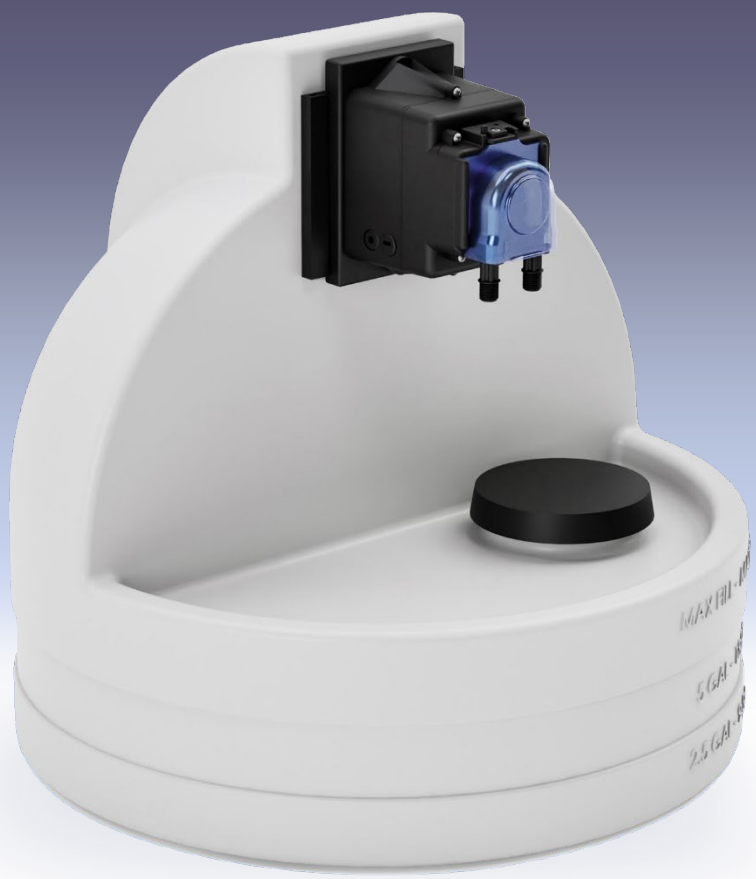
CORE CONTROL™

CircuPool®



Installation and Operation Guide

BALANCE CONTROL Acid Injection Kit

For use with BALANCE CONTROL Upgrade Kit (Available Separately)

Add Acid Injection to Automate pH Control Based on Sensor Data

Expandable Platform Providing Automation of Your Pool's Core Needs

#35905120 | 4300-8A | R202506

TABLE OF CONTENTS

BEFORE INSTALLING, OPERATING, OR SERVICING THIS PRODUCT, READ THE ENTIRE MANUAL FOR ALL SAFETY INFORMATION AND COMPLETE INSTRUCTIONS. THIS PRODUCT IS DESIGNED FOR INSTALLATION AND SERVICE BY PROPERLY TRAINED PERSONNEL.

IMPORTANT SAFETY INSTRUCTIONS 3

INTRODUCTION & GETTING STARTED 5

SYSTEM OVERVIEW 6

EQUIPMENT INSTALLATION 8

- Installation Overview 8
- Mount Dosing Pump / Determine Acid Storage Location 9
- Install Suction Line to Dosing Pump Head 10
- Install Discharge Line to Dosing Pump Head 12
- Install Discharge Line to Cell Housing Injection Port 13
- Wiring Dosing Pump to Control Module 15
- Priming – Drain Air From Dosing Pump 16
- Adding Acid to Acid Storage Tank 17
- Use Safer Acid Alternatives 17

START UP 18

DEFINING THE pH SET POINT 18

- “RESET” Required 18

MAINTENANCE 19

- Refilling Acid Storage Tank 19
- Dosing Pump Maintenance 20
- Inspecting Dosing Pump and Tubing 20
- Replacing the Internal Tube of the Dosing Pump 21

TROUBLESHOOTING 23

READ AND FOLLOW ALL INSTRUCTIONS – SAVE THESE INSTRUCTIONS

All electrical work must be performed by a licensed electrician and conform to all national, state, and local codes. Installation and product must adhere to all regulatory and compliance codes applicable to the area. Improper use or installation can badly harm the unit and its surroundings. When installing and using electrical equipment, basic safety precautions should always be followed, including the following:

- **DANGER!** Disconnect all AC power before installation. Do not operate the unit with any wiring covers open.
- **WARNING! ELECTRIC SHOCK HAZARD:** Do not connect metering pump ("acid pump" or "acid injection pump" or "dosing pump") to mains voltage. Connect to a NEC Class 2 or Limited Power Supply (LPS) 24 VDC supply only.
- **WARNING! EXPLOSION HAZARD:** This dosing pump is not explosion proof. **DO NOT** install or operate in an explosive environment.
- **WARNING! RISK OF EXPOSURE:** Potential for burns, fire, explosion, personal injury, or property damage. To reduce the risk of exposure, the use of proper personal protective equipment is mandatory.
- **WARNING! RISK OF CHEMICAL OVERDOSE:** To reduce risk, follow proper installation methods and recommendations. Check your local codes for additional guidelines.
- **WARNING!** This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction of the appliance by a person responsible for their safety.
- **CAUTION:** Dosing pump installation must always adhere to your local plumbing codes and requirements. Be sure that installation does not constitute a cross connection. Check local plumbing codes for guidelines.
- Removing power from the circulation pump must also remove power from acid dosing pump.
- The use of an auxiliary safety device (not packaged with this product), such as a flow switch or sensor, is recommended to prevent Dosing Pump operation in the event of circulation pump failure or if flow is not sensed.
- Point of injection should be beyond all circulation pumps, filters, and heaters. Maximum temperature 104° F.
- Position the equipment so that disconnecting device is easily accessible.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Do not bury cord or tubing. Placement should minimize damage by lawn mowers, trimmers & other equipment.
- **WARNING!** To reduce the risk of electric shock, replace a damaged cord immediately.
- **DANGER!** Working with muriatic acid can be dangerous. **READ AND FOLLOW THE MANUFACTURER'S INSTRUCTIONS ON THE ACID CONTAINER BEFORE HANDLING AND WORKING WITH ACID** (known as muriatic acid, hydrochloric acid, "pool acid"), such as: Always wear rubber gloves, skin & eye protection, and respirator if needed. ALWAYS ADD ACID TO WATER, NEVER WATER TO ACID. Splashing or spilling acid can cause sever personal injury and/or property damage.
- Acid must be stored safely and securely. Access to area with acid storage must be limited.
- Make sure there is proper ventilation for the area around the pool equipment and wherever acid is stored; it must be properly vented to avoid damage from acid vapors.
- Under no circumstances should an enclosed pool equipment room be used to store tools, maintenance equipment, furniture, sports gear or any other apparatus that is not related to the pool, including spare acid containers. The pool equipment room must be aired and vented prior to entering it.
- Acid container must be stored inside a spill containment vessel (a basin to hold acid in case of overflow or tipping of the acid container)
- Only use liquid acid, **ideally low-fume/reduced corrosivity liquid acid alternatives**. Do not mix dry additives inside of tank or use a solution mixed from dry acid. Turn pump off when replenishing liquid acid.

READ THE FOLLOWING BEFORE HANDLING AND WORKING WITH ACID

ACID USED FOR SWIMMING POOLS CAN CAUSE SEVERE BURNS TO SKIN, MOUTH, AND EYES. BOTH LIQUID ACID AND ITS VAPORS ARE DANGEROUS; MAY BE FATAL IF SWALLOWED OR INHALED. INHALATION CAN CAUSE SEVERE LUNG DAMAGE

WARNING! Please read and understand the following risks, and take all necessary precautions. USE PROTECTIVE GLOVES, GOGGLES, CLOTHING FOR YOUR SECURITY, AND RESPIRATOR IF NEEDED if you may handle acid or manipulate components which have been in contact with acid. Have source of fresh water nearby for flushing/rinsing.

- **INHALATION**
  - Inhalation of vapors can cause coughing, inflammation of the nose, throat, and upper respiratory tract infection, and death. In case of inhalation, move to an area of fresh air immediately.
- **INGESTION**
  - Swallowing can be fatal. Contact local poison control center or physician immediately. Give large amounts of water or milk. Allow person to vomit. If committing occurs, keep head lower than hips to avoid aspiration. If person is unconscious, turn their head to the side. Seek immediate medical attention.
- **SKIN CONTACT**
  - Wash skin with soap and water for at least 20 minutes and remove contaminated clothing and shoes. All contaminated articles should be thoroughly cleaned and rinsed before re-use.
- **EYE CONTACT**
  - Flush eyes immediately with water for at least 20 minutes. Seek immediate medical attention.
- **STORAGE**
  - Store acid and all related containers in a ventilated location protected from excess heat and direct sunlight. Access should be limited to areas where acid is stored. Storage should be secure, minimizing the risk of tampering, accidents, and spills.
- **PERSONAL PROTECTION**
  - **LUNG PROTECTION**
    - EQUIPMENT: Use a NIOSH-approved respirator with acid gas cartridges when exposure to fumes is possible, especially in enclosed or poorly ventilated spaces. VENTILATION: Acid containers should be stored, opened, and used in a well-ventilated area. Handling acid outside can reduce risk.
  - **EYE PROTECTION**
    - Use splash-resistant safety goggles.
  - **CLOTHING**
    - Wear chemical-resistant clothing when handling or working with acid.
  - **GLOVES**
    - Wear chemical-resistant gloves when handling or working with acid.
  - **DISPOSAL**
    - Muriatic acid is a hazardous substance when spilled or discarded due to its corrosive nature. Safely dispose of empty containers following all manufacturer and local guidelines. Small spills of acid may be neutralized using baking soda; carefully pour the baking soda onto the spilled material until the fizzing stops, then mop or scoop up the residue. Should a spill occur and containment or control is beyond the capabilities at hand, expert assistance should be requested; contact your local fire department or hazardous materials spill team.

