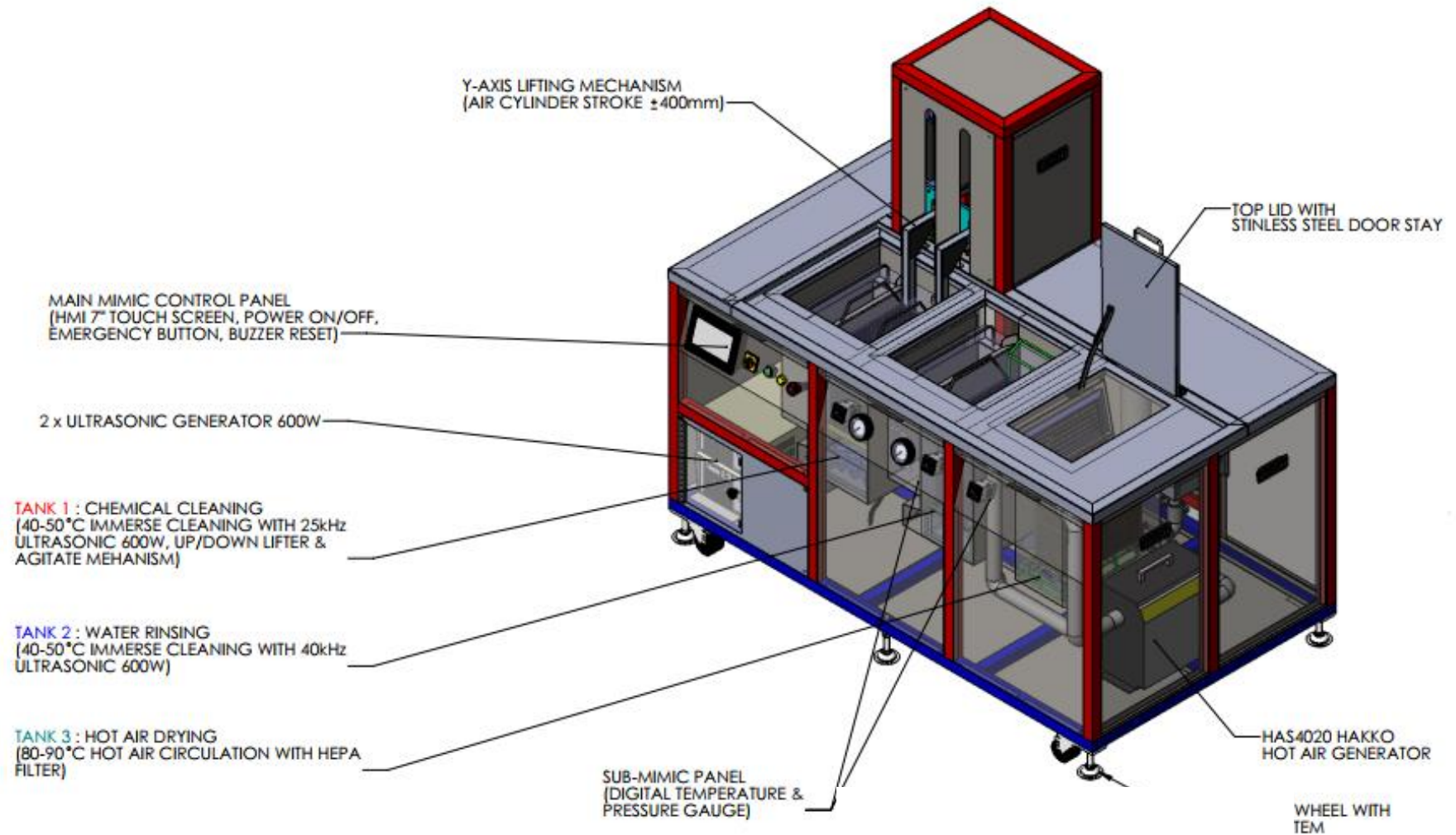


EMERGENCY STOP BUTTON



CHECK VALVE

1.3 MACHINE LAYOUT



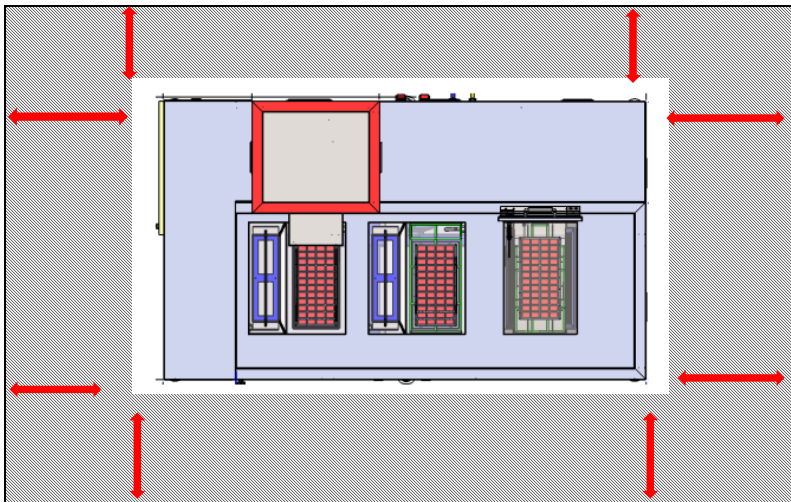
1.4 SERVICING AREA (DONE)

TIPS WHEN SERVICING (How to put the machine into safe condition before maintenance):



1. **TURN OFF** the machine with normal on/off sequence.
2. Make sure that the Main AC supply is **OFF**.
3. Keep the Main AC supply plug **CLOSE TO THE MACHINE** such that others can notice the machine is being serviced.

Dimension is in millimeter (mm)



1000mm on **each side** is required empty and available for the maintenance people to perform their job.

HOW TO OPERATE THE MACHINE

**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH
DRYING**

PROJECT ID: 13688/JST

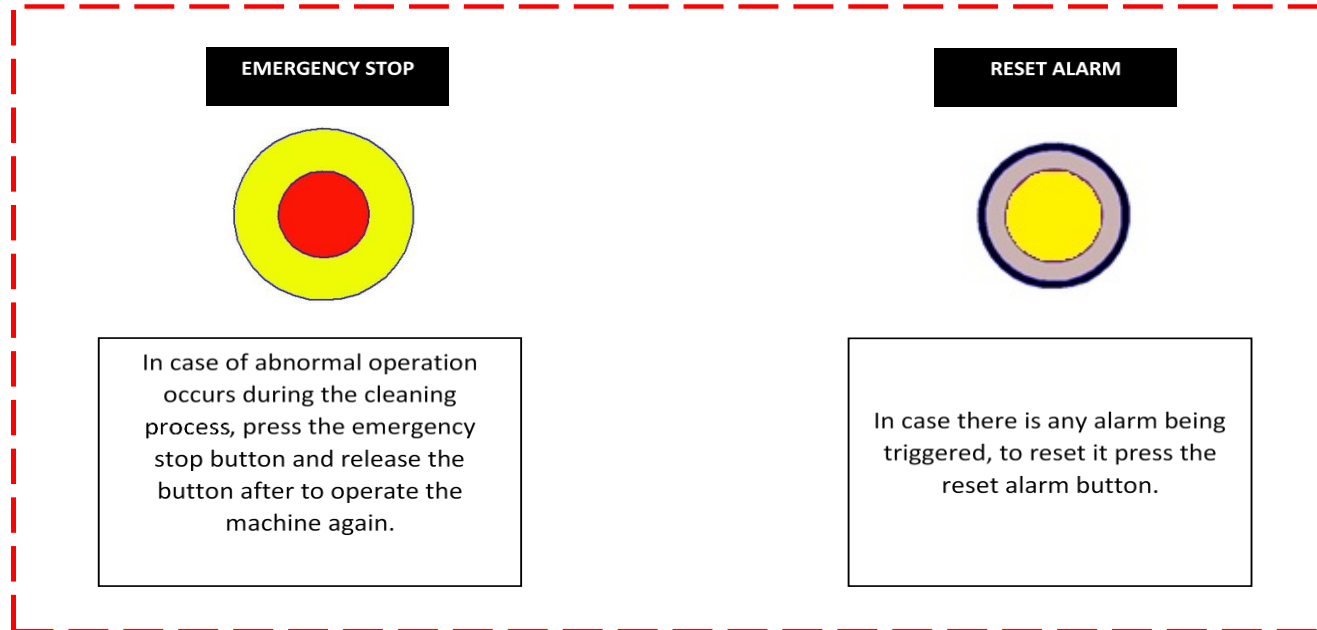
2.1 MACHINE PRE-SETUP



Only authorized person is allowed to operate the control panel.
Misuse of it can cause machine breakdown and injuries.



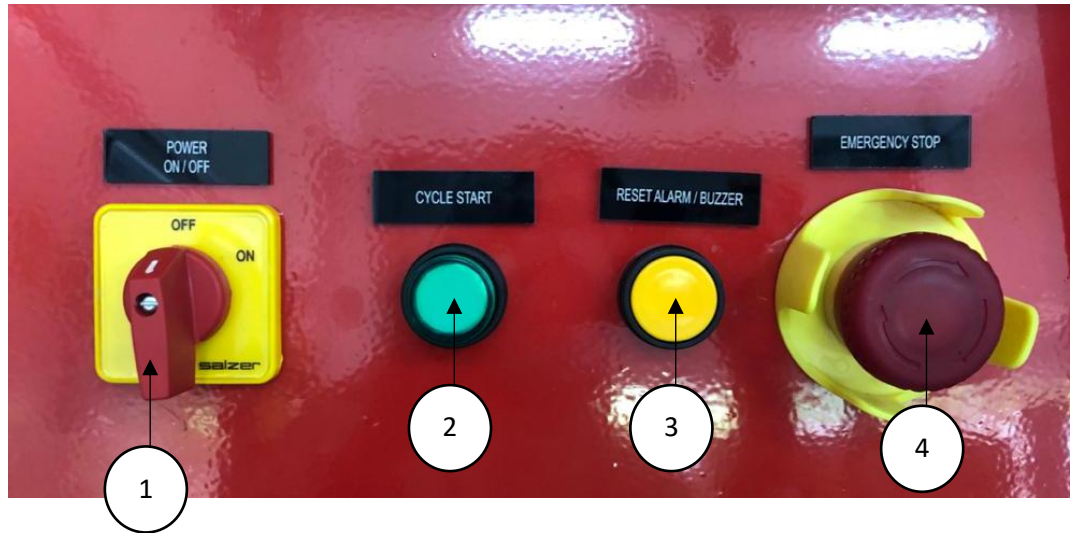
Please only use this button if have any abnormal operation happen.



Please ensure the drainage is always closed before process and during process to avoid leaking or water/chemical spill out

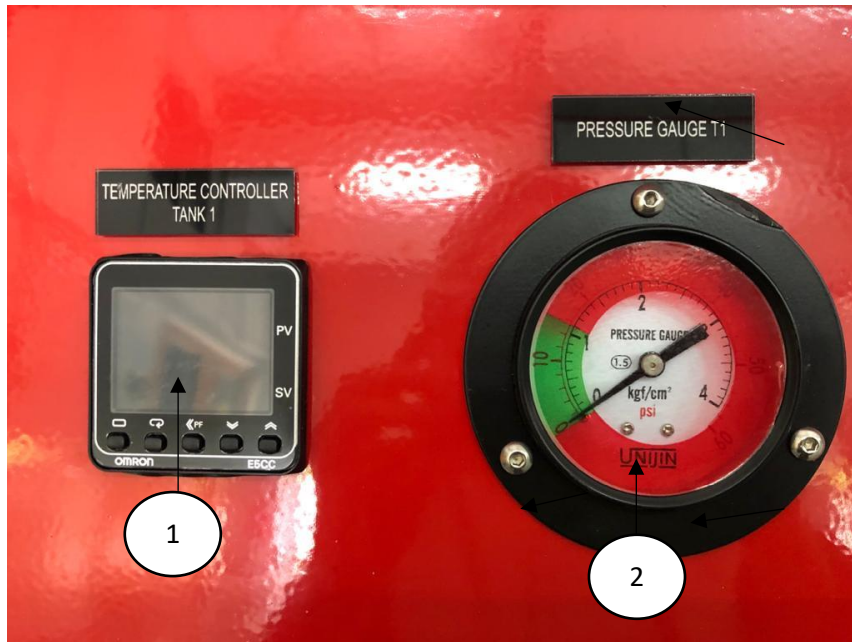
2.2 OPERATION BUTTONS ON MACHINE

2.2.1 OPERATION BUTTONS ON CONTROL PANEL



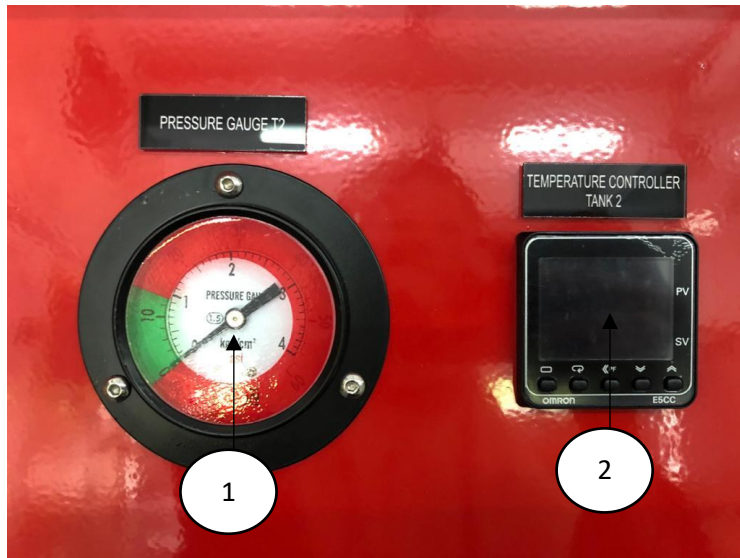
NO	ITEM	DESCRIPTION
1	Power ON/OFF	To switch ON/OFF the power of machine
2	Cycle Start	To start the process cycle
3	Reset Alarm/ Buzzer	To reset the alarm when it occurs.
4	Emergency Stop	If any unusual incident that causes defect towards the product or user, press this button to stop all current operations.

