Installation and Operation Manual

Dive Smart Sanitizer™ G1

By Formarum Inc.

Chlorine and Copper Generator for Residential Swimming Pools

CONTROLS BACTERIA AND ALGAE

In Swimming Pool Waters

DOMESTIC

For pools with a minimum flow rate of <u>30</u> gallons per minute (1HP and smaller pumps):

A maximum of **<u>45,360 L (12,000 Gallons)</u>** of water can be treated with one Dive Smart Sanitizer™ G1 unit. Maximum output of hypochlorous acid equivalent to 0.143 kg (0.32 lb) of free available chlorine per day.

For pools with a minimum flow rate of <u>35</u> gallons per minute (most 1HP pumps):

A maximum of **<u>75,600 L (20,000 Gallons)</u>** of water can be treated with one Dive Smart Sanitizer™ G1 unit. Maximum output of hypochlorous acid equivalent to 0.233 kg (0.51 lb) of free available chlorine per day.

For pools with flow rates above <u>40</u> gallons per minute (1.5HP pumps and up):

A maximum of **<u>113,400 L (30,000 Gallons)</u>** of water can be treated with one Dive Smart Sanitizer™ G1 unit. Maximum output of hypochlorous acid equivalent to 0.345 kg (0.76 lb) of free available chlorine per day.

For Outdoor or Indoor Use.

4000 parts per million (mg/Liters) of salt should be used.

For swimming pools, a range of 1-3 ppm of free available chlorine must be maintained.

READ THE LABEL AND OPERATING MANUAL BEFORE USING

KEEP OUT OF REACH OF CHILDREN

REGISTRATION NO. 32799 PEST CONTROL PRODUCT ACT

WARNING: Staining of pool surfaces may occur due to deposit of copper salts. Excessive levels of copper will increase the probability of this occurrence.

Formarum Inc., 55 West Beaver Creek Rd, Unit 44
Richmond Hill, Ontario, Canada L4B1K5
1-416-725-9466

Dive Smart Sanitizer™ G1
Self-Powered . Self-Contained

Installation and Operation Manual

Table of Contents

Table of Figures

Important Safety Instructions

WARNING
To reduce the risk of injury, do not permit children to operate this device.
WARNING
Heavy pool usage, and higher temperatures may require higher chlorine output to maintain proper free available chlorine residuals.
WARNING
Heavy bather loads may trigger the need for additional chlorine to be added to maintain an appropriate chlorine residual in the water.
WARNING
Follow all aspects of the local and Canadian Electrical Code(s) when installing this device.
WARNING
When replacing the electrode, only use replacement electrodes having a label that clearly states that it is a replacement electrode for Dive Smart Sanitizer^{TM} G1, REGISTRATION NUMBER 32799, PEST CONTROL PRODUCTS ACT.
WARNING
Dive Smart Sanitizer^{TM} G1 must be installed at least 1.5 m (5ft.) from the wall of your swimming pool.
WARNING
Do not operate your pump if Dive Smart Sanitizer^{TM} G1 is damaged or improperly assembled. Always turn pump off prior to installing or servicing the unit. Your Pump and Filtration systems are operated under pressure. Make sure the pressure is released prior to installing or servicing the unit.

<u>Save This Manual</u>

Product Details

Product Description

Dive Smart Sanitizer^{TM} G1 is a self-powered and self-contained water sanitizer device for swimming pools. Dive Smart Sanitizer^{TM} G1 combines two effective disinfection and algae control technologies, saltwater chlorine generation and copper ionization, to produce both chlorine and copper ions to effectively sanitize your pool and prevent algae growths. In addition, Dive Smart Sanitizer^{TM} G1 comes with built-in Wi-Fi connectivity and a powerful web and mobile application that lets you remotely monitor and control the operation of your device.

Product Specifications

Dimensions (Length × Diameter)	41.5 cm × 12.1 cm (1 in. × 4.75 in.)
Weight	2.9 kg (6.4 lb)
Maximum Pressure	25 psi
Maximum Water Temperature	50ºC
Flow Rate	94.5 L/min – 170.1 L/min (25 gpm - 45 gpm)
Salt Level	4000 parts per million (4 grams/L)
Chlorine Output	143 grams/day (0.32 lb) @ 30gpm flow rate 233 grams/day (0.51 lb) @ 35gpm flow rate 345 grams/day (0.76 lb) @ 40gpm flow rate
Copper Output	7.26 grams/day (0.016lb)
Maximum Pool Size	45,360 L (15,000 Gallons) @ 30gpm flow rate 75,600 L (20,000 Gallons) @ 35gpm flow rate 131,400 L (30,000 Gallons) @ 40gpm flow rate
Output Voltage	30 VDC (MAX)
Output Current	7 ADC (Max)

Box Contents

One
Dive Smart Sanitizer™ G1

One
Installation and Operation Manual

Two
2″ to 1.5″ Reducer

Two
2″ PVC Unions

One
Plumber's Tape

One
4oz PVC Cement

One
Pipe Cutting Template

For 2″ Systems
Cut Here

For 2″ Systems
Cut Here

Cutting Template

For 1.5″ Systems
Cut Here

For 1.5″ Systems
Cut Here

Figure 1 - Box Contents

Installation

Installation Location

Dive Smart Sanitizer^{TM} G1 must be installed after all other equipment in the pool plumbing, in the path of water going back to the pool.

