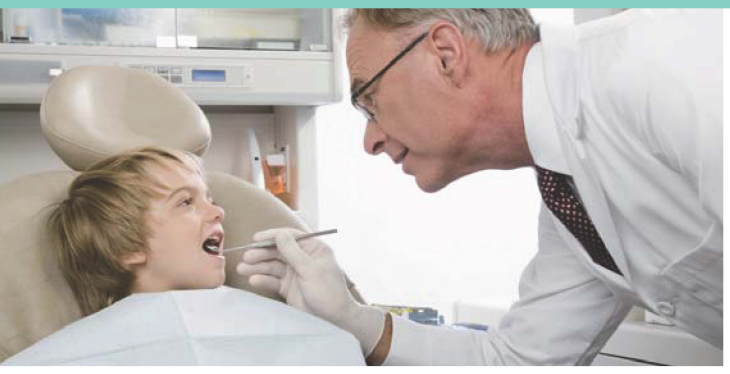
BIOWELL
INFECTION CONTROL



Compact Disinfection Unit

Biowell - Medical Compact Disinfection Unit - CDU

BIOWELL
INFECTION CONTROL

CDU Point-Of-Use (POU) ozonated water disinfection system

- Improve hygiene and care
- Reduce the risk of infections
- Effective against Legionella pneumophila, Pseudomonas spp. and E. coli
- Safe to use
- Does not interfere with dental material bond strengths

All-around protection

“[Ozone] possesses several of the properties of an ideal disinfectant: it effectively removes pathogens over a range of physical and chemical conditions; it produces no residues and no unacceptable by-products (only oxygen); it is easy to generate, safe to handle, suitable for widespread use and cost-effective. Ozone requires only a short contact time to kill and inactivate bacteria, parasites, viruses and fungi and its antimicrobial action is relatively unaffected by pH. Unlike chlorination, it is able to give greater than 99% reductions in the levels of parasites such as Giardia lamblia and Cryptosoridium spp.”

Laurence J. Walsh
Professor, Head of School of Dentistry
University of Queensland, Australia

High purity ozone, easy dissolution, high ppm

Our exclusive and advanced technology produces ozone without any other products besides oxygen. This allows for high dissolution in water, giving high ppm concentrations for effective disinfection.

No unacceptable by-products, no rinse required, residue-free

Ozone naturally reverts back to oxygen.

Safe for everyone, from all aspects

Ozonated water can be used to protect patients and staff from bacteria and infections. It is safe to handle and can be used on water contactable surfaces.

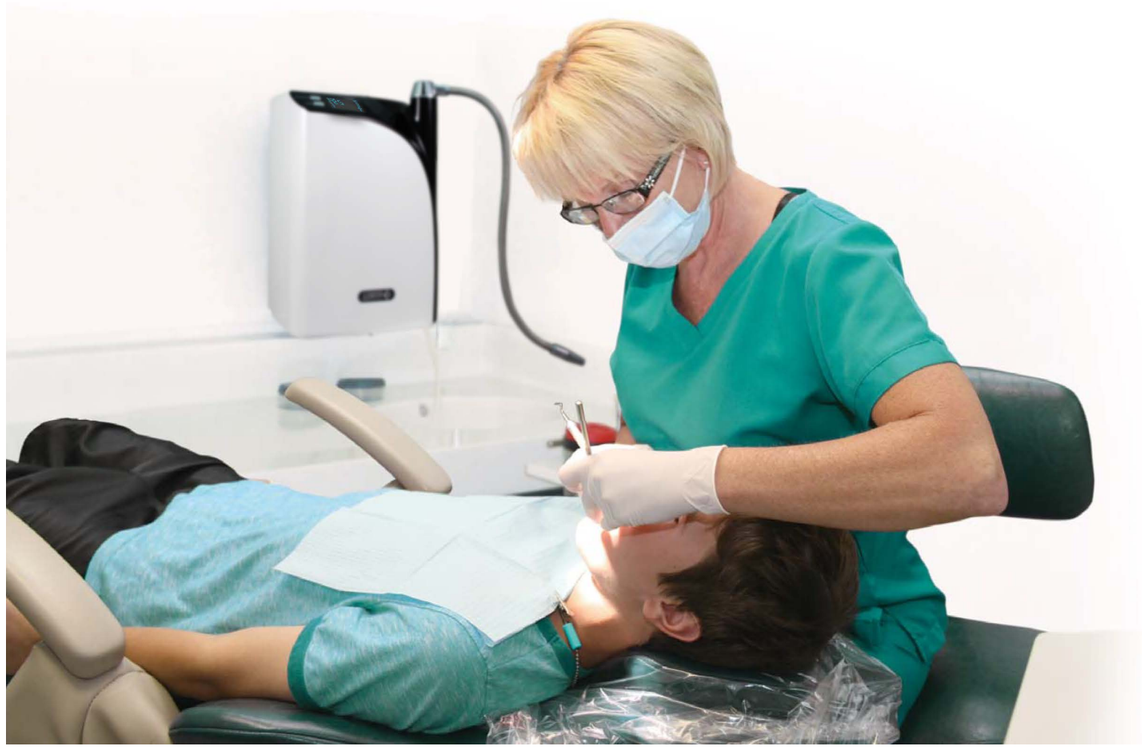
All Biowell systems use Biotek Electrolytic Ozone Generation (EOG) Technology for safe and efficient ozone generation without any health risks. All systems are designed with a built-in ozone neutralizing unit.

