

C7 FIREWALL™



Technical Manual

C7 FIREWALL™

TECHNICAL MANUAL

Culligan provides water treatment in point of use water coolers using these three technologies:



Firewall™



BioCote® antimicrobial protection



High performance filtration

With this in mind, this advanced water purification system combines refined engineering and high-tech features.

INTRODUCTION

Carefully read and follow all instructions to ensure proper and efficient operation of your water purification system. Contact Culligan or an authorized Culligan distributor if you have any questions.

Culligan and an authorized Culligan distributor employ trained service personnel who are experienced in the installation, function and repair of Culligan equipment.

Culligan water purification systems should be combined with selected water treatment components to create a system specifically tailored for each application by trained and qualified personnel.

Products manufactured and marketed by Culligan and its affiliates are protected by patents.

Culligan International Limited and WLI Trading Limited reserve the right, in order to reflect continuous research and development, to amend or **change specifications without prior notice**. Culligan and the Culligan logo, Firewall and the Firewall logo are trademarks in countries where the Group operates. WLI Trading Ltd licensed to use BioCote, and BioCote logo which are registered trademarks of BioCote Ltd.

Culligan technical manuals cover voltages of both 120v and 220v for all markets where Culligan operates. Please ensure that you carefully read the information in this manual and for any parts specific to any market, refer to your technical agreement or specific part listing.

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1. PRECAUTIONS AND GENERAL RECOMMENDATIONS

1.1 SAFETY PRECAUTIONS



Ensure all local laws and codes including health and safety guidelines are met when installing this Culligan purification system. Only qualified service technicians should attempt installation and service. Always read the entire operating instructions before using the appliance and save these instructions for future use.

Connect to potable water supply: this system is to be used for water only and is not intended for use where water is microbiologically unsafe or with water of unknown quality without adequate disinfection. The system is not intended for treatment of contaminated water.

Tip hazard: the dispenser could tip or fall causing serious injury. Always install the unit on a firm, flat, and level surface and secure unit to cabinet, wall, or floor if needed. Never place heavy items on top of the unit and never climb, stand, or hang on the unit or storage cabinet to prevent injury and damage. Transport the unit empty and always use material handling equipment or two people with proper lifting technique to reduce injury risk.

Store and transport unit empty: the unit must be completely drained and sealed before storing to avoid stagnation and reduce microbiological contamination (potential bacterial growth).

Always sanitise before use: sanitise before use to eliminate any potential microbiological contaminants.

Installation and maintenance: the installation, maintenance, sanitising and any repair must be performed by qualified persons trained by Culligan or their authorized distributors only. Do not remove any panels or covers unless qualified and competent to do so. The detachable hose-sets and the connection kit used to connect the main water are supplied by the technician. Do not reuse connectors.

Indoor use only: never expose to direct sunlight, heat sources, to freezing temperatures, ambient air temperature above 32°C (86°F) and keep the unit away from excessive humidity.

Ensure there is proper ventilation: ensure there is adequate clearance around the unit to allow refrigeration system condenser to dissipate heat. Warmer environments require more clearance around the unit. Minimum clearance around all surfaces of the machine is 100 mm.

Caution with cooling fluid: Culligan machines use both R134a and R600a (market dependent) as cooling gas. R600a is a flammable gas, precaution is required. Only qualified and certified personnel should empty, replace or fill the machines refrigerant gases. Ensure always the proper management and transportation of the machine to avoid damaging the refrigerant fluid and causing a dangerous leak.

Use a water pressure regulator: Culligan will not be responsible for injury or damage caused by excessive water pressure. Input or feed pressure must be regulated to 3 bar. Be aware of any potential pressure surges caused by building/municipal pumping stations. Water block devices and external leak detectors are strongly recommended.

Authorized use only: this appliance is to be used for its intended purpose as described in this manual, and untrained individual who use this manual assume the risk of any resulting property damage or personal injury. This appliance is not to be used by children under 8 years old and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge unless supervised, due to risk of injury if incorrectly used. Children should be supervised to ensure that they do not play with the appliance.

UV-C emitter (UV lamp): this appliance contains a UV-C emitter (UV Lamp). UV-C radiation may, even in little doses, cause harm to the eyes and skin. Never operate the UV-C emitter if damaged or removed from enclosure. Do not touch or look directly into the faucet. The replacement of the UV-C must be done by Culligan or approved Culligan distributors and with power supply disconnected. The UV lamp must be replaced at 6 month intervals or when necessary.

Do not operate if damaged: if the machine is damaged, unplug for safety, contact Culligan or authorized distributor for repair, service, and deinstallation to avoid risks.

Caution hot water: Culligan machines produces hot water (model dependent) above 52°C, which can cause severe burns or scalding. Keep unauthorized people and children away from the unit to avoid accidental dispensing of hot water.

Electrical shock hazard: always use a dedicated and properly earthed outlet. Unit should be protected by residual current device (RCD) having a rated residual operating current not exceeding 30 mA. Use only Culligan supplied power cord. Never use extension cords or power strips to connect unit. Do not use if the supply cord is damaged, it must be replaced by the service agent or a similarly qualified person in order to avoid a hazard.

1.2 CERTIFICATIONS

We believe that performance testing and certifications validate Culligan as a world leader in water treatment systems.

C7 FW WATER TREATMENT SYSTEM CERTIFICATIONS INCLUDE:



UL399 – Certified drinking water cooler. Intertek Labs (ETL) Certified the C7 FW water treatment system to ANSI/UL 399 standard for drinking water coolers. CSA C22.2 No. 120 – CSA standard for refrigeration equipment.



BioCote® antimicrobial silver ion technology has been tested by an independent laboratory to show its ability to inhibit the growth of bacteria, mould and fungi by up to 99.99 % over a 24 hour period and for the duration of the machine life.



This system has been tested and certified by Water Quality Association according to NSF/ANSI 42, NSF/ANSI 53*, NSF/ANSI 55 Class A, NSF/ANSI P231, USEPA Guide Standard and Protocol for Testing Microbiological Water Purifiers, and NSF/ANSI 372 for lead free and CSA B483.1. See the performance data sheet for specific reduction claims. System claims vary depending on filters used within the system.

**when using Culligan 1 Micron CBC Filter (FT-0065 or FT-0034)*



Culligan manufacturing, Qingdao, is certified to **ISO 9001:2015** by Intertek.



Culligan water purification systems have been tested and certified to rigorous **CE Standards**.



BPA Free: Culligan tests for BPA and declares that all its products are bisphenol-A FREE and contain no harmful BPA plastics.

END OF LIFE:



WEEE (EU Only): please be aware that our products are covered by the Waste Electrical and Electronic (WEEE) directive (2002/96/EC). The symbol shown denotes that the product should not be disposed of with general/household waste. Please contact your supplier who will arrange for the collection and disposal of this product.

Disposal Non EU Countries: at the end of this product's life, please ensure that it is disposed of in an environmentally friendly manner which is in line with your Country requirements/guidelines.

2. PRODUCT INFORMATION

2.1 C7 FW FEATURES AND BENEFITS

The features showed below and in this technical manual are representative of the generic machine with five water options. Some machines are country specific and have different water options. Please take in to consideration only the details that are applicable to your specific model.



Firewall™ purification: Firewall™ patented and certified UV technology thoroughly purifies water all the way through to the dispensing nozzle, preventing pathogens getting into the system. Firewall™ safely purifies the water up to 99.9999%*, 100% of the time, reducing the risk of viruses, cysts and bacteria.

**Guaranteed free from: 99.9999% bacteria, 99.999% viruses, 99.9% cysts*



Water Options: Cold, sparkling, ambient, hot and extra hot.



Ice Bath cooling technology: the new Ice Bath water cooling system delivers high volumes of ice-cold water, offering a high capacity solution for the most demanding most consistent cold water of the Culligan range.



BioCote® antimicrobial protection: key surfaces surrounding the dispensing areas and drip tray are infused with an exclusive silver additive called BioCote®. Silver is a natural antimicrobial that inhibits the growth of microorganisms providing additional surface protection.



Ergonomic dispensing area: 273 mm dispense height, easy removable drip tray, back lighting in dispense area.



Leak prevention: extra inlet solenoid with timer provides redundant protection and reduces accident potential.



Customizable programming: settings for optimizing each C7 FW include: Hot temp set point, Extra hot temp set point, Filter timer, Energy saving (heater sleep) mode, and Bottles saver counter.



Child safeguard: screen automatically defaults back to cold selection to prevent accidental dispensing of hot water. Hot water warning screen during selection followed by main dispense prevents accidental use.



Intuitive user interface with bottles saved counter: another feature of the C7 FW is the environmentally friendly information of bottle saved counter. This feature monitors dispense time to estimate how many bottles are saved during the use of the product. To read more check chapter 5.



Advanced LCD Screen with auxiliary messaging: user interface with 5" full colour LED display featuring machine status bar and water dispensing options.

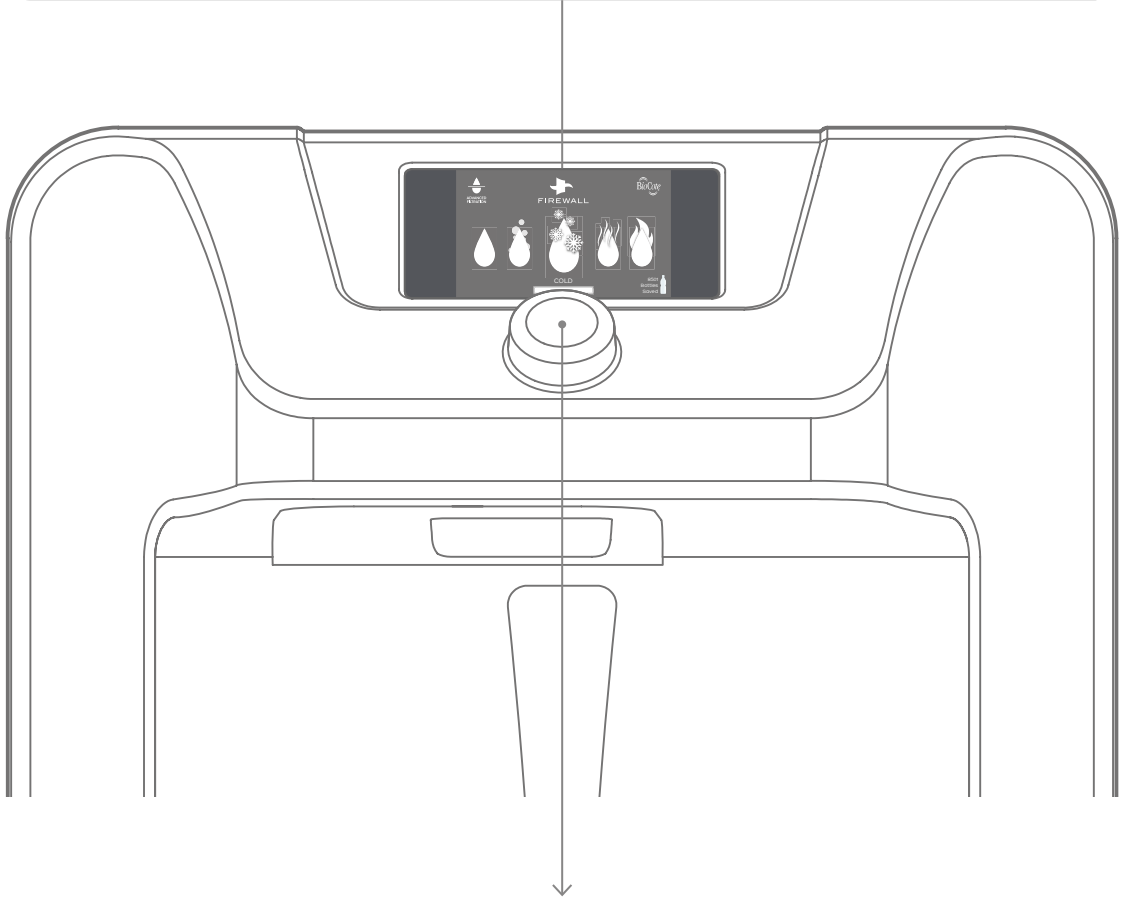


Speedy care – Maintenance and service system: smart design with quick access to all consumables through hinged front door. Quick release hot tank system and improved serviceability with convenient side panel access.



Energy saving sleep mode: energy saving sleep mode is programmed to turn off the heater after three hours of inactivity yielding significant energy savings when unit is not in use.

2.2 USER INTERFACE - DISPLAY SCREEN



Rotate to select



- Bar with dynamic glowing: chiller ON.
- Bar static: chiller OFF
Ice setpoint achieved.

Press to dispense

- ON hot water option, the white arrows indicate the current temperature of the water.

· Left: hot tank "cold".

· Right: current setpoint (75,87°C or 93°C).