- **SAVE THESE INSTRUCTIONS.**

BALANCE CONTROL Owner's Manual

INTRODUCTION

Congratulations on your recent purchase of the BALANCE CONTROL upgrade kit for CircuPool CORE CONTROL system. This sophisticated add-on allows your system to measure and monitor two of the pool's most essential water chemistry levels, ORP and pH. The BALANCE CONTROL upgrade kit allows you to elevate your pool ownership experience & reduce a significant source of pool maintenance hassle & guesswork.

The BALANCE CONTROL upgrade kit includes the main components to add advanced monitoring and control capabilities to your existing system. The ORP (oxidation-reduction potential) Sensor measures how much chlorine generation is needed in order to provide properly sanitized water, and the pH sensor measures how acidic the water is. As these sensors provide real-time data to the CORE CONTROL system, it's able to track this data, send automatic alerts, and take action and provide smart operation. ORP data allows for smart chlorine production, ensuring continuous sanitation at just the right levels. pH data allows you to be alerted when your balance drifts out of range, or with the optional Acid Injection Module (sold separately), the system is able to ensure continuous automated pH balance.

GETTING STARTED

READ ENTIRE MANUAL FIRST - To ensure consistent & reliable operation, the pool and equipment must be used and maintained as specified. Most issues are easily avoidable with correct maintenance.

Before installation or operation, please take the time to read this entire manual, compare package contents with the parts list, and gather tools required. Improper installation may void the warranty and create unnecessary hazards. This manual contains step-by-step instructions to help ensure that your installation meets the recommended standards. Spending the time to understand your system and its functions will ensure successful, trouble-free operation.

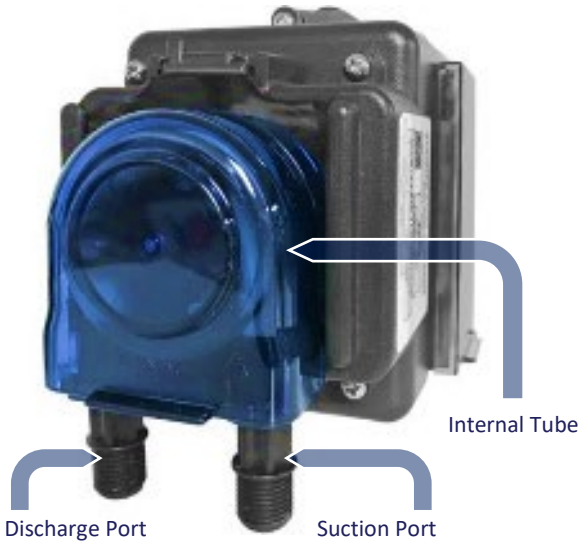
As with any electrical device, it is very important that the installation and service of this equipment be performed by a qualified person with the skills and experience required to do it safely and correctly. Improper installation or service can result in severe electrical shock to the installer or user of the equipment or pool. Please choose your installer with great care! Be sure to familiarize yourself with the pool chemistry requirements and maintenance procedures. If you are unsure about any of the information in this manual, please contact your installer / dealer. Please visit www.circupool.com/help for more information, tips, and troubleshooting assistance.

SYSTEM OVERVIEW

- **WARNING!** Equipment must be installed and used as specified; improper installation or unauthorized modifications may result in personal injury or property damage. If you use third-party components, it is your sole responsibility to address critical safety factors, including but not limited to material compatibility, container security and stability, leak-proof seals and fittings. Failure to follow these guidelines may result in equipment failure, hazardous chemical exposure, personal injury, or property damage. The manufacturer **does not assume liability** for any damage, malfunction, or injury arising from improper installation or use, unauthorized modifications, the use of third-party components and their associated installation. Ensure all installations comply with national and local codes, and hazardous chemical storage regulations.

The acid injection kit for the **BALANCE CONTROL** upgrade includes the following in its user-friendly, integrated design. Unpack the system carefully, *do not* use a knife or sharp tool to open the box as it may damage the contents.

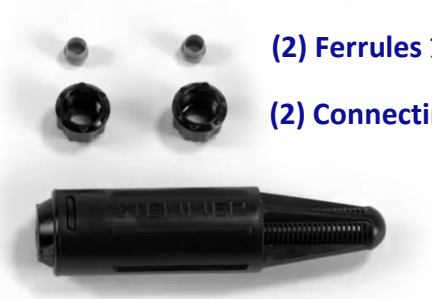
■ Included Components



Dosing Pump

■ Available Separately, See Dealer

Recommended Acid Storage Tank



(2) Ferrules ¼”

(2) Connecting Nuts ¼”

Weighted Strainer ¼"

20’ Roll of Suction / Discharge Tubing

Dosing Pump: This component enables the system’s acid injection by drawing liquid out of the storage tank and discharging it directly within the BALANCE CONTROL Cell Housing. The Dosing Pump is controlled by the BALANCE CONTROL’s pH sensor, working on demand based on the water’s needs to maintain pH balance.

Recommended Acid Storage Tank (Available Separately): This component provides a convenient and secure way to store up to 7.5 gallons of liquid acid. Its integrated design provides a location to mount the Dosing

Pump, and also helps mitigate issues from leaks by providing a large “acid catch” area. Its large removable lid allows for easier refills; lid resists opening unless tabs on opposite sides are squeezed.

20’ Roll of Suction / Discharge Tubing: This component allows for customizable spans of tubing between the Acid Storage Tank. Liquid acid is pumped through the tubing from the tank to the Cell Housing. **WARNING!** The material of this peristaltic-grade tubing is critical to safe operation. **Replacement tubing should be purchased from manufacturer, dealer, or authorized distributor**. Do not substitute generic vinyl, silicone, or unlabeled tubing. Use of more than 20’ is not recommended.

Ferrules & Nuts: These components allow you to easily connect the tubing to the Acid Pump’s discharge and suction ports, creating compression seals.

Weighted Strainer: This component gets attached to the end of the Suction Line tubing inside the Acid Storage tank, keeping the end of the Suction Line at the bottom of the tank.

SPECIFICATIONS	Output	Pressure	Voltage	Amperage
BALANCE CONTROL Dosing Pump	4.0 GPD	80 PSI	24 V DC	0.85 A

Additional Items Required (Not Included)

- Electric Drill with bits, 3/8” drill bit
- Screwdrivers (Phillips and flathead)
- Utility Knife or cutting tool
- Safety equipment (gloves, goggles, protective clothing, etc…)
- Pencil for marking