Compatible with dental bonding materials

Ozonated water leaves no biocidal traces so there is no contamination risk in bonding procedures and does not interfere with dental material bond strengths in endodontic.

Effective even against drug resistant bacteria

Ozone acts instantly, oxidizing bacteria and other pathogenic microorganisms by rupturing their cell membranes. Microorganisms cannot build a resistance to ozone.









Hand wash

First, wash hands according to existing protocol. Then, rinse hands for 20 seconds under ozonated water. The ozonated water will enhence detergent performance. Activate the system using the motion sensor to prevent cross-contamination. The machine will auto shut-off after 20 seconds.

Surface disinfection (with Biowell Spray Bottle)

Moisten cloth with ozonated water. Use immediately to wipe surfaces, such as dental office countertops, cabinets, equipment surfaces, water-contactable surfaces, and so on. For better results, use with the ozone-compatible Biowell Spray Bottle. Fill the spray bottle with ozonated water and use immediately for best results, Ozonated water can be stored in the special bottle for up to 20 minutes. Spray surfaces with the bottle and wipe.

Instrument pre-wash

Pre-wash instruments with ozonated water and perform a visual check before autoclaving as an assurance to an existing sterilization step.

Bacteria-free water source

Wash skin, mouths, and wounds and for applications requiring clean water for infection control.
Soak or wash impressions, prosthesis, dentures, nightguards, bleaching trays, temporary crowns andbridges, implants abutments, etc.

Scaling & prophylaxis

Fill water supply bottle of the scaler unit with ozonated water.

Irrigant in ultrasonic scalers

Fill bottles with ozonated water.

Dental unit water bottles

Fill bottles with ozonated water to prevent biofilm build-up.