2.2.2 OPERATION BUTTONS FOR STAGE 1



NO	ITEM	DESCRIPTION
1	Temperature Controller Tank 1	To set the temperature for Tank 1
2	Pressure Gauge Tank 1	To display the pressure range to the operator

2.2.3 OPERATION BUTTONS FOR STAGE 2



NO	ITEM	DESCRIPTION
1	Pressure Gauge Tank 2	To display the pressure range to the operator
2	Temperature Controller Tank 2	To set the temperature for tank 2

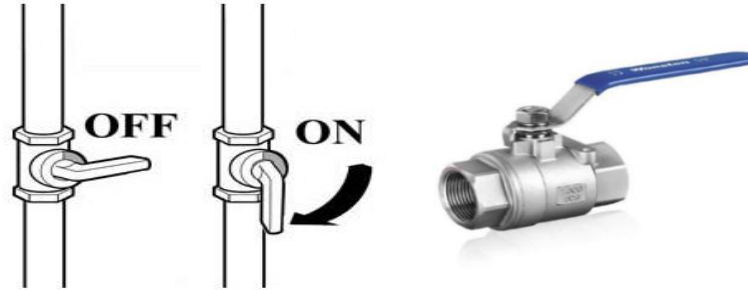
2.2.4 OPERATION BUTTONS FOR STAGE 3



NO	ITEM	DESCRIPTION
1	Emergency Stop	If any unusual incident that causes defect towards the product or user, press this button to stop all current operations.
2	Temperature Controller Tank 3	To set the temperature for tank 3

2.3 BALL VALVE CONDITIONS

BALL VALVE



COLOUR CODE FOR PIPING FLOW

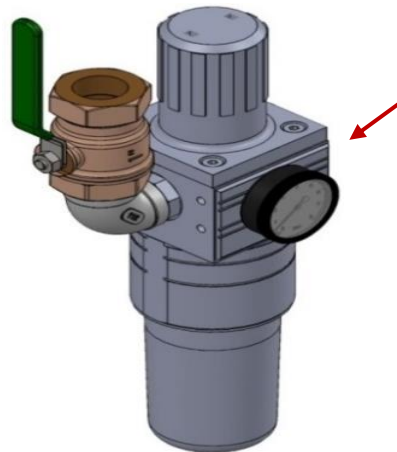
	COLD AIR
	HOT AIR
	WATER
	CHEMICAL

TOGGLE (BLACK) – open half / depend on flow

NORMALLY OPEN (GREEN) – always open

NORMALLY CLOSE (RED) – always close

AIR FILTER REGULATOR



Ensure that the incoming air supply pressure is between
5 - 6 bar.

STATION	DESCRIPTION	VALVE NO	CONDITION
INCOMING SUPPLY	WATER INLET	BV 01	NORMALLY OPEN
	AIR INLET	BV 02	NORMALLY OPEN
STATION 1: IMMERSE CLEANING	WATER INLET	BV 04	NORMALLY OPEN
	2 WAY (DI WATER REFILL)	AV 02	
	TO PUMP	BV 17	NORMALLY OPEN
	TO FILTER	BV 15	NORMALLY OPEN
	TO TOP SPAGER	BV 13	TOGGLE
	TO TANK (BOTTOM)	BV 14	TOGGLE
	TANK OUTLET	BV 16	NORMALLY CLOSED
	SUBTANK OUTLET	BV 18	NORMALLY CLOSED
	DRAINAGE	BV 19	NORMALLY CLOSED
STATION 2: CLEANING & RINSING	WATER INLET	BV 03	TOGGLE
	2 WAY (DI WATER REFILL)	AV 01	
	TO PUMP	BV 08	NORMALLY OPEN
	TO FILTER	BV 09	NORMALLY OPEN
	TO TOP SPAGER	BV 05	TOGGLE
	TO TANK (BOTTOM)	BV 06	TOGGLE
	TANK OUTLET	BV 07	NORMALLY CLOSED
	SUBTANK OUTLET	BV 10	NORMALLY CLOSED
	OVERFLOW OUTLET	BV 22	NORMALLY CLOSED
	OVERFLOW DRAINAGE	BV 21	NORMALLY CLOSED
	DRAINAGE	BV 11	NORMALLY CLOSED

MACHINE PROCEDURE

**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH
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PROJECT ID: 13688/JST

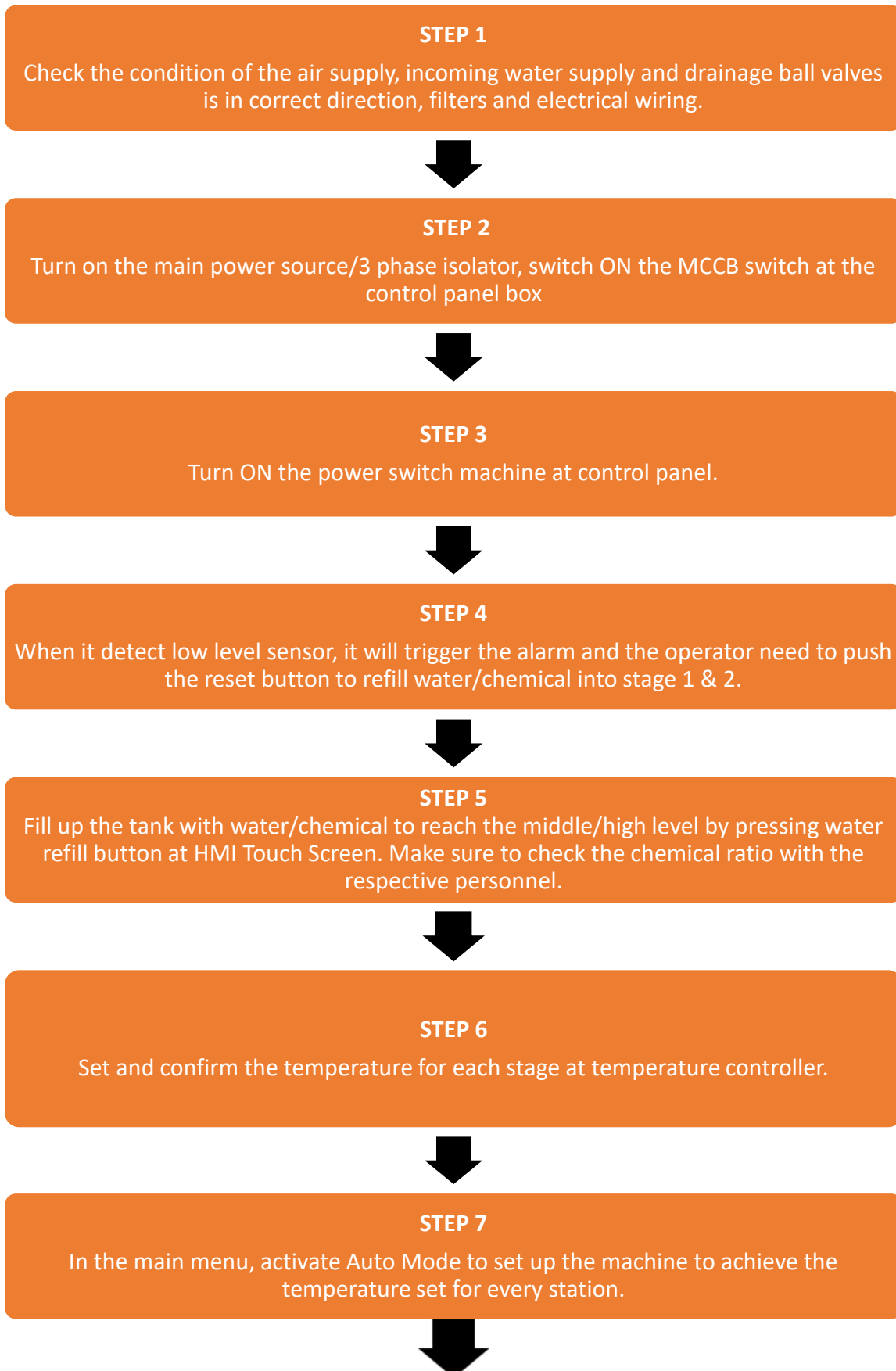
3.1 PROCESS FEATURES

PROCESS	CONDITION
STATION 1 : IMMERSE CLEANING	SMC SMOOTH CYLINDER MODEL : CA2YB40-500Z-A93 (STROKE : 500 mm)
	HYPHONIC GEAR MOTOR DRIVE MODEL : RNYM02-1320-50, MOTOR SPEC: 0.2KW, 3PH, 4P, 415V, 50Hz, 1450rpm RATIO: 50, SF: 2.00 OUTPUT SPEED: 29.0rpm, OUTPUT TORQUE: 56.1N.m BRAND: SUMITOMO
	ULTRASONIC GENERATOR SUG-III MODEL: SUG-MARK-III, POWER: 600W, FREQUENCY: 25kHz, SIZE: 370mm x 290mm x 150mm (L X W X H), CABLE LENGTH: 2MTR
	ULTRASONIC VIBRATOR CASING MATERIAL: SUS304 X 2MM THICKNESS WITH HARD CHROME FINISH POWER : 600W, FREQUENCY : 25 kHz TRANSDUCER QUANTITY : 12 UNIT OVERALL SIZE : 330MM(L) X 190MM(W) X 100MM(H) CABLE LENGTH : 3 METER SERIAL NUMBER: SI-1868
	SHAFT SUPPORT SK25
	LINEAR BALL BUSHING SC25WUUN
	PP FLOAT SENSOR SFS-VF 50W 200VDC

	<p>SS304 SCREW IMMERSION HEATER C/W BAKELITE COVER SPEC: 2KW / 415V / 3P / 50Hz SIZE: DIA ø11.2MM X 350MM (UL) X 3 ELEMENTSWITH 2" BSP SUS304 PLUG & BAKELITE COVER</p>
	<p>THERMOSENSOR C/W 1/4" BSP & 1 METER CABLE PTA PT100 OHM Dia 1/4" x 4"LG</p>
	<p>STAINLESS STEEL HORIZONTAL MULTISTAGE CENTRIFUGAL PUMP MODEL: TPH-2T-2K-S SERIES, POWER: 380~440V 3P 50HZ , MECHANICAL SEAL : SILICON , CARBIDE , O-RING : EPDM</p>
	<p>UNIJIJN / GENERAL PRESSURE GAUGE 1/4" MODEL P110 'BD' 1/4" BSPT BACK CONNECTION WITH PANEL MOUNTING 0-4 BAR 2 1/2"</p>
	<p>PP FILTER HOUSING - BLUE COLOR SIZE: 4" X 10"L, INLET/OUTLET: 1/2", PP BLUE</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">STATION 2 : WATER IMMERSE RINSING</p>	<p>PP FLOAT SENSOR SFS-VF 50W 200VDC</p>
	<p>SS304 SCREW IMMERSION HEATER C/W BAKELITE COVER SPEC: 2KW / 415V / 3P / 50Hz SIZE: DIA ø11.2MM X 350MM (UL) X 3 ELEMENTSWITH 2" BSP SUS304 PLUG & BAKELITE COVER</p>
	<p>THERMOSENSOR C/W 1/4" BSP & 1 METER CABLE PTA PT100 OHM Dia 1/4" x 4"LG</p>
	<p>STAINLESS STEEL HORIZONTAL MULTISTAGE CENTRIFUGAL PUMP MODEL: TPH-2T-2K-S SERIES, POWER: 380~440V 3P 50HZ , MECHANICAL SEAL : SILICON , CARBIDE , O-RING : EPDM</p>
	<p>UNIJIJN / GENERAL PRESSURE GAUGE 1/4" MODEL P110 'BD' 1/4" BSPT BACK CONNECTION WITH PANEL MOUNTING 0-4 BAR 2 1/2"</p>

STATION 3: HOT AIR BLOW DRYING	<p>PP FILTER HOUSING - BLUE COLOR SIZE: 4" X 10"L, INLET/OUTLET: 1/2", PP BLUE</p>
	<p>ULTRASONIC GENERATOR SUG-III MODEL: SUG-MARK-III, POWER: 600W, FREQUENCY: 40kHz, SIZE: 370mm x 290mm x 150mm (L X W X H), CABLE LENGTH: 2MTR</p>
	<p>ULTRASONIC VIBRATOR CASING MATERIAL: SUS304 X 2MM THICKNESS WITH HARD CHROME FINISH POWER : 600W, FREQUENCY : 40 kHz TRANSDUCER QUANTITY : 12 UNIT OVERALL SIZE : 330MM(L) X 190MM(W) X 100MM(H) CABLE LENGTH : 3 METER SERIAL NUMBER: SI-1869</p>
	<p>HAKKO HOT AIR GENERATOR HAS2052S 5kW/200V/3Ph/50Hz</p>
	<p>TROX / ALUMINIUM AIR VENTILATION GRILLE WITH DROPLET SHAPED BLA MODEL: AT-A/ 325 x 225 /P11/P0-RAL9010</p>
	<p>HEPA FILTER 1FRSI-50-1SIHT FILTER CLASS: H13, 305mmWx305mmHx150mmD, AIRFLOW: 90, PRESSURE DROP: 250Pa</p>
	<p>U8 2 PLY SILICONE DUCT HOSE SIZE: 2" x 4METER</p>
	<p>THERMOSENSOR C/W 1/4" BSP & 1MTR CABLE PTA K-TYPE Dia 1/4" x 2"LG</p>

3.2 PROCESS GUIDELINE



STEP 8

While waiting for the temperature to reach the desired setting, machine preparation start button will be blinking and the green tower light also be blinking.



