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# Operation and Installation Manual

## CCH<sup>®</sup> Elite System

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Model CCH-1HCE



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# 1 Safety Precautions

Danger, Warning, Caution, and Note statements are used throughout this manual to emphasize important safety information. The statements are defined below.

## 1.1 Safety Conventions

---

 **Danger:** Indicates a hazardous situation which, if not avoided, will result in death or severe injury.

---

 **Warning:** Indicates a potentially hazardous situation which, if not avoided, can result in personal injury.

---

 **Caution:** Indicates a situation which, if not avoided, can result in minor personal injury, equipment damage, or improper equipment operation.

---

**Note:** Information that may assist in completing a task correctly or for maintaining the machine in good operating condition.

---

**Note:** The use of "CCH® tablets" throughout this manual refers to DryTec® FG Briquettes and CCH® Cal Hypo Tablets.

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## 1.2 Safety Statements for the CCH® Elite

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 **Warning:** For your protection, carefully and completely read the information provided in this manual before attempting to assemble, install, operate, or maintain this product. Retain these instructions for future reference. Failure to follow the instructions or information in this manual may result in injury and damage to the product and may affect warranty coverage.

---

 **Danger:** **Fire or explosion** could result from contamination, or use of any other chlorinating compound!

---

**Danger:** Calcium hypochlorite is hazardous. Please refer to the Safety Data Sheet for additional information and precautions regarding the proper handling of CCH® tablets. If any part of this profile is unclear to you, please stop immediately and contact Solenis at (800) 478-5727.

---

 **Danger:** This system contains liquid under pressure and calcium hypochlorite solution can be discharged unexpectedly. Operate and service all components and attached piping that contain liquid cautiously until you are certain that the system has been depressurized and drained. Failure to do so may result in death or serious injury.

---

 **Danger:** Use suitable personal protective equipment (PPE) at all times to avoid physical contact with calcium hypochlorite solution or vapor. Failure to do so may result in death or serious injury. Please refer to the Safety Data Sheet for additional information and precautions regarding the proper handling of calcium hypochlorite.

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 **Danger:** Do not allow CCH® tablets to come into contact with any foreign matter or chemicals. Calcium hypochlorite is chemically reactive with many substances including, but not limited to water, water treatment products, pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, and corrosive, flammable, and combustible materials. Contamination or improper use of CCH® tablets may cause a violent reaction that produces heat, an explosion, a fire, and the release of toxic gases, and result in death or serious injury. Please refer to the Safety Data Sheet for additional information and precautions regarding the proper handling of calcium hypochlorite.

---

 **Danger:** All wiring connections, fusing, grounding, inspection, and maintenance of wiring must be performed by a licensed electrician in accordance with the National Electric Code (NEC), Occupational Safety and Health Act (OSHA) in the United States, and all local electrical codes. Failure to properly install and wire this product can result in property damage, serious injury, or death, and may affect warranty coverage.

---

 **Warning:** Clean up, without delay, any leakage or spillage of CCH® tablets or calcium hypochlorite solution. Please refer to the Safety Data Sheet for additional information and precautions regarding the proper disposal of calcium hypochlorite. Failure to do so may result in death or serious injury.

---

 **Warning:** Always operate system with electrical component enclosures in place. Failure to do so may result in injury.

---

 **Warning:** Always operate system components with safety guards in place. Failure to do so may result in injury.

---

 **Warning:** Observe and follow all location-specific safety procedures. Failure to do so may result in injury.

---

 **Warning:** **Always be careful when adding muriatic acid to water;** this combination creates an exothermic reaction, which gives off heat. Failure to take care may result in serious injury.

---

 **Caution:** Use only replacement parts identified in Section 10.3. Do not paint over or remove unit nameplates, labels, or tags so that proper replacement parts may be identified.

The system is designed with specific motor characteristics. Changing motor types will change the operating characteristics of the system, which may cause injury and may void the warranty of this chlorinator.

---

 **Caution:** Use of any tablets or other chemicals other than the CCH® tablets designed for use with this chlorinator is hazardous, possibly causing fire and/or explosion and will void this warranty.

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# 2 Introduction

The patented CCH® Elite feeder creates a consistent solution of calcium hypochlorite used for water disinfection.

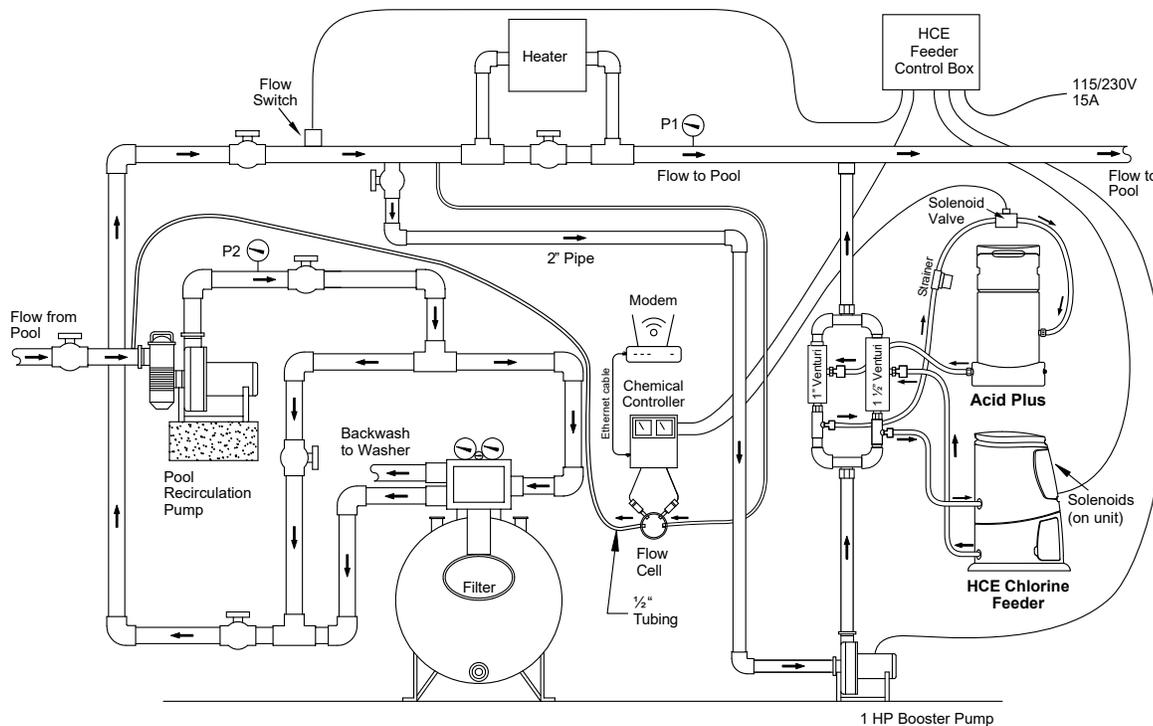
## 2.1 Overview of Operation

The CCH® Elite feeder operates as follows:

1. CCH® tablets are placed in a basket and suspended over the solution reservoir.
2. The control box is plugged into a chemical controller output and powered on.
3. When the chemical controller requires chlorine, the feed solenoid valve opens allowing water from the pool return to enter the inlet water manifold at the proper supply flow rate.
4. Low-velocity, high-volume water enters the reservoir and covers the bottom of the basket.
5. CCH® tablets erode into the reservoir and create a consistent 0.7% available chlorine solution with 84 °F [28.8 °C] inlet water temperature.
6. The chlorinated solution fills the reservoir, lifting the float switch connected to the discharge valve until the valve opens.
7. The discharge valve and outlet tubing are connected to a venturi. The vacuum generated by the venturi suction drains the reservoir tank and sends the concentrated solution into the pool return.

## 2.2 Process Flow Diagrams

**Figure 1.** CCH® Elite with Acid Plus Feeder, installation with single booster pump and two venturis (smallest footprint)



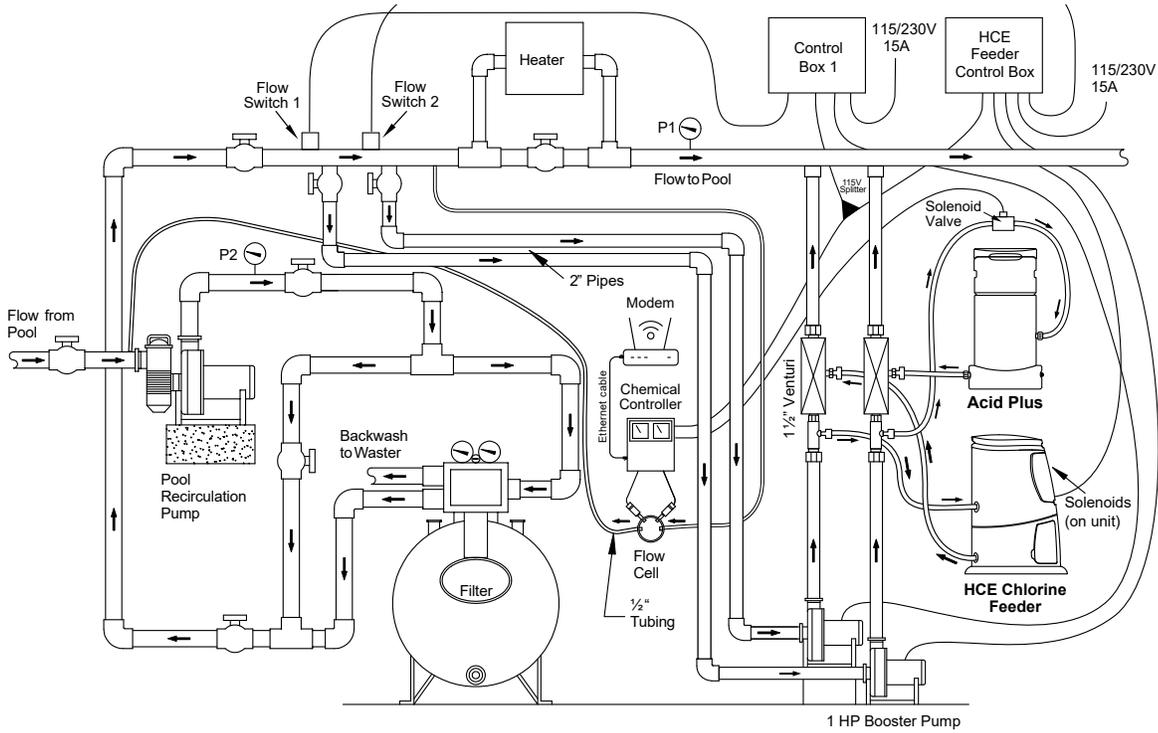
**Note:** Recommended for energy efficiency and smaller footprint.

**Note:** The 1-inch 1078 venturi is used for the Acid Plus Feeder and the 1-1/2" inch 1585X venturi is used for the HCE30 feeder.

