



STERISIL®

719 622 7200 Sterisil.com



# STERISIL® SYSTEM G4 HANDBOOK



# Sterisil® System

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## INTRODUCTION

The Sterisil® System G4 merges the best water purification methods available with our silver-based ion exchange technology. The final product is the only dental water purification system EPA registered to produce treated dental water and autoclave water.

The 6 unique stages of purification and disinfection include reverse osmosis, deionization, Class B ultraviolet (UV) disinfection, and our proprietary residual silver disinfectant. Treated dental water is non-toxic, non-corrosive, contains no oxidizers, and is safe for patients, staff, and equipment.

Treated dental water is EPA registered and carries with it a quantified disinfection claim of  $\leq 10$ CFU/ml HPC purity. That's 50 times lower than the ADA and CDC guidelines without tablets or daily additives.

The G4 comes equipped with a suite of sensors, monitors, and indicators for convenient quality assurance and notification of system maintenance. When the time comes, both audible and visual alarms notify users of the issue to be addressed.

In this handbook, you will learn about all aspects of the system, it's functions needed for daily use, and routine maintenance. If you need information not found in this handbook, visit [sterisil.com/sterisil-system](http://sterisil.com/sterisil-system) for the complete installation manual, or contact Sterisil customer support at (719) 622-7200. Welcome to the next level of water compliance, peace of mind, and confidence.

## FEATURES AND HIGHLIGHTS

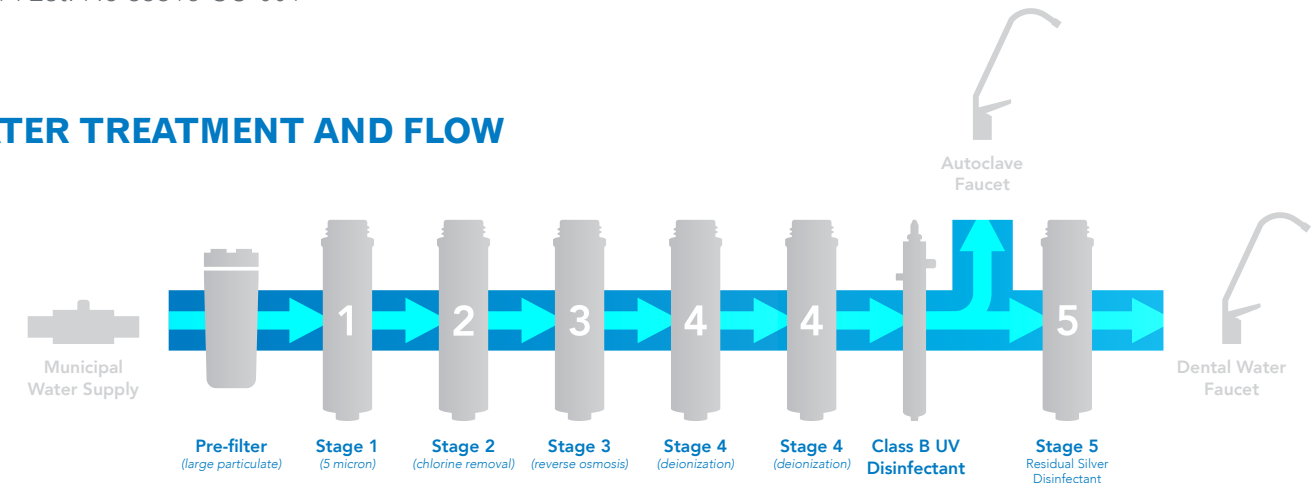
### MAIN FEATURES

- EPA registered **dental water** for any size office. 1 to 100+ chairs
- Produces distilled quality water to 0ppm TDS for **autoclaves**
- Final rinse water for **instrument washers**

