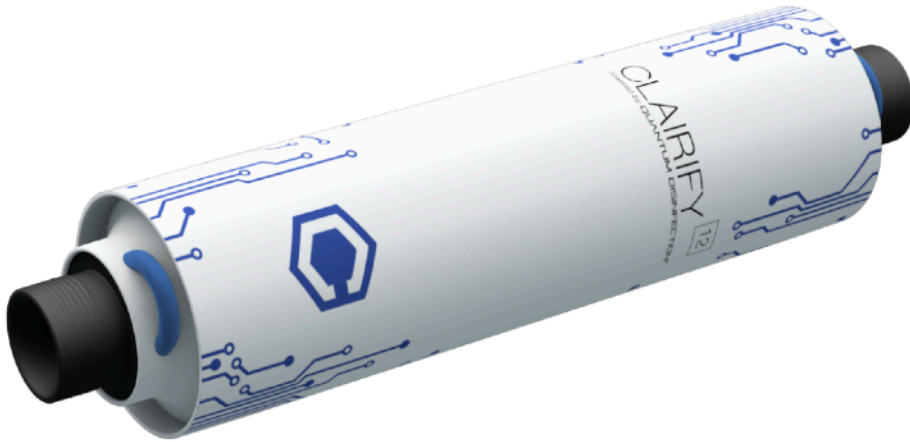


Owner's Manual



CLAIRIFY 12

QUANTUM DISINFECTION™



Contact



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Thank you for purchasing your CLAIRIFY¹²

The CLAIRIFY¹² system is powered by Quantum Disinfection™, a cutting edge technology that protects your water from microbiological contaminants.

What is Quantum Disinfection™?



QUANTUM DISINFECTION™ media: The surfaces of ceramic beads have been modified so that they have an instant disinfection capability. When microorganisms (bacteria, viruses, cysts, algae, yeasts, etc.) come into direct contact with those active ceramics, the electrons inside the pathogens are instantly attracted by the positively-charged surfaces. This causes the entire structure of the microorganism to collapse irreversibly.

NO POWER, NO CHEMICALS and NO MAINTENANCE are the main advantages of QUANTUM DISINFECTION™.

QUANTUM DISINFECTION™ products are only sold by authorized dealers and OEM's. If you purchase a QUANTUM DISINFECTION™ product outside of these authorized channels, you may be in possession of a non-genuine device and Claire Technologies cannot warranty its performance. Each device manufactured or licensed by Claire Technologies has undergone rigorous testing and certification standards relating to performance against microbiological protection.

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Section 1. Operating Parameters

1.1. Recommended Water Characteristics

The Water quality is extremely important for the effectiveness of your CLAIRIFY¹² system.

| Parameter | Recommended Value |
|--------------------------------------|-------------------|
| pH | 3.5 - 8.5 |
| Total Suspended Solids: TSS (mg/L) | < 5 |
| Suspended Solid maximum size (μ) | < 5 |
| Total Dissolved Solids: TDS (mg/L) | < 1,000 |
| Turbidity (NTU) | < 0.01 |
| Nitrate (mg/L) | < 20 |
| Phosphate (mg/L) | < 10 |
| Alkalinity (mg CaCO ₃ /L) | < 600 |
| Chloride (mg/L) | < 200 |
| Chlorine (mg/L) | < 2 |
| Bromine (mg/L) | < 0.1 |
| Fluoride (mg/L) | < 5 |
| Hardness (mg CaCO ₃ /L) | < 850 |
| Heavy metals (mg/L) | < 100 |

1.2. CLAIRIFY¹² System Specifications

| | |
|-----------------------|--------------------|
| Maximum Pressure * | 125 psi 8.6 bar |
| Minimum Temperature | 40 °F 4.4 °C |
| Maximum Temperature | 100 °F 38 °C |
| Maximum Water Flow ** | 12 GPM 44 L/min |

* The system functions at all pressures up to 125 psi (8.6 bar)

** The system functions at all water flows up to 12 GPM (44 L/min)

Section 2 - Safety Information

This manual contains the manufacturer's instructions for operation and maintenance of the CLAIRIFY¹² system. Please read the manual entirely before installing and operating this unit. Note all designated operation procedures, guidelines and property, warning and caution statements in this manual. Failure to do so could result in serious injury and damage to the equipment and property. Make sure that the unit is installed according to these specifications. Do not install, modify or use this equipment in any manner other than specified in this user manual.