**Note:** Connecting the smaller 1-inch 1078 venturi to the HCE30 feeder could lead to improper dosing.

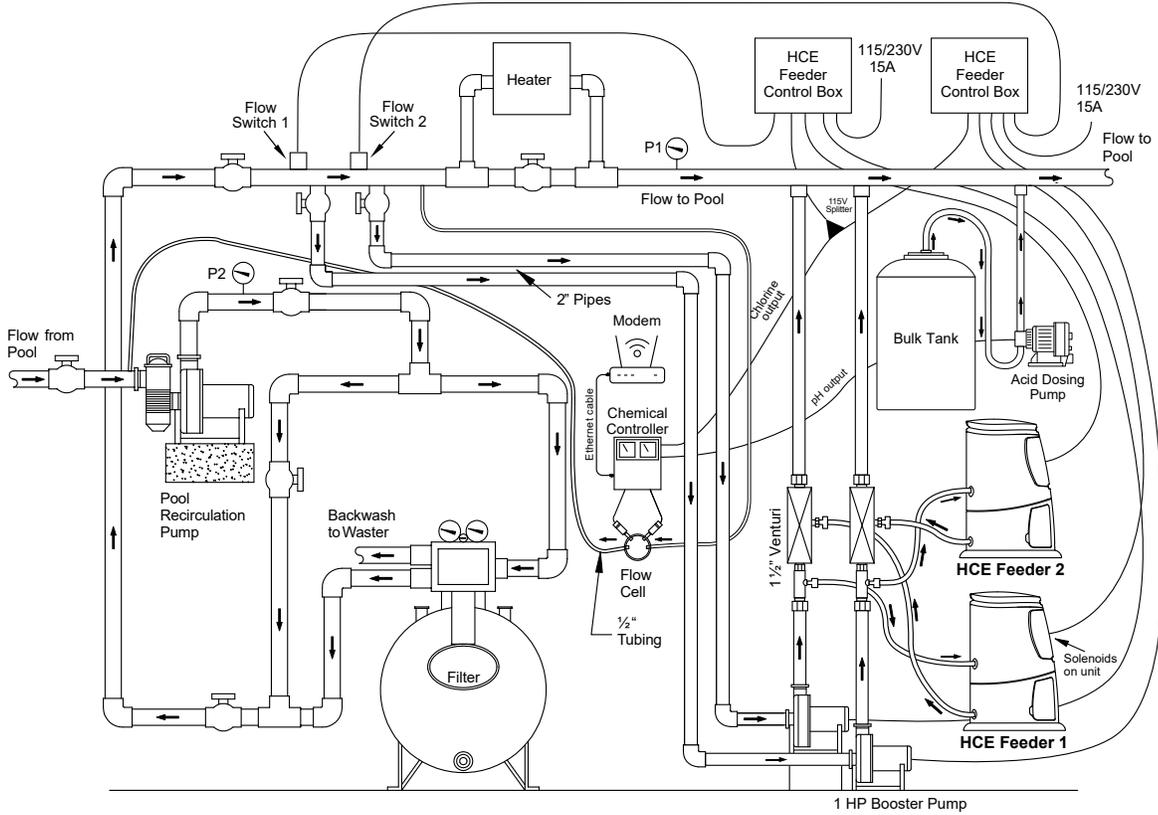
**Note:** Requires 2-inch pipe for pump suction and discharge for effective performance.

**Figure 2.** CCH® Elite with Acid Plus Feeder, installation with separate booster pumps and venturis (simplest installation)



**Note:** Recommended for simplest installation.

**Figure 3.** CCH® Elite DUO Installation



**Note:** Recommended for simplest installation and maximum output for extra large pools.

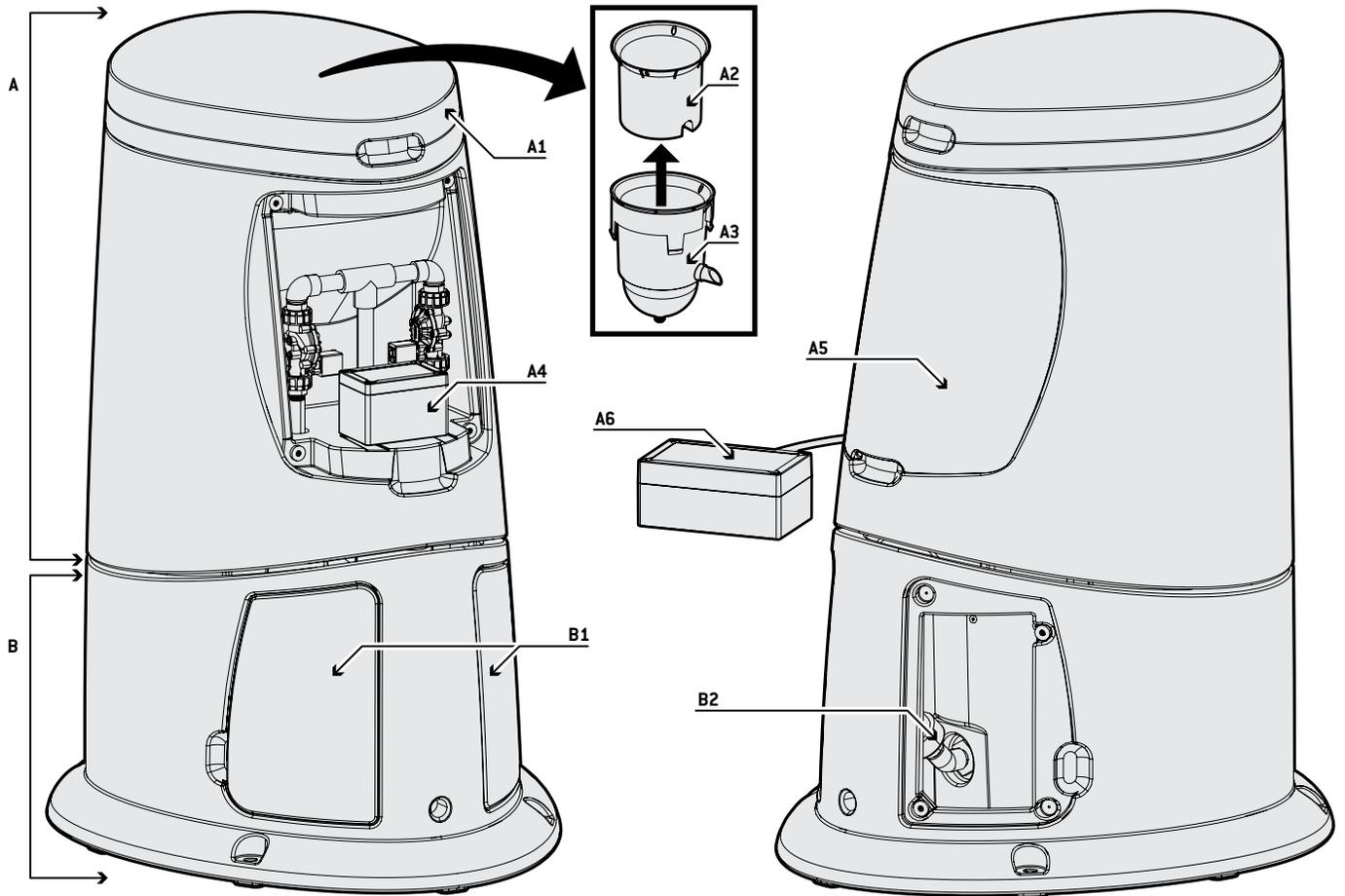
**Table 1. Backpressure vs Suction Flow Rate**

Venturi Inlet Pressure PSI [bar]	Venturi Outlet Pressure PSI [bar]	Pressure differential PSI [bar]	Venturi Suction Rate gpm [L]
34 [2.34] <sup>2,3</sup>	14 [0.97]	10 [0.69] <sup>4</sup>	3.5 [13.25] <sup>4</sup>
34 [2.34] <sup>2,3</sup>	15 [1.03]	9 [0.62] <sup>4</sup>	3.25 [12.3] <sup>4</sup>
34 [2.34] <sup>2,3,7</sup>	16 [1.1] <sup>1,6</sup>	8 [0.55] <sup>1</sup>	2.5 [9.46] <sup>1,5</sup>
34 [2.34] <sup>2,3,7</sup>	17 [1.17] <sup>6</sup>	7 [0.48]	2 [7.57] <sup>5</sup>
34 [2.34] <sup>2,3,7</sup>	18 [1.24] <sup>6</sup>	6 [0.41]	1.5 [5.68] <sup>5</sup>
34 [2.34] <sup>2,3,7</sup>	19 [1.31] <sup>6</sup>	5 [0.34]	1 [3.79] <sup>5</sup>
34 [2.34] <sup>2,3,7</sup>	20 [1.38] <sup>6</sup>	4 [0.28]	0.5 [1.89] <sup>5</sup>
34 [2.34] <sup>2,3,7</sup>	21 [1.45] <sup>6</sup>	3 [0.21]	0 <sup>5</sup>

- 
- Note:**
1. Pressure and suction rate below recommended setting.
  2. 34 PSI nominal venturi inlet pressure created by Pentair 1HP booster pump and Mazzei 1585X venturi.
  3. Actual venturi inlet pressure may vary based on local pool system conditions.
  4. The rated feeder chlorine output is based on a 3gpm inlet and outlet flow rate.
  5. Decrease feeder ½" inlet flow rate with lower suction rate to avoid overflow conditions.
  6. Decrease venturi backpressure to increase venturi suction rate.
  7. 1-½ HP or 2HP booster pump needed if venturi back pressure cannot be decreased to achieve desired operation.
-

# 3 CCH® Elite Feeder Overview

Figure 4. Front View of CCH® Elite Feeder



## 3.1 Components List

The CCH® Elite Feeder includes these components:

- A Hopper, which includes:
  - A1 Hopper lid, hinge pin, and retainer
  - A2 HCE grid basket
  - A3 HCE bowl
  - A4 Junction Box
  - A5 Front cover
  - A6 Feeder control box
  - A7 ESV (emergency shutoff valve)(picture not shown)
  - A8 ESV nut wrench (picture not shown)
  - A9 Grid basket removal tool (picture not shown)
- B Base, which includes:
  - B1 Left and right covers
  - B2 Discharge valve assembly
  - B3 Level switch (picture not shown)
  - B4 Bucket funnel (picture not shown)
- C Booster pump and venturi installation kit (picture not shown)

# 4 Pre-installation Instructions

## 4.1 Prepare the Site

Before installing equipment, ensure that:

1. The site has all electrical connections installed. All electrical lines should be secured to meet site safety procedures and to prevent tripping over electrical lines.

---

 **Danger:** All wiring connections, fusing, grounding, inspection, and maintenance of wiring must be performed by a licensed electrician in accordance with the National Electric Code (NEC), Occupational Safety and Health Act (OSHA) in the United States, and all local electrical codes. Failure to properly install and wire this product can result in property damage, injury, or death, and may affect warranty coverage.

---

2. Site meets criteria noted in Section 4.1.1.

### 4.1.1 Site Requirements

- The feeder must fit in the selected room with enough clearance for maneuvering and servicing the equipment.
  - Recommended clearance for feeder installation is 48" L x 48" W x 76" H [121.9 cm x 121.9 cm x 193.0 cm]
  - Minimum clearance for feeder installation is 36" L x 36" W x 64" H [91.4 cm x 91.4 cm x 162.6 cm].
- Required electrical service as follows:
  - 100 - 240 V AC / 15 - 20 A dedicated outlet.
  - 50 - 60 Hz single-phase only.
  - 50 Hz systems require a locally-sourced booster pump (see booster pump section, Section 5.6, for more information).
- Determine the inlet and outlet location of the booster pump and venturi loop.
  - It is preferable to install this loop across the heater bypass valve to maximize the pressure differential of the system to enhance performance.
  - The booster pump suction should always be downstream of the pool filter(s) to ensure the use of clean, filtered water to protect the solenoid valves. Refer to Figure 1 on page 6 for proper location of piping connections.
  - The booster pump and venturi should be located to minimize the use of 90° elbows on the venturi outlet.
- The following cable lengths need to be considered for placement of the control box and feeder:
  - The combined control box and feeder cable is 20 ft [6 m] when connected; the feeder will need to be within 20 ft [6 m] of the control box.
  - The ORP control cable is 20 ft [6 m]; the control box will need to be within 20 ft [6 m] of the ORP controller.
  - The flow switch cable is 33 ft [10 m]; the distance between the control box and flow switch should be considered.

### 4.1.2 Site Hydraulic Evaluation

1. It is critical to determine the effluent pressure of the system prior to installation. This pressure must be measured immediately after backwashing when it will be at its highest level. Refer to the appropriate diagram from Section 2.2 - Process Flow Diagrams to determine where to measure this pressure (P1).
2. Take a pressure reading and refer to Table 1 to determine the suction capacity of the system assuming that there is no suction lift correction. Record this suction capacity as F1.
3. Next, determine where the CCH® pump and venturi loop will be installed. It may be preferable to install this loop across the heater bypass valve to use this pressure differential to enhance system performance.

---

 **Caution:** Always minimize the backpressure on the venturi.  
Avoid use of elbows after the venturi if possible.  
Never install an elbow within 3 feet of the venturi outlet.  
Always use elbows on the inlet to the CCH® pump or prior to the venturi if possible.

---

4. After the evacuation system has been laid out, measure the height differential (in feet) between where the venturi will be installed and discharge valve of the CCH® feeder. Use this height differential to calculate the suction lift factor (S) in the following formula:

$$\frac{34 - \text{height differential in feet}}{34} = S$$

**Example:** Height differential is 6 feet.  $\frac{(34-6)}{34} = 0.82$

5. Take the suction capacity F1 and multiply it by the suction lift factor to get the actual outlet flow

$$F1 \times S = \text{actual outlet flow}$$

## 4.2 Gather Equipment for Feeder Installation

Assemble these products in preparation for installation.

**Table 2. Equipment for Feeder Installation**

<b>CCH® Elite components</b>	See Section 3.1 - Components List.	
<b>Essential equipment supplied by others</b>	2" Sch 40 pipe	
	Two (2) 2" ball valves	
	2" elbows, 45° and 90°	
	½" [1.27 cm] flexible tubing	
	PVC primer and glue	
	Saddle clamps or Tees for connection to 2" PVC pipe from pool return (optional)	
	Plumber's tape	
<b>COTS Tools</b>	Drill	
	11/16" drill bit and ½" NPT tap	
	Pipe wrenches or gas pliers	
	Tubing cutters	
	Saw (to cut PVC pipe)	
<b>PPE</b>	Safety glasses	
	Rubber gloves	
	Apron	

## 4.3 Pre-Installation Checklist

**Table 3. Pre-installation Checklist**

Item No	Check	Completed?
1	Is a licensed electrician available to perform necessary electrical wiring of the booster pump?	
2	Does the site meet all criteria noted in Section 4.1.1?	
3	Have inlet and outlet locations on the pool return post filter been identified?	
4	Are all CCH® Elite components on hand?	
5	Is all essential equipment supplied by others on hand?	
6	Are all COTS tools and other equipment on hand?	
7	Is all PPE on hand?	

# 5 Installation Instructions

## 5.1 Install the Booster Pump- Venturi Loop

Downstream of your pool filter(s), connect the booster pump suction and venturi outlet 1 1/2" piping: See Figure 5.

**Caution:** Shut off the pool pump and isolate the pool return piping location used for the installation to prevent excessive water leakage.

**Note:** Refer to Figure 1 on page 6 for proper location of system piping connections.

1. Drill and tap two 2" holes that will be used for the booster pump inlet and venturi outlet, respectively.
2. Since not all pipes run full, for horizontal pipe, drill the holes on the side or bottom.
3. Cut and install 2" pipe at both the saddle clamps or tees, then install 2" ball valve on the pipes for isolating the booster pump inlet and venturi outlet.
4. Install the 2" unions on the booster pump suction and discharge.
5. Use the 2" slip x 1 1/2" threaded reducing unions to connect the 1 1/2" venturi threads. Apply plumbers tape to the venturi threads.
6. Thread the 3/4" x 1/2" reducer coupling onto the venturi suction.
7. Complete the 2" piping run from the inlet nipple to the booster pump suction.
8. Install the rest of the piping assembly from the pump discharge as shown in Figure 4. Ensure the venturi is oriented in the direction flow.
9. Complete the 2" piping run from the outlet of the venturi to the outlet nipple on the pool return using as few 90° elbows as practicable.

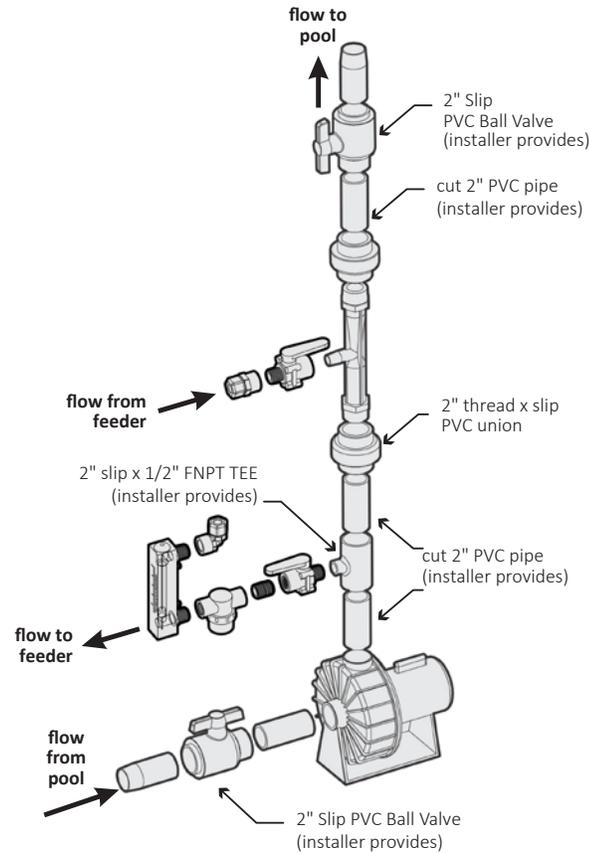


Figure 5. Complete the 2" piping run

## 5.2 Install the Flow Switch

Install the flow switch upstream of the booster pump suction in horizontal or vertical pipe with upward flow direction:

1. Drill and tap a 1/2" NPT hole just upstream of the booster pump suction.
2. In horizontal pipe, the tapped hole should be on the side parallel to the ground or a little lower to ensure the positive presence of flow. See Figure 6.
3. In the vertical pipe, the tapped hole should be in the upward direction of the flow. See Figure 7.

**Caution:** Do not install the flow switch on top of the pipe or in vertical piping with flow going down. This may cause false "no flow" readings in pipes that don't always run full.

4. Use sufficient plumber's tape on the flow switch threads to ensure a good seal.
5. To avoid malfunction, a minimum distance between the flow switch and bends, valves, changes cross-section, etc. must be observed. See Figure 8.
  - Min. 5 x pipe diameter upstream (A)
  - Min. 3 x pipe diameter downstream (B)

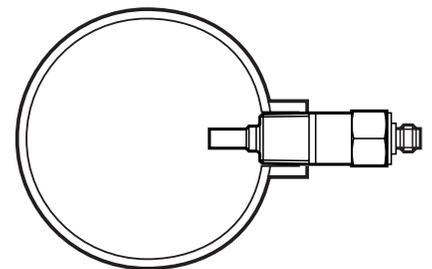


Figure 6. Flow switch install in horizontal pipe

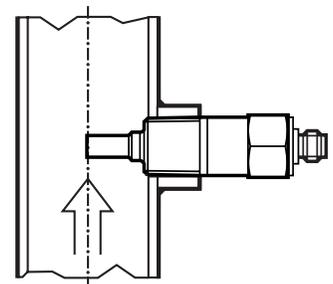


Figure 7. Flow switch install in vertical pipe

## 5.3 Feeder Setup- Connect the Discharge Tubing Line

To connect the discharge tubing line of the feeder to the venturi suction:

1. Remove the hopper (top half) of the feeder and place it on the floor.
2. Remove the left and right base covers to expose the discharge piping check valve and tubing connector.
3. Estimate how much tubing needed to make the connection between the feeder and venturi and cut the appropriate tubing length using tubing cutters.
4. Manipulating the feeder base for easier access, connect the  $\frac{1}{2}$ " OD polyethylene tubing to the tubing connector.
5. Wind the other end of the tubing through the hole in the base so that it comes out of the back of the base. See Figure 9.
6. Connect the tubing to the tubing connector on the venturi suction.
7. Use a wrench, if necessary, to secure the tubing onto the tubing connectors.

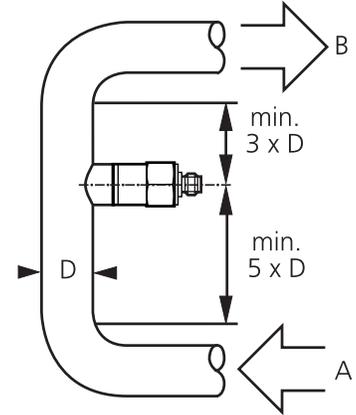


Figure 8. Flow switch minimum distance

## 5.4 Feeder Setup- Connect the Inlet Tubing Line

To connect the inlet tubing line of the feeder to the inlet manifold:

1. Replace the hopper back onto the feeder base.
2. Install the  $\frac{1}{2}$ " ball valve, strainer, flow meter and male threaded tubing connector at the booster pump discharge prior to the venturi. (Install ball valve prior to strainer and flow meter).
3. Install the  $\frac{1}{2}$ " female threaded tubing connector on the  $\frac{1}{2}$ " male threads at the back of the feeder hopper
4. Estimate how much tubing is needed to make the connection between the feeder and venturi and cut the appropriate tubing length using tubing cutters.
5. Using the appropriate tubing connectors, connect the feeder inlet to the booster pump discharge.

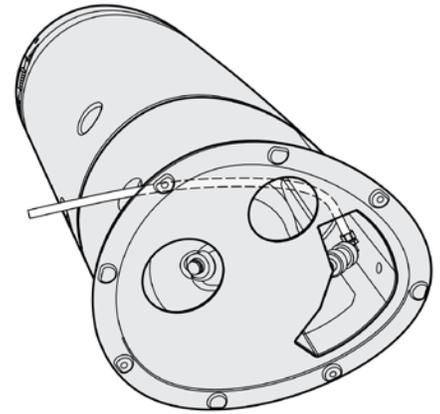


Figure 9. Discharge Tubing Connection

## 5.5 Mount the Control Box

Open the control box cover to access the mounting holes of the control box.

1. The control box mounting holes are located on the outside of the watertight gasket.
2. Select the proper bolt size and material for compatibility to box and wall construction.

## 5.6 Wire the Booster Pump to the Control Box

Using a certified electrician, connect the booster pump to the control box using 12 AWG or bigger wire.

**Warning:** Risk of dangerous or fatal electrical shock. Be sure that power to the motor circuit is off before working on wiring, wiring connections, or the motor. Re-install the motor end cover and all other wiring covers before turning on the power.

**Note:** The pump must be permanently connected to the control box. Be sure no other lights or equipment are on the same circuit.

**Note:** Be sure no other lights or equipment are on the same circuit as the control box.

**Note:** Use Ground Fault Circuit Interrupter (GFCI) as a master on-off switch.

1. Refer to Appendix section 10.2.1 and 10.2.2 for control box wiring help.
2. Remove the booster pump motor end cover to expose the pumps dual-voltage selector, Figure 10.
3. If you have 230 V motor supply voltage, confirm that the plug is set for 230 V. The arrow on the plug will point to the 230 V position, which is the default position of the pump (the plug only connects with one prong in this position).
4. If you have 115 V supply, pull the plug straight up and place it on the two brass prongs so that the arrow points to the 115 V position.
5. Open the control box cover and wire the booster pump to the control box using the wiring diagram, Figure 15.
6. Replace the booster pump motor end cover to complete the booster pump wiring.

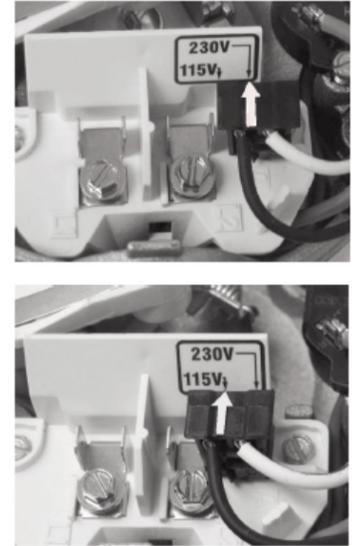


Figure 10. Dual-Voltage Selector

## 5.7 Connect the Flow Switch Cable

Connect the orange flow switch cable to the flow switch:

1. Route the flow switch cable so that it is not a tripping hazard.
2. The M12 connector on the cable goes in one direction. Screw in the connector so that it fully engages with the flow switch.

## 5.8 Prime the System

1. Allow pool water to enter the 2" and ½" piping and tubing to confirm overall water tightness.
2. Open the 2" inlet ball valve and allow water to enter the booster pump checking for leaks.
3. Slowly crack open the booster pump discharge union, allowing water to flow out confirming that the booster pump is fully primed.
4. Reconnect and tighten the discharge union.
5. Open the 2" outlet ball valve fully priming the entire booster pump / venturi loop.
6. Open the ½" gray inlet and outlet feeder ball valves, allowing water to reach the feeder.
7. Check for leaks at the booster pump and venturi loop and feeder and flow switch. Redo any leaking connections.

## 5.9 Connect the Control Box to the Feeder

1. Connect the feeder control cable on the control box (second from the left) to the main cable coming out of the back of the feeder hopper.
2. Orient the notch of both connectors so they can be pushed in together. The 4 pin connectors from the control box and the feeder are keyed so they fit together in only one orientation.
3. Once mated, turn the locking ring clockwise until hand tight. (The connectors are sealed to IP68 when mated correctly.)

# 6 Post-Installation Instructions

Before first time startup of the feeder, check:

**Table 4. Post-Installation Checklist**

Item No	Check	Completed?
1.	Is there any residual debris (plastic shavings, screws, and so on) inside the solution tank?	
2.	Has the booster pump been fully primed?	
3.	Are all electrical lines secure and not a tripping hazard?	
4.	Are all exposed electrical and instrument lines protected and do they meet field conditions?	
5.	Does the booster pump motor plug line up to the correct voltage supply?	
6.	Is the control box cover closed and screws securely tightened?	
7.	Are all fittings and unions tightened to prevent leaks?	
8.	Are flow directional arrows pointed in the correct direction of flow on the venturi, solenoid valves, and check valves?	
9.	Is grid basket placed in HCE bowl correctly so that it cannot spin around?	
10.	Is the control box feeder cable connected to the feeder cable and is the locking ring turned clockwise to seal the two connectors together?	

## 6.1 System Startup

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**Note:** Before starting up the equipment, ensure that the Post-Installation checklist has been completed.

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### 6.1.1 Feeder Preparation

After completing the post-installation checklist:

1. Put on the appropriate PPE: long sleeved clothing, rubber gloves, apron, dust mask, and safety glasses.

---

 **Danger:** Use suitable personal protective equipment (PPE) at all times to avoid physical contact with calcium hypochlorite liquid or vapor. Failure to do so may result in death or serious injury. Please refer to the Safety Data Sheet for additional information and precautions regarding the proper handling of calcium hypochlorite.

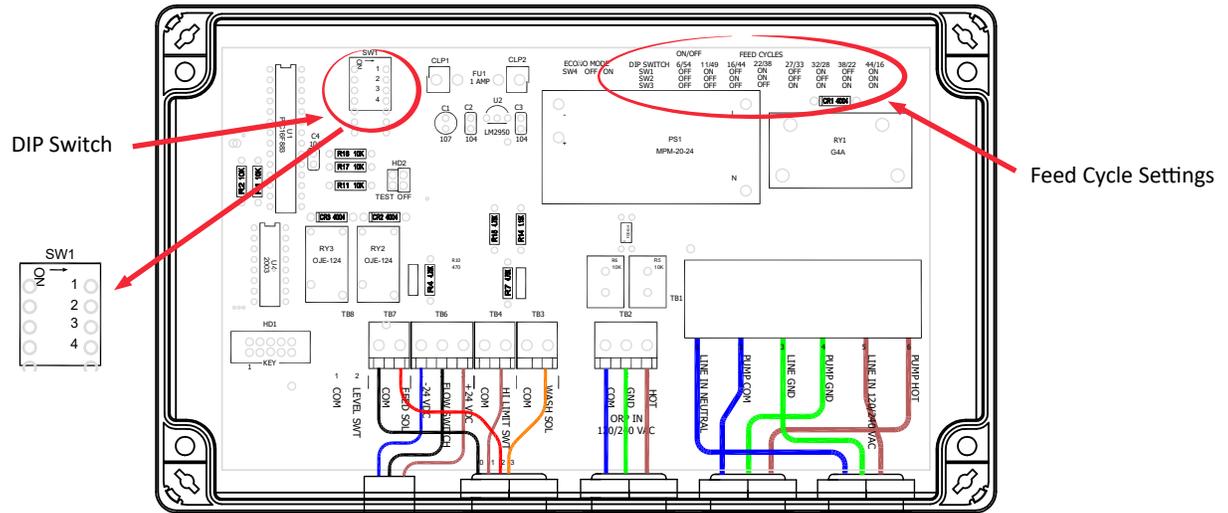
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2. Open the hopper lid.
3. If not already installed, place grid basket in to the hopper. Confirm that only one grid basket is installed in the hopper and placed in the correct orientation where the basket spout is on the bowl outlet. (Basket should not be able to rotate when placed correctly).
4. Use a scoop to add approximately 3 inches of CCH® tablets to the basket.
5. Close the hopper lid.

## 6.1.2 Control Box Preparation

**Danger:** Ensure the control box is not plugged into power prior to removing the top cover, adjusting DIP switches, and wiring in the booster pump. Failure to do so may result in death or serious injury from electrical shock.

1. Prior to powering up the control box, verify the output setting and economy mode by removing the top cover and identifying the DIP switch settings in accordance with the Feed Cycle Settings table in step 4, below.
2. The DIP switches are located near the top left of the controller and the feed cycle settings are on the top right. See Figure 11, below.
3. There are 4 DIP switches. Switches 1, 2, 3 control the feed solenoid On/Off time and switch 4 turns the economy mode On/Off.



**Figure 11.** DIP Switch Location and Feed Cycle Settings

4. The below Feed Cycle Settings table shows On/Off feed times in seconds based on the combination of DIP switch settings. The higher on times yield higher chlorine output.

ON/OFF	FEED CYCLES							
DIP SWITCH	6/54	11/49	16/44	22/38	27/33	32/28	38/22	44/16
SW1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
SW2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
SW3	OFF	OFF	OFF	OFF	ON	ON	ON	ON

5. Set your desired output and economy mode setting in accordance with the above Feed Cycle Settings table.
  - a. For example, SW1 on, SW2 off, SW3 on yields 32 sec On and 28 sec Off for the feed solenoid – Approximately 75% chlorine output of the feeder.
  - b. If SW4 is off, the booster pump will always be powered on and running. If SW4 is on, it will be in economy mode and be on a 1-minute delay. The pump will run for a minimum of 1 minute during startup and 20 seconds after the last feed or wash cycle.
  - c. The DIP switches can be toggled at any time with the controller powered off.

**Note:** If using an ORP or chemical controller for dosing, start with the dip switches configured to the highest output. This is SW1, SW2, and SW3 on.

6. Close the top cover of the controller to resume start up.

### 6.1.3 System Power Up



**Figure 12.** Feeder Control Box

INDICATOR LIGHT (no light indicates the signal or function is not present or active)		
<b>Flow</b>	Solid Green	Flow switch senses flow in pool recirculation piping
<b>Feed</b>	Flashing Green	In a feed cycle - solenoid is energized (open)
	Solid Green	In a feed cycle - solenoid is <b>NOT</b> energized (closed)
<b>Wash</b>	Flashing Green	In a wash cycle - solenoid is energized (open)
	Solid Green	In a wash cycle - solenoid is <b>NOT</b> energized (closed)
<b>Alert</b>	Flashing Red	High level switch is triggered. (Overflow condition) - 3s delay on, 10s delay off
BUTTONS		
<b>Power</b>	Toggle feeder from standby (off) to ready to feed (On)	
<b>Mode</b>	Toggle from Manual (timer mode) to ORP (ORP mode) <b>Note:</b> ORP light flashes green when chlorine signal is present	

1. Connect the control box to a dedicated AC power source in accordance with the site requirements section 4.1.1.
2. After an up to 30 second boot-up period, the box will initially power up with the following indicator lights and colors present:
  - **Power:** off / red — *Indicates the control box is receiving power and is on standby.*
  - **Mode:** manual or ORP / green — *Indicates the operating mode the box is in.*
  - **Flow:** green — *Indicates there is flow at the flow switch. If the light is off, there is either no flow, the orange flow switch cable is not correctly connected to the flow switch, or the flow switch is improperly installed.*
  - **Feed, Wash, Alert:** Off
3. Slowly open the inlet ball valve to allow water to flow through the manifold.
4. Press the control box power button to energize the system.
5. Put the control box on manual mode to energize the feed solenoid valve and send water into the hopper.
6. Check for leaks from lines, valves, and connections. If necessary, tighten parts.
7. Put the control box back on ORP mode.
8. Connect the control box ORP plug to an ORP (chemical controller) chlorine demand output.
9. Use the ORP controller to send a chlorine feed signal to confirm operation of the CCH® Elite control box.
10. When the chlorine signal is removed, verify that the controller goes into four wash cycles of 15 sec On and 15 sec Off.
11. Once all operating conditions are verified, press the power button on the control box to put it back into standby.

# 7 Operation Instructions

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**Note:** Before starting up the equipment, ensure that the Post-Installation checklist has been completed.

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To operate the CCH® Elite Feeder:

1. Put on the appropriate PPE: long sleeved clothing, rubber gloves, apron, dust mask, and safety glasses.



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**Danger:** Use suitable personal protective equipment (PPE) at all times to avoid physical contact with calcium hypochlorite liquid or vapor. Failure to do so may result in death or serious injury. Please refer to the Safety Data Sheet for additional information and precautions regarding the proper handling of calcium hypochlorite.

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2. Ensure that the inlet and outlet ball valves on the booster pump discharge and venturi suction lines are closed.
3. Open the hopper lid.
4. Ensure that the hopper is at least 50% full with CCH® tablets.
5. Close the hopper lid.
6. Fully open the feeder outlet ½" ball valve on the venturi suction.
7. Slowly open the feeder inlet ½" ball valve until the flow meter reads 3.0 gpm.
8. Power on the control box and select the appropriate feed mode.
9. If on ORP, once chlorine demand signal is received, the booster pump will turn on and the feeder will start its feed cycle based on the defined DIP-switch setting.
10. Once chlorine demand signal terminates, the feeder will go into its wash 15 sec On/Off cycle (4) times for a full 2 minute cycle (indicator light stays on for the entire wash cycle).
11. If more water goes into the feeder than is able to be removed by the venturi, the alert indicator light turns on indicating a high level condition. This condition will shut both solenoid valves and allow the booster pump to continue to run to let the venturi remove the water from the base.
  - If the pump was off due to economy mode, it will turn on in order to let the venturi remove water from the base.
  - The ESV (Emergency Shutoff Valve) provides mechanical stop in case the electronic high level switch malfunctions.
12. If economy mode is selected, the booster pump will be on a 1-minute delay. The pump will run for a minimum of 1 minute during startup and 20 seconds after the last feed or wash cycle.

## 7.1 Fill the Hopper

1. Put on the appropriate PPE: long sleeved clothing, rubber gloves, apron, dust mask, and safety glasses.

**Danger:** Use suitable personal protective equipment (PPE) at all times to avoid physical contact with calcium hypochlorite liquid or vapor. Failure to do so may result in death or serious injury. Please refer to the Safety Data Sheet for additional information and precautions regarding the proper handling of calcium hypochlorite.

**Danger:** Fire or explosion could result from contamination, or use of any other chlorinating compound!

**Caution:** Use of any tablets or other chemicals other than the CCH® tablets designed for use with this chlorinator is hazardous, possibly causing fire and/or explosion and will void this warranty.

2. Open the hopper lid.
3. Use a scoop to fill the hopper with CCH® tablets.

**Caution:** Do not dump CCH® tablets into the basket. Dumping will cause dust from calcium hypochlorite and can damage basket from force of load.

**Caution:** Use of any tablets or other chemicals other than the CCH® tablets designed for use with this chlorinator shall void this warranty.

4. Close the hopper lid.

## 7.2 Fill the Hopper (Dustless Procedure)

**Danger:** Use suitable personal protective equipment (PPE) at all times to avoid physical contact with calcium hypochlorite liquid or vapor. Failure to do so may result in death or serious injury. Please refer to the Safety Data Sheet for additional information and precautions regarding the proper handling of calcium hypochlorite.

