Water Treatment

Solenis

CCH® Endurance

Installation and Operation Manual

Model #CCH-2SD

Rev. June 2025

Product Stewardship

MAKING THE WORLD A BETTER PLACE

Innovative Water Care is committed to maintaining and improving our leadership in the stewardship of our products. One of our initiatives is to make health, safety, and environmental protection an integral part of a product's life cycle - from manufacture, marketing, and distribution to use, recycling, and disposal.

Everyone involved with the product has responsibilities to address society's interest in a healthy environment and in products that can be used safely. We are each responsible for providing a safe workplace. All who use and handle products must follow safe and environmentally sound practices.

For more information about our Product Stewardship Program, contact your Innovative Water Care Representative. For product inquiries, contact 1-800-478-5727 or www.cchpoolcare.com.

CCH® Endurance Feeder Limited Warranty

The CCH® Endurance 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

Service

For warranty service, contact the authorized CCH® Endurance 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 CCH Tablets® for Industrial Applications and Swimming Pools or CCH® Endurance Tablets designed for use with this chlorinator shall void this warranty.

Any transportation to and from an authorized CCH® Endurance 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.

NOTE:
No modifications may be made to the chlorinator without prior written approval from Solenis. Unauthorized modifications void any warranty. This CCH® Endurance 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.

Solenis

Solenis
1400 Bluegrass Lakes Parkway
Alpharetta, GA 30004

Table of Contents

1 Introduction

1.1 CCH® Endurance Tablets

The patent-pending, slow dissolving **CCH®** Endurance Tablets are a 3-in-1 product that chlorinates consistently, increases calcium to protect plaster, and increases alkalinity to stabilize pH. The benefits of the **CCH®** Endurance Tablets include but is not limited to:

- DOES NOT add cyanuric acid to your pool reducing wasteful drainage
- DOES NOT reduce ORP effectiveness
- Dissolves slowly to give long lasting chlorination
- DOES NOT form nitrogen trichloride (strong chlorine odor) associated with trichlor use
- Highly concentrated to reduce shipping and handling costs
- More concentrated than liquid bleach
- Longer shelf life when compared to liquid bleach
- Adds less total dissolved solids (TDS) than liquid bleach
- Class 2 Oxidizer (less restrictive storage requirements compared to Class 3 Oxidizers)

1.2 CCH® Endurance Feeder

The **CCH®** Endurance Feeder is an easy to use, automatic solution that is exclusively designed to feed **CCH®** Endurance Tablets. Other Calcium Hypochlorite or Trichlor tablets will not fit into the feeder nor will they dissolve properly and provide the appropriate feed rate. With the simplicity of an erosion feeder, the **CCH®** Endurance Feeder's streamlined design is easy to install, service and requires minimal operator maintenance.

2 Overview

2.1 Theory of Operation

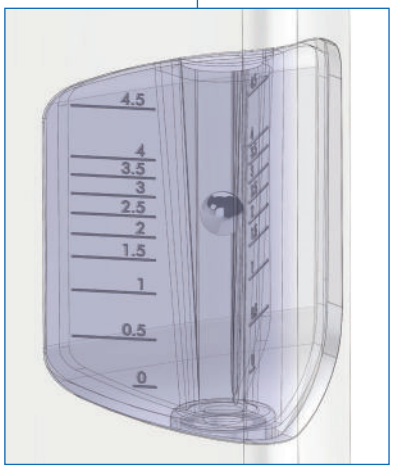
The patent-pending **CCH**® Endurance System is a pressurized feeder system designed for pools and spas ranging from 500 to 60,000 gallons [1,892.7 to 227,124.7 liters]. A pre-filter to post-filter loop will be added to the main pool recirculation system as part of the **CCH**® Endurance System. This recirculation loop will create the pressure differential to provide the proper flow of water through the feeder.

The **CCH**® Endurance System incorporates the principles of High Capacity Erosion (HCE) technology. Water rises in a "column" from a submerged nozzle below the tablet grid making contact with the **CCH**® Endurance Tablets. The tablets are then submerged in a column of water with the water flow from the nozzle creating a chlorinated solution that is discharged to the pool return line. The feeder operates in a pressurized condition with a pressure range between 5 to 20 psig [0.35 to 1.38 bar].

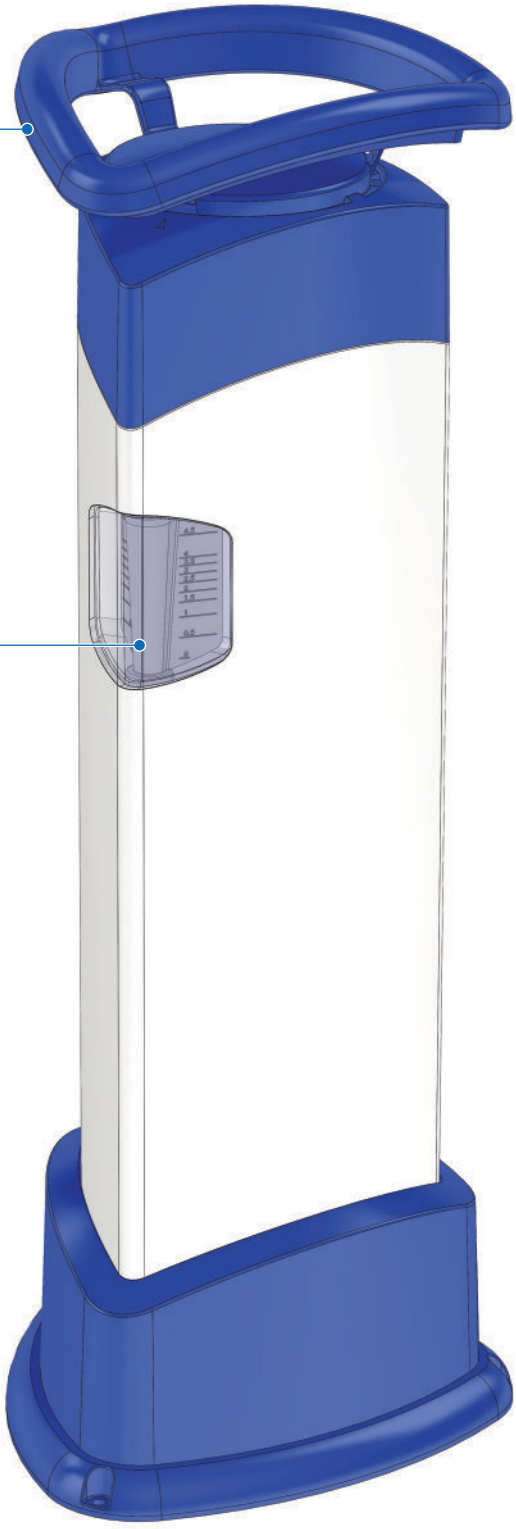
The chlorine output is controlled by the cartridge height setting (distance of the tablet from the nozzle) and the inlet flow rate which has an operating range of 0.5 to 4.5 gpm [1.9 to 17.03 lpm]. In addition, an ORP controller may be used for more precise control. o The inlet flow rate will allow a minimum available chlorine (AvCl) output of 0.5 lb/day [0.2 kg/day] and will allow a maximum AvCl output of 9 lbs/day [4.1 kg/day] for both pools and spas.

2.2 Major Components

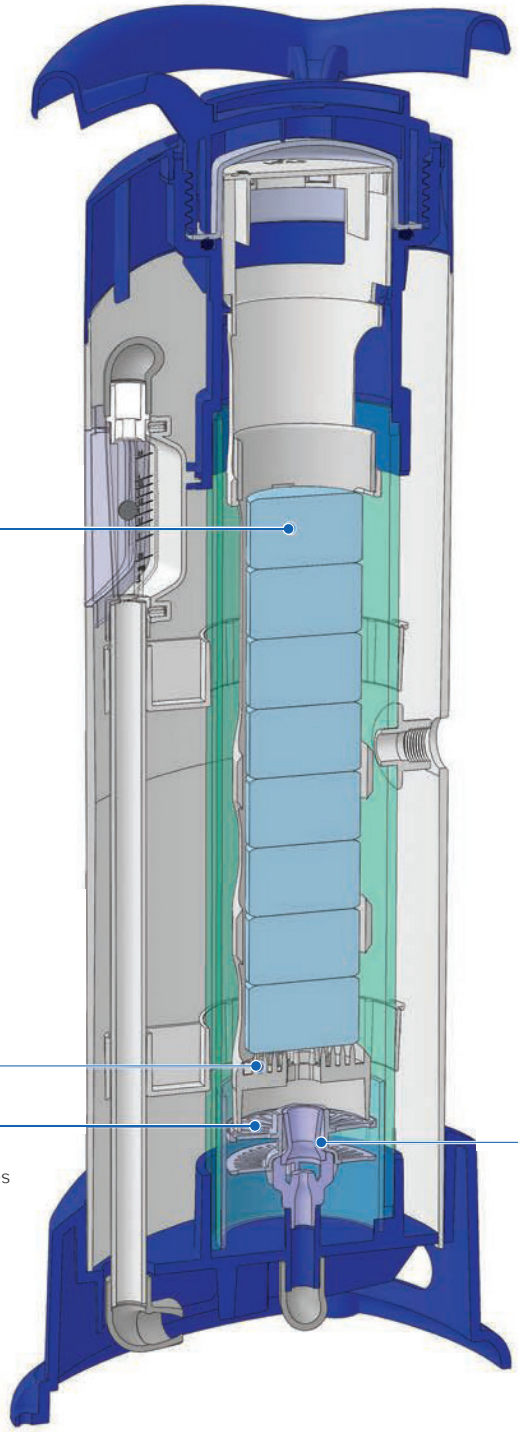
Pressure Cap creates pressure tight seal with minimal operator effort



