

U1/S2 - Install & Operation Manual

Dispense options

Chilled & Ambient
Chilled, Ambient & Sparkling



Chilled



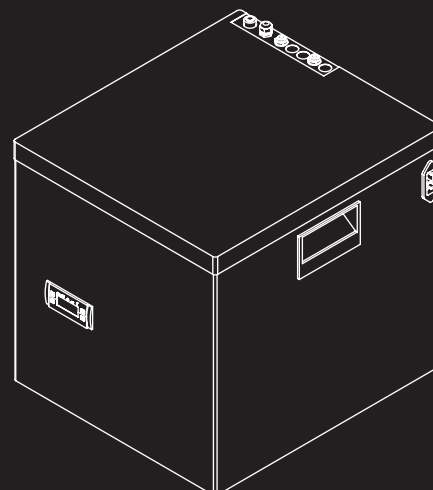
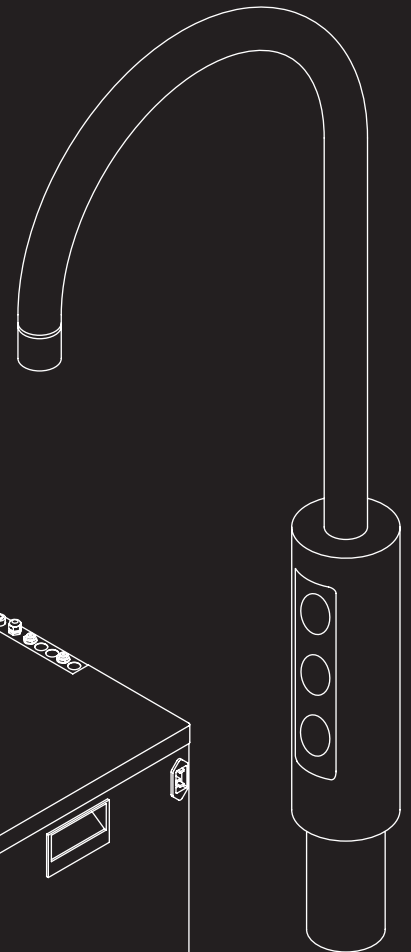
Ambient



Sparkling

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Telephone
+44 (0)1362 695 006
Email
sales@borgandoverstrom.com

borgandoverstrom.com

Synergy House
Fakenham Road
Morton On The Hill
NR9 5SP

Model Overview

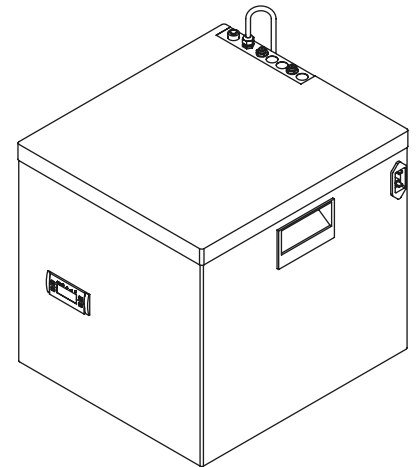
Introduction

The u1 epitomises cutting-edge design and innovation with its contoured tap and compact under-counter unit. This is our most discreet range and will fit into any environment seamlessly.

The under-counter dispenser is a Dry Chill™ cooler designed to

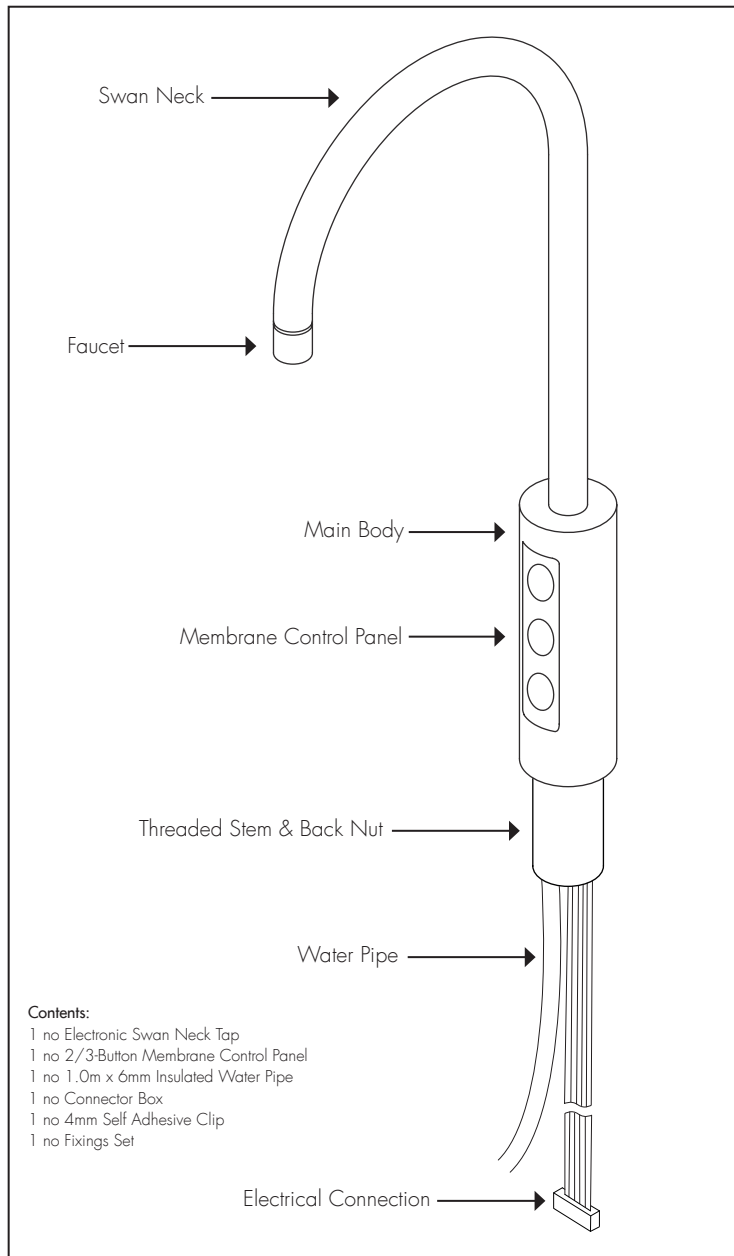
provide ambient still, chilled and/or carbonated water. All the materials and components are tested during the entire production process in order to satisfy all expectations.

COOLING SYSTEM	Stainless steel direct chill coil encased in a solid-block system for instant response cool down action. Ultra efficiency compression system with capillary control. Environmentally friendly R134a refrigerant.
COLD TEMPERATURE	2°C - 10°C.
OUTPUT PER HOUR	40 litres cold at <10°C. 40 litres sparkling at <10°C.
DISPENSE	Swan Neck Faucet with ergonomically designed and situated light touch sensitive controls.
MAX RUNNING POWER CONSUMPTION - CHILLED, AMBIENT & SPARKLING	570 watt (during recovery), Rated input 323 watt.
MAX RUNNING POWER CONSUMPTION - CHILLED & AMBIENT	570 watt (during recovery), Rated input 300 watt.
POWER SUPPLY	230V AC (50 Hz)
WATER CONNECTION	Mains in - 1/4" Push Fit/ Faucet - 1/4" Push Fit
CO2 CONNECTION	1/4" Push Fit
DIMENSIONS	(w x d x h) 330 x 370 x 362mm
WEIGHT	26Kg
CUPBOARD VENTILATION	Required



Component/Feature Overview

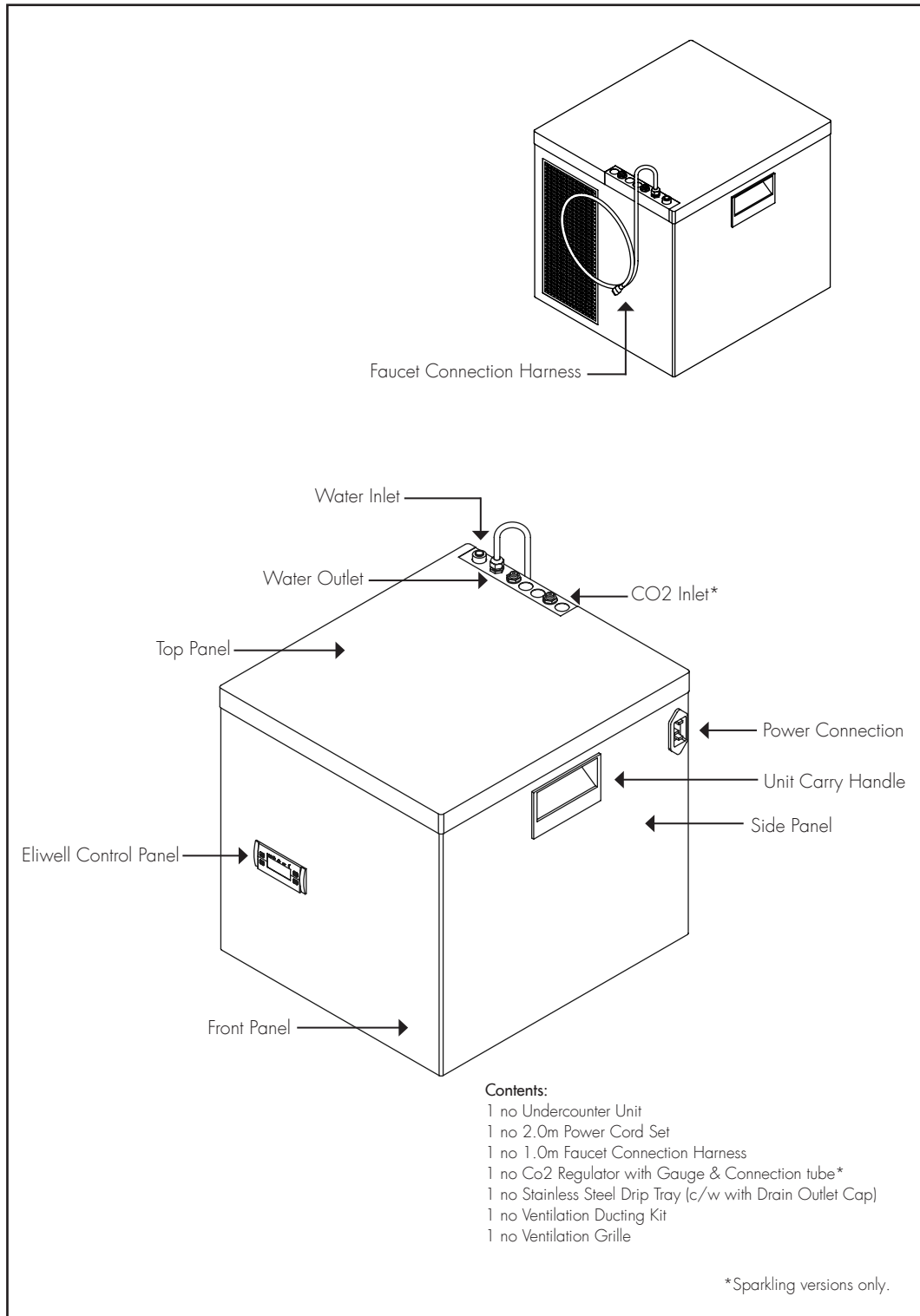
U1 Tap - Major Components



Please Note:

Mains Installation Kit & Filters are supplied as extra items according to individual ordering requirement.

S2 Electronic - Major Components



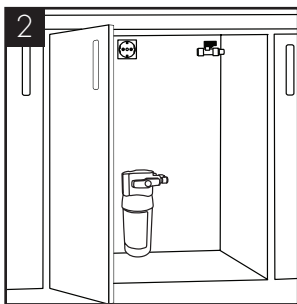
Installation

Tap Installation

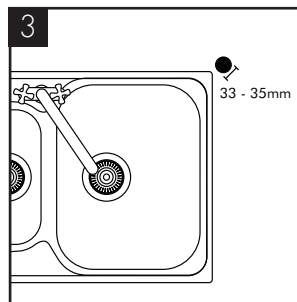
1

Identify a suitable location for the undercounter unit. It should be positioned within 1.0m of the faucet, and within 2.0m of suitable services connections. Allow enough space to fit the ventilation ducting system.