2.3 TECHNICAL INFORMATION

TECHNICAL DATA		C7 Firewall™	
Features			
BioCote®	Yes		
UV Technology	Firewall™		
Dispense area height [mm]	273		
Energy saving mode	Yes		
Working information			
Cold water output [°C]*	5		
Sparkling water output [°C]*	5		
Hot water output [°C]*	75-93		
Extra hot water output [°C]*	80-95		
Ice Bath capacity [L]	4.5		
Sparkling tank capacity [L]	0.5		
Hot tank capacity [L]	1.5		
Recommended inlet water pressure [bar]	2.5-3.5		
Recommended CO ₂ pressure [bar]	3		
Recommended inlet water temperature [°C]	5-25		
Working room temperatures [°C]	2-37		
UV Lamp change interval	6 months**		
** NSF 55 Class A and P231 Certification requirement;			
* Performance may vary depending on the local conditions			
Electrical			
Compressor power [W]	110		
Pump power [W]	10		
Fan power [W]	16		
Mixing motor [W]	25		
Control power [W]	19		
Heating element power [W]	500-800 (model dependent)		
UV Lamp [W]	13		
Total max power(HCAS) [W]	993		
24-hour standby power consumption [kWh]	0.46		
Power supply	220-240V/50Hz or 120V/60Hz		
Component detail			
Refrigerant gas	230V/R600a or 120V/R134a		
Refrigerant quantity (g)	R600a: 26g; R134a: 65g		
Physical			
Dimensions (W x D x H) [mm]	399 x 519 x 427 (counter top only)	399 x 519 x 1269 (with base cabinet)	
Weight (dry) [kg]	31-34	51-54	

TECHNICAL DATA**C7 Firewall™****Connections**

1/4" CO ₂ quick connect bulkhead	Yes
1/4" Water quick connect bulkhead	Yes
Drain plug hot tank	Yes
Drain plug Ice Bath	Yes

Accessories supplied

Power cord

UV Lamp

Filter(s)*

**Filter configuration depended on incoming water conditions*

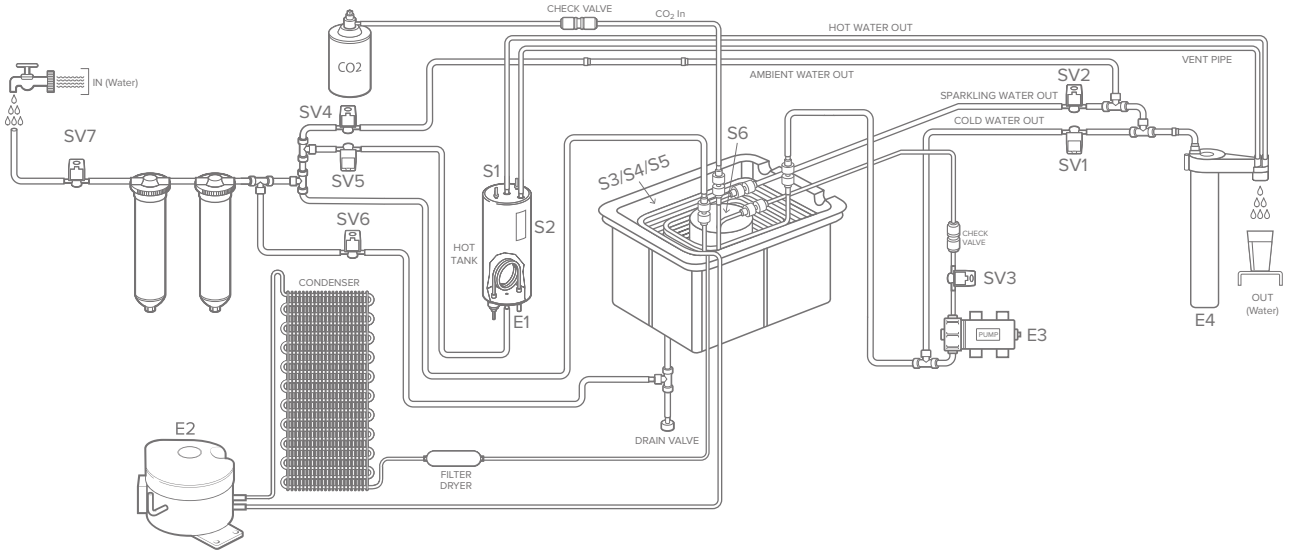
TECHNICAL DATA**C7 Firewall™**

Model ID	Description
F-7FX-M-HCAS-HVL621NX-XX-YYY	Culligan C7 HCAS Mini 500W Climate Class N
F-7FX-M-HCAS-HVL621TX-XX-YYY	Culligan C7 HCAS Mini 500W Climate Class T
F-7FX-M-HCAS-HEL621NX-XX-YYY	Culligan C7 HCAS Mini 800W Climate Class N
F-7FX-M-HCAS-HEL621TX-XX-YYY	Culligan C7 HCAS Mini 800W Climate Class T

2.4 WATER FLOW DIAGRAM

These diagrams are for reference and understanding the C7 FW, some features might not be included on your machine.
More detailed information can be seen in Chapter 6.1 and electrical diagram on Chapter 6.3.

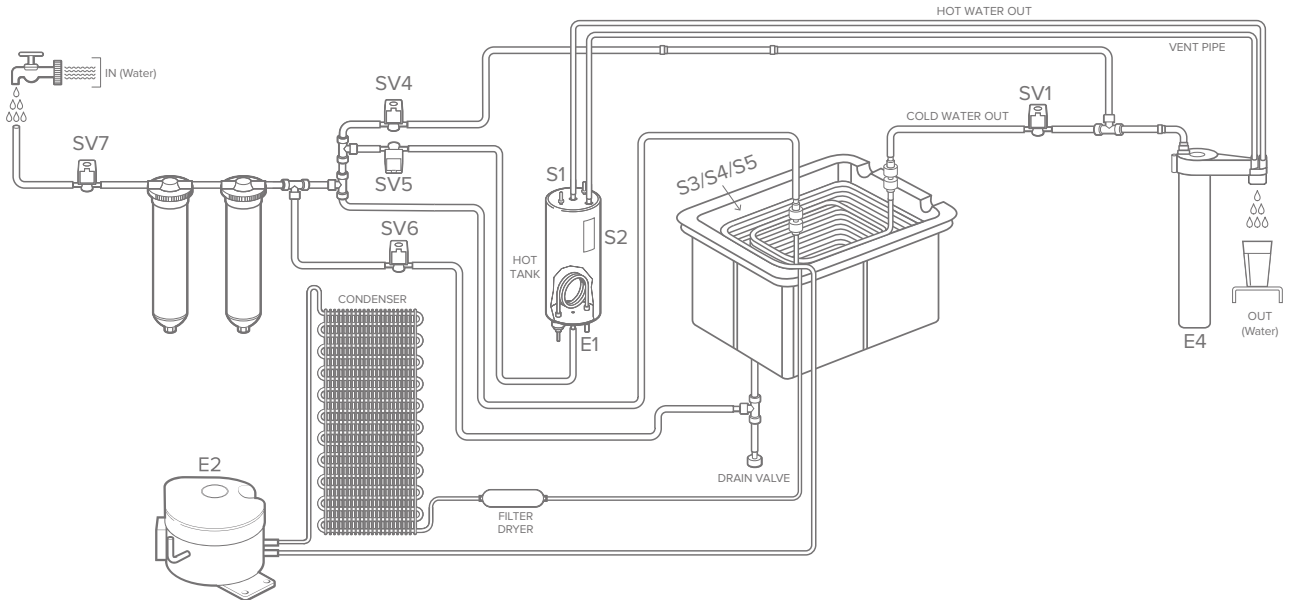
Water configuration: cold, sparkling, ambient and hot.













Element	Description	Function	Action
SV1	Cold water out		SV7+SV4+E4
SV2	Sparkling out		SV7+SV1+E4
SV3	Sparkling in		SV2+E4
SV4	Ambient water output		Dispense
SV5	Hot water output		SV7+SV3+E3 Until S6 is satisfied
SV6	Ice Bath fill		Fill
SV7	Inlet solenoid		SV7+SV5
E1	Hot tank heating		Click: E1 Until S1>Extra Hot Setpoint Dispense: SV7+SV5
E2	Compressor		SV7+SV6 Until level probe detects water
E3	Pump		ON: S3/S4/S5 - No Ice On Probes OFF: S3/S4/S5 - Ice On Probes
E4	UV Firewall™		
S1	Hot water sensor		S1<SetPoint; E1=ON S1≥SetPoint; E1=OFF
S2	Overheat thermostat		S2≥105°C; E1=OFF Requires Manual Reset
S3 S4 S5	Ice Bath probes		
S6	Sparkling level sensor		

These diagrams are for reference only; some features might not be included on your machine. More detailed information can be seen in Chapter 6.1 and electrical diagram on Chapter 6.3.

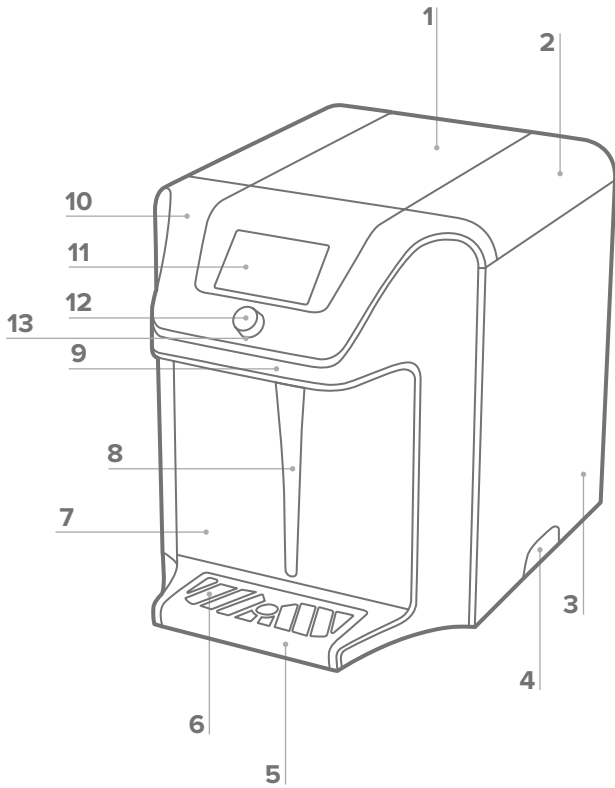
Water configuration: cold, ambient and hot.



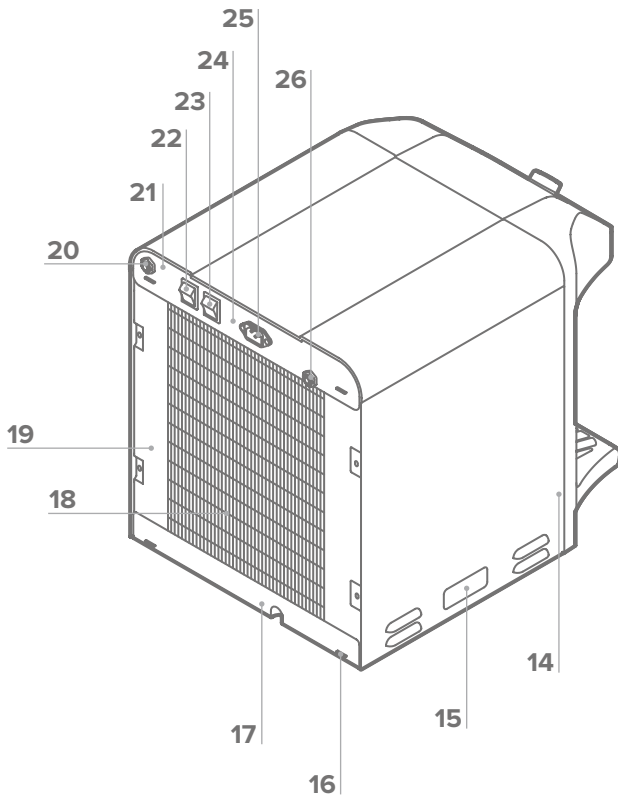
Element	Description	Function	Action
SV1	Cold water out		SV7+SV4+E4
SV4	Ambient water output		SV7+SV1+E4
SV5	Hot water output		SV7+SV5
SV6	Ice Bath fill		Click: E1 Until S1>Extra Hot Setpoint Dispense: SV7+SV5
SV7	Inlet solenoid		SV7+SV6 Until level probe detects water
E1	Hot tank heating		
E2	Compressor		ON: S3/S4/S5 - No Ice On Probes OFF: S3/S4/S5 - Ice On Probes
E4	UV Firewall™		
S1	Hot water sensor		S1<SetPoint; E1=ON S1≥SetPoint; E1=OFF
S2	Overheat thermostat		S2≥105°C; E1=OFF Requires Manual Reset
S3	Ice Bath probes		
S4			
S5			