> # WARNING
>
> Dive Smart Sanitizer^{TM} G1 must be installed at least 1.5 m (5ft.) from the wall of your swimming pool.

Dive Smart Sanitizer^{TM} G1 can be installed in any horizontal or vertical orientation.
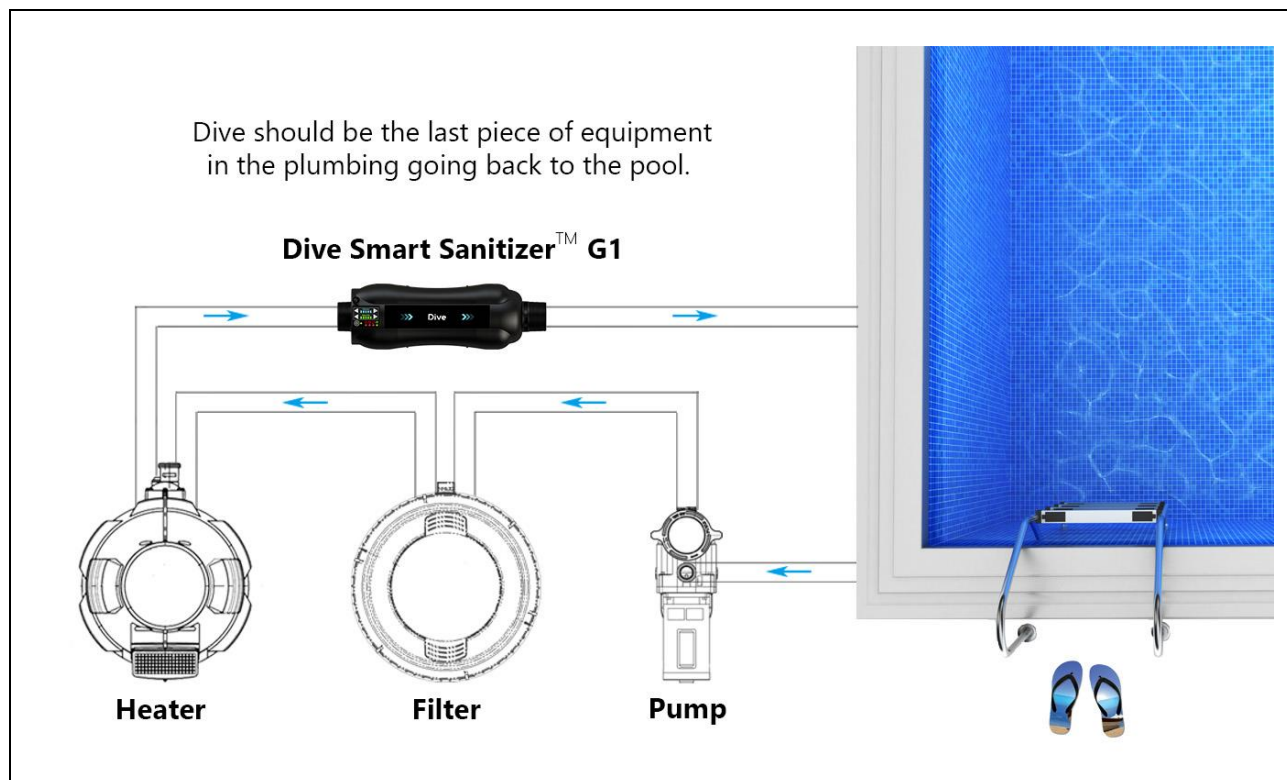

Figure 2 - Installation Example

Tools and Materials Needed

Please make sure you have the following before you start the installation.