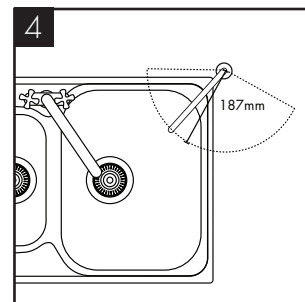
Service Requirements
 Water: Mains potable water – internally regulated to 1.3bar. Min mains pressure 1.3bar.
 Electricity: 13A supply – Earth Leakage Protected.



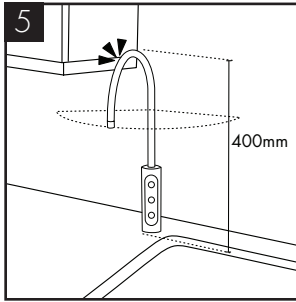
When planning and providing for the connection to the services, always allow for easily accessible service isolator fittings and for the position of an external water filter.



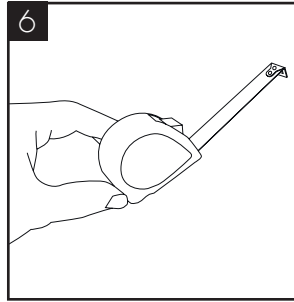
Identify a suitable position for the swan neck faucet. A 33-35mm (max) hole is required.



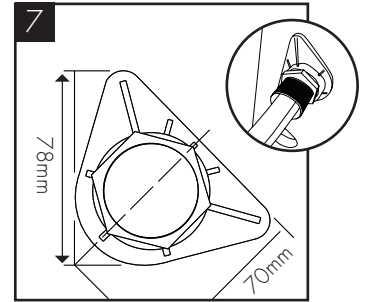
When positioning to drain over an existing sink bowl, allow for the reach of the swan neck or otherwise the position of any optional drip tray.



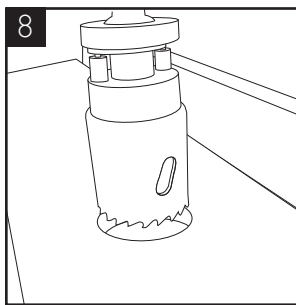
Also allow for the height of the swan neck under any overhanging cupboard/shelf.



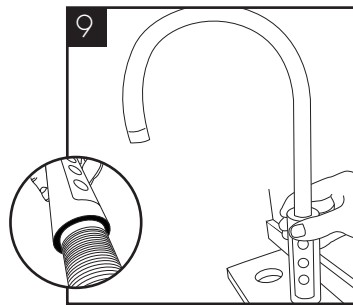
Allow for the space needed for forming the required hole. Relate the selected position to the underneath of the counter and check for any obstructions.



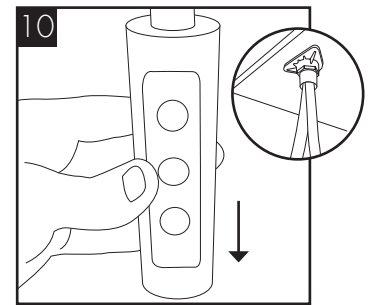
Allow sufficient space for fitting the back nut to the faucet stem.



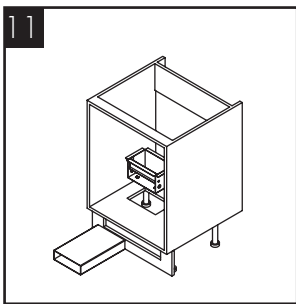
Carefully form the needed hole, using the correct type of cutter for the work surface material. **Observe all local occupational health and safety requirements.**



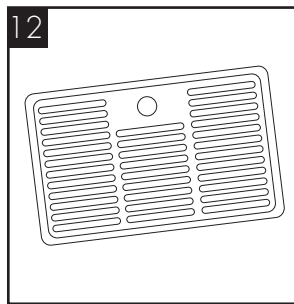
Remove the back nut and washer from the faucet and carefully feed the connecting pipe tail and ribbon cable through the hole formed in the work surface. Ensure the sealing O ring is pre-fitted in the base of the faucet. You may want to apply a thin bead of silicone sealant also.



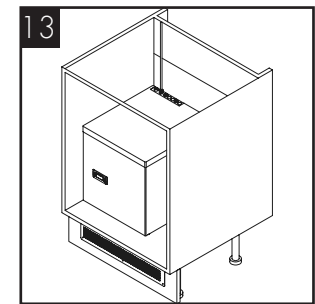
With the faucet control panel in the right position, carefully refit the back washer and nut. Take care not to over-tighten.



Install the ventilation system using the instructions/templates provided.

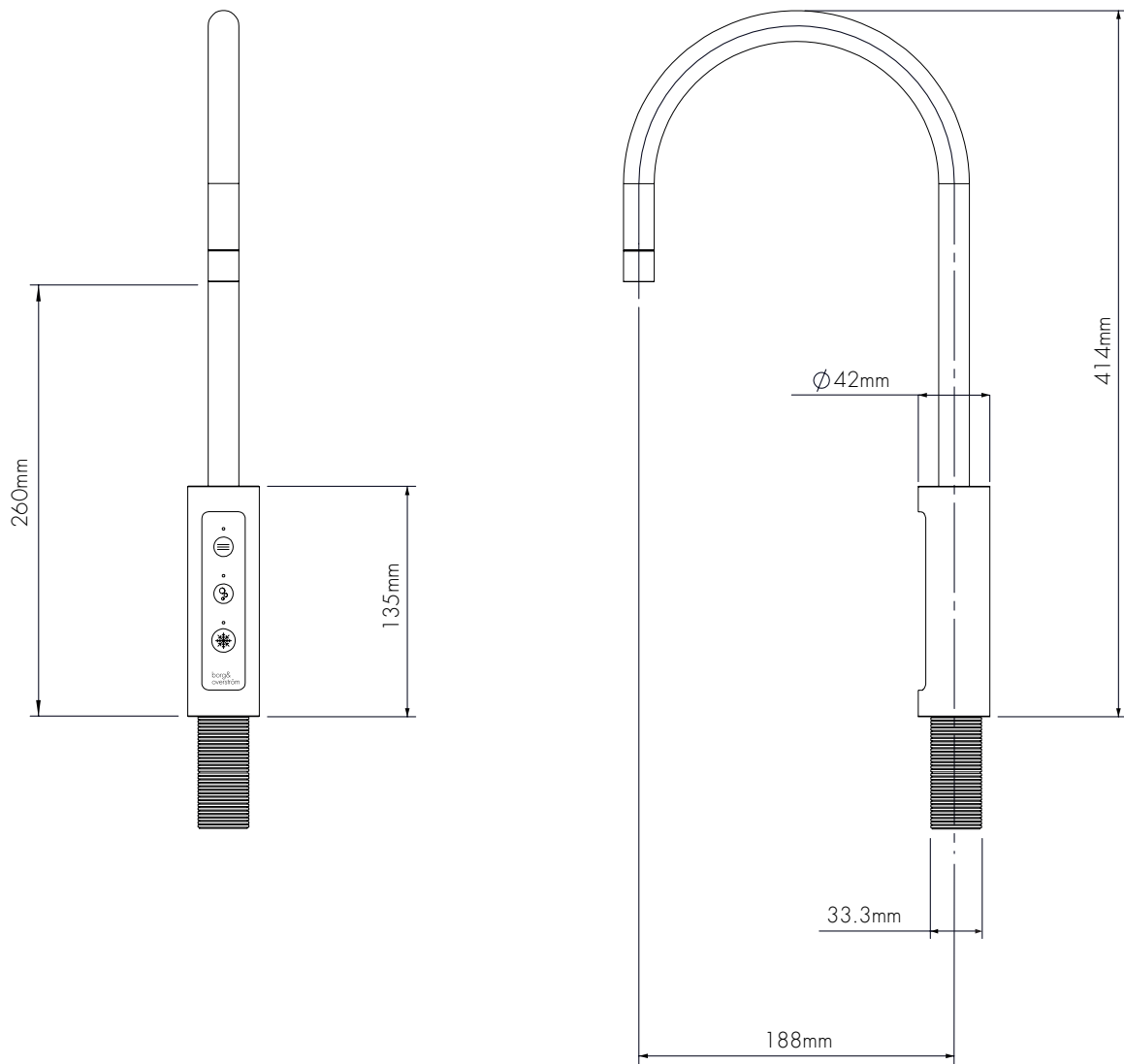


Fit optional Drip Tray at this stage (if selected).

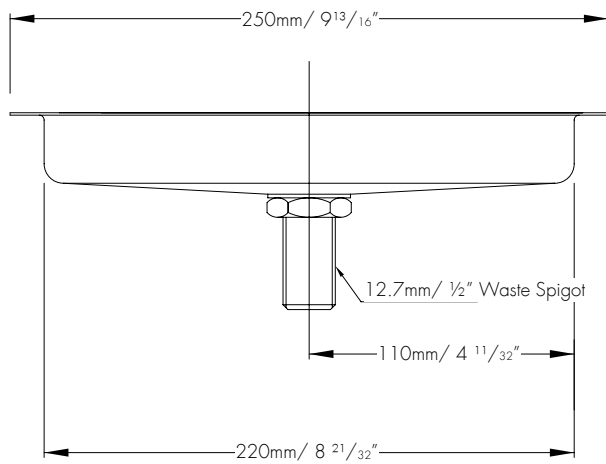
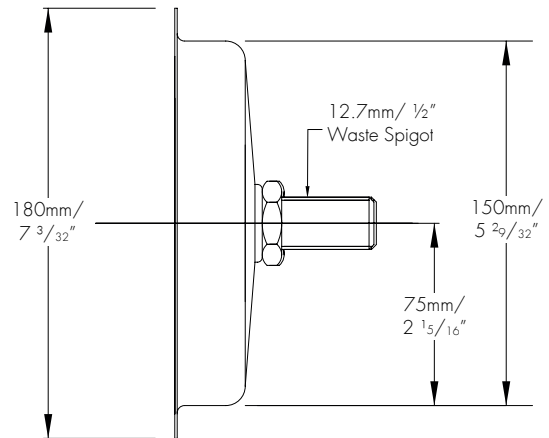
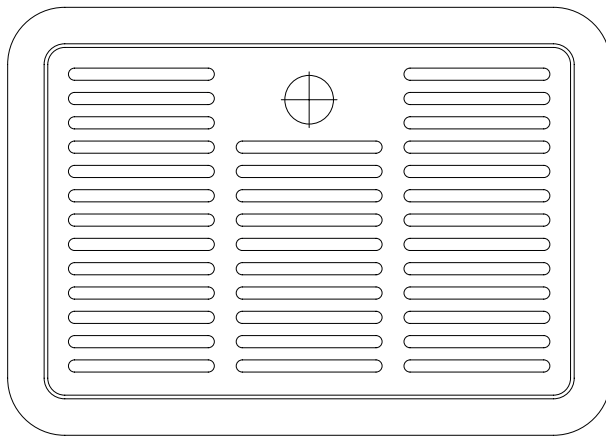


Once the ventilation system is installed, position the unit on the ducting as instructed and follow the connection steps on page 9.