2.5 FRONT AND REAR VIEW

1 EXTERNAL COMPONENT

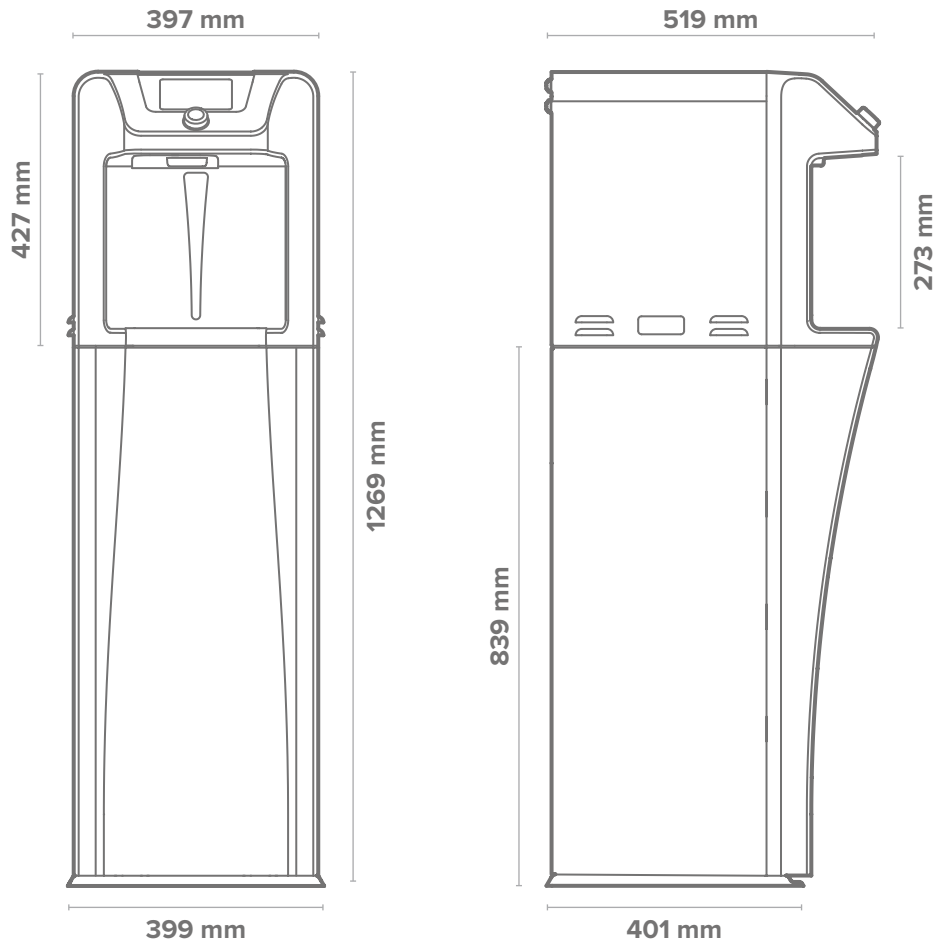


No	Description
1	C7 - Top Housing Insert- Glossy Black
2	C7 - Metal Top cover
3	C7 - Right side panel
4	Plastic Handle Black
5	C7 - Drip Tray
6	C7 - Drip Tray Grill
7	C7 - Back Splash Trim
8	C7 - Waterfall Light Diffuser
9	C7 - Door Parent Part
10	C7 - UI Insert Trim
11	C7 - UI Display Cover
12	C7 - UI Button Graphic Lens
13	C7 - UI Knob



No	Description
14	C7 - Left side panel
15	Plastic Handle Black
16	Unit Rubber Feet
17	C7 - Down base
18	C7 - High Efficiency Condenser
19	C7 - Support corner left /right
20	JG Bulkhead Connector Union 1/4"
21	C7 - Back panel
22	Switch - Heater/Compressor (Green)
23	Switch - Power (Red)
24	Fuse Holder & Fuse 220V/10A Fuse Holder & Fuse 110V/15A
25	Socket for Plug Connection
26	JG Bulkhead Connector Union 1/4"

2 PRODUCT DIMENSIONS



3 PRODUCT LABEL

To identify your product characteristics and production date you can refer to the examples below:

Model:



F-7FX-M-HCAS-HVL621NX-XX-YYY

Machine Model

S / N:



LB2H634SB18C13004CN1

Year: 18

Month: A->L (Jan->Dec)

C: March

Day: 13

Machine Number: 004

3. INSTALLATION INFORMATION

Installation requirements:

A dedicated and properly earthed outlet. Unit should be protected by residual current device (RCD) having a rated residual operating current not exceeding 30 mA.

The machine needs to be mounted on a firm level surface so there is no chance of it toppling or falling over. A 100 mm air gap is required the whole way around the machine to allow for sufficient ventilation.

The machine must not be installed in direct sunlight or next to a heat source. The supply water must be potable and up to a maximum recommended temperature of 25°C (77°F).

Materials needed:

- PPE: rubber or nitrile safety gloves, safety footwear and protective eyewear
- Phillips screwdriver, temperature gauge, TDS meter and chlorine test strips
- Jug to collect water from the faucet and 10 litre container to drain the machine
- Aqua Dosa sanitise – or other 3% hydrogen peroxide
- ¼” plastic tubing and assorted ¼” quick connect fittings
- Sanitizing cartridge or Culligan filter housing without media.
- Install kit with non-return valve, pressure reducer and water block.

AUSTRALIAN INSTALLATION GUIDE

Installation Instructions

Installation in accordance with AS/NZS 3500.1 and AS/NZS 3500.2.



K001 Install Kit

For installation, you will need: 1-20 metres of 6mm 5/16 inch water pipe, John Guest fittings, moulded plug fitted, CO2 Gas (if required), CO2 Regulator and customer handbook. Allow 1 hour to complete installation.

- The Culligan units must be installed according to the local guidelines.
- A 350kpa pressure reducing valve and dual check valve must be connected at the water supply.
- The Culligan units should not be connected to water supplies of unknown bacterial quality or those not already fit for human consumption. The Culligan units should only be connected to a potable drinking water supply.
- Culligan International strongly recommends the use of an anti-flood device.
- K001 Install kit , (1 x 63058/103988 – brass tee, 1 x 54011/104115 ball valve, 1 x 52028/104177 dual check valve or 52010 / 100665 alternate dual check valve).
- After hours sales/service – 1300 88 14 14.

3.1 START-UP INFORMATION



Only competent trained technicians should work on Waterlogic products. Culligan units may weigh over 25 kg. We recommend caution when lifting. Packing materials could present a trip hazard. Keep them off the floor.

- It is advisable to have the power and flexible water supply within a two meters range of the machine. If water supply is further than two meters, rigid fixed permanent pipework is required. All water connections shall be that of a fixed permanent solution and not by temporary means of fixture:

→ 0 - 2 meters: ≥ 1/4” JG pipe

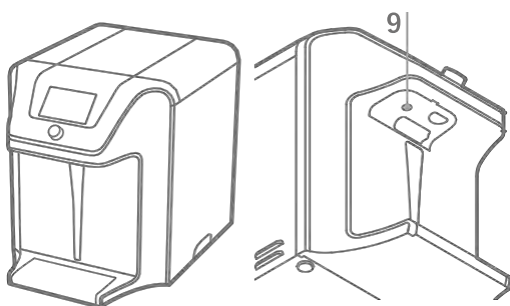
→ 2 - 10 meters: ≥ 15 mm pipe

- The isolation for the water and electricity should be easily accessible, and the machine should not be installed using an extension lead.
- The water outlet connection must be fitted with an install kit containing a non-return valve, a pressure reducer (maximum 3 bar) and a water block device. Prepare the connection to the machine from the install kit via a length of 1/4" John Guest food grade tubing.
- Remove the filter from the machine and flush it externally, making sure 10 litres of water pass through the filter to clear any carbon fines that may need to be removed.
- Before turning ON the machine, take a glass of water from a faucet and check the TDS levels. If the TDS is less than to 30ppm you need to add 2.5 grams of sodium bicarbonate to the Ice Bath to ensure it works efficiently.

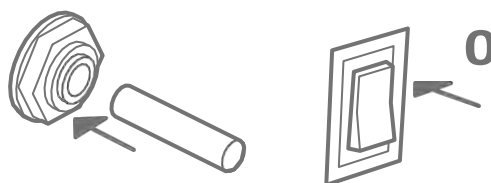


The Ice Bath water is not used for consumption, so the addition of the sodium bicarbonate as no effect on the quality of the drinking water. To connect the water cooler to the mains water supply, you will need to use a new set of connectors. Do not use connectors that where already used on other installations. A pressure higher than 3.5 bar will damage the machine, a pressure reducing valve is necessary.

To start-up the product follow the instructions below. Some pre-installation piping is required before installing the machine:

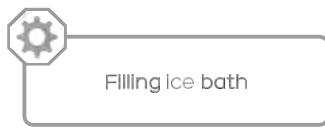
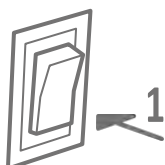


Unpack and carry out a visual inspection of the unit. Open the front door (unscrewing [9]) and visually inspect the internals of the product.

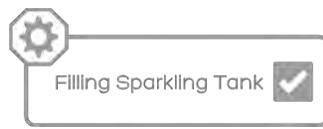


Connect the water supply (chapter 2.5 [26]). Ensure the **green** switch on the rear of the machine (chapter 2.5 [22]) is in the OFF position and connect the unit to a power supply and CO₂ (check CO₂ instructions on 3.3 page 14).

1



2



Turn ON the **red** power switch (chapter 2.5 [23]) and follow instructions on the display screen. It should take approximately 2 minutes to fill the Ice Bath and 30 more seconds to fill the sparkling tank (model dependent)

3



Fill hot tank before turning ON the **green** switch:

1. Press the dispense button [12] until water dispenses.
2. Turn ON **green** switch chapter 2.5 [22].

Check sanitizing instruction (chapter.3.2) to complete the installation.

4

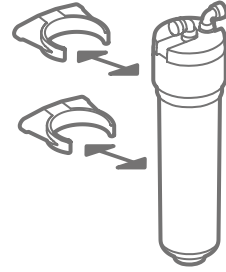
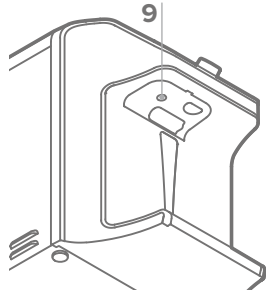
5

3.2 SANITISING INSTRUCTIONS

The disinfection of the product after installation is very important to ensure that there is no residue on the machine due to transport and testing that can leave a bad taste in the water.

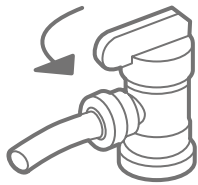


Always ensure proper ventilation and use proper personal protective equipment such as gloves and eye protection when using chemicals. Refer to material safety data sheet for specific requirements of each chemical product. Take all necessary precautions to prevent sanitiser from contacting eyes, clothing, and any other surfaces it could damage.

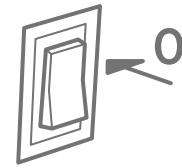


1 Turn OFF the water supply and open the front panel [9] to access the filter.

2 Replace the filter with the housing with the sanitiser inside (30 ml). Bypass the other filters if applicable.



3 Turn ON the water supply.



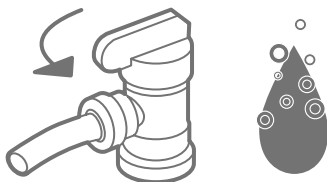
4 Ensure the **green** (chapter 2.5 [22]). Compressor and heater switch is OFF.



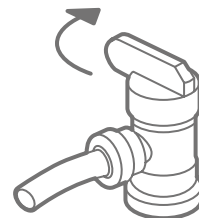
5 Dispense **cold** water until water with sanitiser solution comes out the faucet.



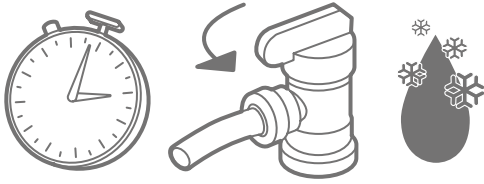
6 Repeat the process with the **ambient** water.



7 Ensure CO₂ supply is on and dispense 500 ml of **sparkling** water from the faucet. This will let the pump refill the tank with water that contains sanitiser solution.

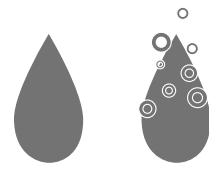


8 Turn OFF the water supply and replace the filter housing with the original filter.



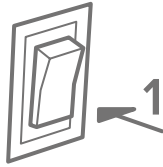
9

Wait 10 minutes. After, flush at least 5 litres of **cold** water and use test strips to make sure there is no sanitiser left.



10

Flush 5 litres of **ambient** and **sparkling** until there is no sanitiser in the system.



11

After the sanitiser has been completely flushed the **green** compressor and heater switch can now be turned ON.

3.3 CO₂ INSTALLATION



EQUIPMENT UNDER PRESSURE, HANDLE WITH CARE

For the replacement of the CO₂ cylinder, all the operations must be carried out exclusively by qualified technical personnel.

The cylinders must not be lifted by the cap, or dragged, rolled or slid along the floor.

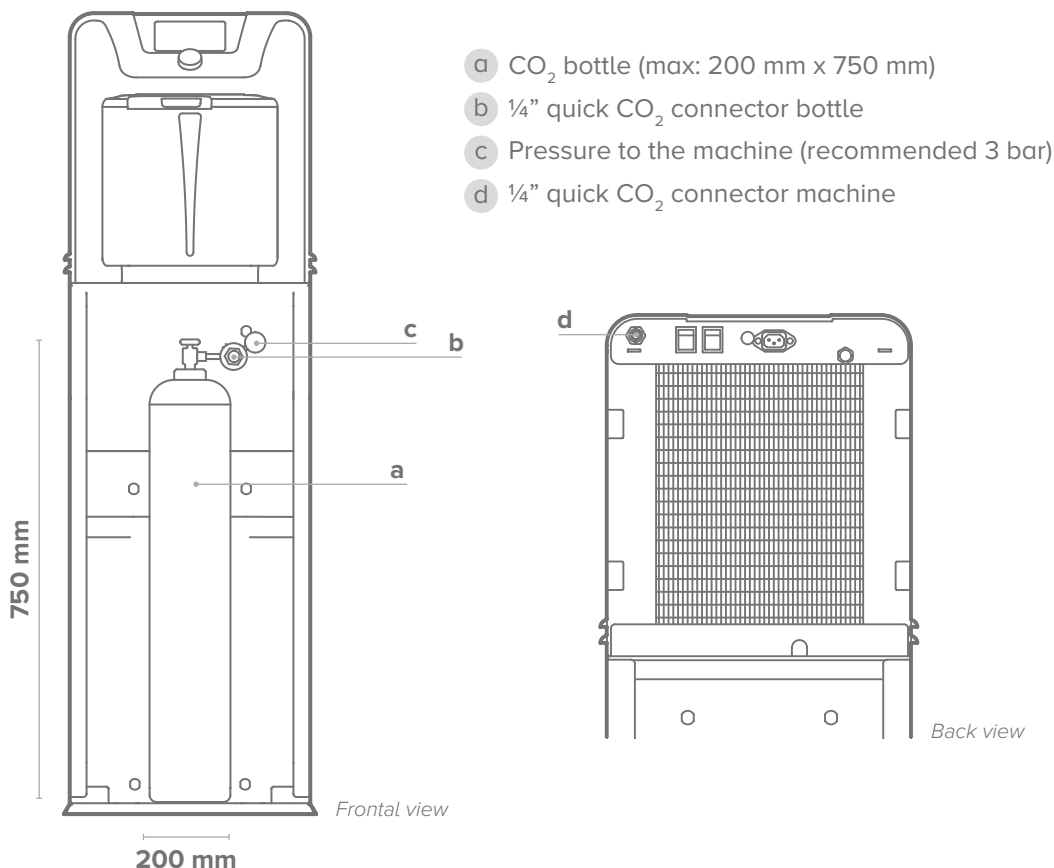
Even short distances, an appropriate hand cart or other suitable means of transport should be used.