Integrated Flow Meter



2.2 Major Components (continued)

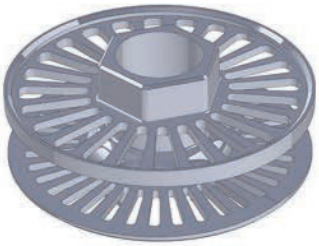


Cartridge Assembly
Stacks tablets for extended use

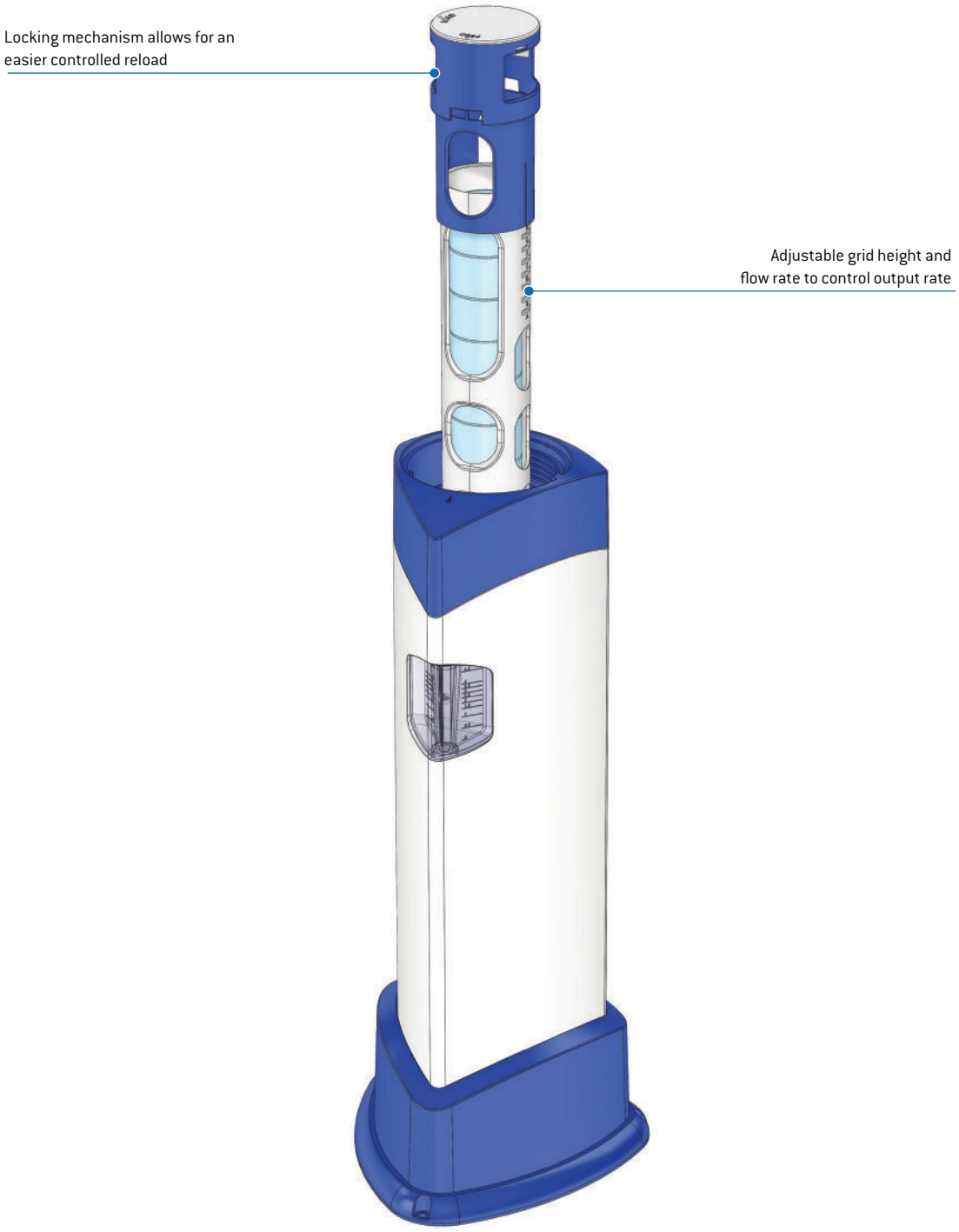
Spiked Grid
allows for even tablet dissolution

Spray Nozzle
recirculates flow and concentrates the cal-hypo solution

Nozzle Protection Basket
Protects nozzle from being clogged by tablet particles



2.2 Major Components (continued)



2.3 Specifications

Operational Characteristics	
Operating Pressure range	5 to 20 psig [0.35 to 1.38 bar]
Nominal Pressure	15 psig [1.03 bar]
Operating Temperature range	40° to 130° F [4.4° to 54.4° C]
Flow Rate range	0.5 to 4.5 gpm [1.9 to 17.03 lpm]

Dimensions	
Tubing	5/8" [15.9 mm] O.D. (LLDPE)
Feeder	W12" x D13" x H31" [304.8 mm x 330.2 mm x 787.4 mm]

Weight	
Feeder Weight full	29.4 lbs [13.3 kg]
Feeder Weight empty	23 lbs [10.4 kg]

Cartridge Capacity	
Tablet Quantity	11
Weight	6.4 lbs [2.9 kg]

Feed Rate	
Available Chlorine (per day)	Pool: 0.5 to 7.0lbs (0.2 to 3.2kg) Spa: 0.5 to 5.5lbs (0.2 to 2.5kg)

Recommended Pool Size	
Indoor	1,000 to 60,000 gallons [3,785.4 to 227,124.7 liters]
Outdoor Stabilized	1,000 to 40,000 gallons [3,785.4 to 151,416.5 liters]
Outdoor Un-Stabilized	1,000 to 25,000 gallons [3,785.4 to 94,635.30 liters]
Commercial Spa	500 to 5,000 gallons [1,892.7 to 18,927.1 liters]

NOTE:

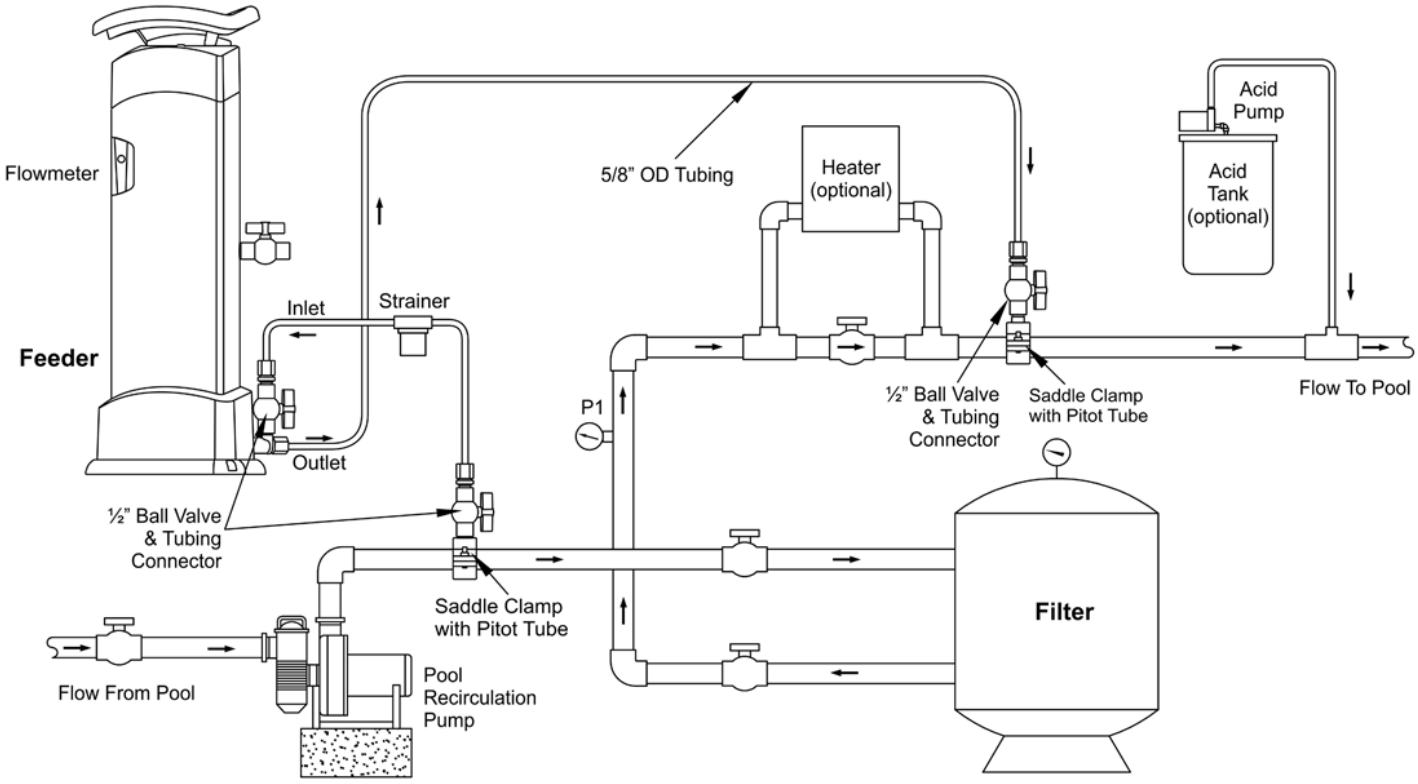
1. Applicable pool size is subject to local health codes.

2. Recommended pool size is a guideline based on ideal conditions. Actual pool size will vary due to site specific conditions.

3 Installation

Choose a location in the pump room that will allow easy access for replenishing the feeder cartridge with **CCH**® Endurance Tablets. The **CCH**® Endurance Feeder will be positioned in a location such that the pre to post filter recirculation loop is feasible.

3.1 CCH® Endurance System: Standard Installation



NOTE: Refer to Appendix A for Pitot Tubes for 2 ½" and 3" pool piping

NOTE: If greater feed rates are required, contact your dealer for alternative feeder options

3.2 Tools & Equipment Required for Feeder Installation

- Drill – Cordless Recommended
- 7/8" [22.2 mm] Drill Bit
- Plumbers Tape or Pipe Sealant
- Tube Cutters or Utility Knife
- Gas Pliers (Channel Locks)
- 7/16" (11 mm) Nut Driver, Socket or Box wrench

3.3 Installation Parts and Assemblies

Part	Description	Part Number
	A - (2) Adjustable Saddle Clamp Assembly for 2" [50.8 mm] pipe	73096
	B - (2) Adjustable Saddle Clamp Assembly for 1-1/2" [38.1 mm] pipe	73096
	C - (2) 5" x 1/2" [127 mm x 12.7 mm] MNPT Pitot tube Refer to Appendix A for Pitot Tubes for 2 ½" and 3" pool piping	73086

3.3 Installation Parts and Assemblies (cont'd)

Part	Description	Part Number
	D - (3) 1/2" [12.7 mm] FNPT x 1/2" [12.7 mm] FNPT PVC Ball Valves	74061
	E - (4) 1/2" [12.7 mm] MNPT x 5/8" [15.9 mm] O.D. Tubing Connector - W10MC8	71918
	F - 12' X 5/8" [365.76 cm X 15.9 mm] O.D. LLDPE Tubing	73095
	G - (2) 1/2" [12.7 mm] PVC Closed Nipples	71611

3.4 Installation Procedure

Background: The next steps involve installing a loop around the pool filter where the **CCH®** Endurance Feeder will be located. The pool filter will create a pressure differential to provide flow through the **CCH®** Endurance Feeder. This loop is created using the saddle clamps, pitot tubes, ball valves, tube fittings, and tubing provided with your system.

NOTE: Refer to the schematics on pages 11-13 for a pool system installation and follow the steps below.

NOTE: Before starting installation, determine if the pipes to be drilled are above or below the pool water level. If they are below the pool water level, isolation valves must be shut to prevent backflow through the holes that are being drilled. If isolation valves are shut properly, some water may drain out of the drilled holes but will stop once piping is empty.

NOTE: Apply plumbers tape to all male threads to ensure a leak free connection.

NOTE: Pitot tubes can be installed in either horizontal or vertical pool piping.

3.4.1 Making the inlet connection from the pool to the feeder (Pre-Filter)

Choose a location on the main pool recirculation piping on the discharge side of the pool pump but upstream of the pool filter(s). Make sure the pool pump is off and shut isolation valves from the pool piping so that it is dry.

1. Drill 7/8" (22.2 mm)hole anywhere on the top half of the pipe (figure 1). **Caution: Do not drill on the bottom half of the pipe. Excess debris may enter your feeder**.

2. For 2" [50.8 mm] pool pipe, use Assembly A (figure 2a). Do not yet fully tighten nuts (figure 2b). For 1-1/2" [38.1 mm] pool pipe, use Assembly B (figure 2c). **Refer to Appendix A for Pitot Tubes for 2 ½" and 3" pool piping**.

3. Insert part C (figure 3a). **Make sure Pitot tube is fully inserted prior to tightening saddle clamp** (figure 3b).

4. Connect part D, Ball Valve (figure 4).

5. Connect part E, Tubing Connector (figure 5).

Figure 1

Figure 2a

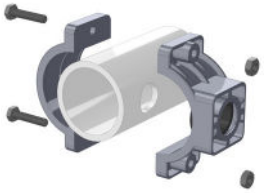
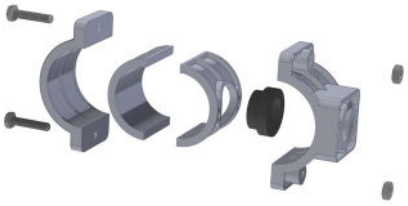


Figure 2b

Figure 2c



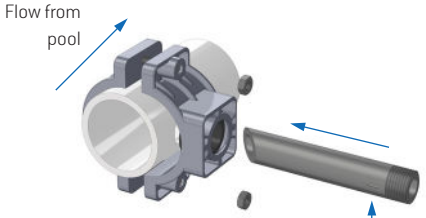


Figure 3a

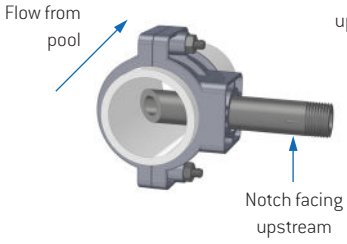


Figure 3b

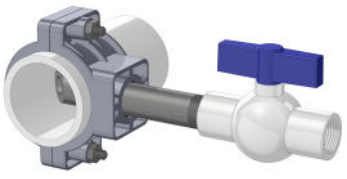


Figure 4

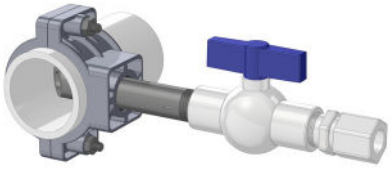
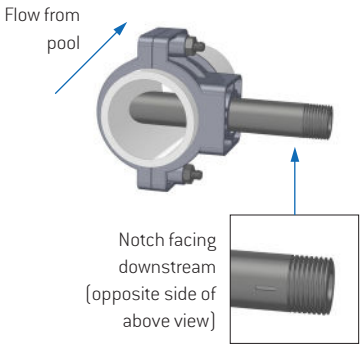


Figure 5

3.4.2 Making the chlorine injection connection from the feeder to the pool (post-filter and heater)

Choose a location on the main pool recirculation piping downstream of the pool filter(s), and heater (if available), but before the acid or CO_2 injection point.

1. **To make the outlet connection from the feeder to the pool, repeat all steps from section 3.4.1 except for step #3. Step #3 is modified as follows:**



3.4.3 Completing the feeder circulation loop

1. Complete feeder assembly with parts part D, ball valve, and part E, tubing connector (figure 6).

2. Connect part D, ball valve, and part G, closed nipple to the drain port to complete the feeder assembly (figure 7a & 7b).

3. Choose a location for the **CCH**® Endurance Feeder that allows easy access for filling and maintenance.

4. Using the 5/8" [15.9 mm] O.D. tubing, part F (see figure 8), cut the tubing to size and connect the feeder inlet to the pre-filter tubing connector installed in step #5 of section 3.4.1, and connect the feeder outlet to the post-filter tubing connector installed in step # 1 of section 3.4.2.

This completes your feeder recirculation loop.

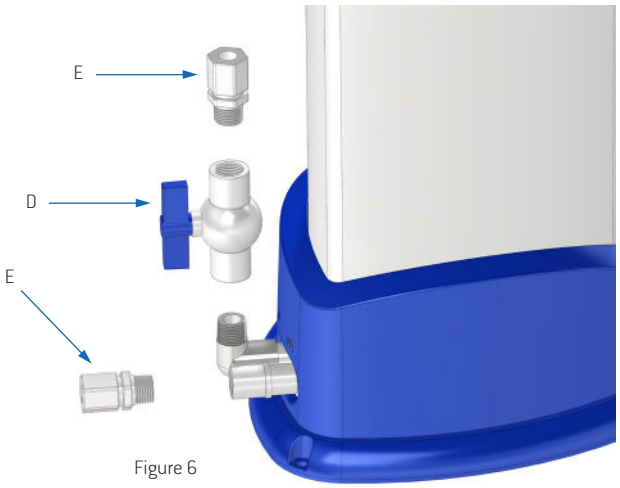


Figure 6

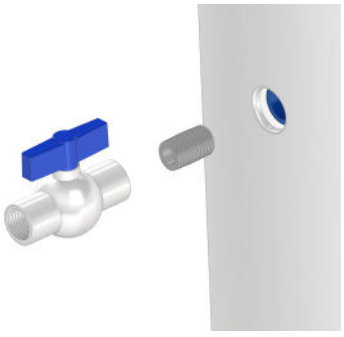


Figure 7a

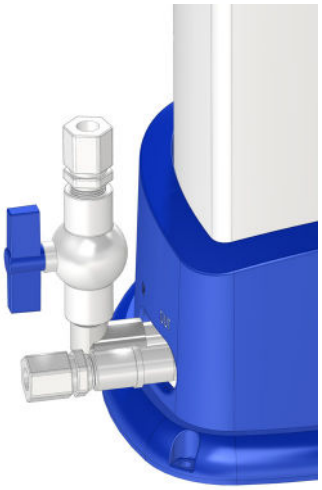


Figure 7b


Figure 8

4 Feeder Start Up

4.1 Pre-Startup Procedure

Following the steps outlined below will ensure a smooth start-up of the **CCH®** Endurance Feeder. For seasonal operation, perform this procedure each Spring.

IMPORTANT!! Do NOT put CCH® Endurance Tablets in the feeder during the start-up operation.

4.1.1 Verify water flow through feeder

1. With the **CCH®** Endurance Feeder fully installed per the installation procedure, section 3.4, turn on the pool recirculation system, and open all valves to the feeder.

   Note: Before starting the flow test, ensure the pressure cap at the top of the feeder is on and shut. Turn cap clockwise a quarter turn until the triangle of the cap lines up with the body of the feeder. This indicates the pressure tight seal on the feeder.

2. Increase the flow rate going through the feeder until it reaches the maximum flow rate as read on the flow meter on the front of the feeder.
3. With maximum flow going through the feeder, check the system for leaks. Tighten all fittings as necessary if leakage is observed.
4. When all leaks have been corrected, shut the inlet valve first, then shut the outlet valve to fully isolate the feeder from the pool filter system.

4.1.2 Adjusting the cartridge feed rate setting

Note: Adjust cartridge feed rate setting prior to loading with CCH® Endurance Tablets. The feed rate setting of the cartridge may not be able to be reduced if already full of tablets. Refer to table 4.2.2 on page 21 for feed rate setting.

1. With pressure cap and seal cap removed, remove the cartridge assembly from the feeder, turn counter clockwise so that load lines up with arrow on the feeder (figure 9). This locks the cartridge assembly for easy loading or feed rate setting adjustment. Follow steps #2 - #5 to complete the feed rate setting adjustment.
2. See figure 10.
3. Twist counterclockwise (figure 11).
4. Slide up or down (figure 12).
5. Twist clockwise (figure 13).

Figure 9

Figure 10

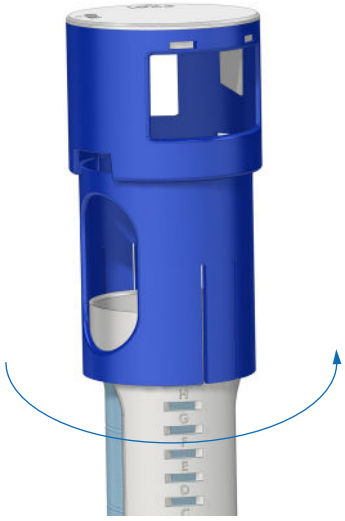


Figure 11

Figure 12

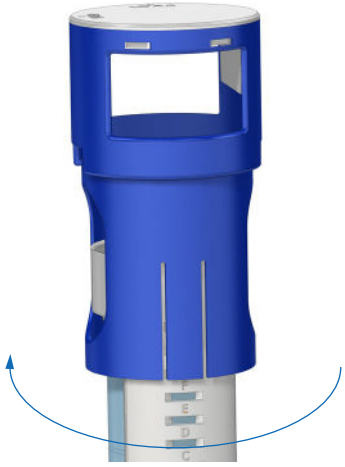


Figure 13

4.1 Pre-Startup Procedure (continued)

4.1.3 Loading the cartridge assembly with CCH® Endurance Tablets

WARNING - Use ONLY CCH® Endurance Tablets in the feeder. The use of any other treatment chemicals will void the warranty and NSF listing. DANGER: Under no circumstances should you mix calcium hypochlorite with other forms of concentrated chlorine or other chemicals. Fire and/or explosion may result. Caution must be used when refilling the cartridge with more tablets.

WARNING - Wear protective gloves when handling CCH® Endurance Tablets. Refer to Safety Data Sheets for additional information and precautions regarding the use and handling of the tablets.

WARNING - KEEP OUT OF REACH OF CHILDREN

1. Prior to removing the pressure cap, open the Ball Valve at the drain and drain the solution into a bucket or down to a drain (figure 14). **Caution: Failure to perform this step may result in a chlorine spill and possible injury.**
2. Remove pressure cap. See figure 15a & 15b.
3. Load tablets (figure 16a & 16b, page 19).
4. See figure 17 (page 19).
5. Verify that O-ring is still in place and there is no debris in the O-ring groove before replacing seal cap (figure 18, page 19).
6. Replace seal cap (figure 19, page 20).
7. To tighten pressure cap, follow the steps written on the top housing of the feeder as shown in Figure 20, page 20.
8. Align white dot on handle with white dot on housing cap (figure 21, page 20).
9. Twist cap clockwise to align white dot on handle with arrow on top housing (figure 22, page 20).

Figure 14

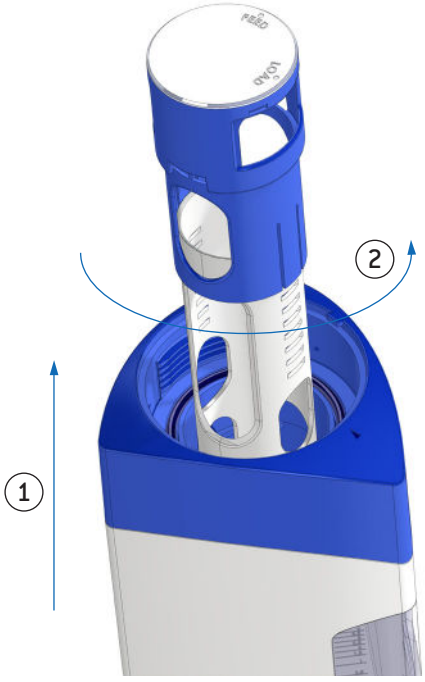


Figure 15a

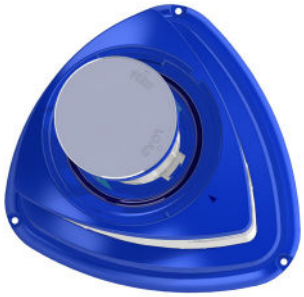


Figure 15b

4.1.3 Loading the cartridge assembly with CCH® Endurance Tablets (continued)

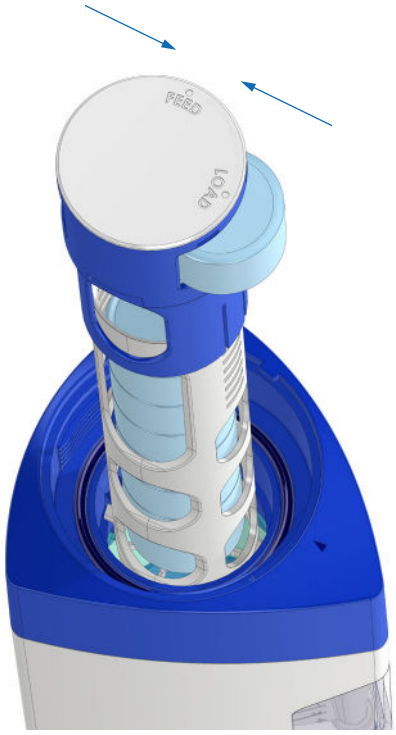


Figure 16a

Figure 16b

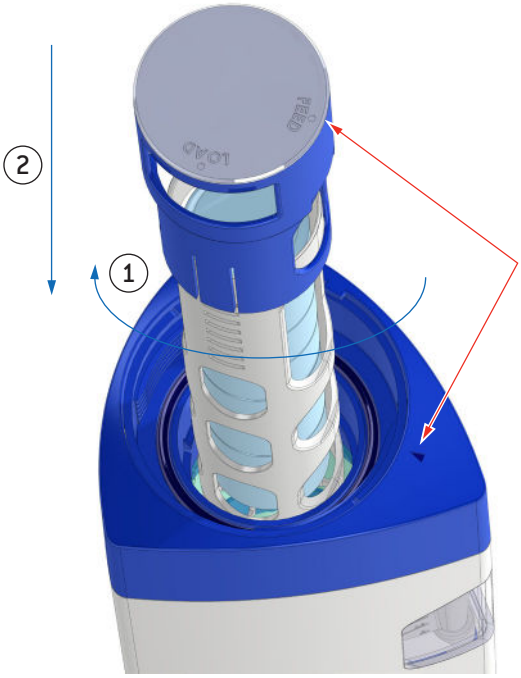


Figure 17

Figure 18

4.1 Pre-Startup Procedure (continued)

4.1.3 Loading the cartridge assembly with CCH® Endurance Tablets (continued)

Figure 19

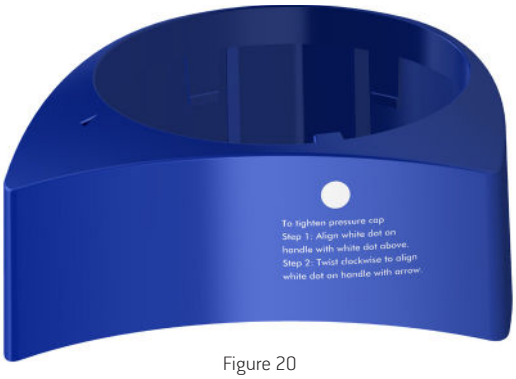


Figure 20

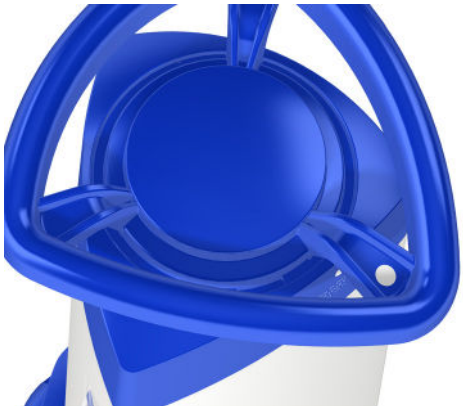


Figure 21

Figure 22

4.2 Startup Procedures

Warning - Higher than normal levels of chlorine may develop inside the feeder during extended periods of no flow through the feeder. This may result in a higher than normal level of chlorine injected into the pool when flow through the feeder is re-established. To prevent this, drain the feeder prior to start-up after extended periods of no flow through the feeder.

4.2.1 Feeder Startup

After completing the PRE-START-UP PROCEDURE, and establishing that all components of the feeder are operating properly, your **CCH®** Endurance Feeder is ready for start-up.

1. Establish the proper cartridge feed rate setting for your pool using the chart in section 4.2.2

2. Load the cartridge assembly with **CCH®** Endurance Tablets by following section 4.1.3.

3. Open the inlet and outlet ball valves at the pool piping.

4. Open the ball valve at the feeder inlet and set the flow meter to the recommended feed rate setting determined in step 1 using the ball valve at the feeder inlet.

5. Monitor the flow rate through the feeder daily to ensure that the proper flow rate is being maintained.

6. During the first few days of operation, check the chlorine level in the pool frequently to establish the best Inlet flow rate and cartridge feed rate setting for your pool. Adjust the chlorine output either up or down according to the table, or adjust the ORP setpoint if using the ORP kit.

4.2.2 Feed Rate Tables

Pool Feed Rates

Cartridge Setting	Inlet Flow Rate - gpm *(lpm)*								
	0.5 *(1.9)*	1 *(3.8)*	1.5 *(5.7)*	2 *(7.6)*	2.5 *(9.5)*	3 *(11.4)*	3.5 *(13.2)*	4 *(15.1)*	4.5 *(17)*
	Output Rate lbs *(kg)* Av. CL/Day								
A	0.5 *(0.2)*	0.8 *(0.4)*	1 *(0.5)*	1.2 *(0.5)*	1.4 *(0.6)*	1.6 *(0.7)*	1.8 *(0.8)*	2.2 *(1.0)*	3.1 *(1.4)*
B	0.6 *(0.3)*	0.9 *(0.4)*	1.2 *(0.5)*	1.4 *(0.6)*	1.5 *(0.7)*	1.7 *(0.8)*	1.9 *(0.9)*	2.3 *(1.0)*	3.2 *(1.5)*
C	0.7 *(0.3)*	1 *(0.5)*	1.4 *(0.6)*	1.5 *(0.7)*	1.6 *(0.7)*	1.8 *(0.8)*	2.0 *(0.8)*	2.4 *(1.1)*	3.3 *(1.5)*
D	*	*	*	1.6 *(0.7)*	1.7 *(0.8)*	1.9 *(0.9)*	2.2 *(1.0)*	2.6 *(1.2)*	3.4 *(1.5)*
E	*	*	*	*	1.8 *(0.8)*	2.0 *(0.8)*	2.4 *(1.1)*	2.8 *(1.3)*	4 *(1.8)*
F	*	*	*	*	*	2.1 *(1.0)*	2.6 *(1.2)*	3 *(1.4)*	5 *(2.3)*
G	*	*	*	*	*	*	2.8 *(1.3)*	3.2 *(1.5)*	6 *(2.7)*
H	*	*	*	*	*	*	*	3.4 *(1.5)*	7 *(3.2)*

Spa Feed Rates

Cartridge Setting	Inlet Flow Rate - gpm *(lpm)*								
	0.5 *(1.9)*	1 *(3.8)*	1.5 *(5.7)*	2 *(7.6)*	2.5 *(9.5)*	3 *(11.4)*	3.5 *(13.2)*	4 *(15.1)*	4.5 *(17)*
	Output Rate lbs *(kg)* Av. CL/Day								
A	0.5 *(0.2)*	0.8 *(0.4)*	1 *(0.5)*	1.2 *(0.5)*	1.3 *(0.6)*	1.5 *(0.7)*	1.8 *(0.8)*	2.0 *(0.9)*	2.3 *(1.0)*
B	0.6 *(0.3)*	0.9 *(0.4)*	1.2 *(0.5)*	1.4 *(0.6)*	1.4 *(0.6)*	1.6 *(0.7)*	1.9 *(0.9)*	2.1 *(1)*	2.4 *(1.1)*
C	0.7 *(0.3)*	1 *(0.5)*	1.4 *(0.6)*	1.5 *(0.7)*	1.5 *(0.7)*	1.7 *(0.8)*	2.0 *(0.9)*	2.3 *(1)*	2.5 *(1.1)*
D	*	*	*	1.6 *(0.7)*	1.6 *(0.7)*	1.8 *(0.8)*	2.2 *(1.0)*	2.5 *(1.1)*	2.75 *(1.2)*
E	*	*	*	*	1.7 *(0.8)*	1.9 *(0.9)*	2.4 *(1.1)*	2.7 *(1.2)*	3.3 *(1.5)*
F	*	*	*	*	*	2.0 *(0.9)*	2.6 *(1.2)*	3.0 *(1.3)*	4 *(1.8)*
G	*	*	*	*	*	*	2.8 *(1.3)*	3.2 *(1.5)*	5 *(2.3)*
H	*	*	*	*	*	*	*	3.4 *(1.5)*	5.5 *(2.5)*

* use higher flow rate

5 Feeder Maintenance

5.1 Feeder Maintenance

Due to the combination of low chlorine concentration and relatively high flow rate, maintenance of the **CCH**® Endurance Feeder should be minimal. To reduce the maintenance frequency even further, maintain pool water chemistry as follows:

Total Alkalinity	60-80ppm
Calcium Hardness	200-1800ppm
pH	7.2-7.6

Adherence to these recommendations at all times will help to achieve the most effective and economical performance from the **CCH**® Endurance Feeder.

5.2 Preventive Maintenance (quarterly or as needed)

⚠ **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.**

A. Clean feeder with a roughly 1% acid / water solution of 20 Baume muriatic acid..

1. Shut the inlet and outlet isolation ball valves and disconnect inlet and outlet tubing
2. Remove the pressure cap then remove cartridge assembly and all tablets from the feeder
3. If the feeder was bolted down to the ground, unfasten bolts, then turn feeder upside down and empty out the feeder of remaining Cal Hypo debris
4. Reconnect the inlet and outlet tubing, then slowly crack open the inlet isolation valve and allow water to flow into the feeder
   i. Caution: opening the inlet valve too fast may send water gushing up out of the feeder
5. Once the feeder is almost full of water, Shut the inlet valve then add some acid to make up the 4:1 ratio (water : acid)
6. Replace the pressure cap on the feeder and let the acid solution sit for 30 minutes
7. Open the inlet and outlet isolation valves and let water flow into the feeder for 5 minutes, allowing the acid solution to clear out the outlet tubing
8. Shut the inlet and outlet valves, remove the pressure cap and inspect the feeder for cleanliness.
9. Repeat above steps if more cleaning is still needed

WARNING: BE SURE TO REMOVE ALL TABLETS FROM THE FEEDER PRIOR TO ADDING ACID SOLUTION TO THE FEEDER

6 Troubleshooting Guide

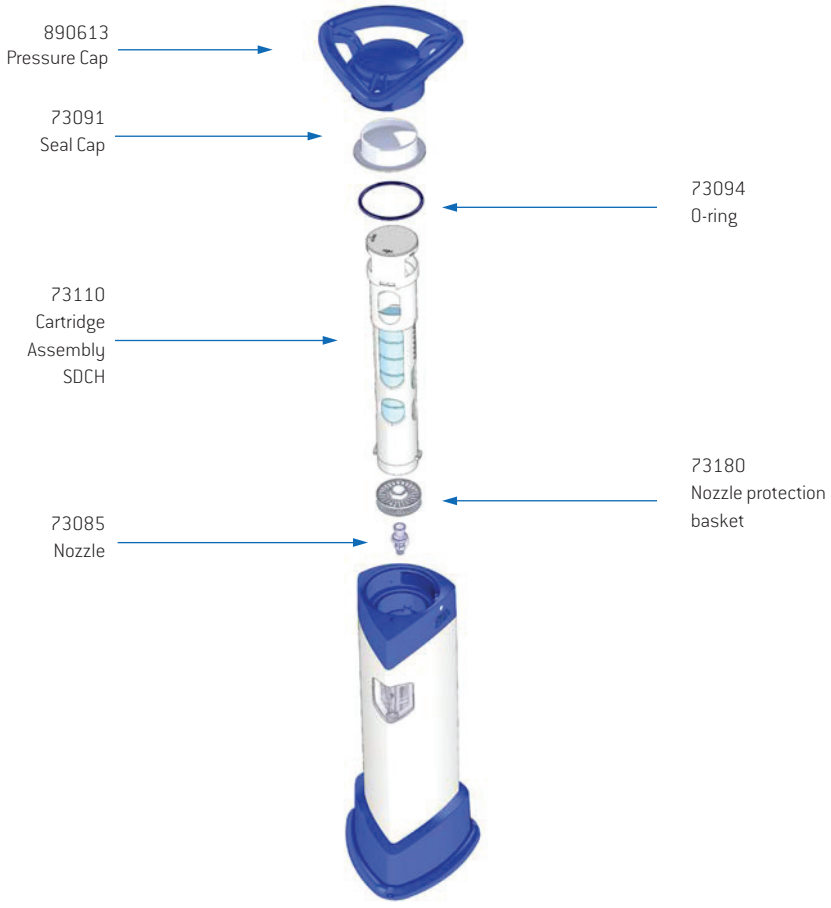
Problem	Cause	Solution
Insufficient water flow to feeder	Inlet shut-off valve shut or not open enough	Check flow meter and open valve to allow sufficient flow into the feeder
	Inlet piping to feeder made after the pool filter	Correct feeder installation to provide inlet water before the pool filter
	Clogged inlet piping, flow meter or feeder nozzle	Install an optional 1/2" [12.7 mm]NPT inline strainer if inlet water is contaminated (Solenis Part # 71605)
Insufficient chlorine in pool	Feed rate/output too low	Check feed rate table on page 21 and increase inlet flow and/or modify cartridge feed rate setting until desired feed rate is achieved
	Cartridge feed rate setting is incorrect for feed rate required	Check feed rate table on page 21 and modify cartridge feed rate setting
	Feeder empty	Refill Cartridge assembly with **CCH**® Endurance Tablets
	No inlet water flow due to shut inlet valves	Open inlet valves
	No water flowing out of feeder due to shut outlet valve	Open outlet valve
Excess chlorine in pool	Feed rate/output too high	Check feed rate table on page 21 and decrease inlet flow and/or modify cartridge feed rate setting until desired feed rate is achieved
Water leaking through pressure cap	Pressure cap not properly installed	Completely twist cap
	O-ring no longer providing proper seal	Replace O-ring
	O-ring not seated properly or debris in O-ring groove	Remove pressure cap. Clean and adjust O-ring so it properly sits in O-ring groove
	Seal cap missing or broken	Replace seal cap
Stuck pressure cap	Improper installation	Refer to appendix B for proper installation and corrective action

7 Feeder Views

7.1 Feeder Assembly View

Note: Quantities listed below represent the number of parts shipped with the feeder. Part numbers are for procurement of 1 individual spare part unless otherwise stated.

Part	Description	Qty	Part Number
CCH® Endurance Feeder	Complete Feeder assembly	1	73100
Pressure Cap	Threaded Cap with Handle	1	73092
Seal Cap	Inner Seal Cap	1	73091
O-ring	O-ring Seal	2 (1 spare)	73094
Cartridge Assembly SDCH	Cartridge for **CCH**® Endurance Tablets	1	73110
Nozzle	Standard SDCH Nozzle	1	73085
Nozzle Protection basket	Filter basket for nozzle protection	1	73180