### PRODUCT HIGHLIGHTS

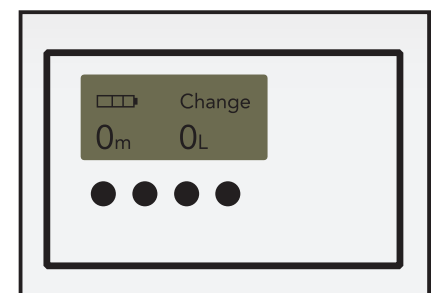
- No more tablets & additives for daily dental water use
- Fully automated monitoring with visual and audible alarms
- Class B Ultraviolet (UV) Irradiation water disinfection
- Cartridge replacement only takes 10 minutes per year!
- Does not adversely affect composite bond strength
- Contains no iodine or chlorine and prevents hard water deposits
- Non-toxic, non-corrosive and safe for patients and dental equipment
- CRA recommended
- FDA cleared, EST.#3005844469
- ISO 13485 certified and CE certified
- EPA Reg. No 83315-2
- EPA Est. No 83315-CO-001

## WATER TREATMENT AND FLOW



## FILTER MONITOR

The Filter Monitor, when properly programmed, tracks the remaining lifespan for stages 1-3, Stage 5, and the UV light. The annual kit (P/N: SS-AK) is changed 365 days from the date of installation and includes Stages 1,2,3, and the UV bulb. The Stage 5 Cartridge's lifespan is based on the count of liters of dental water processed.



### FILTER MONITOR ALARMS

Month counts will always descend a 12 month starting point. When the count reaches 0, an audible alarm will sound, and the word "change" will appear in the upper portion of the Filter Monitor indicating it's time to change cartridges 1-3 and the UV light.

When properly programmed, liter counts start at zero and count up to the programmed alarm point corresponding with the capacity rating on the Stage 5 Cartridge. When the count reaches 90% of the total programmed capacity for Stage 5, the "Dental Water Quality" LED Indicator at the unit and the LED indicator on the dental water faucet disc will illuminate yellow. When the liter count has reached the programmed capacity of Stage 5, the indicator lights will illuminate red signaling the Stage 5's expiration.

## PROGRAMMING

**!** Only Stage 1 on the filter monitor needs a month count. All other stages should be programmed to dashes for the month count. Improper programming will lead to false alarms.

**!** Only Stage 5 needs a liter count. All other stages should be programmed to dashes for the liter count. Improper programming will lead to false alarms.

### Setting Month Counts

1. Use the "PWR/STG" button to turn on the monitor, and cycle through the stages until you reach the stage to be programmed.
2. Press the "SET" button. The unit will beep once, and the word "SET" will appear in the upper section on the Filter Monitor indicating it is in set mode. Verify the solid bar is above the left (month) side of the display. If it is not, press the "PWR/STG" button to move it over. It must be in set mode to do this.
3. You can now program the monitor to 12 months with the arrows.
4. When you reach the correct number, hold down the "SET" button to save it. The unit will beep twice to confirm you have saved the setting.
5. The counter will show the number selected.

### Setting Liter Counts

1. Use the "PWR/STG" button to cycle through the stages until you reach Stage 5.
2. Press the "SET" button. The unit will beep once, and the word "SET" will appear in upper section on the filter monitor indicating it is in set mode. Verify the solid bar is above the right (liter) side of the display. If it is not, press the "PWR/STG" button to move it over. It must be in set mode to do this.
3. You can now program the liter count to correspond with the Stage 5 capacity rating with the arrows.
4. When you reach the correct number, hold down the "SET" button to save it. The unit will beep twice to confirm you have saved the setting.
5. The count will return to 0. Liters used will count up.

### Setting Dashes

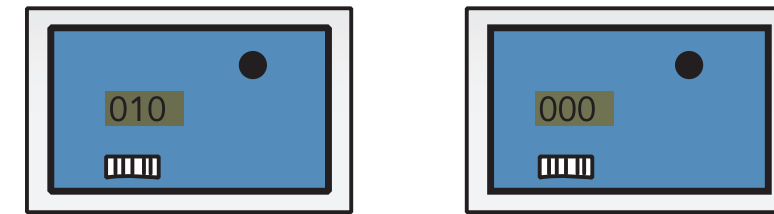
1. Use the "PWR/STG" button to cycle through the stages until you reach the desired stage.
2. Press the "SET" button. The unit will beep once, and the word "SET" will appear in upper section on the Filter Monitor indicating it is in set mode. Verify the solid bar is above the side of the display you wish to change. If it is not, press the "PWR/STG" button to move it over. It must be in set mode to do this.
3. Hold the DOWN arrow and the "SET" button at the same time. The dashes will appear underneath the solid bar, and the unit will beep once.
4. Hold the "SET" button to save it. The unit will beep twice to confirm.

