



# Published by SJE Corporation, Ltd. Copyright © 2017 by SJE Corporation, Ltd.

78-21, Sandan 7-Ro, Jeonggwan-Myeon, Gijang-gun, Busan, Republic of Korea **Tel**: +82 51-521-3200

Fax: +82 51-521-3305
Website: http://www.sjecorp.com
E-mail: sales@sjecorp.com

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of SJE Corporation, Ltd.

Printed in Republic of Korea SJE20170701

# Manufactured by SJE Corporation, Ltd.



# **User's Manual**

Model: OPTIMA SEII Ver. G2.3.00

Distributor's Contact Information:

## Table of Contents

Introduction	2
Applications	2
Product Specifications	2
Exterior Descriptions	3
Safety Precautions	4
Included Items and Accessories	6
Pre-Start Procedure	7
Standard Operating Procedure	9
Moisture Control	12
Emergency stop	13
Pause operation	13
Shutdown operation	13
Maintenance	14
Freeze Prevention	17
Troubleshooting Guide	19
OPTIONAL ITEMS	24
Service Request	25
OPTIMA STEAMER™ Limited Warranty	25

### Introduction

The Optima Steamer continues to pursue environmentally friendly and effective cleaning solutions. Optima Steamer which is safe, durable and easy to use will support your cleaning operations for many years to come.

### **Applications**

The Optima Steamer is capable of generating continuous, super-heated vapor steam. The Optima Steamer is specifically used for various cleaning applications including cleaning machinery & components, washing vehicle exteriors, interiors, engine compartment, glass, metal surfaces, windows, wheel wells, vents, deodorizing bad odors, sanitizing hazardous food-borne bacteria from food processing equipment, removing weeds and more.

### **Product Specifications**

#### **OPTIMA SEII**

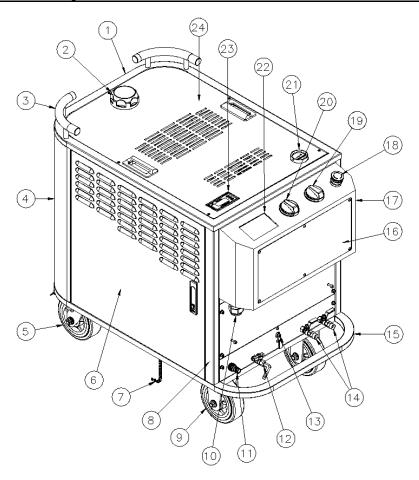
Model	Optima SE <b>II</b>					
IVIOGEI	18	ЗК	27	7K	42	2K
Working Pressure		7~8.5 kg/cm²	(99~121 psi) Max 9.5 kg/㎠(135 psi)			)
Steam Temperature		178 ℃ Ma	x. 180 ℃ (	(352.4 °F Max 356 °F)		
Preheating Time	9~10 r	ninutes	9~10 r	ninutes	10~11	minutes
Electrical Power	18.2	2kW	27.2kW		42.2kW	
Voltage / Hertz	208V ~ 600V, 3Ph 50 / 60Hz		380V~600V, 3Ph 50 / 60Hz			
Water Consumption*	Max. 300 ~ 1200 cc/min (0.0		min (0.08~0	).32 gpm)		
Water Tank Capacity	38 L					
		STANDARD			ASME	
Net Weight(kgs/lbs)	103 kgs	110 kgs	119 kgs	115.5 kgs	124.5 kgs	136.5 kgs
	227 lbs	242.5 lbs	262.5 lbs	254.6 lbs	274.5 lbs	301 lbs
Dimensions [L] x [W] x [H]	910 X 560 X 870 (mm)					

<sup>\*</sup> Water consumption can be different depending on the use of the Moisture Control Valve. (See page 12, "Moisture Control")



\* For user's safety, DO NOT modify factory settings for steam pressure and temperature.

### **Exterior Descriptions**



4	_	•
1	Inn	trama
١.	100	frame

2. Tank cap

3. Handles

4. Front frame

5. Rotary caster

6. Side door

7. Grounding chain

8. Rear frame

9. Rear wheel

10. Electrical cable holder

11. Quick plug for feed-water

12. Drain valve

13. Moisture control valve

14. Steam outlet valves

15. Chassis frame

16. Control box cover

17. Control box

18. Emergency switch

19. Steam switch

20. Power switch

21. Pressure gauge

22. LCD

23. TDS monitor(OPTIONAL)

24. Top cover

### Safety Precautions

### Visual Symbols



To ensure correct and safe usage with a full understanding of this product's performance, please be sure to read through this User's Manual completely and store it in a safe location. The contents of this User's Manual and the specifications of this product are subject to change without prior notice.

	specifications of this product are subject to change without prior notice.		
	Caution		Warning!
4	Risk of Electric shock	M	Risk of Burns
	Risk of Suffocation		Slippery Surface
	DO NOT operate on an incline		Wear appropriate protective gear (Goggles, ear plugs, gloves)



The manufacturer assumes no responsibility for any consequential losses or damages including but not limited to injury of persons, loss of business or properties which may occur through use of this product without consulting the User's Manual, regardless of any failure to perform on the part of this product.