The machine is not equipped with the CO₂ pressure reducer, which must be ordered separately. Also, the CO₂ reservoir is not provided.

If you order the base cabinet for the C7 Firewall™ the CO₂ bottle can be fitted inside the cabinet, on example below. The maximum recommended size of the bottle to fit the cabinet is 200 mm diameter by 750 mm height.

To achieve a good level of carbonation the Ice Bath must be cold, a minimum of 1 hour after start-up.

1. Before starting, ensure the CO₂ gas bottle is food grade (E290).
2. Remove the dust cap (where fitted) from the CO₂ outlet on the bottle.
3. Direct the outlet into a safe location, open the tap on the gas bottle for a second and close again, this will purge the gas which will clear any dust from the outlet.
4. Connect the CO₂ pressure regulator and tighten with a spanner, ensuring that the O-ring seal is correctly located.
5. After the installation of the machine, connect the pipework from the regulator [b] to the machine [d] and secure the gas bottle in position with a strap or chain so it will not fall over.
6. Open the tap on the gas bottle and set the pressure to 3 bar [c].
7. Dispense 500 ml of sparkling water and allow a full regeneration.
8. Re-check and readjust the CO₂ pressure to the machine (pressure tends to drop after first dispense).
9. Dispense a glass of water and taste the water for correct sparkling flavour.



3.4 CONTACTLESS

In this chapter, you will be guided through the process of installing the contactless solution. If you have any questions during this process, please reach out to your Regional Technical Manager at support@waterlogicsupport.zendesk.com.



All work must be carried out with the water and electricity disconnected.

Prior to commencing work, please refer to the below instructions carefully.

Note: If you have an older Version 1 PCB (Serial number $\leq 19J30$, before 30/10/2019 manufacture date) you will need to replace both the UI and main PCB and remove the small ice thickness PCB, if you have the new version 2 PCB (Serial number $\geq 19J31$, after 31/10/2019 manufacture date) you will only need to replace the UI PCB only.

Written Process

Gain access to the machine. Remove top cover and side panel to expose PCB and electrical connections. Remove selector button and UI PCB housing/cover to expose UI PCB.

Remove 2 screws to remove UI PCB from housing.

Install new Contactless UI PCB to housing/cover.

Additional steps required if both PCBs required for change as per note above. Full steps not shown in visual process.

A. Remove all electrical connections from main PCB. Take note of connections.

B. Apply pressure to the 4 retaining lugs and remove the main PCB from the unit.

C. Install new main PCB on to 4 retaining lugs and re-establish electrical connections.

D. Remove Ice Thickness PCB or leave redundant as shown.

Refit UI PCB housing to machine.

Feed cables through opening and across to the opening on the back of the machine.

Remove cover from opening (knock through) and pass cable through to exterior of machine. Fit grommet to opening to protect wiring harness.

Pedal/IR harness is labelled. Fit both harness to both pedals/IR module.

Test operation of machine.

Visual Process

1



- Gain access to machine by removing side panel and top cover

2



- Remove selector button
- Remove UI PCB housing/cover.

3/4



- Remove 2 screws shown to remove UI PCB from housing/cover.

6

Reverse steps to fit new UI PCB.



- Knock through the protective cover shown.
- Fit grommet provided to opening in machine to protect the harness.

8



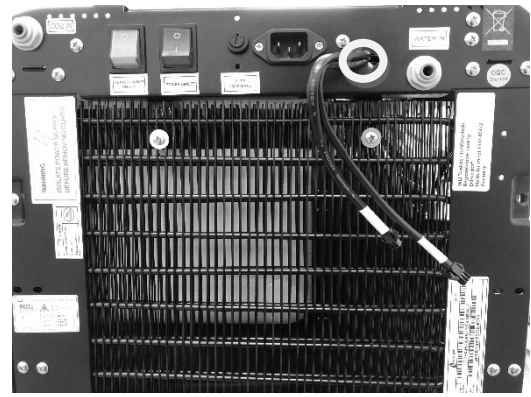
- Pedal/IR harness is labelled as shown.
- Connect accordingly.

5



- Refit UI PCB cover/housing to machine.

7



- Feed harness through opening shown in image and across to the opening on the rear of the machine.

9



- Test machine operation.

4. SERVICE PROCEDURES

A service every six months is important to keep the machine in perfect working condition and to ensure the best water quality possible.

The service is composed of the following tasks:

- Check the correct operation of the machine - Verify if every function is operational and the water temperatures and pressures are correct; the machine is not damaged or with strange noises/vibration.
- Descale the machine (for models equipped with hot tank).
- Sanitise the machine (previously on chapter 3.2).
- Change the filter(s)*.
- Change the UV lamp.
- Surface cleaning: these machines dispense purified water and one of the key factors is keeping the machine clean to avoid contamination and staining.

4.1 MAINTENANCE REPLACEMENT COMPONENTS

Component	Recommended replacement frequency
UV lamp (Chapter 6.1 [14])	Every 6 months or as required
Filters*(Chapter 6.1[12])	Every 6 months or as required
Hot tank (Chapter 6.1 [31])	Replace every 5-6 years depending on usage
Ice detection probes (Chapter 2.4 [S3/S4/S5])	Verification every 6 months, clean or replace as
Sparkling level probe (Chapter 2.4 [S6])	Verification every 6 months, clean or replace as

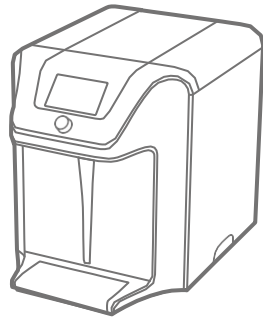
**Number and type of filters are dependent on the incoming water conditions*



C7 FW is equipped with labels to help correctly identify the components, replace these labels when damaged. Use only Culligan replacement parts that can be obtained from Culligan or an authorized Culligan distributor, failure to do so will void the warranty.

42 VERIFYING THE CORRECT OPERATION OF THE MACHINE

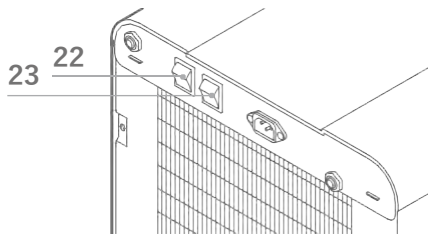
Before doing the scheduled service on the machine, ensure that the machine is in perfect working conditions by following the steps below.



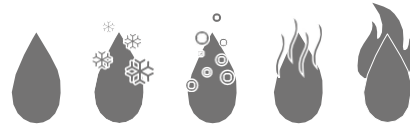
1 Check the exterior of the machine for damage.



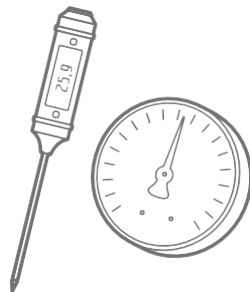
2 Check if the water supply is open (if it is closed there might be a leak in the system).



3 Ensure that the switches [22] and [23] are turned ON.



4 Verify every function present in the machine for correct functionality.



5 Measure the temperatures to verify if the machine is cooling and heating properly. Measure static and nominal (working) pressures for proper operation.



6 Press five times the **ambient** dispense in five seconds to enter the maintenance screen. Check chapter 5 for more information.



7 Check the maintenance screen for the temperature set-points and errors. If needed check chapter 5 and chapter 7.



8 If everything is working properly the machine can now be serviced.

43 HOT TANK DESCALING INSTRUCTIONS



STAINLESS STEEL TANK DESCALING

The hot tank is made from stainless steel. Ensure descaling solution is compatible with stainless and always flush the unit completely. Dispose all chemicals in an environmentally safe manner.



PERSONAL PROTECTIVE EQUIPMENT REQUIRED

Always ensure proper ventilation and use rubber or nitrile gloves and eye protection when using chemicals.

HOT WATER: The WL7 FW water purification system produces hot water (model dependent) up to 95°C (203°F) which can cause severe burns or scalding. Hot water should be dispensed carefully into properly insulated container to avoid injury.

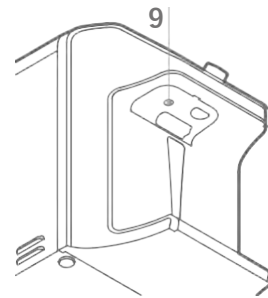
Materials needed:

- Use non-toxic cleaner such as ScaleKleen, DEZCAL or 20% citric acid solution to remove mineral deposits.
- PPE: rubber or nitrile safety gloves and protective eyewear.
- Phillips screwdriver, temperature gauge.
- 10 litre water container to collect water dispensed from the faucet and drain plugs.
- ¼" plastic tubing, at least 1 meter (3 to 4 feet) in length, and assorted ¼" quick connect fittings.
- Inline descaling/sanitizing cartridge or Culligan filter without media.

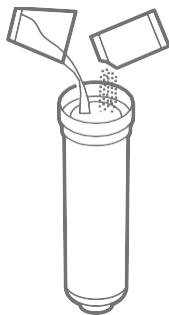
DESCALING STEPS



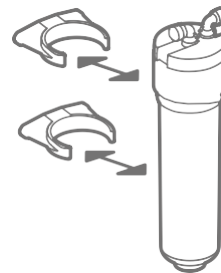
1 Turn OFF the water supply.



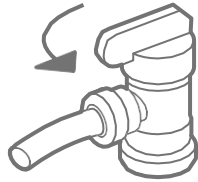
2 Open the front panel [9] to access the filter.



3 Prepare a filter housing with descaler (50g) and mix with a glass of hot water.

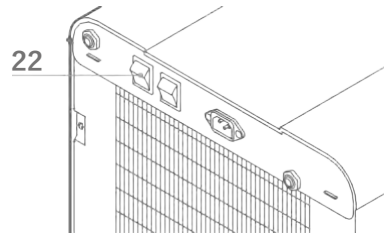


4 Replace the filter with the housing with descaler (bypass the other filters if applicable).



5

Turn ON the water supply.



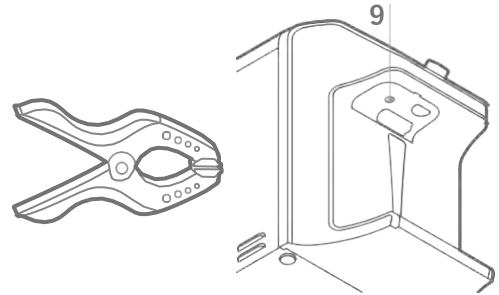
6

Ensure the **green** compressor and heater switch is ON[22].



Dispense hot water until water with descale solution comes out the faucet.

7



8

Pinch the dispensing tube or block the hot dispense and dispense hot water until water comes out the faucet by the vent hole.



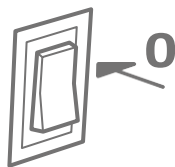
Activate the extra hot to improve the descale efficiency.

9



10

Wait 15 minutes (front door must be closed due to a safety switch).



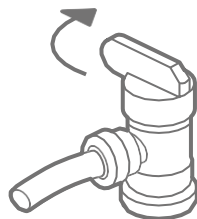
1

Turn the **green** compressor and heater switch [22] OFF.



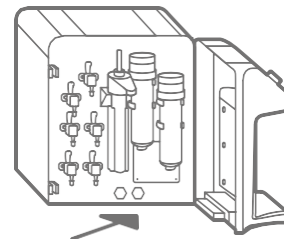
1

Dispense at least 2 litres of hot water to cool the tank.



Turn OFF the water supply.

13



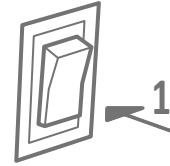
14

Drain the hot tank through the drain plug in the front and replace the descale housing with the filter.



1

Turn ON the water supply and dispense hot water to flush the remaining descaler. Repeat step 8 to clean the ventilation tank flush until water runs clear.



1

Turn the **green** compressor and heater switch [22] ON and allow the hot tank to heat up. Dispense to a glass and check the temperature.



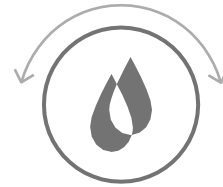
If you used the pincher, don't forget to remove it from the machine after the descaling procedure is finished. In every service maintenance the machine must be sanitised. Please follow the instructions in chapter 3.2.