## CHANGING THE BATTERIES

**!** **IMPORTANT** When replacing the batteries in the Filter Monitor, all programmed settings will be reset. Make sure to record all readings before changing batteries. Refer to the Programming section in this guide.

1. Starting with a Philips head screwdriver, remove the two screws securing the faceplate. Remove the faceplate and the Filter Monitor from the housing.
2. WITHOUT UNPLUGGING THE WIRES, locate the battery panel on the back of the Monitor.
3. Slide off the panel and replace batteries (Size AA).
4. Replace the back panel, place the Monitor in its location, and screw on the white bracket.
5. Reprogram the Monitor.

## WATER QUALITY MONITORS



### CHANGING THE BATTERIES

1. Start with a Philips head screwdriver, and remove the two screws securing the faceplate. Remove the faceplate and the Water Quality Monitor from the housing.
2. WITHOUT UNPLUGGING THE WIRE, remove the three screws on the back of the Monitor.
3. Remove back panel.
4. Remove batteries (Size 357-A watch batteries), and install new batteries ensuring polarity is correct.
5. Replace the back panel, screw in the three screws, place the Monitor in its location, and screw on the white bracket.

### IDEAL WATER QUALITY READINGS

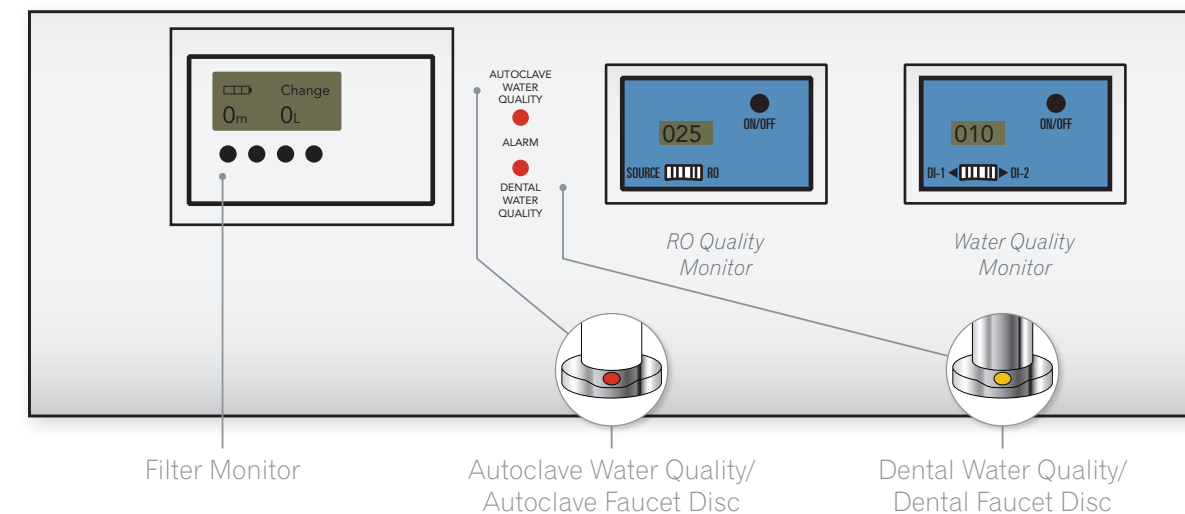
#### Source/RO Water Quality Monitor

Sterisil® water quality standards dictate that a viable RO filter should reduce source water TDS by greater than 75%. If your rate of reduction drops below 75%, it's time to change your annual kit.

#### DI Water Quality Readings

Acceptable DI-1 readings should be <010ppm TDS. When readings exceed 10ppm TDS, the alarm will sound and the "DI Water Quality" LEDs will illuminate red on the system and faucet disc. DI-2 will normally read <005ppm.

## SYSTEM NOTIFICATIONS



#### FILTER MONITOR

##### MONTH COUNTS (Audible Alarm)

When the count reaches 0m, an intermittent audible alarm will sound, and the word "change" will appear at the top of the Filter Monitor indicating its time to change cartridges 1-3 and the UV light.