#### GENERAL SAFETY RULES

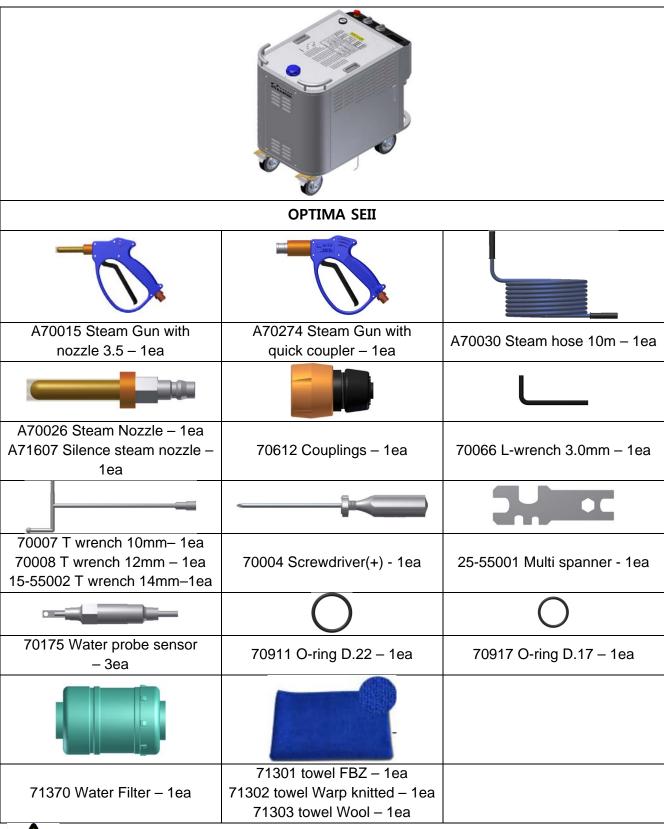
• DO NOT direct, air or discharge the steam jet at itself, persons, animals or live electricity.



- Use and store the product on a level ground (surface) only.
- DO NOT use the product if any part, power cord, safety device, hose or spray gun are visually damaged or suspected of being damaged.
- DO NOT use the product in rainy or snowy weather outdoors. This product is not weather-proof or water-proof.
- Never leave the product unattended while operating.
- Make sure to comply with safety rules in the event of operating in a danger area.
- Never use the product in an area where a fire and explosion hazard exists.
- DO NOT use the product below 0°C (32°F) or in extremely cold weather.
- DO NOT allow water sit in the water pipelines and steam vessel if leaving the product non-operational in cold weather.
- Store the product at a room temperature(See page 17, "Freeze Prevention")
- Heavy object. Be cautious when carrying or lifting. (See page 2, "Product Specifications")
- Unplug the product from its power source and release all the remaining steam from the product before carrying.

- Use only "Clean" and "Soft" water in the product.
- Use of a water softener is recommended to prevent scale build-up
- Using any kind of boiler water treatment (solution) can help decrease scale build-up.
- DO NOT add detergent, wax or any chemical liquid in the water tank or steam vessel.
- DO NOT use distilled water or filtered water below 15 ppm.
- Connect to electrical power according to the product specifications. (See page 2, "Product Specifications")
- Connect to the electrical power outlet installed in accordance with IEC 60364.
- Be cautious of the risk of electric shock in the event of connecting to electrical power.
- Ensure the connection status of Grounding Chain and Ground Wire to the product to avoid static shocks.
- Users about to use the product should carry out a visual check for insecure cable at entry to a plug, evidence of poor wire connections or evidence of appliance or plug overheating.
- Make sure that all the switches on the product are off before plug-in power cables.
- In the event of using extension cord, make sure of a ground-fault circuit interrupter (GFCI) built in.
- Make sure extension cord is constructed of proper diameter in accordance with the electrical specifications. (Contact manufacturer or distributors for right extension cord)
- Keep out of reach of children and pets.
- This product is not intended for use by children, or by persons with reduced physical, sensory or mental capabilities, or by person lacking experience with the product or knowledge of the product's use, unless they have given supervision or instruction concerning the use of the product.
- Wear appropriate protective gear to protect users' ear, eyes and hands in operation.
- According to steam pressure, noise can be reached to 95 decibel(dB).
- DO NOT use the product within the range of persons who are not wearing any protective gear.
- Hot surface. DO NOT touch steam vessel, steam valves, steam hoses and guns in operation.
- Replace steam hoses immediately if ruptured.
- Use manufacturer approved spare parts and accessories including steam hoses, steam guns and power cables.
- Unplug the product from its power source and allow it to cool before carrying out any maintenance.
- Never disable sensors in order to bypass an alarm signal.
- Open the drain valve and release all remaining water from the steam vessel after users shut down the product completely. (See page 13, "Shutdown operation")
- Never spray steam over cleaning hazardous materials or surfaces containing hazardous substance including asbestos.

### **Included Items and Accessories**



<u>,</u>

Make Included items and accessories are subject to change without prior notice.

### **Pre-Start Procedure**



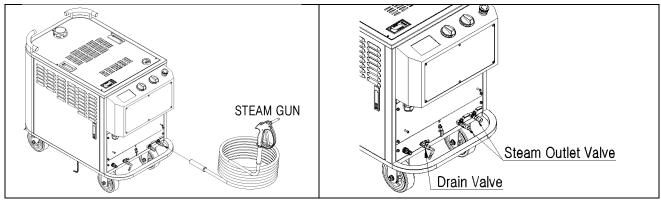
Wear appropriate protective gear before using the product.



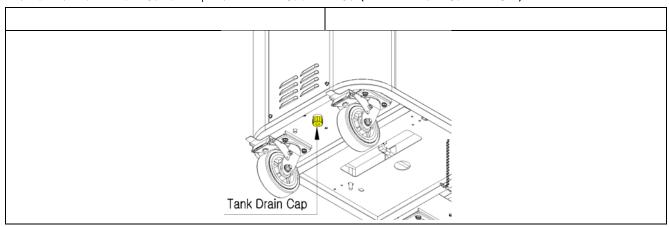
Surface of exhaust flue and valves may be hot. Take precautions when users resume operations.