Mouth rinse

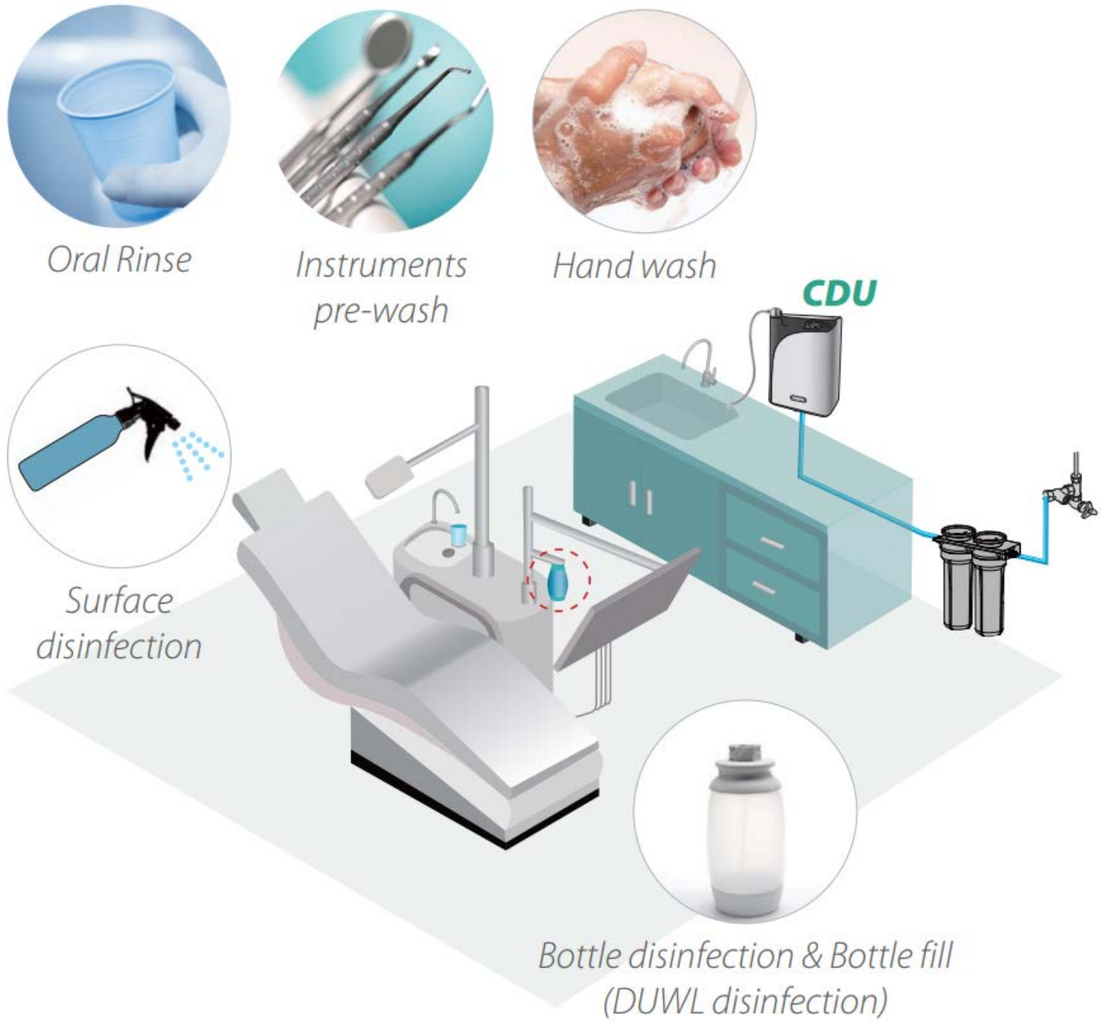
Fill patient's cup with ozonated water and use immediately for rinsing. Use as a pre-procedural mouth rinse. Ozonated water has antibacterial properties and is a bacteria-free water source.

Treatment area irrigation

Fill a syringe with a needle with ozonated water and use it to irrigate the treatment area. Use immediately.

*Ensure accessories and equipment that contact ozonated water are of ozone-resistant material.