STEP 9

When the desired temperature has reached, the machine preparation start button will stop blinking and indicating the machine is ready to start the process cycle.



STEP 10

Load the parts into the basket and place the basket at the lifter.



STEP 11

At Press the cycle start button to start the process.

***Remarks: Cycle is depend on setting operation timer**



STEP 12

The cleaning process is activated (timer counting).



STEP 13

After settle the cleaning process, make sure pick up the basket.



STEP 13

Repeat step 10 to 13 for every cleaning process of the parts.

3.3 OPERATION PROCEDURE

3.3.1 GENERATOR INSTALLATION PROCEDURE



Step 1

The picture shows the female connector for ultrasonic output.



Step 2

The picture shows the male ultrasonic output socket from the generator.



Step 3

Connect the female ultrasonic output to the male output socket.



Step 4

The picture shows the power female connector for the generator.



Step 5

The picture shows the power supply male socket for the generator.



Step 6

Plug in the female power cord to the male power supply socket.



Step 7

The picture shows the (4-pin) remote female connector.



Step 8

The picture shows the (4-pin) male remote socket.



Step 9

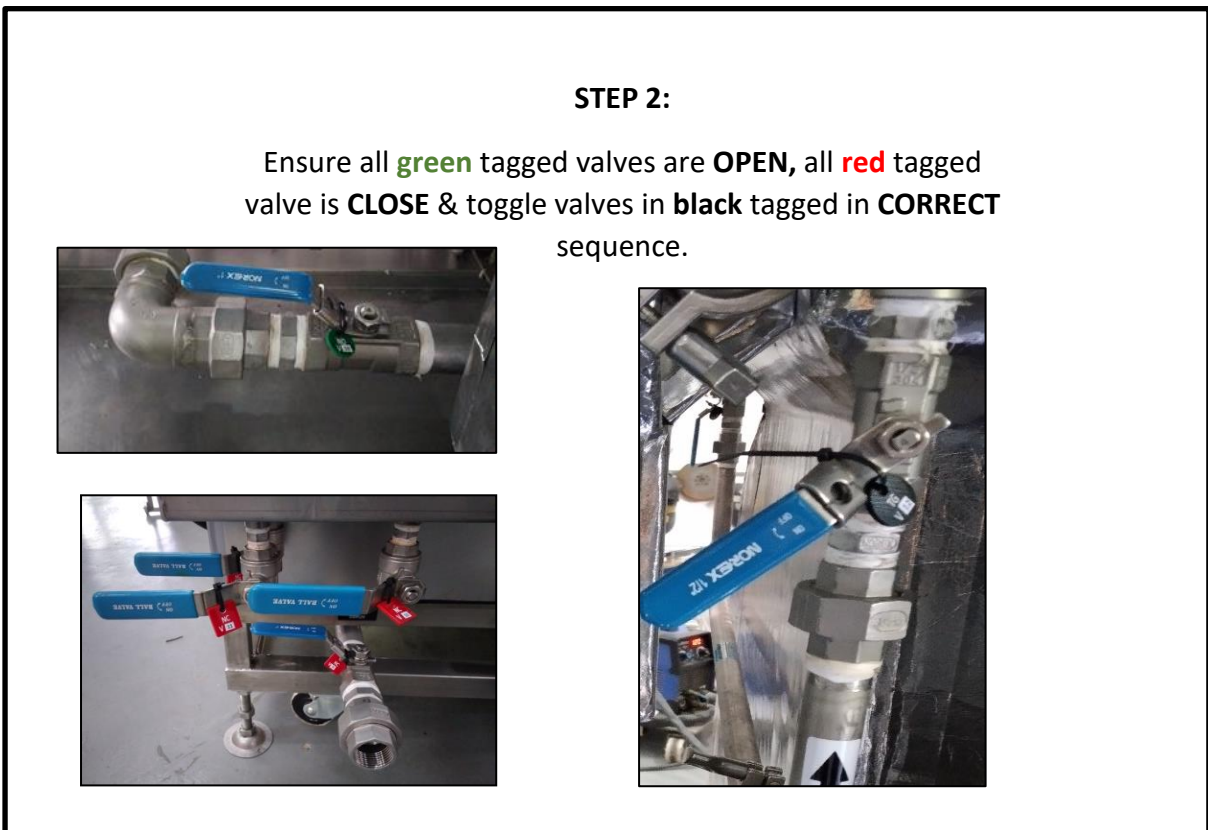
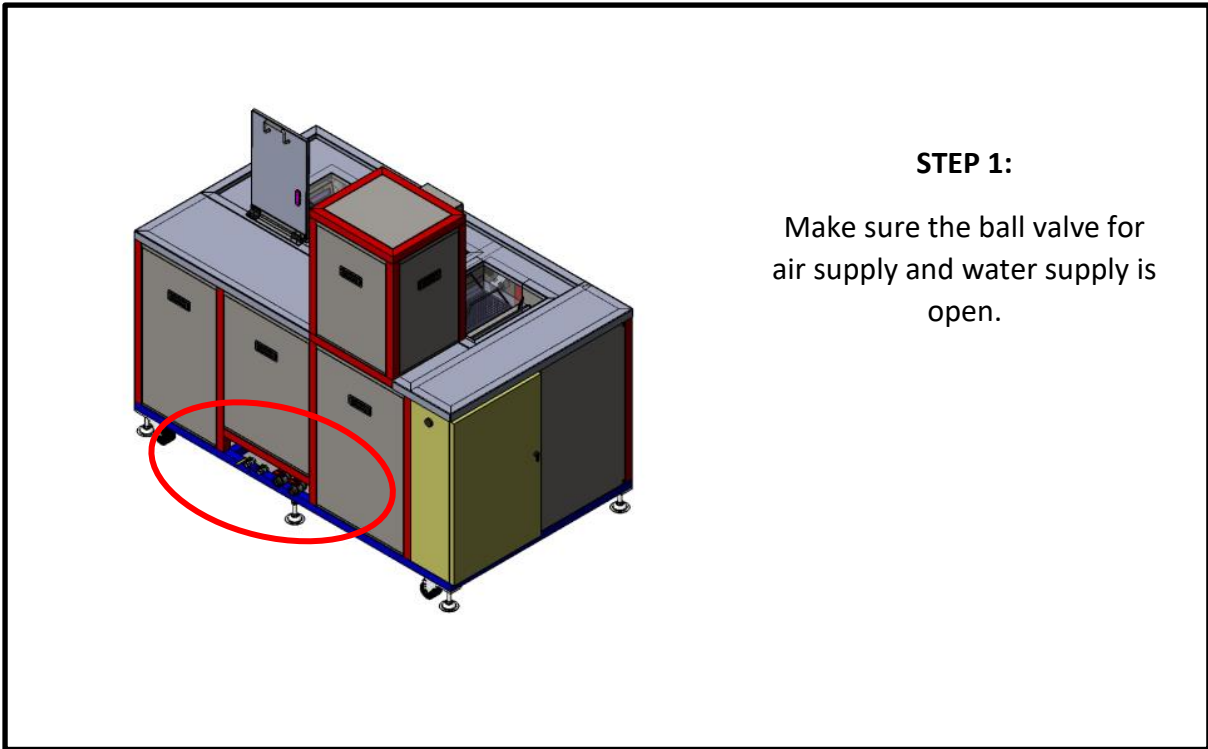
Connect the female remote head to the male remote socket.



STEP 10

Generator installation complete.

3.3.2 CHECK UP PROCEDURE





Step 3:

Check for any leakage throughout the machine such as the pipelines, filter, tank and pump before switching the machine on and off.

3.3.3 WATER REFILL PROCEDURE



STEP 1

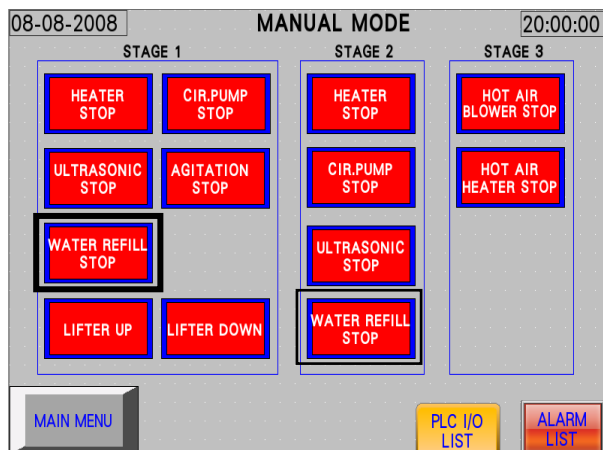
Switch ON the power of machine.



STEP 2

When low sensor detects low water level, it will trigger alarm. Then, the operator needs to push buzzer reset to fill the water into the tank.

***Remarks: Make sure the ball valve is in correct position**



STEP 3

At the Manual Mode, Select Water Refill for Stage 1 and Stage 2. Then, the water will start refill in tank 1 and tank 2.

3.3.6 START UP PROCEDURE



*THE IMAGE IS FOR REFERENCE PURPOSE

STEP 1

Turn on the main power/isolator 3 phase.
This main power/isolator 3 phase is from customer side.



STEP 2

Switch ON MCCB at the control panel.



STEP 3

Switch ON the power switch at the machine.

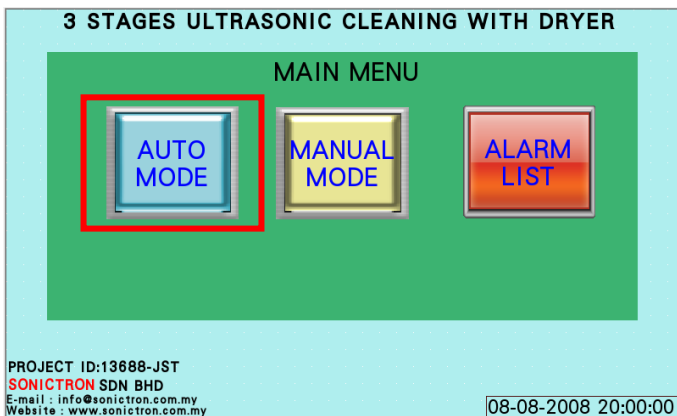
STEP 4



Set the temperature by pressing up or down button (red color box). Do not change the temperature throughout the process.

When the temperature reaches the set temperature. The machine is reading to be operated in auto mode.

STEP 5

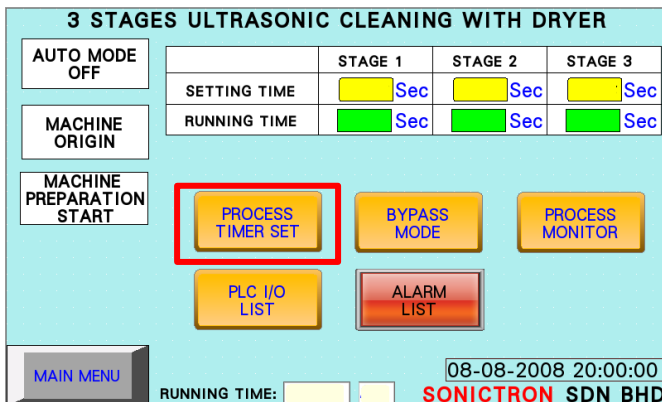


After turn on the Power Switch, the touch screen will turn on and appear 3 mode:

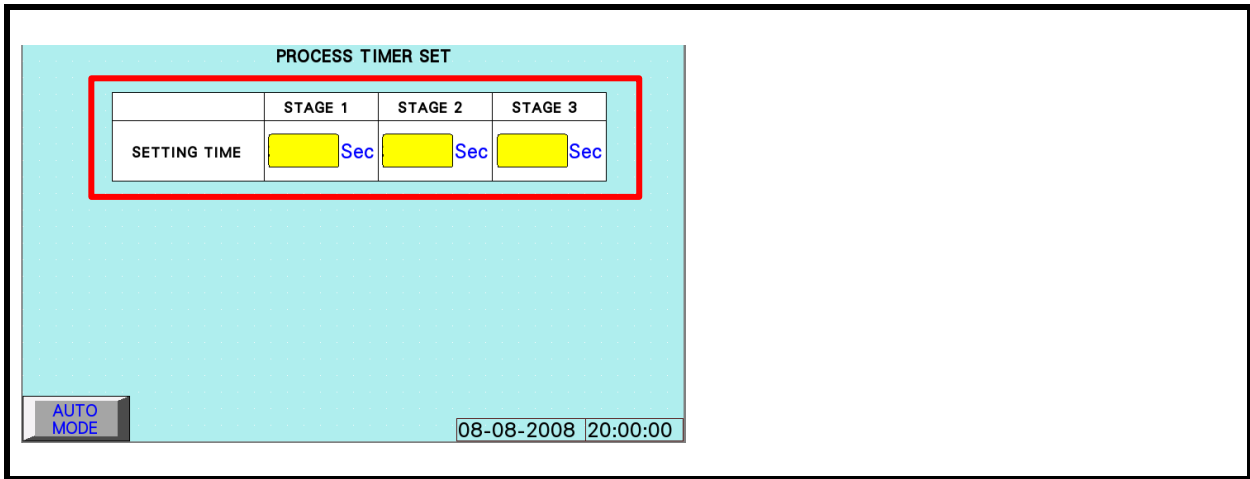
- AUTO MODE**
- SUPERVISOR MODE**
- ALARM**

Please select **AUTO MODE** to run the auto

STEP 6



Set the time by select PROCESS TIMER SET on Auto Mode. Then set time for each of the stage.