#### Steps:

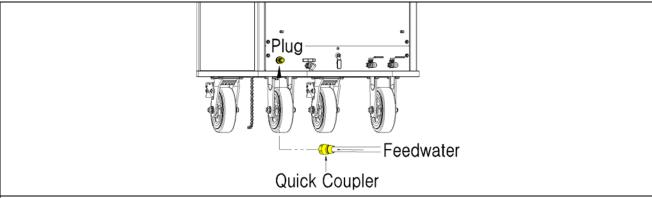
- 1. Connect steam hoses and guns to the steam outlet valves. Ensure a tight connection using appropriate tools.
- 2. Ensure that valves including drain valve, steam outlet valves are fully closed.



3. Ensure that tank drain cap are well-connected. (See illustrations below)



4. Fill the water tank with clean water. When tap water or hard water is used, use of a water softener is recommended to prevent scale build-up. (See page 24, "Optional Item")



#### Continuous Water Supply

In the event of using continuous water supply, connect water hose attached with Quick Coupler to the Plug of the product.



Water pressure needs to be below 2bar from the tap for Floater to run effectively.

### Water Quality Matters!

Water quality can greatly affect the product's life span and performance. It is important to use SOFT WATER. If tap water or hard water is used, use of a water softener is recommended in order to prevent scale build-up.

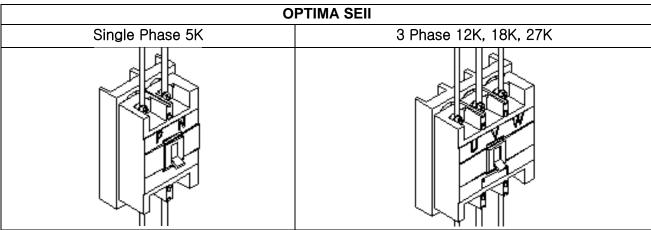
DO NOT use distilled water.



DO NOT add any detergent, wax or cleaning additives into the water tank or steam vessel.

The use of water temperature above 5℃ (40°F) recommended. Use filtered water above 15 ppm.

6. Check for electrical specifications before connecting to electrical power outlet. In the event of using extension cords, take waterproof measures on the electrical sockets and plugs.



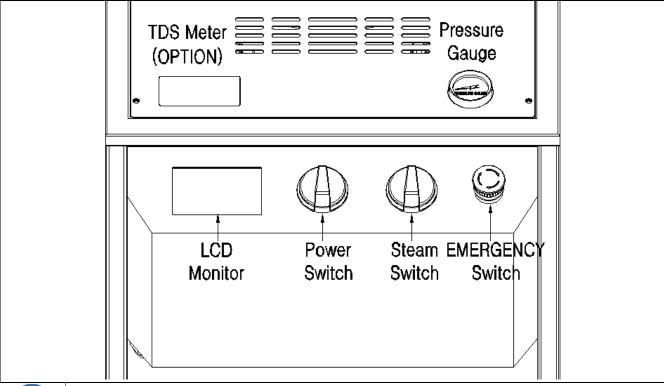


\* Alert users to the presence of "dangerous voltage" inside the product that might cause bodily harm or electric shock.

For the use of OPTIMA XE, make sure to connect the GROUND WIRE(G) to GROUND TERMINAL. Never connect GROUND WIRE to NEUTRAL(N) TERMINAL.

### Standard Operating Procedure

Make sure to advance the steps of Pre-Start Procedure before users follow Standard Operating Procedure. (See page 7, "Pre-Start Procedure")





Wear appropriate protective gear before using the product.



Never leave the product unattended while operating.

Surface of an exhaust flue or valves may be hot. Take precautions while operating.



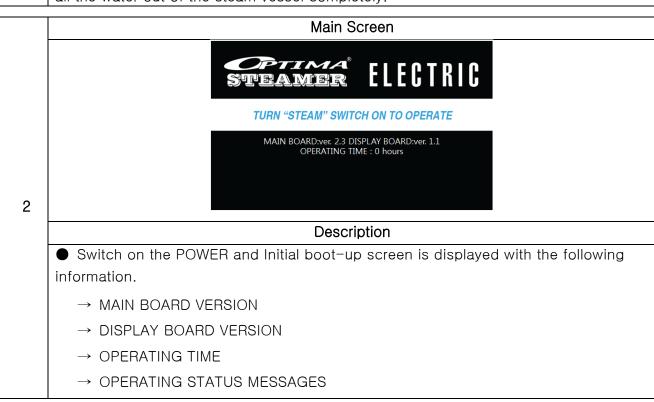
DO NOT apply any physical impact to the control panel box or leave any objects on it. DO NOT press LCD Display with your hands or any objects.