1. Dive Smart Sanitizer™ G1 (Provided)
2. Installation and Operation Manual (Provided)
3. Cutting Template (Provided)
4. Two 2" PVC Threaded-Socket Unions (Provided)
5. Two 2"X1.5" PVC Reducers for 1.5" systems (Provided)
6. PVC Cement (Provided)
7. Plumber's Tape (Provided)
8. Hacksaw, PVC saw, or a pipe cutter (Not Provided)
9. A Wi-Fi Router and an internet connection, and a smartphone (Only needed for wireless setup, control and monitoring features) (Not Provided)

Installation Procedure

Step 1 – Use the Cutting Template provided to cut out a 51.2 cm (20 1/8 inch) section of your 2" PVC return pipe (If you have 1.5" pool plumbing, you have to cut out a 53.2 cm (21 inch) section of your 1.5" PVC return pipe). Make sure Dive Smart Sanitizer™ G1 is the last equipment in the path of water going back to the pool.
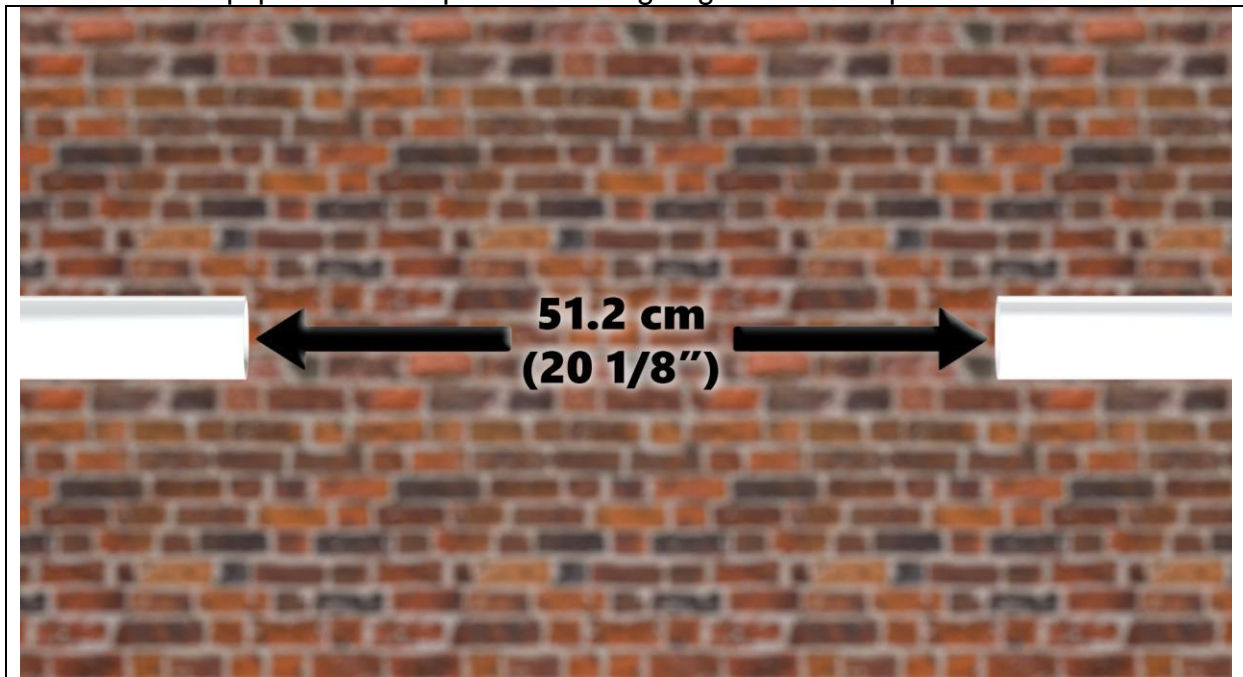