44 FILTER REPLACEMENT

The filters must be replaced every 6 months and **FLUSHED** before being connected to the machine.



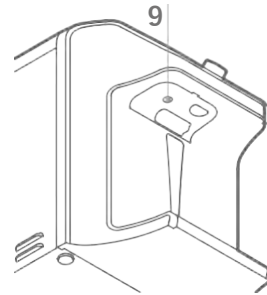
1 Turn Off water supply.



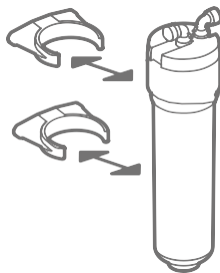
2 Dispense to relieve the water pressure.



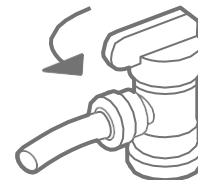
3 Ensure the new filters are **flushed** before step 4 and 5.



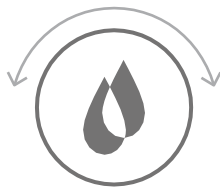
4 Open the front panel [9] to access the filter.



5 Replace the filters.



6 Turn ON the water supply and check for leaks.



7 Dispense a cup and taste the water. If needed flush 5 litres to ensure a good quality water.



8 The filters are now replaced.

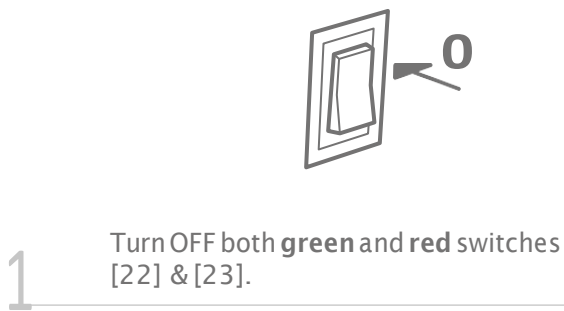


In every service maintenance the machine must be sanitised. Please follow the instructions in chapter 3.2.

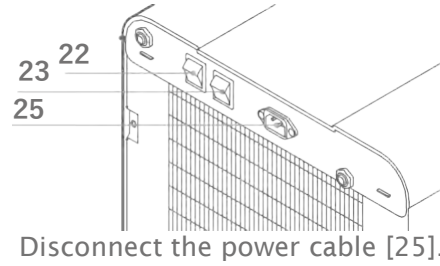
45 UV LAMP REPLACEMENT



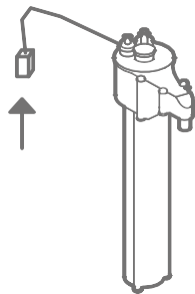
The UV lamp can cause harm if improperly used, please check the safety precautions before attempting to replace the UV lamp.



1 Turn OFF both **green** and **red** switches [22] & [23].



2 Disconnect the power cable [25].



3 Open the front door chapter 2.5 [9] and disconnect the UV lamp.



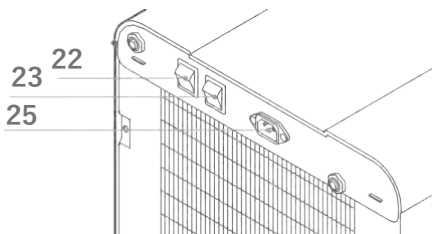
4 Pull the UV lamp carefully.



5 Check the interior of the Firewall™ for damage or scaling (remove and descale if necessary).



6 Introduce the new lamp carefully and connect the UV plug.



7 Reconnect the power cable [25] and turn ON both **green** and **red** switches [22] and [23].



8 Dispense water, check for UV error and carefully check for UV light presence.

i

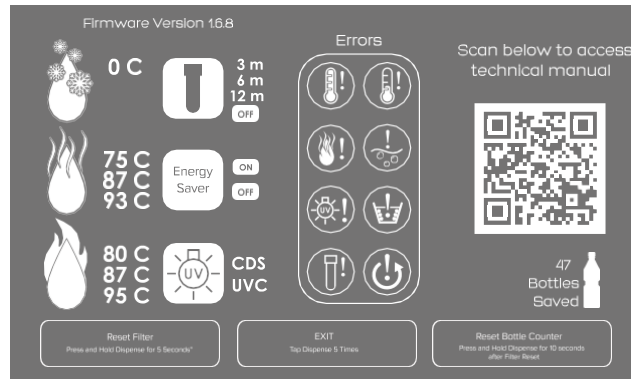
If the Firewall™ requires descaling, remove the spiral, prepare a bath with descaler and leave the spiral inside the bath for at least 10 minutes.

5. PROGRAMMING AND SPECIAL FEATURES

5.1 PROGRAMMING INSTRUCTIONS

One of the features present in the C7 FW is the maintenance screen (see below).

To access the screen, choose the ambient dispensing icon and press 5 times for 5 seconds.



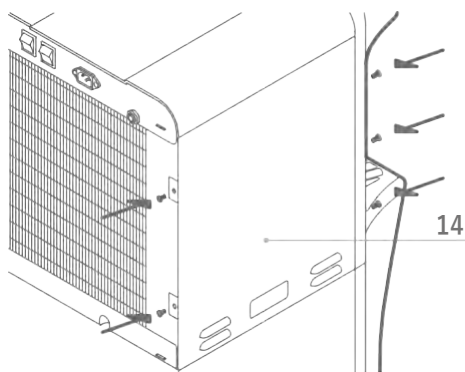
This screen allows to check the settings of the machine:

- Filter timer (factory setting: OFF);
- Energy saving mode (factory setting: ON);
- Hot water setpoint (factory setting: 87°C);
- Extra hot water setpoint (factory setting: 95°C).

But also allows you to see/do:

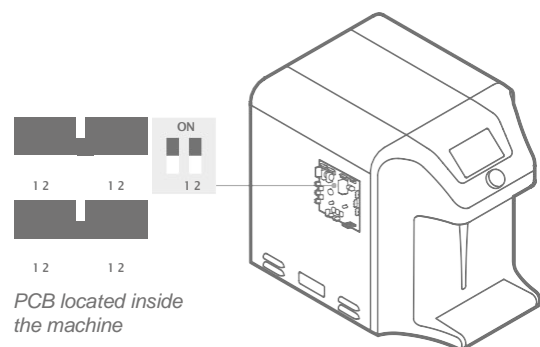
- Errors the machine is experiencing;
- Type of UV sensor present;
- Reset the filter timer;
- Reset bottles saver counter.

To change the factory settings, follow the instructions below:



1

Remove the panel [14] by taking screws in the back and front with the front door open.

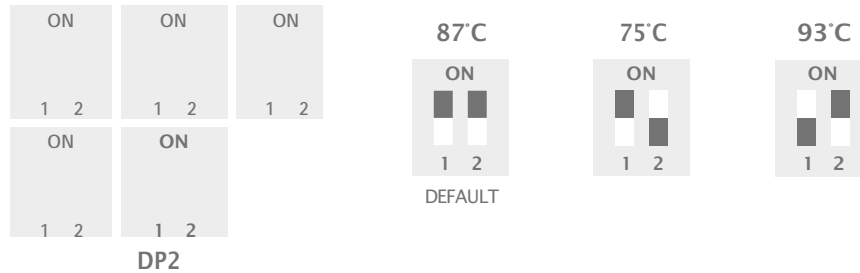


2

On the upper part of the machine you will see the PCB with red DIP switches.

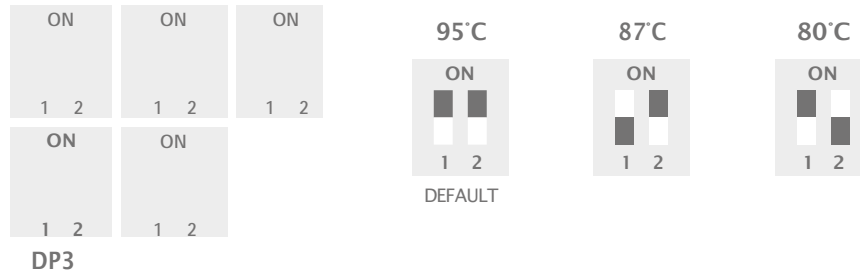
1. Hot water setpoint

The hot water comes with the default setpoint of 87°C. To change this value, change the DIP switches like shown below to get 75°C or 93°C.



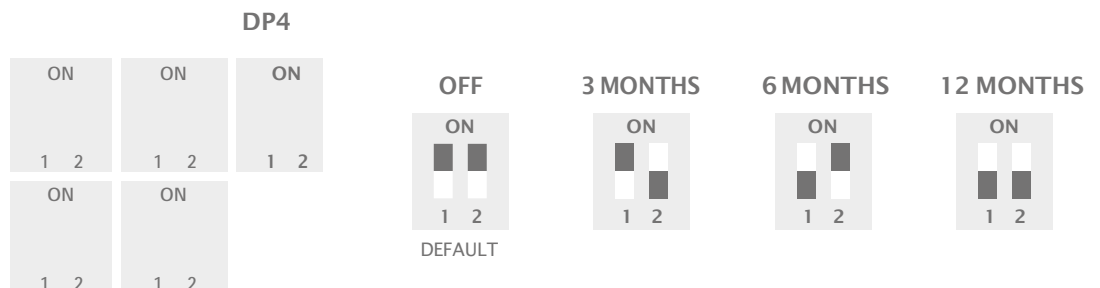
2. Extra hot water setpoint

The extra hot water comes with the default setpoint of 95°C. To change this value, change the DIP switches like shown below to get 87°C or 80°C.



3. Filter change timer

The filter change timer comes OFF by default. To change this value, change the DIP switches as shown below to get three months, six months or twelve months.



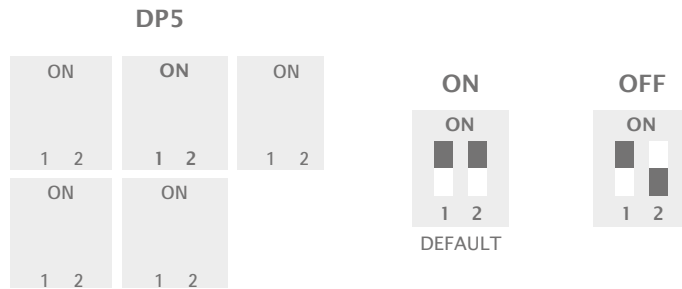
To **reset** the filter timer after a filter replacement, enter maintenance screen, press and hold the dispense button for approximately 5 seconds until you hear a single beep. The filter icon will flash, and the unit will beep one time to confirm timer reset.

4. Energy saving

All C7 Firewall™ water purification systems come from the factory with energy saving sleep mode enabled to meet the Energy Star certification requirements.

Energy saving sleep mode disables the heater circuit when the unit has not been used for a continuous period of 3 hours.

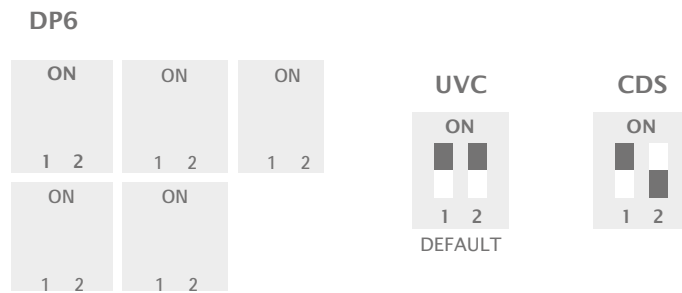
The energy savings are significant when the unit is idle, so the energy saving option should be left ON.



5. UV sensor

The sensor of the Firewall™ system can be used in UVC or CDS mode.

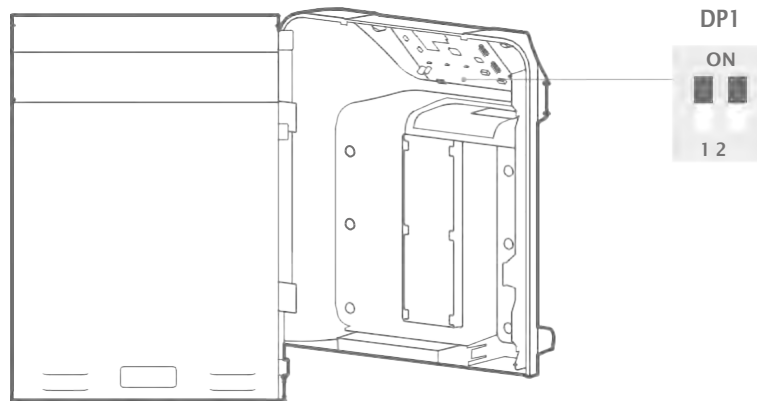
The UV sensor mode must remain in the factory setting and must not be altered except when this sensor is changed from one type to another.



Every one of the selections made above from 5.1 - 1 to 5.1 - 5 can be seen by accessing the maintenance screen.

52 MODEL CONFIGURATION

C7 FW model configuration can be altered by adjusting the switch DP1 on the back side of the display PCB. Hot and sparkling models require associated internal components at time of purchase.



C7 FW DISPLAY PCB (BACK VIEW)



Cold and ambient



Cold, ambient and sparkling



Cold, ambient, hot and extra hot



Cold, ambient, sparkling, hot and extra hot

53 SPECIAL FEATURES

1. Rate of rise protection

C7 Firewall™ utilises a thermistor in the hot tank to monitor temperature, to preventing the hot tank from dry heating and damaging the heater and hot tank controls. Tank temperature is monitored at start up and shuts down the heater when temperature increases too quickly to avoid tripping the overheat protection. Check chapter 7.4 for the related error and troubleshooting.