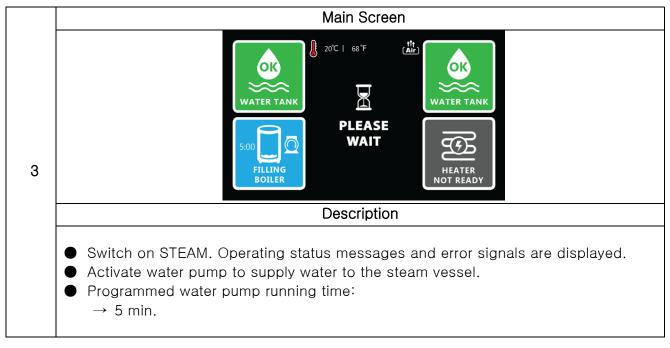
### LCD ICON DESCRIPTION

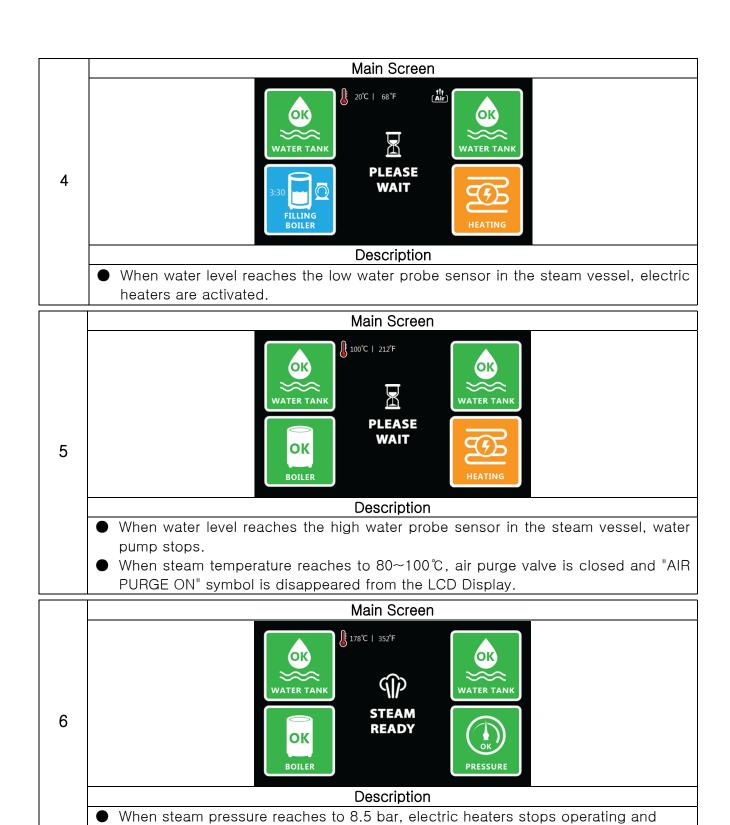
WATER	6	HEATING
STEAM VESSEL	$\bigcirc$	WATER PUMP
PRESSURE GAUGE	\$	STEAM READY
TEMPERAURE	ff <sub>†</sub> (Air)	AIR PURGE

### **OPERATING PROCEDURE**

Step	
4	Switch on the POWER and Initial boot-up screen is displayed. Switch on STEAM and alarm signal goes off once initiating LCD Display and beginning to run the product according to programming.
I	Note!  "OPERATING PROCEDURE" is repeated if users resume the operation after draining all the water out of the steam vessel completely.







"STEAM READY" message is displayed.

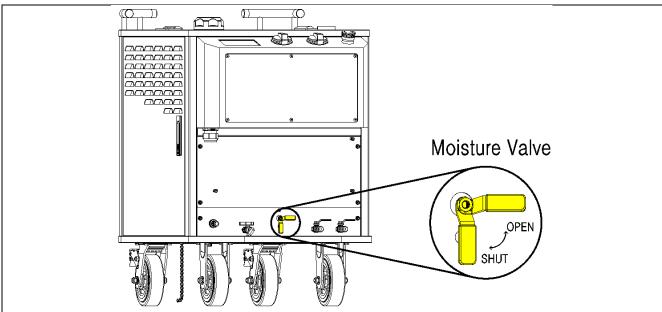
### Moisture Control

Users can spray moisturized steam (wet steam) by opening the moisture control valve.

In the event of cleaning interior surfaces or water sensitive areas, ensure that the moisture control valve is fully closed to minimize surface moisture.

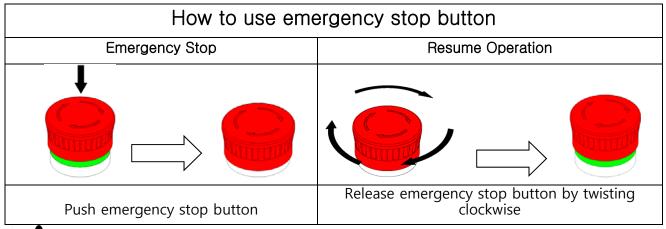


Using two steam guns with the moisture control valve open continuously may consume steam faster than what can be replenished. Open the moisture control valve by 1/3 allowing pressure to build up.



### Emergency stop

- 1. In case of a failure in the product or an emergent situation occurred, push the emergency stop button in.
- 2. Overhaul the failure, take necessary measures and resume the emergency stop button.





Emergency stop button will shut off all electrical power sequences inside the main power enclosure.

### Pause operation

- 1. Switch off the STEAM.
- 2. Close the steam outlet valves and release all the remaining steam from the hoses by pulling the gun trigger. It prevents remaining of condensed water residue in the steam hoses afterwards and increases the life span of the steam hoses and guns.

### Shutdown operation

- 1. Switch off the STEAM.
- 2. Switch off the POWER.
- 3. Release steam from the steam vessel by pulling the gun trigger until the pressure drops down to  $1\sim2 \text{ kg/cm}^2(28.4 \text{ psi})$ .
- 4. Close the steam outlet valves and release all the remaining steam from the hoses by pulling the gun trigger.
- 5. Release remaining steam from the steam vessel by opening the drain valve.



Keep drain valve open for the next operation



DANGER. Burn hazard! Hot steam. Keep hands clear.

6. In cold weather, take precautionary measures to keep water pipes from freezing and bursting. (See page 17, "Freeze Prevention").

### Maintenance

### Before to check product



Must cool down the product.