Tap Dimensions



Drip tray Dimensions



Ventilation System Installation

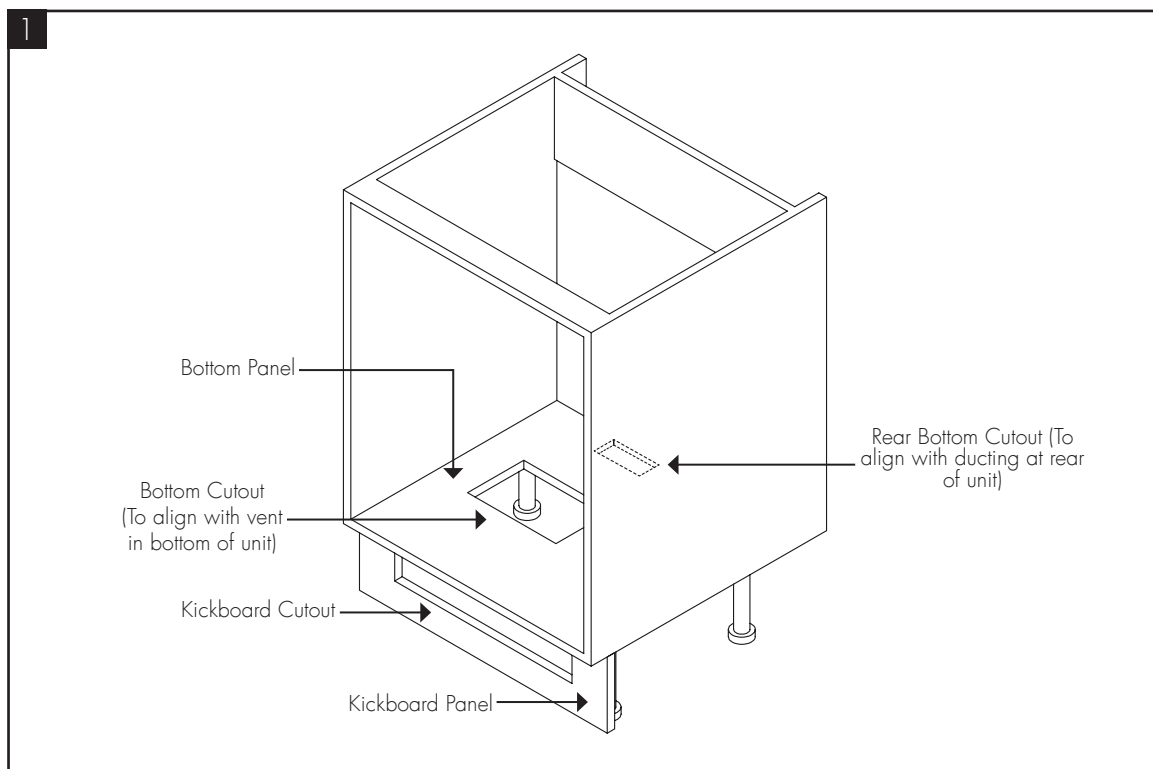
When Borg & Overström u1 undercounter units are installed inside a cabinet or housing, adequate ventilation is recommended to ensure that they operate satisfactorily.

During a cooling cycle it is normal for the unit to produce heat, and the purpose of ventilation is to provide a supply of air that can absorb the generated heat which would otherwise accumulate inside the cabinet or housing, and reduce the cooling

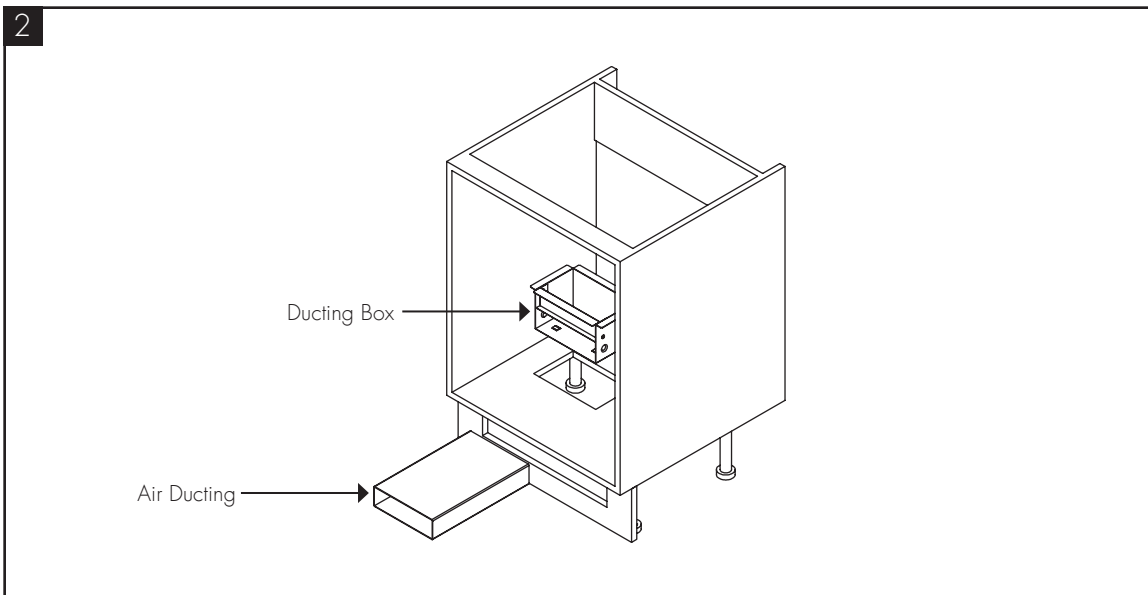
performance of the unit. The amount of heat generated by the cooling cycle depends directly upon the amount of usage – the higher the usage, the more heat produced. To provide adequate ventilation we recommend that air grilles/vents are fitted as supplied (or vent apertures formed) in the cabinet to allow an airflow as shown below. Normally this should be enough for all situations.

In conjunction with an inlet vent grille set into the front of the plinth, it is recommended that a ducting box and duct is installed in the base of the cabinet. Another slot located in

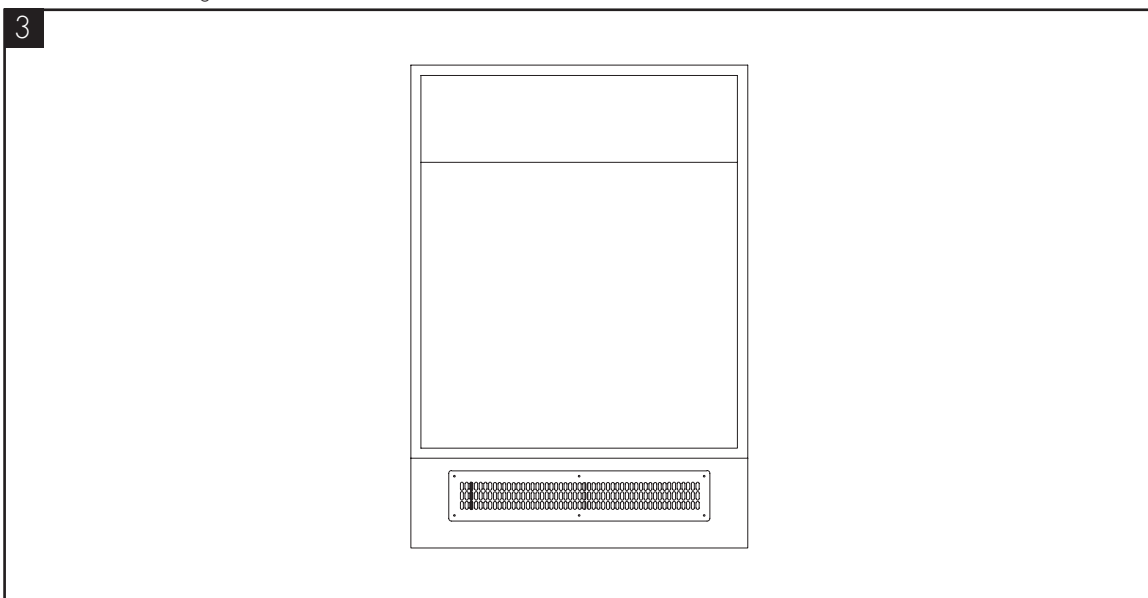
the base is responsible for allowing airflow past the condenser positioned at the rear of the dispenser. Instructions for installing the ventilation system are as follows:



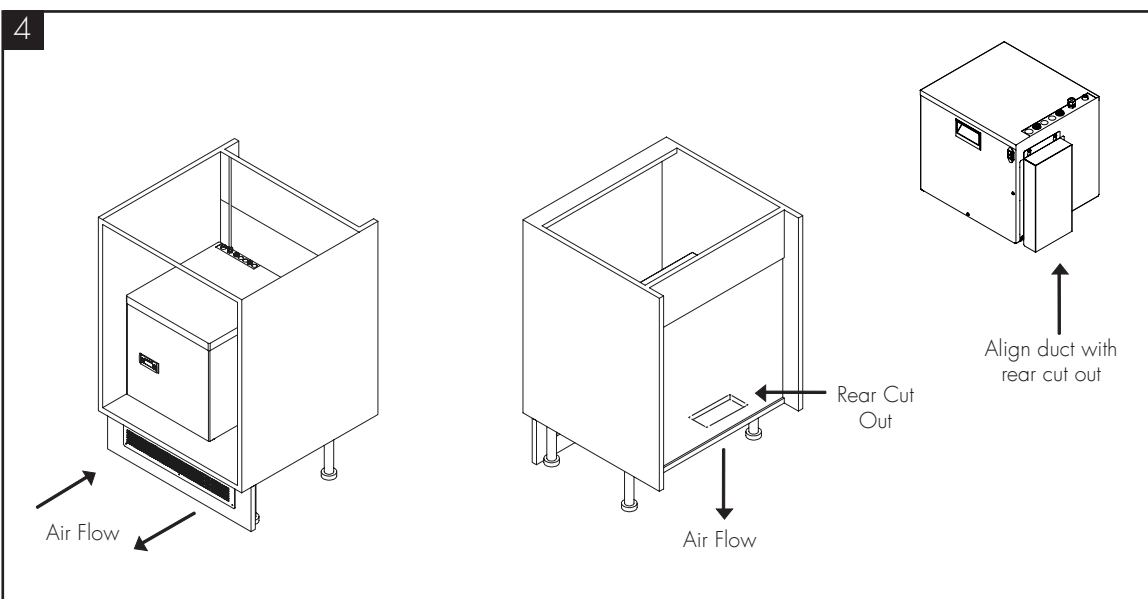
Using the supplied templates, cut the bottom and kickboard panel of the installation cabinet.



Insert ducting box into its cut slot in the Bottom panel. Then insert the air ducting into the ducting box until it reaches its limits. Then cut the air ducting so that it is flush with the kickboard.

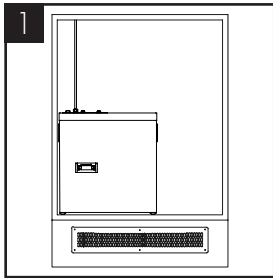


Centrally locate the ventilation grille over the kick board cut out, then using self tapping screws, secure the kick plate.

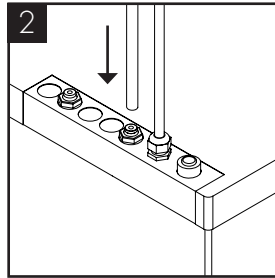


The unit must be positioned accurately over the air ducts to ensure optimum airflow.

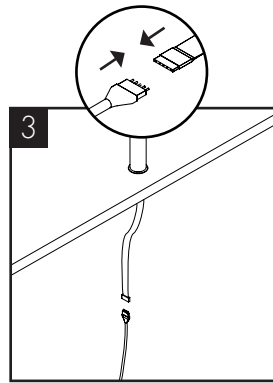
Undercounter Installation & Water Connection



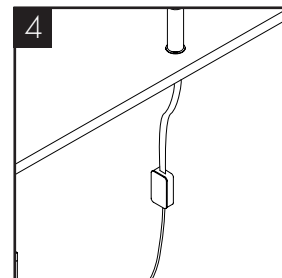
1
Locate the machine in a suitable enclosure, ensuring that the supplied ventilation kit can be installed.



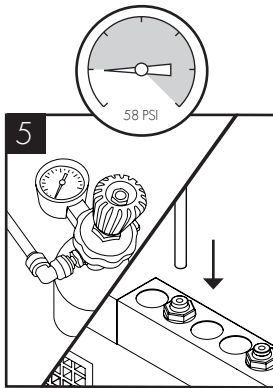
2
Connect the u1 tap to the water outlet.



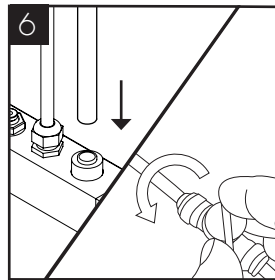
3
Connect the faucet connection harness to the tap control panel membrane.