Self-Contained Water / Bottle Systems



Surface disinfection with the Biowell Spray Bottle

- Outer Aluminum material
- Inner ozone-compatible coating
- Capacity 275ml

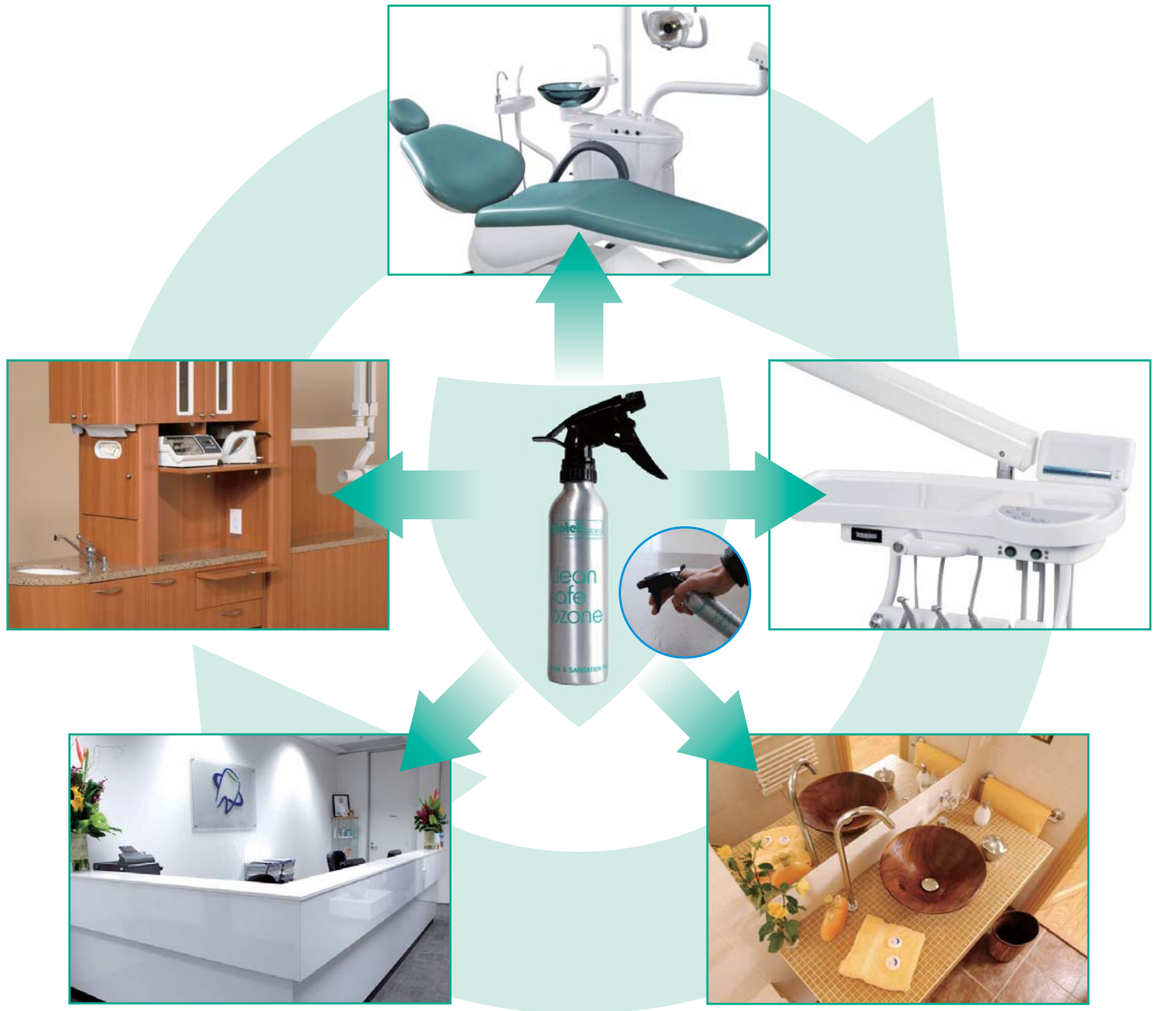
Fill the spray bottle with ozonated water and use immediately. Ozonated water stored in the special ozone-compatible bottle is effective up to 20 minutes.

Simply thoroughly spray surfaces and wipe.

Spray Bottle

- Safe
- Effective
- No-rinse
- Removes bacteria
- Removes odor
- Leaves no residue or smell

Ozone is a powerful oxidizer and naturally reverts back to oxygen. It leaves no residual and does not require a final rinse or wipe down. Cleaning is easier and faster.

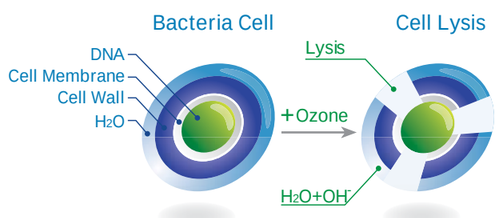


At Biowell we are committed to developing ozonated water disinfection products to improve quality of care and hygiene. We strive for excellence and quality in our products and service, to bring you the benefits of ozone in a safe, easy to use system effective across multiple applications.

Ozone's Bacterial Disinfection Mechanism

Structure of a bacteria cell and disinfection procedure:

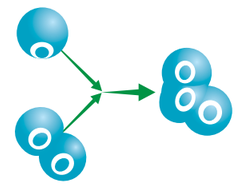
1. Ozone oxidizes bacteria cell wall and membrane, allowing water and additional ozone to enter the cell.
2. The sudden flood of ozone (O_3) and hydroxyl (OH^-) dissolved in water (H_20) causes cell lysis, and as it bursts, the genetic material and enzymes are released into the ozonated water.