Must get rid of pressure in the product.



Wear appropriate protective gear.



Unplug to shut down the power.



Caution of burn



Keep the below maintenance schedule.

#### Maintenance Schedule

	Maintenance items	Daily	Monthly
Α	Drain boiler	✓	
В	Drain Water Tank		<b>√</b>
С	Replace filters		<b>√</b>
D	Check probes / clean or replace if necessary		<b>√</b>

#### A. Drain boiler

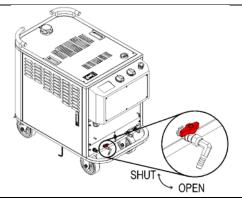
- 1. Reduce pressure below 2 kg/cm²(28.4 psi)
- 2. Open the drain valve until water drained out.
- 3. Leave drain valve open until the next use.



Wear appropriate protective gear for eyes and hands because steam is very hot.



Leave drain valve open until the next use.

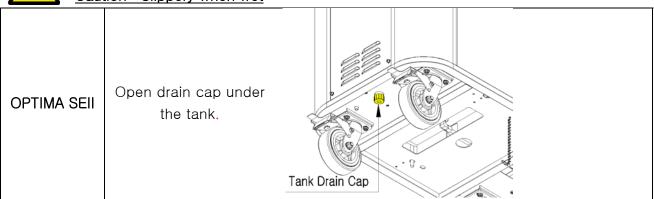


#### B. Drain Water tank

Open drain cap under the tank.

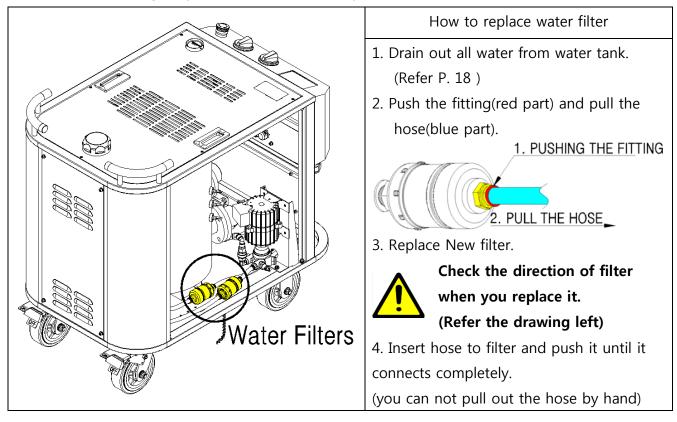


### Caution: Slippery when wet



#### C. Replace filters

Check water filter regularly and replace if necessary.



#### D. How to check and clean water probes

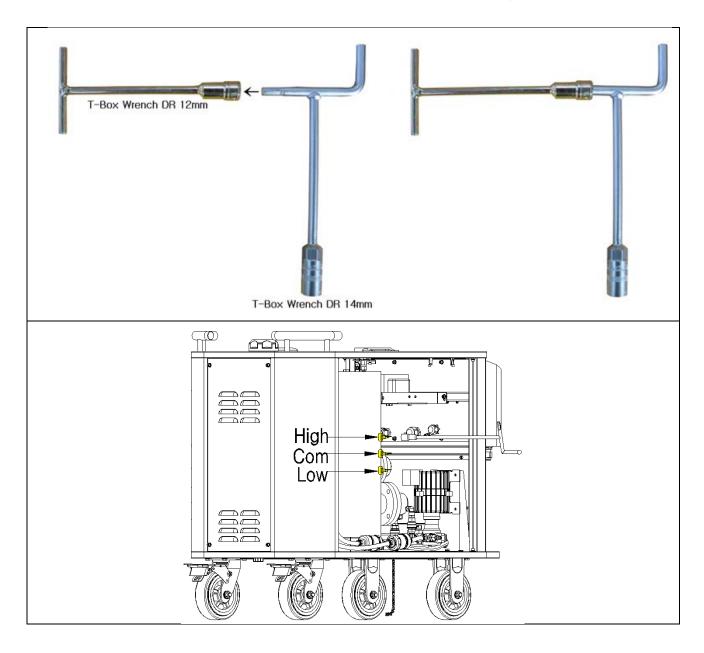
There are 3 water probes (high/common/low).

Minerals in the water or various foreign materials would be hardened and this may make water probe's malfunction.

Requires : Screwdriver(+), 14mm long box wrench or Spanner, Sand paper, Teflon tape.

#### Procedure:

- 1. Unplug the power plug and then remove pressure completely by opening steam valve.
- 2. Open the drain valve and drain out all water from boiler.
- 3. Detach top cover and front cover. Then detach the all wires from water probe sensors.
- 4. Disconnect water probe sensors from steam vessel by 14mm long box wrench.
- 5. Clean the water probe sensor by soft sand paper. Replace it if necessary.
- 6. Wind Teflon tape 6 times on the thread in order to prevent leakage.



### Freeze Prevention



In cold climates, it is necessary to store the product in an area where a temperature is above freezing. Follow the below steps to protect your product against freezing and bursting.

#### Steps:

#### 1. Drain the steam vessel

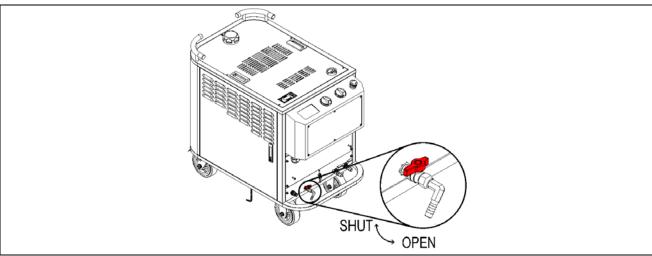
Reduce pressure under 2 kg/cm²(28.4 psi) and then drain out water from the steam vessel by opening a drain valve. Leave the drain valve open until the next use.