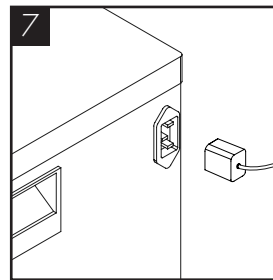
4
Install within connection box as supplied.



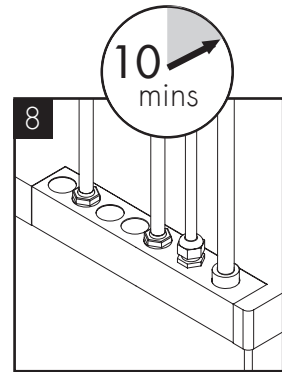
5
*Connect the CO2 supply from gas regulator, ensuring the pressure is set to max 58 PSI (4 bar), and turn on the supply.



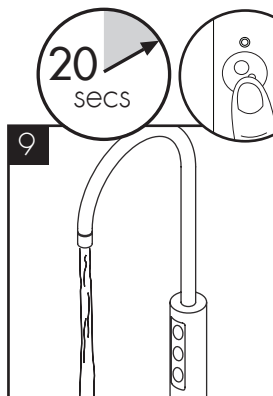
6
Connect the chiller to the water supply and open the mains supply isolation valve.



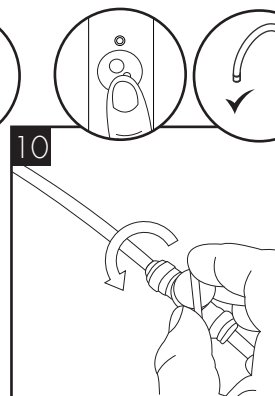
7
Connect the unit to the electrical supply and turn on.



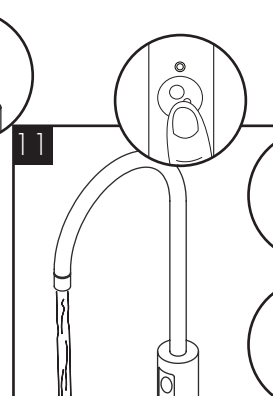
8
After approximately 10 minutes, the compressor and fan will stop as the chiller has reached its normal operating temperature.



9
*The carbonator should be purged of air by activating the sparkling water dispense for approximately 20 seconds.

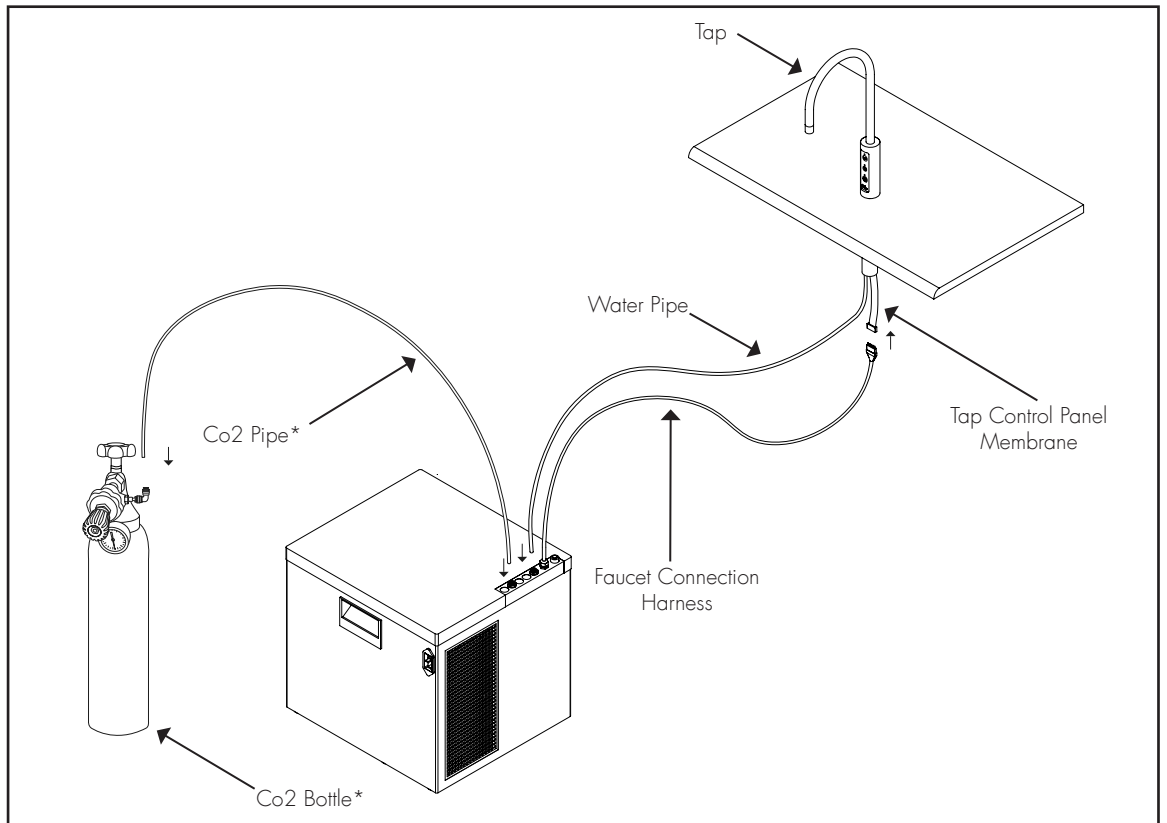


10
*Isolate the water supply and activate the sparkling water dispense. When the water system has emptied, allow gas to be expelled for approximately 5 seconds. Immediately after this 5 second period restore the water supply and allow the system to refill.



11
Dispense ambient, still and sparkling water, in turn, to purge any air from the system. The time to do this may vary depending on the length of pipe between the unit and the tap.

*Sparkling versions only.



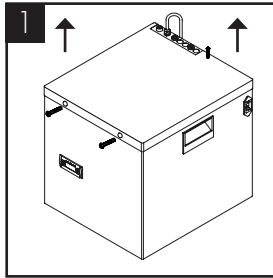
Safety

The unit should be isolated from the electricity supply before removal of any covers. Great care must be employed when working with high pressure carbon dioxide, and in no cases should the maximum operating pressure of 58 PSI (4 bar) be exceeded.

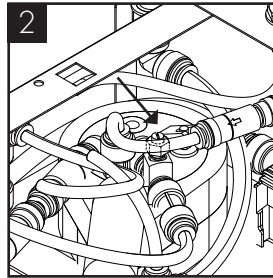
*Sparkling versions only.

Sparkling Water Flow Rate - Sparkling Versions Only

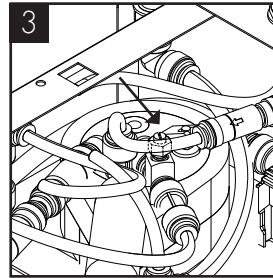
NOTE: The soda water flow rate is set to 35ml/sec at a CO₂ pressure of 58 PSI (4 bar). To adjust the soda water flow rate follow these steps:



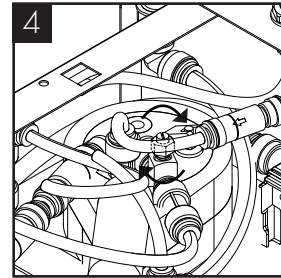
Remove the 3 screws holding the unit lid down and lift the lid away



Locate the flow control adjuster, this can be found on top of the carbonator can, connected to the central port of the can.



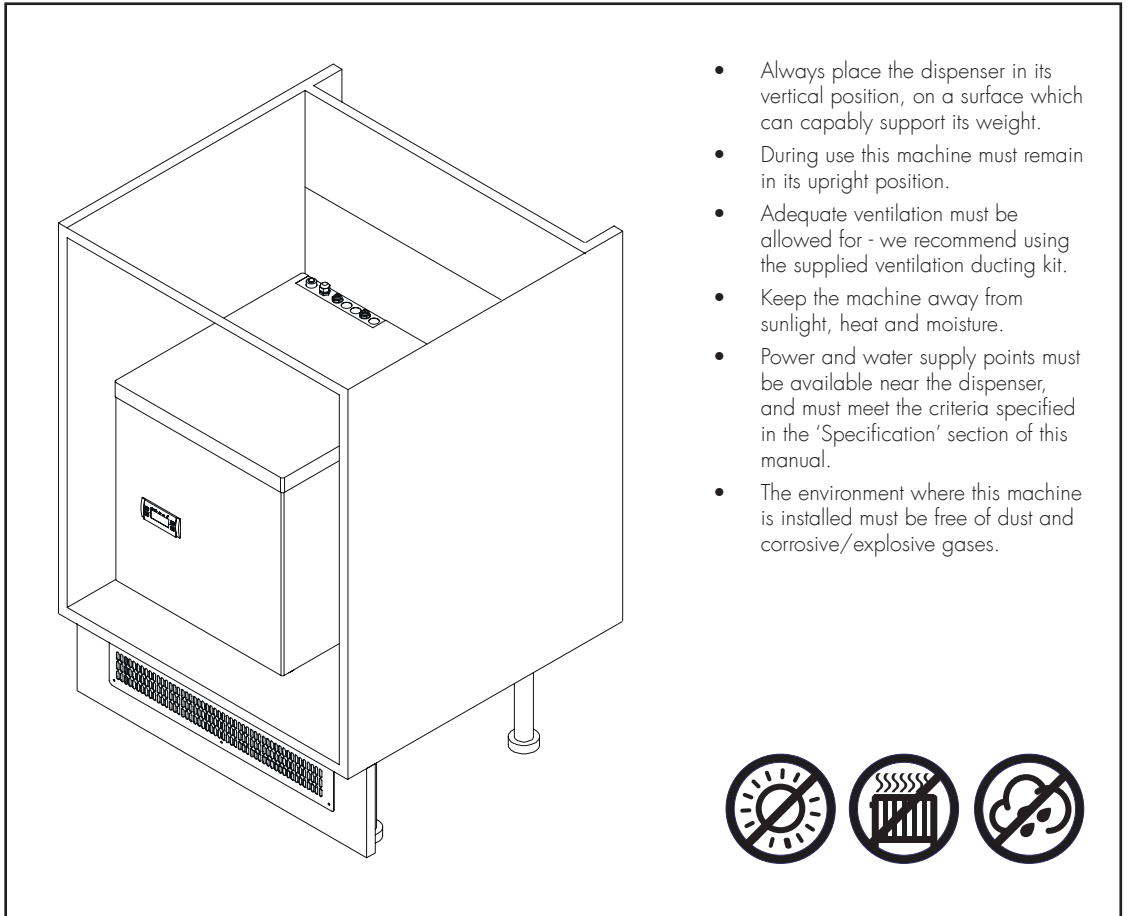
Loosen the lock nut, but do not remove.



Flow can then be adjusted by turning the adjuster screw, anti-clockwise to increase flow and clockwise to restrict flow. After each adjustment the flow rate should be timed.

Once the correct flow rate is achieved reverse steps 1, 2 and 3.