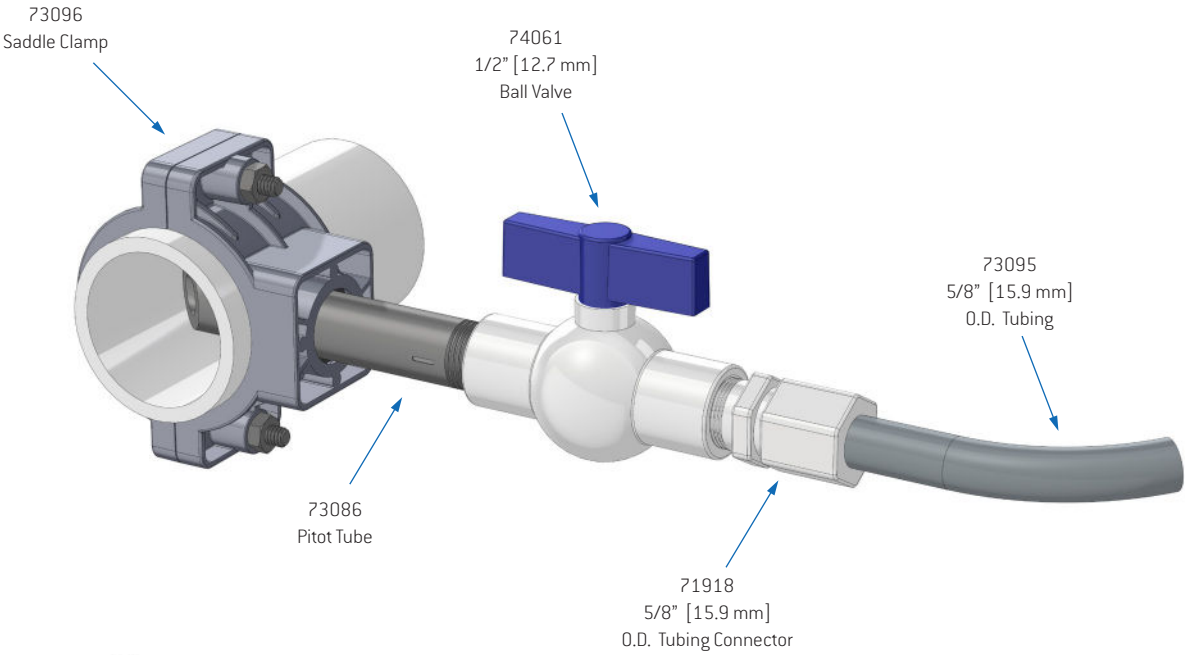


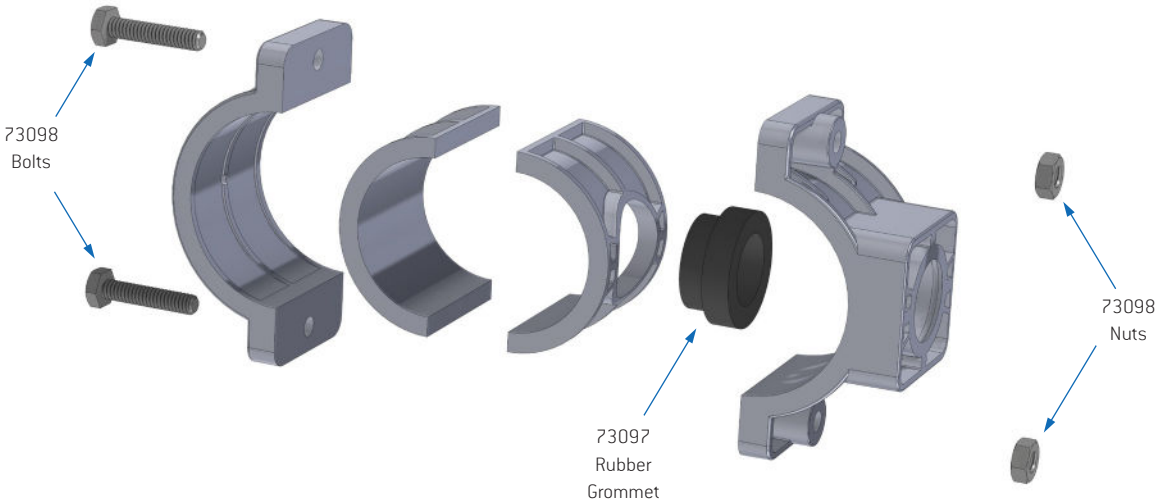
7.2 Installation Kit View

Note: Quantities listed below represent the number of parts shipped with the feeder. Part numbers are for procurement of 1 individual spare part unless otherwise stated.

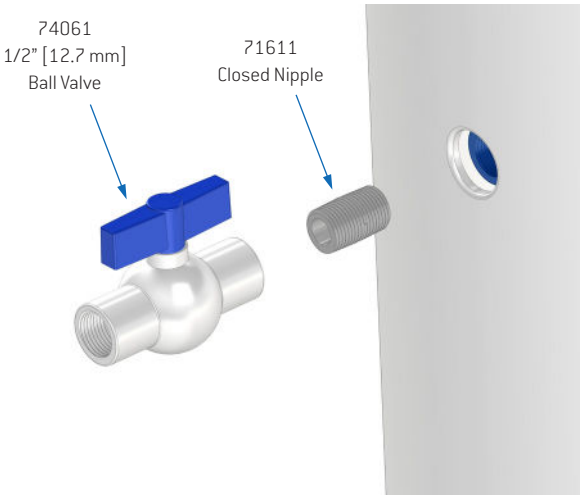
Note: Refer to Appendix A for Pitot Tubes for 2 ½" and 3" pool piping

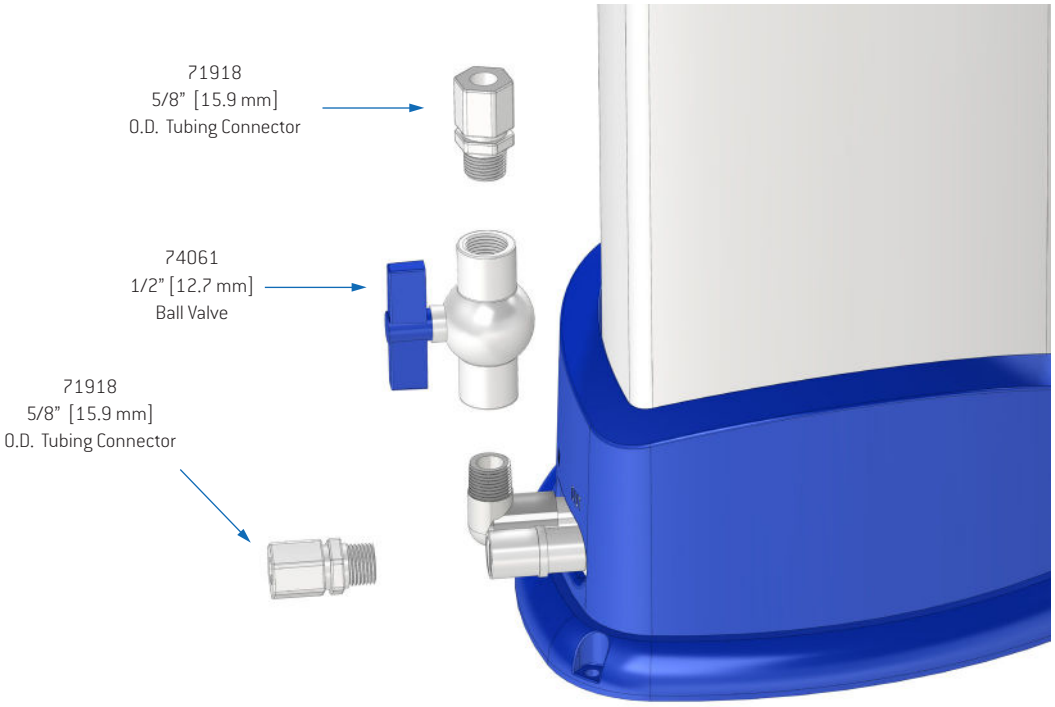
Part	Description	Qty	Part Number
Saddle Clamp	1 1/2" to 2" [38.1 mm to 50.8 mm] Adjustable Saddle Clamp	2	73096
Rubber Grommet	Seal for Saddle clamp	2	73097
Nuts and Bolts	For saddle clamps, 4 pack	1	73098
Pitot Tube	5" x 1/2" [127 mm x 12.7 mm] NPT, 45° angle cut, 2 pack	1	73086
Ball Valve	1/2" [12.7 mm] female threaded	4	74061
Tubing Connector	5/8" [15.9 mm] O.D. Tubing Connector, W10MC8	4	71918
Tubing	12' x 5/8" [365.8 cm x 15.9 mm] O.D. x 1/2" [12.7 mm] I.D. LLDPE Tubing	1	73095
Closed Nipple	1/2" [12.7 mm] PVC Closed Nipple for Drain Port	2 (1 spare)	71611





7.2 Installation Kit View (continued)





8 Appendix

Appendix A – Technical Bulletin: Pitot Tubes for 2 ½" and 3" Pool piping

Pitot Tubes for 2 ½" and 3" Pool piping - Part Numbers

Part	Description	Qty	Part Number
Pitot Tube – 1 7/8"	¾" (19 mm) sch 40 pipe, for 2 ½" Pool Piping, 45° angle cut, 1 7/8" length from bottom of threads, (2 pack)	1	73141
Pitot Tube – 2 5/8"	¾" (19 mm) NPT, for 3" Pool Piping, 45° angle cut, 2 5/8" length from bottom of threads, (2 pack)	1	73142

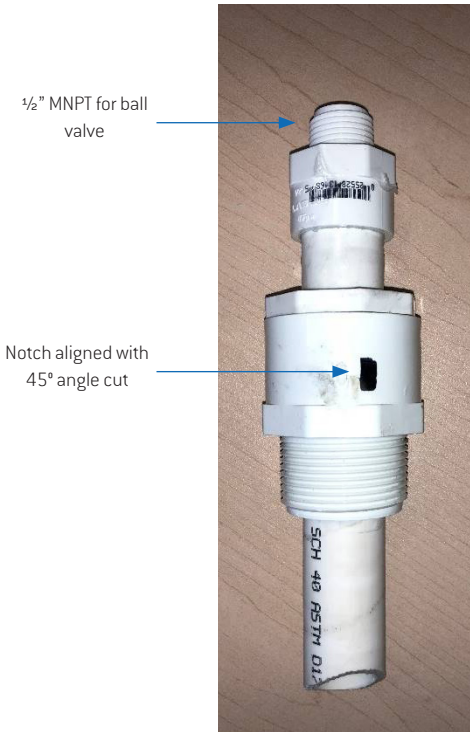
Background: As part of the design of the CCH® Endurance Feeder, pitot tubes help provide up to 2 times the flow rate increase with the same pressure differential. The increase in flow rate is needed to provide enough flow through the feeder to reach the maximum feed rate output established by the feed rate table, section 4.2.2, of the installation and operator's manual.

The pitot tubes listed in the parts of the manual are designed for 1 ½" to 2" piping as that will accommodate the majority of pools in this market. For the remaining pools that have between 2 ½" and 3" piping, design modifications to the pitot tubes were required to provide the same level of performance.