Steam is extremely hot, we are appropriate hand and eye protection.



Leave drain valve open until next use.

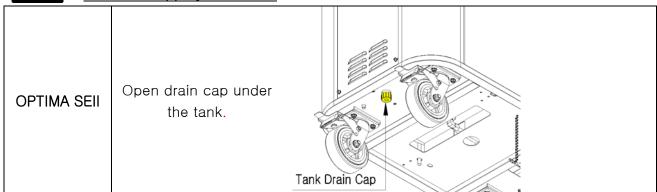


#### 2. Drain Water tank

Open drain cap under the tank.

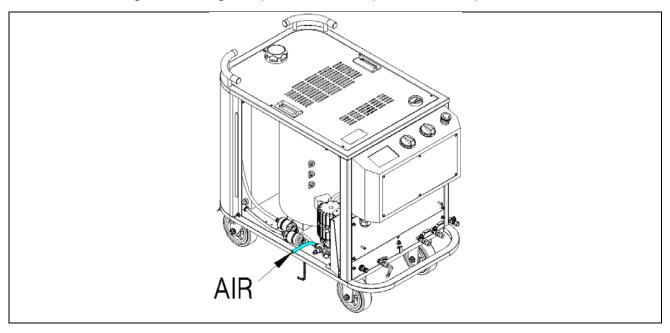


Caution: Slippery when wet.



#### 3. Drain the water feeding lines and the water pump.

Open the drain valve, then disassemble/detach water feeding line like the below picture and drain all remaining water using compressed air. Keep drain valve open until next use.



#### 4. Storage

Keep Product in a warm place to prevent for being frozen.



Pipe line or parts can be ruptured, if product is frozen badly. Freeze can cause malfunction. If product would be frozen, do not operate it immediately. Put the product in warm place in order to thaw. After that, check if there is any damage.

If the machine is visually damaged or performs abnormally, immediately turn off the machine and contact your distributor or manufacturer.

### Troubleshooting Guide

When a malfunction occurs, refer to the troubleshooting guide below. If the problem persists, please contact your local distributor and report the problem by referring to the ERROR CODE.

### **Symbol Description**



Alarm beeps continuously



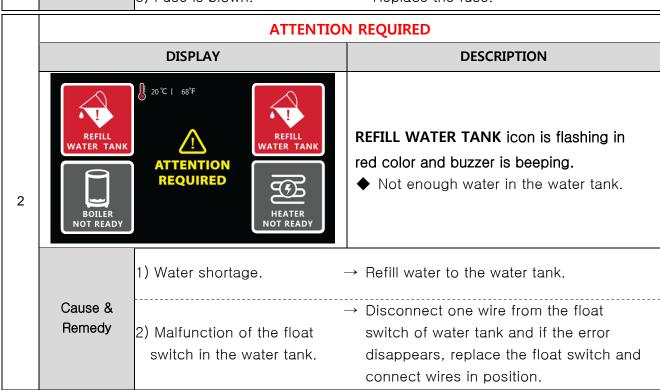
Alarm beeps once

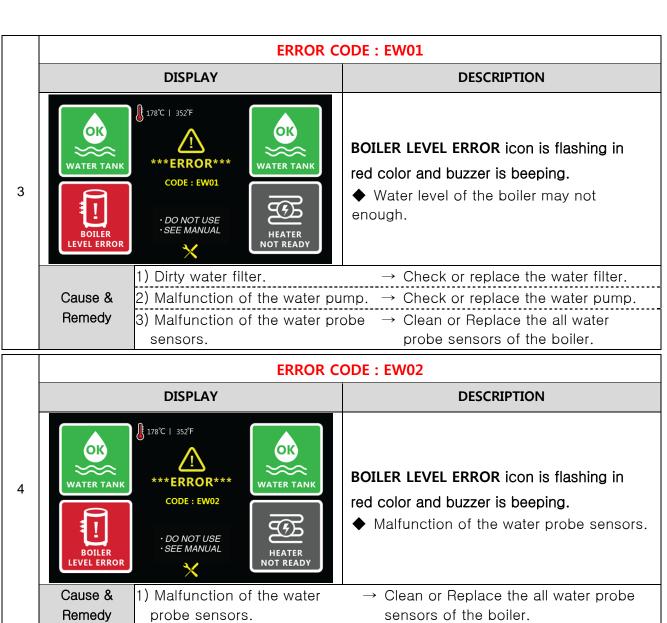


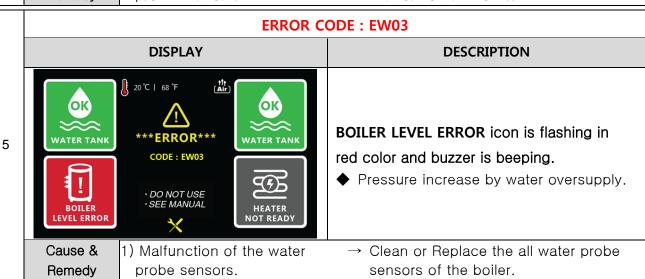
Continuous pressure increases over 9 bar (130 psi)