1. Put on the appropriate PPE: long sleeved clothing, rubber gloves, apron, dust mask, and safety glasses.
2. Remove the red tamper prevention tab on the lid of the briquette bucket. The lock release button is visible.
3. Firmly press the lock release up, then turn the lid counter-clockwise to remove the lid from the bucket.
4. Place the bucket funnel on the bucket opening and turn it clockwise until the bucket funnel is firmly seated on the bucket. Listen for the ratcheting sound of the locking mechanism to confirm that the funnel is properly installed.
5. In one smooth motion, invert the bucket into the hopper opening while aligning the tabs of the bucket funnel into the slots of the hopper opening. See Figure 13.
6. Turn the bucket and funnel clockwise to secure the bucket onto the hopper. The CCH® tablets will deposit into the hopper.

**Note:** Ensure that the bucket is empty before removing it from the hopper.

To remove the bucket from the hopper:

1. Turn the bucket counter-clockwise to disengage the tabs on the bucket funnel from the hopper.
2. Lift the bucket and funnel up to remove them from the hopper.
3. To remove the bucket funnel from the bucket, firmly press up on the two funnel locking buttons, then turn the bucket funnel counter-clockwise. See Figure 14.



Figure 13. Bucket Funnel Installation

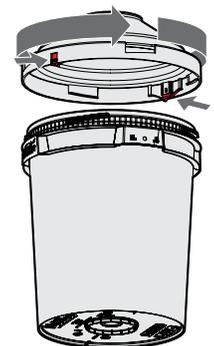


Figure 14. Bucket Funnel Removal

# 8 Preventative Maintenance

## 8.1 Preventative Maintenance Schedule

Routine maintenance of the CCH® Elite feeder is minimized when proper pool water balance is maintained. Maintain pool water chemistry as follows:

<b>Total Alkalinity</b>	60 – 80 ppm
<b>Calcium Hardness</b>	200 – 1800 ppm
<b>PH</b>	7.2 - 7.6
<b>LSI</b>	-0.3 - +0.5

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**Note:** Adherence to these recommendations at all times will ensure the most effective and economical performance of the feeder

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**Note:** The use of Carbon Dioxide gas (CO<sub>2</sub>) to lower pH will raise the Total Alkalinity significantly. High total alkalinity (over 80 ppm) will increase scale and solids buildup in feeder.

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Complete each of the following tasks during the first week of each month.

**Table 5. Monthly Maintenance**

Action Needed	Maintenance Process	Time to Complete
Change/clean basket	See Section 8.2.1 - Clean the Grid Basket (Online Cleaning Instructions).	
Inspect inlet and outlet plumbing fittings	<p>Verify that there are no leaks at any of the inlet and outlet ½" feeder fittings and 2" booster pump and venturi piping and fittings, including the booster pump itself.</p> <ol style="list-style-type: none"> <li>1. Close all isolation ball valves and re-plumb / replace any leaking piping and fittings.</li> <li>2. If leaking is observed at the pump motor, the pump shaft seal and impeller will have to be replaced. Refer to the booster pump manual troubleshooting guide and repair parts list for additional information.</li> </ol>	2 min
Inspect booster pump	<ol style="list-style-type: none"> <li>1. Visually check for leaks on and around the pump, including the suction and discharge piping and fittings.</li> <li>2. Close inlet and outlet 2" ball valves and tighten or replace any leaking fittings.</li> <li>3. If leaking observed at the pump motor, the pump shaft seal and impeller is likely burned.</li> <li>4. Refer to pump manual in the Appendix, Section 10, for replacement parts and instructions.</li> </ol>	5 min
Inspect inlet line strainer assembly	<ol style="list-style-type: none"> <li>1. With pressure in the line, visually inspect the strainer basket for leaks. Replace the entire basket assembly if leaking.</li> <li>2. Close inlet ball valve.</li> <li>3. Remove strainer basket and visually inspect for cracks and debris.</li> <li>4. Remove strainer screen and wash it out prior to replacing it back into the basket.</li> <li>5. If screen appears damaged or has a hole in it, replace with a new screen.</li> <li>6. Re-install the strainer basket back into the strainer body.</li> </ol>	10 - 15 min

Inspect discharge check valve	<ol style="list-style-type: none"> <li>1. Close the outlet ball valve.</li> <li>2. Open the lower left and right base covers and unscrew the check valve unions to remove the check valve body.</li> <li>3. Disassemble the check valve and inspect for calcium build up and debris. Clean if necessary.</li> <li>4. Visually check the seal for corrosion. If the seal is corroded, replace the check valve.</li> <li>5. Re-assemble the check valve body ensuring to put the seal on the side of the ball.</li> <li>6. Replace the check valve body back onto the unions, ensure arrow points away from feeder.</li> </ol>	10 min
Inspect reservoir tank	<p>Visually inspect the solution reservoir and ensure that there is no calcium buildup or debris on the high level switch or the discharge valve (DV) assembly including the DV float, and arm.</p> <ul style="list-style-type: none"> <li>▪ Buildup on the level switch will prevent positive notification of a high level event. Verify switch operation by lifting up the switch and confirming the alert indicator light turns on.</li> <li>▪ Build up on the DV float or arm can interfere with feeder discharge operation. Refer to Section 8.2 - Cleaning Procedures if needed.</li> </ul>	5 min
Inspect 45° cut Bowl drain pipe	<ul style="list-style-type: none"> <li>▪ Visually inspect the HCE bowl drain pipe and ensure that there is no calcium buildup or debris on around the edges clogging the fluid path. Break off scale if necessary.</li> </ul>	
Replace 45° cut drain pipe	<ul style="list-style-type: none"> <li>▪ Remove the ¾", 45° cut, schedule 40 pipe from the hopper bowl and replace it with a spare, clean discharge pipe. Refer to Section 8.2 - Cleaning Procedures to prepare the pipe for the next maintenance interval.</li> </ul>	2 min

Complete the following tasks during the first week of January and the first week of July.

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**Note:** Maintenance that prevents the discharge line from clogging is critical to feeder operation.

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**Table 6. Semiannual Maintenance**

Action Needed	Maintenance Process	Time to Complete
Inspect the Venturi	<ol style="list-style-type: none"> <li>1. Close the inlet and outlet 2" ball valves to the booster pump suction and venturi outlet</li> <li>2. Close the inlet and outlet ½" ball valves to the feeder.</li> <li>3. Disconnect the feeder discharge tubing from the venturi.</li> <li>4. Remove the venturi via the 2" unions and visually inspect and verify it is not clogged with scale build up.</li> <li>5. If scale buildup is found, refer to Section 8.2 - Cleaning Procedures.</li> </ol>	2 - 5 min
Inspect the solenoid valves	During feed or wash cycle, if the solenoid valves are hot to the touch, consider replacing the valve. If the solenoid makes a rattling noise when energized, consider replacing the valve.	2 min

## 8.2 Cleaning Procedures

### 8.2.1 Clean the Grid Basket (Online Cleaning Instructions)

**Warning:** Always label the contents of cleaning buckets.

**Danger:** Use suitable personal protective equipment (PPE) at all times to avoid physical contact with calcium hypochlorite liquid or vapor. Failure to do so may result in death or serious injury. Please refer to the Safety Data Sheet for additional information and precautions regarding the proper handling of calcium hypochlorite.

1. Put on the appropriate PPE: long sleeved clothing, rubber gloves, apron, and safety glasses.
2. Allow the hopper to run low enough so all remaining CCH® tablets in the hopper fit inside the basket.
3. Add water to two 5-gallon buckets until each bucket is approximately  $\frac{3}{4}$  full.
4. Prepare the soak bucket:
  - a. Carefully add 12 oz of muriatic acid to one of the 5-gallon buckets to create a roughly 1% solution of 20 Baume muriatic acid.

**Warning:** Always be careful when adding muriatic acid to water; this combination creates an exothermic reaction, which gives off heat. Failure to take care may result in serious injury.

- b. Label this bucket "ACID" and set it aside so that it will not be knocked over.
5. Label the remaining bucket "FRESH WATER" and set it aside.
6. Close the feeder inlet and outlet  $\frac{1}{2}$ " ball valves.
7. Turn off the control box master power switch.
8. Use basket removal tool to remove the used grid basket from the chlorinator. If necessary, use a flat head screw driver to pry and jostle the basket to break scaling.
9. Inspect the HCE Bowl 45° cut drain pipe and, if necessary, break off excess scale or remove the drain pipe completely and replace with a clean spare pipe (*you may have to move the wash nozzle out of the way to remove the pipe*).
  - a. Place "dirty" drain pipe in the acid solution to clean for future use.
10. Pour any remaining CCH® tablets into the replacement basket and install the basket and chemical into chlorinator.
11. Place the used basket into the FRESH WATER bucket.
12. Slowly open the inlet manifold ball valve.
13. Turn on the control box master power switch.
14. Shake the used basket up and down in the FRESH WATER bucket to remove loose residue.
15. Transfer the used basket to the acid bucket and let it soak for 24 hours.

**Table 7. Equipment Needed for Cleaning Procedures**

<b>PPE</b>	Rubber gloves	
	Safety glasses	
	Apron	
	Long-sleeved clothing	
Two 5-gallon buckets for online cleaning		
Three 5-gallon buckets for offline cleaning		
Basket removal tool		
Replacement basket		
Muriatic acid		
Hose (for offline cleaning)		

## 8.2.2 Comprehensive (Offline) Cleaning Instructions

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**Warning:** Always label the contents of cleaning buckets.

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1. If possible, allow the hopper to run completely out of CCH® tablets.
2. Add water to three 5-gallon buckets until each bucket is approximately  $\frac{3}{4}$  full.
3. Prepare the soak bucket:
  - a. Carefully add 12 oz of muriatic acid to one of the 5-gallon buckets to create a 1% solution of muriatic acid.

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**Warning:** Always be careful when adding muriatic acid to water; this combination creates an exothermic reaction, which gives off heat. Failure to take care may result in serious injury.

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- b. Label this bucket "ACID FOR SOAKING" and set it aside so that it will not be knocked over.
4. Prepare the rinse bucket:
  - a. Carefully add 32 oz of muriatic acid to another 5-gallon buckets.

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**Warning:** Always be careful when adding muriatic acid to water; this combination creates an exothermic reaction, which gives off heat. Failure to take care may result in serious injury.

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- b. Label this bucket "RINSE ACID" and set it aside so that it will not be knocked over.
5. Label the remaining bucket "FRESH WATER" and set it aside.
6. Close the booster pump and venturi inlet and outlet 2" ball valves.
7. Close the feeder inlet and outlet  $\frac{1}{2}$ " ball valves.
8. Turn off the control box master power switch.
9. Remove the drain pipe from the HCE bowl and use the basket removal tool to remove the used grid basket from the chlorinator. If necessary, use a flat head screw driver to jostle the basket to break scaling (*you may have to move the wash nozzle out of the way to remove the pipe*).
10. Place the used basket and drain pipe into the FRESH WATER bucket.
11. Shake the used basket up and down in the FRESH WATER bucket to remove loose residue.
12. Transfer the used basket and drain pipe to the ACID FOR SOAKING bucket and let it soak for 24 hours.
13. Remove the venturi from the union connection and place it in the ACID for soaking bucket and let it soak for 1 hr.
14. Pour the contents of the RINSE ACID bucket into the hopper of the feeder.
15. After 1 hour, check the chlorinator and tank. If both are still heavily scaled:
  - a. Carefully pour another 32 oz of muriatic acid into the hopper.
  - b. Add 32 oz of clean water to the hopper.
  - c. Check the chlorinator and tank again in another hour.
16. After 1 hour, check the venturi. If it is still scaled, add some more acid and water in the soaking bucket and allow to soak for another 30 min to 1 hour. Once the venturi is confirmed clean, re-install at the unions.
17. After the feeder is clean, open the  $\frac{1}{2}$ " outlet ball valve on the venturi suction allowing it to remove the contents of the tank.
18. Inspect the hopper and solution tank for cleanliness.
19. Pour additional fresh water into the hopper, if necessary, to remove any debris remaining in the hopper or tank.
20. After the feeder has drained, close the outlet  $\frac{1}{2}$ " ball valve.
21. Dry the inside of the hopper.
22. Install the replacement basket and drain pipe and place CCH® tablets into the hopper.
23. Refer to Section 7 - Operation Instructions to restart the unit.