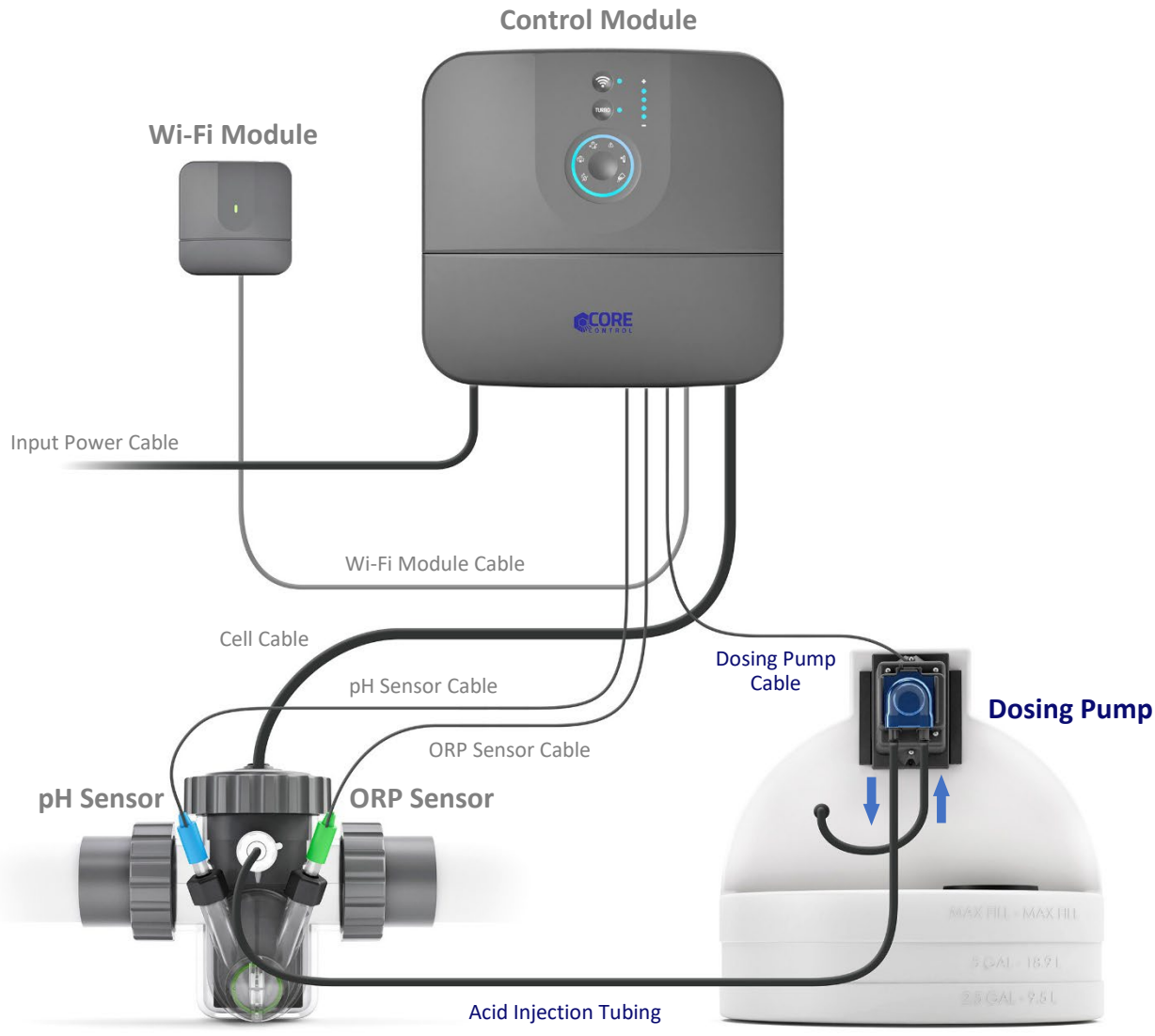
EQUIPMENT INSTALLATION

WARNING! BEFORE INSTALLING, OPERATING, OR SERVICING THIS PRODUCT, READ THE ENTIRE MANUAL FOR ALL SAFETY INFORMATION AND COMPLETE INSTRUCTIONS. This product is designed for installation and service by properly trained personnel. Read IMPORTANT SAFETY INFORMATION on page 3-4, as well as additional instructions as follows.

- **IMPORTANT**: Installation should only be performed by a qualified individual who also has working knowledge of basic pool service operations. Install Dosing Pump so that it is in compliance with all national and local plumbing and electrical codes.
- **WARNING! Make sure all equipment is disconnected from power and depressurized.** Verify that no power is present before opening the control panel or making any wiring connections. Improper handling may result in **electric shock, serious injury, or equipment damage**.
- **WARNING!** Use all required personal protective equipment when working on or near a Dosing Pump
- **IMPORTANT**: Use the proper product to treat potable water systems, use only additives listed or approved for use.
- **IMPORTANT**: Inspect tubing frequently for leakage, deterioration, or wear. Schedule regular maintenance to change tubing to prevent damage to pump and/or spillage.
- **IMPORTANT**: Dosing pump is not recommended for installation in areas where leakage can cause personal injury or property damage.

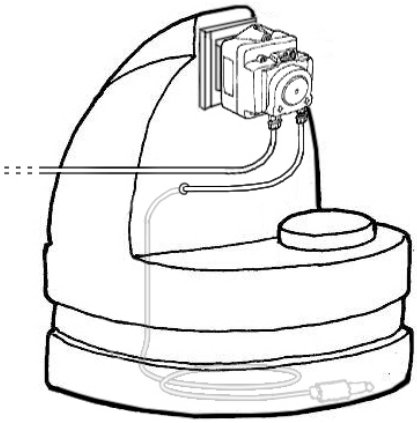
Installation Overview

Acid Injection components (Dosing Pump, Acid Storage, cables, and tubing) are labelled in blue.



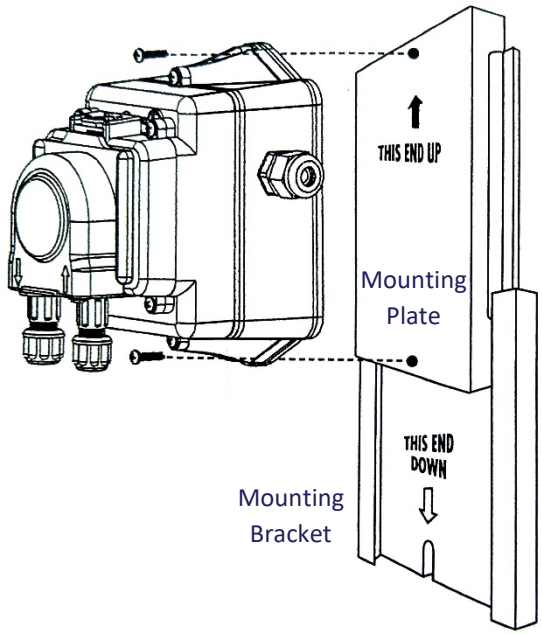
Mount Dosing Pump / Determine Acid Storage Location

- **WARNING!** Please review EQUIPMENT INSTALLATION safety information on page 8 as well as IMPORTANT SAFETY INFORMATION on pages 3-4, which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage.
- **WARNING!** Ensure all Acid Storage tanks or containers are **EMPTY** during all installation steps.
- **WARNING!** DO NOT mount the pump directly over an open acid storage tank – acid container must be securely covered.
- **IMPORTANT: Instructions and safety recommendations are based on the recommended Acid Storage tank.** If you source a third-party acid storage solution, it is your sole responsibility to address critical safety factors, including but not limited to: material compatibility, container security and stability, leak-proof seals and fittings. **WARNING!** Failure to follow these guidelines may result in equipment failure, hazardous chemical exposure, personal injury, or property damage. The manufacturer **does not assume liability** for any damage, malfunction, or injury arising from the use of third-party components and their associated installation. Ensure all installations comply with national and local codes, and hazardous chemical storage regulations.



Recommended Acid Storage tank

Third-party Acid Storage tank



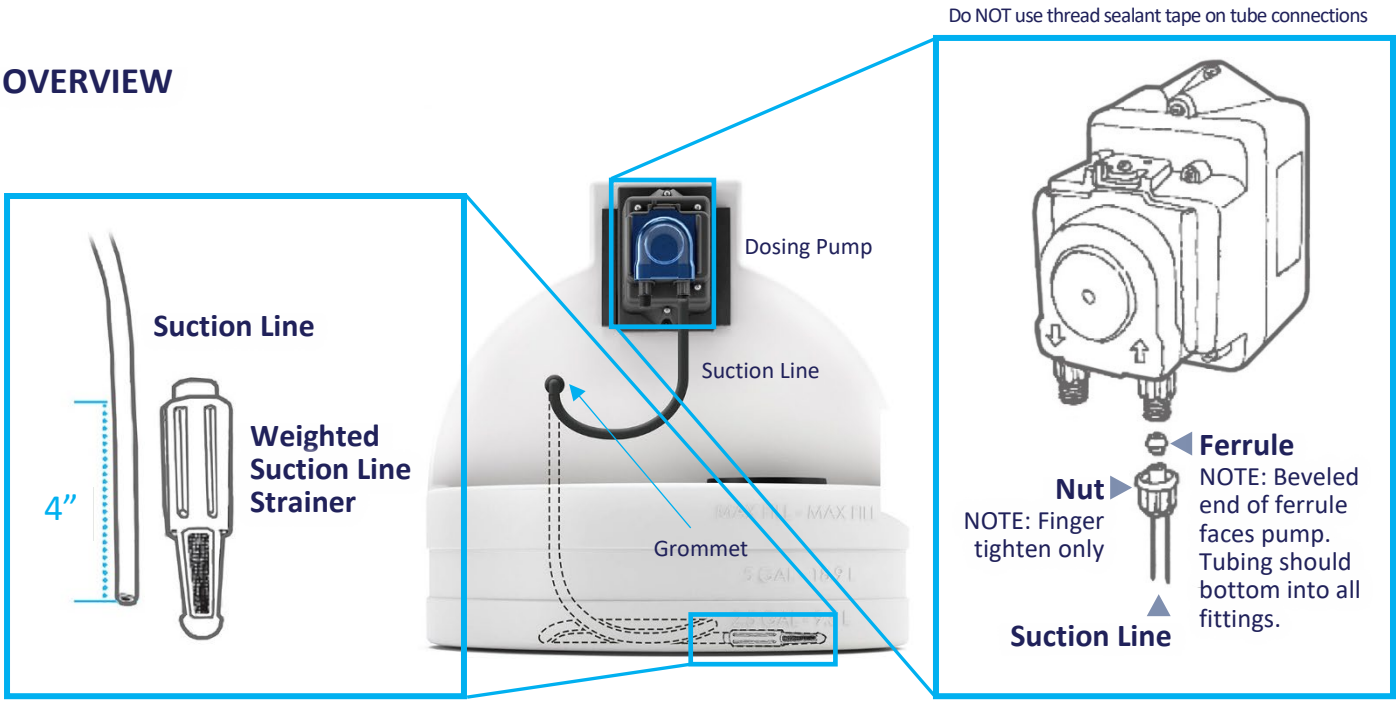
Locate the Dosing Pump and Acid Storage within reasonable proximity to the BALANCE CONTROL Cell Housing, so that the tubing that will connect the two components will be able to reach, and so that the route the tubing will travel 1) does not pose a hazard for individuals who access the area to perform maintenance on the pool equipment or 2) does not pose a risk should leakage or spills occur.