1

2

3

	STAGE 1	STAGE 2	STAGE 3
SETTING TIME	<input type="text"/> Sec	<input type="text"/> Sec	<input type="text"/> Sec
RUNNING TIME	<input type="text"/> Sec	<input type="text"/> Sec	<input type="text"/> Sec

PROCESS TIMER SET BYPASS MODE PROCESS MONITOR

PLC I/O LIST ALARM LIST

AUTO MODE OFF

MACHINE ORIGIN

MACHINE PREPARATION START

MAIN MENU

RUNNING TIME: 08-08-2008 20:00:00 SONICTRON SDN BHD

STEP 7

Select these options on the touch screen turn ON the Auto Mode.

Steps to click the button:

- AUTO MODE OFF:** To switch on/off the auto mode.
- MACHINE ORIGIN OFF:** To ensure the machine condition (lifter) in origin stated before operated.
- MACHINE PREPARATION OFF:** To switch on/off the preparation mode. All the automation process will be activated. The light of machine



STEP 8

After the temperature reach at desired setting value, place the basket at the lifter.



STEP 9

Then, push the cycle start to start the cleaning process.

3.3.7 TURNING OFF PROCEDURE



STEP 1

Make sure the process cycle had been completed.
No basket left in the machine.

STEP 2

Steps to click the button to turn off:

1. MACHINE PREPARATION OFF
2. MACHINE ORIGIN OFF
3. AUTO MODE OFF

Make sure there are no basket left in the machine before turning off the machine.

Make sure the lifter is on its original place. By clicking the machine origin button.

- 3
- 2
- 1

3 STAGES ULTRASONIC CLEANING WITH DRYER

	STAGE 1	STAGE 2	STAGE 3
SETTING TIME	Sec	Sec	Sec
RUNNING TIME	Sec	Sec	Sec

MACHINE PREPARATION START

PROCESS TIMER SET BYPASS MODE PROCESS MONITOR

PLC I/O LIST ALARM LIST

MAIN MENU 08-08-2008 20:00:00

RUNNING TIME: SONICTRON SDN BHD



STEP 3

Switch OFF **POWER** button



STEP 4

Switch off the main power supply/isolator 3 phase.

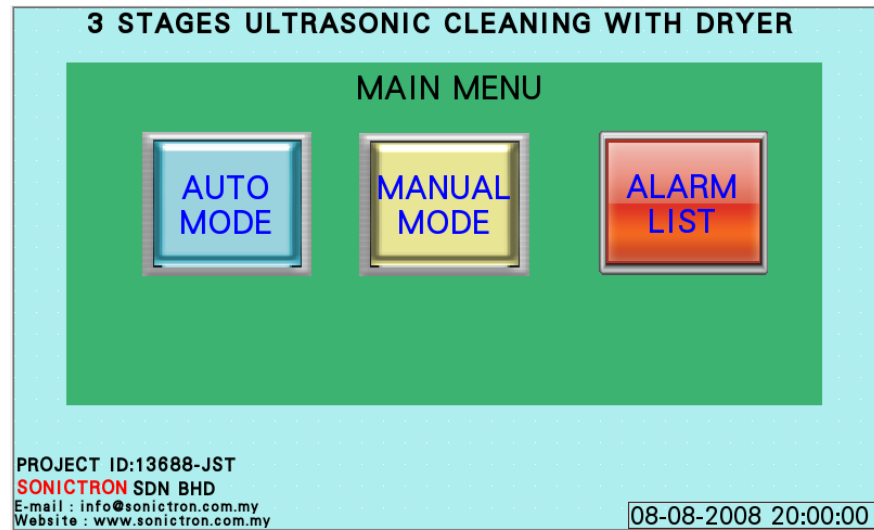
*THE IMAGE IS FOR REFERENCE PURPOSE

TOUCH SCREEN MANUAL

**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH
DRYING**

PROJECT ID: 13688/JST

SCREEN 1



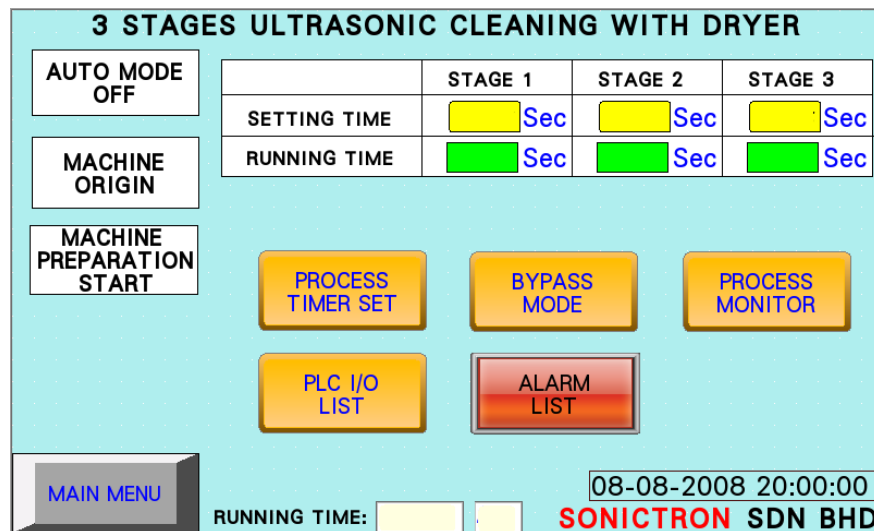
This screen shows the Main Menu to begin the operating procedures. This Menu consists of three options, which are:

AUTO MODE: To begin the cleaning operation, click this button to direct the user to **SCREEN 2**

MANUAL MODE: Directs the user to **SCREEN 13**

ALARM LIST: Shows user any warning messages during machine operations. Directs to **SCREEN 10**

SCREEN 2



This screen provides the indication of each stages process timer (sec) to be performed for Auto Mode.

AUTO MODE: Indicated the activation of the mode.

MACHINE ORIGIN: To ensure the machine condition (lifter) in origin stated before operated.

MACHINE PREPARATION: Indicated the preparation is activated. The **MACHINE PERAPARATION** button will stop blinking when it reached the desired parameter.

MAIN MENU: Direct to **SCREEN 1**

RUNNING TIME: Shows users how many hours and minute of machine running.

PROCESS TIMER SET: To set the time process for each stages. Directs to **SCREEN 8**

BY PASS MODE: Directs to **SCREEN 6**

PROCESS MONITOR : Direct to **SCREEN 3**

PLC I/O LIST: The list of PLC I/O. Direct to **SCREEN 9**

ALARM LIST: Shows user any warning messages during machine operations. Directs to **SCREEN 10**

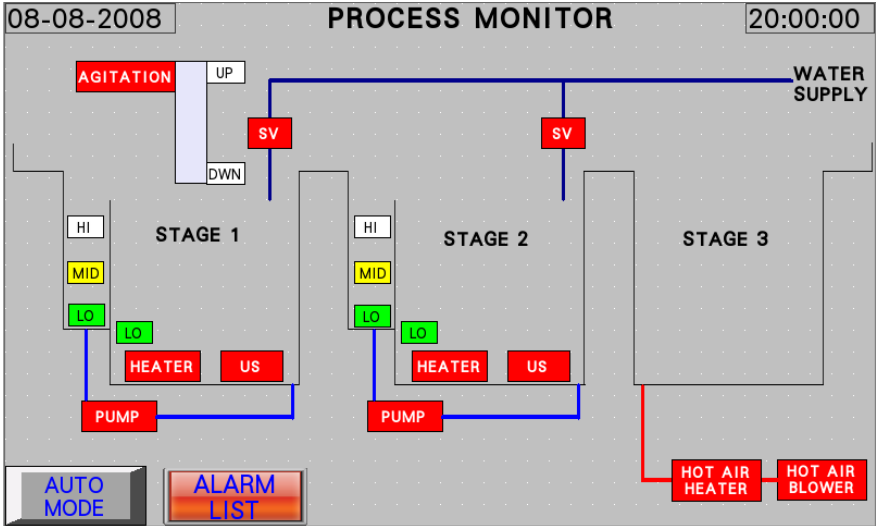
SCREEN 3

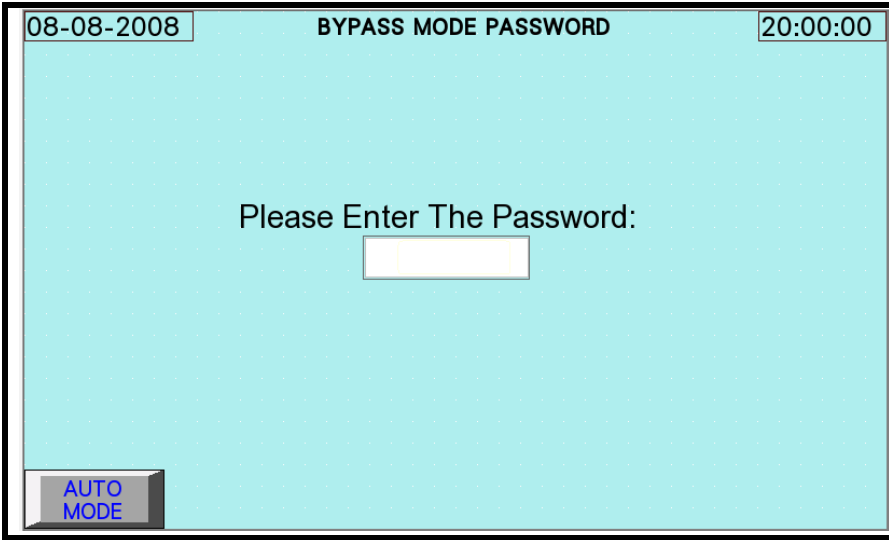
This screen shows the machine layout to indicate the machine components that are functioning and not functioning during the process.

Colour	Level sensor	Agitation Up & Down	Pump & Others
Yellow	Middle Level	Not operated	-
Green	Optimum level	Operated	Operated
White	Below level	-	-
Red	Low Level	-	Not operated

AUTO MODE: Direct to **SCREEN 2**

ALARM LIST: Shows user any warning messages during machine operations. Directs to **SCREEN 10**

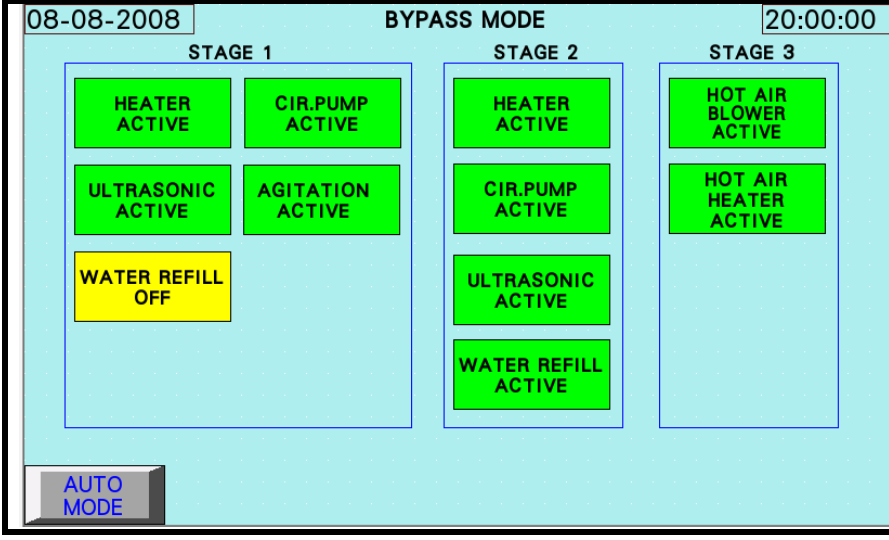




SCREEN 5

To enter the **BYPASS MODE** required a password.

(ONLY AUTHORIZED PERSON ALLOWED TO ENTER THIS MODE.)

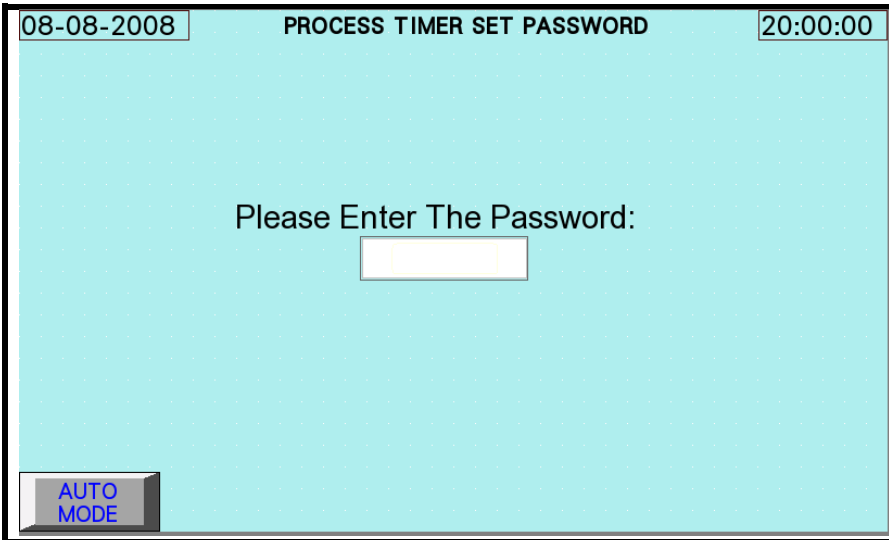


SCREEN 6

Enter the **BYPASS MODE** to switch ON/OFF the machine components **INDIVIDUALLY** if necessary

AUTO MODE: Direct to **SCREEN 2**

(ONLY AUTHORIZED PERSON ALLOWED TO ENTER THIS MODE.)



SCREEN 7

To enter the **PROCESS TIME SET**, a password needs to be inserted.

(ONLY AUTHORIZED PERSON ALLOWED TO ENTER THIS MODE.)

PROCESS TIMER SET

	STAGE 1	STAGE 2	STAGE 3
SETTING TIME	<input type="text"/> Sec	<input type="text"/> Sec	<input type="text"/> Sec

SCREEN 8

This screen enables to set the timer for each of stages/process by each station in seconds.