##### LITER COUNTS (Audible Alarm, Stage 5 only)

When a liter count reaches its set point, the word "change" will appear in the top section of the Filter Monitor.

##### CHANGE BATTERY

The battery icon will appear in the upper left portion of the Filter Monitor, signaling that a battery (AA) change is needed for the Filter Monitor. Be sure to take note of existing month and liter counts prior to changing batteries.

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#### AUTOCLAVE WATER QUALITY/AUTOCLAVE FAUCET DISC

##### RED INDICATOR (Visual and Audible Alarm)

The effluent water from the lead (leftmost) Stage 4 Cartridge has reached 10ppm and is due to be changed. DI-1 on the Water Quality Monitor will read at or above 10ppm.

#### DENTAL WATER QUALITY/DENTAL FAUCET DISC

##### YELLOW INDICATOR (No Audible Alarm)

The Stage 5 Cartridge has processed 90% of its liter capacity.

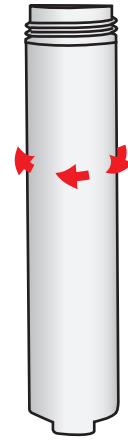
##### RED INDICATOR (Visual and Audible Alarm)

The Stage 5 Cartridge has processed 100% of its liter capacity and is due to be changed.

## REPLACING CARTRIDGES

The system is equipped with an automatic valve that shuts off water when a cartridge is removed. Therefore, source water does not need to be turned off to change a cartridge.

1. Close the tanks by turning the tank ball valve to the closed position or perpendicular to the tubing going in.
2. Mark an "X" on the cartridge(s) to be replaced to avoid any confusion when the new cartridge is introduced. Remove it by rotating counter clockwise. Have a towel ready to catch any water that may drip out.
3. Write the installation date on the new cartridge, and remove the yellow cap from the top.
4. Rotate the new cartridge clockwise into the valve head to secure it. Always replace cartridges from right to left to prevent unwanted spills.
5. Run the autoclave water to purge the air from the system.
6. Open the tanks by turning the ball valve in line with the tubing going in.

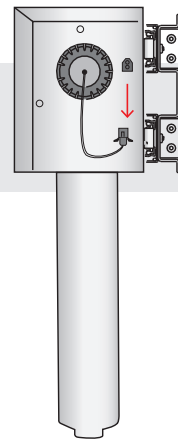


## REPLACING THE UV LIGHT

### IMPORTANT

Do not touch the bulb. Grease from hands can cause damage to the lamp. Do not look at the light when on. The ultraviolet light can cause eye damage.

1. Unplug the bulb from the unit.
2. Use a flat head screw driver to pry out the white/clear piece and remove light.
3. Insert the new bulb until it clicks into place.



## WATERLINE SHOCK PROTOCOL USING CITRISIL SHOCK™ TABLETS

For older dental units, units that consistently show excessive CFU levels, or units which have sustained a breach in protocol, it may be necessary to perform a shocking protocol with Citrisil Shock™ to clear previous accumulations in the existing waterlines.

Shock should be performed in the following manner:

1. Empty existing water from the bottle.
2. Add only 6 fl. oz. of warm distilled/deionized water.
3. Press orange Citrisil™ Shock tablet from its packet into the bottle.
4. Wait 60 seconds for tablet to fully dissolve.
5. Swirl orange shock solution to clean and disinfect the inside of bottle.
6. Connect bottle to dental unit and run all lines until orange color appears.
7. Leave in lines overnight.
8. The following day empty orange shock solution from bottle and refill with treated maintenance water from the chrome faucet.
9. Purge waterlines until the orange shock treatment dissipates.

## FAQS

### WILL THE STERISIL® SYSTEM G4 TREAT MY ENTIRE BUILDING/OFFICE?

The G4 is not designed as a full building/office water treatment system. It provides treated water for independent bottle reservoirs, directly plumbed dedicated lines for each operatory unit, and autoclaves. In addition, it can be plumbed to provide treated water to a drinking water dispenser.