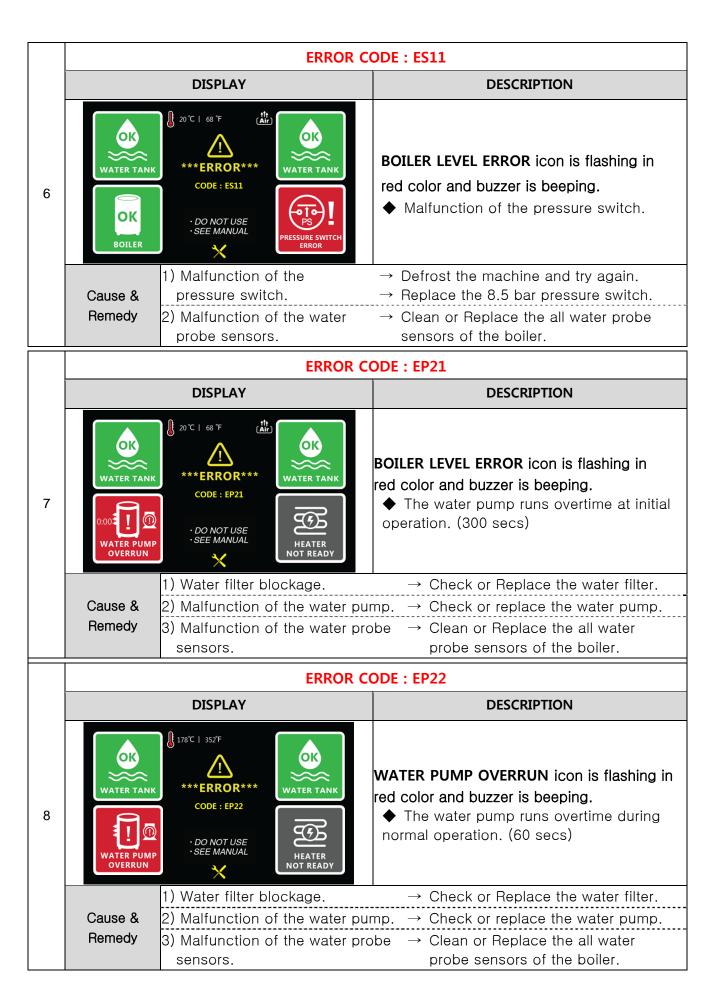
### Error display and Solution

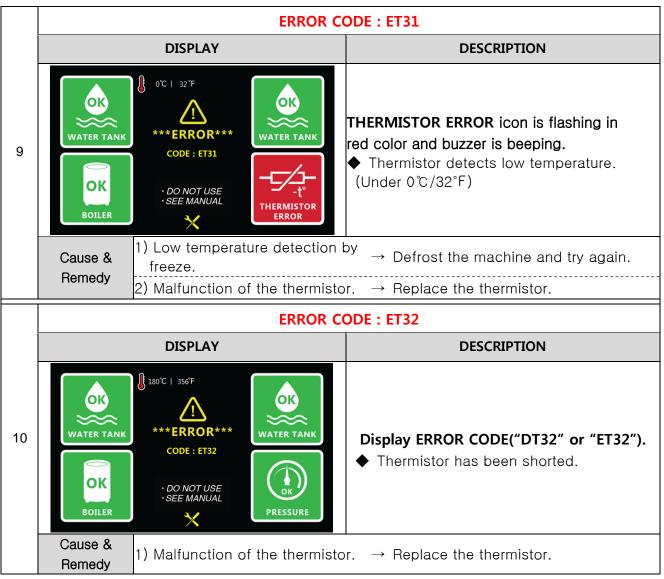
Description	Nothing on LCD screen and no alarm sound when POWER & STEAM		
Description		switches are on.	
		1) No power supply.	→ Check your electrical power source.
1	1 Cause & Remedy		→ Check power plug connection.
		2) Emergency Stop switch	ightarrow Release the Emergency Stop switch.
		is pressed.	
		3) Fuse is blown.	→ Replace the fuse.

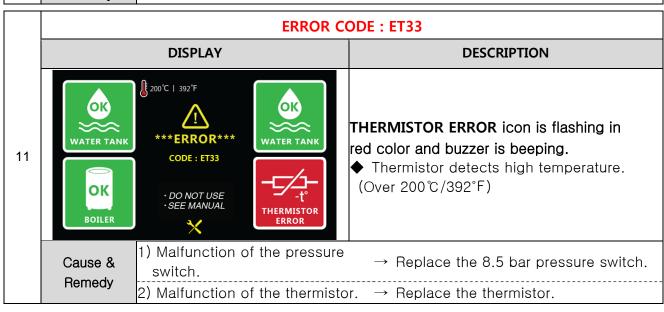












	Description	Boiler pressure keeps incre	asing above 9 bar (130 psi).	
12		1) Malfunction of the pressure switch.	→ Replace the pressure switches.	
	Cause & Remedy	<ol><li>Malfunction of the water probe sensors.</li></ol>	→ Clean or Replace the all water probe sensors of the boiler.	
		3) Using distilled water	→ Use normal tap water. (above 15 ppm)	
Description		Steam or wa	ter leaks from underneath.	
	Cause &	1) Safety valve has activated.	→ Solve the reason of abnormal pressure and replace the safety valve.	
	Remedy	2) Damaged by freeze rupture.	→ Replace a broken part.	
		3) Damaged piping line.	→ Fix or replace a broken part.	
13	STANDARD		ASME	
	Safety Valve		Safety Valve	

	Description	Water supplying	tube of water pump is hot or damaged.
	Cause &	1) Malfunction of	→ Replace the non-return valves
	Remedy	the non-return valve.	and damaged parts.
14		Non-retu Valve	urn