AUTO MODE: Direct to **SCREEN 2**

(ONLY AUTHORIZED PERSON ALLOWED TO ENTER THIS MODE.)

AUTO MODE 08-08-2008 20:00:00


PLC I/O LIST-1

- X00.00 STAGE 1 IMMERSE CLEANING HEATER OVERHEAT
- X00.01 STAGE 1 IMMERSE CLEANING HEATER STANDBY
- X00.02 STAGE 1 IMMERSE CLEANING HEATER ON/OFF
- X00.03 STAGE 2 CLEANING & RINSING HEATER OVERHEAT
- X00.04 STAGE 2 CLEANING & RINSING HEATER STANDBY
- X00.05 STAGE 2 CLEANING & RINSING HEATER ON/OFF
- X00.06 STAGE 3 DRYER TANK HEATER OVERHEAT
- X00.07 STAGE 3 DRYER TANK HEATER STANDBY
- X00.08 STAGE 3 DRYER TANK HEATER ON/OFF
- X00.09 STAGE 3 HOT AIR GENERATOR BOX THERMOSTAT-1
- X00.10 STAGE 3 HOT AIR GENERATOR BOX THERMOSTAT-2
- X00.11 RESERVED
- X01.00 STAGE 1 IMMERSE CLEANING CIR PUMP TRIP
- X01.01 STAGE 1 AGITATION MOTOR TRIP
- X01.02 STAGE 2 CLEANING & RINSING CIR PUMP TRIP
- X01.03 STAGE 3 DRYER HOT AIR BLOWER TRIP
- X01.04 CONTROL PANEL EMERGENCY STOP PB

SCREEN 9

This screen shows user the list of programming commands in the machines and to refer the auto mode PLC list to the electrical control box.

AUTO MODE: Directs user to **SCREEN 2**

AUTO MODE 

ALARM MESSAGES

08-08-2008 20:00:00

DATE & TIME	MESSAGES



SCREEN 10

Screen shows alarm message when operated under **AUTO MODE**. This screen shows indicating alarms that have been triggered during abnormal operation.

AUTO MODE: Directs user to **SCREEN 2**

ALARM HISTORY: Direct user to **SCREEN 11**

UP/DOWN ARROW BUTTON: To scroll the alarm active list up/down.

AUTO MODE **ALARM HISTORY**  

08-08-2008
ALARM HISTORY
20:00:00

DATE & TIME	MESSAGES

AUTO MODE

ALARM ACTIVE

CLEAN EVENT

↑

↓

SCREEN 11

This screen shows the alarm history that had happen.

AUTO MODE: Directs user to **SCREEN 2**

ALARM ACTIVE: Directs user to **SCREEN 10**

UP/DOWN ARROW BUTTON: To scroll the alarm active list up/down.

✕

Are you sure you
want to do this operation?

YES

NO

SCREEN 12

The user can exit the **AUTO MODE** by choose on **MAIN MENU** in **SCREEN 2**.

YES: To exit the **AUTO MODE** and direct user to **SCREEN 1**

NO: To cancel from exiting the auto mode.

3 STAGES ULTRASONIC CLEANING WITH DRYER

MAIN MENU

AUTO
MODE

MANUAL
MODE

ALARM
LIST

PROJECT ID:13688-JST
SONICTRON SDN BHD
 E-mail : info@sonictron.com.my
 Website : www.sonictron.com.my

08-08-2008 20:00:00

SCREEN 13

To enter the **MANUAL MODE**, select **MANUAL MODE** on **MAIN MENU** in **SCREEN 1**.

SCREEN 14

This screen enables the user to choose switch ON/OFF the machine components INDIVIDUALLY for every stage, if necessary.

STAGE 1 :

HEATER STOP: To start/stop the heater at tank 1 manually.

CIRCULATIONPUMP STOP: To start/stop the circulation pump at tank 1 manually.

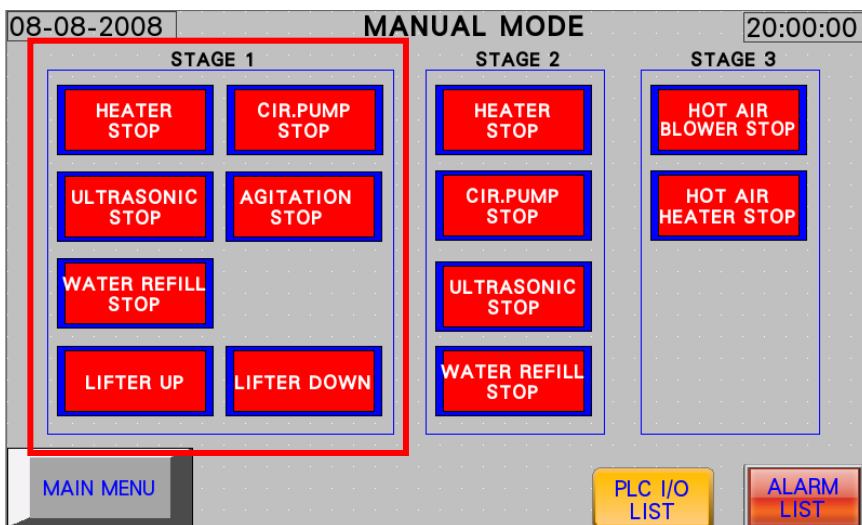
ULTRASONIC STOP: To start/stop the ultrasonic at tank 1 manually.

AGITATION STOP: To start/stop the agitation process at tank 1 manually..

WATER REFILL STOP: To start/stop the water refill process at tank 1 manually.

LIFTER UP: To move lifter in UP position at tank 1 manually.

LIFTER DOWN: To move lifter in DOWN position at tank 1 manually.



SCREEN 15

This screen enables the user to choose switch ON/OFF the machine components INDIVIDUALLY for every stage, if necessary.

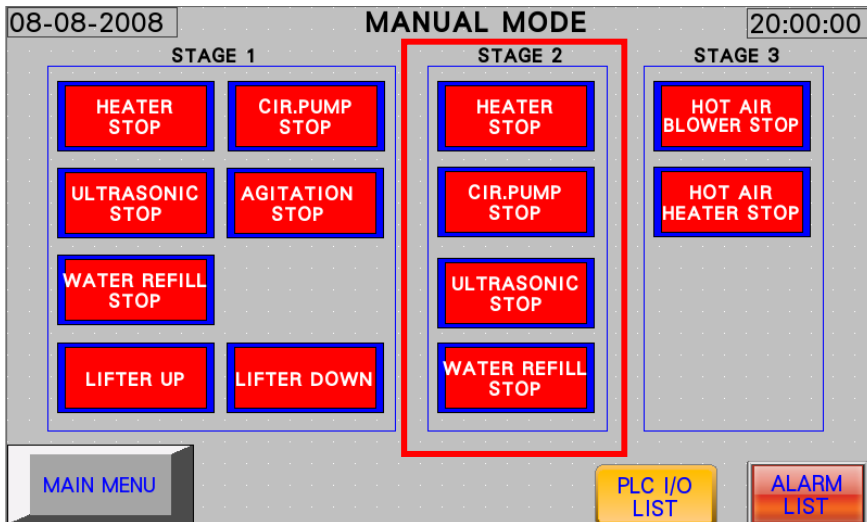
STAGE 2 :

HEATER STOP: To start/stop the heater at tank 2 manually.

CIRCULATIONPUMP STOP: To start/stop the circulation pump at tank 2 manually.

ULTRASONIC STOP: To start/stop the ultrasonic at tank 2 manually.

WATER REFILL STOP: To start/stop the water refill process at tank 2 manually.



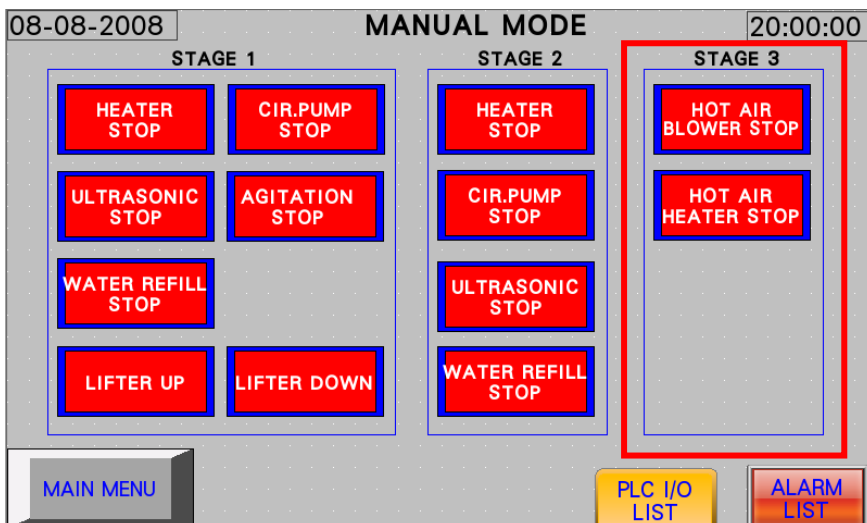
SCREEN 15

This screen enables the user to choose switch ON/OFF the machine components INDIVIDUALLY for every stage, if necessary.

STAGE 3 :

HOT AIR BLOWER STOP: To start/stop the hot air blower at tank 3 manually.

HOT AIR HEATER STOP: To start/stop the hot air heater at tank 3 manually.



SCREEN 16

PLC I/O LIST-1

<input type="checkbox"/>	X00.00	STAGE 1	IMMERSE CLEANING HEATER OVERHEAT
<input type="checkbox"/>	X00.01	STAGE 1	IMMERSE CLEANING HEATER STANDBY
<input type="checkbox"/>	X00.02	STAGE 1	IMMERSE CLEANING HEATER ON/OFF
<input type="checkbox"/>	X00.03	STAGE 2	CLEANING & RINSING HEATER OVERHEAT
<input type="checkbox"/>	X00.04	STAGE 2	CLEANING & RINSING HEATER STANDBY
<input type="checkbox"/>	X00.05	STAGE 2	CLEANING & RINSING HEATER ON/OFF
<input type="checkbox"/>	X00.06	STAGE 3	DRYER TANK HEATER OVERHEAT
<input type="checkbox"/>	X00.07	STAGE 3	DRYER TANK HEATER STANDBY
<input type="checkbox"/>	X00.08	STAGE 3	DRYER TANK HEATER ON/OFF
<input type="checkbox"/>	X00.09	STAGE 3	HOT AIR GENERATOR BOX THERMOSTAT-1
<input type="checkbox"/>	X00.10	STAGE 3	HOT AIR GENERATOR BOX THERMOSTAT-2
<input type="checkbox"/>	X00.11		RESERVED
<input type="checkbox"/>	X01.00	STAGE 1	IMMERSE CLEANING CIR PUMP TRIP
<input type="checkbox"/>	X01.01	STAGE 1	AGITATION MOTOR TRIP
<input type="checkbox"/>	X01.02	STAGE 2	CLEANING & RINSING CIR PUMP TRIP
<input type="checkbox"/>	X01.03	STAGE 3	DRYER HOT AIR BLOWER TRIP
<input type="checkbox"/>	X01.04		CONTROL PANEL EMERGENCY STOP PB

MANUAL
MODE



This screen shows user the list of programming commands in the machines and to refer the manual mode PLC list to the electrical control box.

SCREEN 17

MANUAL MODE✕

Are you sure you want to do this operation?

The user can exit the **MANUAL MODE** by clicking on **MAIN MENU** in **SCREEN 2**.

YES: To exit the **MANUAL MODE** and direct user to **SCREEN 1**

NO: To cancel from exiting the manual mode.

MACHINE PART LISTS

**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH
DRYING**

PROJECT ID: 13688/JST

5.1 STANDARD MECHANICAL PART LIST

STATION/ PROCESS	BRAND	DESCRIPTION	MODEL / PART NO / SIZE	QUANTITY	
STATION 1: IMMERSE CLEANING	SS304	ULTRASONIC VIBRATOR	CASING MATERIAL: SUS304 X 2MM THICKNESS WITH HARD CHROME FINISH POWER : 600W, FREQUENCY : 25 kHz TRANSDUCER QUANTITY : 12 UNIT OVERALL SIZE : 330MM(L) X 190MM(W) X 100MM(H) CABLE LENGTH : 3 METER SERIAL NUMBER: SI-1868	1	UNIT
	SONICTRON	ULTRASONIC GENERATOR SUG-III	MODEL: SUG-MARK-III, POWER: 600W, FREQUENCY: 25kHz, SIZE: 370mm x 290mm x 150mm (L X W X H), CABLE LENGTH: 2MTR	1	UNIT

	PP	PP FILTER HOUSING - BLUE COLOR	SIZE: 4" X 10"L, INLET/OUTLET: 1/2", PP BLUE	1	UNIT
	SS304	SS304 / SCREW IMMERSION HEATER	2" BSP THREAD, 2kW/415V/3pH/50Hz, COIL LENGTH : 350MM	1	UNIT
	WALRUS	STAINLESS STEEL HORIZONTAL MULTISTAGE CENTRIFUGAL PUMP	MODEL: TPH-2T-2K-S SERIES, POWER: 380~440V 3P 50HZ , MECHANICAL SEAL : SILICON , CARBIDE , O-RING : EPDM	1	UNIT
	UNIJIN	UNIJIJN / GENERAL PRESSURE GAUGE 1/4"	MODEL P110 'BD' 1/4" BSPT BACK CONNECTION WITH PANEL MOUNTING 0-4 BAR 2 1/2"	1	UNIT
	PP- MELTBLOWN	10" PP MELT-BLOWN FILTER CARTRIDGE 20MICRON	PP, 10" 20 MICRON	1	UNIT