The pitot tubes for 2 ½" to 3" pool piping are shown in the pictures below. They have the same 45° angle cut similar to the smaller pitot tubes that come with the feeder system, but instead come with a threaded fastener that threads right into the pool pipe. No saddle clamps are needed making for a simple installation. Once the pitot tubes are installed, the isolation ball valves (part number 74061 from section 7.2 of the operator's manual) are used to complete the inlet and outlet connections of the feeder following section 3.4 in the manual.

Pitot Tube – 1 7/8"
For 2 ½" pool piping

Pitot Tube – 2 5/8"
For 3" pool piping



Tools & Equipment Required for Installation

- Drill – Cordless Recommended
- 1 ½" hole saw
- 1 ¼" pipe tap
- Gas Pliers (Channel Locks)
- Plumbers Tape or Pipe Sealant

Installation Procedure

Go to section 3.4 of the manual and refer to the notes prior to starting the installation.

- To install the pitot tube that will make the inlet connection from the pool to the feeder, choose a location on the main pool recirculation piping on the discharge side of the pool pump but upstream of the pool filter(s).

- To install the pitot tube that will make the chlorine injection connection from the feeder to the pool piping, choose a location on the main pool recirculation piping downstream of the pool filter(s), and heater (if available), but before the acid or CO_2 injection point.

Make sure the pool pump is off and shut isolation valves from the pool piping so that it is dry.

1. Drill a 1 ½" (38.1 mm) hole anywhere on the top half of the pipe. Caution: Do not drill on the bottom half of the pipe. Excess debris may enter your feeder.

2. Use a 1 ¼" pipe tap and channel locks to tap threads in the hole

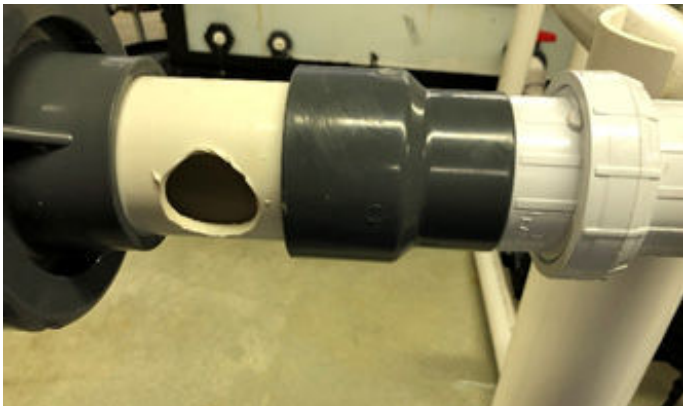
3. Select part 73141 for 2 ½" pool piping or part 73142 for 3" pool piping.

    a. Apply plumbers tape to both exposed threads on the pitot tube

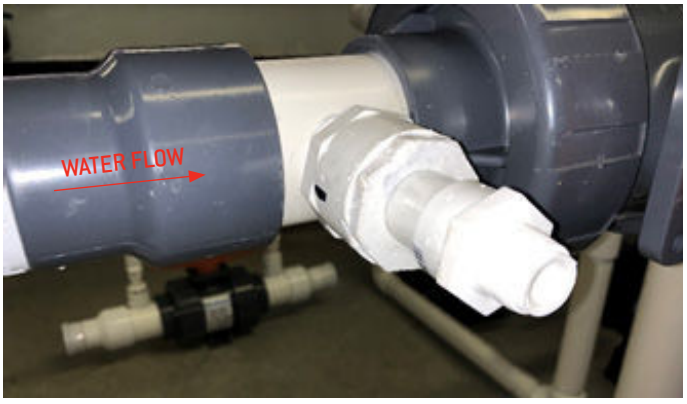
4. Thread the pitot tube as far into the pool pipe as possible preferably, until it touches the inside of the pipe and cannot rotate any further. Once the maximum depth has been reached, back out the pitot tube until the notch aligns with:

    a. **Directly upstream of the pool pipe** for the inlet connection to the feeder

    b. **Directly downstream of the pool pipe** for the chlorine injection connection from the feeder to the pool



1 ½" hole with 1 ¼" pipe tap



Inlet water pitot tube – notch facing upstream

Inlet water pitot tube - notch facing downstream

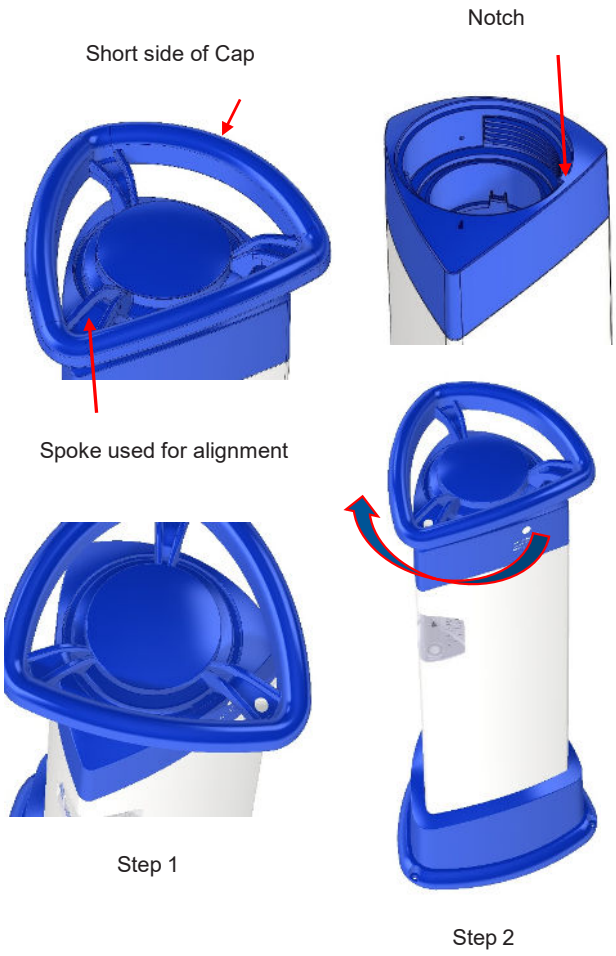
Appendix B – Pressure Cap Installation

Problems have been occurring in the field during attempted installation of the Pressure Cap on the feeder. If not oriented properly, the pressure cap can be forced on incorrectly causing an improper seal of the feeder during pressurized use. Once this happens, much effort is required to remove the cap from this improper installation. The feeder is updated with orientation dots to improve installation in the field.

Proper Installation

The Pressure Cap handle is designed to be similar to an isosceles triangle with two equal sides and a shorter side. The spoke opposite the shorter side of the triangle is used to align the pressure cap to the correct starting position and rotate clockwise to the final position aligned with the arrow on the feeder.

1. Align the spoke opposite short side of the cap to the notch and slide the cap down as far as it can go.
2. Rotate the cap clockwise until the spoke is in alignment with the arrow on the front of the feeder.
   a. There should be no resistance to the clockwise rotation if step 1 is done correctly. Do not force rotation of the cap.
   b. **IF THE CAP DOES NOT ROTATE SMOOTHLY**, lift it back up and repeat step 1.



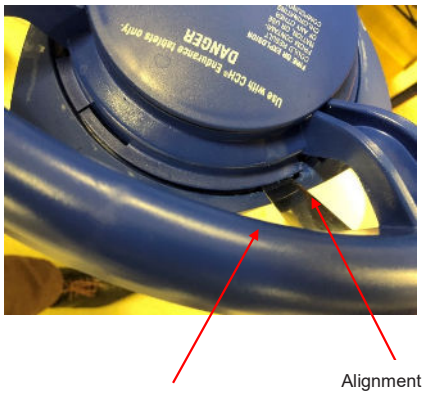
Correcting Improper Installation

Preferred Method – thin blade butter knife

1. Place the butter knife between the edge of the cap and the feeder (bending the knife 45° may help make it easier to place under the cap handle).
2. Grab the edge of the cap near the notch and lift it enough to go over the notch.
3. Rotate the cap counterclockwise over the notch until it disengages the threads and can lift off of the feeder.
4. Repeat installation steps 1 and 2 for proper installation.

Optional Method – Flathead screwdriver

1. Break the notch off by using a flathead screwdriver to lift it up away from the cap.
2. Once the notch is off, rotate the cap counterclockwise until the threads disengage allowing removal of the cap from the feeder.
3. Repeat installation steps 1 and 2 for proper installation.



Preferred method Step 2 - Grab edge of cap and lift with knife

Preferred method Step 3 - Rotate counterclockwise over notch

NOTES

NOTES

Solenis Pool Solutions
1400 Bluegrass Lakes Pkwy
Alpharetta, GA 30004
800.478.5727

www.solenis.com
www.cchpoolcare.com