BioSure

COMPACT SANITATION SYSTEM

CSS

MODEL : EOS7131 - CS

Operator's Manual

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Preface Foreword Introduction

Described in this manual is the BioSure® CSS – Compact Sanitation System with model and version of engineering detailed as follows:

Product Code	Model No.	Program Code
CSS	EOS7131-CS	CS-V1.07

BioSure® is a division of BES Group. BES Group is a global leading ozone equipment manufacturer with pioneering ozone application technology and currently holds over 40 patents for its EOS (Electrolytic Ozone Systems) worldwide.

Copyright Information

Manual Number: Second edition, Aug 2015

Warranty

The information contained in this document is subject to change without notice.

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INTRODUCTION

Congratulations on the purchase of your new BioSure® CSS – Compact Sanitation System! Our CSS is surely the right choice for enhancing your sanitation results and food safety protocols in many preparation steps in commercial kitchen applications. You can be assured your CSS unit was constructed and designed with quality and performance in mind. Each component has been rigorously tested to ensure the highest level of acceptance.

This operator's manual was complied for your benefit. By reading and following the simple safety, installation, operation, maintenance and troubleshooting steps described in this manual, you will receive years of trouble free operation from your CSS. The contents of this manual are based on the latest product information available at the time of publication. BES Group reserves the right to make changes in the content at any time without notice.

Immediately write in the serial number of your BioSure® CSS unit in the space provided below:

SERIAL NUMBER _____

Upon delivery, unpack the machine carefully and inspect it to ensure it was not damaged during shipment. If damage does exist, retain the original packing materials and then immediately file a claim with the transportation company and your BioSure dealer. Be sure that the mechanical and electrical problems are corrected prior to operation of the unit. If you require service, contact BES Group Customer Service.

CONTACT CUSTOMER SERVICE
for the Sales or Service Center nearest you!
service@besgroups.com

Please have the following information available for all service requests:

1. Model Number
2. Serial Number
3. Date and Place of Purchase

Please read all safety warnings carefully before using the product, especially the following sections: "IMPORTANT SAFETY INSTRUCTIONS" and "GENERAL INFORMATION" (P.7-11). These sections provide very important information concerning the safety and proper operation of the unit. However, in order to feel assured you have gained a good grasp of every feature provided by your new CSS, the Manual should be read in its entirety.

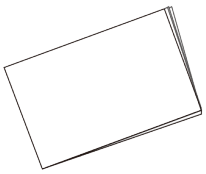
Please always keep the manual handy for easy reference and note that:

- We are not responsible for any accidents and/or malfunctions due to improper use of this product.
- Please refer to this manual often when you have questions during the use or when troubleshooting this unit.

PACKAGE CONTENTS

Your CSS comes with the following items. As soon as you open the package, please check that all these items are present.

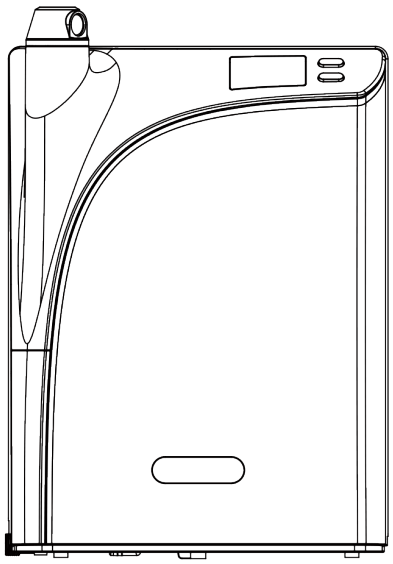
If anything is missing, please contact your dealer.



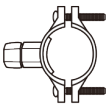
Owner's Manual

Water Outlet Tube

Input Hose (PE, white, 1.5 m)



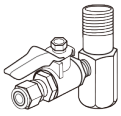
CSS Unit



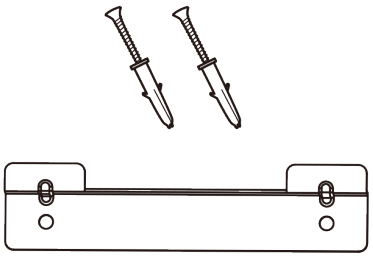
Drain Clamp

Drain Hose (PVC, black, 1.5 m)

Plumber's Tape



Connecting Adapter



Mounting Bracket (x1) with Screws (x2)

OM100 Titration Ink

IMPORTANT SAFETY INSTRUCTIONS

READ ALL SAFETY WARNINGS & INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING INSTALLATION & OPERATION

WARNING

Please read these pages carefully. They contain very important information to protect you and your valuable warranty on CSS. Make sure you are familiar with all the following safety warning and precautions associated with the unit.

DANGER

✓ Could cause personal injury or have adverse effects on health.

- Poor water quality may have negative effects on people health and your CSS! It is recommended that you use potable municipal water as source water (raw water).
- Do not move the unit by the front cover. Move the unit by putting both hands underneath it. This will prevent the unit from falling during movement.

CAUTION

✓ Could cause damage to CSS and possibly void your warranty.
✓ Risk of Fire and Electric Shock.

- If on hard water please ask about pre-treatment options. Your CSS is not under warranty for any damage or required cleaning by hard or poor quality water deposits.
- To protect the unit and maintain the performance, water and power supply MUST be connected at all times! The unit MUST be stayed power-on at all times even not in use!

  Considering the core technology of this product, stabilization of iEOG (P.25), it relies greatly on a steady supply of electricity. Efforts should be made in order to try to avoid any or many incidents of man-made power off. The product's limited warranty does not cover any damage to the iEOG parts due to frequent power off operations. Disconnecting power more than 36 times a year will void the limited warranty to the entire product.
- Failure to install or operate in accordance with the instructions described in this manual could void warranty and result in injury or product damage.
- Never run hot water through this unit. Connecting it to a hot water (>35°C) source could damage the iEOG or other parts.
- Protect your CSS from freezing temperatures or from direct sunlight.
- Keep the unit and the power cord away from hot surfaces or appliances – failure to do so may result in electric shock or fire!

- To reduce the risk of electric shock, do not remove cover; no user-serviceable parts inside. Always refer servicing to qualified service personnel. Remove the cover will void the warranty.

- Do NOT try to fix the unit yourself! All service or repairing work must be performed by an authorized and qualified technician.

- All plumbing should be completely set up before plugging power to power on.

- Ensure all water inlets and outlets are connected to corresponding hoses and are properly installed.

- To protect your investment, if the input water pressure may exceed 7.0 kg/cm^2 (100 psi), a flow pressure regulator must be installed prior to input.

- Always make sure that all the connecting hoses allow free flow of water during operation.

- Ensure the power supply meet the requirements as indicated in the product specifications. Follow all applicable electrical codes.

- Risk of electric shock. Always use a well-grounded, 15A or above individual socket. Do NOT use loose or defective socket.

- To prevent accidental shock we recommend this product always be used on a GFCI (Ground fault Circuit Interrupter) outlet.

- Risk of electric shock. Do NOT put the machine in water or spray water into it. Otherwise it may damage the unit or cause electric shock.

- Do not pull the power cord. Never touch power cord or power outlet with wet hands.

- Do NOT use a damaged power cord. Do NOT stretch, twist or tie power cord during use. Do NOT press power cord.

- In the event that water gets into power supply, unplug the power cord and completely dry power outlet.

- Do NOT operate the system if:

    - The cord or plug is damaged.
    - There is no input water supply.
    - The system has malfunctioned.
    - There is any noticeable damage to the system. Contact your regional distributor or authorized service agency for examination, repair or replacement.

- WARNING – To reduce the risk of electric shock, replace damaged cord immediately.

- Do NOT block the vent at the back of the machine, as this will impair the efficiency of the system.

- Do not use the unit in a dusty place. This may cause the unit to malfunction.

- Do not spray water on the main unit. Do not clean with a damp cloth or any chemicals, which may leak into the unit.

- Do not place this unit on an uneven surface. Do not drop or use excessive force on this unit.

- Do not poke or scratch the touch pad or LCD display with sharp objects.

- The system should always be sized appropriately for its intended use by a qualified professional familiar with the application.
- In case water leaks out of the unit (other than hoses) or unit is standing in a puddle of water, shut off the water supply, unplug the power cord and refer servicing to qualified service personnel.
- In case of strange noises, burning odor or smoke, unplug the power cord immediately and refer servicing to qualified service personnel.
- Replace iEOG Pre-Filter at least every 12 months to optimize the purification performance of this unit even if the replacement indicator light isn't turned on.
- Keep original packaging for storage or unit transportation.

These safety precautions and warnings are provided at YOUR benefit to your safety and investment, for the safe and proper use of this unit and can prevent danger, bodily harm and/or possible damage due to misuse. Please make sure you are familiar with all the safety precautions and warnings associated with this unit. BioSure is not responsible for any damage or injury caused by not adhering to these precautions and warnings.

SAVE THIS MANUAL FOR FUTURE REFERENCE

READ ALL SAFETY WARNINGS & INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING INSTALLATION & OPERATION.

1. General Information

1.1 Description

BioSure® CSS unit is a disinfection system with ozonated water in supply designed specifically for food preparation and service in commercial kitchens, offering the benefits of ozone in cold water in an effective and safe manner for integration with, and improvements of processes in food safety protocols. We take our commitment to quality seriously in order to ensure we are providing the highest standard of quality ozone food safety solutions available.

The BioSure® CSS unit incorporates **Indirect Electrolytic Ozone Generation (iEOG)** technology with electronic control and full-time performance monitoring. We provide concentrated ozonization treatment into water that flows through our systems, so as to provide for your applications with dissolved ozone in water at effectively high levels. With stabilized ozone production and constant dissolution capacity, the concentrations of dissolved ozone can be guaranteed, ensuring the given water flow with dissolved ozone levels on demand at "Right on Spec" performance to your applications.

The CSS system can be used to support and assist in a wide range of major applications in commercial kitchens, enabling food preparation professionals to reduce or replace harsh chemicals and/or multi-step wash programs that may use expensive hot water previously. With cold-water only and by the power of dissolved ozone in water, a complete solution is offered to you not only for bacteria free and chemical free, but also for a huge energy saving to your overall benefits!

Recommendable applications for CSS

Applications (Including but not limited to)	Suggested Conc. ppm (Dissolved Ozone)	CSS Performed Flowrate
High Protein Products	4.0*1	300 / 120 LPH (1.3 / 0.5 GPM)
General Terminal Disinfection	3.7*2	
General Direct Food Contact	2.0*3	
Flat Surface Disinfection	1.0*3	
Standards apply: *1: BES Company Standard; *2: Campden BRI (UK); *3: Industry Standard		

Note: Consult your local BioSure® professionals for specific application recommendations.