Select a well-ventilated and dry location for Dosing Pump (to avoid water intrusion and pump damage) and the Acid Storage tank. Use two screws to attach mounting bracket to top of recommended Acid Storage tank (or a nearby vertical surface if using third-party acid storage). Attach Dosing Pump to mounting plate with two screws and slide into place. Ensure Dosing Pump's suction & discharge ports face down.

Install Suction Line to Dosing Pump Head

- **WARNING!** Please review EQUIPMENT INSTALLATION safety information on page 8 as well as IMPORTANT SAFETY INFORMATION on pages 3-4, which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage.
- **WARNING!** Ensure all Acid Storage tanks or containers are **EMPTY** during all installation steps.
- **IMPORTANT:** Instructions and safety recommendations are based on the recommended Acid Storage tank. If you source a third-party acid storage solution, it is your sole responsibility to address critical safety factors, including but not limited to: material compatibility, container security and stability, leak-proof seals and fittings. **WARNING!** Failure to follow these guidelines may result in equipment failure, hazardous chemical exposure, personal injury, or property damage. The manufacturer **does not assume liability** for any damage, malfunction, or injury arising from the use of third-party components and their associated installation. Ensure all installations comply with national and local codes, and hazardous chemical storage regulations.

OVERVIEW

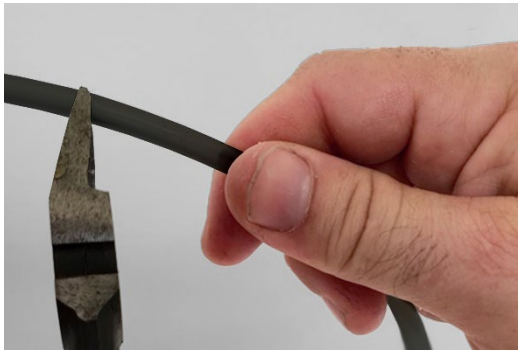


Overview: Suction Line installation begins by installing and positioning the tubing with weighted strainer inside of the Acid Storage tank (allowing excess length for use during maintenance, see step 2), and concludes by finalizing the tubing length and connecting the tubing to Dosing Pump. Note: some models may already have step 1 completed.

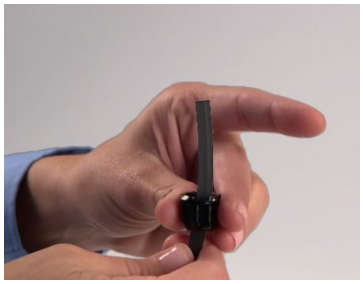
1. Mark a spot on the vertical wall of the Acid Storage tank, below the Dosing Pump and above the tank’s horizontal acid catch. Use 3/8” bit to drill a hole in the tank wall. Vacuum out shavings and install Grommet. Uncoil the suction/discharge tubing and firmly feed a length through the Grommet into the tank.

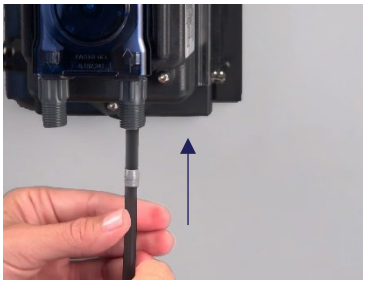
2. Unscrew the black tank lid (squeezing its sides) to allow access inside the tank. Continue to feed tubing until the end of the tubing is able to reach out of the tank lid opening by approximately 24". **NOTE: This length should be able to reach the bottom of a separate 1-gallon bucket of water (for use during priming and maintenance).** While tubing is temporarily positioned out of the tank lid opening and easily accessible, install the Weighted Suction Line Strainer onto end of tubing by pressing firmly, until 4" of tubing has been inserted into Weighted Strainer. **Coil tubing back within tank so that Strainer rests on floor of tank beneath tank lid opening**.

3. Determine how much tubing is needed to reach from Grommet to Suction Port on Dosing Pump. **Allow a generous amount of sufficient slack to avoid kinks and stress cracks. Slack is additionally beneficial as normal maintenance can require trimming the tubing end to re-establish a secure and leak-free connection.** Once you determine the length of tubing needed, mark and cut tubing – this end of the tubing will be used to connect to Dosing Pump. When cutting, always make a clean square cut to ensure that the Suction Line is burr free.



4. Slide a connecting Nut and Ferrule over the cut end of the Suction Line tubing extending from Grommet. Beveled end of Ferrule should face up toward Dosing Pump. Insert this tubing fully into the suction port of Dosing Pump (right side marked with an UP arrow) until it bottoms out. Slide the Ferrule up to Dosing Pump.

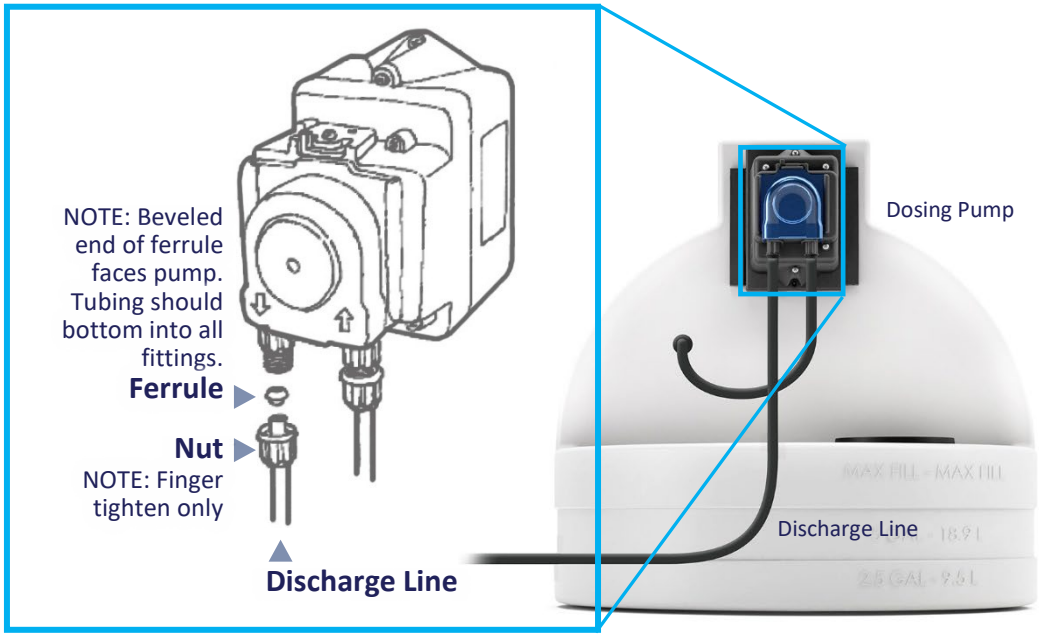




5. Slide connecting Nut up to the port's threads. Finger-tighten Nut to the threads on the suction port while holding the tube fitting in place (fully inserted into Dosing Pump), in order to create a secure compression seal. Over-tightening the Ferrule and Nut with a wrench may result in damaged fittings, crushed Ferrules, and air pick up.

Install Discharge Line to Dosing Pump Head

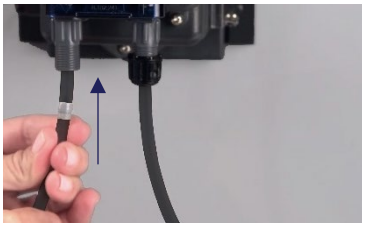
- **WARNING!** Please review EQUIPMENT INSTALLATION safety information on page 8 as well as IMPORTANT SAFETY INFORMATION on pages 3-4, which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage.
- **WARNING!** Ensure all Acid Storage tanks or containers are **EMPTY** during all installation steps.



Do NOT use thread sealant tape on tube connections

1. Take end of additional suction/discharge tubing, ensure it has a clean square cut and is burr free. This will become the start of the Discharge Line.

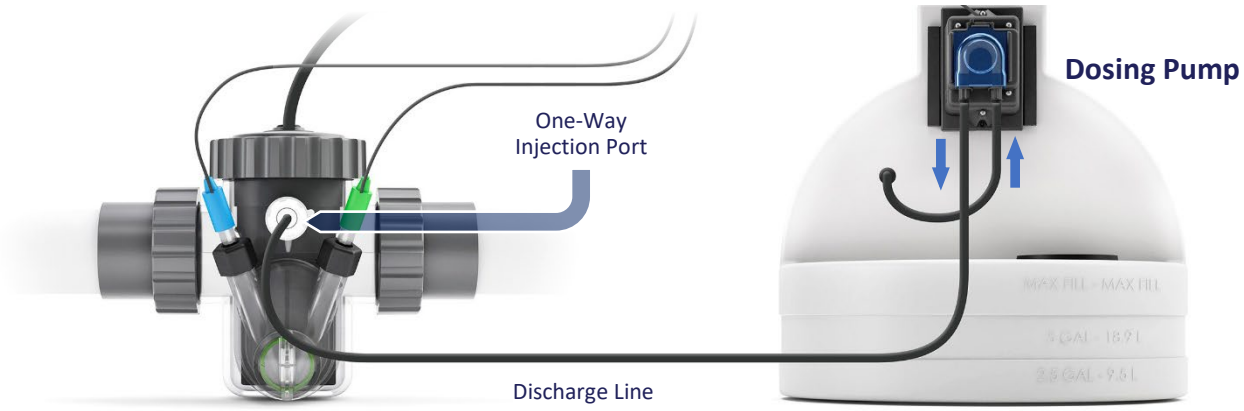
2. Slide a connecting Nut and Ferrule over the cut end of the Discharge Line tubing. Beveled end of Ferrule should face up toward Dosing Pump. Insert this tubing fully into the discharge port of Dosing Pump (left side marked with a DOWN arrow) until it bottoms out. Slide the Ferrule up to Dosing Pump.