# 9 Troubleshooting Guide

Symptom	Probable Cause	Solution
No/low inlet water flow	Solenoid valve does not properly open	Replace solenoid valve. Check with dealer.
	½" Inlet ball valve closed	Open the inlet ball valve.
	Inlet strainer plugged	Clean inlet strainer.
	Booster pump not running	See booster pump section.
	Emergency Shut Off Valve in Closed position.	If ESV is stuck, lower gently to reset.
	Feeder cable not connected to control box.	Check feeder cable connection to control box is connected properly. Refer to Section 5.9 for connecting instructions.
Insufficient chlorine in pool	Feeder empty	Refill hopper with CCH® tablets.
	No/low inlet water flow	See No/low inlet water flow section above.
	Clogged discharge line	Clean or replace discharge tubing and fittings. Refer to Section 8.2 - Cleaning Procedures.
	Clogged check valve	Remove and clean the check valve.
	Clogged venturi	Remove venturi and clean. Refer to Section 8.2 - Cleaning Procedures.
	ORP/chemical controller signal not present	Check ORP cable connection to chlorine signal output on ORP. Refer to ORP controller manual.
	Feeder cable not connected to control box.	Check feeder cable connection to control box is connected properly. Refer to Section 5.9 for connecting instructions.
Excess chlorine in pool	ORP/chemical controller problem	Refer to the ORP Controller Manual.
	Clogged basket	Clean grid basket. Refer to Section 8.2 - Cleaning Procedures.
	Clogged 45° cut HCE bowl drain pipe	Break off excess scale from drain pipe or remove and refer to cleaning instructions, page 19
Feeder overflow	Clogged discharge line	Clean or replace discharge tubing and fittings. Refer to Section 8.2 - Cleaning Procedures.
	Clogged venturi	Clean venturi. Refer to Section 8.2 - Cleaning Procedures.
	Insufficient outlet suction	Excessive pressure drop on the venturi outlet. Check with dealer.
	ESV Failure	Replace ESV. Check with dealer.
	Inlet flow rate too high	Check inlet flow meter and set to 3 gpm max.
Control box flow light inactive	No flow in pool pipe where flow switch is installed	Initiate flow in pool pipe.
	Flow switch cable not connected or bad connection to flow switch	Check cable connection to flow switch. Check connector pins for damage or corrosion.
	Flow switch installed incorrectly in pool pipe	Refer to Section 5.2 for proper flow switch installation instructions.
	Flow switch failure	Replace flow switch.

# 10 Appendix

## 10.1 Requirements and Specifications

### 10.1.1 Requirements for Product Installation and Operation

**Table 8. Site Requirement**

<b>Recommended Clearance</b>	Feeder: 48" L x 48" W x 76" H [121.9 cm x 121.9 cm x 193.0 cm]
<b>Minimum Clearance</b>	Feeder: 36" L x 36" W x 64" H [91.4 cm x 91.4 cm x 162.6 cm]
<b>Electrical</b>	120/240 V AC, 1 ph, 50/60 Hz, 15 - 20A dedicated circuit

**Table 9. Accessory & Equipment Specifications**

<b>Chemical</b>	DryTec® FG Briquettes and CCH® Cal Hypo Tablets
<b>Discharge Tubing</b>	½" [1.27 cm] OD Polyethylene flexible tubing
<b>Water Inlet Tubing</b>	½" [1.27 cm] OD Polyethylene flexible tubing
<b>Control Box Supply Voltage:</b>	100 - 240 VAC
<b>Frequency</b>	50/60 Hz
<b>Current Rating</b>	13.675 Amps Full Load (13.175A Relays, 0.500A Controller)
<b>Ambient Operating Temperature</b>	-41 to 140 °F (-20 to 60 °C)
<b>Insulation Rating for External Line Circuits</b>	105 °C, 300V

### 10.1.2 Product Specifications

**Table 10. Operational Specifications**

<b>Dry Chemical Capacity</b>	90 lbs + 45 lbs reserve [40.8 kg + 20.4 kg reserve] (91.8 lbs [41.6 kg] of available chlorine)
<b>Tank Size (Solution Volume)</b>	6.3 gal [23.6 L]
<b>Available Working Solution</b>	4.8 gal [18.2 L]
<b>Water Inlet Size</b>	½" [1.3 cm] OD
<b>Solution Outlet</b>	½" [1.3 cm] OD
<b>Shipping Weight</b>	Approximately 70 lbs [31.8 kg]
<b>Operating Weight</b>	Approximately 220 lbs [100 kg]
<b>Operating Temperature</b>	-4 °F – 140 °F [-20 °C – 60 °C]
<b>Feeder Dimensions</b>	29.8" L x 25.3" W x 40.9" H [75.7 cm x 64.3 cm x 103.9 cm]
<b>Feeder Cable</b>	9' [2.7 m]
<b>Control Box Dimensions</b>	7.95" W x 4.8" H x 2.9 D [20.2 cm x 12.2 cm x 7.4 cm]
<b>Control Box Power Cable</b>	10' [3 m]
<b>Control Box Feeder Cable</b>	1' [0.3 m]
<b>Control Box ORP Cable</b>	20' [6 m]
<b>Control Box Flow Switch Cable</b>	33' [10 m]

**Table 11. Chemical Feed Rate Specifications**

<b>Pool Chlorine Delivery Rate (Pools)</b>	5 – 189 lbs [2.3 kg – 85.7 kg] AvCl/day Maximum of 7.8 lbs [3.5 kg] AvCl/hr
<b>Spa Chlorine Delivery Rate (Spas)</b>	5 – 141 lbs [2.3 kg – 63.9 kg] AvCl/day Maximum of 5.9 lbs [2.7 kg] AvCl/hr
<b>Solution Strength</b>	0.6 – 0.8% at 84 °F [28.8 °C] inlet water temperature
<b>Water Inlet</b>	2.5 - 3.5 gpm [9.5 - 13.2 lpm] @ 30 - 40 psig [2.1 - 2.8 bar]
<b>Venturi Discharge Rate</b>	3 gpm [11.4 lpm] at nominal venturi operation
<b>Recommended Pool Size (For guidance only, see notes)</b>	<ul style="list-style-type: none"> <li>• Outdoor Non-Stabilized: 17,500 – 250,000 gal.</li> <li>• Outdoor Stabilized: 50,000 – 630,000 gal.</li> <li>• Indoor: 70,000 – 1,000,000 gal.</li> <li>• Spas: 1,000 – 5,000 gal.</li> </ul>

**Note:** Above guidance is based on nominal bather loads with well kept pool conditions. Heavy bather loads, pool leakage, frequent backwashing, use of other sanitization equipment, etc will change feeder sizing requirements.

**Note:** Higher flow rates (increased turn over rate requirement) mostly impact feeder sizing on very shallow water such as water slides or kiddie pools since these are less likely to maintain chlorine residuals regardless of bather load. These water features may require more feeder output and/or a bigger feeder model.

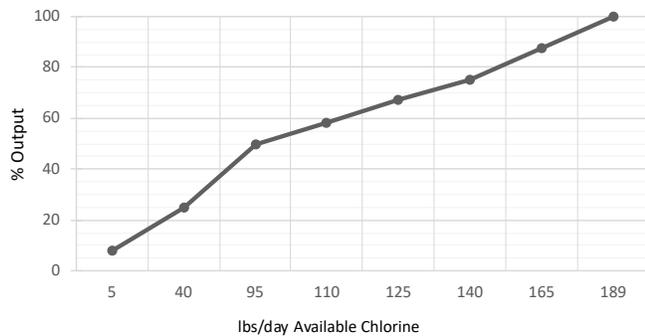
**Note:** Historical chlorine consumption data (how much chlorine the pool typically used per day/week/month) can help with feeder sizing requirements.

### 10.1.3 Optional Feed Rate Capability

Tables represent Feed Solenoid On/Off Time vs Available Chlorine Delivery Rate (lbs/day).

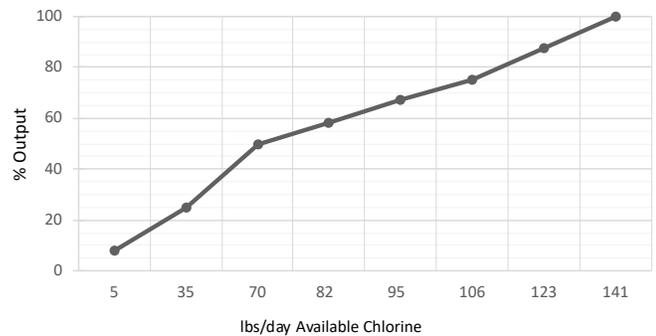
**Table 12. Pools - DryTec® FG Briquettes and CCH® Cal Hypo Tablets**

On/Off (seconds)	On Time %	AvCl (lbs/day)	Output %
44/16	74 %	189	100 %
38/22	63 %	165	87.5 %
32/28	53 %	140	75 %
27/33	45 %	125	67 %
22/38	37 %	110	58 %
16/44	27 %	95	50 %
11/49	18 %	40	25 %
6/54	10 %	5	8 %



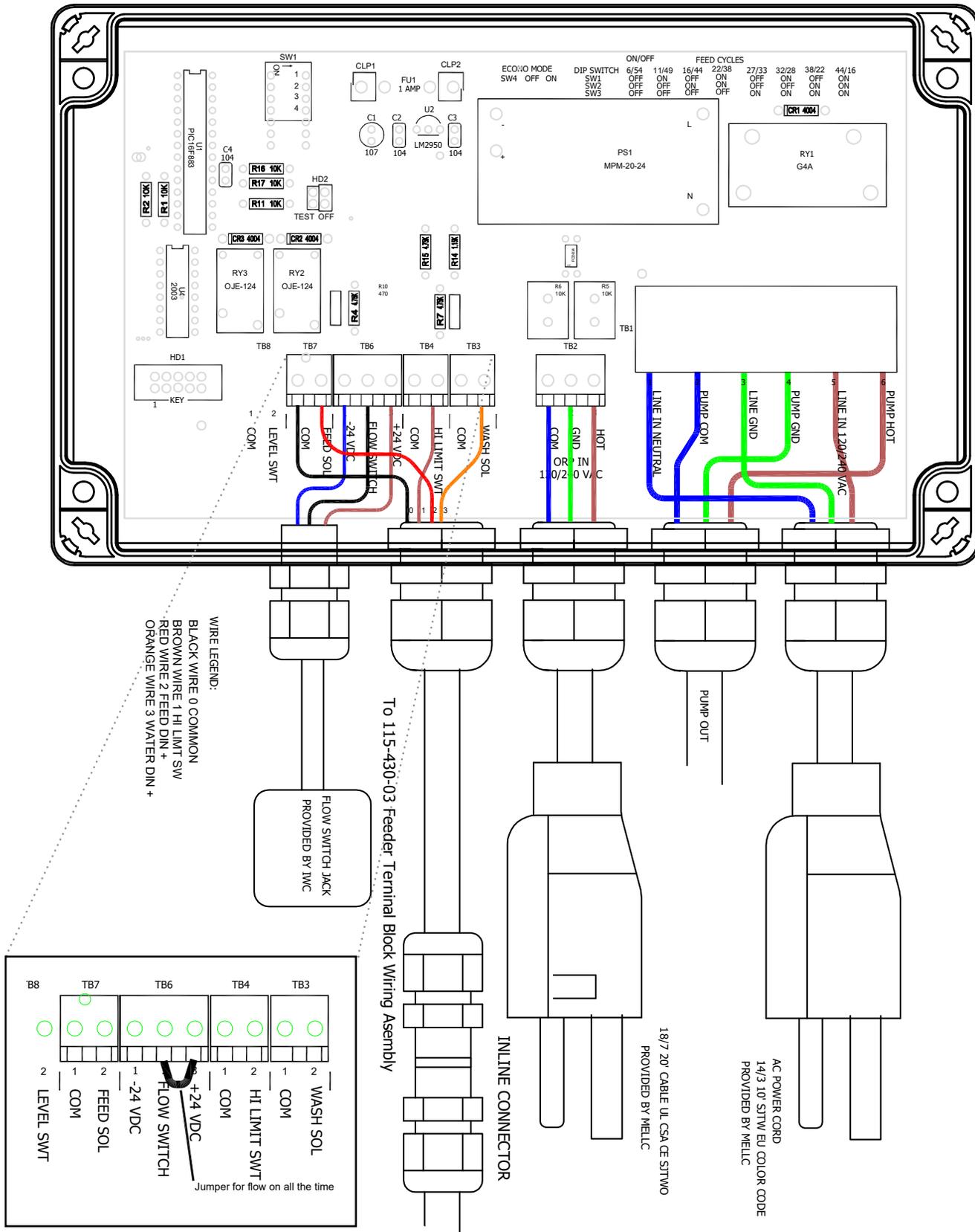
**Table 13. Spas - DryTec® FG Briquettes and CCH® Cal Hypo Tablets**

On/Off (seconds)	On Time %	AvCl (lbs/day)	Output %
44/16	74 %	141	100 %
38/22	63 %	123	87.5 %
32/28	53 %	106	75 %
27/33	45 %	95	67 %
22/38	37 %	82	58 %
16/44	27 %	70	50 %
11/49	18 %	35	25 %
6/54	10 %	5	8 %



## 10.2 Electrical Schematics

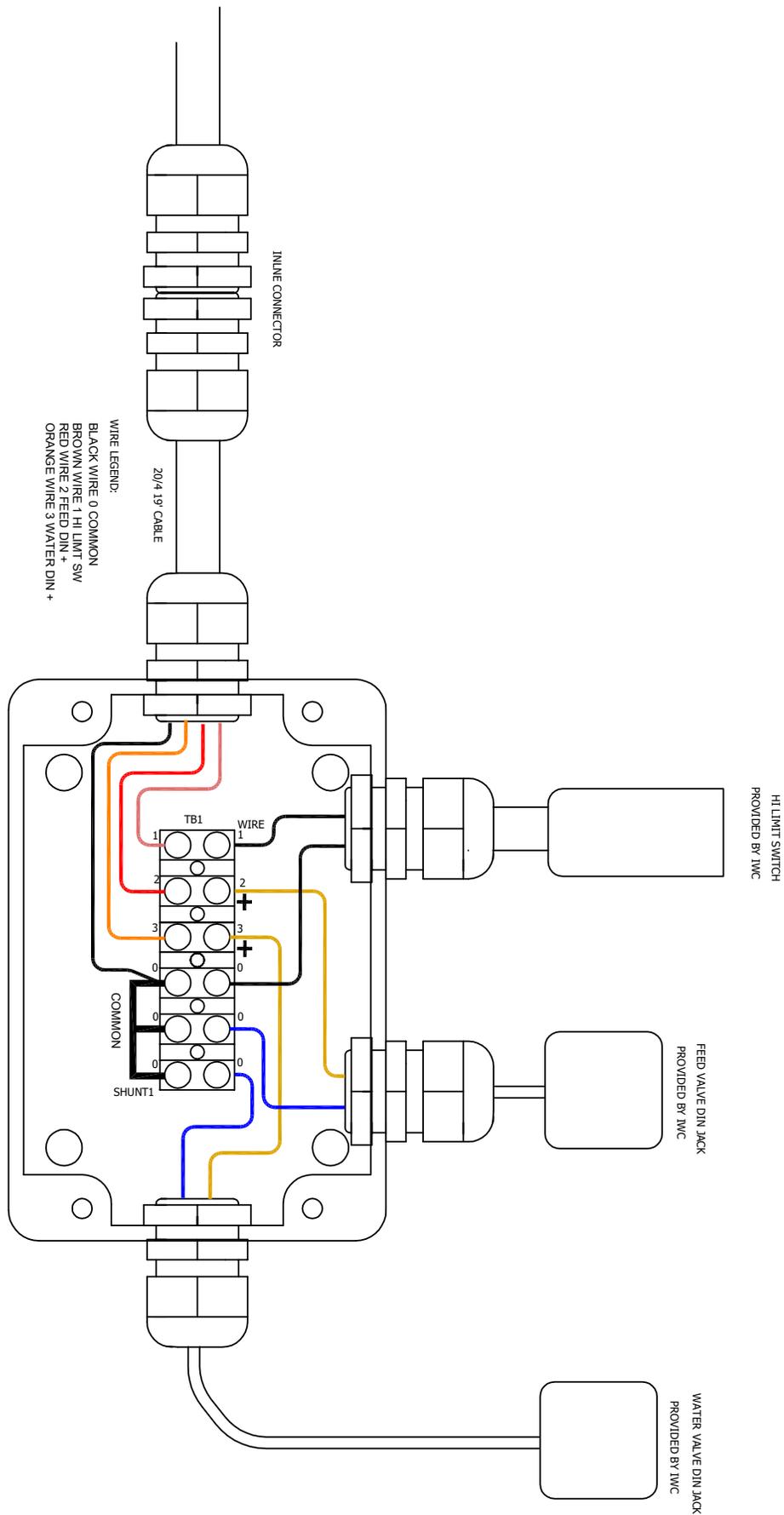
Figure 15. 115 VAC Control Box Wiring Schematic



**Note:** Ensure there is flow in pool pipe prior to bypassing flow switch.

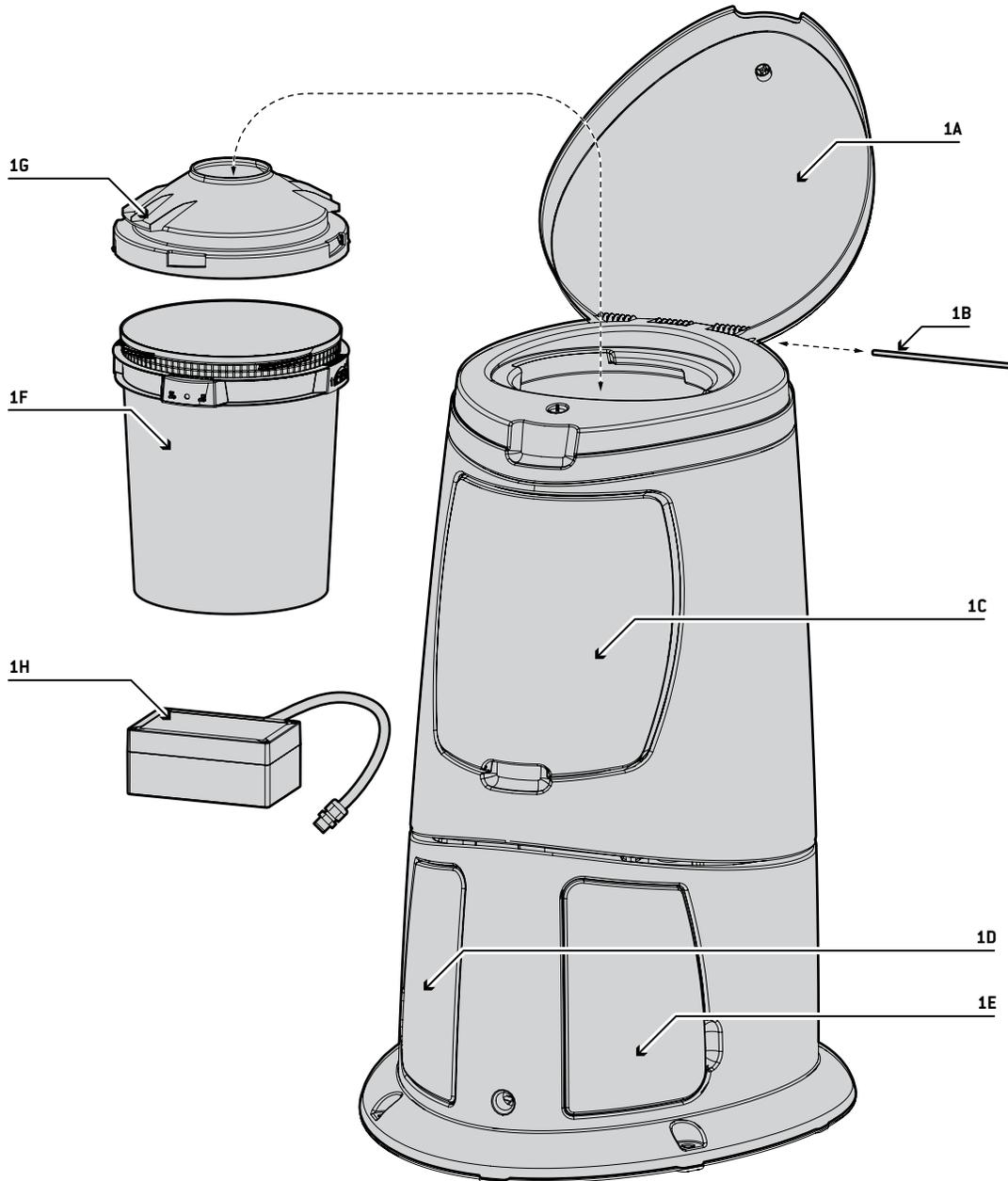


**Figure 17. Feeder Junction Box Wiring Schematic**



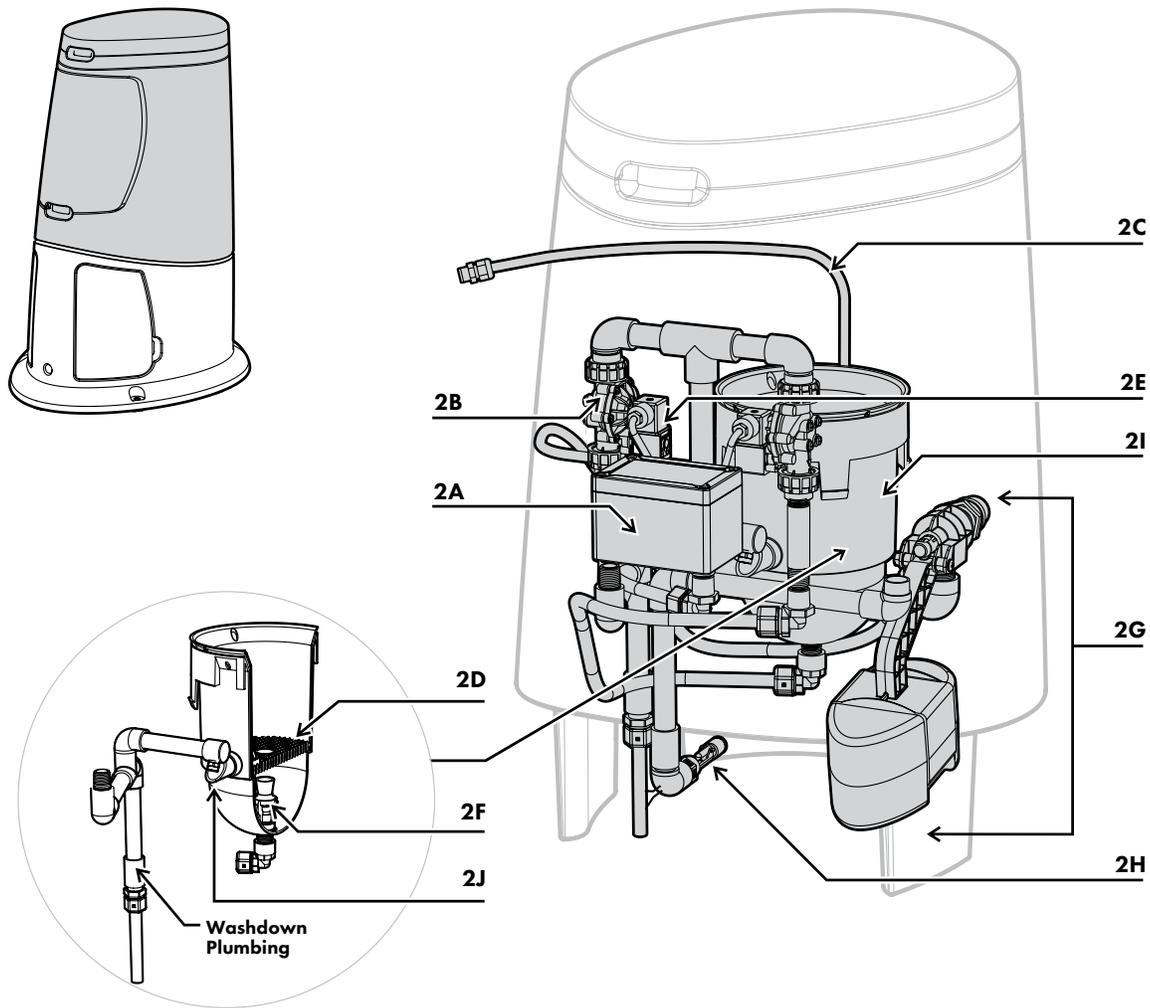
## 10.3 Replacement Parts List and Views