2. Ice Bath circulator motor

The Ice Bath has got a mixing motor (check chapter 6.1) that ensures movement of the water. This allows for a uniform temperature all around the bath which also prevents the accumulation of ice in colder areas.

The circulation motor comes on when dispensing and remains on for 4 minutes after dispense button is released. The circulation motor runs for 5 minutes for every 30 minutes when the machine has not been used.

Check chapter 7.7 for the related error and troubleshooting.

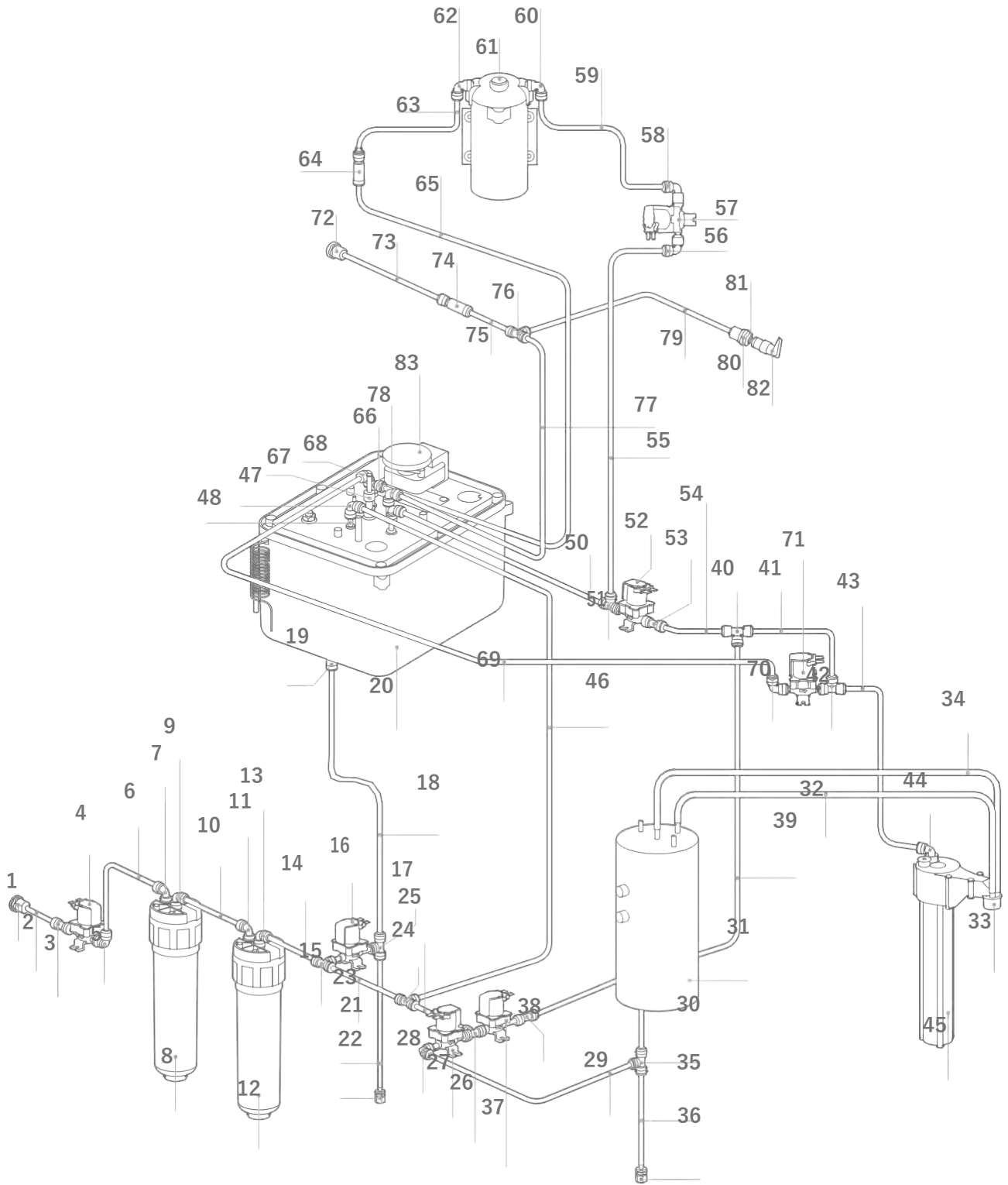
3. Ice thickness probes

To maintain the quality of the Ice Bath, instead of a temperature sensor or thermostat, the system uses ice thickness probes. What these probes do is to measure the amount of ice by TDS (lower TDS means more ice), avoiding the complete freezing of the Ice Bath while ensuring the coldest temperature possible.

6. SCHEMATICS

61 HYDRAULIC COMPONENTS

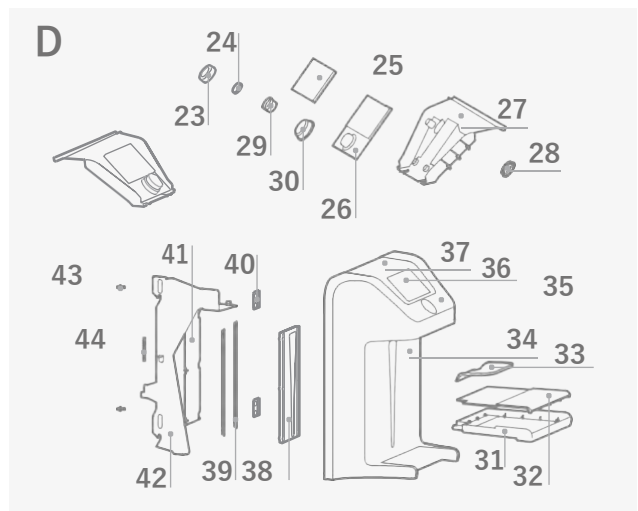
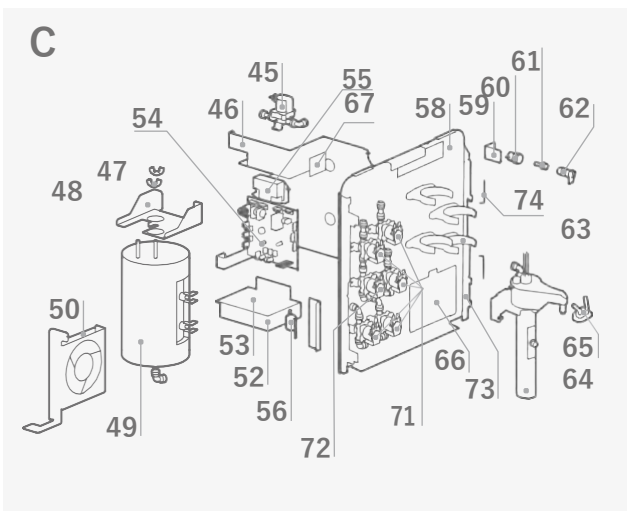
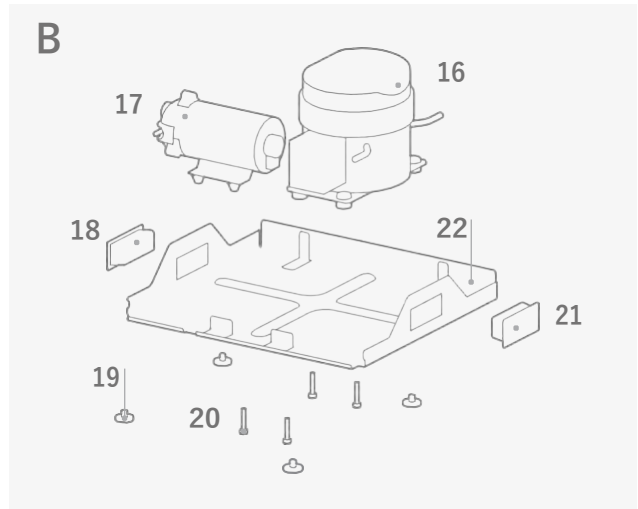
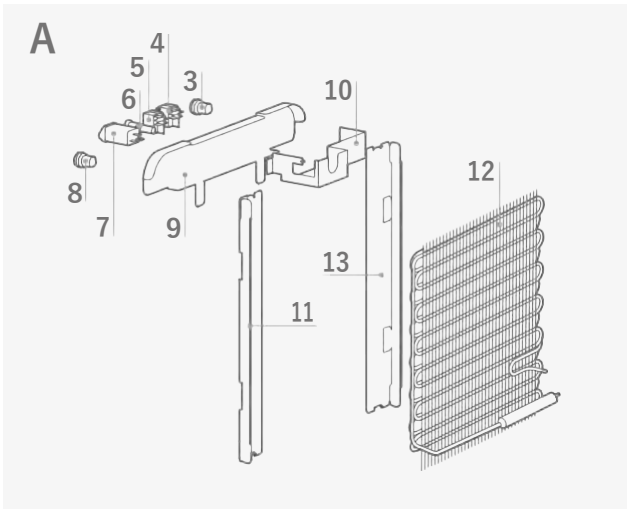
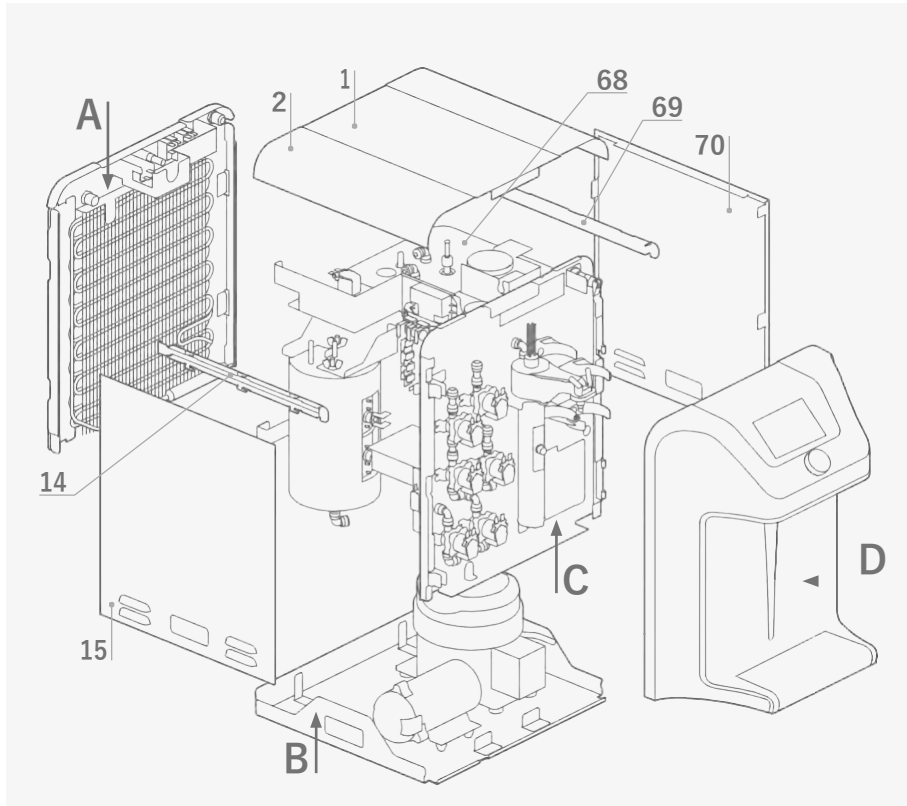
This images complement the flow diagram in chapter 2.4.



No	Description
1	JG Bulkhead Connector Union 1/4"
2	1/4" PE Pipe
3	JG Equal Straight Connector 1/4"
4	MS DC Solenoid Valve SWV24-02
5	JG Equal Elbow Connector 1/4"
6	1/4" PE Pipe
7	JG Equal Elbow Connector 1/4"
8	Filter
9	JG Equal Elbow Connector 1/4"
10	1/4" PE Pipe
11	JG Equal Elbow Connector 1/4"
12	Filter
13	JG Equal Elbow Connector 1/4"
14	1/4" PE Pipe
15	JG Equal Tee Connector 1/4"
16	MS DC Solenoid Valve SWV24-01
17	JG Equal Tee Connector 1/4"
18	1/4" PE Pipe
19	JG 3/8" x 1/4" Reducing Fitting
20	Ice Bath Assembly
21	1/4" PE Pipe
22	Drain Valve
23	1/4" PE Pipe
24	JG Equal Tee Connector 1/4"
25	1/4" PE Pipe
26	JG Equal Tee Connector 1/4"
27	MS DC Solenoid Valve SWV24-01
28	JG Equal Elbow Connector 1/4"
29	1/4" PE Pipe
30	JG Equal Tee Connector 1/4"
31	1.5L 120V 500W Universal Hot Tank (Sensor) 1.5L 230V 500W Universal Hot Tank (Sensor)
32	Silicone Pipe 5/16"
33	C7 - Dispense Nozzle
34	Silicone Pipe 5/16"
35	1/4" PE Pipe
36	Drain Valve
37	MS DC Solenoid Valve SWV24-01
38	JG Equal Straight Connector 1/4"
39	1/4" PE Pipe
40	JG Equal Tee Connector 1/4"
41	1/4" PE Pipe