3. Slide connecting Nut up to the port's threads. Finger-tighten Nut to the threads on the discharge port while holding the tube fitting in place (fully inserted into Dosing Pump), in order to create a secure compression seal. Over-tightening the Ferrule and Nut with a wrench may result in damaged fittings, crushed Ferrules, and air pick up. Uncoil remaining suction/discharge tubing and direct towards BALANCE CONTROL Cell Housing; connection will occur in next step.

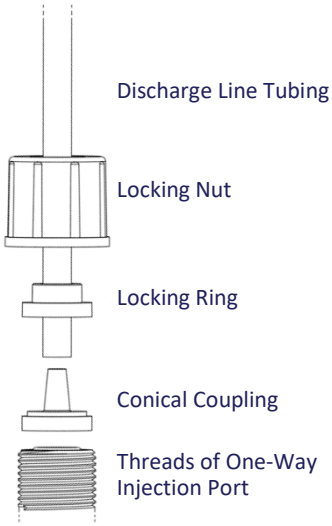
Install Discharge Line to Cell Housing Injection Port

- **WARNING!** Please review EQUIPMENT INSTALLATION safety information on page 8 as well as IMPORTANT SAFETY INFORMATION on pages 3-4, which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage.
- **WARNING!** Ensure all Acid Storage tanks or containers are **EMPTY** during all installation steps.
- **WARNING!** Ensure that the route the Discharge Line tubing will travel 1) does not pose a hazard for individuals who access the area to perform maintenance on the pool equipment or 2) does not pose a risk should leakage or spills occur.



BALANCE CONTROL
Cell Housing

One-Way Injection Port Overview



1. Uncoil remaining suction/discharge tubing and direct towards BALANCE CONTROL Cell Housing. To determine the approximate length of Discharge Line, lay out tubing across a safe route to determine the required length of Discharge Line to reach from the Dosing Pump to the BALANCE CONTROL Cell Housing. **Allow a generous amount of sufficient slack to avoid kinks and stress cracks. Slack is additionally beneficial as normal maintenance can require trimming the tubing end to re-establish a secure and leak-free connection.** Once you determine the length of tubing needed, mark and cut tubing – this end of the tubing will be used to connect to BALANCE CONTROL Cell Housing. When cutting, always make a clean square cut to ensure that the Discharge Line is burr free.

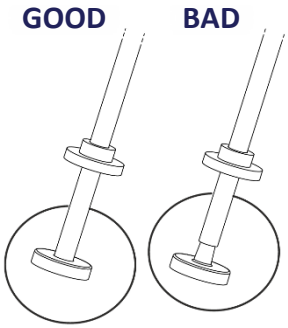
2. Unscrew and open the One-Way Injection Port's Locking Nut, located on the central front part of the cell.

   NOTE: Some models may come with a Threaded Sealing Plug in place of the One-Way Injection Port in the Cell Housing. If present, remove this instead, install Injection Port into Cell Housing (ensure generous thread sealant tape between two components), then open Locking Nut and proceed.

Open Locking Nut on One-Way Injection Port

3. Locate both the Locking Nut and Locking Ring from inside the Injection Port. Slip the Locking Nut and Locking Ring over the Discharge Line tubing.

4. Insert the Conical Coupling fully into the end of the tube. Bring the Locking Ring and Locking Nut together over the Conical Coupling. (IMPORTANT: Do NOT use thread sealant tape on tube connections). Before proceeding to close the connection, make sure the black seal is secured in place.



5. Attach the Discharge Line with assembled tube fittings and close the Injection Port's Locking Nut tightly by hand. Over-tightening the Locking Nut with a wrench may result in damaged components and improper seal.

Note: Save and store remaining suction/discharge tubing (if present) for use in future maintenance and tube replacement. **IMPORTANT:** Additional tubing should be purchased through manufacturer, dealer, or approved distributor.

IMPORTANT: Do NOT use thread sealant tape on tube connections

Fit components on to the Discharge Line

Verify black seal is securely in place in the port

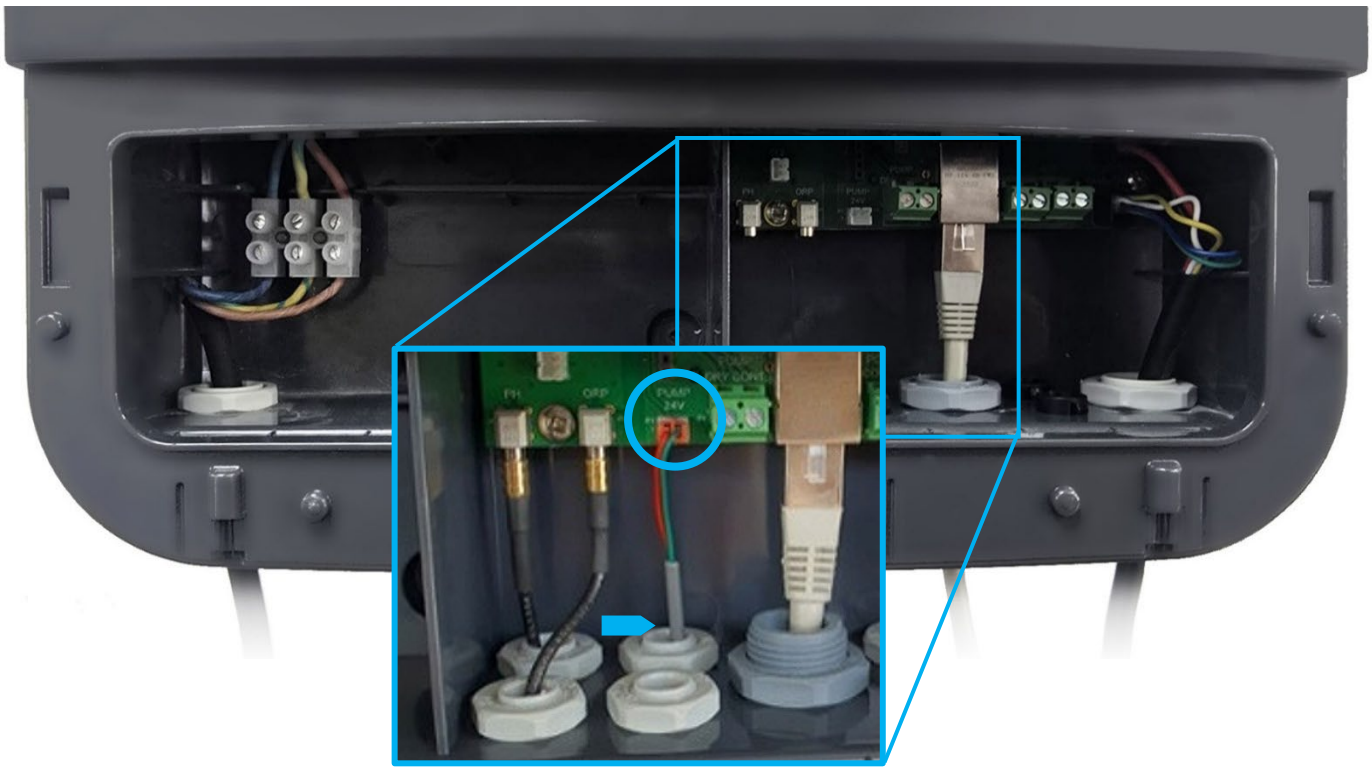
Attach Discharge Line with fittings to Injection Port

Tighten valve nut by hand to close Injection Port

Wiring Dosing Pump to Control Module

- **WARNING!** Please review EQUIPMENT INSTALLATION safety information on page 8 as well as IMPORTANT SAFETY INFORMATION on pages 3-4, which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage.
- **WARNING! Make sure all equipment is disconnected from power.** Verify that no power is present before opening the control panel or making any wiring connections. Improper handling may result in **electric shock, serious injury, or equipment damage**.

1. Verify that no power is present, open the wiring panel on the front of the Control Module.
2. On the wiring attached to the Dosing Pump, locate the connector end.
3. Inside the Control Module, identify the back PG connector second from the left, on the bottom of the Control Module (marked with arrow below). Loosen PG connector to allow wiring to pass through.
4. Pass connector end of Dosing Pump wiring through PG connector, and insert connector end into the circuit board connection marked with “PUMP 24V” on left (circled below).
5. Tighten PG connector again.



Priming – Drain Air From Dosing Pump

- **WARNING!** Please review EQUIPMENT INSTALLATION safety information on page 8 as well as IMPORTANT SAFETY INFORMATION on pages 3-4, which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage.