STATION 2: CLEANING AND RINSING	PP	PP FILTER HOUSING - BLUE COLOR	SIZE: 4" X 10"L, INLET/OUTLET: 1/2",PP BLUE	1	UNIT
	SS304	SS304 / SCREW IMMERSION HEATER	2" BSP THREAD, 2kW/415V/3pH/50Hz,		
	WALRUS	STAINLESS STEEL HORIZONTAL MULTISTAGE CENTRIFUGAL PUMP	MODEL: TPH-2T-2K-S SERIES, POWER: 380~440V 3P 50HZ , MECHANICAL SEAL : SILICON , CARBIDE , O-RING : EPDM	1	UNIT
	UNIJIN	UNIJIJN / GENERAL PRESSURE GAUGE 1/4"	MODEL P110 'BD' 1/4" BSPT BACK CONNECTION WITH PANEL MOUNTING 0-4 BAR 2 1/2"	1	UNIT
	SS304	ULTRASONIC VIBRATOR	CASING MATERIAL: SUS304 X 2MM THICKNESS WITH HARD CHROME FINISH POWER : 600W, FREQUENCY : 40 kHz TRANSDUCER QUANTITY : 12 UNIT OVERALL SIZE : 330MM(L) X 190MM(W) X 100MM(H) CABLE LENGTH : 3 METER , SERIAL NUMBER: SI-1869	1	UNIT

	SONICTRON	ULTRASONIC GENERATOR SUG-III	MODEL: SUG-MARK-III, POWER: 600W, FREQUENCY: 40kHz, SIZE: 370mm x 290mm x 150mm (L X W X H), CABLE LENGTH: 2MTR	1	UNIT
	PP-MELTBLOWN	10" PP MELT-BLOWN FILTER CARTRIDGE 10MICRON	PP, 10" 10 MICRON	1	UNIT
STATION 3: HOT AIR BLOW DRYING	HAKKO	HAKKO HOT AIR GENERATOR	HAS2052S 5kW/200V/3Ph/50Hz	1	UNIT
	HEPA FILTER	"1FRSI-50-1SIHT FILTER CLASS: H13,	HEPA FILTER	1	UNIT
	TROX	TROX / ALUMINIUM AIR VENTILATION GRILLE WITH DROPLET SHAPED BLADES	MODEL: AT-A/ 325 x 225 /P11/P0-RAL9010	2	UNIT
	-	U8 2 PLY SILICONE DUCT HOSE	SIZE: 2" x 4METER	1	UNIT
	MISUMI	GAS SPRING - MOUNTING ORIENTATION FREE TYPE	FGSS15100B	1	UNIT
	MISUMI	BRACKET FOR GAS SPRING	GFSBR8A	2	UNIT
LIFTER AND AGITATION SYSTEM	AIRTAC	FILTER REGULATOR 1/2" C/W BRACKET & GAUGE	MODEL: GAFR40015S, SIZE: 1/2", BRAND: AIRTAC	1	UNIT
	SUMITOMO	HYPHONIC GEAR MOTOR DRIVE	"MODEL : RNYM02-1320-50, MOTOR SPEC: 0.2KW, 3PH, 4P, 415V, 50Hz, 1450rpm	1	UNIT

	SMC	SMC SMOOTH CYLINDER	MODEL : CA2YB40-500Z-A93 STROKE : 500 mm)	1	UNIT
	KBS	LINEAR BALL BUSHING	SC25WUUN	2	UNIT
	KBS	SHAFT SUPPORT	SK25	2	UNIT
	MISUMI	STAINLESS STEEL ROLLER FOLLOWER PIN- RETAINING RING	MODEL: RFSS17-55, DIA:7 LENGTH:55 MATERIAL:SS304	1	UNIT
	INA	ROLLER FOLLOWER	MODEL: NATR17-PPA OUTER DIA: 40, INNER DIA:17, WIDTH:21,MATERIAL:SUJ2	1	UNIT

5.2 STANDARD ELECTRICAL PART LIST

BRAND	DESCRIPTION	MODEL / PART NO / SIZE	QUANTITY	
PP	PP FLOAT SENSOR	SFS-VF 50W 200VDC	8	UNIT
QPS	TRANSFORMER	THREE PHASE ISOLATION TRANSFORMER C/W METAL CASING	1	UNIT
TOYO	COOLING BLOWER FAN	VIDEO FAN-4" T30S-A24 DC24V	1	UNIT
TOYO	FAN GUARD	TOYO-FAN GUARD-4"	2	UNIT
~	FILTER GUARD	FILTER GUARD 4"	1	UNIT
MW	POWER SUPPLY	S-100-24 (4.5)A	1	UNIT
OMRON	PLC	CP1E-N60SDR-A	1	UNIT
OMRON	TOUCH SCREEN	NB7Q-TW01B (7" ,TFT COLOR)	1	UNIT
OMRON	TEMP.CONTROLLER	E5CC-RX2ABM-800 RELAY OUTPUT,AC220V	3	UNIT
FUJI	MAGNETIC CONTACTOR	SC-4-1,(N.O) 240VAC	1	UNIT

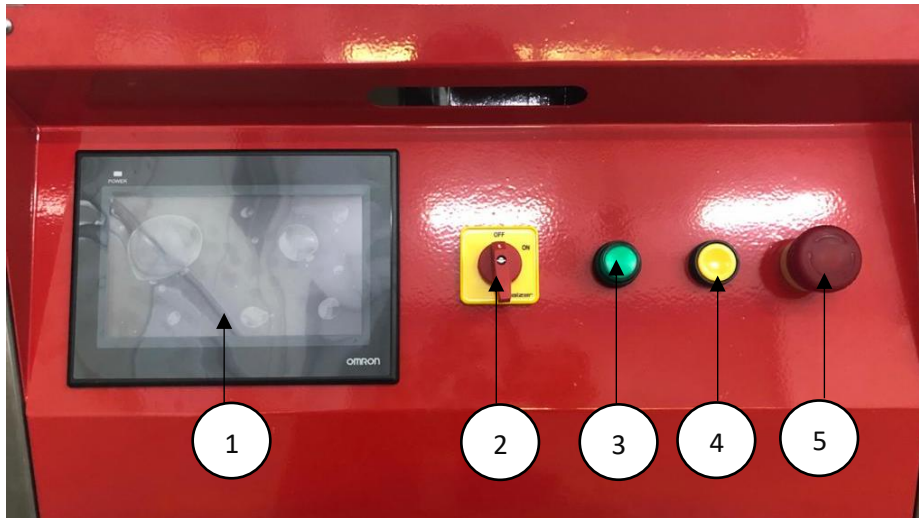
SALZER	POWER ON/OFF SW	16A 1POLE O/F ISOLATOR	1	UNIT
IDEC	EMERGENCY STOP PB C/W RESET,LAMP	YW1L-V4E11Q4R N.OPEN & N.CLOSE	2	UNIT
IDEC	ILLUMINATED PUSH BUTTON SWITCH C/W LP	YW1L-M2E10Q4G DC24,GREEN,LED BULB,N.OPEN,22MM	1	UNIT
IDEC	POWER RELAY C/W BASE	RM 2S (DC24V)	3	UNIT
IDEC	ILLUMINATED PUSH BUTTON SWITCH	YW1B-M1E10Y YELLOW,N.OPEN,22MM	1	UNIT
PUNA	TOWER LIGHT C/W BUZZER	P6 P RYG B	1	UNIT
NHD	RAIL-MOUNT TERMINAL BLOCKS	MEC-15 (15A)	50	UNIT
HANYONG	TERMINAL BLOCK (METAL STOPPER)	HYBT-07	10	UNIT
HQ	THERMOSENSOR C/W 1/4" BSP & 1MTR CABLE	PTA PT100 OHM DIA 1/4" X 4"LG	2	UNIT
HQ	THERMOSENSOR C/W 1/4" BSP & 1MTR CABLE	PTA K-TYPE DIA 1/4" X 2"LG	1	UNIT
SWIFT TECH	THERMOSTAT C/W SCREW IN TYPE	ZA300C	1	UNIT
-	CONTROL PANEL	CR705025 (H=700,W=500,D=250)	1	UNIT

MACHINE FACILITIES

**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH
DRYING**

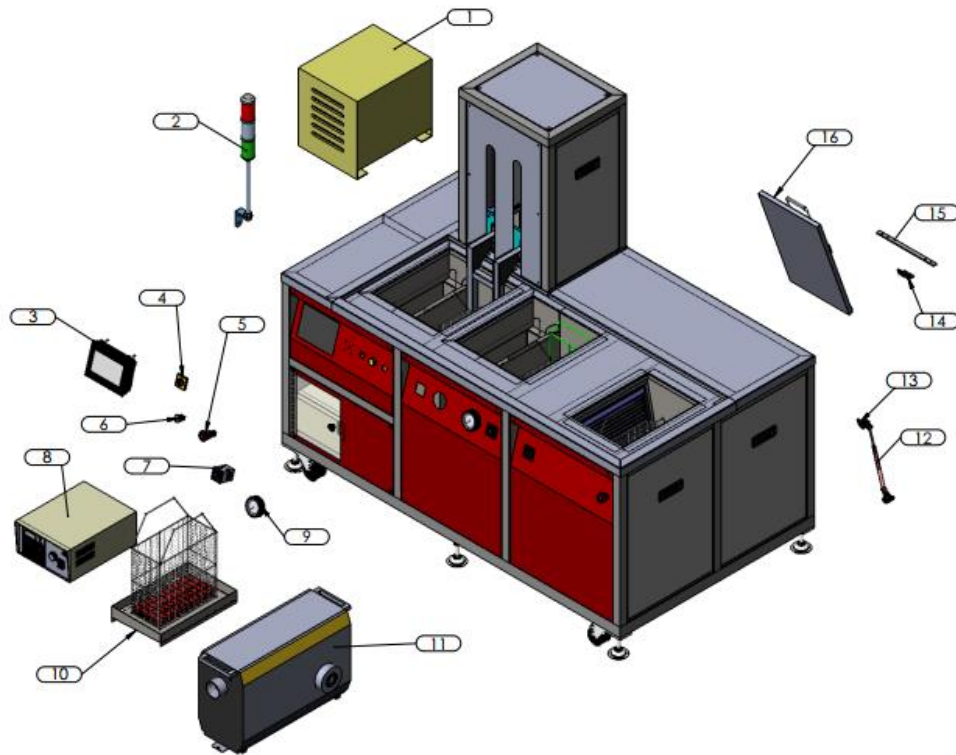
PROJECT ID: 13688/JST

6.1 CONTROL PANEL



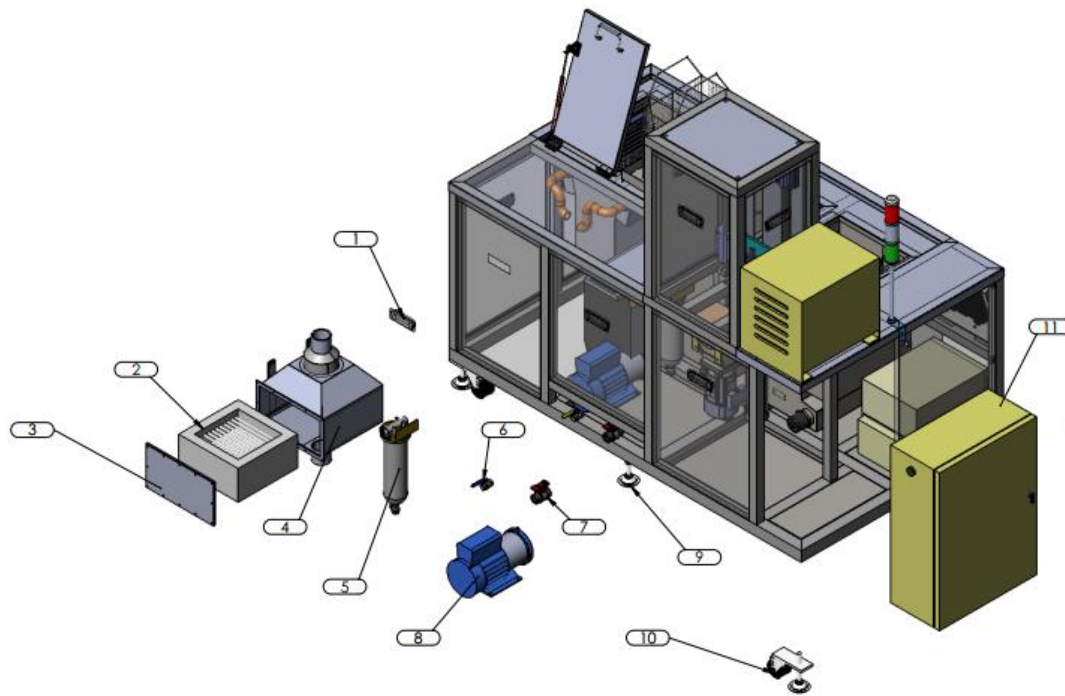
NO	ITEM	ITEM CODE	QUANTITY
1	HMI TOUCH SCREEN	SE000522	1
2	POWER ON/OFF	SE000035	1
3	CYCLE START PUSH BUTTON	SE000018	1
4	RESET PUSH BUTTON	SE000053	1
5	EMERGENCY PUSH BUTTON	SE000037	1