No	Description
42	JG Equal Tee Connector 1/4"
43	1/4" PE Pipe
44	JG Equal Elbow Connector 1/4"
44a	FW Assembly
45	1/4" PE Pipe
46	JG Equal Elbow Connector 1/4"
47	Ice bath stainless Cold water pipe
48	JG Equal Elbow Connector 1/4"
49	1/4" PE Pipe
50	JG Equal Tee Connector 1/4"
51	JG Equal Tee Connector 1/4"
52	MS DC Solenoid Valve SWV24-01
53	JG Equal Straight Connector 1/4"
54	1/4" PE Pipe
55	1/4" PE Pipe
56	JG Equal Elbow Connector 1/4"
57	MS DC Solenoid Valve SWV24-02
58	JG Equal Elbow Connector 1/4"
59	1/4" PE Pipe
60	JG Equal Elbow Connector 1/4"
61	75 GDP RO DC Pump
62	JG Equal Elbow Connector 1/4"
63	1/4" PE Pipe
64	JG Non-Return Valve 1/4"
65	1/4" PE Pipe
66	JG Equal Elbow Connector 1/4"
67	Ice bath Sparkling tank
68	JG Stem Elbow Connector 1/4"
69	1/4" PE Pipe
70	JG Equal Elbow Connector 1/4"
71	MS DC Solenoid Valve SWV24-01
72	JG Bulkhead Connector Union 1/4"
73	1/4" PE Pipe
74	JG Non-Return Valve 1/4"
75	1/4" PE Pipe
76	JG Equal Tee Connector 1/4"
77	1/4" PE Pipe
78	JG Equal Elbow Connector 1/4"
79	1/4" PE Pipe
80	JG Bulkhead Connector Union 1/4"
81	Sparkling Safety Valve
82	Upper Safety Valve 1/4"
83	Ice bath Motor

62 EXPLODED VIEW DIAGRAM AND PARTS LIST



No	Description	No	Description
1	C7 - Top Housing Insert-	40	C7 - Hinge
2	C7 - Metal Top cover	41	C7- waterfall light backing
3	JG Bulkhead Connector Union 1/4"	42	C7 - Door latch
4	Switch - (Red)	43	C7 adjustment pin for door parent
5	Switch - Heater/Compressor (Green)	44	C7 - Spring for Door Latch
6	Fuse Holder & Fuse	45	MS DC Solenoid Valve SWV24-02
7	Socket with EMI filter	46	C7 - Middle support panel
8	JG Bulkhead Connector Union ¼"	47	Wing nut M6 for hot tank
9	C7 - Back panel	48	C7 - Bracket for hot tank
10	C7 – Electronic cover box		1.5L 120V 500W Universal Hot Tank (Sensor)
11	C7 - Support corner left /right	49	1.5L 230V 500W Universal Hot Tank (Sensor)
12	C7 - High Efficiency Condenser		Fan Motor 110V (AC Axial fan)
13	C7 - Support corner left /right	50	Fan Motor 230V/50-60Hz (AC Axial fan)
1	C7 - Side panel support corner left/right	51	Bracket for Fan Motor
15	C7 - Left side panel	5	C7-Transformer 120V C7-Transformer 220-240V
1	R134a Compressor 110V/60Hz R600a Compressor 220-240V 50HZ	53	C7 - main control PCB
17	75 GDP DC Pump	5	120V/60Hz Electronic FX Ballast 230V/50/60Hz Electronic FX Ballast
18	Plastic Handle Black	55	Micro Switch with Lever
19	Unit Rubber Feet	56	C7 - Micro Switch Cover
20	Bolt for Compressor	57	C7 - Front support panel
21	Plastic Handle Black	5	C7 Metal block panel for safety valve
22	C7 - Down base	59	JG Bulkhead Connector Union 1/4"
23	C7 - UI Knob-Glossy black	60	Sparkling Safety Valve
24	C7 - UI Button GraphicLens	6	Upper Safety Valve 1/4" for Sparkling Unit
25	C7 - Silicon gasket for display PCB	62	2,8" Filter Clip
26	C7 - UI PCB with Knob LED	63	FW Assembly
27	C7 - UI Sealing Cover	64	C7 - DISPENSE NOZZLE
2	C7- Spring metal cover for PCB Cover	65	C7 - Compressor cover
29	C7 -UI Button	66	C7 Ice Thickness detection PCB
30	C7 - Knob Light Diffuser	67	Ice Bath Assembly
31	C7 - Drip Tray	6	C7 - Side panel support corner left/right
32	C7 - Drip Tray Grill	69	C7 - Right side panel
33	C7 -Door Dispense Area Insert	70	MS DC Solenoid Valve SWV24-01
34	C7 - Back Splash Trim	71	MS DC Solenoid Valve SWV24-02
35	C7 - UI Insert Trim	72	C7 - Hinge
36	C7 - UI Display Cover	73	C7 - Hinge Pin
37	C7 - Door Parent Part		
38	C7 - Waterfall Light Diffuser		
39	C7 - LED PCB for waterfall back light		

6.3 ELECTRICAL DIAGRAM

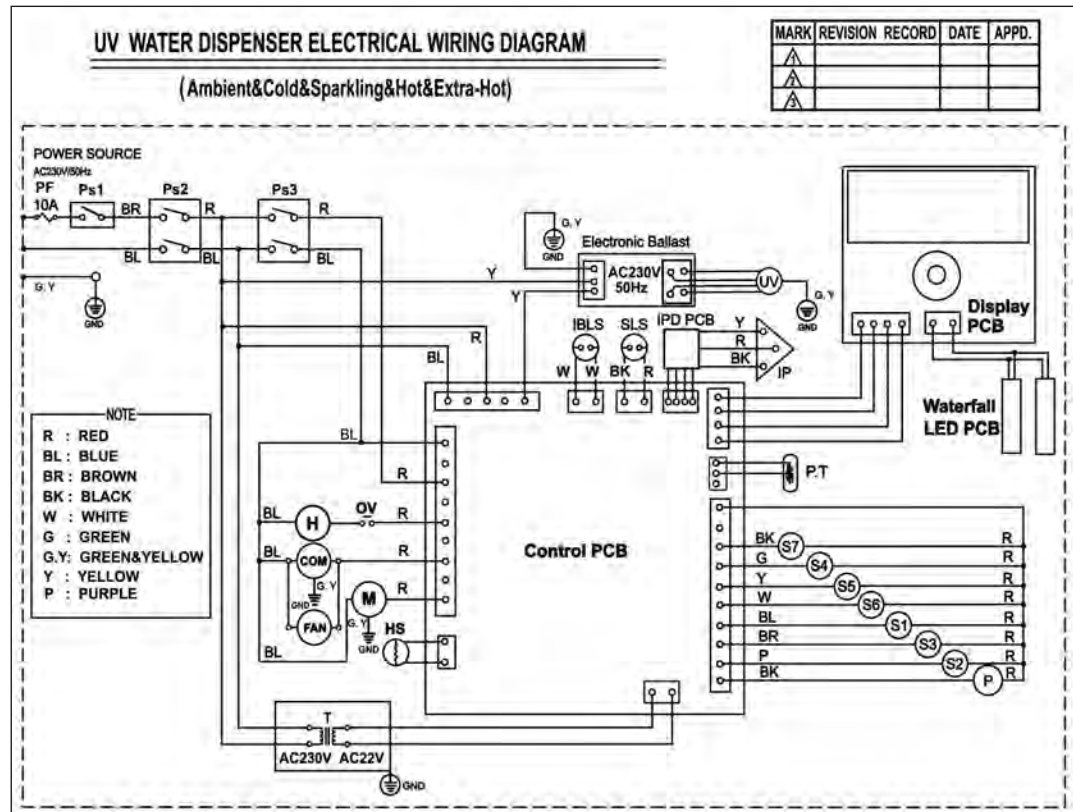


HIGH VOLTAGE ELECTRICAL HAZARD

C7 Firewall™ Unit and PCB (Printed Circuit Board) contain high voltage hazard. Only trained and qualified technicians should attempt live testing and troubleshooting.

Electrical Diagram 230V

The diagram below complements the flow diagram in chapter 2.4.



Mark	Description
PF	Power Fuse
PS1	Safe Power Switch
PS2	Main Power Switch
PS3	Compressor/Heater Power Switch
UV	UV Lamp
H	Hot Tank Heater Element
OV	Overload
COM	Compressor
FAN	Condenser Cooling Fan
M	Ice-Bath Mixing Motor
HS	Hot Tank Temperature Sensor
T	Transformer
IBLS	Ice-Bath Water Level Sensor
SLS	Sparkling Tank Level Sensor

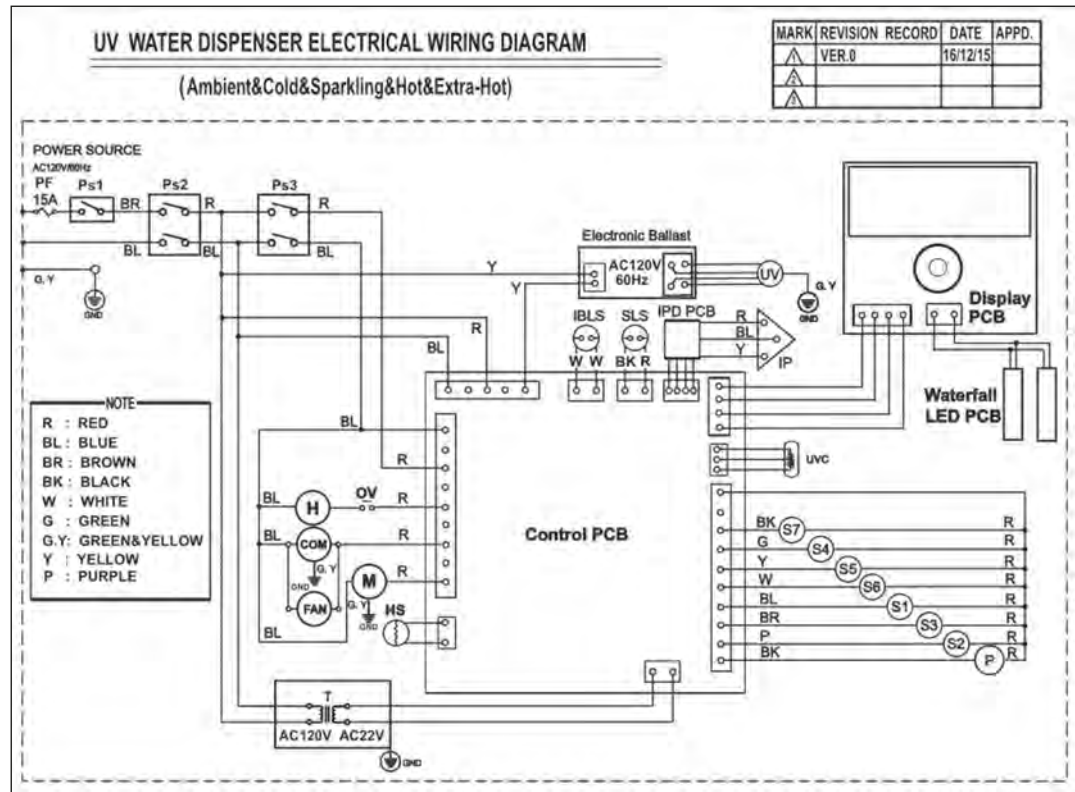
Mark	Description
IPD PCB	Ice Probes PCB
P.T.	Photo Transistor
S1	S. Valve- Cold Water Out
S2	S. Valve- Sparkling Water Out
S3	S. Valve- Sparkling Water In
S4	S. Valve- Ambient Water Out
S5	S. Valve- Hot Water In
S6	S. Valve- Fill Ice Bath
S7	S. Valve- Inlet Solenoid
P	Pump
IP	Ice Probe
Drawing No	2016.12.09



HIGH VOLTAGE ELECTRICAL HAZARD

C7 Firewall™ Unit and PCB (Printed Circuit Board) contain high voltage hazard. Only trained and qualified technicians should attempt live testing and troubleshooting.

Electrical Diagram 120V



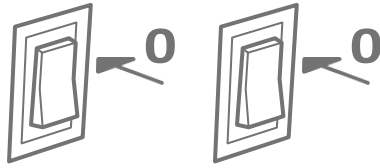
Mark	Description
PF	Power Fuse
PS1	Safe Power Switch
PS2	Main Power Switch
PS3	Compressor/Heater Power Switch
UV	UV Lamp
H	Hot Tank Heater Element
OV	Overload
COM	Compressor
FAN	Condenser Cooling Fan
M	Ice-Bath Mixing Motor
HS	Hot Tank Temperature Sensor
T	Transformer
IBLS	Ice-Bath Water Level Sensor
SLS	Sparkling Tank Level Sensor

Mark	Description
IPD PCB	Ice Probes PCB
UVC	Intensity of Ultraviolet Detection
S1	S. Valve- Cold Water Out
S2	S. Valve- Sparkling Water Out
S3	S. Valve- Sparkling Water In
S4	S. Valve- Ambient Water Out
S5	S. Valve- Hot Water In
S6	S. Valve- Fill Ice Bath
S7	S. Valve- Inlet Solenoid
P	Pump
IP	Ice Probe
Drawing No	2016.12.15

7. TROUBLESHOOTING

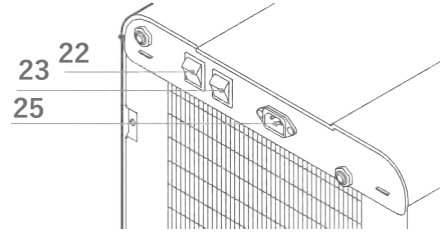
The reference numbers in between “[]” in this chapter refer to chapter 2.5.

