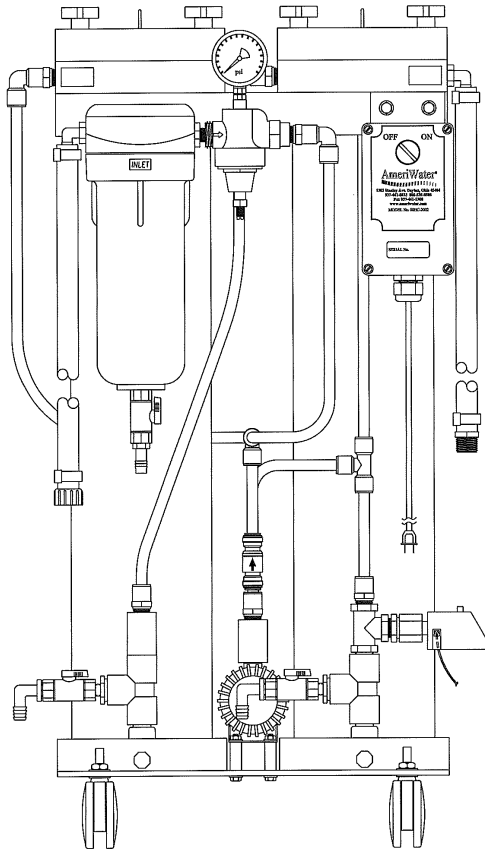




# SILEX OPERATION & MAINTENANCE MANUAL HC Series



**Manufactured With Pride  
In The USA**

[www.amerewater.com](http://www.amerewater.com) • 800-535-5585

AmeriWater • 3345 Stop 8 Rd. • Dayton, OH 45414

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# **SECTION 1, YOUR SILEX SYSTEM**

## **1.1 HOW DOES THE SILEX DEIONIZER WORK?**

Silex is a simple, maintenance-free system. This unit utilizes an Ecocirc Pump that is used for recirculating the water back through the Silex system and a monitor light that signals that the product water quality has dropped below the desired quality set point. An alarm will sound indicating that it is time to exchange the resin packs and send them to AmeriWater for regeneration.

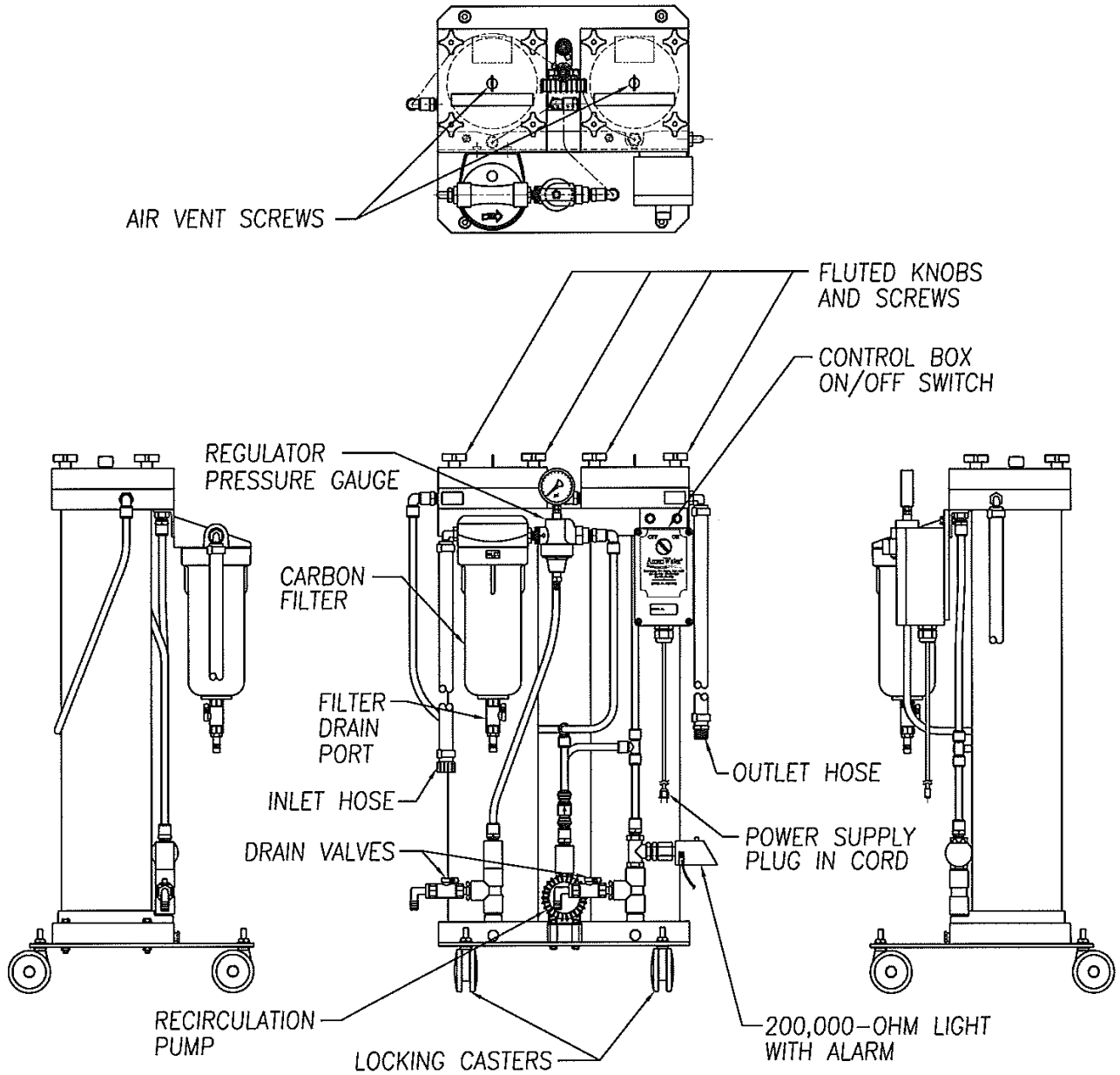
## **1.2 HOW DOES THE REGENERATION WORK?**