3. In the ozonated water, the unleashed cell components are attacked by the ozone so that it cannot recover and no resistance is built up.
4. After contact with the various cell components, ozone (O_3) reverts back to its stable oxygen (O_2) state. Therefore, there are no residues and no final rinse required.

Ozone

Ozone is the world's most powerful naturally occurring oxidizing agent. It is a composed of three oxygen atoms and is highly unstable. Ozone's instability is what makes it such a powerful oxidant, since it seeks to quickly shed its excess oxygen atom and revert to atmospheric oxygen (O_2). The excess oxygen atom is typically used to oxidize an organic substance. Ozone also exhibits a short shelf life and quickly reverts back to atmospheric oxygen even when it is isolated and contained within a non-oxidizable tank. It is for this reason that the ozone must be generated on-site a short period before usage.

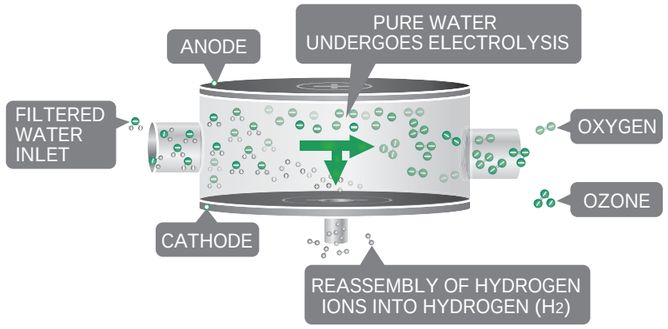


Ozone Creation:
Singlet Oxygen (O) + Oxygen (O_2) = Ozone (O_3)
Ozone Dispersion
Ozone (O_3) + Bacteria, odor, pesticides = Oxygen (O_2)

Proudly Powered By EOG

Our patented Indirect Electrolytic Ozone Generation (EOG) uses water to generate ozone. With a sophisticated power control, water is electrolyzed, forming H_2, O_2 and O_3. H_2 passes the cathode on the generator and is directed to the drain. Hence the gases collected through the electrolysis reaction include only O_2 and O_3 (O_3 = 28 wt%), without any associated hazardous substance. This technology produces the highest purity and concentration of ozone on demand.

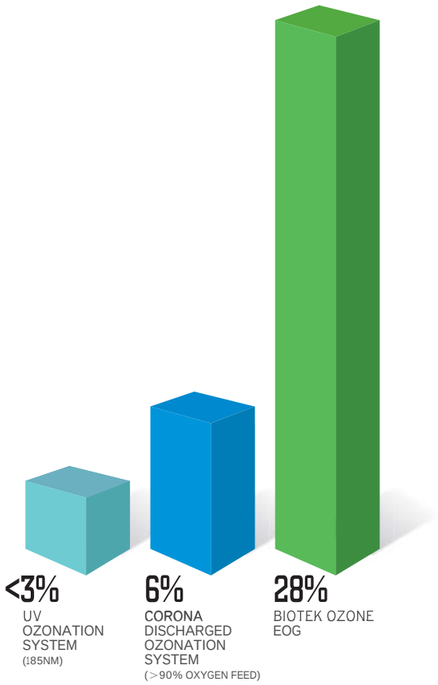
Biowell's Electrolytic ozone generation (EOG) technology in Biowell systems