**Figure 18.** Hopper and Base Exterior Components View



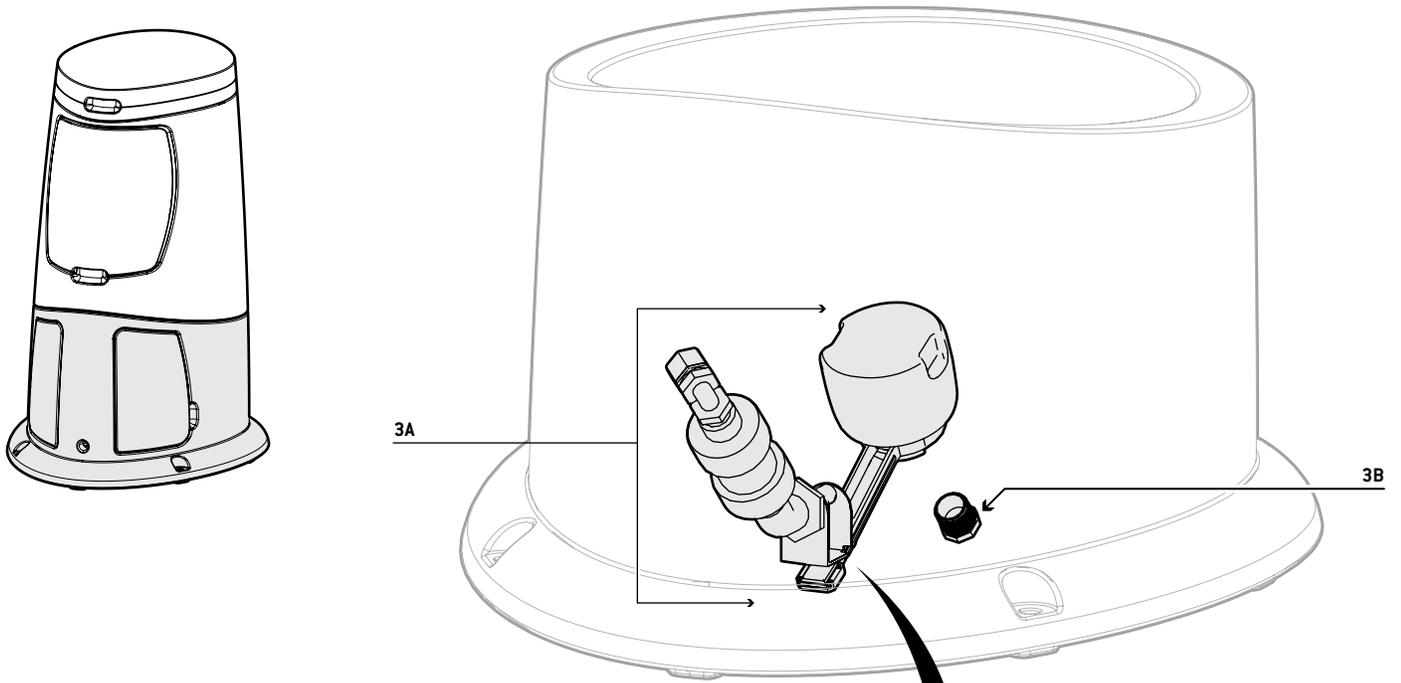
No	Description	Part Number
1: HOPPER AND BASE EXTERIOR COMPONENTS (if applicable, use both part numbers when placing order)		
1A	CCH® Lid / Lid label	73415
1B	Hinge Pin and Retainer Clip	N/A
1C	CCH® Front Cover / Cover Label	73416
1D	Left Cover	73233
1E	Right Cover	73235
1F	Bucket - 50 lbs CCH Tablets	23215
1G	Bucket Funnel	73216
1H	CCH® Control Box / Control Box Label	892153

Figure 19. Hopper Interior Components View

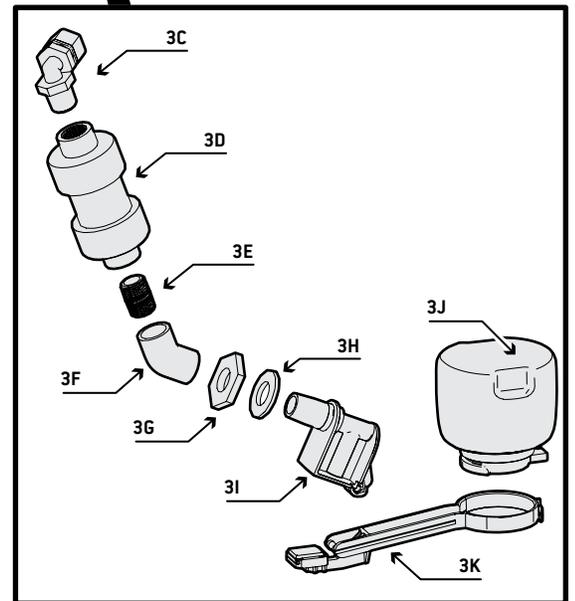


No	Description	Part Number
<b>2: HOPPER INTERIOR COMPONENTS</b>		
2A	Junction Box	877169
2B	Solenoid Valve	206034
2C	Junction Box Cable (Comes with Junction Box)	N/A
2D	Grid Basket	73220
2E	DIN Cables	73261
2F	Chlorinator, HCE Nozzle	73085
2G	Emergency Shutoff Valve	73241
2H	High Level Switch	79840
2I	HCE Bowl	73219
2J	¾" HCE Bowl discharge drain, 45° cut	N/A

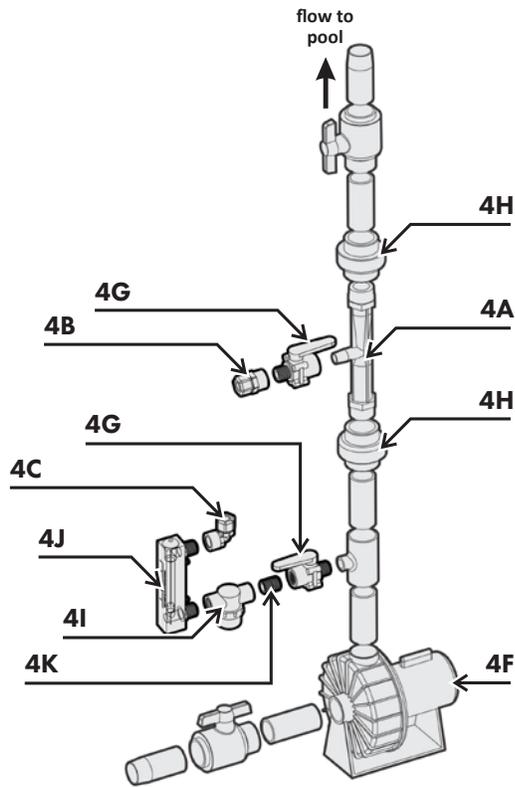
Figure 20. Base Interior Components View



No	Description	Part Number
<b>3: BASE INTERIOR COMPONENTS</b>		
3A	Discharge Valve Assembly	205958
3B	3/4" NPT Plug PVC (replacement customer sourced)	N/A
3C	1/2" 90° Tubing Connector, W8ME8	205529
3D	PVC Check Valve	205959
3E	1/2" Threaded Nipple	205545
3F	1/2" 45° Threaded Elbow	205963
3G	Discharge Valve Nut	71583
3H	Discharge Valve Gasket	71576
3I	Discharge Valve Body	206080
3J	Discharge Valve Float	206082
3K	Discharge Valve Arm	206079



**Figure 21.** Booster Pump and Venturi Assembly



No	Description	Part Number
4: INSTALLATION SPARE PARTS		
4A	Venturi 1585X PVDF No Check Valve	205508
4B	Female ½" NPT x ½" Tubing Connector, straight	205466
4C	Female ½" NPT x ½" Tubing Connector, elbow	205938
4D	Male ½" NPT x ½" Tubing Connector, straight (not shown)	71890
4E	Tubing - 20ft ½" O.D PE (not shown)	205490
4F	Booster Pump	205955
4G	½" NPT ball valve, Male x Female	205491
4H	Venturi Unions	71907
4I	Line Strainer	206084
4J	0.5 – 5.0 gpm flow meter, ½" NPT	74720
4K	½" NPT closed nipple	205545
4L	Flow Switch 24VAC/DC, SS ½" NPT (SC050R)	206036

## 10.4 CCH® Elite Duo

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**Note:** Refer to Figure 2 for schematic and Section 5 for installation instructions.

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**Note:** The two feeders operate as a single unit, so all feed and wash cycles are triggered simultaneously. Because each feeder still has its own control box, high level alarms are still individually registered.

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**Note:** Refer to the previous feeder and booster pump sections for spare parts.

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Part	Description	Quantity	Part Number
CCH® Elite Duo System	Two complete separate feeder systems with individual booster pumps and venturis for optimal performance on extra-large pools.	2	73250
ORP Feed Splitter	Power cord splitter, NEMA 5-15P to 2x NEMA 5-15R, customer sourced	1	N/A

# Limited Warranty

The CCH® Elite Feeder is warranted against any manufacturing defects in material or workmanship for a period of 12 months after installation or 18 months after shipping from Solenis, whichever is earlier. This warranty applies only to the original end-user.

To register your feeder please visit [www.cchpoolcare.com](http://www.cchpoolcare.com)

## Service

For warranty service, contact the authorized CCH® Elite Dealer in your area. Any defective part(s) covered by this warranty will be repaired or replaced, at the discretion of Solenis. Replacement may be with either new or reconditioned parts.

## Exclusions

This warranty does not cover damage or failure due to accidents, fire, flood, or other acts of God. Nor does it cover damage or failure due to abuse, misuse, abnormal or improper use, neglect, improper maintenance, alterations or modifications by anyone other than Solenis (unless specifically approved in writing by Solenis), repairs by anyone other than an authorized Dealer, or ordinary wear and tear.

Use of any tablets or other chemicals other than the DryTec® FG Briquettes and CCH® Cal Hypo Tablets designed for use with this chlorinator shall void this warranty.

Any transportation to and from an authorized CCH® Elite Dealer is your responsibility.

Neither Solenis nor its Dealers are responsible or liable for indirect, special, or consequential damages arising out of or in connection with the use or performance of the product or other damages with respect to loss of property, loss of revenues or profit by the owner. EXCEPT AS PROVIDED ABOVE, Solenis MAKES NO WARRANTIES. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS SPECIFICALLY EXCLUDED.

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**Note:** No modifications may be made to the chlorinator without prior written approval from Solenis. Unauthorized modifications void any warranty. This CCH® Elite Feeder is subject to one or more patents owned by Solenis, and all rights in any modifications or improvements, including but not limited to any patents, copyrights, trademarks or trade secrets, belong exclusively to Solenis.

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For information, contact Solenis at (800) 478-5727.

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