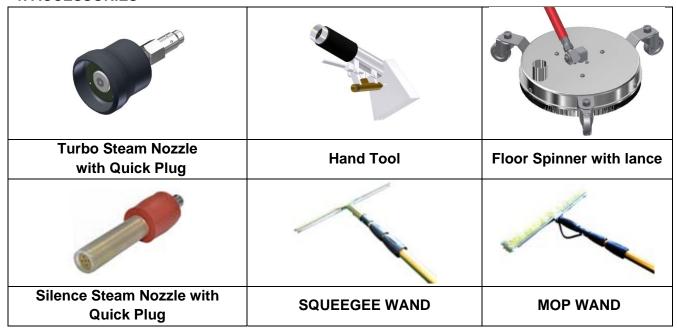
	Description	Water tank is abnormally hot.	
	Cause &	1) Malfunction of the air purge → Clean or Replace the air purge valve.	
	Remedy 2) Malfu	2) Malfunction of the thermistor. $ ightarrow$ Replace the thermistor.	
15		Air Purge Valve	

16	Description	Static electricity on the spray gun or the machine			
	Cause & Remedy	1) The machine is not grounded properly.  The machine is not grounded using the grounding chain located at the rear bottom of the machine.			
	Ground Chain				

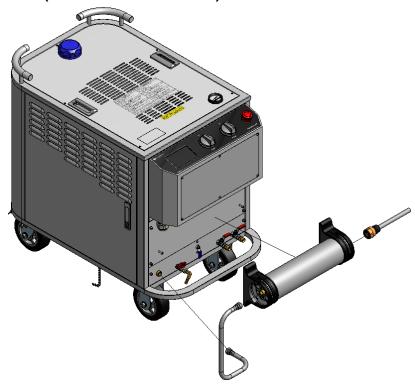
### **OPTIONAL ITEMS**

OPTIMA DM(DMF) is designed to use with various useful optional items as below.

#### 1. ACCESSORIES



#### 2. OMEGA SOFTENER (Portable Water Softener)



X Please visit our website to see more details. ( http://www.sjecorp.com )



Some items can be changed or discontinued without notice.

### Service Request



Your machine has a defect or broke down?

Simply register your service requirement by scanning here and SJE Service center will contact you as quickly as possible to provide further information.

### OPTIMA STEAMER™ Limited Warranty

SJE Corporation Ltd. hereby warrants that new Optima Steamers purchased directly from SJE Corporation Ltd., headquartered in Busan, South Korea will be free from defects in material and workmanship for the period of time stated below, subject to certain limitations.

#### **OUR WARRANTY POLICY**

This warranty is not transferable and covers replacement parts only. This warranty does not cover any consequential damages or business loss.

#### THE PERIOD OF WARRANTY

The warranty on your Optima Steamer is twelve(12) months from the date of purchase by the original owner against defects in material and workmanship.

#### **GENERAL EXCLUSIONS**

General exclusions from this warranty shall include any failures caused by:

- a. Installation of parts, attachments or accessories that are not original to the unit or genuine Optima Steamer parts.
  - (i.e. external aftermarket attachments such as exhaust duct extension)
- b. Abnormal strain, neglect, or abuse.
- c. Lack of proper maintenance.
- d. Accident or collision damage.
- e. Changing or altering factory settings without consulting with an authorized technician.
- f. Damage or malfunctions resulting from natural calamity, freezing, theft, accident, vandalism, abuse due to misapplication and/or improper site conditions.
- g. Water damage
- h. Electrical damage from including, but not limited to improper use of extension cords, failure to meet proper voltage requirements, incorrect or insufficient amperage circuit.
- i. Insufficient unobstructed distance on exhaust

#### Items not covered under warranty include:

- a. Parts replaced due to normal wear or routine maintenance including, but not limited to sensors, filters, fuses, valves, pipes, electrodes, cables and fittings (i.e. nipples, couplings, o-rings, etc)
- b. Consumable or wearing items requiring replacement as part of normal operation including, but not limited to steam hoses and guns.
- c. Any transportation or travel costs.

- d. Reimbursement for rental units while repairing warranty items.
- e. Normal maintenance items such as: draining tanks and vessel, descaling, filter and sensor changes, vessel cleaning, tightening and sealing bolts and fittings and others stated in the User's Manual.
- f. Failure caused by water scale problem due to local water conditions.
- g. Warranty work completed after 30 days from discovery.
- h. Damage, problems or failure caused by factors external to the Product including, but not limited to, faulty or poor external electrical wiring, incorrect or faulty power supply, voltage fluctuations, over voltage transients or electromagnetic interference, inadequate or faulty water or fuel.

#### **CUSTOMER'S RESPONSIBILITY**

Under this warranty, the customer's responsibility shall be to:

- a. Operate and maintain the machine as specified in the User's Manual.
- b. Give notice to authorized Optima Steamer distributors or SJE Corporation Ltd. of apparent defects within ten (10) days after discovery of initial malfunction.
- c. Provide proof of purchase, purchase date, and serial number of the warranty product(s).
- d. Make the unit available for inspection and repairs at distributor's place or service center. If shipped, transit costs should be prepaid.

For warranty service request, please e-mail at tech@sjecorp.com or call +82 51 521 3200.





#### [Head Office]

78-21, Sandan 7-Ro, Jeonggwan-Myeon, Gijang-Gun, Busan, South Korea Tel: +82 51 521 3200 / Fax: +82 51 521 3305

 $E\hbox{ - mail: info@sjecorp.com,} \quad http://www.sjecorp.com$ 

#### [US Office - Steamericas, Inc]

808 HINDRY AVENUE # E INGLEWOOD, CA 90301, United States / Tel: +1-310-327-8900 (US Office)