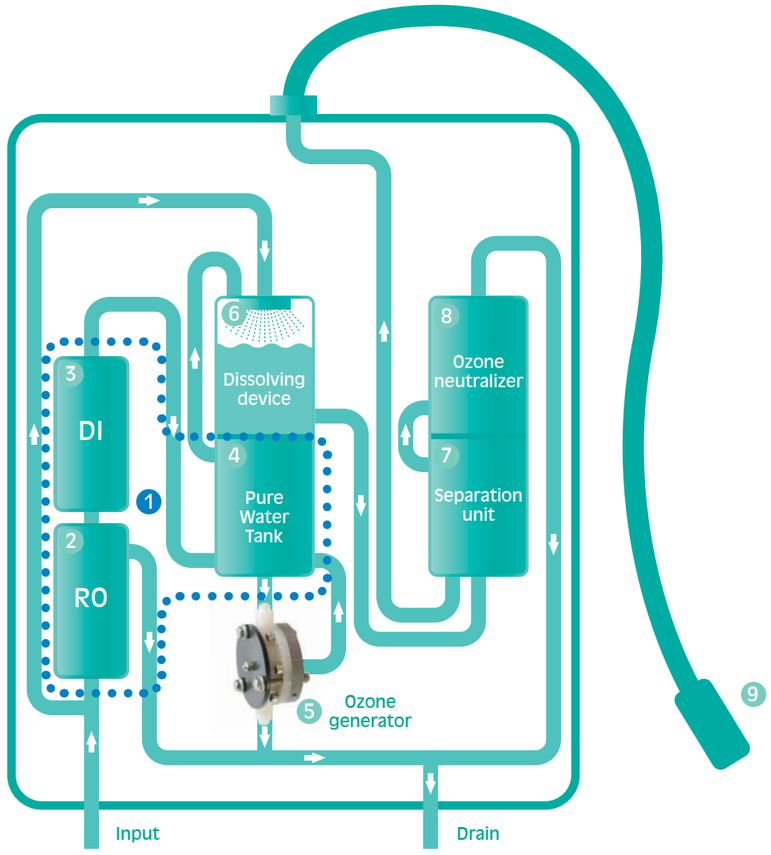
Biowell's EOG Benefits

- NOx Free*[1]
- Highest purity available
- Only tap water & electricity are required
- No air dryer or oxygen concentrator
- Full time performance monitoring
- Safe to operate
- Low power consumption
- Not affected by air quality and humidity
- Patented ATS (Anytime System) for immediate dissolved ozone

*: Nitrous Oxide (NOx) is a known carginogen which reacts with moisture and other compounds to produce nitric acid and other toxic by-products.
* visit www.biospinozone.com for more technical information

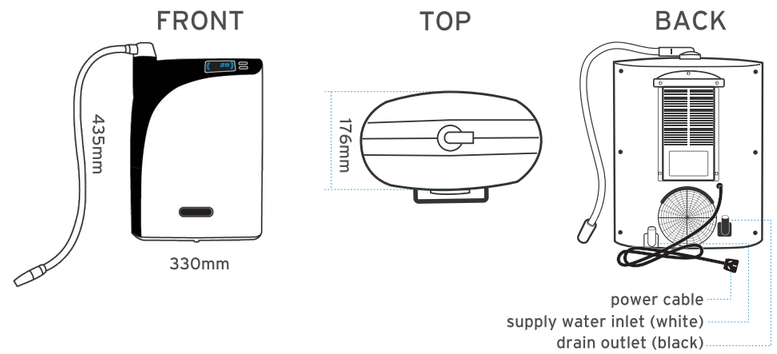


CDU Ozonated water generation process



1. **Pure water system** prepares tap water for the source of ozone generation
2. **RO filter** is the first step to removes ions
3. **DI filter** is the second step to remove ions
4. **Pure water tank** stores water for ozone generation and feeds it to the ozone generator. After ozone is generated, it is also fed back to the pure water tank.
5. The **electrolytic ozone generator** (EOG) cell generates ozone from water. Hydrogen is removed via the drain.
6. **Dissolving device** dissolves ozone in water to make ozonated water.
7. **Separation unit** removes undissolved ozone from ozonated water.
8. **Ozone neutralizer** converts undissolved ozone into oxygen.
9. **Ozonated water output**