The AmeriWater regeneration center maintains the resin used in the Silex Deionizer. When resin packs are exhausted, replace the packs in the Silex system with “stand-by” resin packs and return the exhausted pack to AmeriWater for regeneration. The resin will be regenerated and returned the next business day after receipt. It’s as simple as that!

## **1.3 ABOUT THE RESIN PACK**

The resin has a shelf life of approximately one year. The resin pack consists of resin contained in a polypropylene bag that never has to be opened. Resin packs are shipped in plastic sleeves to prevent the exchanges from drying out.

# SECTION 2, SILEX FEATURES



## SECTION 3, INSTALLATION IN 10 EASY STEPS

1. Locate the Silex system on a firm, level foundation.
2. It is recommended, but not required, to locate the system near a standard floor drain or sump and a 115 Volt receptacle. This receptacle is where the power supply cord will be plugged in. The ON/OFF switch on the control box should be set at OFF. This switch will activate the pump and monitor light. There must be water through the Silex system before turning the switch to the ON position. A green light located on the switch also indicates that the unit is on. Attention: Running the pump dry may cause premature failure.

**CAUTION:** Vent all plumbed drain lines in accordance with local plumbing codes and / or local regulations. If a drain is not feasible, mount the system on a raised platform so that it can be drained into a container.

3. It is recommended to install cut-off valves on the inlet and outlet sides of each unit to facilitate changing of resin packs.
4. Connect the water inlet to the garden hose fitting on the inlet hose.
5. Install the water outlet hose to the point of use. This system has been shipped with a 3/4" MPT fitting installed on the outlet hose. A 3/4" FPT coupling has also been provided.
6. The Silex Deionizer is designed to operate at pressures up to 50 PSI (Pounds per Square Inch). A regulator has been installed on the inlet of the Silex system to adjust incoming pressure. The maximum flow for each deionizer is 3 GPM (Gallons Per Minute).
7. Install the carbon cartridge in the bowl of the filter housing.
8. Install the resin pack(s):
  - a. Remove the cover plates by unscrewing the four black knobs on each plate. To break the seal between the cover plates and the upper plates, use a slotted screw driver in the pry notch located in the top of each upper plate. Open the drain valve at the bottom of each column.



- b. Remove the resin pack from the shipping box and open the tied end of the plastic sleeve. **DO NOT** remove the resin pack from the plastic sleeve at this time.