6.2 ULTRASONIC CLEANING MACHINE FRONT VIEW



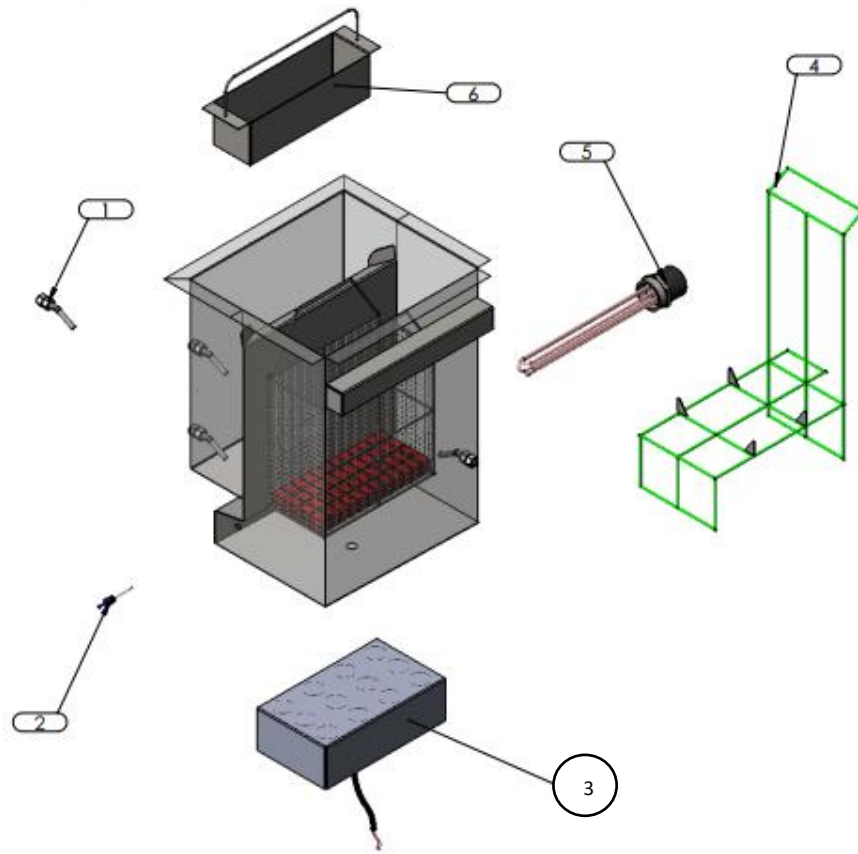
NO	ITEM	ITEM CODE	QUANTITY
1	TRANSFORMER	SE000523	1
2	TOWERLIGHT	SE000450	1
3	HMI TOUCH SCREEN	SE000522	1
4	POWER ON/OFF	SE000035	1
5	EMERGENCY PUSH BUTTON	SE000037	1
6	CYCLE START PUSH BUTTON	SE000018	1
7	TEMPERATURE CONTROLLER	SE000156	3
8	ULTRASONIC GENERATOR 25KHZ	SM000989	1
	ULTRASONIC GENERATOR 40KHZ	SM000990	1
9	PRESSURE GAUGE	SE000452	2
10	SLUNTING DECKER	SD001259	1
11	HOT AIR GENERATOR	SM000991	1
12	GAS SPRING	SM000992	1
13	BRACKET FOR GAS SPRING	SM000993	2
14	HINGE	SM000829	2
15	DOOR HINGES BASE	SD001260	2
16	TOP LID	SD001261	1

6.3 ULTRASONIC CLEANING MACHINE BACK VIEW



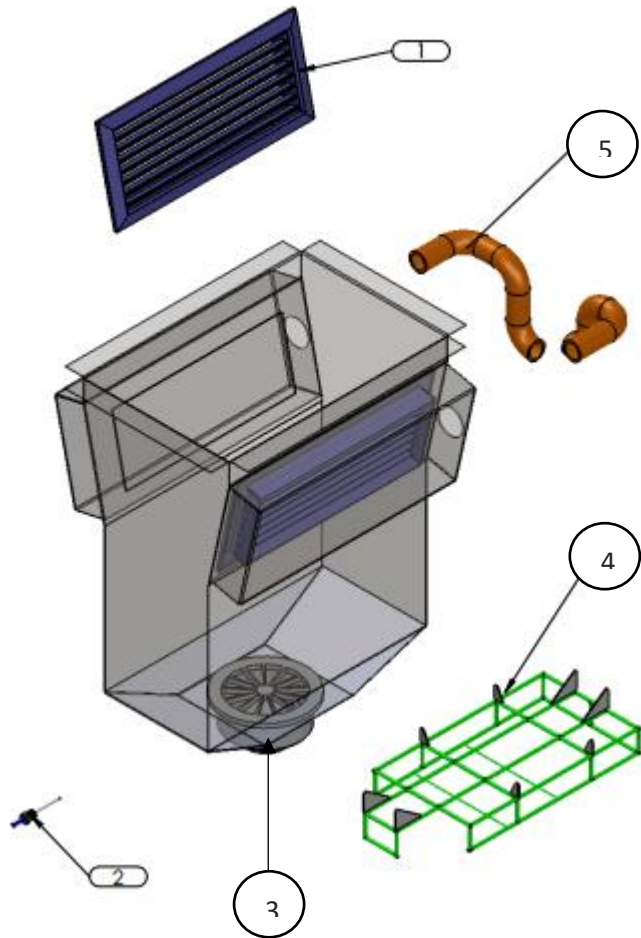
NO	ITEM	ITEM CODE	QUANTITY
1	LIFTING HANDLE	SA000333	9
2	HEPA FILTER	SM000994	1
3	HEPA FILTER HOUSING COVER	SD001262	1
4	HEPA FILTER HOUSING BODY	SD001263	1
5	PP BLUE FILTER HOUSING	SM000218	2
6	BALL VALVE 1/2"	SA000004	1
7	PVC BALL VALVE	SA000069	2
8	CENTRIFUGAL PUMP	SM000722	2
9	LEVELLING STEM	SM000811	6
10	CASTOR WHEEL	SM000024	4
11	CONTROL PANEL	SE000289	1

6.4 TANK 1 AND TANK 2



NO	ITEM	ITEM CODE	QUANTITY
1	PP FLOAT SENSOR	SE000290	8
2	THERMOCOUPLE	SE000028	2
3	ULTRASONIC VIBRATOR TANK 1 25 KHZ 600 WATT	SM000995	1
	ULTRASONIC VIBRATOR TANK 2 40 KHZ 600 WATT	SM000996	1
4	BASKET TANK	SD001143	2
5	SCREW IMMERSION HEATER	SE000524	1
6	PRE FILTER	SD001264	1

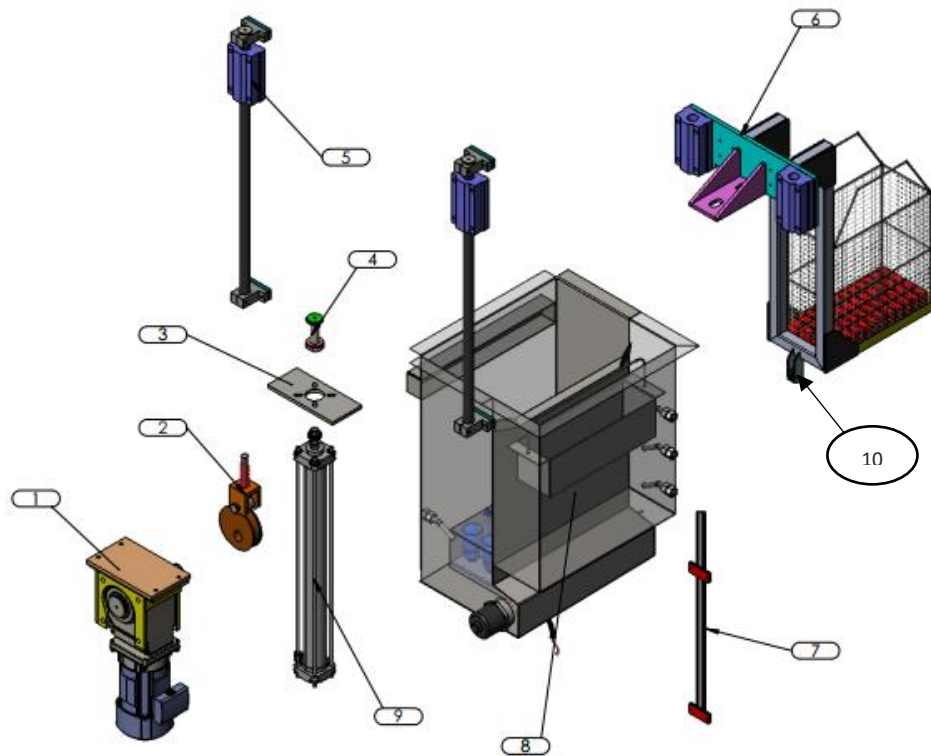
6.5 TANK 3



NO	ITEM	ITEM CODE	QUANTITY
1	AIR GRILL	SM000944	2
2	THERMOCOUPLE K TYPE	SE000229	1
3	BOTTOM AIR DISTRIBUTOR	SM001001	1
4	BASKET STAND	SD001265	1
5	U8 2 PLY SILICONE DUCT HOSE	SM000031	1

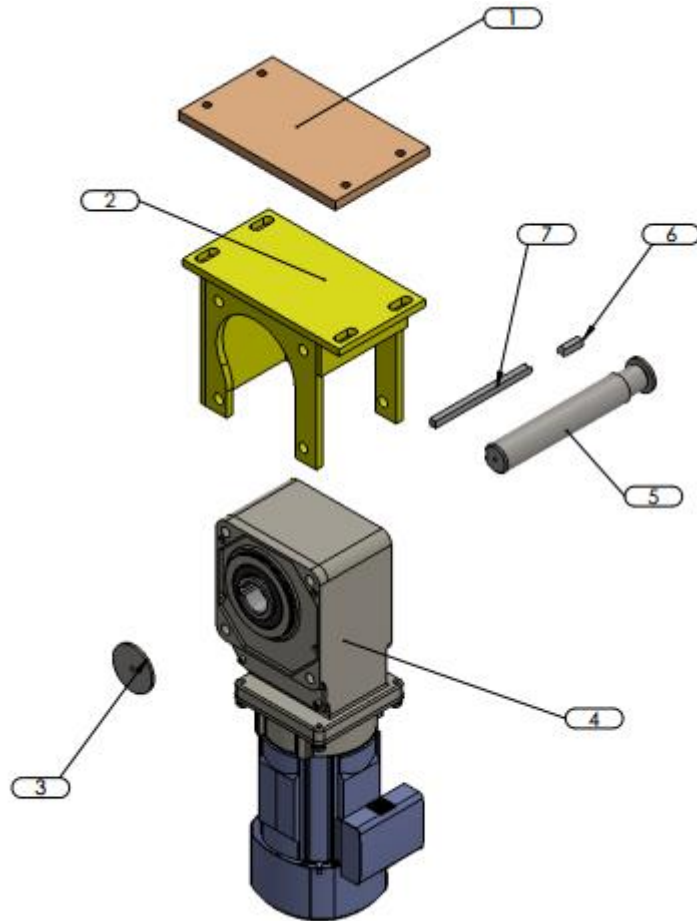
6.6 LIFTER AND AGITATION MECHANISM

6.6.1 LIFTER AND AGITATION MECHANISM EXPLODED



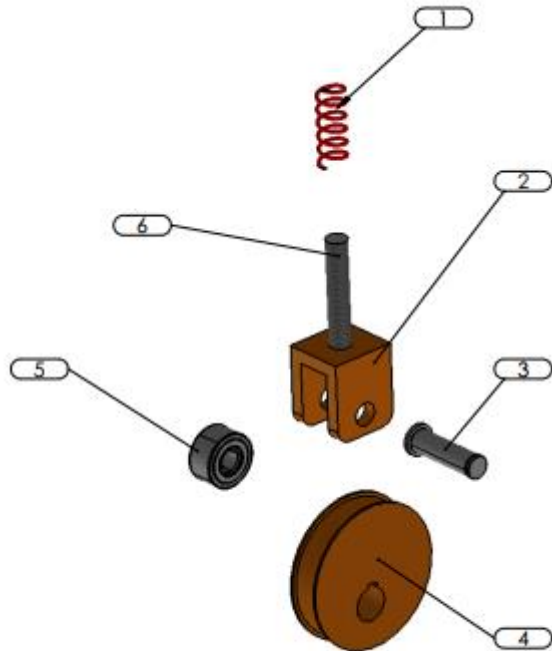
NO	ITEM	ITEM CODE	QUANTITY
1	MOTOR DRIVE ASSEMBLY	SD001266	1
2	AGITATION MECHANISM ASSEMBLY	SD001267	1
3	CYLINDER BASE PLATE	SD001268	1
4	CYLINDER BUSH	SD001269	1
5	SHAFT ASSEMBLY	SD001270	2
6	LIFTER AND AGITATION ASSEMBLY	SD001271	2
7	ROLLER GUIDE	SD001272	1
8	TANK 1	SD001273	1
9	CYLINDER	SM000997	1
10	ROLLER BUSH	SM001000	1

6.6.2 LIFTER AND AGITATION MECHANISM (MOTOR DRIVE)



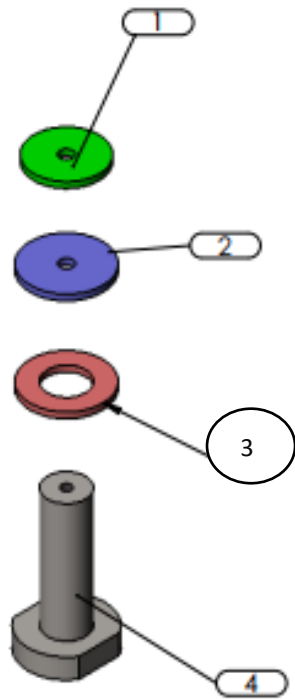
NO	ITEM	ITEM CODE	QUANTITY
1	MOTOR MOUNTING BASE	SD001274	1
2	MOTOR MOUNTING BASE A	SD001275	1
3	MOTOR SHAFT CAP B	SD001279	2
4	HYPONIC MOTOR	SM000597	1
5	AGITATION SHAFT	SD001277	1
6	KEY AGITATION CAM	SD001278	1
7	KEY HYPONIC MOTOR	SD001280	1