Figure 3 - Installation Step 1

Step 2 – Apply a few turns of Plumber's Tape to the threaded ports on the Dive Smart Sanitizer^{TM} G1. Fasten the threaded sections of the 2" PVC unions to Dive Smart Sanitizer^{TM} G1 by hand-tightening them. Do not use a pipe wrench.
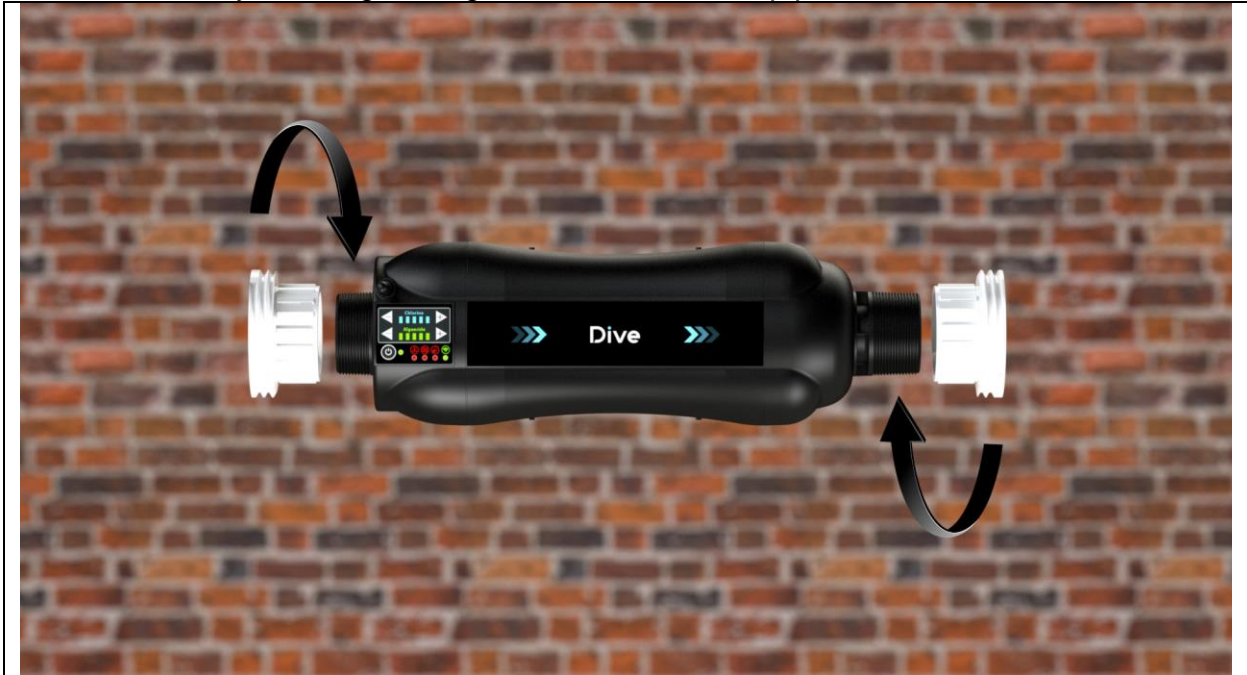

Figure 4 - Installation Step 2

Step 3 – Apply PVC cement to the socket port of the 2" PVC unions and the pipe ends and attach them together by inserting the pipe end into the union sections. **Make Sure the tightening ring is first positioned over the pipe before the socket port is attached to the pipe end. The ring cannot be inserted after the parts are glued.**
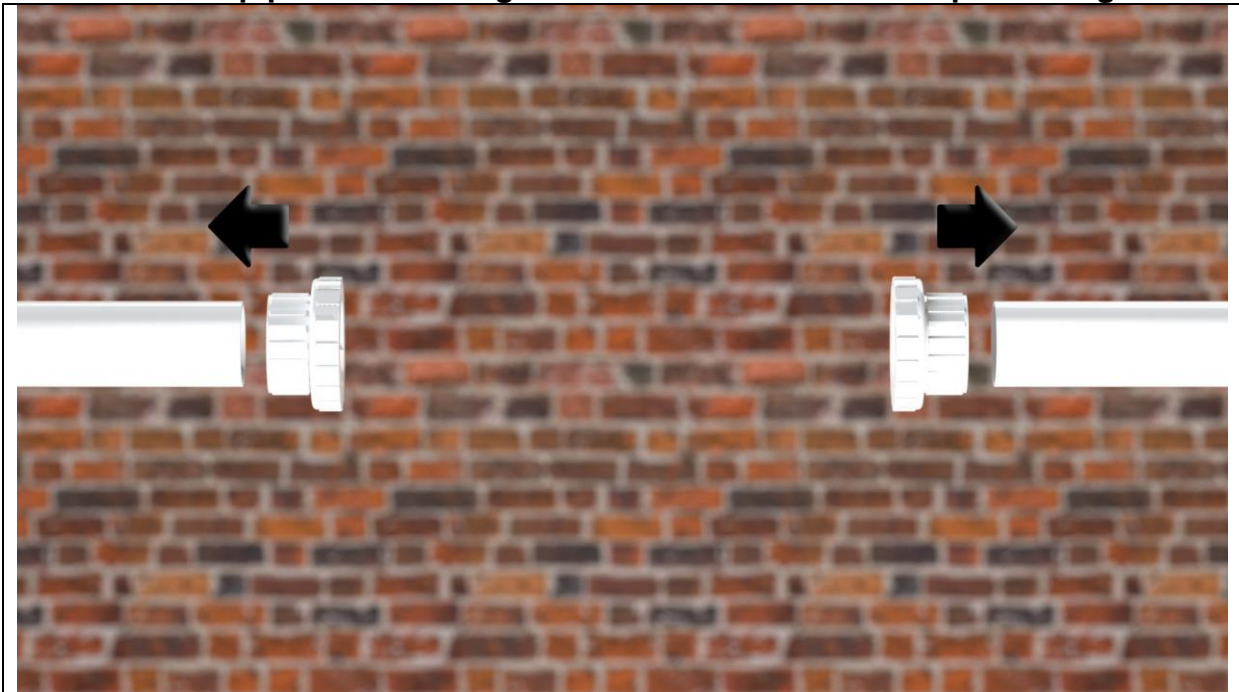