7.1 RESETTING THE HOT TANK HIGH LIMIT SAFETY



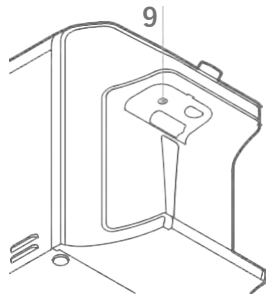
1

Turn OFF both **red** [23] and **green** [22] switches.



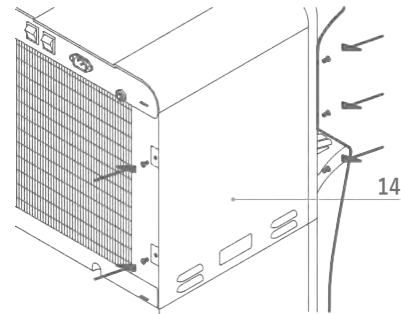
2

Unplug the power cord from the rear of unit [25].



3

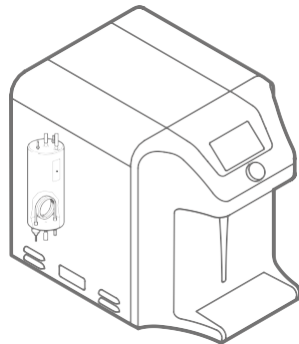
Remove the locking screw under the front access and open the door [9].



4

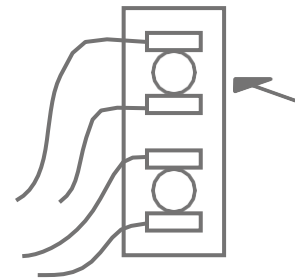
Remove the left panel [14] by taking screws in the back and front with the front door open.

Hot tank located inside the machine



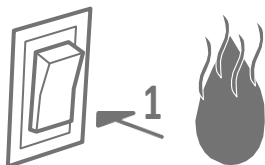
5

Locate the hot tank reset button.



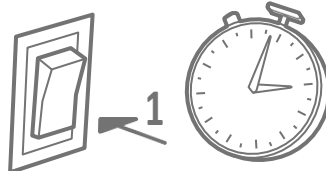
6

Press the reset button “click”.
Check continuity with multimeter.



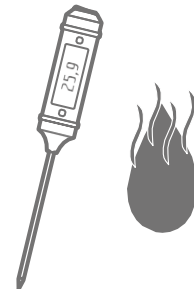
7

Connect the power, [25],
Turn ON **red** button [23]
and fill the hot tank.



8

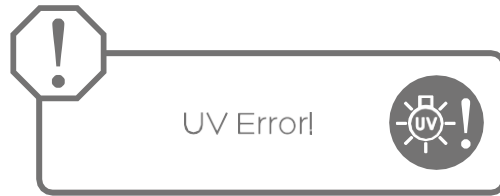
Turn ON **green** button [22] Wait 10 minutes for the hot tank to heat up.



9

Verify the proper operation of the hot tank.

72 UV ERROR



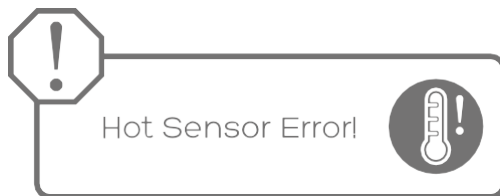
- The UV sensor is not detecting UV light to ensure safe water.
- Cold, sparkling, and ambient (room temperature) icons will be ghosted in the dispense screen.

COMMON TROUBLESHOOTING:

1. UV lamp – a) Status; b) Intensity; c) Connections
2. UV ballast – a) Status; b) Connections
3. UV sensor – a) Status; b) Condition (temperature); c) Correct placement
4. Quartz spiral – a) Inspect condition; b) Clean or replace.
5. Water quality – a) Water must be clear with low turbidity and tannins to allow proper UV transmission.

RESET the ERROR by turning OFF and ON after 5 seconds the **red** power switch.

73 HOT SENSOR ERROR



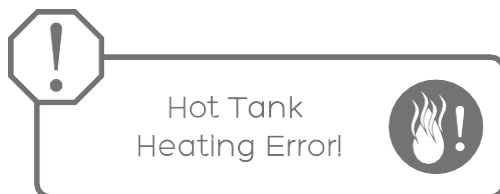
- System is detecting a problem with the thermistor;
- Heater will be shut off and hot and extra hot icons will be ghosted in the dispense screen.

COMMON TROUBLESHOOTING:

1. Ensure thermistor is connected properly and fully installed in the hot tank.
2. Replace thermistor (sensor).

RESET the ERROR by turning OFF and ON after 5 seconds the **red** power switch.

74 HOT TANK HEATING ERROR



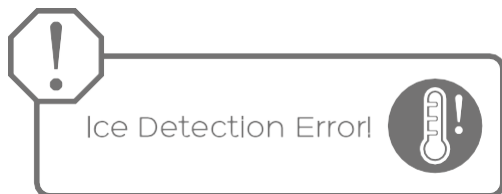
- Rate-of-rise error has been detected;
- This avoids dry heat or tripping the thermal overload;
- Hot and extra hot water icons will be ghosted in the display screen.

COMMON TROUBLESHOOTING:

1. Ensure hot tank is full of water by selecting hot icon and dispense until steady stream of water flows to cup.
2. Cycle power to see if error repeats (RESET).
3. If error repeats and tank is full, check 7.3 hot sensor error.

RESET the ERROR by turning OFF and ON after 5 seconds the **red** power switch.

7.5 ICE DETECTION ERROR



- The ice detection sensor has a short circuit or open circuit.
- Refrigeration compressor will be shut off and cold and sparkling icons will be ghosted in the dispense screen.

COMMON TROUBLESHOOTING:

1. Ensure the Ice Bath is above 30 ppm Total Dissolved Solids (TDS). Add ½ teaspoon of sodium bicarbonate to the Ice Bath from the top access if necessary.
2. Check all connections to confirm connectivity.
3. Replace probe sensors.

RESET the ERROR by turning OFF and ON after 5 seconds the **red** power switch.

7.6 SPARKLING WATER LEVEL ERROR



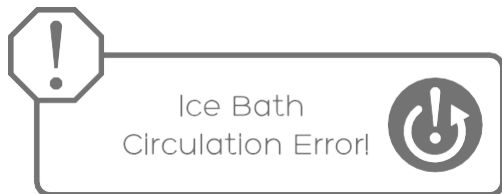
- Sparkling water level or pump time out error.
- The sparkling water injection pump cycled twice without filling carbonator.

COMMON TROUBLESHOOTING:

1. Limited water supply. Verify that water supply is open and dispense ambient water to validate water flow.
2. CO₂ pressure too high. Ensure 3 bar (42.5 PSI) maximum.
3. Sparkling water level probe. Verify all connections from probe to PCB.
4. Isolate CO₂ gas supply and relieve pressure in tank by opening PRV (pressure relief valve) before attempting to remove the level sensor probe or any other component under pressure.
5. Remove and inspect sparkling water sensor probe. Clean and replace if needed.

RESET the ERROR by turning OFF and ON after 5 seconds the **red** power switch.

7.7 ICE BATH CIRCULATION ERROR



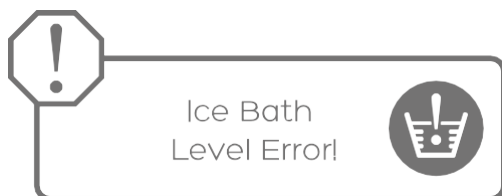
- The circulation motor in the ice bath has faulted

COMMON TROUBLESHOOTING:

1. Cycle power to ensure error repeats (RESET).
2. Check all wiring to ensure there is not an open circuit.
3. Replace circulation motor (chapter 6.1 , [83]).

RESET the ERROR by turning OFF and ON after 5 seconds the **red** power switch.

7.8 ICE BATH LEVEL ERROR



- The Ice Bath fill solenoid valve [SV6] has been open for more than 10 minutes during start-up or more than 1 minute during normal operation. If the Ice Bath fill happens three times within an hour this error will also show.

COMMON TROUBLESHOOTING:

1. Check for leaks.
2. Ensure adequate water supply.
3. Check to make sure Ice Bath level sensor is properly connected.
4. Check Ice Bath fill solenoid valve [SV6].
5. Replace Ice Bath level sensor.

RESET the ERROR by turning OFF and ON after 5 seconds.

7.9 DISPENSE TIME OUT



- Indicates a 2 minute continuous dispense has been detected in operating mode.

COMMON TROUBLESHOOTING:

1. Release dispense button.
2. Damage to front dispense control knob. Replace front display PCB control knob. [13]
3. Moisture on front control knob PCB shorting signal to main PCB. Ensure PCB board and controls are dry and protective covers and seals are in place.
4. Wire short circuit. Inspect and check all harness and wiring for damage.

7.10 NO POWER TO THE MACHINE

Symptoms	Causes	Solutions
<ul style="list-style-type: none"> · Red switch not lit · Green switch not lit · Display not lit 	Circuit Breaker	Check the circuit breaker
	Fuse is blown defective/loose power cord.	Replace fuse [24] Check that power cord is properly plugged in [25]. If it is properly plugged in, use a different power cord to verify.
	Failed power socket with, electromagnetic interference filter (EMI).	Replace power socket with, electromagnetic interference filter (EMI).
<ul style="list-style-type: none"> · Red switch lit · Green switch lit · Display not lit 	Defective red power switch.	Replace red power switch [23].
	Bad transformer.	Replace transformer.
	Black power connector to the PCB is not properly connected.	Properly connect.
<ul style="list-style-type: none"> · Display not lit 	Bad front PCB.	Replace front PCB.
	Defective red power switch.	Replace red power switch.

7.11 COLD WATER TROUBLESHOOTING

If the cold water temperature is above 12°C or at the same temperature as the ambient water, follow the instructions below.

Symptoms	Causes	Solutions
Compressor is running, and condenser [18] is warm, but water is not cold.	Too much dispensing in a small time depleted the water cooling capacity; Insufficient ventilation in the condenser coil due to lack of ventilation or dirty condenser coil.	Wait for the tank to recover before dispensing more cold water, assure that the condenser coil chapter 2.5 [18] is clean and with enough space for correct ventilation (minimum of 100 mm).
Compressor is not running.	No power to refrigeration elements.	Check If the red and green Switches are ON chapter 2.5 [22] & [23]. Check power socket chapter 2.5 [25] and cable. Check fuse chapter 2.5 [24]. Repair or replace compressor.
Compressor runs but condenser [18] is not warm.	Refrigerant lost Refrigerant line is blocked	Check for leaks in the refrigerant line, check the condenser grill chapter 2.5 [18] for damage first. Shake the filter dryer to see if you hear the shaking noise of the elements inside. If it does not shake, the dryer is blocked.

7.12 HOT WATER TROUBLESHOOTING

Before starting with the troubleshooting check in the maintenance screen (Chapter 5.1-) if the hot water setpoint is the correct for the type of usage. The setpoint can be changed to ensure specific demands.

Symptoms	Causes	Solutions
No power to the Heater do to Sleep Mode	The Heater Shuts off when the Machine enters in Sleep Mode after 3 Hours of no dispensing.	Wake the Machine out of Sleep Mode by using the dispensing knob and allow 10 minutes for the water to heat up. You can check the heating progress on the screen (check chapter 2.2 User Interface)
	Green Button [22] is Switched OFF	Turn Green Button Switch chapter 2.5 [22] ON
No power to the Heater	Overheat thermostat is activated	Ensure the Hot Tank is Filled and click to deactivate the overheat thermostat (Chapter 7.1)
	Loose connection to the Heater	Correct the wiring connections to the Heater
	Faulty Thermostat	Replace Heating Thermostat Drain Hot Tank and check the resistance of the Heater (Should be 26 ohm)
	Broken Heating Element	Replace Hot Tank if Heater is damaged

7.13 DISPENSING TROUBLESHOOTING

Symptoms	Causes	Solutions
Irregular/ Intermittent Dispensing	Too much water pressure. Recommend 2.7 – 3.5 Bar for C7 FW water treatment system to operate	Adjust water pressure to 2.7-3.5Bar.
	Dirty Solenoid	Open and Clean the Inlet and Outlet Solenoid
	Faulty Solenoid	Replace the Faulty Solenoid
	Mineral deposits on the expansion slot inside the Hot Tank vent chamber which blocks the normal path of water to expand properly.	Descale Hot Tank following the instructions on Chapter 4.3-
Hot water coming out of faucet vent hole	Improper tubing attachment from the tank to faucet or vice versa.	Verify if tubing is connected properly from tank outlets to correct faucet attachments.
	Hot Tank outlet hole is scaled over.	Inspect and Descale Tank as needed.
	Expansion chamber is not sealed properly.	Replace the Hot Tank.
No flow or restricted flow of water	Closed or Partially Closed water supply valve to the unit.	Open water supply valve.
	Hot Tank outlet hole is scaled over.	Inspect and Descale Tank as needed.
	Tubing is creased or has a “kink” in it.	Inspect and replace tubing as necessary.
No flow or restricted flow of water	Firewall as got scale in the spiral	Descale Firewall.
	Exhausted Filter	Replace the Filter
	Solenoid Valve is Malfunctioning	Inspect valve components for proper function, check the spring. Replace as necessary.
	Solenoid connection to the Display PCB	Turn power off; unplug the unit and visually inspect solenoid connections into the Display PCB. Verify the soldering points on connections are secure into the board. Remove the PCB to inspect the front of the board.
	Incorrect Sizing of Inlet Pipe	0-2 meters: ≥1/4” John Guest Pipe 2-10 meters: ≥15mm Rigid Permanent Pipe