6.6.3 LIFTER AND AGITATION MECHANISM (AGITATION CAM FOLLOWER)



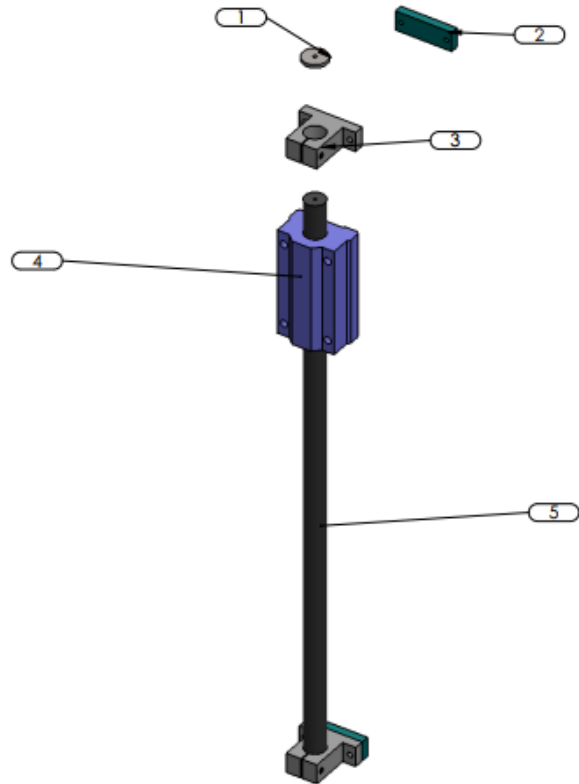
NO	ITEM	ITEM CODE	QUANTITY
1	AGITATION COMPRESSION SPRING	SD001282	1
2	AGITATION ROLLER FOLLOWER BRACKET	SD001281	1
3	ROLLER FOLLOWER PIN	SM000999	1
4	AGITATION CAM FOLLOWER	SD001283	1
5	ROLLER CAM	SM000998	1
6	M16 STUD	SA000390	1

6.6.4 LIFTER AND AGITATION MECHANISM (CYLINDER BUSH)



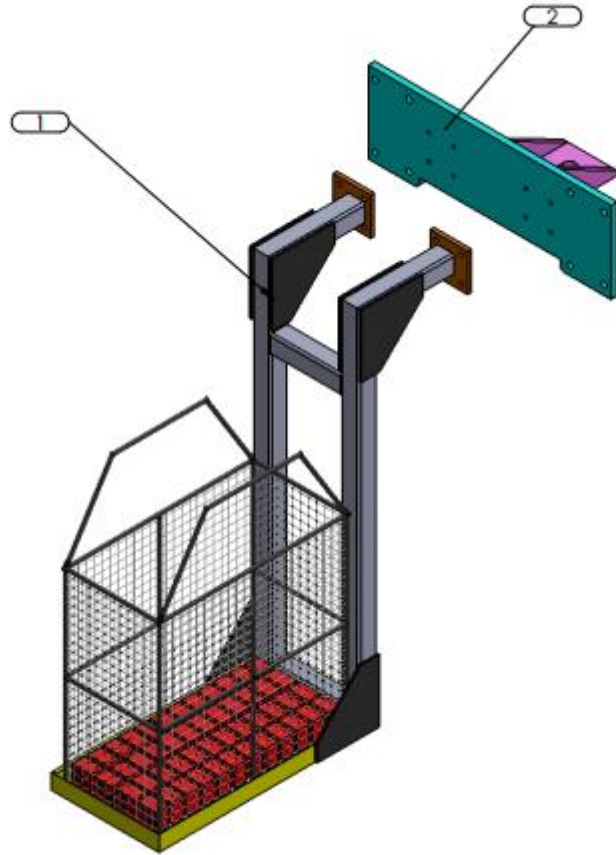
NO	ITEM	ITEM CODE	QUANTITY
1	AGITATION WASHER	SD001287	1
2	NYLON AGITATION DAMPENER TOP	SD001286	1
3	CYLINDER BUSHING	SD001284	1
4	NYLON AGITATION DAMPENER	SD001285	1

6.6.5 LIFTER AND AGITATION MECHANISM (LIFTER SHAFT)



NO	ITEM	ITEM CODE	QUANTITY
1	SHAFT ENDCAP	SD001288	2
2	SHAFT SUPPORT BRACKET	SD001289	2
3	SHAFT SUPPORT	SM000049	2
4	LINEAR GUIDE BLOCK	SM000051	1
5	LINEAR GUIDE SHAFT	SD001290	1

6.6.6 LIFTER AND AGITATION MECHANISM (LIFTER ARM)



NO	ITEM	ITEM CODE	QUANTITY
1	LIFTER ARM ASSEMBLY	SD001291	1
2	LIFTER BRCAKET ASSEMBLY	SD001292	1

MAINTENANCE

**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH
DRYING**

PROJECT ID: 13688/JST

7.0 MAINTENANCE

7.1 MACHINE SCHEDULES

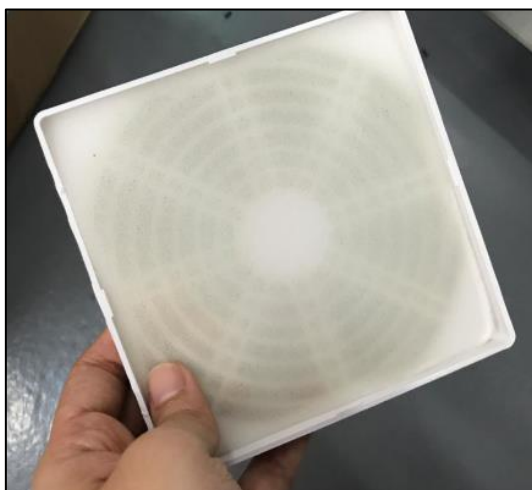
7.2 GENERAL MAINTENANCE PROCEDURE

7.2.1 GENERATOR FAN FILTER CLEANING MAINTENANCE



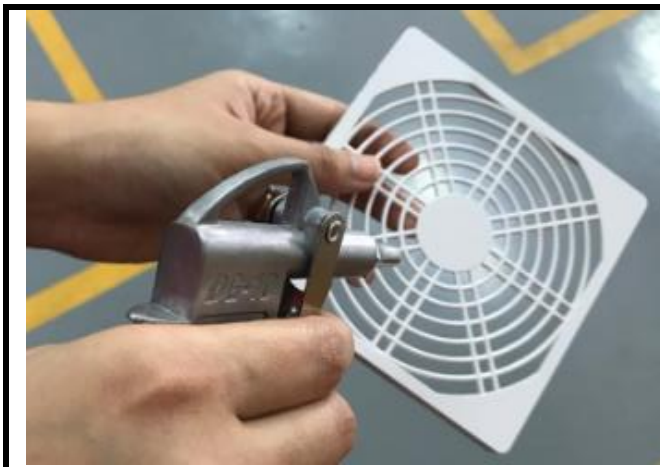
Step 1

Take out the generator fan cover.



Step 2

Take out the filter.



Step 3

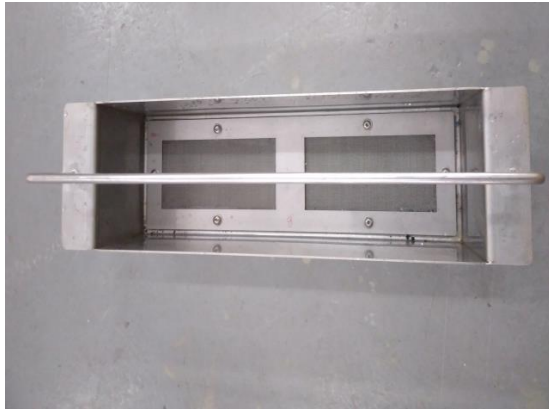
Clean the filter guard and the filter by using air blow



Step 4

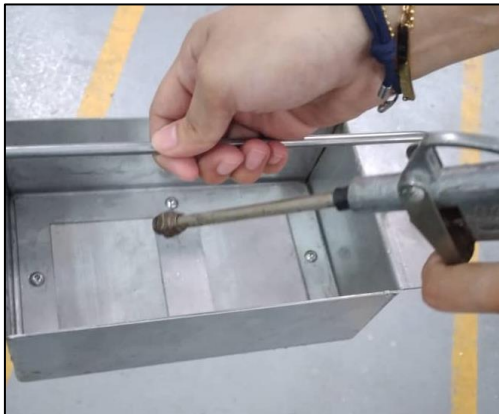
Place the filter and the filter guard back to the original placement.

7.2.2 PRE-FILTER CLEANING MAINTENANCE



Step 1

Remove the pre filter from overflow tank and clean it using tap water.



Step 2

Dry the basket using CDA blow and put it into overflow tank. Clean it using air spray.

7.2.3 TO CHANGE OR CHECK ON SCREW IMMERSION HEATER

Step 1



Disconnect power supply to heater.

Remove the casing of the heater.

Step 2



Pull out the wires and study the connection.

Check the wiring to ensure no wiring is damaged, worn or loose. Repair or replace as needed.

Step 3



Use the pipe wrench to remove the whole assembly for cleaning process or new replacement.

7.2.4 TO CHANGE FILTER CARTRIDGE IN FILTER HOUSING



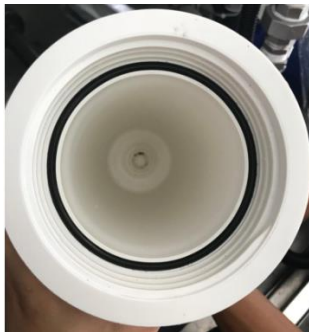
STEP 1

Open the filter housing using filter housing opener. Turning anticlockwise before the filter can be detached.



STEP 2

Next, slowly remove the housing by pulling it downwards.



STEP 3

Remove the contaminated filter and clean the internal housing by using soap and water and dry it after. Replace the old filter with new unit.



STEP 4

Lastly, install back the filter housing by turning clockwise. Ensure that it is securely attached to prevent leakage.

TROUBLESHOOTING

**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH
DRYING**

PROJECT ID: 13688/JST

8.0 TROUBLESHOOTING

LIMITED WARRANTY

**1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH
DRYING**

PROJECT ID: 13688/JST

LIMITED WARRANTY

Machine maker warrants this **1 UNIT CUSTOM FULLY AUTO PREWASH MACHINE FOR BARREL** to be free from defect in material and workmanship for a period one year from the date of machine acceptance. Machine maker's liability under this warranty is limited solely to repairing, or, at the machine maker's option, replacing those products included within the warranty which are deemed defective and returned to machine maker within the applicable warranty shall not apply to any product which has been subjected to misuse, negligence, accident, or has been improperly installed, misapplied, modified, or repaired by unauthorized persons.

Inspection: Buyer shall inspect the product upon receipt. The buyer shall notify the machine maker in writing of any claim of defects in material and workmanship within 30 days. Failure to make such a claim shall be considered a waiver of right to claim.

Disclaimer: The provisions stated herein are machine maker's sole obligation and specifically exclude all other remedies or warranties, expressed or implied including those related to merchantability of fitness for a particular purpose.

Limitations: Machine maker shall not be liable for any incidental, consequential, or special damages, losses, or expenses. Any action relative to this warranty must be initiated within one year of purchase.

Other Exclusions:

The following additional items are excluded from limited warranty:

- a. Defects in any item that was not part of the original product as constructed by the machine maker.
- b. Any defect caused by or worsened by negligence, improper maintenance, lack of maintenance, improper action or inaction, or willful or malicious acts by any party other than machine maker, its employees, agents, or trade contractors.
- c. Normal wear and tear of the home or consumer products in the home.
- d. Loss or damage caused by acts of nature, including but not limited to fire, explosion, smoke, liquid escape, changes that are not reasonably foreseeable in the level of underground liquid table, glass breakage, windstorm, hail, lightning, falling trees, aircraft, vehicles, flood, and earthquakes.

e. Misuse as describe below;

- Handling/Operating
 - Unstable of power supply
 - High humidity environment
 - Hot environment
 - Attempt heavy usage
 - Placing the machine at unstable position, unclean and unsmooth surface
 - Maintain at dusty place
- Liquid/Chemical
 - High viscosity
 - Aggressive acid (Except for chemical tank and station 1g)
 - Flammable
 - Initial temperature $\geq 80^{\circ}\text{C}$
- Process
 - Cleaning porous stones or pearls in the device
 - Cleaning heavy products
 - All jigs/ hooks/ fixtures/ components which are contaminant with grease, oil and other substances before start loading into stripping tank.

Arbitration of Dispute:

The Owner shall promptly contact the Company's warranty department regarding any disputes involving this Agreement. If discussions between the parties do not resolve such dispute, either party may, upon written notice to the other party, submit such dispute to arbitration. The award of the arbitrator shall be final, conclusive, and binding upon the parties. The expenses of the arbitrators shall be shared equally, but each party shall bear its own fees and costs.

Exclusive Warranty:

The machine maker and the Owner agree that this limited warranty on **SAQ-FA4 1 UNIT 4 STAGES AQUEOUS ULTRASONIC CLEANING MACHINE** in lieu of all warranties of habitability or workmanlike construction, or any other warranties, express or implied, to which owner might be entitled, except as to consumer products. No employee, trade contractor, or agent of the machine maker has the authority to change the terms of this one-year limited warranty.

APPENDIXES

1 UNIT 3 STAGES ULTRASONIC CLEANING MACHINE WITH DRYING

PROJECT ID: 13688/JST

APPENDIX 1
MAINTENANCE SCHEDULE

APPENDIX 2

**ASSEMBLY DRAWING
& SCHEMATIC DIAGRAM**

APPENDIX 3
ELECTRICAL DIAGRAM

APPENDIX 4

ULTRASONIC GENERATOR MANUAL

APPENDIX 5
SPARE PART MANUAL