WARNING! Double-check all installation steps. Should leak occur: be prepared to stop Dosing Pump operation once priming begins should a leak occur by selecting the OFF toggle in app, or by removing power from CORE CONTROL system. You MUST wear personal protective equipment including rubber or polyethylene protective gloves, safety glasses, protective clothing, and approved respirator if needed; be prepared with a hose to rinse or flush with freshwater and a clean-up plan if needed – follow all local guidelines and refer to disposal steps outlined in IMPORTANT SAFETY INSTRUCTIONS pages 3-4.

Before activating the acid Dosing Pump, priming must be executed. Priming is the action of sucking the air from the Dosing Pump while allowing liquid to take its place. **Priming requires My-Pool app**.

IMPORTANT: PRIMING THE DOSING PUMP SHOULD BE PERFORMED WITH WATER. This allows you to check for leaks without risk of leaking acid. During initial installation, **acid should not yet be present** in the storage tank. If Suction Line is installed with excess length (see pages 10-11), the Weighted Strainer can be placed into an adjacent 1-gallon bucket of water. Keep Strainer off ground & free of dirt. See warnings below.

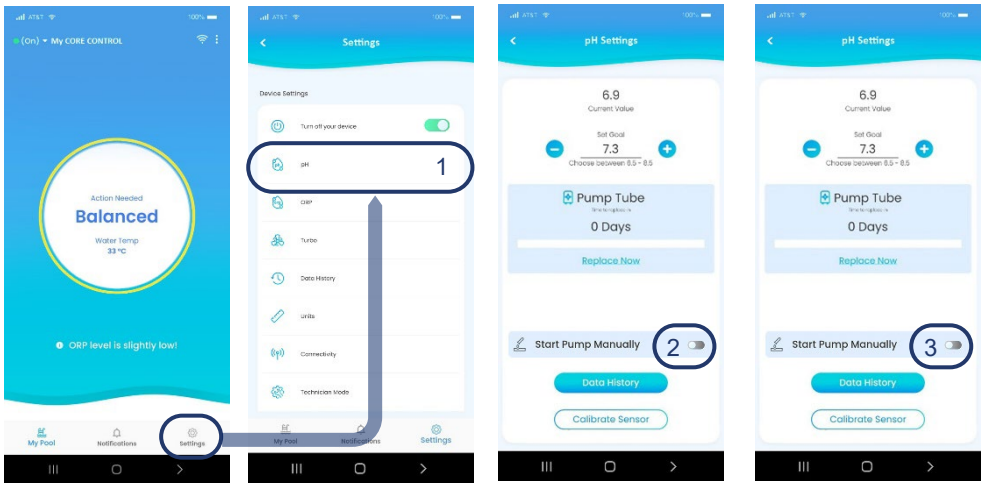
WARNING! If subsequent priming becomes necessary after initial installation and acid is present in tank, take great care in retrieving Weighted Strainer so as to prevent splashing and drips. Use only plastic tools, such as long plastic tongs (no metal), to retrieve Weighted Strainer.

BEGINNING PRIMING (Weighted Strainer should be in water, pool circulation pump should be running)

1. Access My-Pool app, go to “Settings” in lower navigation menu, and then choose “pH”.
2. Select the toggle under “Start Pump Manually” to activate the Dosing Pump.
3. Allow Dosing Pump to operate for 5 minutes from the time water is circulating (keep Suction Line submerged during this time as approximately 2 oz of water gets transferred). Toggle Dosing Pump off.

WARNING! Check all connections to ensure there are no leaks after Dosing Pump begins operation, and throughout priming process.

Continue to regularly check for leaks throughout regular usage as a part of routine pool maintenance.



Toggle On Toggle Off

Adding Acid to Acid Storage Tank

- **WARNING!** Please review EQUIPMENT INSTALLATION safety information on page 8 as well as IMPORTANT SAFETY INFORMATION on pages 3-4, which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage.

Type of Acid: Dosing Pump has been tested with Muriatic Acid (20-22 Baume, 31.5% HCL).

USE SAFER ACID ALTERNATIVES

It is strongly recommended that you utilize "Low-fume Reduced-corrosivity Muriatic Acid". This formulation of pool acid is widely available and offers a safer user experience, minimizes harmful vapors, and reduces the risk and discomfort of handling while retaining effectiveness.

WARNING! RISK OF SERIOUS PERSONAL INJURY AND PROPERTY DAMAGE. You MUST wear personal protective equipment including rubber or polyethylene protective gloves, safety glasses, protective clothing, and approved respirator if needed; be prepared with a hose to rinse or flush with freshwater and a clean-up plan if needed – follow all local guidelines and refer to disposal steps outlined in IMPORTANT SAFETY INSTRUCTIONS pages 3-4.

Ensure Dosing Pump is OFF and that power is removed so it cannot become activated when adding acid.

Filling Acid Storage tank should only be performed by an experienced individual while taking great care. Read and strictly follow the acid manufacturer's safety and handling protocols. Use hand, body and eye protection when transferring or handling acid; perform in an open space, not an enclosed area. When filling Acid Storage tank, carefully and slowly tilt the tip of the canister into the tank to prevent splashing or spilling. DO NOT OVER FILL.

Refilling Acid Storage tank will eventually be necessary, see "Refilling Acid Storage Tank" under Maintenance on page 19, including **IMPORTANT** information about when it **may be necessary to activate a "Reset" in the My-Pool app** if the tank is allowed to run dry or if operation "times out" due to high pH.

START UP

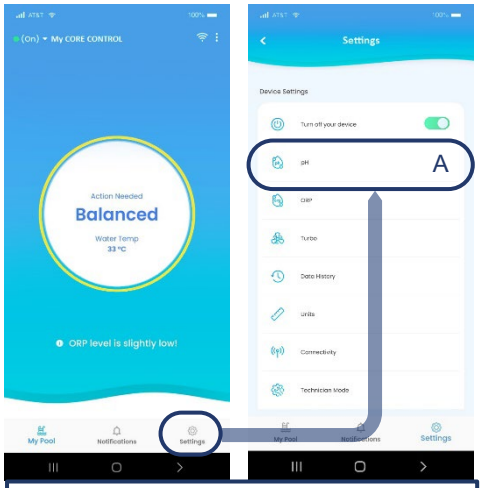
- **WARNING!** Please review EQUIPMENT INSTALLATION safety information on page 8 as well as IMPORTANT SAFETY INFORMATION on pages 3-4, which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage.

Balance the chemicals – It is ideally recommended that your pool chemistry be balanced and stable, especially pH. If your pool's pH is more than 0.5 over your target set point level, consider beginning by balancing your pH manually. **NOTE:** Large differences between current pH and set point pH may require one or more pH reduction "Reset" steps in the My-Pool app (see page 18).

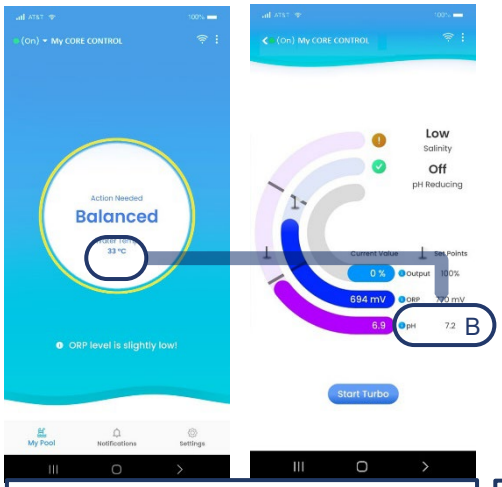
DEFINING THE pH SET POINT

EXCERPTED, SEE BALANCE CONTROL UPGRADE KIT MANUAL FOR FULL INSTRUCTIONS INCLUDING ACTIVATING "PLUS" CONFIGURATION, CHANGES IN MY-POOL APP, CALIBRATION, SENSOR CARE & MORE.

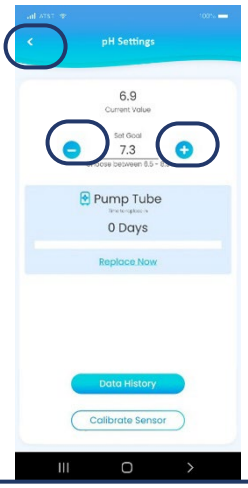
While the recommended range for pH is between 7.2 – 7.8, the industry generally recommends a target of 7.5 pH. Small changes in pH can have large effects. Higher pH, even when in range, can cause excess scaling and can negatively impact the effectiveness of chlorine. Lower pH, even when in range, has the potential to contribute to erosion. The most effective target for your pool may be different than general recommendations. Accessing the pH set point menu can be done in two ways:



A) Press "Settings" on the right side of the lower navigation menu. On the settings screen, press "pH". Or,



B) Tap the main circle on the home screen to access the Monitoring screen. From there, press the pH value on lower right



Press + / - to increase/decrease the set point values.
Press < to confirm and go back to the previous screen.