Do not install the system on water lines with pressures above the rated pressure (see Section 1.2).

Do not install the system on a hot water line. Water temperature over 100 °F (38 °C) and/or pressure 125 psi (8.6bar) can result in housing failure and property damage.

Do not use a torch or any other high temperature source near the system.

Do not install in direct sunlight or outdoors.

Do not install the system backwards with the feed water line connected to the outlet; follow the water flow arrow depicted on the unit.

Do not install in locations where it can be damaged by other freestanding equipment.

Do not use liquid pipe thread compounds for threaded connections. Use Teflon® tape only.

Do not over tighten the connections to the manifold.

The system should be protected from water hammer. Where water hammer is present it is recommended to install a pressure regulator in front of the system in order to protect the disinfection system as well as the other equipment from water hammer damage.

Protect from freezing.

Caution



- Carefully examine unit after installation for any leaks over a 24 hour period.
- Refer to the user manual for recommended fittings.
- Ag Exposure: The unit component contains silver. If the unit breaks, avoid inhalation or ingestion of the debris and avoid exposure to eyes and skin. Obey local regulations and guidelines for the removal and disposal of silver waste.

Section 3 - Installation

3.1. Fittings

Due to its FTG specific design, the CLAIRIFY¹² system has multiple connection selection.

By default, the CLAIRIFY¹² system includes two (2) of Model FTG-1 Connections (1" NPT) for both outlet and inlet connections. For other type of fittings, please see and order from the following list:

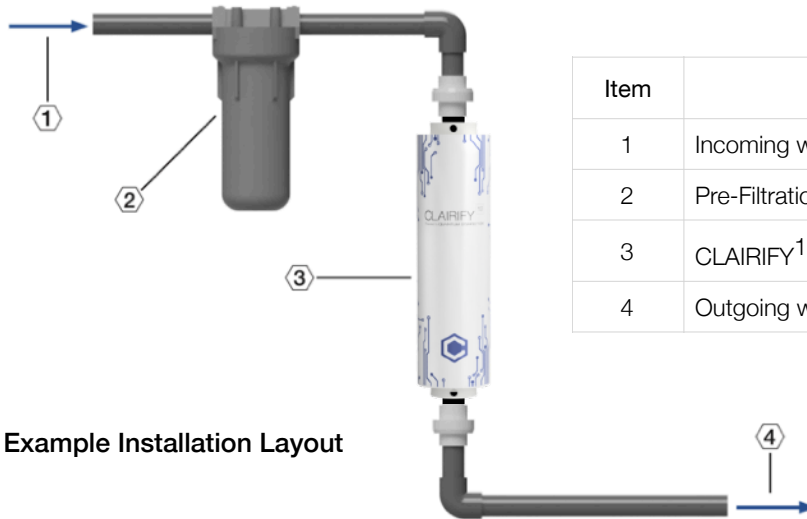
| Model FTG | Connection Description |
|-----------|--|
| FTG-1 | Connector 1" NPT (the standard fittings) |
| FTG-2 | Connector 3/4" NPT |
| FTG-3 | Connector 1" Barb with pressure gauge port |
| FTG-4 | Connector 1" Barb |
| FTG-5 | Connector 3/4" Barb |
| FTG-6 | Connector 1/2" Barb |
| FTG-7 | Connector 1" Pex |
| FTG-8 | Union Straight |
| FTG-9 | End Plug with pressure gauge port |
| FTG-10 | End Plug |



3.2. General User Assembly

It is recommended that the CLAIRIFY¹² system must be installed after a pre-filter (5 Micron Minimum) in order to protect the unit from suspended solids. Solids larger than 5 Micron will clog the activated surfaces of the Quantum Disinfection™ media inhibiting irreversibly their germicide properties.