- c. Stretch the resin pack over your arm to elongate the pack, and feed it into the Silex column allowing the pack to slide out of the plastic sleeve.



- d. Replace the cover plate and tighten the black knobs. Be sure to tighten the knobs evenly by screwing in the knobs in opposite corners simultaneously. Repeat for the other two corners.



- e. Close the drain valve at the bottom of the column.

- f. Repeat steps a. through e. for each of the columns.

9. Open the air vents located on the top of the cover plates and turn on the water supply. Tighten the air vents closed when water begins to escape through the vents.

10. Allow several gallons of water to run through the Silex system. Turn the ON/OFF switch on the control box to ON. Continue running water through the system until the water quality light changes from red to green. The green light indicates that the Silex is producing deionized



water.

## SECTION 4, RESIN PACK & FILTER EXCHANGE

### 4.1 RESIN PACK EXCHANGE

1. Turn the ON/OFF switch on the control box to OFF. Turn off the water supply to the Silex system.
2. Open the air vents located in the center of the cover plates.
3. Place a container under the Drain Valves located on the bottom plates of the system. Open the valves and allow the water to drain into the container. The container may be emptied at a drain.
4. Remove the cover plates by unscrewing the black knobs located at each corner of the cover plates.
5. Pull the exhausted resin pack part of the way out of the column and lay it over the top of the system.

**NOTE:** If the Drain Valve located on the bottom plate is not open, a vacuum will be created making it difficult to remove the resin pack.

6. Slowly pull the exhausted pack over the side of the column while sliding it out of the column and into the plastic sleeve that it was shipped in.
7. Remove the new resin pack from the shipping box and open the tied end of the plastic sleeve. Stretch the resin pack over your arm to elongate the pack. Feed the pack into the column allowing it to slide out of the plastic sleeve. Save the plastic sleeve for the return shipment of the resin pack at the next exchange.
8. Carefully wipe the O-rings and the grooves on the top plate and cover plate to remove any debris from the surfaces that must seal together.
9. Replace the cover plates and tighten the knobs. To ensure proper tightening and a good seal, tighten the knobs in opposite corners simultaneously. Repeat for the other two corners.
10. Turn on the water supply to the Silex system and remove trapped air by loosening the air vents located in the center of the cover plates. Tighten the air vents when water begins to escape through the vent. This ensures that all of the air has been removed from the system and maximizes the life and efficiency of the resin packs.



11. Allow water to run through the system for 1 to 2 minutes prior to placing the Silex system in service. Turn the switch on the control box to ON.

## 4.2 FILTER CARTRIDGE REPLACEMENT

The carbon cartridge should be replaced each time the resin pack(s) are exchanged.

1. Turn the ON/OFF switch on the control box to OFF. Turn off the water supply to the system.
2. Place a container under the filter housing sump and open the filter drain port on the bottom of the sump to drain the water out of the filter housing. Close the filter drain when water ceases to flow out of them.
3. Use the filter wrench supplied in the installation kit to turn the filter housing counterclockwise.
4. Remove and discard the old filter cartridge.
5. Partially unwrap the plastic from the new filter cartridge. Holding the end covered in plastic, place the new filter cartridge in the housing. Discard the plastic wrapper after installation.
6. Screw the filter housing back on making sure the O-ring is in the groove and is not pinched.
7. Turn on the water supply to the system. Turn the ON/OFF switch on the control box to ON.

## SECTION 5, RESIN PACK REGENERATION

Regeneration certificates are used to simplify the exchange of your exhausted Silex system packs. The certificate has been purchased and will be used as payment for the resin pack regeneration service. Simply follow these steps:

1. Fill out a regeneration certificate by printing your name, phone number, company and address.
2. When you send each pack to AmeriWater, enclose the regeneration certificate in the box. AmeriWater will ship you a freshly regenerated resin pack.
3. To order more certificates, contact the company that originally sold you the deionizer. Be sure to keep regeneration certificates on hand to ensure uninterrupted service.
4. It is recommended to send the exhausted resin to AmeriWater immediately after exchange. This will allow time for shipment and will maintain your uninterrupted supply of deionized water.