### WHAT IS THE LIFESPAN OF THE CARTRIDGES?

The lifespan of G4 cartridges is determined by the incoming source water quality and the volume of water used. Most locations can expect Stages 1, 2, and 3 to last approximately one year. The Stage 4 cartridges may last between 4 to 12 months depending on water quality and usage.

### WHY DOES THE WATER FROM MY G4 HAVE A STRANGE ODOR?

This issue will occur once the Stage 4 cartridges have been depleted. Ensure the cartridges are promptly replaced when the effluent water quality dictates.

### DO I NEED TO CLOSE THE MAIN WATER VALVE FEEDING THE G4 WHEN CHANGING THE FILTERS?

The main water valve does not need to be closed when changing filters. Each filter connects to a valve head with an automatic shut-off valve that cuts off water flow once the cartridge has been removed.

### WHY IS MY G4 BEEPING, AND WHY ARE THE LIGHTS FLASHING?

The G4 features built-in alarms to indicate when specific cartridges are ready to be replaced. The "Autoclave Water Quality" indicator will flash red, and the G4 will alarm when the lead Stage 4 is ready to be replaced. The "Dental Water Quality" indicator will flash yellow once 90% of the Stage 5's capacity has been used. The indicator will flash red when you have used 100% of the Stage 5's capacity.

### DOES THE INCOMING WATER PRESSURE MATTER?

The G4 requires a minimum incoming source pressure of 65 PSI to function optimally. Inadequate source pressure can result in low water pressure from hand pieces and faucets directly plumbed to it. A booster pump is recommended when incoming water pressure is below 65 PSI.

### WHY IS THE WATER PRESSURE FROM MY FAUCET/HAND PIECE SO LOW?

Insufficient handpiece/faucet pressure can be caused by several issues. Most commonly it is the following:

- Insufficient tank size
- Expired tank
- Insufficient incoming source pressure
- Improper system configuration

### WHY IS THE DRAIN LINE FROM THE PERMEATE PUMP CONSTANTLY DRAINING?

The stream of brine water will reduce from a constant stream to a "pulse" of water as the tanks fill. You should also check the orientation of the permeate pump as this can affect the brine flow. The long arrow should always point toward the ceiling. If your tanks are full and this issue persists, contact Sterisil customer support.

### WILL THE STERISIL® SYSTEM G4 STOP WORKING IF IT IS UNPLUGGED?

The G4 will continually produce water even if the power is disconnected. The standard AC plug supplies power for the alarms. The UV light is equipped with its own power cord and transformer. In the event of an alarm, unplugging the system or UV light is not recommended.

### WHAT ARE THE TANKS FOR?

The Reverse Osmosis (RO) Cartridge is rated to produce 50 gallons of purified water per day. To have water ready for on demand use, water must be stored in tanks. The larger tank stores reverse osmosis water, and the smaller tank stores treated dental water. The system will continually fill these tanks as water is used from the system.

### **DO I NEED TO PURCHASE A BOOSTER PUMP FOR MY G4?**

A booster pump is recommended when the incoming water pressure is less than 65 PSI, or there is an elevation change between the G4 and the dental operatories/dispensing faucets. For direct feed applications, if the chair furthest from the system is more than 50 feet, a booster pump may be needed to maintain adequate water pressure at the handpiece.

### **WHAT IS THE PRE-FILTER FOR? DO I NEED TO PURCHASE A PRE-FILTER KIT?**

The Pre-Filter reduces the incoming source water's particulates to improve the water quality entering the G4. A Pre-Filter is not required for it to function, but it is highly recommended with water sources of 250 total dissolved solids parts per million or higher.

### **IS WATER FROM THE AUTOCLAVE OR DENTAL FAUCET SAFE TO DRINK?**

Though the water from the Autoclave and Dental lines is not directly harmful, Sterisil does not recommend consumption of water from these faucets.

### **SHOULD I SHOCK MY OPERATORIES PRIOR TO INSTALLING A G4?**

A shock treatment for units that will be directly plumbed to the system is beneficial prior to installation but not required. Independent bottle reservoir units can be shocked as needed with Citrisil™ tablet shock.

#### **NEED HELP OR HAVE QUESTIONS?**

Our technical support staff is available and ready to help. Please call, email, or visit us online for additional support.



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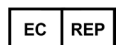
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