If your water does not contain suspended solids (such as tap water), the 5 micron pre-filter may not be necessary.



Example Installation Layout

| Item | Part ID |
|------|--|
| 1 | Incoming water |
| 2 | Pre-Filtration System (5 Micron) |
| 3 | CLAIRIFY ¹² System Assembly |
| 4 | Outgoing water |

3.3. Assembly Instructions

Read the following instructions completely before installing the disinfection system.

System must be installed in a vertical, upright and level position.

System must be installed using cold water and preferably away from heavily traffic areas.

The system should be mounted on a wall, or to the back of other equipment that provides a sufficient support structure to hold the disinfection system in place.

System can be installed using metal or non-metallic piping systems.

NOTE: This product is designed for cold water use only, less than 100°F (38 °C). Passing hot water through this product will damage the system.

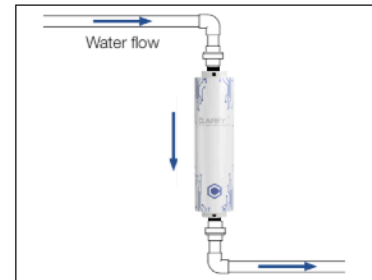
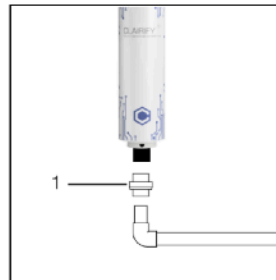
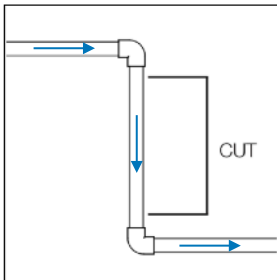
3.3.1. Fittings assembly

1. Remove the protective plastic wrap from the CLAIRIFY¹² system.
2. From the parts bag included, remove the two fittings and the two blue retainer clips in addition to the small *lubricant* tube.
3. With the lubricant provided, generously lubricate the two o-rings on each fitting prior to installation.
4. Install the fitting into the open ends of the CLAIRIFY¹² system by pushing the fittings into the cartridge with a *twisting* motion until fully seated. Once the fittings are fully seated, install the blue retainer clips into each end of the CLAIRIFY¹² system to lock the fittings in place.



3.3.2. System Assembly

1. Shut off all equipment downstream of the CLAIRIFY¹² system installation, locate the water supply shutoff valve and turn it off.
2. Locate (or add) and cut approximately 20 inch section of open pipe to install the unit assembly.
3. Connect the incoming cold water line to the inlet connection of the CLAIRIFY¹² system. Make sure that you adapt your water line to the inlet connection. For example, a union connector can be used.
NOTE: Product includes 1" NPT connections for inlet and outlet manifold ports. Other fittings are available (see Section 3.1. Fittings).
NOTE: There is a directional flow arrow on the filter. The incoming water should be routed to the inlet and the treated water should be flowing away from the outlet or arrow head end of the flow arrow.
4. Connect the outlet fitting of the CLAIRIFY¹² system to the water line.
5. Turn on water supply to the disinfection system.
6. Flush the cartridge by running water for five minutes through the system. This will purge any trapped air and fines from the system.
7. Once system has been flushed, turn on the equipment downstream of installation.
8. Check for leaks over the next 24 hours.