Figure 5 - Installation Step 3a

If you have 1.5" system, you will need to use the provided 2" to 1.5" PVC reducers. First apply PVC cement to the 1.5" socket port of the PVC reducer and the 1.5" pipe ends and attach them together by inserting the pipe ends into the reducer socket ports. Then proceed to apply PVC cement to opposite port of the PVC reducer and the socket port of the 2" PVC unions attach them together by inserting the PVC reducer into the union socket port.
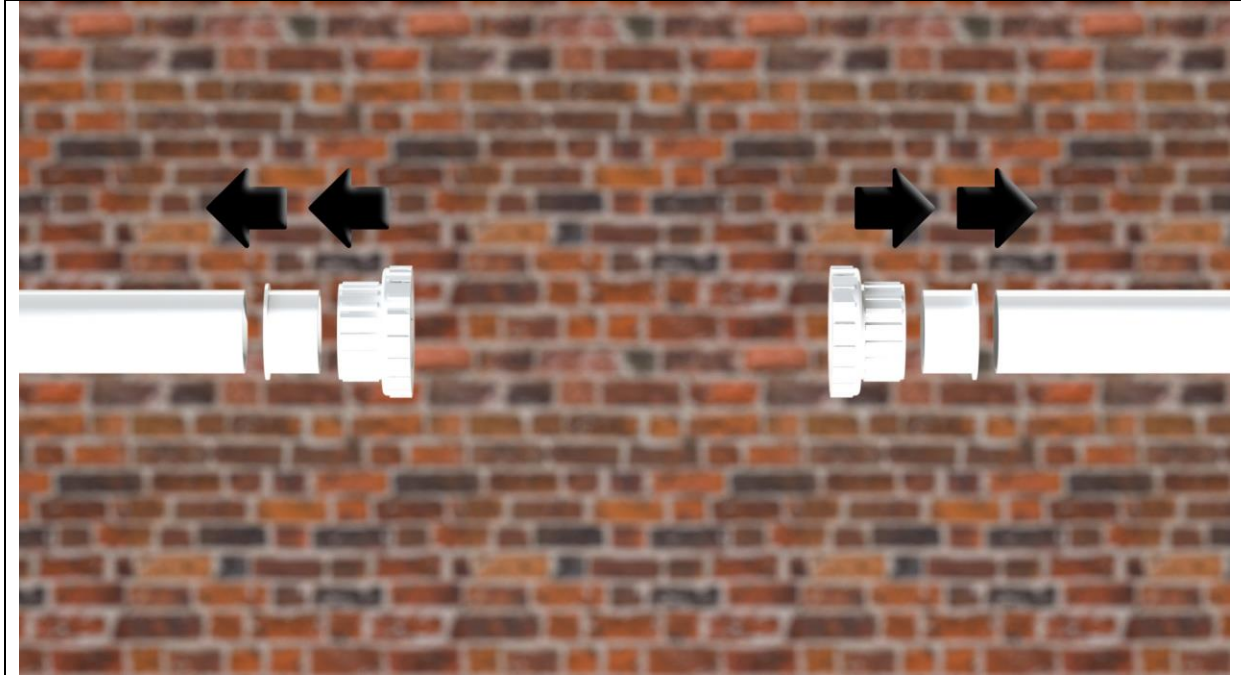