### Certificates Make Exchanging Packs a Breeze!



The image shows a sample of an AmeriWater Resin Regeneration Certificate. It features the AmeriWater logo at the top left, a photograph of a woman in a business suit holding a resin pack, and a series of text instructions and form fields. The text explains that the certificate is used as payment for resin pack regeneration and provides instructions on how to use it. The form fields include Name, Phone (with parentheses for area code), Company, Address (two lines), City, and State/Zip. At the bottom, it specifies '2101C Standard Resin Pack' and provides the shipping address for AmeriWater Inc. in Dayton, Ohio. The website www.amerewater.com is also listed.

**AmeriWater®**

### Resin Regeneration Certificate

This certificate has been purchased and will be used as payment for the resin pack regeneration service.

When you send each pack to AmeriWater, enclose this regeneration certificate in the box. AmeriWater will ship you a freshly regenerated resin pack. To order more certificates, contact the company that originally sold you the deionizer.

Fill out for return shipment to:

Name \_\_\_\_\_

Phone ( ) \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State/Zip \_\_\_\_\_

www.amerewater.com

**2101C Standard Resin Pack**

Ship exhausted pack and certificate to:  
AmeriWater Inc.  
1257 Stanley Ave.  
Dayton, Ohio 45404

Fill out and enclose in box for return shipment

- NO Paperwork
- NO Phone Calls
- NO Purchase Orders

## **SECTION 6, SERVICING YOUR SILEX SYSTEM**

### **6.1 DISINFECTION**

Normally, disinfection is not required with this system. However, if desired, disinfection can be carried out by the following steps:

1. Turn the ON/OFF switch on the control box to OFF. Turn off the water supply to the Silex system.
2. Remove filter and resin packs from the system. Reference the instructions for resin pack and filter exchange on pages 5 & 6.
3. Pour one tablespoon of household chlorine bleach (5% solution) into the filter sump as well as each Silex column.
4. Close all drain valves, sample ports, and filter drains and open the air vents located in the center of the top plates.
5. Turn on the water supply to the Silex system and allow the system to fill with water until the presence of chlorine can be detected at the outlet of the system.
6. Turn off the water supply to the Silex system and allow the system to soak for 15 minutes.
7. After the 15-minute soak time, turn on the water supply to the system. Allow the system to flush until chlorine is no longer detected.
8. Drain the water out of the system by placing a container under the drain valves and opening the valves. Place the container under the filter drains and open the valves to drain the water out of the filter sump. Close all valves when water is no longer flowing out of them.
9. Install new filter cartridge in the filter sump, and new resin packs in the Silex columns. Reference the resin pack and filter exchange instructions on pages 5 & 6.

Apart from regular resin pack exchange and periodic disinfection, the Silex system requires no maintenance. In the event that the system is damaged, all parts can be ordered from AmeriWater by calling 1-800-535-5585.

## SECTION 7, REPLACEMENT PARTS

### 7.1 CONSUMABLES

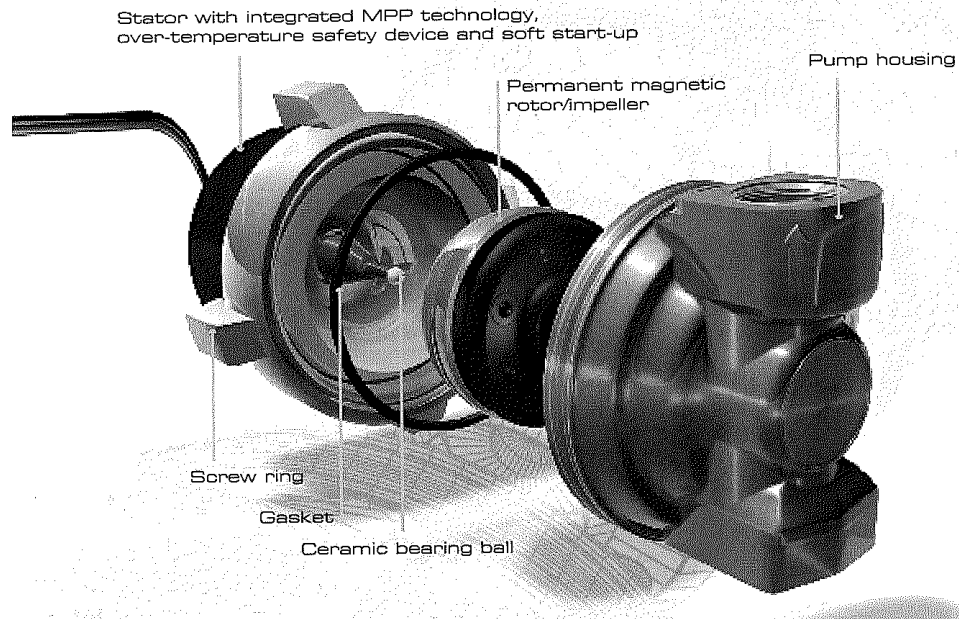
Part #	Name
002101C	Regeneration Certificate, Standard DI
002101S	Pack DI Standard Regeneration
20-5101	Filter Cartridge Carbon Block, 10 Micron, 2.5"x10" DOE