Dimensions Diagram

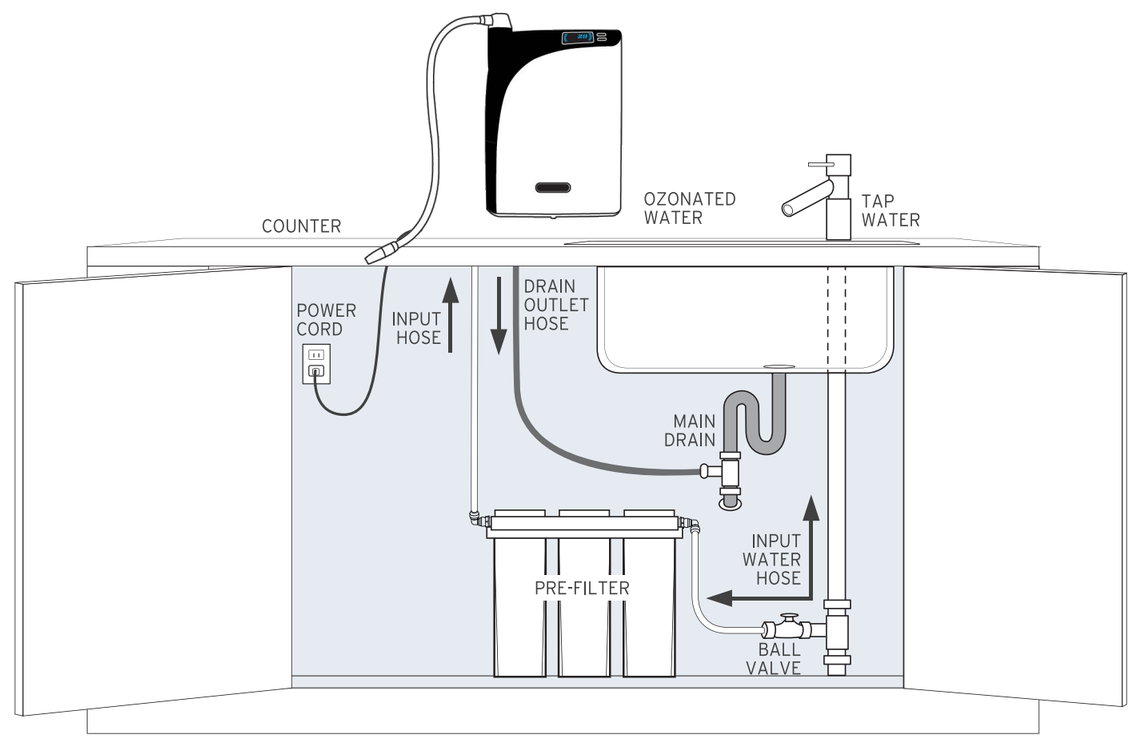


Input/Output & Pipe Diameters

- Power cord length 2m
- Input hose length 2m
- Input tap water hose diameter: $^{3}/_{8}$"
- Drain hose length 3m
- Output hose length 2m
- Output water hose diameter: $^{3}/_{8}$"
- Stainless stell output hose φ14 × φ8 × 550mm

Installation

Counter-top or wall mounted



CDU
Compact Disinfection System

PRODUCT SPECIFICATIONS

Product Name		Compact Disinfection Unit
Model No.		CDU
Ozonated Water Flow Rate (Added to tap water flow within washer) Input water pressure: 3.0 kg/cm^2		180±15% l/h
Ozonated Water Concentration Input Water Conditions Temperature: 15℃ ; Pressure: 3.0 kg/cm^2 Conductivity: ≤ 500μs/cm Residual Chlorine: ≤ 0.1ppm Ambient Temperature: 20℃ ;		4.0 ppm @ 180 l/h (0-20 secs) Sensor activated 2.0 ppm @ 180 l/h (0-30 mins) Sensor activated
Ozonated Water Output Pressure Input Water Pressure: 3.0 kg/cm^2		0.3-0.5 kg/cm^2
Power Supply	Voltage	☐ 100~120V, 60/50 Hz ☐ 200~240V, 60/50 Hz
	Power Consumption	80 W
Input Water	Water Quality	Municipal Water Residual Chlorine ≤ 0.1ppm Water Particle Size ≤ 10μ
	Water Temperature	5-30℃ /41-86 ℉
	Water Pressure If the input water pressure is over 7.0kg/cm^2, install a pressure reducing valve (PRV).	1.5-7.0 kg/cm^2 / 20-100 psi
	Water Flow	≥ 360 l/h
Environment	Ambient Temperature	5-35℃ /41-95 ℉
	Room Condition	Good Ventilation 30 Air Changes per Hour (ACH)
Appearance	Dimension(mm)	L330×W176×H435
	Model Type	Countertop / Wall-mounted
	Net Weight	7.5 kg /16.7lbs
	Nozzle	Solid Stream

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