Figure 6 - Installation Step 3b

Step 4 – Position the Dive Smart Sanitizer^{TM} G1 in the gap and hand-tighten the unions. Ensure the arrows on the device align with the direction of the water flow.
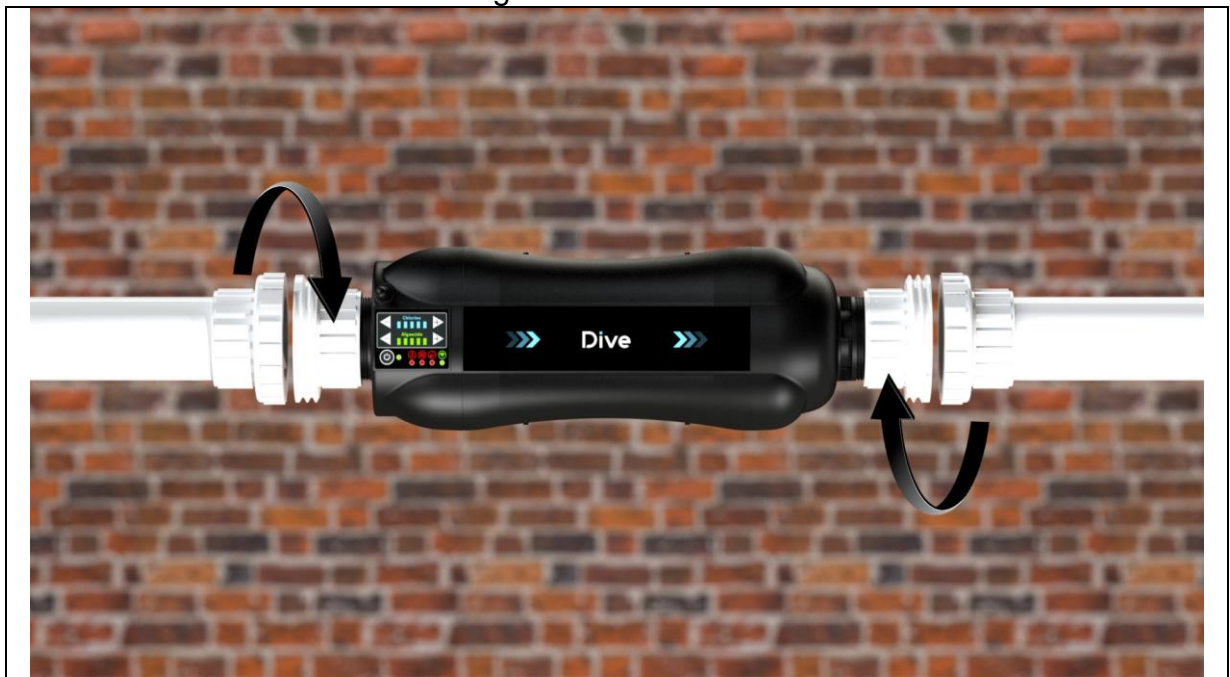
Figure 7 - Installation Step 4

Step 5 – The Installation is complete. Turn your pump on to make sure there are no leaks and that the power LED on the Device is turned on.
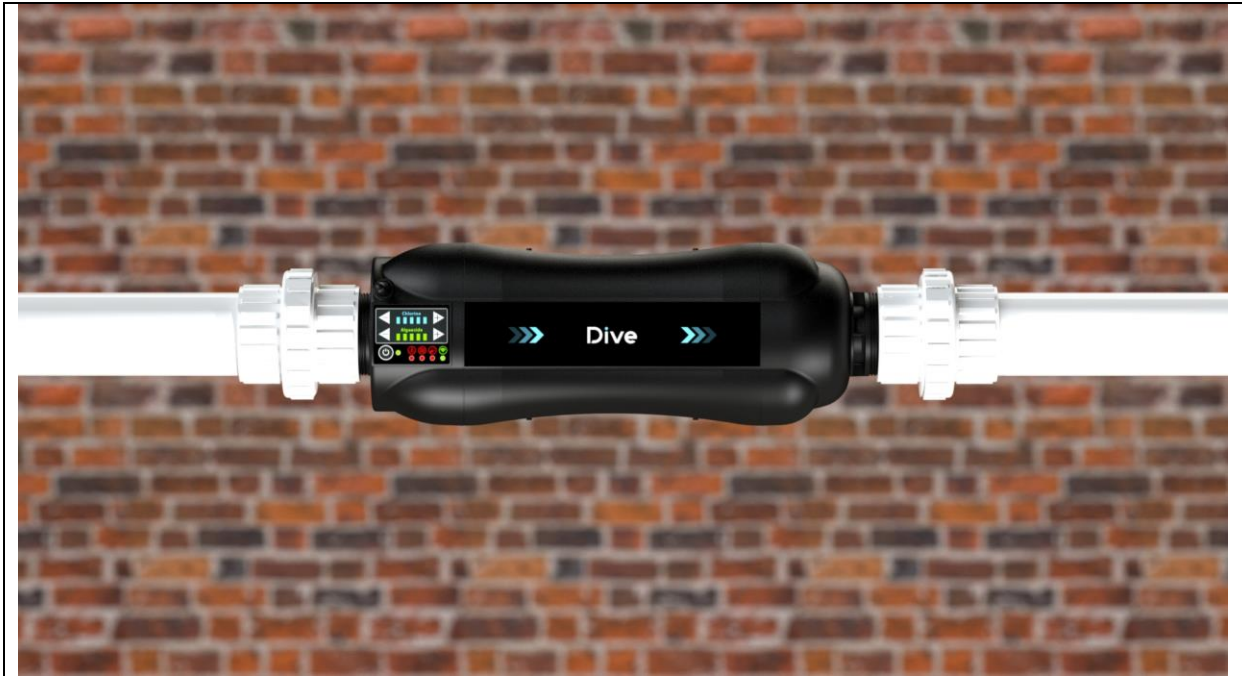

Figure 8 - Installation Step 5

Web/Mobile Application Setup

1. Install the mobile Dive Application on your smart phone or visit the Web Application at: ***app.divepoolsystems.com***

2. Register your device using the serial number located on your device or the box.
3. Follow the steps in the application to setup the remote connection and wireless features.