### 7.2 STANDARD REPLACEMENT PARTS

Part #	Name
80-0137	Laing Ecocirc Pump
0119-0067	Drain Tee Assembly
0119-0010	Column, Silex Assembly
14570111	Washer
19300001-00	Silex O-Ring
19530901	Air Vent
19560310	Knob Assembly
21530234	Filter Housing O-Ring
43530701	Gauge
44-0065	Regulator
75679122	Hydro-Check, 200K Light with Alarm
94560410	Caster, Twin Wheel with Brake
94560411	Caster, Twin Wheel no Brake
62-0012	Power Supply
65-0011	Switch
65-0012	Switch Contact
75679119	Resistivity Hydro-Check Patch
041002	Ball Valve
55-0013	JGES Check Valve

# SECTION 8, TROUBLESHOOTING FOR THE ECOCIRC PUMP

## 8.1 Pump components



## 8.2 Pump does not run

Check if the voltage is correct. If voltage is correct, and the pump is hot, the thermal overload protection might have switched-off the pump. Wait until the pump is cooled again. It will turn on automatically.

The pump is blocked – clean the pump of impurities (The pump must be without power. Turn the ON/OFF switch on the control box to OFF. Close the shut-off valves. Open the screw ring carefully and clean the pump. Attention: water will run out of the pump, avoid electric parts getting wet).

The pumped fluid is too hot. (Make sure the pumped fluid temperature is within the allowed range of the temperature) Max. Ambient Temperature: 50 Degrees C

### **8.3 Loud flow noise**

The system has not been purged correctly. Re-purge the system. Flush the system to remove dirt. Make sure the system is filled and the air has been forced out. The pump must be without power to rid the system of air. Turn the ON/OFF switch on the control box to OFF. Remove the screw ring from the pump a little, so that the air can leak out of the pump. Attention: Avoid electric parts getting wet! Then open the lead-in carefully, until some water runs out of the pump. Now fasten the screw ring. The pump can be switched on. If you hear air noises at first, these should lessen after a short while. Turning the pump off and back on accelerates the air removal. If the air noise does not disappear or at least decrease substantially, repurge the system. Avoid dry run in any case! This will damage the pump. Be sure there is water throughout the system.

There might be dirt inside the pump housing. Clean the pump inside (The pump must be without power. Turn the ON/OFF switch on the control box to OFF. Close the shut-off valves. Open the screw ring carefully and clean the pump. Attention: water will run out of the pump, avoid electric parts getting wet).

### **8.4 Cleaning the pump – changing the rotor**

The pump must be without power. Turn the ON/OFF switch on the control box to OFF. Close the shut-off valves. Open the screw ring carefully. Attention: water will run out of the pump. Avoid electric parts from getting wet or water running over the motor. Take away the stator. Take out the rotor carefully by grabbing it at the blade wheel. Check the pump housing, the rotor and the stator for impurities and remove them. Clean the pump.

Put the rotor back in the stator and check whether it can be turned easily. If not, the bearing might be worn (swirl marks on the bottom side of the rotor). Put in the new rotor. Change the pump against a new one. If the rotor can be turned easily, close the pump again. Remove the gasket. Clean the gasket and the nut and the area on the stator where the gasket lays. Put the gasket back inside the pump housing. Assemble the stator with the screw ring. The screw ring must not be installed using tools. Normally it is enough to assemble the screw ring manually. If the pump does not work, replace the motor.