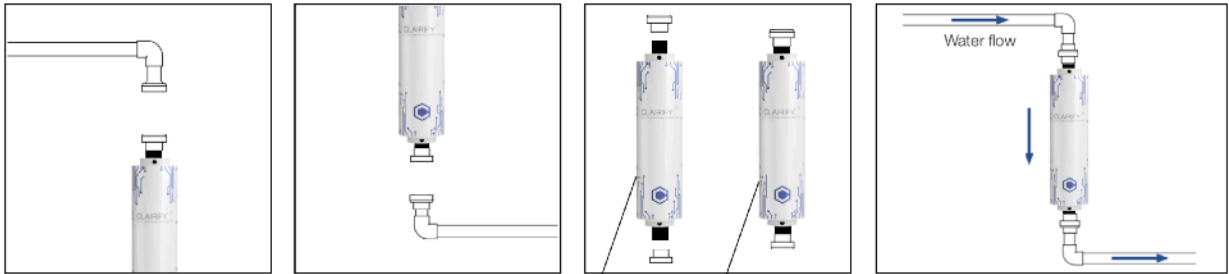
1 - union connector *

3.3.3.Maintenance

1. If required, turn off downstream equipment.
2. Shut off the inlet water supply to the system.
3. Repeat the fitting assembly (see section 3.3.1. Fittings assembly).
4. Open the union connector and remove the old CLAIRIFY¹² system.
5. Remove the female part of the union connector from both of the CLAIRIFY¹² fittings, inlet and outlet.
6. Install the female parts of the union connector to the new CLAIRIFY¹² system by connecting them to the fittings for both the inlet and outlet.
7. Install the new CLAIRIFY¹² system in the place of the old CLAIRIFY¹² system by reconnecting both union connectors, inlet and outlet.

NOTE: There is a directional flow arrow on the filter. The incoming water should be routed to the inlet and the treated water should be coming from the outlet or arrow head end of the flow arrow.

8. Follow Steps 5, 6 and 7 from the Section 3.3.2. System Assembly.



Old System New System

Section 4. Manufacturer Warranty

Unless otherwise provided in a warranty for the specific product purchased, Seller hereby warrants that the goods purchased herder shall be free from material defects in material and workmanship **for a period of one (1) year from the day of shipment to Buyer.** The foregoing warranty shall not be valid if the product or component parts have been subjected to abuse, misuse, accident, alteration, neglect, unauthorized repair or installation. The foregoing warranty is also contingent upon the proper use of the product and expires immediately upon the modification or enhancement of the product by anyone without the express written consent of the Seller.

Upon discovery of any defect in material or workmanship within one year from the date of shipment, Buyer shall notify Seller within five (5) days of Buyer's discovery of such defect. If such goods are proven to be materially defective to Seller's, and only Seller's, reasonable satisfaction, then such defective goods shall be repaired or replaced at Seller's sole option. In the event the goods cannot be repaired or replaced, Seller shall issue a credit to Buyer for the purchase price of the defective goods. Such repair, replacement, or insurance of credit shall constitute a fulfillment of all liabilities with respect to such goods. The warranty for all goods sold by Seller but manufactured by others shall be the warranty provided by such manufacturer for such goods. Seller shall take all commercially reasonable efforts (other than payment of money) to provide the manufacturer's warranty to Buyer.

THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY PROVIDED BY SELLER. SELLER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND THERE IS EXPRESSLY EXCLUDED ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. BUYER'S SOLE REMEDY SHALL BE REPAIR OR REPLACEMENT OF DEFECTIVE PRODUCTS, OR, IF THE PRODUCT CANNOT BE REPAIRED OR REPLACED, TO RECEIVE CREDIT FOR THE PURCHASE PRICE OF THE DEFECTIVE PRODUCT. Seller is not liable for damage to goods, property or persons arising out of the improper installation of such goods; modification, repair or tampering of such goods by anyone other than Seller, misuse of the goods; or utilization of the goods under conditions exceeding specifications for such goods.

This disinfection system has been independently tested for the supplemental bactericidal treatment of disinfected public drinking water or other drinking water that has been deemed acceptable for human consumption by the state or local health agency having jurisdiction. The system is only designed to reduce normally occurring non-pathogenic nuisance microorganisms. The system is not intended for the treatment of water that has an obvious contamination or intentional source, such as raw sewage, nor is the system intended to convert wastewater or surface water to microbiologically safe drinking water.

Section 5. Certifications

QUANTUM DISINFECTION™

| Quantum Disinfection™ Media is | Certificate # |
|---|----------------------|
| - a NSF Certified <u>Component</u> to NSF/ANSI 42 for <u>material requirements only</u> | C0292640-01 |
| - tested by IAPMO to NSF/ANSI 61 | 23033 |
| - certified Ministry Of Health China - MOH | 2015KF2513 |



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