Water Chemistry

The table below summarizes the recommended water parameters. It is important to maintain these levels in order to prevent corrosion or scaling and to ensure maximum enjoyment of the pool. Test your water daily and adjust these parameters as required.

Free available chlorine	1.0 – 3.0 ppm
pH	7.2 – 7.8
Total alkalinity	100 – 120 ppm
Calcium hardness	200 – 300
Salt	4000 ppm
Cyanuric Acid (stabilizer)	30 – 100 ppm
Copper	0.2 – 0.4 ppm

Do not add pool chemicals directly to the skimmer. This may damage the cell.

• Maintaining high salt and chlorine levels above recommended range can contribute to corrosion of pool equipment.

• Check the expiry date of the test kit as test results may be inaccurate if used after the expiration date.

• NOTE: For outdoor pools, chlorine residuals can be protected from destruction by sunlight by the addition of stabilizer (cyanuric acid).

• Regulation may exist regarding the use of cyanuric acid. Please consult with your local authority.

• For swimming pools, a minimum of 1ppm of free available chlorine must be maintained.

Salt Level

You must maintain 4000 parts per million of salt in your pool water.

Enter your swimming pool dimensions and shape in the Dive web or mobile application. The software will automatically calculate the amount of salt needed in (kg/lb) for your requirements.

Type of Salt to Use

It is important to use only sodium chloride (NaCl) salt that is greater than 99% pure. Avoid using calcium chloride as a source of salt. Avoid using rock salt. The impurities content of rock salts will reduce the life of the cells. Water condition salt pellets may be

used, but generally take longer to dissolve. Do not use salts with anti-caking agents. They may cause discoloration of surfaces.

How to Add or Remove Salt

For new plaster pools, wait 10-14 days before adding salt to allow the plaster to cure. Turn the circulating pump on and add salt directly into the pool. Brush the salt around to speed up the dissolving process. Do not allow salt to pile up on the bottom of the pool. Run the filter pump for 24 hours with the suction coming from the main drain (use pool vacuum if there is no main drain) to allow the salt to evenly disperse throughout the pool. The only way to lower the salt concentration is to partially drain the pool and refill with fresh water.
Always check stabilizer (cyanuric acid) when checking salt. These levels will most likely decline together.

Copper concentration verification

Before operating your Dive Smart Sanitizer™ G1, determine the copper concentration already in the swimming pool water by using a copper test kit. Check the expiry date of the test kit as the results may be inaccurate if the kit is used after the expiry date. Excess levels of copper may cause staining of pool surfaces.

Operation

Start-up

1. After installing the Dive Smart Sanitizer™ G1, Install the mobile Dive Application on your smart phone or visit the Web Application at: ***app.divepoolsystems.com***