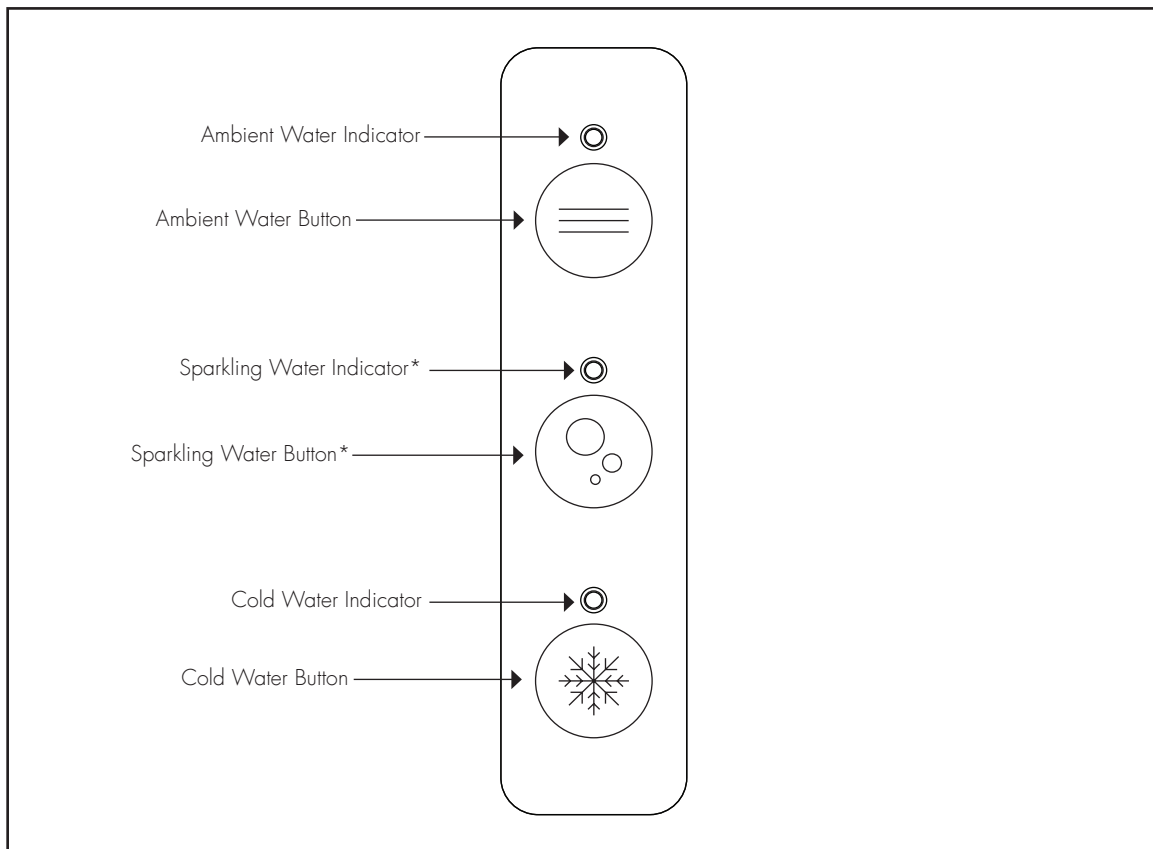
General Safety



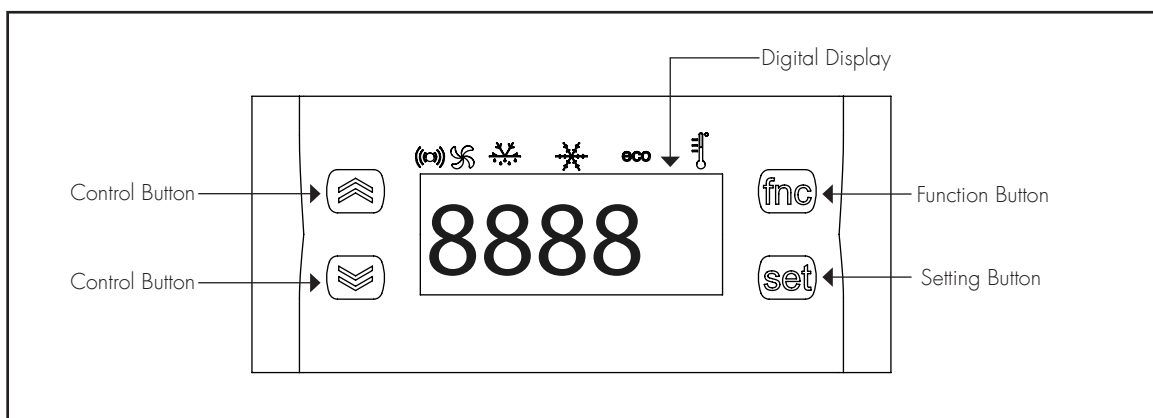
Operation

Functions & Controls

Tap Control Panel

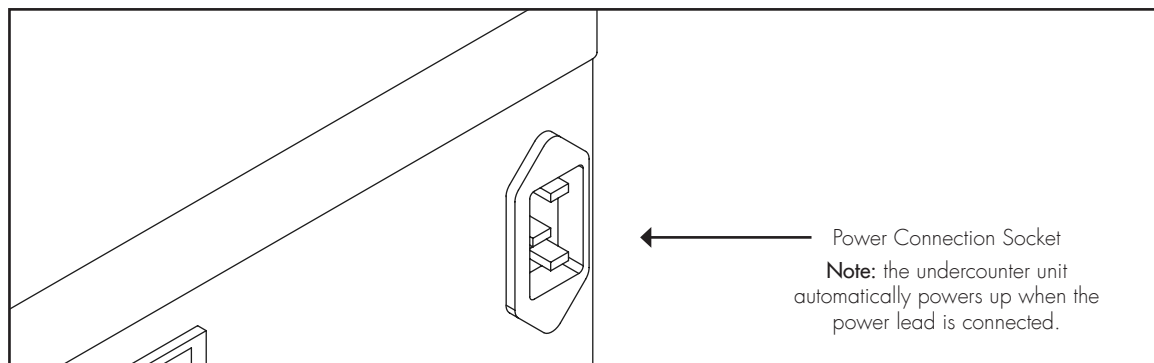


Eliwell Control Panel



*Sparkling versions only.

Controls

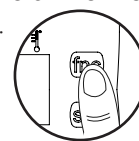


Basic Settings

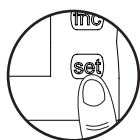
Adjusting the Set Point:



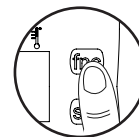
1. Switch on Mains power – the display will flash several times, then the fridge system will switch on and the display will give a steady reading, this is the temperature of the water bath sensor.
2. Press and release the 'Set' button – The display will show 'SET'.
3. Press 'Set' again and the display will show a numeric value (e.g. 9°C).
4. Raise or lower this figure to the desired setting using the up or down arrows on the left of the control display window.
5. When the correct setting is shown in the display window press 'Set' button the display will now show SET.
6. Press FNC button to return to the probe temperature reading.



Altering the Differential setting:

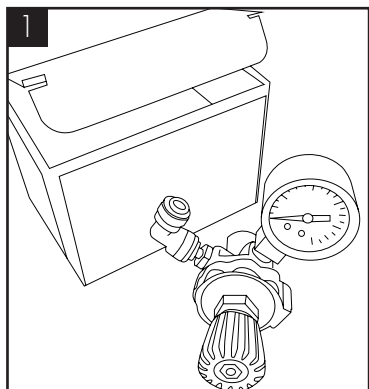


1. Press and hold the 'Set' button until CP shows on the display – Release the button.
2. Press 'Set' again, DIF will show on the display.
3. Press 'Set' again and the display will show a numeric value, (e.g. 1°C, the default setting.)
4. Raise or lower this figure to the desired setting using the up or down arrows on the left of the control display window.
5. When the adjustment has been made press 'Set' again the display will show DIF.
6. If no further changes are required press FNC again to exit.

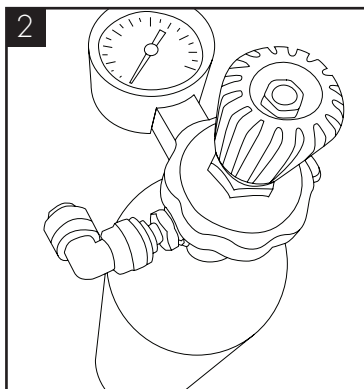


NOTE: If no buttons are pressed for 15 seconds, the control will revert to temperature display mode, and any changes to settings will be saved.

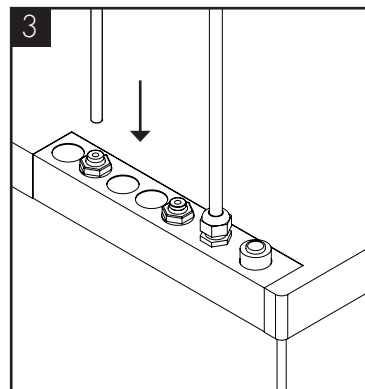
CO2 Bottle Installation - Sparkling Versions Only



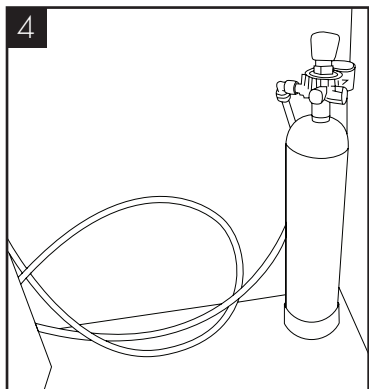
1 Unpack CO2 Regulator and fit elbow fitting to spigot outlet.



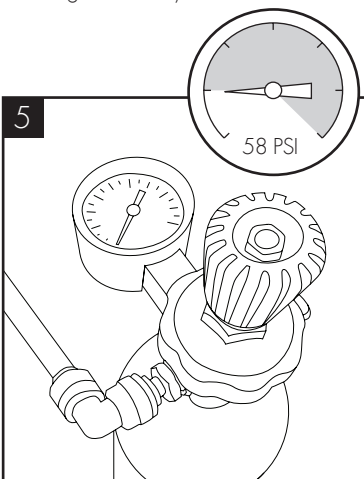
2 Attach the regulator to the disposable CO2 bottle, ensuring the small pressure relief vent in the stem is facing away from you or anyone else. Ensure the regulator is closed. Hand tighten securely.



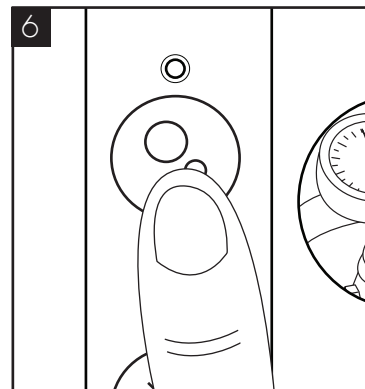
3 Connect the assembled CO2 bottle and regulator to the CO2 inlet using a 1/4" pipe.



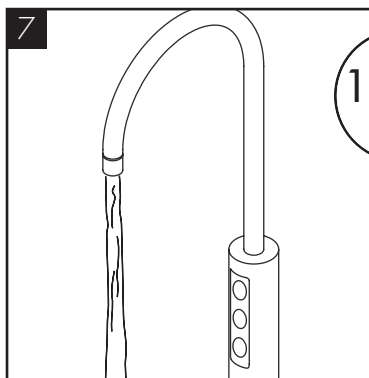
4 Stand the cylinder in a suitable place.



5 We recommend between 3.5 - 4 bar (58 PSI) (max). Do not exceed 4 bar pressure.



6 It is necessary to prime the sparkling system with CO2 - push the sparkling button for a few seconds until CO2 is coming through. Check and adjust the CO2 pressure accordingly.



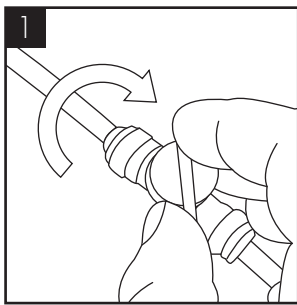
7 Allow the machine to stand for 8 - 12 minutes for the initial chilling process to complete.



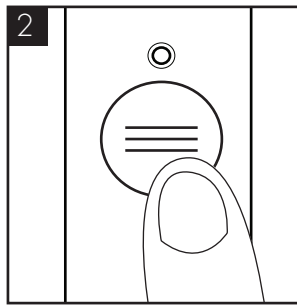
Maintenance & Cleaning

Sanitisation Guide

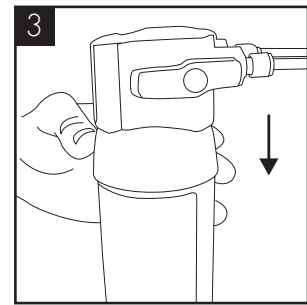
NOTE: All maintenance operations must be carried out with the dispenser switched off. This operation must only be carried out by trained staff. Every 6 months a sanitisation procedure is recommended as follows:



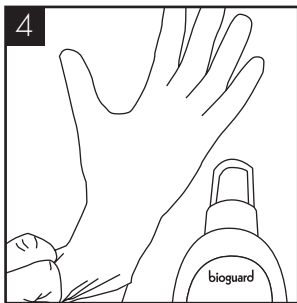
1 Turn off incoming mains water.



2 Briefly press cold/ambient dispense button to release internal water pressure from the machine.



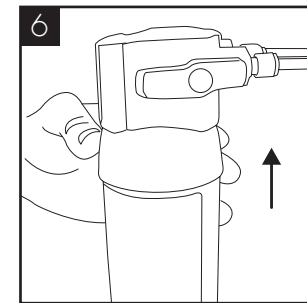
3 Remove the existing filter.



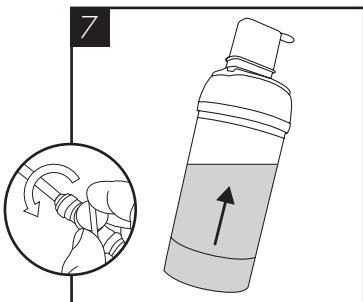
4 Use Bioguard Hand Gel and put on protective gloves.



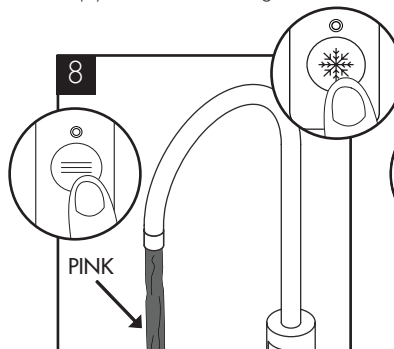
5 Add 25 ml of Bioguard Internal Sanitisation fluid to a clean and empty service filter cartridge.



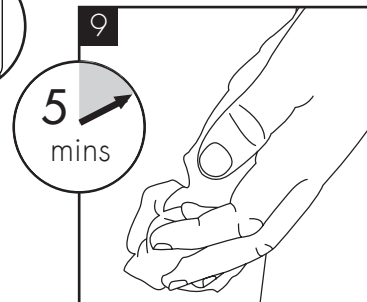
6 Connect to filter head.



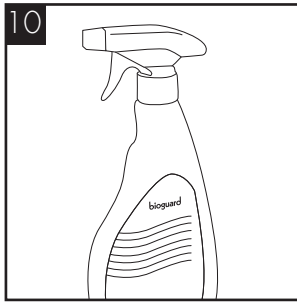
7 Turn on incoming water, allow service cartridge/doser to fill.



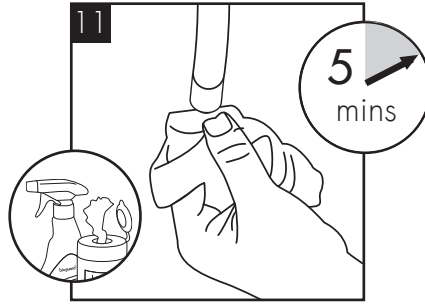
8 Dispense water using the cold button until the water appears pink. Briefly press the ambient button too. Repeat with sparkling button if present.



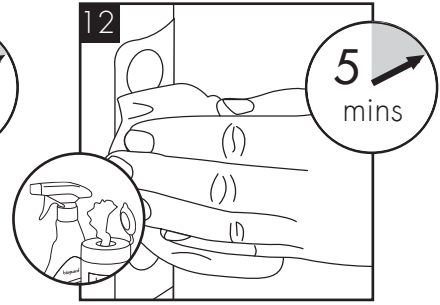
9 Leave the solution inside machine for sanitisation to take effect (minimum 5 minutes) while thoroughly cleaning the machine externally



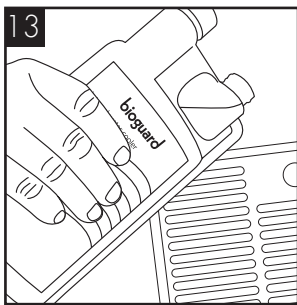
For this we recommend the use of Bioguard Foam Descaler & Sanitiser Spray.



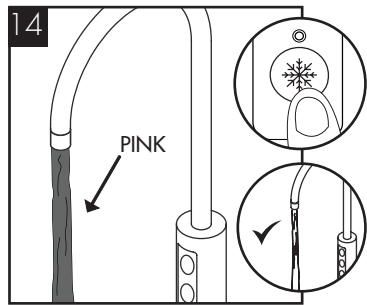
Pay particular attention to the dispense faucet and the push button controls. For this use Bioguard External Sanitiser & Clear Spray and Sanitising Wipes.



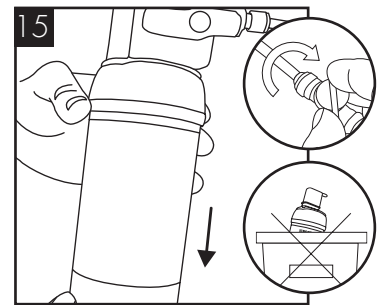
Attend to any cosmetic marks with Bioguard Rejuvenator & Protector as needed.



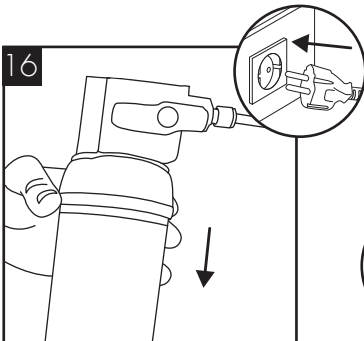
Remember to include the drip tray. If a Waste Overflow System is fitted, empty this and flush through with a small amount of sanitisation fluid if needed.



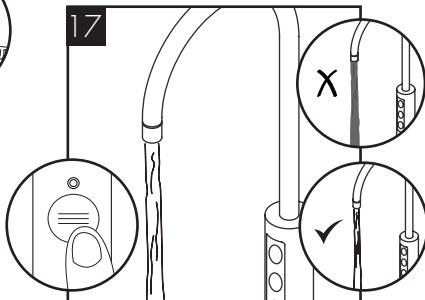
When the external cleaning (minimum 5 minutes) is completed, flush the machine using the cold button with clean water until the dispense water runs clear. Repeat briefly with the ambient and sparkling buttons if present.



Turn off water and remove the service filter. Retain service filter for reuse.



Fit new filter. Turn on incoming water supply and reconnect the power.



Pre-flush the new filter to waste using the ambient button until the water appears clear and is free of air. Flush through a small amount of water to check all functions.



Please note that this sanitisation fluid contains an active caustic/alkaline agent. Always use responsibly and with care remembering that due to its alkaline nature unnecessary concentrated/prolonged contact with any materials, including metals, can cause damage. Always rinse all contact surfaces after use with clean water.

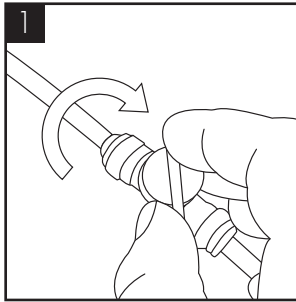


Avoid skin contact and wear protective gloves when handling sanitisation fluids.

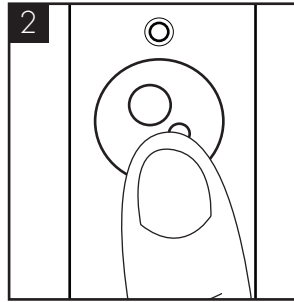


In the event of any skin contact, flush immediately with clean, cold water.

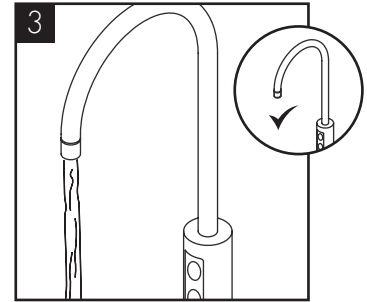
Emptying the CO2 Tank - Sparkling Versions Only



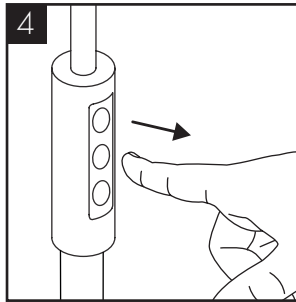
1 Turn off the water supply.



2 Press and hold the Sparkling water dispense button until all the water is expelled and only CO2 gas is being released.



3 The tank is empty of sparkling water when only CO2 is being released.



4 Ensure to release the Sparkling water button and take care to avoid releasing excess amounts of CO2 gas as this may damage the tank.

Advanced Troubleshooting

Fault Diagnostics

Problem/Report	Possible Cause	Suggested Action
No Water Dispensing	Water Pressure Regulator	Check water tank flow through the regulator. Replace if necessary.
No Sparkling Water*	No CO2 pressure, check by operating pressure relief valve on carbonator tank.	Check CO2 bottle, regulator and non-return valve. Supply pressure should be 58 psi (4bar), adjust or replace as necessary.
	Carbonator Tank Not Filling	Check carbonator probe for possible short circuit to ground. Check for pump timeout, cycle power off & on then purge carbonator. Check supply to water pump (230V AC), if voltage present & pump inoperative - replace pump. If voltage not present & pump is not timed out, check control board fuses. If necessary replace control board.
Poor Quality Carbonation*	Incorrect CO2 Pressure	Check CO2 bottle, regulator and non-return valve. Supply pressure should be 58 psi (4bar), adjust or replace as necessary.
	Air in Carbonator Tank	Isolate the power supply and operate the sparkling water tap until gas is expelled. Allow gas to expel for 5 seconds. Switch on power supply and allow the tank to refill.
	Residue in Carbonator Tank	After prolonged use, a surface film can develop within the carbonator tank. Refer to cleaning and sanitising instructions.
	Carbonator Tank is Overfilled	If pump runs continuously, check connections to tank level probe, if problem persists replace the PCB.

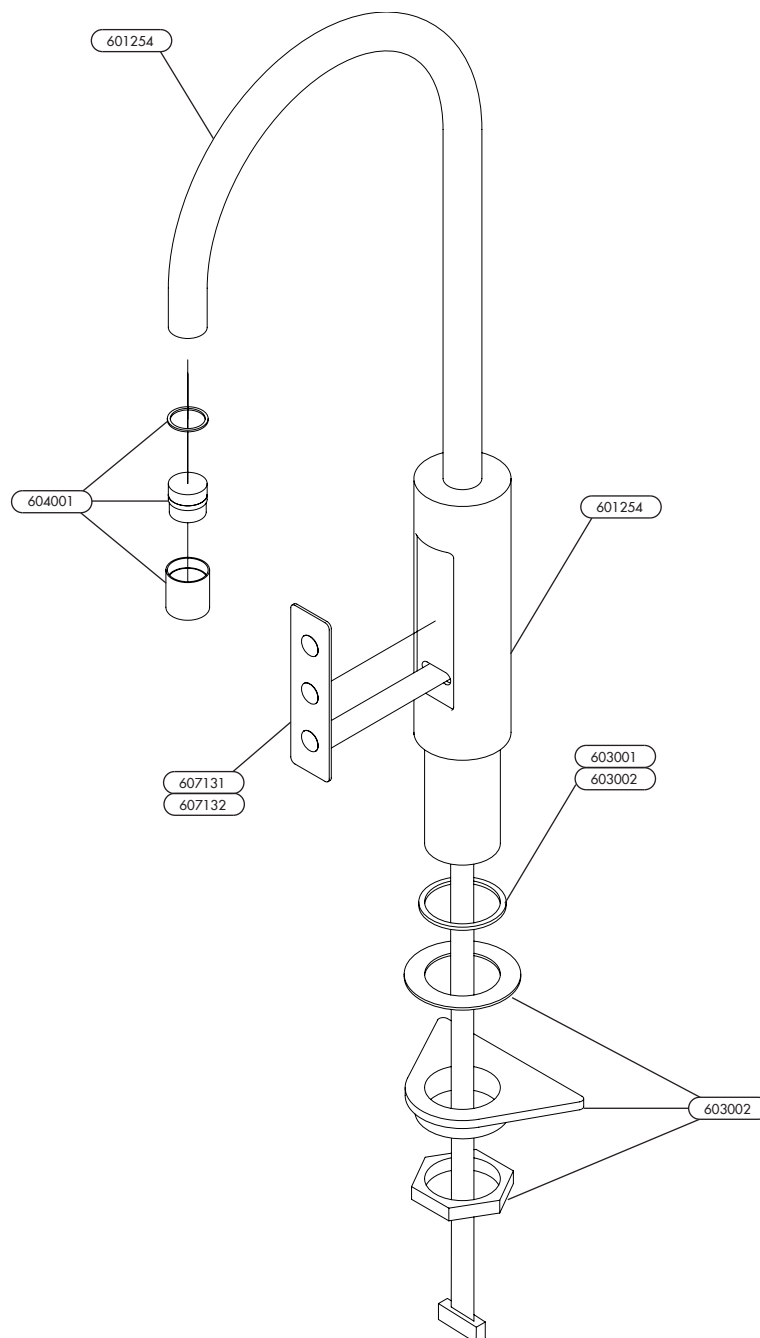
*Sparkling versions only.

Fault Diagnostics (Continued)

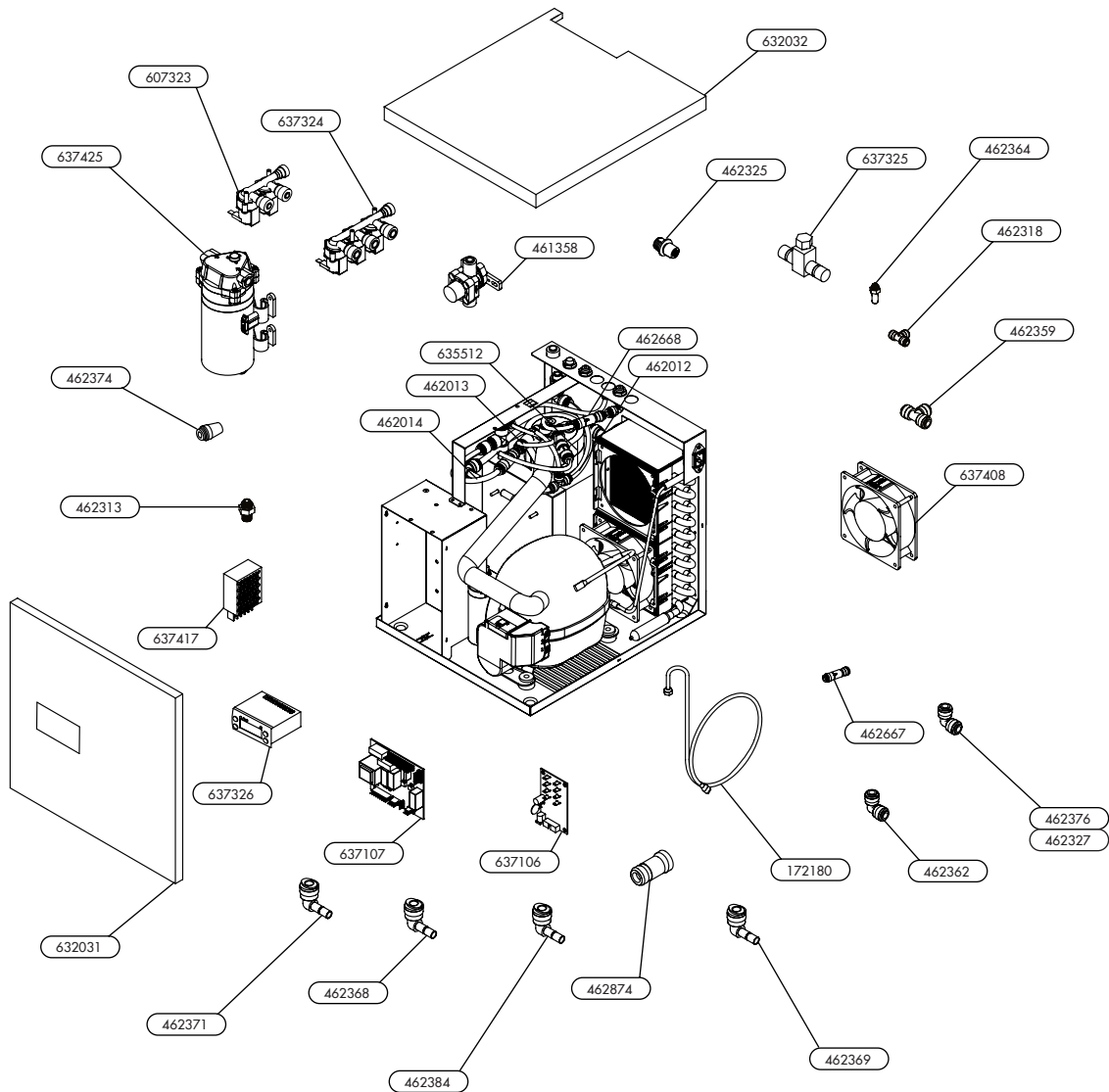
Problem/Report	Possible Cause	Suggested Action
Warm Drinks	Insufficient cooling air flow through the fridge.	Check that the condenser is not blocked. Check supply to cooling fans (230V AC). If supply present replace fans. If supply not present move on to the compressor. The supply to the fans and the compressor are linked.
	Compressor not running	Check supply to compressor (230V AC). If supply not present check the Eliwell fridge controller is operating. Check for system over heat. Allow the unit to cool and check for airflow obstructions. Once the unit has cooled the fridge system will restart. If the problem persists contact technical support. If the Eliwell controller is operating check the operating parameters are correctly set and inspect the probes. Replace probes as necessary.
	Eliwell fridge controller not operating.	Check supply to the controller. If present replace the controller. If supply is not present check the PCB.
	PCB not operating.	Check the fuses on the board and the fuse in the mains plug. If fuses are ok replace the PCB.
	Fridge failure	If compressor & fan are running and there is no cooling contact technical support.

Exploded Diagrams & Parts List

U1 - Tap Exploded Diagram



Exploded Diagram



U1 - Tap Parts List

Borg & Overstrom Part No	Description	Chilled & Ambient	Chilled, Ambient & Sparkling
601254	U1 Tap Assembly complete with O-ring, Nut and washer set	•	•
603001	U1 tap replacement O-ring	•	•
603002	U1 tap O-ring, Nut and washer set	•	•
604001	U1 Swan Neck Tap Aerator Set	•	•
607131	U1 Tap Chilled & Ambient Control Panel Membrane	•	
607132	U1 tap Chilled, Ambient & Sparkling Control Panel Membrane		•

S2 Electronic - Undercounter Unit Parts List

Borg & Overstrom Part No	Description	Chilled & Ambient	Chilled, Ambient & Sparkling
172180	Swan Neck Faucet Connection Harness	•	•
461358	S2 Pressure Regulator Valve		•
462012	3/8 LLDPE BU TUBE		•
462013	1/4 LLDPE BU TUBE	•	•
462014	5/16 LLDPE BU TUBE		•
462313	Straight Adaptor, 3/8x1/4 BSP		•
462318	Equal Tee, 1/4	•	•
462325	Bulkhead Connector, 1/4	•	•
462327	Reducing Elbow 3/8 x 1/4	•	
462359	Equal Tee, 3/8		•
462362	Equal Elbow, 3/8		•
462364	Stem Adaptor, 3/8ODx1/4BSP		•
462368	Stem Elbow, 1/4-1/4	•	•
462369	Stem Elbow, 3/8-1/4		•
462371	Stem Elbow, 3/8-3/8		•
462374	Reducer, 3/8-5/16		•
462376	Equal Elbow, 5/16		•
462384	Stem Elbow, 5/16-5/16		•
462667	Single Check Valve, 5/16		•
462668	Single Check Valve, 1/4		•
462874	Reducing Straight Connector, 5/16-1/4		•
607323	2 Way Dispense Solenoid	•	
632031	S2 Front Wrap	•	•
632032	S2 Lid	•	•
633512	Can Wrap Insulation		•
637106	Solenoid Dispense Control Board	•	•
637107	EXL170 CLIP III Control Board	•	•
637324	3 Way Dispense Solenoid		•
637325	Flow Control		•
637326	Eliwell Control	•	•
637408	Axial Fan 240V	•	•
637417	12V Power Supply	•	•
637425	Aquatec Pump IPC1400 MOTOR ASSEMBLY	•	•













Technical Information









Specification

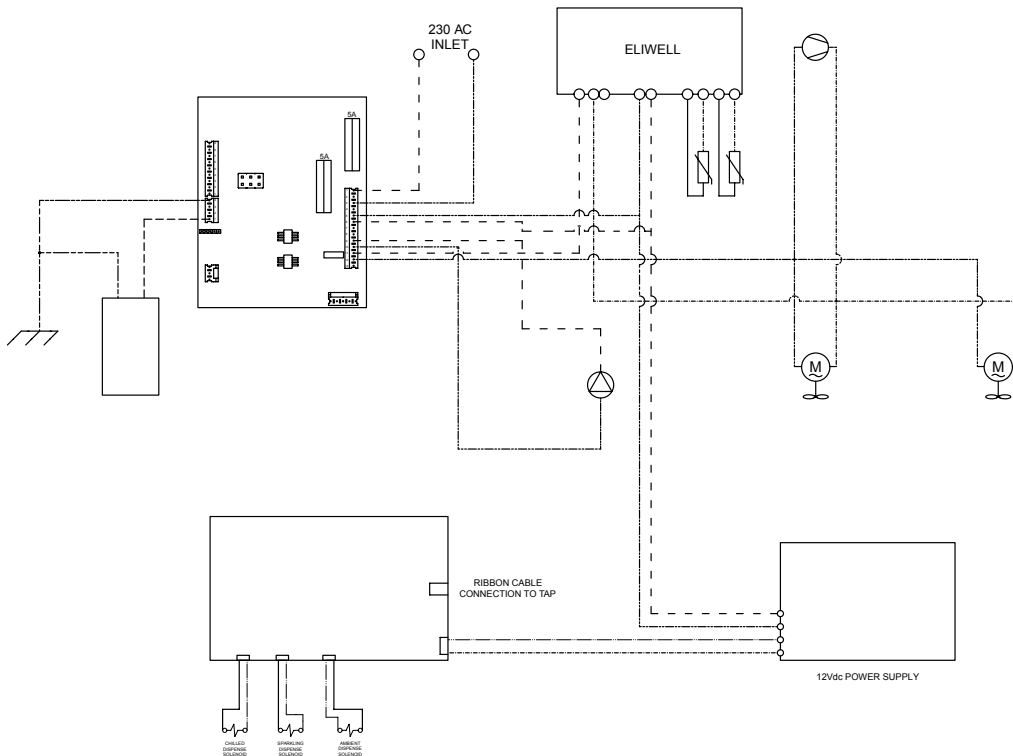
COOLING SYSTEM	Stainless steel direct chill coil encased in a solid-block system for instant response cool down action. Ultra efficiency compression system with capillary control. Environmentally friendly R134a refrigerant.
COLD TEMPERATURE	2°C - 10°C
OUTPUT PER HOUR	40 litres cold at <10°C. 40 litres sparkling at <10°C.
DISPENSE	Swan Neck Faucet with ergonomically designed and situated light touch sensitive controls.
MAX RUNNING POWER CONSUMPTION - CHILLED, AMBIENT & SPARKLING	570 watt (during recovery), Rated input 323 watt.
MAX RUNNING POWER CONSUMPTION - CHILLED & AMBIENT	570 watt (during recovery), Rated input 300 watt.
QUANTITY OF REFRIGERATION GAS	R134a 130g
POWER SUPPLY	230V AC (50 Hz)
WATER CONNECTION	Mains in - 1/4" Push Fit/Faucet - 1/4" Push Fit.
CO2 CONNECTION	1/4" Push Fit.
DIMENSIONS	(w x d x h) 330 x 370 x 362mm
WEIGHT	26Kg
RATED CURRENT - CHILLED & AMBIENT	1.9A
RATED CURRENT - CHILLED, AMBIENT & SPARKLING	2A
FUSE RATING	5A
INLET WATER PRESSURE	22 PSI (1.5Bar) - Internally regulated to 22 PSI (1.5Bar).
CO2 PRESSURE	58 PSI (4 Bar) Maximum
COMPRESSOR	Tecumseh THB4422Y
CLIMATIC CLASS	N

Chilled, Ambient & Sparkling - Circuit Diagram

KEY













-  CONDENSER FAN
-  TEMPERATURE PROBE
-  FAN
-  COMPRESSOR
-  TRANSFORMER
-  SWITCH
-  SOLENOID
-  FUSE
-  PUMP
-  BRIDGE DIODE
-  TEMPERATURE SWITCH
-  CARBONATOR CAN

-  BLACK
-  PURPLE
-  BROWN
-  BLUE
-  WHITE
-  YELLOW
-  GREEN
-  RED

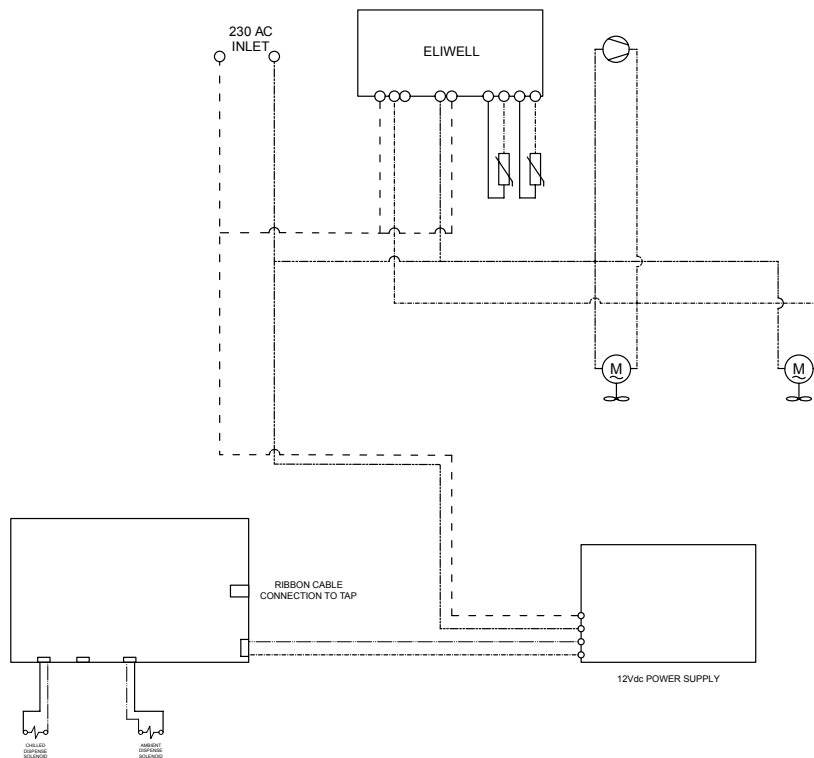


Chilled & Ambient - Circuit Diagram

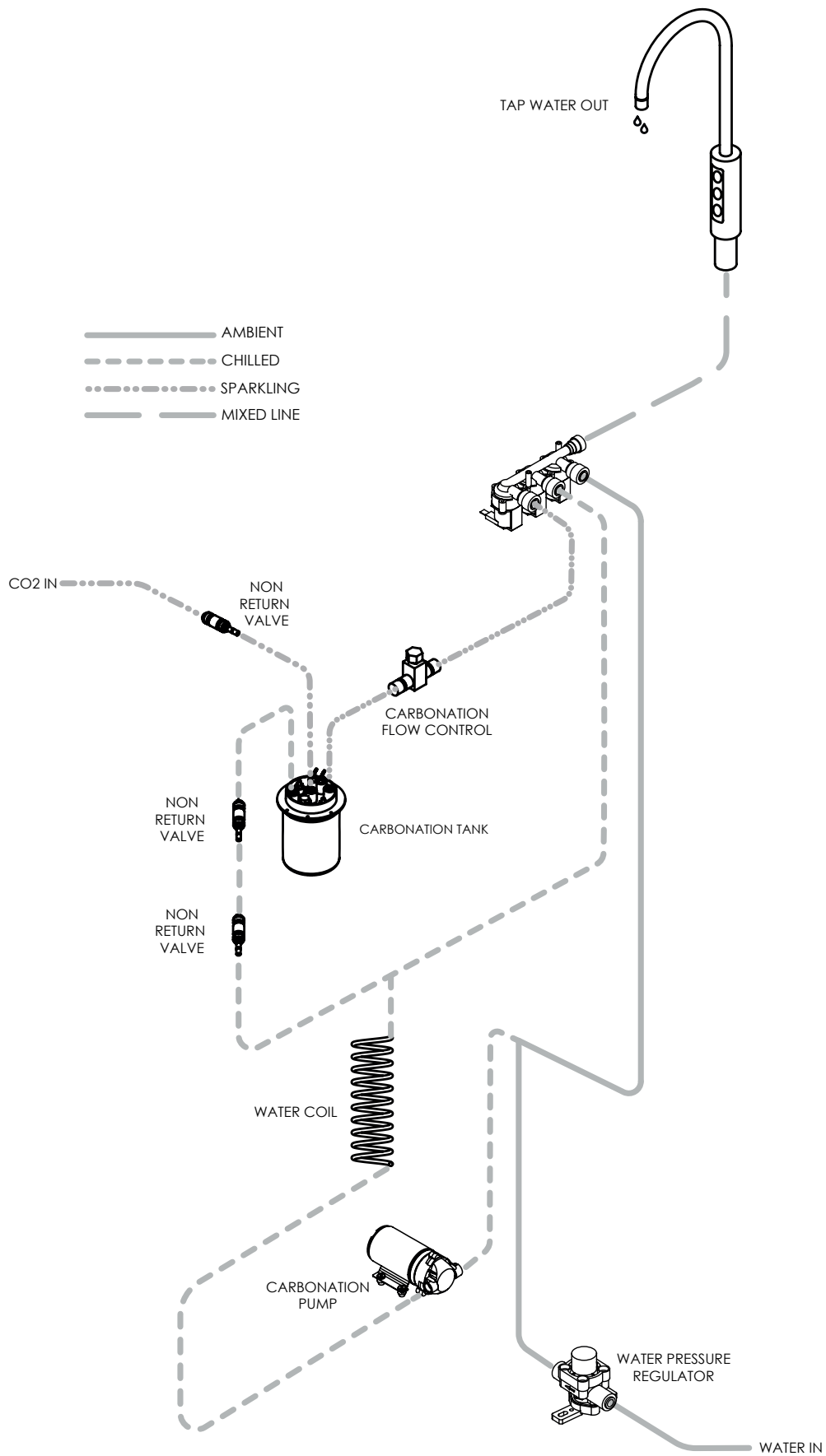
KEY

-  CONDENSER FAN
-  TEMPERATURE PROBE
-  FAN
-  COMPRESSOR
-  TRANSFORMER
-  SWITCH
-  SOLENOID
-  FUSE
-  PUMP
-  BRIDGE DIODE
-  TEMPERATURE SWITCH
-  CARBONATOR CAN

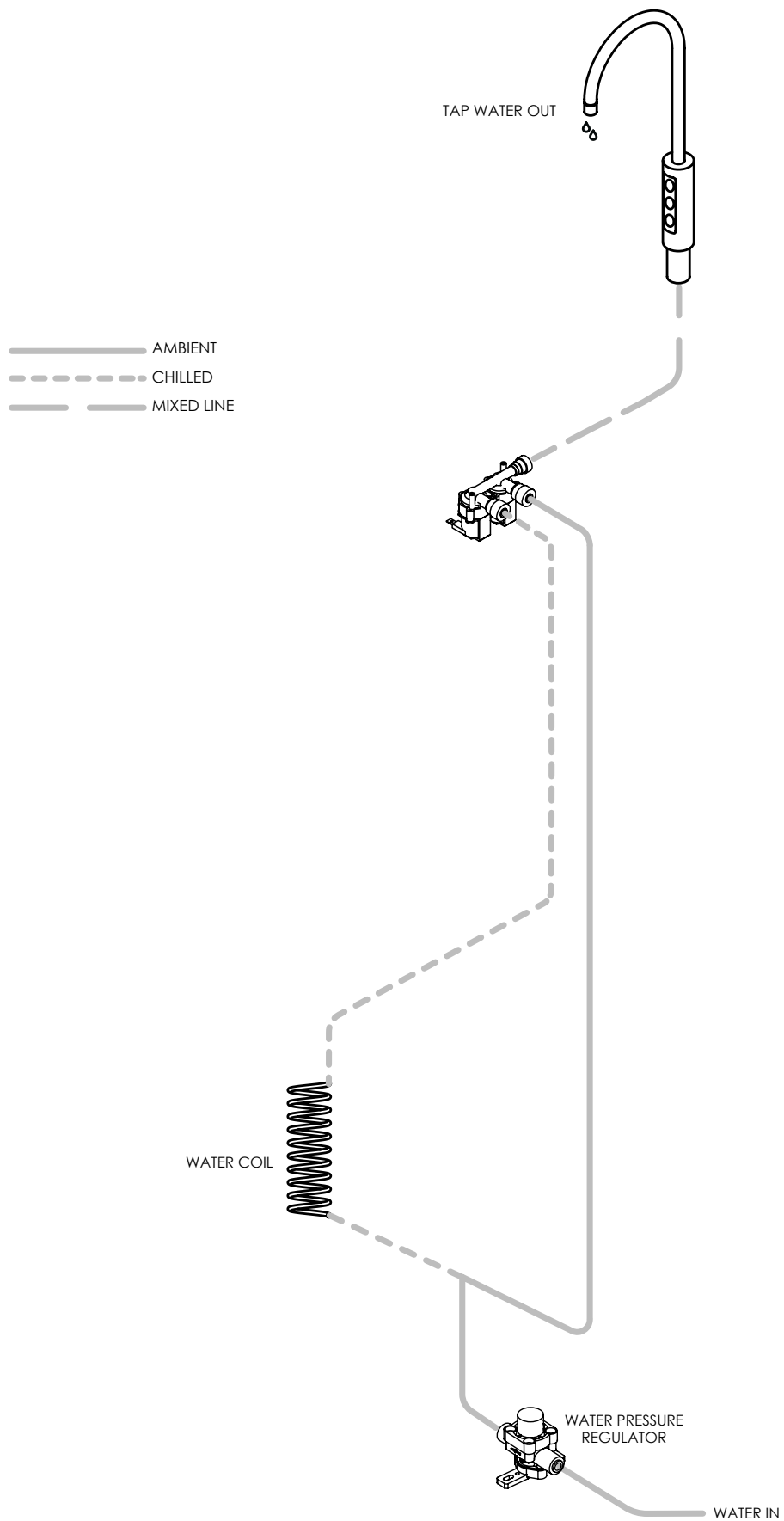
- BLACK
- · - · - · PURPLE
- - - - BROWN
- · - · - · BLUE
- - - - WHITE
- · - · - · YELLOW
- - - - GREEN
- · - · - · RED



Chilled, Ambient & Sparkling - Water Pathway Diagram



Chilled & Ambient - Water Pathway Diagram



CE Declaration of Conformity CE

Producer: Borg & Overström
Synergy House
Fakenham Road
Morton-on-the-Hill
NR9 5SP
UK

Product Type: Water Dispenser
Model Range: S2/U1/U2 40L (Undercounter) Series


According to:

2004/108/EC Electromagnetic Compatibility (EMC)
2014/35/EU Low Voltage Directive (LVD)
97/23/EC Pressure Equipment Directive (PED)
2011/65/EU Restriction of the use of certain hazardous substances (RoHS)
2012/19/EU Waste Electrical & Electronic Equipment (WEEE)
1935/2004: materials and articles intended to come into contact with food.
2023/2006: good manufacturing practice for materials and articles intended to come into contact with food (GMP)

Applicable Regulations & Standards:

EN 60335 1:2012: Household and similar electrical appliances - Safety. Part 1. general requirements
BS EN ISO 13585:2012: Brazing — Qualification test of brazers and brazing operators.
BS EN ISO 9001:2008: Quality management systems
BS EN ISO 14001:2004: Environmental management systems

We declare that the above product(s) comply with the relevant basic requirements of the known EC regulations, provided the products are installed and used in accordance with the parameters of their design and purpose, as identified.



Daniel Lyon
Managing Director

Date July 2018

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