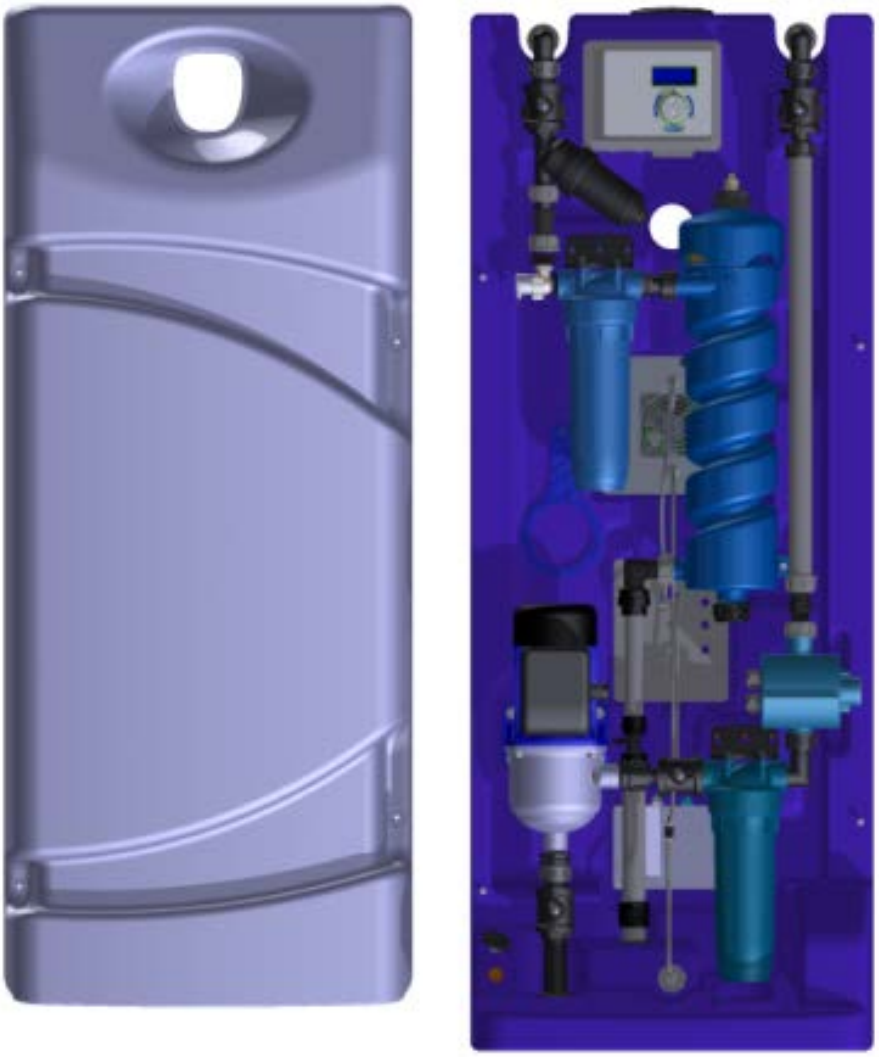
h2ozone™

Water Treatment System



Installer Commissioning Manual

Rev2 February 2017

For the latest version, visit our website www.h2ozone.com

This manual is intended for h2ozone™ approved installers.

This manual will be used in conjunction with the "Installation, Operation and Maintenance" manual.

Please follow all the safety information from the "Installation, Operation and Maintenance" manual.

For the latest version, visit our website www.h2ozone.com

Installer helpline telephone number: +353 1 281 1646

Part 1 – Before installing h2ozone™

Source water quality (all requirements on the list must be met, if any requirement is not met DO NOT INSTALL THE H2OZONE™)

- The source water was tested by an accredited testing institution in the last month
- The source water test results meet the following parameters:
  - ≥ 80% UVT, Turbidity ≤ 1 NTU, TOC (Total Organic Carbon) ≤4 mg/l, De chlorinated/Chlorine free water, TSS ≤1mg/L, Bromide≤5 µg/liter, pH between 6.5 – 8
  - water temperature must be between 5°C and 25°C
  - water should be chemically safe to drink. The H2ozone™ is not designed to treat chemicals in the water

Rain Water Harvesting (the following are requirements for adequate water harvesting, if the requirements cannot be met DO NOT INSTALL THE H2OZONE™)

h2ozone™ is designed with the capacity to treat 300 l/hr, 2700 l/day, 16,500 l/wk or 800,000 l/yr . Before installing the H2ozone™, the installer must be aware of the expected usage pattern and the expected daily volume and must advise the customer about the water usage limits of the H2ozone™.

Rainwater harvesting requirements:

- **It is recommended that any installed rainwater harvesting system comply with BS 8515:2009 (UK), ARCSA/ASPE/ANSI 63-2013 Rainwater Catchment Systems (USA) or equivalent standard.**
  Key Requirements (other requirements may be needed)
- The surface from which the water is collected must be clean and from a non-reactive material
- The gutters must be clean, in good condition, protected with leaf guards
- A first flush diverter is recommended
- Floating suction is mandatory
- Calmed inlet is mandatory
- The installer must check the placement, type and capacity of the water tank and determine that it can meet the h2ozone™ requirements.
- The installer must check the lift pump is fit for purpose

Mains water:

- If mains water is used a filter that removes chlorine must be installed before the water enters the system
- The mains water must fall into the source water quality parameters

Other precautions before installing the h2ozone™:

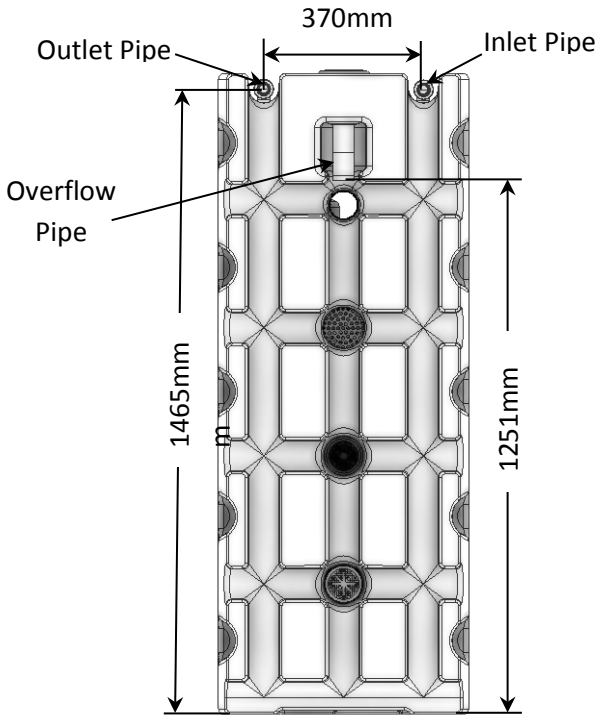
The installer is responsible for checking that the room in which the H2ozone™ is being installed is suitable.

Location of the H2ozone:

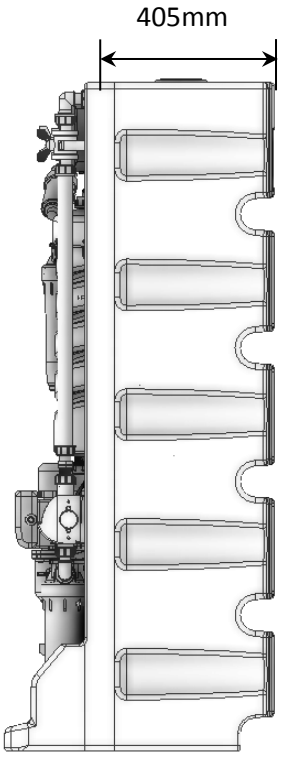
- **h2ozone** ™ must be installed indoors only; it is not for outside use
- **h2ozone** ™ must be installed on a flat, horizontal load bearing floor
- **h2ozone** ™ must be installed in a clean, dry room
- The floor must support the H2ozone™ weight of 250Kg when full
- As there is a risk of water spills during installation the installer must take the necessary precautions so that the water does not affect anything around the machine
- As there is a risk of ozone contamination the installer must ensure the room is ventilated and the ozone will be vented safely to the outside
- The H2ozone™ must be well clear from anything that can damage or interfere with it (e.g. Boiler)
- There should be minimal risk of re-entry of ozone from the outside environment

The above information should have been gathered at the initial site survey

Pipework requirements for the installation of h2ozone ™:



Back of Machine



Side of Machine

Inlet, Outlet and Overflow pipe requirements:

- the Inlet must be a 1" BSP threaded connection 1465mm from the base of the machine
- the Outlet must be a 1" BSP threaded pipe 1465mm from the base of the machine
- The distance between the Inlet and Outlet must be 370 mm
- The machine overflow pipe ends 1251 mm from the base of the machine
- The machine must be installed with a minimum of 25mm from the back wall

Important information about the overflow pipe and safe venting of ozone gas.

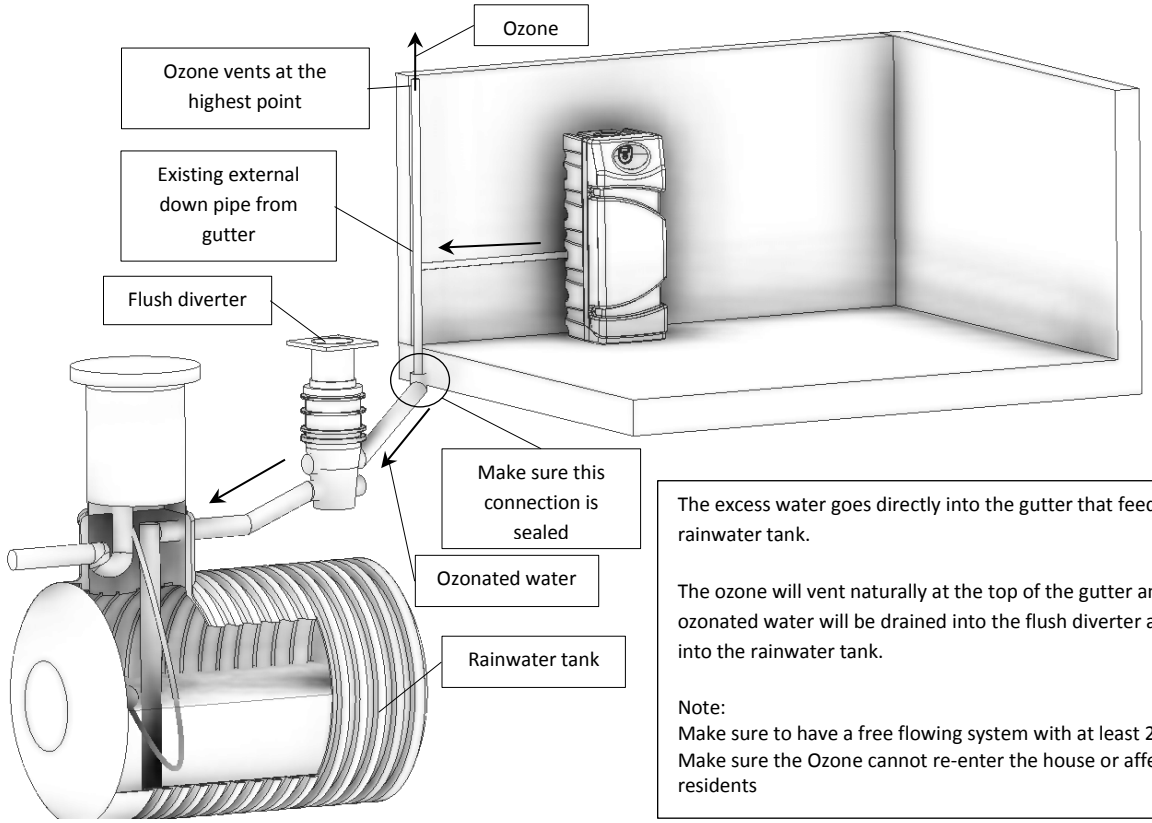
Exposure to ozone for long periods of time can be hazardous to health.
It is important therefore that the installer take all the necessary precautions to limit the risk of ozone exposure.
If the requirements below cannot be met, the installer must NOT INSTALL h2ozone ™.

- In normal operation, the H2ozone™ will produce ozone offgas that will be vented through the overflow pipe along with the surplus water.
    - The overflow pipe is DN50 PVC
    - The overflow pipe ends at 1251mm from the base of the machine
    - The overflow pipe needs to be prepared with abrasive paper before connected to the drain system
    - Ozone will attack NBR rubber. Only use glued or welded joints or EPDM, silicone rubbers
    - **The drain system MUST BE A CLOSED FREE FLOWING SYSTEM** no other pipes should be connected to this system
    - The water and the ozone gas must be separated; we recommend using a U bend
    - The ozone must be vented outside at a point as high as possible where the people and animals won't get in contact with the gas
    - The water which will also contain ozone will be drained separately. We recommend that it will be drained back into the water harvesting tank. If not possible the water needs to be directed through a closed system on a drain outside
    - The ozone in the water can react with certain materials so be sure to use materials non-reactive to ozone on your drain pipes (PE or PVC piping)

- In the unlikely event that ozone may leak from the machine, the machine must be installed in a well-vented room with venting on an external wall to an appropriate high point.

Suggested Set Ups for Overflow System and Venting

Setup 1: The ozonated water is fed back into the rainwater tank:

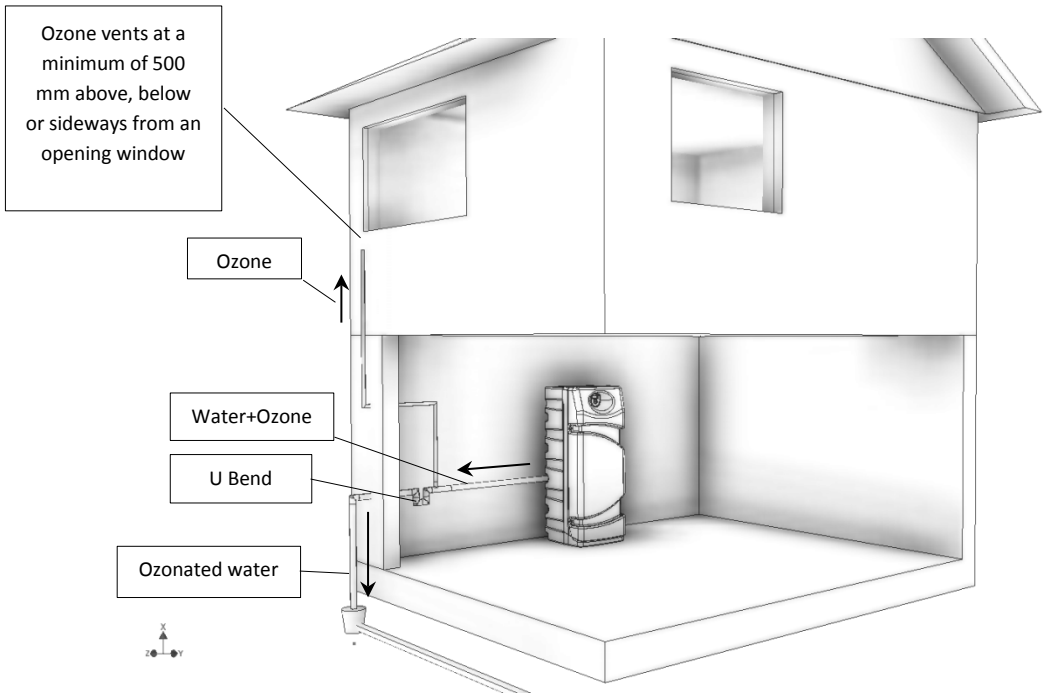


The excess water goes directly into the gutter that feeds the rainwater tank.

The ozone will vent naturally at the top of the gutter and the ozonated water will be drained into the flush diverter and then into the rainwater tank.

Note:
Make sure to have a free flowing system with at least 2.5% drop.
Make sure the Ozone cannot re-enter the house or affect the residents

Setup 2: The ozonated water is fed into a closed drain pipe:



The excess water goes directly into a free flowing closed draining pipe

A U bend on the overflow pipe will separate the ozonated water from ozone gas. The ozone gas will be vented to a high point outside the building

Note:
Make sure to have a free flowing system with at least 2.5% drop.

Electrical system requirements:

Mains Supply – Standard single phase domestic mains plug connection with IEC connector to machine and moulded plug to suit country of sale 230VAC +6/-10% grounded, 50HZ, 13-16A. Mains cable with plug to BS1363; CEE7/7; AS/NZS 3112 ; or other as appropriate to market. A 30mA RCD circuit should be included as part of installation.

IF ANY OF THESE REQUIREMENTS ARE NOT SATISFIED THE INSTALLER CANNOT AND SHOULD NOT INSTALL h2ozone ™.

Part 2 – Installing the h2ozone ™

1. Connect the Inlet, Outlet and Overflow pipes
2. Install the ORP probe:
    - Before connecting the ORP probe remove the plastic cap, ensure the O-ring is fitted and the probe has enough buffer solution
    - Do not touch the glass or the tip of the probe
    - Screw the probe in by hand until you feel confident that water can't leak
3. Install the 3 filters
4. Open all the valves except for the Outlet Valve
5. Turn The H2ozone™ ON.

Note that there will be a 20 sec. delay on power up before the fill process starts.

First run (commissioning mode):

The system will guide you through the steps below. This should take about 30 minutes to complete. Water will not be available until all steps are completed. You will need to follow this procedure only once. In the event that you interrupt the procedure by powering off the H2ozone™ or the machine displays an error you will be prompted to restart the commissioning process.
It is advised to flush out the system and pipework by running a tap to empty the H2ozone™ of the first volume of water and then allowing the H2ozone™ to re-fill before commencing normal use.

For the first run follow these steps:

1. Turn on the H2ozone™. The control panel will display the Commissioning mode screen containing the software version number. Press OK.
2. The language selection screen will be displayed, choose "English". The control panel will ask you to confirm your choice, press OK.
3. The control panel will display the set time screen. Set the correct time. The control panel will ask you to confirm your choice, press OK.
4. The control panel will display the set date screen. Set the correct date. The control panel will ask you to confirm your choice, press OK.
5. On the next screen "Calibrate Ozone sensor" is displayed. Press Ok. The ozone sensor will then be calibrated. This will take 60 seconds.
6. Once ozone sensor calibration is complete a menu will be displayed. Select the start commissioning option.
7. The next screen will display the H2ozone™ machines Status, ORP value, LPM (litres per minute) and current water level (L) in litres.
8. At this point a fill will be carried out,
    a. The status will change from "Inactive" to "Warmup" for 35 seconds.
    b. After warmup the status will change to "Fill". At this point the machine will fill to 220 litres.
    c. Once 220 litres is reached the status will change to "Cooldown" for 30 seconds.
    d. After cooldown the status will change to "Ozone On". At this point the ozone level will rise to 700 and two minutes later the status will change back to "Inactive".
9. After the fill has been completed a DAF fill will be carried out,
    a. The status will change from "Inactive" to "Warmup" for 35 seconds.
    b. After warmup the status will change to "Fill for 90 seconds.
    c. After this the status will change to "Cooldown" for 30 seconds.
    d. After cooldown the status will change to ozone on for two minutes and the status will change back to inactive.
10. Once fills have been completed the question "Confirm checked for leaks" will be displayed. Once checked press OK.
11. You will be prompted to enter the control panel pin number. Enter the correct pin and press ENTER.
(The PIN number may be obtained by registering the machine at www.h2ozone.com/register using the hardware number displayed.)
12. The control panel will then display "Pin OK". Cycle the power to the H2ozone™.
13. The commission process is now complete and the H2ozone™ is in run mode.

TURN ON THE OUTLET VALVE BEFORE USING THE h2ozone ™.

Connecting h2ozone ™ to the user's Wi-Fi:

1. Remove control knob from control panel.
2. Remove control panel front cover
3. Remove Wi-Fi module from logic board
4. Plug Wi-Fi module into programming card
5. Plug card USB lead into computer
6. Open RS Wi-Fi programme on computer
7. In the window;
    - Open port
    - Enter SSID and passkey for broadband network
    - "configure"
    - On bottom of window you will see the following
    - " set ok?"
    - "success"
8. Return module to control panel and refit cover and knob

Spare Parts 

When replacing any part of the product use only H2ozone spare parts and not reconditioned or copy parts that have not been clearly authorised by H2ozone Water. Failure to do so could compromise the performance and/or safety of the machine.

Installation and Commissioning Checklist

It is a requirement that the checklist be completed and returned to the Dealer/Distributor, a copy of which is to be given to the customer upon completion.

CE

Customer _____

Address _____

_____

_____

_____

E-mail _____

Report No.

_____

Date

_____

INSTALLATION AND COMMISSIONING CHECKLIST

SITE LOCATION :	
MACHINE LOCATION :	
MACHINE NAME AND NUMBER	
WIFI SSID AND PASSWORD	
DATE OF COMMISSIONING	

INSTALLATION	
Did pre installation water sample fit H2ozone requirements	
Is overflow free draining and sealed to outside of the system	
Is pre-installed overflow pipework at least DN40	
are there any bends or traps that may cause back pressure	
Do all local connections meet H2ozone guidelines	
Has off-gas venting been installed as per H2ozone requirements	
Is ozone gas safely vented to outdoors as per H2ozone requirements	
What type of filter is fitted on water supply to H2ozone	

COMMISSIONING	
Pre commissioning room ozone level reading	
Is correct software version installed	
Has ORP probe been checked for sufficient buffer solution	
What type of inlet filter is fitted	
What type of outlet filter is fitted	
Is there an outlet flow regulator fitted	
Has machine passed through commissioning cycle	
Has outlet pipework been checked for leaks	
Post commissioning room ozone level reading	
Machine clean, dry and front cover fitted	

COMMENTS;