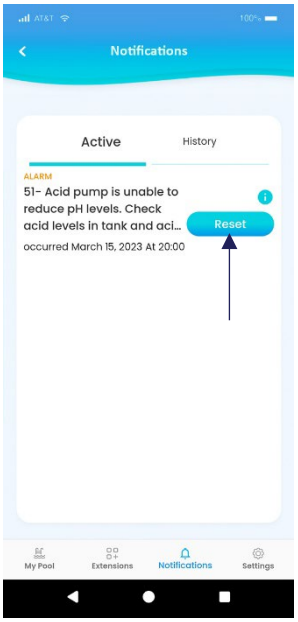
"RESET" REQUIRED WHEN SET POINT CAN'T BE REACHED

IMPORTANT: As a safety feature, the system will STOP attempting to run the Dosing Pump when the system is unable to reduce pH levels to within target range.

This safety feature ensures that you are in control of the amount of acid added to your pool. This "time out" mode triggers after 2 hours of operation.

Common scenarios which may trigger this: 1) the level of acid in the storage tank is low, or 2) the water's current pH is much higher than the setpoint, requiring a longer amount of Dosing Pump operation to initially reach target levels. **If starting with a pH more than 0.5 higher than the set point, multiple resets may be required**.

For safety, once triggered this alarm's **"Reset" button must be pressed** for the system to resume Dosing Pump operation. This can be found under the Active tab after pressing "Notifications" in the app's lower navigation menu.



Refilling Acid Storage Tank

STOP – DO NOT ADD ACID until reading "Adding Acid to Acid Storage Tank" on page 17. Carefully follow all important safety guidelines, instructions, and warnings.

- It is strongly recommended that you utilize "Low-fume Reduced-corrosivity Muriatic Acid", see page 17.

Regularly monitor the level of liquid acid in the tank as a part of your routine pool maintenance. The rate at which acid is used is entirely dependent on the pool, its usage, local conditions, and more. The recommended Acid Storage tank is translucent to allow easier observation of liquid level.

It is recommended to refill Acid Storage tank BEFORE tank is allowed to run dry and end of Suction Line is exposed. Refilling the Acid Storage tank before its level drops below the level of the Suction Line's weighted strainer can help ensure consistent system performance and prevent subsequent need to prime Dosing Pump.

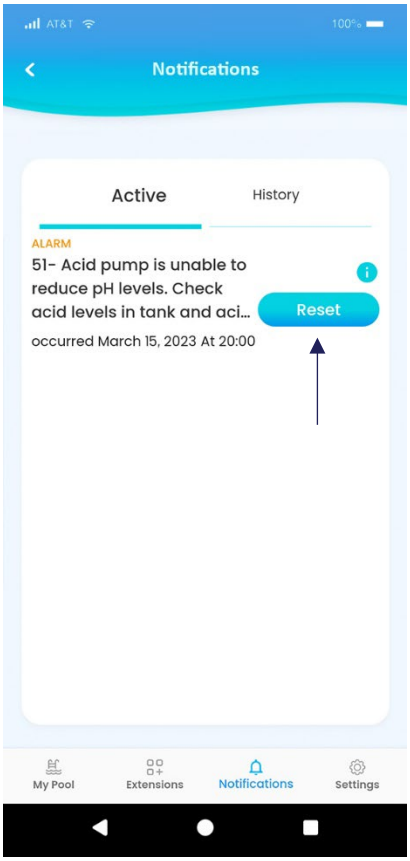
If the level of liquid acid in the tank drops below the level that the Dosing Pump is able to draw acid, you'll likely get a notification in the My-Pool app: "**Alarm 51 - Acid pump is unable to able to reduce pH levels. Check acid levels in tank**." See more below:

IF "RESET" IS REQUIRED IN MY-POOL APP

IMPORTANT: As a safety feature, the system will STOP attempting to run the Dosing Pump when after a length of time the system is unable to reduce pH levels to within target range, including when the Acid Storage tank is low.

For safety, once this alarm is triggered the **"Reset" button must be pressed** in the app in order for the system to resume Dosing Pump operation.

This can be found under the Active tab after pressing "Notifications" in the app's lower navigation menu.



If the system has stopped Dosing Pump operation due to low levels in the Acid Storage Tank, it is necessary to reset the active alarm in the My-Pool app.

Dosing Pump Maintenance

Dosing Pump maintenance is outlined as follows. See documentation for other components for additional necessary regular maintenance.

Inspecting Dosing Pump and Tubing

It is required to inspect the Dosing Pump, its Inner Tube, the Suction and Discharge Line tubing, and the connection to the One-Way Injection Port before starting a new bathing season and/or every six months during the season. Please contact manufacturer, local dealer, or authorized distributor to obtain tubing or parts.

The My-Pool app will track usage and remind you when it has been 180 days since the last inspection, at which point the "**Alarm 98 – It's time to inspect Dosing Pump & Tubing**" alert will be displayed to notify you the components must be checked and replaced if not in good condition.

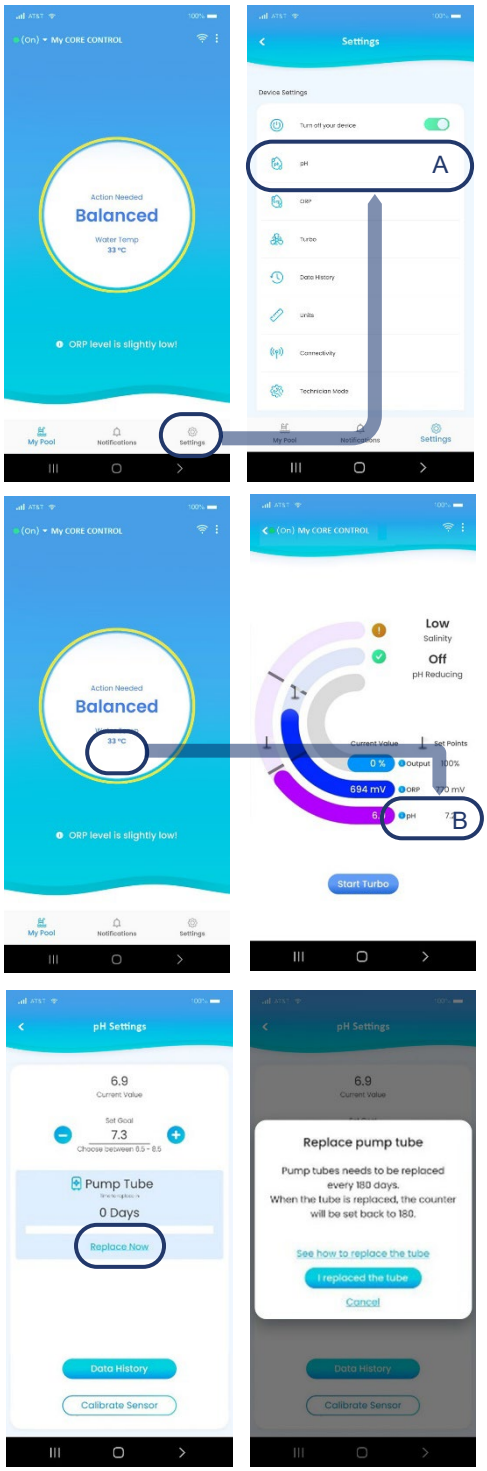
My-Pool app displays the usage counter for the Dosing Pump tube in the pH Setting menu.

Accessing the pH settings (can be done in two ways):

A) Press "Settings" on the right side of the lower navigation menu. On the settings screen, press "pH"

Or

B) Tap the main circle on the home screen to access the Monitoring screen. From there, press the **pH value** on lower right



From the pH Settings screen, within the Pump Tube section you can press "Replace Now"

Replacing the Internal Tube of the Dosing Pump

It is recommended to replace the Inner Tube of the Dosing Pump annually and any tubing that is not in good condition. Please contact manufacturer, local dealer, or authorized distributor to obtain tubing or parts. Follow installation instructions to replace Suction Line or Discharge Line tubing; Inner Tube replacement instructions are as follows.

Preparation - **IMPORTANT**: Maintenance should only be performed by a qualified individual who also has working knowledge of basic pool service operations.

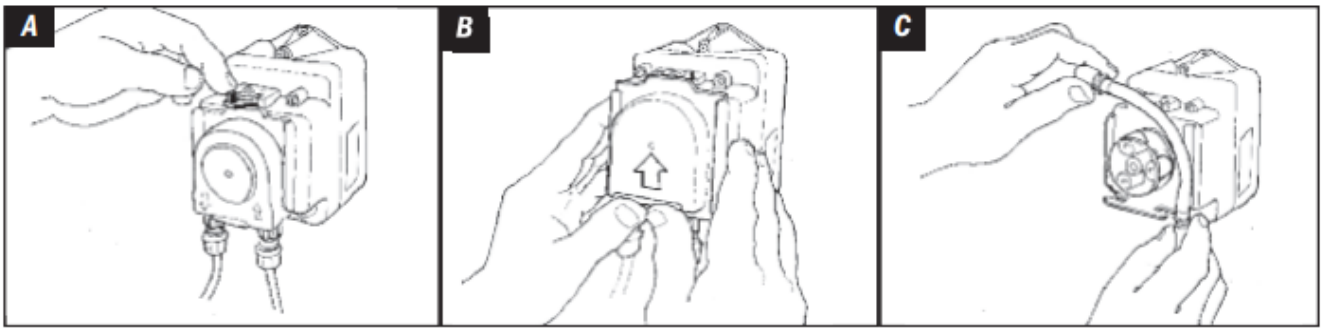
WARNING! RISK OF SERIOUS PERSONAL INJURY AND PROPERTY DAMAGE. BEFORE INSTALLING, OPERATING, OR SERVICING THIS PRODUCT, READ THE ENTIRE MANUAL FOR ALL SAFETY INFORMATION AND COMPLETE INSTRUCTIONS. This product is designed for installation and service by properly trained personnel. Read IMPORTANT SAFETY INFORMATION on page 3-4 which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage, as well as additional instructions as follows:

WARNING! Use all required personal protective equipment when working on or near a Dosing Pump. You MUST wear personal protective equipment including rubber or polyethylene protective gloves, safety glasses, protective clothing, and approved respirator if needed; be prepared with a hose to rinse or flush with freshwater and a clean-up plan if needed – follow all local guidelines and refer to disposal steps outlined in IMPORTANT SAFETY INSTRUCTIONS pages 3-4.