2. Turn on the pool pump.
3. Register your device using the serial number located on your device or the box.
4. Follow the steps in the application to setup the remote connection and wireless features.
5. Use the Dive Application to turn your device on/off, adjust your chlorine and copper production, set up operation schedules and more.
6. Alternatively, you can control the device using the user interface on the Dive Smart Sanitizer™ G1.
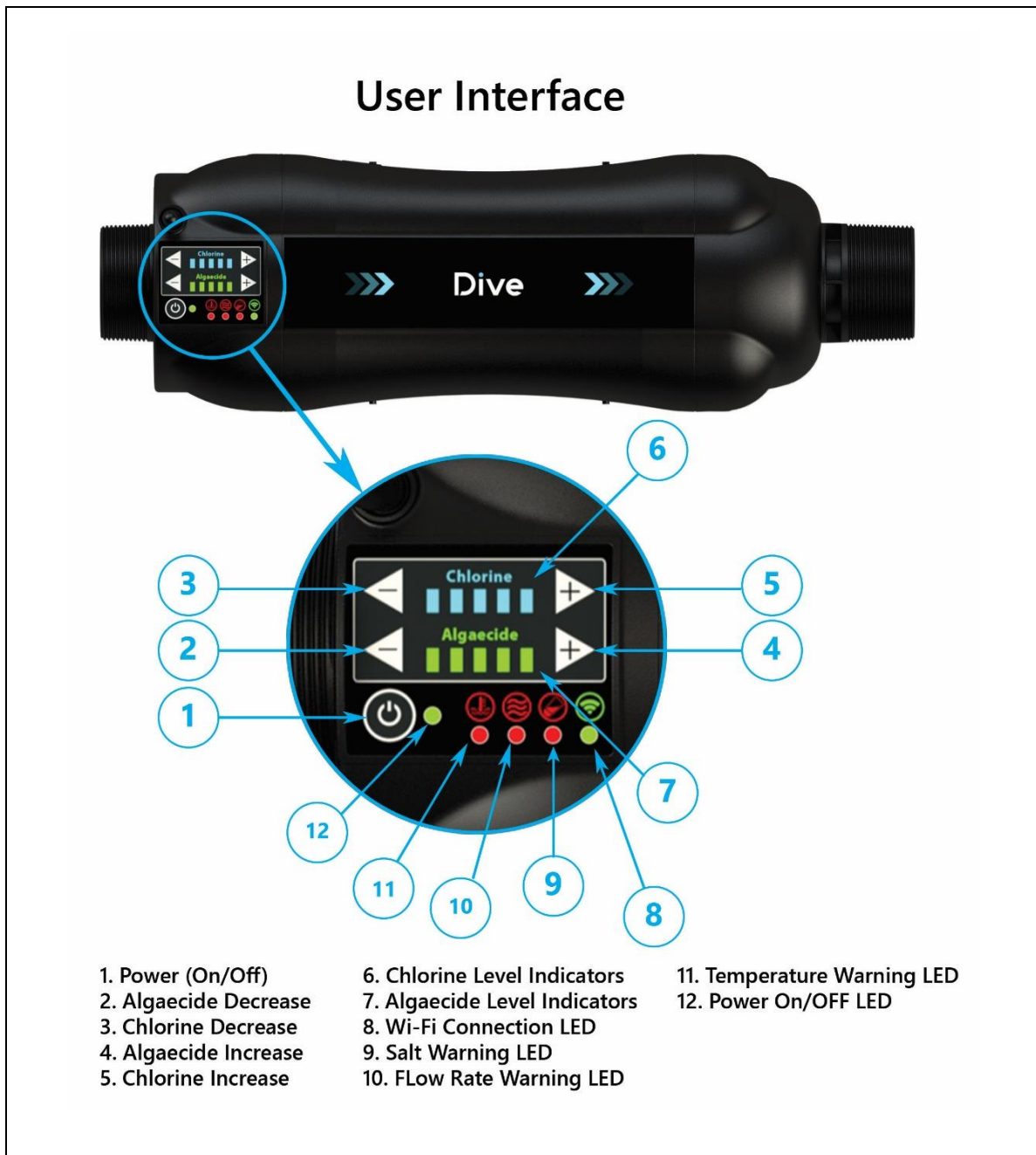
Figure 9 - Manual Control

Winterizing

The Dive cell will be damaged by freezing water just as your pool plumbing would. In areas of the country which experience severe or extended periods of freezing temperatures, be sure to drain all water from the pump, filter, and supply and return lines before any freezing conditions occur.

In regions where climate conditions (below zero degree Celsius) will not allow pool use during winter season (October to April), remove Dive Smart Sanitizer^{TM} G1 from the swimming pool pipeline system and place it in indoor environments.

Maintenance
Servicing and cleaning Dive cell

1. The life expectancy of the electrolytic cell is 10,000 hours under normal use conditions.
2. When prompted by the Dive application for cell maintenance (or every 6 months), turn off pump.
3. Unscrew the unions attached to the end caps of the device and remove Dive Smart Sanitizer^{TM} G1 from the pipeline.
4. Drain the water pipe between the pump and the Dive Smart Sanitizer^{TM} G1 System.
5. Remove the left end cap of dive by removing the four fasteners attaching the end cap to the device.
6. Pull the handles located on the Dive cell.
7. Once removed, look inside the cell and inspect for scale formation (light colored crusty or flaky deposits) on the cell and for any debris if no deposits are visible, reinstall.
    a. If deposits are seen, use a high pressure garden hose and try to flush the scale off.
    b. Mild Acid Washing: Use only in severe cases where flushing and scraping will not remove the majority of Deposits. To acid wash, remove cell from piping. In a clean plastic container, mix a 4:1 solution of water to muriatic acid (one gallon of water to one quart of muriatic acid). ALWAYS ADD ACID TO WATER, NEVER ADD WATER TO ACID. Be sure to wear rubber gloves and appropriate eye protection. The cell should soak for a few minutes and then rinse with a high pressure garden hose. If any deposits are still visible, repeat soaking and rinsing. Replace cell and inspect again periodically.
8. After cleaning, insert the Dive cell back in the device.
9. Close the end cap by closing the four fasteners. Ensure the sealing gasket is inserted in the end cap before closing the device.
10. Reinstall the device on the pipe using the two unions.
11. Turn the pump on and look for possible leaks.

WARNING

Do not operate your pump if Dive Smart Sanitizer^{TM} G1 is damaged or improperly assembled. Always turn pump off prior to installing or servicing the unit. Your Pump and Filtration systems are operated under pressure. Make sure the pressure is released prior to installing or servicing the unit.