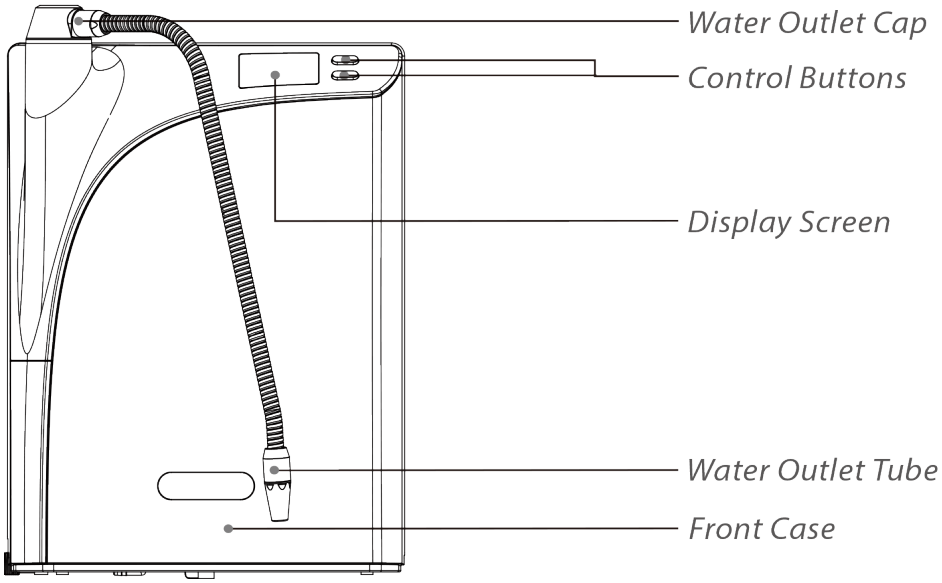
1.2 Specifications

Model		CSS	
Engineering Configurations			
Type of Ozone Generators		Indirect electrolytic ozone generation **(iEOG)**	
Ozone Generation Source		Water (municipally treated water)	
Principle of Setup		Stationary Point of Use (POU)	
Start / Control Method		Touch pad / buttons	
Dissolving Method		Spray Dissolution	
Off-gas handling		Built-in catalytic process	
Cooling Configuration		Air cool	
IP Code		IP-X2	
Noise Level		Max. 40 bBA (at 1 m or 3.3 ft)	
Output Feature			
Output		Ozonated water	
Flow Capacity (LPH)		**(1)** 270 LPH (1.2 GPM)	**(2)** 120 LPH (0.5 GPM)
Concentration*(ppm)		6.0 ~ 0.5	8.0 ~ 1.0
Outflow Pressure		≤ 0.3 kg/cm^2 (4.3 psi)	
Power Requirements			
Applied Power		AC 100 ~ 240 V / 60 ~ 50 Hz	
Rated Power	In Use	60 W	
	Standby	≤ 30 W	
Input Water Requirements			
Pressure		3.0 ± 1.0 kg/cm^2 (42.7 ± 14.2 psi)*	
Flow Rate		≥ 300 LPH (1.3 GPM)	
Temperature		5 ~ 30 °C (41 ~ 86 °F)	
Water Quality		pH: 6 ~ 8; Conductivity: ≤ 500 μ s/cm**	
* Recommended pressure; if the input water pressure may exceed 7.0 kg/cm^2 (100 psi), a flow pressure regulator must be installed prior to input. ** Municipally treated tap water			
Dimensions and Weight			
Dimension	mm	300 x 165 x 400	
(WxDxH)	inch	11.8 x 6.5 x 15.8	
Net Weight	Kg	7.5 (around 9.5 kg when filled with water)	
(Approx.)	lb	16.5 (around 21 lbs when filled with water)	
Location Requirements			
Location		For use on a hard, level, and stable surface only	
Ambient Temperature		5 ~ 35 °C (41 ~ 95 °F)	
Ventilation		Min. 5 air changes per hour	
Clearance		Min. 10 cm (4”) clearance around unit	

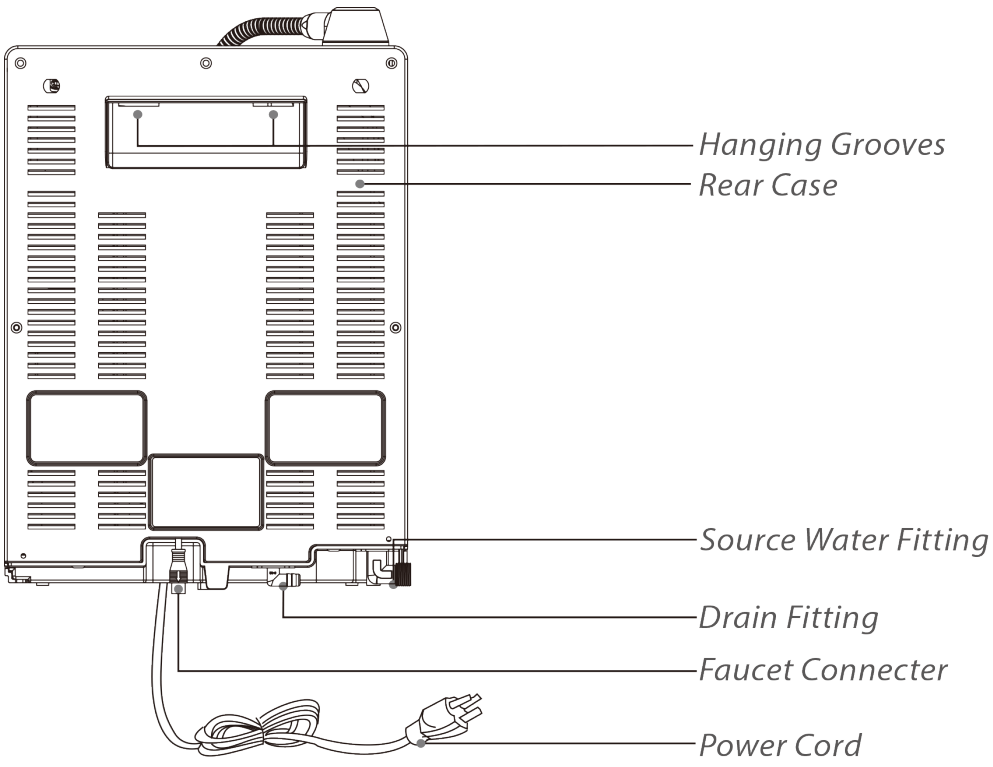
2. System Overview

2.1 Getting to Know Your CSS Unit

Front View

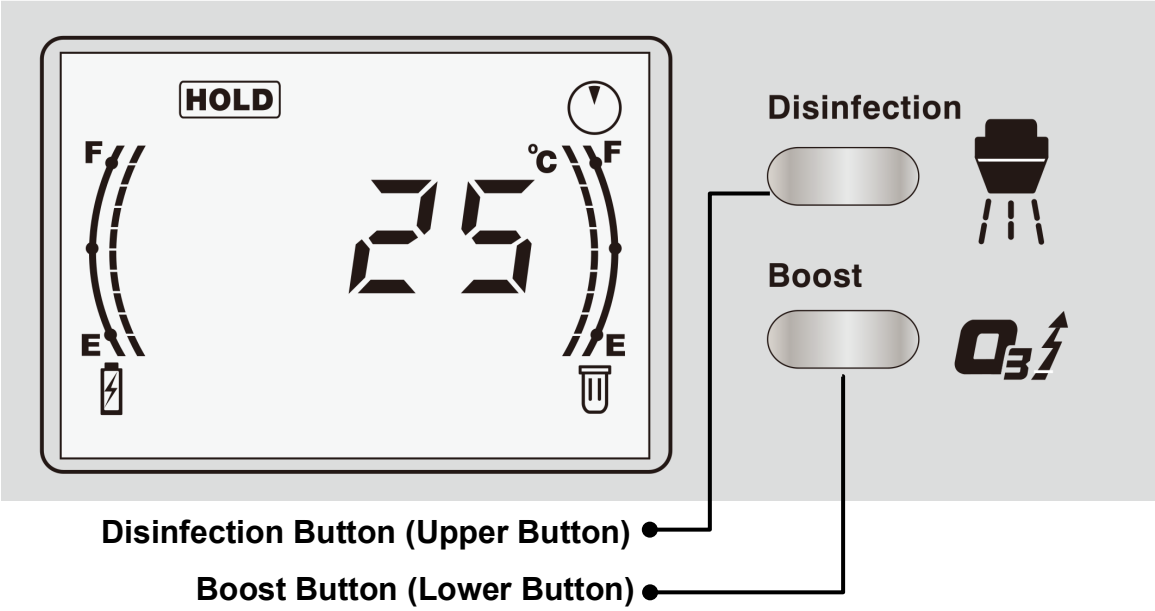


Back View



2.2 Control & Display

Control Buttons



Buttons for Output Functions

"Disinfection Button" – Press to start (2 modes); press any button (a light press for 0.2 sec.) to stop. Pressing this button to start will give an output with flow rate at **270 LPH (1.2 GPM)** and dissolved ozone concentrations ranging **6.0 ~ 0.5 ppm**.

This button controls two modes in output, which are different in their output time length system default settings: **(1) 20 seconds; (2) 60 minutes**. The associated output concentration profiles will therefore differ. These two different modes can be performed specifically by different methods of button operation on this upper button:

Disinfection Time Length (Default Settings)	Method of Press to Start (using the upper button)	Buzz Sound (Beep Number)
20 Seconds	0.2 sec light press	Once
60 Minutes	2 sec press and hold	Twice

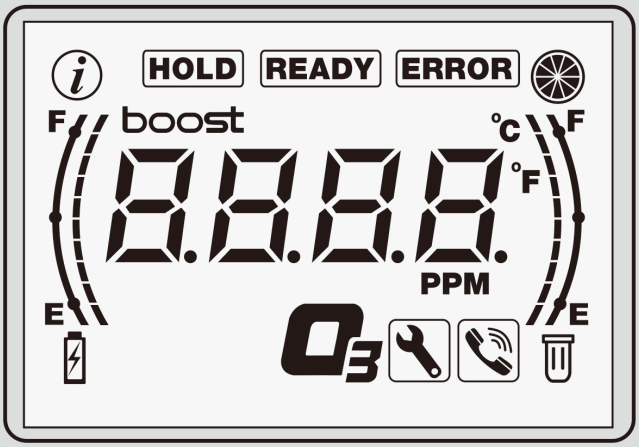
"Boost Button" – Press to start (1 mode only); press any button (a light press for 0.2 sec.) to stop. Pressing this button to start will give an output with flow rate at **120 LPH (0.5 GPM)** and dissolved ozone concentrations ranging **8.0 ~ 1.0 ppm**.

Boost Time Length (Default Settings)	Method of Press to Start (using the lower button)	Buzz Sound (Beep Number)
60 Minutes	0.2 sec light press	Once

For directions of use and further information about applications, refer to P.35.

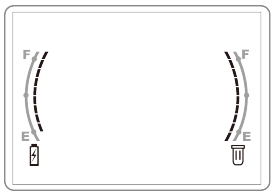
Note: A LIGHT PRESS is all that is required when pressing the buttons. If any button is not pressed during any of the output operations, the system will automatically stop giving the output after the default time length settings.

Display Screen Guide



ⓘ	-	Status Alert / Info		-	Performance Meter
HOLD	-	Waiting Indicator	READY	-	Ready Indicator
ERROR	-	Error Indicator	°C / °F	-	System Temperature
O_3	-	Output Feature	boost	-	Boost Starting
PPM	-	Output Concentration			
	-	Service Indicator		-	Call Customer Service

8.8.8.8. - **Numbers or Signs for Temperature, Concentration, Service Code, Error Code and Operational Code.**



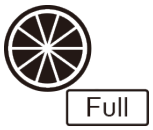
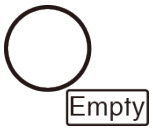
- **Life Meters for Cell (Left) and Pre-Filter (Right)**

Display Feature – Conditions & Interpretations

1. ⓘ - Status Alert / Info

	"ⓘ" represents an alert or info notification. The icon will be shown under the following conditions:
Flash	(1) Notify user of the monthly power disconnection limits have been reached.
Flash	(2) Alert the users to the status of warranty invalidation (alert for a reached 36 times power disconnection statistical limits).
Display	(3) Display of operation log and records.

2. ◍ - Performance Pie Meter

	The performance pie chart shows the performance charge levels, from full ◍ to empty ○ when using continuously, filling to full in standby. When the meter shows that every segment is filled, the system is ready with peak performance for standby.
Full / Empty	 **Performance at peak**  **Performance at baseline**
Flash	 **Consuming or recharging performance**

3. HOLD - Waiting Indicator

	"HOLD" means to wait. When this waiting icon is present, it indicates to wait for certain amount of time before functions can be turned back to be available. This waiting status can happen under the following three conditions:
Display	(1) First time start-up – The waiting icon will stay on until system preparation gets ready (30 to 55 minutes based on input pressure).

Flash	(2) Re-start – The waiting icon will remain flashing until a compulsory time out period is completed (30 minutes).

4. READY - Ready Indicator

Display	"READY" icon shows that the system is ready, and the system's functions are all available for use.

5. ERROR - Error Indicator

Flash (Fast)	When system displays a flashing red ERROR (0.15 sec flashing frequency), this means there is a detectable error or problem, which has caused the system to stop function normally. Conditions which can attribute to an error could include the following: • Water Input Failure (iEOG water filling timeout, [P30, P.44]). • Consumables end of service life [P.43, P.46]. • Faulty iEOG generator (cell) [P.44, P.46].

6. °C/°F - System Temperature

Display	System's temperature is measured and displayed during normal standby for user's reference. Standard display is in Degrees Celsius; Degrees Fahrenheit is optional [P.38].

7. O_3 - Ozonated Water Supply

Display	"O_3" is displayed when the unit is in operation, and the ozonated water flow is injected in the output. ***Note: Ozonated water is dosed into water line based on program configurations (P.32).***

8. boost - Concentration Boost

Display	The icon is displayed when the "boost" feature is in operation, which is initiated by pressing the Boost Button (the lower button).

9. PPM - Output Concentration

Display	Based on the usage, readings of dissolved ozone concentrations will be simulated and displayed by system during the operations as reference to operators. Expressed in **ppm** (parts per million), the unit is equivalent to mg/L.

10.  - Service Indicator

	When  is present, it indicates the system requires a service. The display of the icon can be observed in two modes with regards to how urgent the condition is:
Flash	(1) Near the end of service life for Consumable Parts – by 2% remaining life (Service due in 3 weeks).
Display	(2) Service due for Consumable Parts – end of service life.

11.  - Call Customer Service

Display	 usually will be displayed together with ERROR during error conditions. This is an indication that at this point operator should contact the local customer service for troubleshooting.

12. 8.8.8.8. - Numbers or Signs for Temperature, Concentration, Service Code, Error Code and Operation Log Code

Display	Numbers, signs or codes are displayed in 8.8.8.8.. This helps provide information to operator.

13.  **- Life Meters: iEOG Cell (Left); Pre-Filter (Right)**

Display	The bar meters on the two sides of the screen show the monitored life remaining level or capacity for the ozone generator (iEOG cell) and input pre-filtration (Pre-Filtration Service Indicator). When the shown level has only one segment left, the system chirps periodically or after using.

3. Getting Started

Consult your local BioSure dealer for service of installation. The instructions described below for the installation is intended for operator's reference only. For an installed unit, see Section 3.2 for operation instructions [P.25].

3.1 Installing Your CSS

Location

The BioSure® CSS is designed for setting up on countertop, wall-mount or under-counter. For countertop setup, place the unit on a hard flat surface to prevent toppling and falling. For wall-mount, select a solid wall and apply the mounting bracket (accessory included) to secure the mounting.

Key criteria for your CSS location:

- Electricity supply nearly accessible (AC 100 ~ 240 V / 60 ~ 50 Hz).
- Municipally treated tap water nearly accessible (pH: 6 ~ 8; ≤ 500 μ s/cm).
- Cold water supply available (5 ~ 30 °C / 41 ~ 86 °F).
- Drainage available.
- Well ventilation - min. 5 air changes per hour.
- Able to allow sufficient access for maintenance and all piping.
- Climate-controlled, ambient temperature of 5° to 35°C (41° to 95°F).
- Out of reach of water splash and airborne water with a degree of protection from dirt or other containments.

Electrical

The BioSure® CSS is supplied with a standard power cord. Plug the cord into a standard grounded, grounding type receptacle only. Refer to product specifications (see Section 1.2) and your local electrical codes for information on proper electrical connection. All permanent electrical connections should be attended by a qualified electrician.

Note: The circuit must be protected by a GFCI (Ground fault Circuit Interrupter) installed in accordance with electrical codes.

Plumbing

Parts & Hardware included

A. Standard input pre-stabilizer with mounting kits
B. Connecting adapter
C. Input hose (3/8", PE, 1.5 m, white)
D. Drain Hose (ϕ7×10 mm, PVC, 1.5 m, black)
E. Plumber's tape (Teflon tape)
F. Drain clamp

Tools & Materials Required

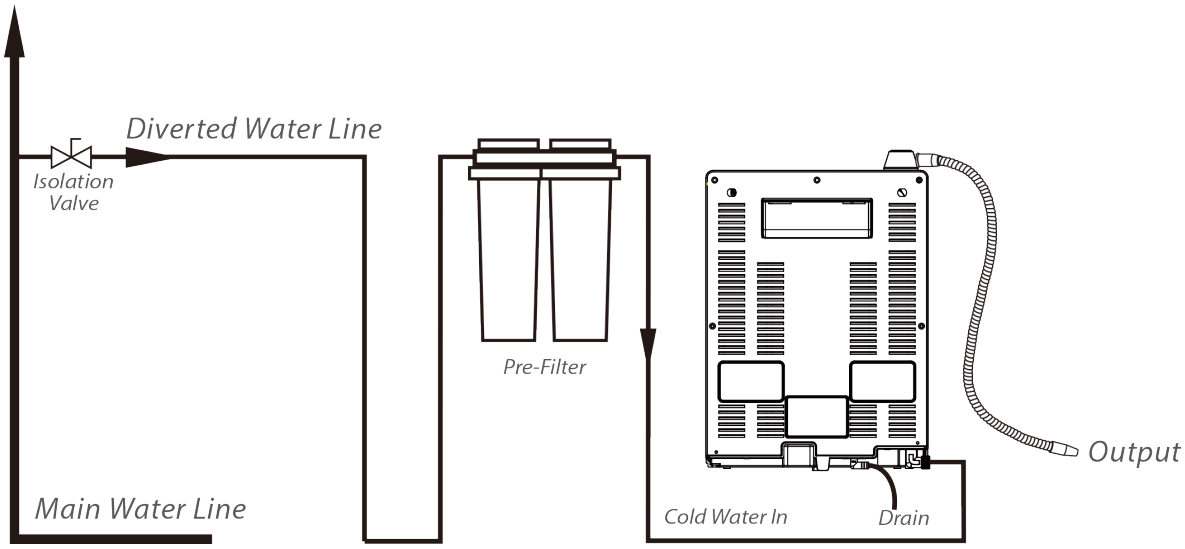
- Safety glasses
- Phillips screwdriver, adjustable wrench and utility knife
- Tape measure and pencil or marker
- Pan or bucket and newspaper or towels
- Electric drill (cordless recommended)
- Other piping materials (depend on actual situation)

Optional Materials

- Hacksaw or Pipe cuter (for metal pipe)
- 10 mm drill bit (for creating passing holes for piping)

Plumbing and Installation Instructions

Setup your unit and then plumb all the necessary water input, output and drain as in accordance with the **"Typical Scheme of Installation"** below. Follow all local plumbing and construction codes.



Typical Scheme of Installation

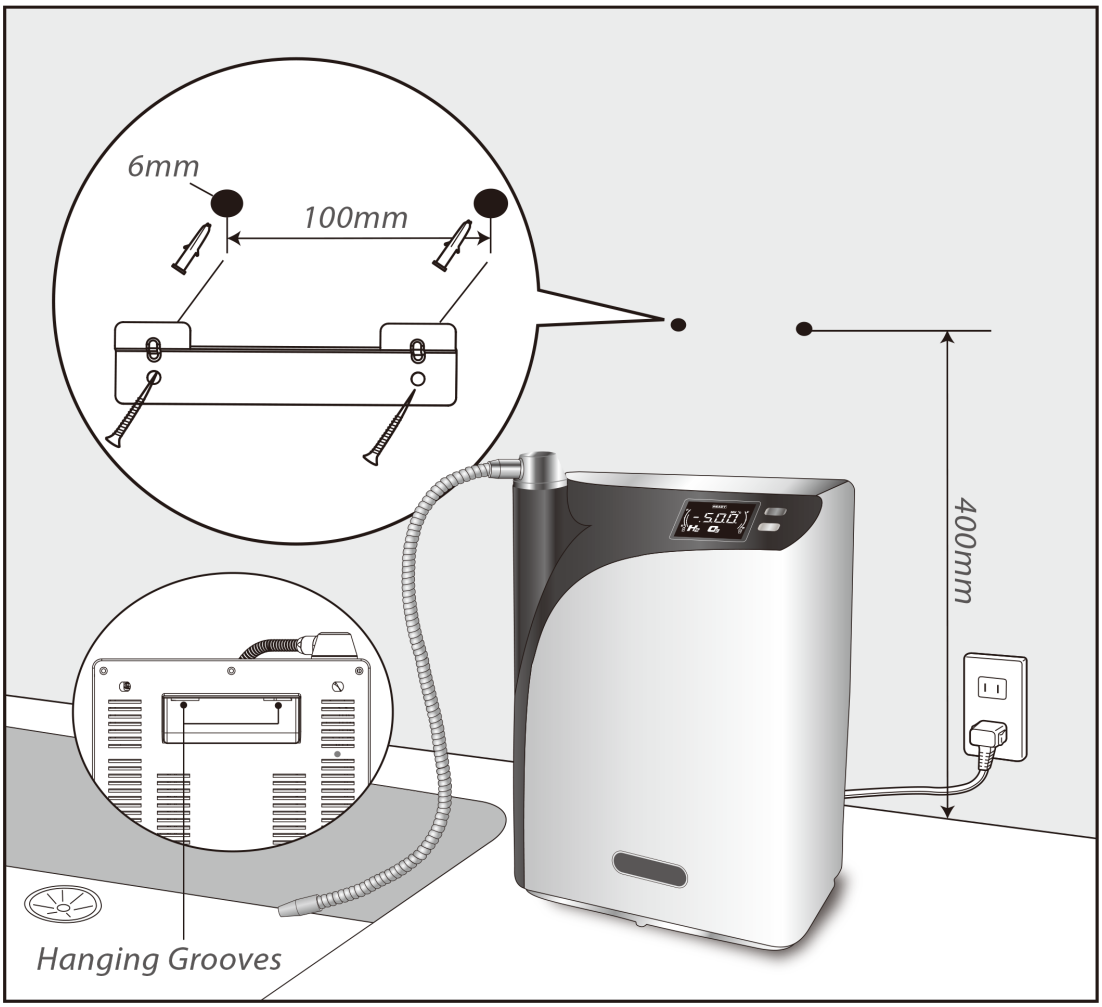
Instruction 1 - Counter Top or Under-Counter

For counter-top installation, determine if you will place your unit simply on a stable counter or mount it on a wall near and above a sink. To mount the CSS, please follow the directions below:

1. Drill two 6 mm holes with 30 mm in depth in the wall 400 mm above the top of the sink or counter. The distance between the 2 holes must be 100 mm.

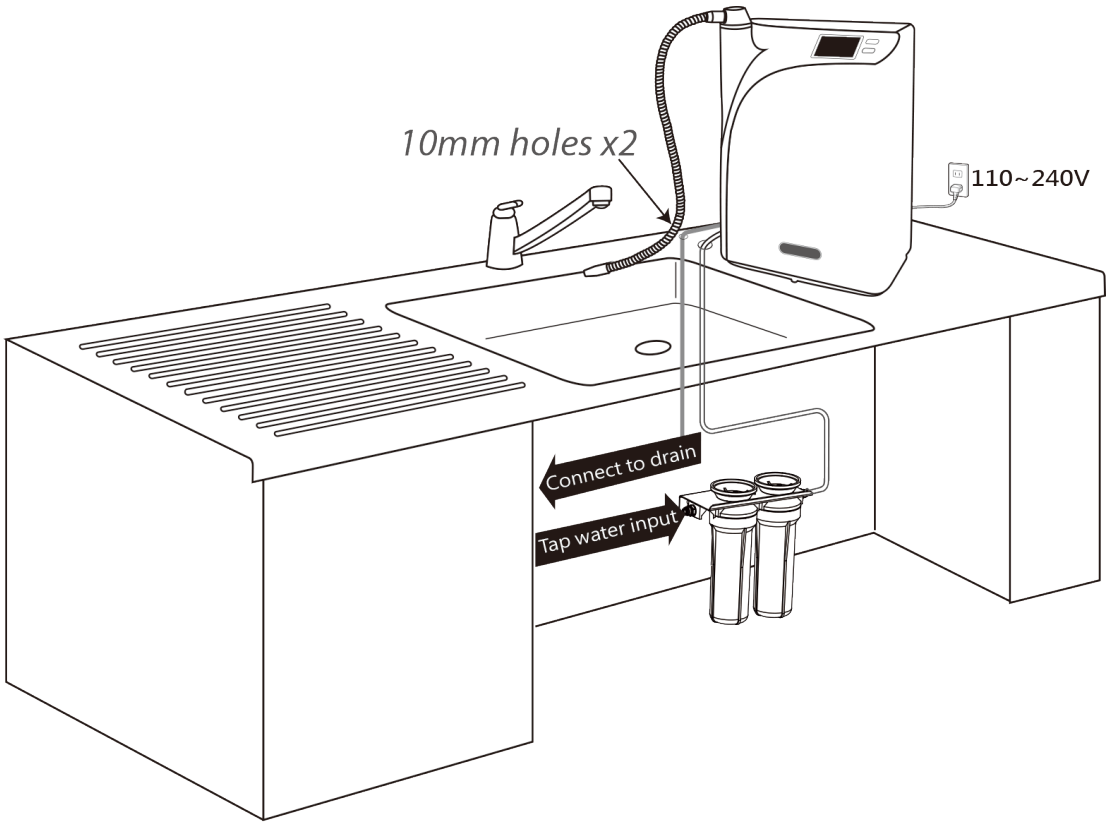
2. Press the plastic anchor inserts into the holes as pictured below. Push the plastic anchor insert so that the opening is flush with the wall.

3. Place the mounting bracket on the wall and fix with screws as pictured below. Hang the CSS on the mounting bracket.

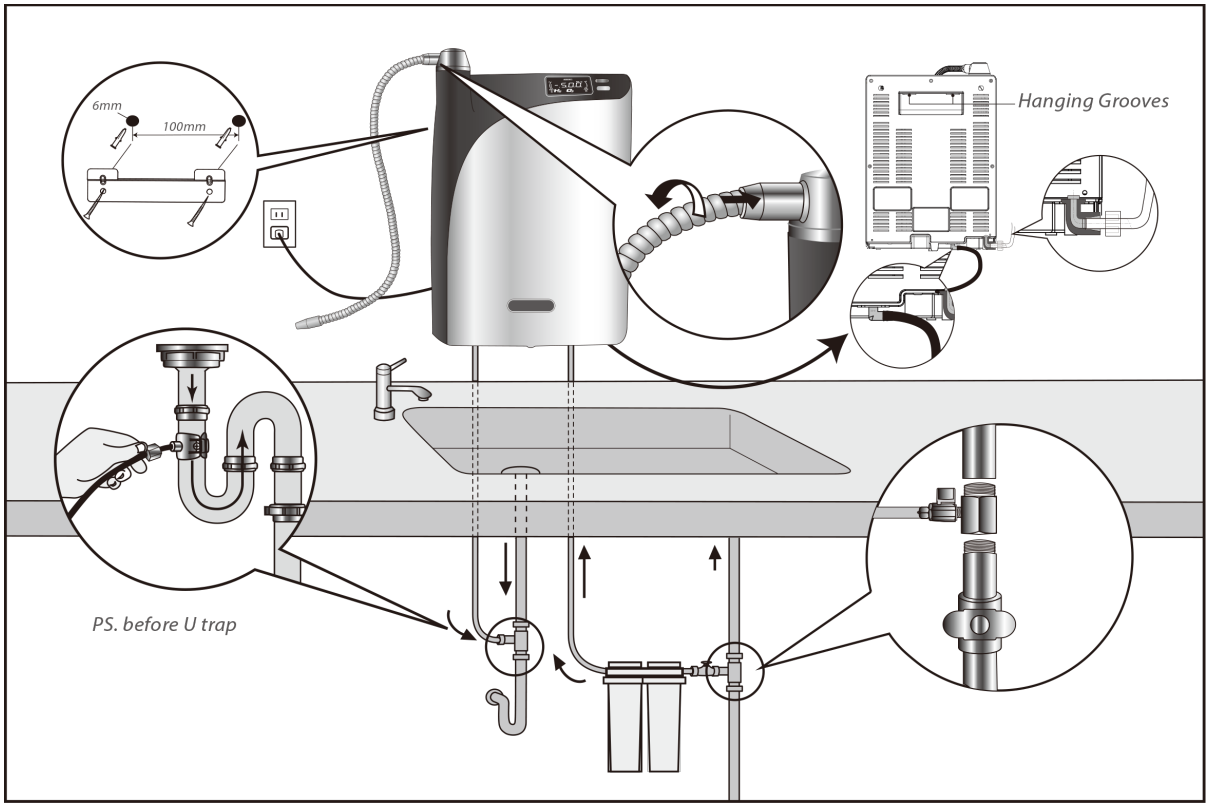


Important:

For counter-top installation, two 10 mm holes on the counter will be required for passing the input water and drain hoses through the surface. This is in order to allow the connections from the back of the unit to under sink area for input water and drain.

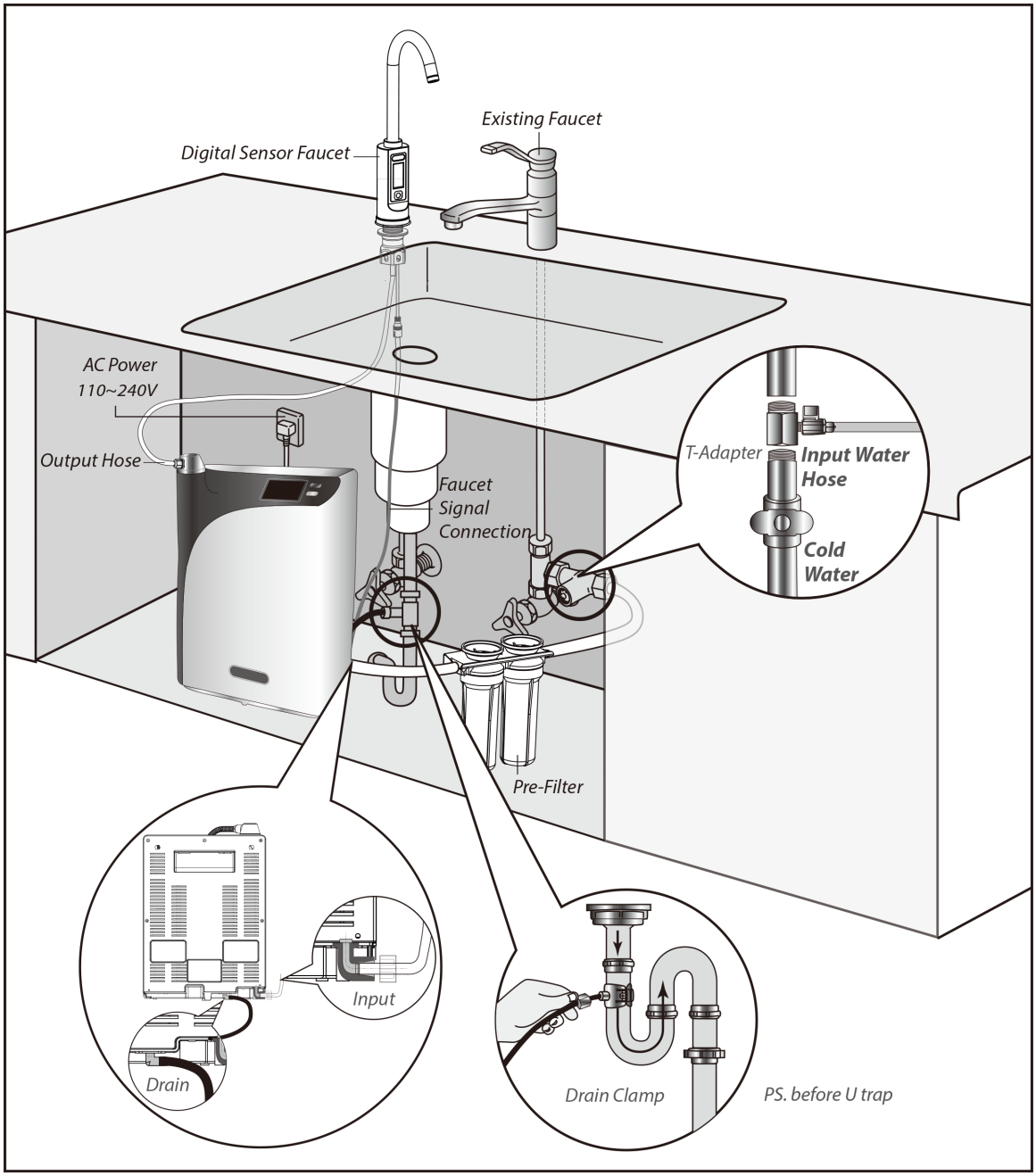


Below drawing shows the installation and relevant plumbing as installed with a counter-top scheme:



For under-counter installation, a digital sensor faucet designed exclusively for the unit will be required in order to accomplish the control of output from counter-top. The CSS main device will be located under the sink. While the connections of the input water and drain are accessible directly under the sink, the outlet will be connected to the faucet for output.

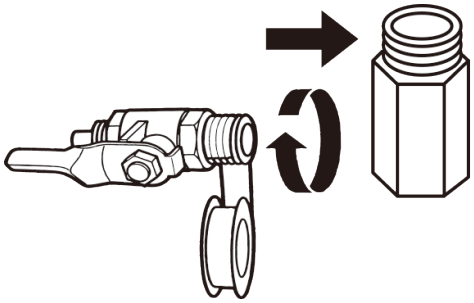
Below drawing shows the installation and relevant plumbing schemes for under-counter installation:



Note: These installation diagrams are for illustration and reference purposes only, indicating the required key components in the installation. Plumbing and setup orientation may vary from place to place.

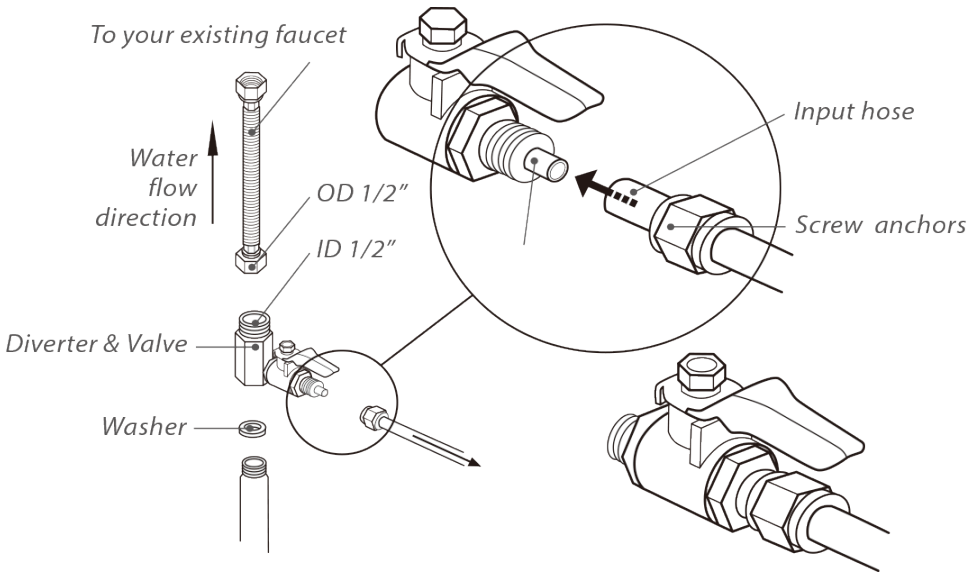
Instruction 2 – Input Water Setup

1. Find the ½" to ⅜" Ball Valve T-Adapter (diverter & valve) in the accessory box. Assemble and seal the threaded connection with the plumber's tape included in the accessory box:



2. Locate the cold water supply under the sink. Shut off water supply.

3. Connecting the adapter to the cold water line between the wall and the sink faucet as follows:



Instruction 3 – Setup Input Water Pre-Stabilizer

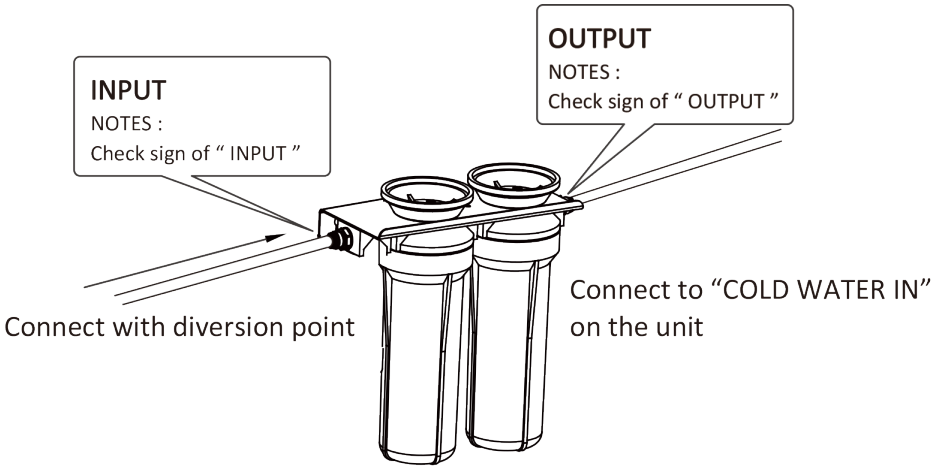
1. Select an easy-to-access location near or under the sink for the input water pre-filter.

2. Determine if you will place the pre-filter simply on surface in a vertical position or mount it. To mount the pre-filter:

   a. Using the built-in bracket on the back of the pre-filter head to mark the holes for mounting screws on the wall surface. Use a 6 mm drill bit to bore pilot holes into the marked positions or drive screws directly into the positions. This may require the use of toggle bolts to hold in dry wall.

b. Hang the pre-filter on the eyes of the bracket. This pre-filter head should be mounted to a firm wall surface.

3. Connect the water line from the adapter's valve outlet to the inlet of pre-filter. The outlet will be connected to the unit.



Note: In mounting setup, allow a minimum clearance of 10-15cm (4-6") below the pre-filter for further service. The pre-filter must be placed or mounted in a vertical position.

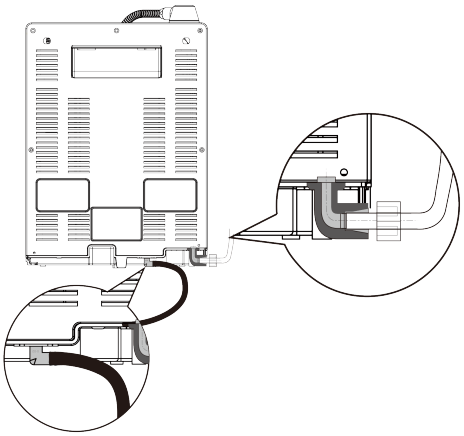
Instruction 4 – Input & Drain Connection

1. Remove the joint tube from the unit's inlet and outlet fittings on the back of the unit. This joint tube is used for shipping purposes only.

2. Remove the input hose (white) and drain hose (black) from the accessory kit. Locate the

3. Insert the input hose into the unit's fitting (COLD WATER IN). Tightly screw the nut onto the fitting to secure the hose into place. Then, attach the drain hose to the unit's drain fitting (DRAIN).

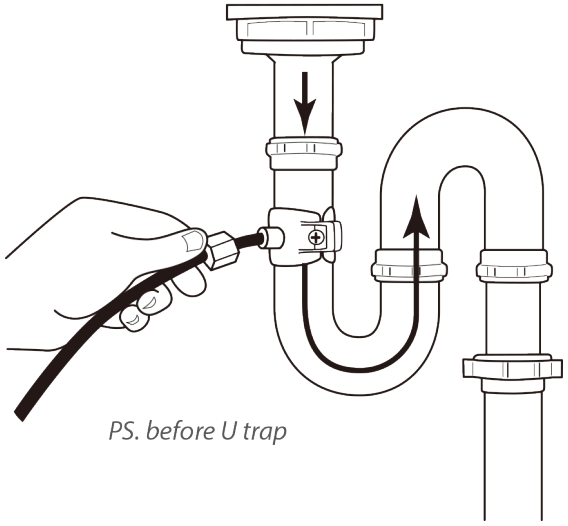
Insert and lock the Input water hose (white) into "COLD WATER IN" fitting (white). Attach the drain hose (black) to "DRAIN" fitting (black).



4. For counter-top installation, two 10 mm holes on the counter will be required for passing the input water and drain hoses through the surface.

5. Setup the drain hose under-sink connection:

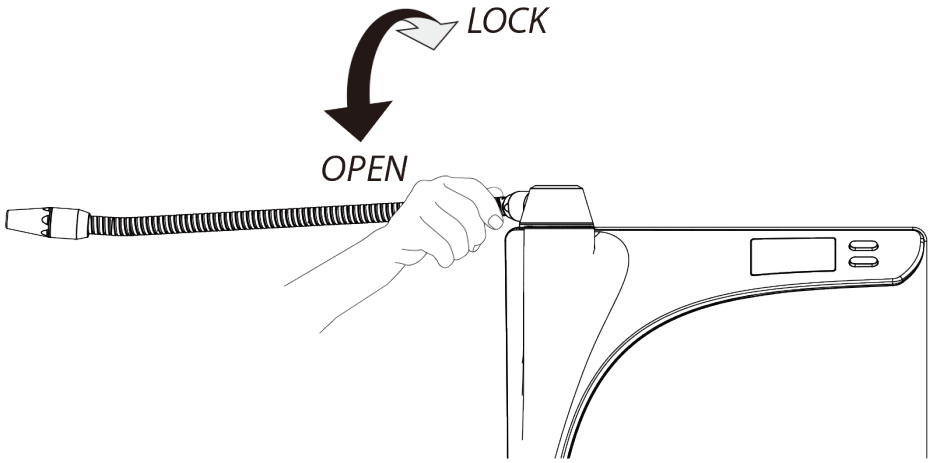
   Drill a 10 mm hole into the sink drainpipe and install the drain hose with the drain clamp (included accessory) in accordance with the below scheme.



Instruction 5 – Connect Water Output

1. To locate the water outlet, remove the plastic cap positioned at the top of the unit (rotating water output cap).

   a. For counter-top installation, find the flexible water outlet tube in the accessory box. Screw the tube anticlockwise into the water outlet until there is no gap. Do not over tighten.

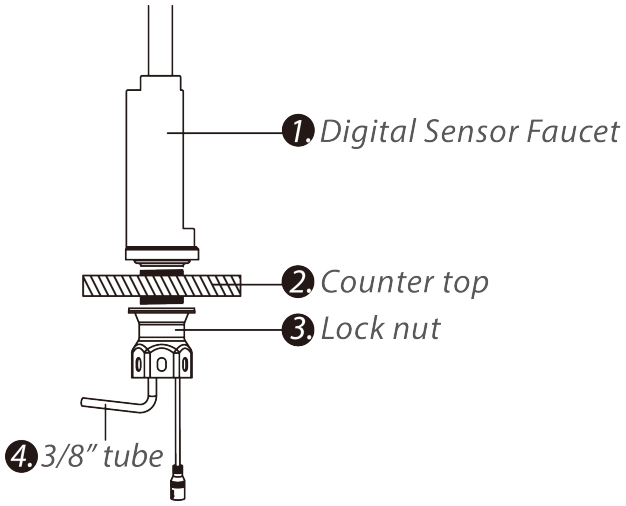


b. For under-counter installation, install the SF-100S Digital Sensor Faucet and connect it with HOS according to the following instructions:

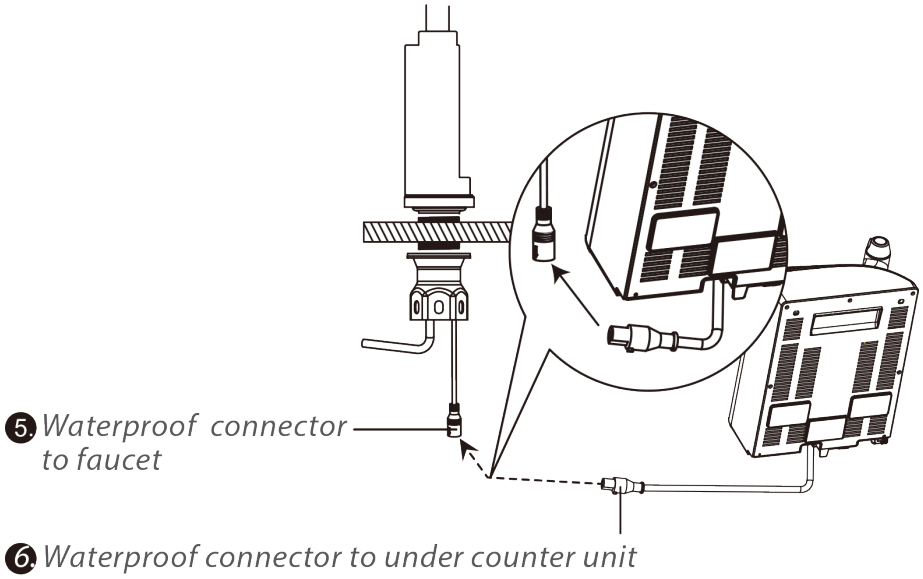
1) Drill a ϕ32 (mm) or 1¼" hole in the sink or counter top or use the available hole.

2) Insert the faucet tailpieces with supply and connection line into the hole.

3) From beneath the sink or counter top, screw the lock nut onto the faucet tailpieces and tighten them with a basin wrench.



4) Connect the faucet and under counter unit and wire the waterproof connectors.



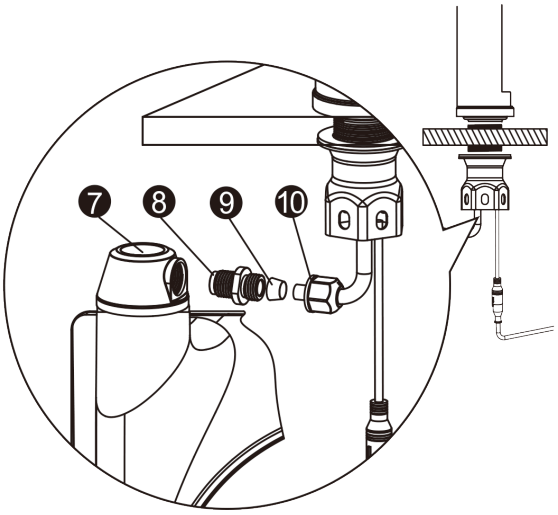
5) Connect the faucet and under counter unit and assemble the tubing as shown.

❼ *Unit water outlet cap*

❽ *Faucet adapter and union converts M14 anti-clockwise thread to M14 clockwise (use the M14 anti-clock wise thread to connect to the unit water outlet cap)*

❾ *Ferrule (for 7x9 mm tube)*

❿ *M14 lock nut*



3.2 Starting Your CSS

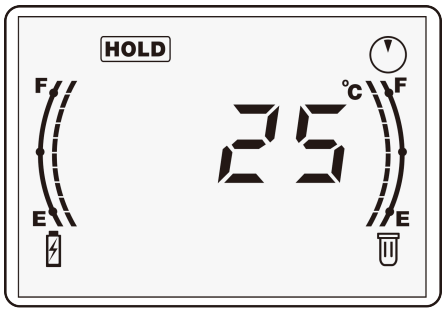
Confirm all below points prior to start-up:

1. All inputs, output and drain are correctly installed. Ensure that the machine is connected to cold water supply input. Ensure the area is well ventilated.
2. Input water pressure is less than 7.0 kg/cm^2 (100 psi), or within the recommended range: 3.0 ± 1.0 kg/cm^2 (42.7 ± 14.2 psi).

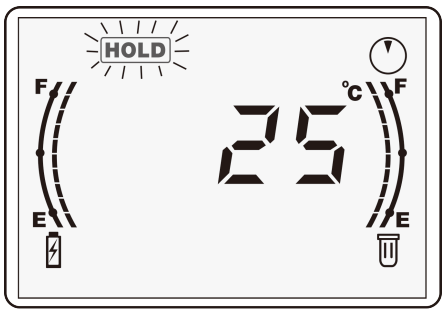
First Time Start-Up

- **iEOG Start-Up & Preparation**

There is no ON/OFF switch on the CSS. The unit is switched ON by plugging the power cord into a wall outlet. Before plugging the unit to start, all plumbing works should be completed first.



Once we start the unit, the display screen will be ON, "**System Temperature**" will be shown and "**Life Meters**" will light up. For the first time use, a solid on lighting **Waiting Indicator** "HOLD" will be displayed after starting the unit. This indicates the unit is in its preparing mode for the first time start-up, which includes taking water to fill for the iEOG process and starting up the process.

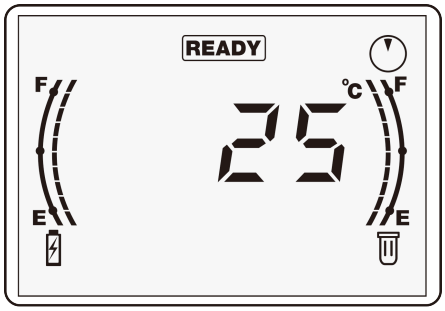


The entire first time start-up preparation will take at least 30 minutes. However, depending on the input water pressure, the time required specifically for the water filling might be less or more. The filling process will take less than 30 minutes if a recommended 3.0 kg/cm^2 (42.7 psi) input water pressure can be obtained. In this case, once the filling process is completed, the "HOLD" icon will start flashing (blink/0.5 sec) instead of being solid on lighting, and this flashing "HOLD" will stay for the rest of this 30-minute-at-least preparing period.

If the input water pressure is below 2.5 kg/cm^2 (35.6 psi), up to 45 to 55 minutes for the filling process could be expected. In this case, the entire first time start-up preparation will take more than 30 minutes along with the additional time required for completing the water filling for iEOG start-up.

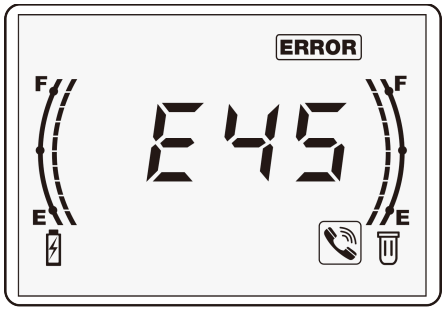
Note: Having non-stopped draining during the preparation stage is normal.

- **System Ready Indication**



Once the entire preparation phase is completed, the "HOLD" icon (either is in solid on lighting or flashing) will extinguish, and then **"READY"** icon will light up and stay solid on, indicating that the unit is now ready for use. All functions are now available.

- **Unsuccessful Start-Up**



However, if in one hour the initial water filling process for iEOG start-up cannot be completed, a "E45" error code will be displayed, indicating that the water filling process was unsuccessful. All functions will remain suspended. Please check the input water pressure and refer to the troubleshooting section to symptom 10 on P.48 if the symptom is identified.

3.3 System Shut-Down & Re-Start

Conditional Shut-Down

The CSS is intended for constant power-on, unless in necessary situations, such as for service or relocation. The unit can be switched OFF by un-plugging the cord from wall outlet (power supply). Before shutting down the unit, the water supply should be completely turned off.

The following sequence of steps must be followed for manual shut-down:

1. Shut off water supply first.
2. Turn off the system by un-plugging the cord from the wall outlet.

Note: Disconnecting the power frequently may cause unexpected impacts on the iEOG module and result in degradation to the product performance. 36 times of power off in a year will void warranty.

Re-Start & 30 Minutes Re-Start Protection

To re-start the unit, reconnect the unit to power for switching on. However, **after re-start all functions will be suspended for 30 minutes**. This is a standard protection procedure to minimize the impacts on the iEOG-working module. During this "HOLD" period, system is running program for self-maintenance and protection.

After re-start, the display screen will be ON, "**System Temperature**" will be shown, "**Life Meters**" will light up, and **Waiting Indicator** "HOLD" will be flashing (blink/0.5 sec) during this 30 minutes re-start protection period.

Once the protection period has passed, the flashing "HOLD" icon will extinguish, and then **"READY"** icon will light up and stay solid on. Again, the **"READY"** indicates the unit is now ready for use and all functions are available.

3.4 Transportation & Relocation

For safety reasons, be sure that the people who transport and handle the unit are informed about the machine specifications and information. Whenever possible, make sure the system stays in the upright position, and avoid damage to the hose connectors during transportation. Check all passages and spaces where the machine has to be transported through, they must have sufficient dimensions to meet the height and width of the machine (including the package before unpacking). Never push, pull or press the components protruding from the contour line of machine (water inlet and outlet pipes etc.).

Do not transport the machine in a way by which it can be exposed to environmental conditions or extreme humidity. The ambient temperature during transportation should always be maintained between –5 ~ 40 °C at all times.

For machine relocation, consult your local BioSure professionals for installation arrangements.

3.5 Principles for Correct & Proper Use

As a result of proper use of the BioSure® CSS unit, unpleasant effects of traditional chemical use are virtually eliminated, and you may save much more expensive hot water, too. The BioSure® CSS unit can be so reliable to you and is safe and harmless to your equipment when installed and operated properly!

- The BioSure® CSS unit MUST remain connected to the supply of power and water AT ALL TIMES. This is because the stability and sustainability of the iEOG's performance is highly reinforced by the continuance of connected power and water supply to the system.

- Power disconnection should always be avoided as far as possible unless necessary, for example, during machine servicing activities. Disconnecting the power or having power failure during operation of the unit at anytime may cause unexpected impacts on the iEOG working module and result in degradation to the ozone production performance. For desirable maintenance, instance of power disconnection should be managed within 36 times on an annual operation basis. ***Note: In cases for locations where power lost can happen frequently, together in use of Uninterruptible Power Supply (UPS) is recommended.***

- The BioSure® CSS unit is intended solely to apply cold, municipal tap water as input for the operation. The key criteria considered for the quality of the input water are as follows (Refer to Section 1.2):

  - Water conductivity below 500 µs/cm
  - Temperature between 5 ~ 30 °C (41 ~ 86 °F)
  - pH between 6 and 8
  - Municipally treated tap water

- Connecting to the water source with supply pressure at **3.0 kg/cm^2 (42.7 psi)** is preferably recommended for the best system performance.

- Ambient temperature around the system should be between **5°~35°C (41°~95°F)**. If the system is installed in an environment with temperatures over 35°C (95°F), an additional air-cooling approach must be provided. Operating outside of the recommended temperature ranges may result in damage not covered under the product's warranty.

- The system must be protected from freezing, which can cause cracking of the system's parts and water leakage.

- The system may not be operated in conditions other than those described in this manual (Refer to Section 1.2).

- The system is not intended for operation outside. However, if it is so necessary for outdoor installations, protection from weather elements (direct sun, rain, dirt) must be provided.
- The system is not intended for portable operation but for stationary only.

- The correct and proper operation of the system cannot be guaranteed if non-genuine parts or third party accessories are used.

- Please read and observe the service requirements to keep the machine in good working order.

4. Operation & Conditions

4.1 Operation Principle

iEOG Process for Professional Dissolved Ozone Generation

The CSS produces ozonated water at professional high levels for effective disinfection use.

Just exactly what is this? Your CSS employs computer accurate low-voltage electric current and selectable proton exchange energy to perform water electrolysis through patented ***Indirect Electrolytic Ozone Generation*** **(iEOG)** cell. Inside this advanced ozone generator, driving force from the electric current and proton exchange energy will split water into its basic elements – H_2, O_2 & O_3, and the process will then separate the hydrogen gas to leave oxygen and ozone as the only reaction products. This leads to the higher ozone dissolution in water because there is no other competing gas present in the output comparing to the traditional method that uses air as source.

This method of generation can achieve ozone concentrations of 20~30% in the output and is independent of air quality because water is used as the source of production.

iEOG stabilization

The iEOG process requires water with low conductivity as the starting substrate. With a self-contained water treatment for water deionization inside the CSS, using typical tap water as the only feeding source for the system come factory-ready for you to attach the municipal water supply directly. The water required by the iEOG process is secured through our iEOG stabilization module, including an external part for the treatment in the first phase (pre-stabilizer), followed by a combined Reverse Osmosis (RO) and Resin Deionization (DI) process within the system to accomplish the requirement. The majority of ionic species present in the input water, which are responsible for the conductivity levels, will be removed through this stabilization process.

Off-gas handling & Ozone Practice Safety

Un-dissolved or excess ozone will be destroyed to form oxygen by separating and directing it through a built-in ozone destruct device before releasing it into the air. This destruct unit applies a catalytic method that is able to destruct the off-gas immediately.

4.2 Operation States & Instructions

For First Time Start-Up, System Shut-Down and Re-Start, please see Section 3.2 and 3.3 (P.29 and 30).

Note: The unit is switched ON by plugging the cord into wall outlet directly (power supply).

Output Operations

You can select the two control buttons on the panel between “Disinfection” (the upper button) with larger flow for general disinfection and rinse and “Boost” (the lower button) with immediately raised concentrations for reinforcement and acceleration effects:

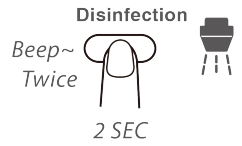
To Select “Disinfection”

1. 20 SEC, 300 LPH (1.3 GPM) Outflow

6.0 ppm during performance is fully recharged
The specific “ O3 ” icon is displayed during water outflow. If ANY button is not pressed again, the unit will automatically stop after 20 seconds of water outflow.

Press once on the lower button and again to stop

2. 60 MIN, 300 LPH (1.3 GPM) Outflow

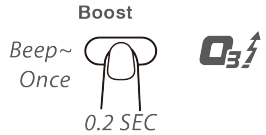


6.0 - 0.5 ppm during performance is fully recharged
The specific “ O3 ” icon is displayed during water outflow. If ANY button is not pressed again, the unit will automatically stop after 60 minutes of water outflow.

Press & hold for 1 sec on the lower button and again to stop

To Select “Boost”

1. 60 MIN, 120 LPH (0.5 GPM) Outflow



8.0 - 1.0 ppm during performance is fully recharged
The specific “ O3 ” and “ boost ” icons are displayed during water outflow. If ANY button is not pressed again, the unit will automatically stop after 60 minutes of water outflow.

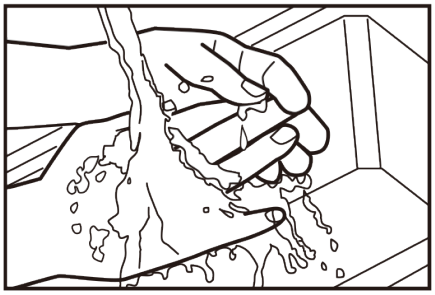
Press once on the upper button and again to stop

For Temperature Display, Consumables Service life index, Service and Error Code Information or other special functions, please refer to Special Features described in Section 4.4 (P.36).

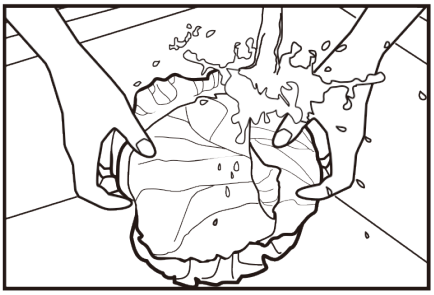
4.3 Directions for Use

Ozone is the natural bactericidal agent and disinfectant, effective against infestation of harmful bacteria, virus, as well as dangerous chemical and pesticide residues. When it is given in a dissolved form in water, the application can be directional, and the result is highly effective and chemical free.

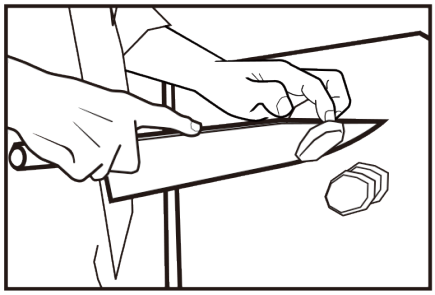
Recommendation of Use



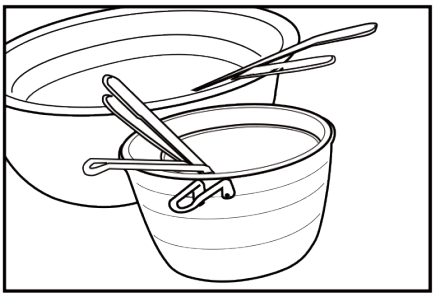
hand disinfection



produce wash



surface disinfection



utensil sanitation

1. Ozonated water has wide bactericidal applications in food preparation and service: hand washing, utensils, knives, bowls, cutting board, cleaning rag, towels or other tools or equipment.

2. **Rinse subjects with ozonated water in final disinfection stage.** Ozonated water achieves rapid and effective disinfection and bacteria elimination.

   - **For surface disinfection:** remove oil first.
   - **For produce wash:** Apply clean tap water for pre-rinse to remove dirt first.

3. Ozonated water achieves rapid and effective disinfection and bacteria elimination. Results approved by Campeden BRI in UK and SGS: 5 log kill (ie. 99.999%) in 20 seconds when used against E. coli, Salmonella spp., S.aureus, P. aeruginosa and C. albicans.

4. Rinsing fish, shrimp, meat and poultry directly with ozonated water is associated with rapid and effective disinfection, bacteria elimination as well as pollutant removal.

5. Ozonated water rapidly and effectively eliminates any “fishy smell” and odors when used for direct rinsing. It also help remove pesticide residue greatly in 1~2 minutes.

Extended Benefits of Using BioSure Ozonated Water

1. The ozonated water prepared by pure ozone from patented iEOG technology is free from hazardous, or even carcinogenic, toxins such as nitrogen oxides (NO_x), nitrates (NO_3) and nitrites (NO_2).

2. Permitted under Soil Association (UK) standards of use for direct contact on organic produce.

3. Approved terminal sanitizer status following testing process that was managed by Campden BRI in UK: the application can be used as bactericidal agents for terminal disinfectants.

4. Product conforms to requirements of UL (U.S.), CE (Europe), PSE (Japan) and SAA (Australia) certifications.

4.4 Special Features

- **Temperature Display Setting:** Upper Button 10 sec + Lower button 5 sec
- **Service Life Index:** Lower Button 5 sec
- **Operation Code:** Lower Button 10 sec
- **Pre-filter Lifecycle Monitoring Setting:** Upper Button 20 sec + Lower button
- **Pre-filter Lifecycle Monitoring Reset:** Upper Button 10 sec + Lower button

Temperature Display Switch

The CSS measures the system's internal temperature and displays it on the display screen for user’s reference. This display as a primary presentation during system’s standby comes as default in every unit. Standard display is in degrees Celsius (°C); degrees Fahrenheit (°F) is optional. You can switch the display of temperature between in degrees Celsius (°C) and degrees Fahrenheit (°F):

1. During system standby, press and hold the upper button for 10 seconds. One beep will sound and the display will show “0000”.

2. Press and hold the lower button for 5 seconds (One beep sounds) to switch the temperature unit between degree Celsius (°C) and Fahrenheit (°F).

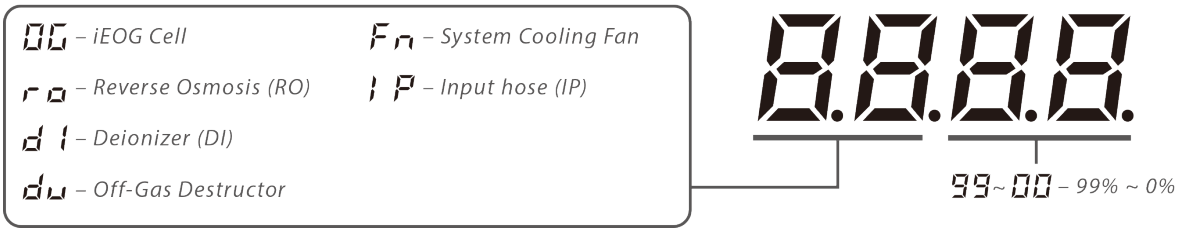
Consumables Service Life Index

The CSS records the remaining service life of each consumable part for operator’s reference. The information can be displayed on the display screen through the following operations:

1. During system standby, press and hold the lower button for 5 seconds.

2. Press the upper button to switch the display for each of the consumable parts equipped in the units for regular check purpose.

To read the code, starting from the left, the first two letters indicate the part item, and the following two numbers indicate the remaining lifetime expressed in percentage (%):



Operation Log Index Display

The unit's operational history is recorded as long as the power is on. The data represents the system's operation log and can be read in 20 digits of code in groups of 5. However, it is only intended for your service provider to interpret the codes when troubleshooting the unit. The recorded data can be used to access the following information:

- Product model code
- Total operation time
- Total power disconnection count
- Total iEOG water filling failure count
- System program code

Index to operation log coding

Display	o	i	r	H	4
Alphabet	o	i	r	H	4

Display	F	d	G	E	c
Alphabet	F	d	G	E	c

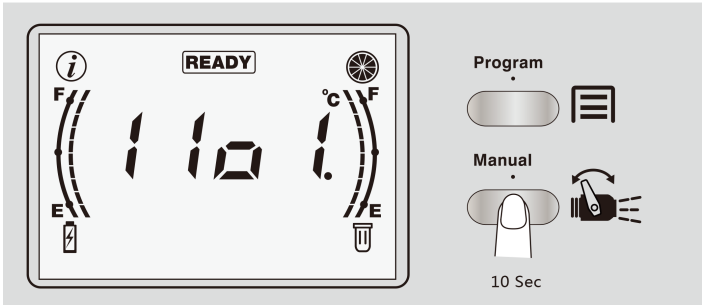
How to call out the operation log data:

1. To display the operation log, press and hold the Lower Button for **10 second** to display the product model code, which is in the first group with 4 digits.

2. Then, press the upper button to switch to each subsequent group in series.

Operational descriptions and display identifications:

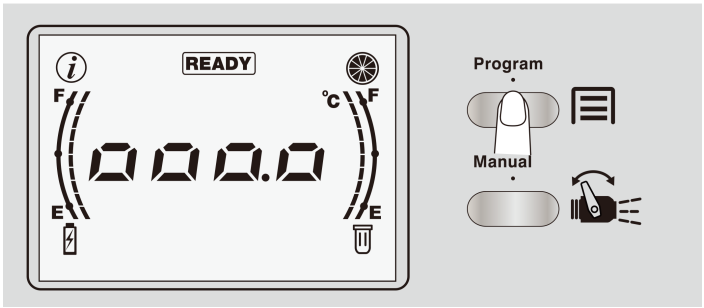
- **Group 1 (Display example: oooo.):**



Press and hold the lower button for 10 second to display the first group with 4 digits of code.

Observe point behind the 1st digit from right.

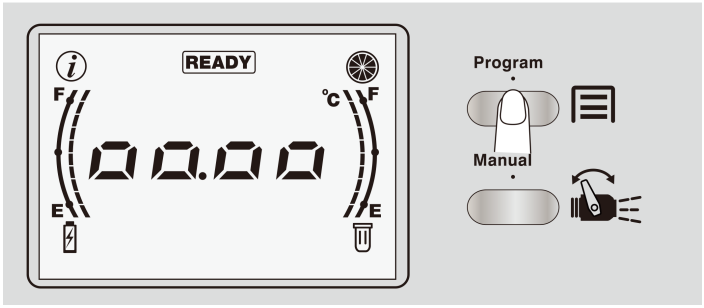
- **Group 2 (Display example: ooo.o):**



Press the upper button to switch to group 2.

Observe point • behind the 2nd digit from right.

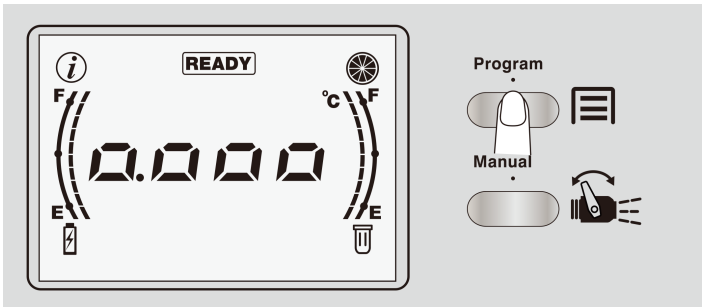
- **Group 3 (Display example: oo.oo):**



Press the upper button to switch to group 3.

Observe point • behind the 3rd digit from right.

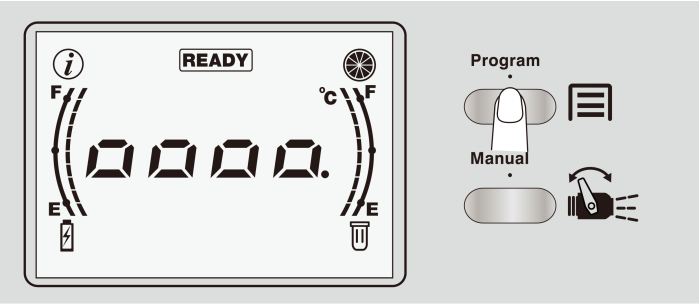
- **Group 4 (Display example: o.ooo):**



Press the upper button to switch to group 4.

Observe point • behind the 4th digit from right.

- **Group 5 (Display example: oooo.):**



Press the upper button to switch to group 5.

Observe point • behind the 1st digit from right again.

Your BioSure service provider may request for this information before service. The operator can use the tables on P.50 to note down the codes to report. Below is an example of the table for use:

Group No.	Digit 1	Digit 2	Digit 3	Digit 4
1	1-1st	1-2nd	1-3rd	1-4th •
2	2-1st	2-2nd	2-3rd •	2-4th
3	3-1st	3-2nd •	3-3rd	3-4th
4	4-1st •	4-2nd	4-3rd	4-4th
5	5-1st	5-2nd	5-3rd	5-4th •

Note: The Operation Codes are for service technicians to interpret only.

Pre-filter Lifecycle Monitoring Program Setting & Reset

By default, the CSS is available with “Pre-Filter Service Indicator”. The “Life Meter” on the right side is provided to assist user to monitor the replacement cycle of the filter(s) (or the cartridge(s)). There are total of ten monitoring programs for options, from “PF00” to “PF09”, based on treatment capacity:

- **PF00**: ∞ L (∞ gal)
- **PF01**: 5,000 L (1,320.9 gal)
- **PF02**: 10,000 L (2,641.8 gal)
- **PF03**: 15,000 L (3,962.7 gal)
- **PF04**: 20,000 L (5,283.6 gal)
- **PF05**: 25,000 L (6,604.5 gal)
- **PF06**: 30,000 L (7,925.4 gal)
- **PF07**: 35,000 L (9,246.3 gal)
- **PF08**: 40,000 L (10,567.2 gal)
- **PF09**: 45,000 L (11,888.1 gal)

If monitoring is not required, select “PF00” to deactivate the function. Otherwise, select your option based on the capacity provided by the manufacturer of the product.

Key criteria for evaluation of the capacity or lifetime of the filter(s) (or the cartridge(s)) is as follows:

- Conductivity ≤ 500 μs/cm & Chlorine residue ≤ 0.1 ppm in output within the lifecycle.

Follow below directions to setup your own “Pre-Filtration Service Indicator”:

Step 1 - Press and hold the “Upper Button” **for 20 seconds** to enter the setting and one beep sounds.
Step 2 - Use the “Upper Button” to select program from PF00 to PF09 according to the filter’s capacity.
Step 3 - Press the “Lower Button” to save the setting and one beep sounds.

The monitored remaining lifecycle for the pre-filter is displayed on the right side “Life Meter” on the display. Each segment represents 10% of the monitored remaining lifecycle.

Pre-Filtration Service Indicator

Each segment in the indicator represents 10% of the monitored remaining lifecycle. When the shown level has only one segment left, the system will chirp after each operation. When a “**S11**” notification code is displayed, it indicates that the remaining lifecycle of the pre-filter has been consumed to 2% remaining or less (refer to below Service Notification). At this point, the operator should manage to replace the cartridge(s) for the pre-filter and restart the monitoring program after the replacement.

After the replacement, the meter needs to be reset according to the below steps:

Step 1 - During system standby, press and hold the “Upper Button” **for 10 seconds**. One beep will sound and the display will show “0000”.
Step 2 - Key in “0101” to reset monitoring for the lifecycle of the pre-filter:
a. Press the “Upper Button” to select numbers from 0 to 9.
b. Press the “Lower Button” to switch the selecting digit from right to left.
c. Key in “0101” then **double press** the “Lower Button” to confirm to reset the life meter.

4.5 Service & Error Notifications

Service Code Descriptions

When time comes for the need of a standard service to replace consumable parts, the unit will display Service Codes and notification signs. Please contact your regional BioSure Dealer for service arrangements when the notification is observed.

The Service Notification will be displayed in two different modes according to the degree of urgency: **“2% Remaining Notification”** and **“Life Ending Notification”:**

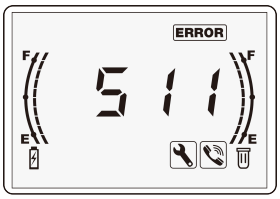
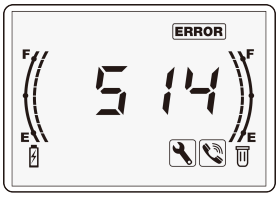
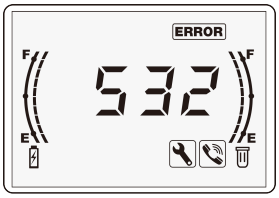
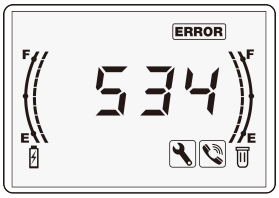
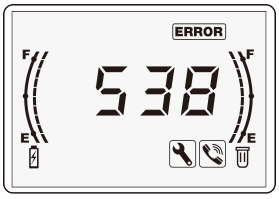
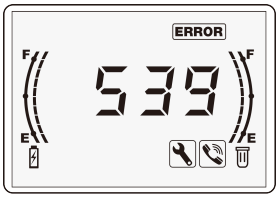
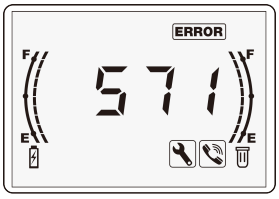
2% Remaining Notification

In this mode, a flashing "🔧" icon will be displayed and relevant Service Code will be given. When pressing any button 2 beeps will sound. At this time, the user should contact the local BioSure dealer to schedule a service and part replacement within 3-week time.

Life Ending Notification

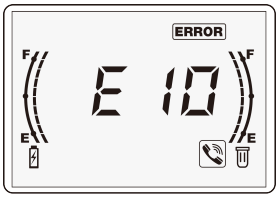
In this mode, 10 second buzz will sound from the unit, a solid on lighting "🔧" will be displayed and relevant Service Code will be given. When pressing any button 5 beeps will sound. At this point, all functions are suspended and the user should contact the local BioSure dealer to schedule a service and part replacement IMMEDIATELY.

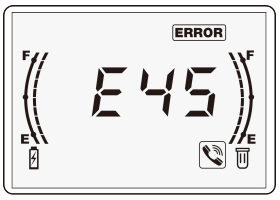
Relevant coding interpretations are listed as follows:

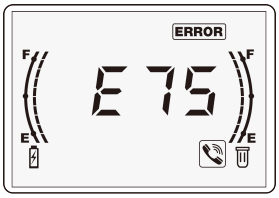
Service Code Display & Indicated Service Component	
 S11, for Pre-filter	 S14, for Reverse Osmosis Module
 S32, for Resin Deionizer Module	 S34, for Off-Gas Destructor
 S38, for System Cooling Fan	 S39, for Input Hose
 S71, for iEOG Cell	

Error Code Descriptions

The unit is designed with capacity to monitor the system's performance and detect any major performance errors. For the following detectable performance errors, once detected, Error Code will be displayed accordingly:

<table>
<tr><th colspan="2">Error Code Display & Indicated Problems</th></tr>
<tr><td> 

E10, iEOG Cell Fails, all functions are suspended</td><td rowspan="2"> 

E45, iEOG water filling process fails (preparation timeout), all functions are suspended</td></tr>
<tr><td> 

E75, Power Disconnection exceeding 36 times is recorded within a year</td></tr>
</table>

For troubleshooting, refer to the troubleshooting section on P.46~49.

Power Disconnection Statistical Number Counts Notification

To maintain the system's best performance, power must be connected at all times. Unless in necessary situations, such as due to servicing activities or supply outage that may occur occasionally and/or unexpectedly, attempt and care should be made in order to avoid any man-made incidence of power off. Disconnecting the power frequently and too many times may cause unexpected impacts on the iEOG module and will result in degradation to the product performance.

Note. To keep the warranty valid, power off should not exceed 36 times in an operating year (3 times per month).

Associated with the accumulated power disconnection number counts, the system notification will be provided with two phases:

- **Phase 1: Reminder notification to accumulated power off times**
  – A reminder to the recorded number at the time

- **Phase 2: Warning to power off limits**
  – A notification to the limitation reached and invalid warranty on the iEOG cell, i.e., 36 times.

Phase 1

An incident reminder will be displayed once a “monthly notifying point” is reached.

Monthly notifying point = acceptable numbers of disconnection = 3×N

[N.B.: N stands for accumulated operating month(s), N ≥1]

For example, if the unit has been operated for 1 month, the acceptable numbers of power disconnection is 3 times. If the unit has been operated for 2 month, the acceptable numbers of power disconnection is 6 times in total [3x2=6]. Therefore the incident is notified once the 3rd time of power disconnection occurs within the first operating month, or once the 6th time within the two operating month, and so on for the following months.

At this stage (phase 1), the accumulated numbers of power disconnection at the time will be displayed on the panel, icon “ⓘ” and “” will blink slowly, and Icon “” will light on. This reminder is provided with intention to bring up attention to users with respect to the fact that the accumulated numbers of power disconnection has exceeded the acceptable number based on consideration for proper maintenance.

This status comes after the completion of the re-start protection period (30 min) and can be removed and returned to normal standby status by pressing any key. At this point, users should read the display on the panel, and call the dealer to discuss and understand the circumstance if necessary. Most importantly, following effort should be made in order to try to avoid any further incident of man-made power off.

Note: Press any key after 30 min to remove the phase 1 reminder.

Phase 2

For 36 times (or more) power disconnection in an operating year recorded by the unit, a “**E75**” code will be displayed on the panel, together with the accumulated power disconnection numbers at the time to be displayed one after the other. Similar to phase 1, icon “ⓘ” and “” will blink slowly, and Icon “” will light on. All these displays come after the completion of re-start protection period (30 min) and can be removed and returned to normal standby status by pressing any key.

Note: Press any key after 30 min to remove the phase 2 reminder.

After removing the status, display will return to normal, and all functions will still be available, despite that the icon “” will remain blinking. However, impacts on the iEOG module may have been resulted and degradation to the performance may have occurred. At this point, the warranty has become partially invalid. This is for your reference that you should call your dealer to discuss your usage and discuss service if necessary.

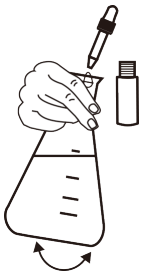
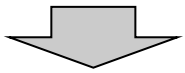
Note: Disconnecting water to the unit may cause operation error (E45), resulting in internal power cut-off to iEOG module for protection reason. This will be taken into account as an incident of power disconnection.

4.6 Validation

Ozone has a short half-life and leaves no residues. Therefore, to overcome ozone's hard-to-detect properties, BioSure provides a simple titration kit – OM-100, which can be used to ensure your unit is actively providing ozone for disinfection and sanitation. This kit can be found in the accessory box.

OM-100 includes an easy-to-use dropper bottle containing dissolved ozone titration reagent to quickly and effectively establish measures for the presence of dissolved ozone in a sample. Just simply pour 200 ml of ozonated water into a beaker, drip the OM-100 until light blue is present. This measures the ozone concentration in the sample instantaneously by manner of titration and measuring the oxidation.

How to Use OM-100 for Performance Validation:

Step 1	 200 ml	1. Prepare OM-100 in hand and take sample from the output for 200 ml. ***Note: After observing outflow, allow it to flush for 10 sec before taking samples.***
Step 2	 Shake Gently   Light Blue	1. Apply the first drop, if the result: a. Shows a light blue, meaning the sample is below 1.0 ppm. b. Is Clear, and see no change in transparency, meaning the sample is above 1.0 ppm, you can try to apply the 2nd drop. 2. Following 2-1, apply 2nd drop, if the result: a. Shows light blue, meaning the sample is below 2.0 ppm (1.0 ~ 2.0). b. Is still clear, and see no change in transparency, meaning the sample is above 2.0 ppm, you can try to apply the 3rd drop. 3. You may carry on the test and more drops may be applied depending on the actual ppm of the sample.

You can also check the video for the use of OM-100 on YouTube - Key Word: How to Use OM-100.

For ordering OM-100, contact your local BioSure dealer.

Note: Sample is taken from the output after pressing control buttons and 10 sec flush. You may take 3 – 5 samples at a time for average.

5. Maintenance & Service

Regular service should be performed to avoid damage to the system, more costly repairs and to keep the warranty active.

5.1 System Service

Standard service cycle for your CSS is a rule of thumb under the following conditions:

- System MUST remain connected to water and power supply at all times.
- Municipal water (or equivalent quality) is used for input.
- Operating room temperature is in accordance with products instructions.
- Operating input water temperature and the supply pressure are in accordance with products instructions.

The required standard service will be notified by the system through the display of the **"Service Notification"**. The information is displayed on **"Service Code"** screen when the work is required. The operator should contact the local BioSure service provider for service. The related items as replacement in the service and the servicing cycles are as follows:

Consumable Part Life Cycle Table

Consumable Part	Servicing Cycle
iEOG Pre-filter	By Capacity
Reverse Osmosis Assembly (RO)	3 Years
Resin Deionizer Assembly (DI)	
iEOG Cell	
Off-Gas Destructor	
System Cooling Fan	
Input Hose	

Note: The pre-filter's cartridge(s) should be replaced according to the product's treatment capacity.

5.2 Troubleshooting

Please check out the following troubleshooting suggestions before calling for repair.

Symptom 1: Display panel does not light up

Cause 1-1	Is the power cord plugged in correctly to an active electricity outlet?
Solution 1-1	**Plug the power cord in properly.**

Cause 1-2	Electronic failure
Solution 1-2	**Unplug the unit and contact your dealer to arrange service**

Symptom 2: Water does not flow out or the unit has stopped functioning

Cause 2-1	Is the input water line closed?
Solution 2-1	**Secure the input water supply.**

Cause 2-2	Is the input water line disconnected?
Solution 2-2	**Secure the input water connection and flow.**

Cause 2-3	Is the input water hose bent?
Solution 2-3	**Be sure the hose is not bent or replace the hose as needed.**

Cause 2-4	Is the water pressure too low?
Solution 2-4	**Replace your pre-filter cartridge(s) or contact your dealer for technical assistance.**

Symptom 3: Water is leaking from the hose at the attachment

Cause 3-1	Is the input attachment loosen or disconnected?
Solution 3-1	**Re-connect the hose and secure the attachment.**

Symptom 4: Water is leaking from inside

Cause 4-1	Loosen connection inside or unknown reasons
Solution 4-1	**Unplug the unit and contact your dealer to arrange service.**

Symptom 5: The water has a strange odor or tests bad

Cause 5-1	Has the unit been unused for a long time?
Solution 5-1	**Operate the unit for 10 ~ 15 min. If the condition does not improve, contact your dealer to arrange service.**

Symptom 6: Abnormal noise coming from the unit

Cause 6-1	Unknown
Solution 6-1	**Unplug the unit and contact your dealer to arrange service.**

Symptom 7: 2 beeps when pressing any button and service code displayed

Cause 7-1	2% remaining lifetime for the indicated part(s)
Solution 7-1	**Contact your dealer to arrange service and replace the notified part(s) within 2 weeks.**

Symptom 8: All functions suspended, 10 seconds alarm sounded, 5 beeps when pressing any button and service code displayed

Cause 8-1	Service cycle due for the indicated part(s)
Solution 8-1	**Contact your dealer to arrange service and replace the notified part(s) immediately.**

Symptom 9: All functions suspended, E10 error code displayed

Cause 9-1	Faulty iEOG cell
Solution 9-1	**Contact your dealer to arrange service immediately.**

Symptom 10: All functions suspended, E45 error code displayed

Cause 10-1	Input water supply closed to result in iEOG water filling failure
Solution 10-1	**Secure the water supply and press any key to re-start the process.**

Cause 10-2	Pre-filtration jammed to result in iEOG water filling failure
Solution 10-2	**Clean and replace as needed and then press any key to re-start the process.**

Cause 10-3	Low input water pressure to cause iEOG water filling failure
Solution 10-3	**Correct or improve the water pressure and then press any key to re-start the process.**

Cause 10-4	Electronic problem to cause iEOG water filling failure
Solution 10-4	**Observe if there is drain and make sure the drain line is not blocked. Contact your dealer to arrange service.**

Symptom 11: E75 error code displayed

Cause 11-1	Power disconnection exceeding limitation – 36 times in an operating year period achieved
Solution 11-1	**Press any button to return to normal standby mode after 30-min waiting period. Contact your dealer for performance check.**

6. Appendix

6.1 Operation Log Code Recording Table

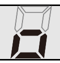
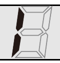
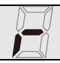
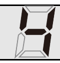
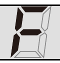
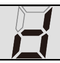
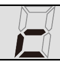
Operation Log Code Recording Table			Date: / / Operator:	
Group No.	Digit 1	Digit 2	Digit 3	Digit 4
1	1-1st	1-2nd	1-3rd	1-4th •
2	2-1st	2-2nd	2-3rd •	2-4th
3	3-1st	3-2nd •	3-3rd	3-4th
4	4-1st •	4-2nd	4-3rd	4-4th
5	5-1st	5-2nd	5-3rd	5-4th •

Operation Log Code Recording Table			Date: / / Operator:	
Group No.	Digit 1	Digit 2	Digit 3	Digit 4
1	1-1st	1-2nd	1-3rd	1-4th •
2	2-1st	2-2nd	2-3rd •	2-4th
3	3-1st	3-2nd •	3-3rd	3-4th
4	4-1st •	4-2nd	4-3rd	4-4th
5	5-1st	5-2nd	5-3rd	5-4th •

Operation Log Code Recording Table			Date: / / Operator:	
Group No.	Digit 1	Digit 2	Digit 3	Digit 4
1	1-1st	1-2nd	1-3rd	1-4th •
2	2-1st	2-2nd	2-3rd •	2-4th
3	3-1st	3-2nd •	3-3rd	3-4th
4	4-1st •	4-2nd	4-3rd	4-4th
5	5-1st	5-2nd	5-3rd	5-4th •

Operation Log Code Recording Table			Date: / / Operator:	
Group No.	Digit 1	Digit 2	Digit 3	Digit 4
1	1-1st	1-2nd	1-3rd	1-4th •
2	2-1st	2-2nd	2-3rd •	2-4th
3	3-1st	3-2nd •	3-3rd	3-4th
4	4-1st •	4-2nd	4-3rd	4-4th
5	5-1st	5-2nd	5-3rd	5-4th •

Index to operation log coding

Display					
Alphabet	o	i	r	H	4
Display					
Alphabet	F	d	G	E	c