- **WARNING! Make sure all equipment is disconnected from power and depressurized.** Verify that no power is present before opening the control panel or making any wiring connections. Improper handling may result in **electric shock, serious injury, or equipment damage**.

1. Follow all safety precautions prior to tube replacement.
2. Prior to service, pump water or a compatible buffer solution through the pump and suction and discharge lines to remove fluid and avoid contact.
3. Unplug the pump.
4. Disconnect the suction and discharge connections from pump head.

Remove Tube

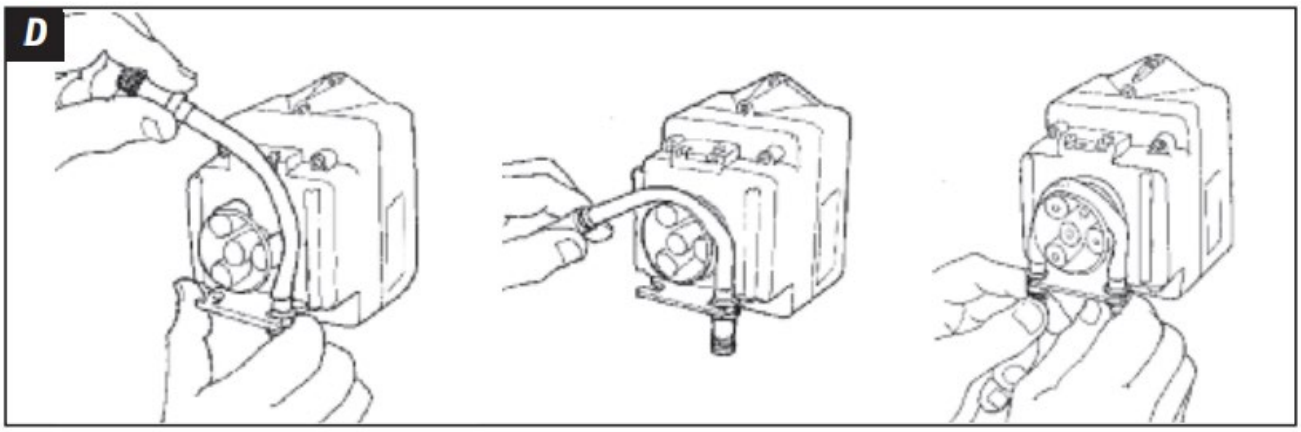


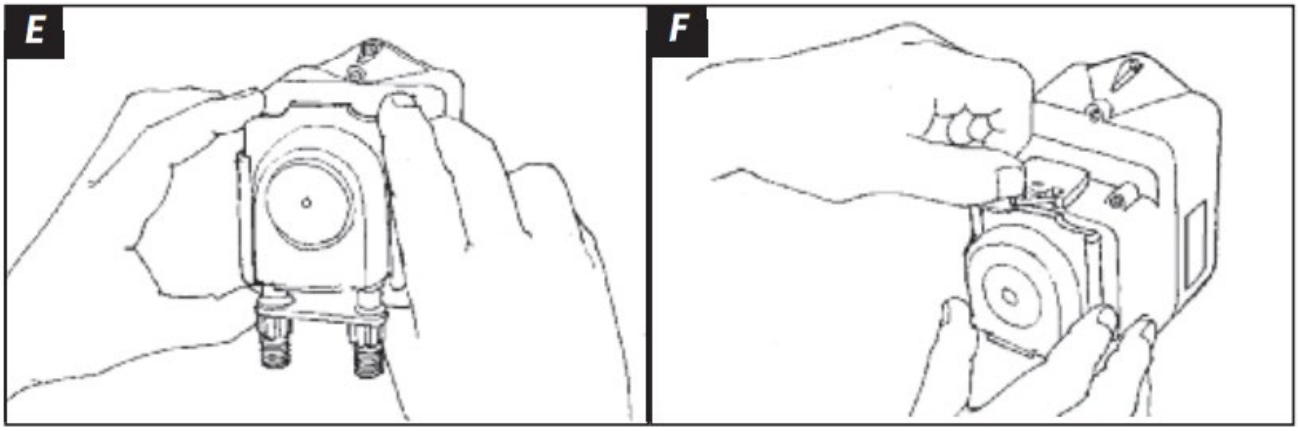
Always unplug pump before doing maintenance work.

1. Remove power from the pump.
2. Remove the Phillips head locking screw on the latch (CE models only). Slide the vertical tab 180 degrees from left to right to unlock the cover latch. Illustration A
3. To slide cover off, push up on the raised edge. Illustration B
4. Release the fittings from the slots to remove the tube. Illustration C
5. Remove roller assembly.

6. Use non-citrus all-purpose cleaner to clean residue from pump head housing, roller, and cover.
7. Check cover for cracks. Replace if cracked.
8. Ensure rollers spin freely.
9. Replace roller assembly if: seized, excessive side play from bore wear, or if rollers are visibly worn.
10. Re-install roller assembly.

Install New Tube





1. To install new tube, insert one fitting into slot, pull tube around the center of the roller assembly and insert second fitting into the other slot. Illustration D
2. Align tube housing cover with track and slide over tube until fully closed. Illustration E
3. Power the pump.
4. Run the pump for one minute to relax the tube.
5. To lock cover in place, press down on the cover while turning the vertical tab 180 degrees from right to left. Install the Phillips head locking screw (CE models only). Illustration F
6. Run the pump for one minute to verify operation.
7. Reconnect the suction and discharge lines.
8. Prime the pump and then place it in the desired operating mode / reconnect to power; refer to page 16.

TROUBLESHOOTING

WARNING! Stop first and please review Equipment Installation safety information beginning on page 8 as well as IMPORTANT SAFETY INFORMATION on pages 3-4, which includes guidance on personal protective equipment (PPE), ventilation, location access security, spills and leakage, chemical handling, and potential for personal injury or property damage.

- **WARNING! Make sure the system is disconnected from power** before opening the Control Module or making any wiring connections. Improper handling may result in **electric shock, serious injury, or equipment damage**.
- **WARNING! You are about to manipulate components which are in contact with concentrated Muriatic Acid. USE PROTECTIVE GLOVES, GOGGLES and CLOTHING FOR YOUR SECURITY, as well as approved respirator if needed. In case of involuntary contact with acid, flush the affected areas with running water. In case of contact with eyes, flush with water and contact a physician!**

SCENARIO:	POSSIBLE CAUSE:	SUGGESTED ACTION:
Dosing Pump is not operating (motor does not spin)	Pump is not connected to the control panel	Check wiring schematic on page 15. Ensure proper connection to control panel.
	Pump is not prompted by control panel to inject acid to the pool	Access My-Pool app's monitoring screen. Confirm that pH setpoint is lower than actual pH value (use titration chemical test to verify). If necessary, calibrate pH sensor using pH buffer solutions as instructed in BALANCE CONTROL Upgrade Kit manual.
	Dosing Pump is in "time out" mode for protection (system has injected acid for more than 2 hours without measured pH level reaching programmed pH setpoint).	Access My-Pool app's alert and follow instructions – reset in app is necessary (see page 18-19) AFTER checking for: 1) This can occur when acid level is low in Acid Storage Tank. If low, follow instructions to refill and perform "reset" in app. 2) This can occur when pool pH is much higher than pH setpoint (approximately more than 0.5 pH difference). If pH is still high on an independent test, perform "reset" in app to allow further pH reduction.
	Acid level probe (if connected) stops pumps operation	Check acid level and that acid level probe is working properly.
Dosing Pump motor is spinning but no acid is being sucked and injected	Acid Storage tank is empty, level of Hydrochloric (Muriatic) acid inside is too low	Replenish acid in the container or replace with a new one. Refer to "Refilling Acid Storage Tank" page 19, "Adding Acid to Acid Storage Tank" page 17, and if needed "Priming – Drain Air From Dosing Pump" page 16.
	Air is caught in the system	Refer to chapter "Priming – Drain Air From Dosing Pump" page 16.
	Dosing Pump's Internal Tube is worn out or ruptured	Replace Internal Tube. IMPORTANT: follow the instructions listed on "Replacing the Internal Tube of the Dosing Pump" page 20.
	One-Way Injection Port may be obstructed	Carefully unscrew the One-Way Injection Port from Cell Housing assembly. Disconnect the tube from the check valve. Replace with a new One-Way Injection Port (sold separately), discard old part.

CORE CONTROL™

Owner's Manual

Notes: