

# PROCEDURE : ANNUAL MAINTENANCE FOR CLX Chlorine Analyzer

**MANDATORY: Contact Operations prior to removing unit from service**

**While the CLX is in normal Operation Press the SERVICE Button, wait until the CLX displays HOLD.**

**When HOLD is displayed**

**Shut off Flow to the CLX**

**Shut off Power off the CLX**

Parts List for Annual Maintenance of the CLX

Included are the following parts:

<u>Quantity</u>	<u>Description</u>
• 2	Inline Check Valves
• 2	Reslyn Duckbill Valves
• 2	End Caps (use with duck bills)
• 2	Pump Tubing (black tubes)
• 2	Reagent Cap Assemblies with clear tubing attached
• 1	CLX cuvette
• 1	Duck Bill Removal Tool (dental pick) in case the duck bill sticks in the opening

Tools required (not provided in kit):  
5/32 or 4mm Hex Driver (Allen Key)  
Philips Screwdriver  
Tweezers (if needed for removal of duck bills)  
Flush Kit (syringe kit for reagent lines)  
Q-Tips for cleaning cuvette O-Rings (if needed)

NOTE: The check valve replacement for the chlorine analyzer should not be attempted over a grating or where parts cannot easily be recovered if dropped. It is highly recommended that the instrument be moved to a clean workbench area for this operation if practical. Before beginning the service remember to:

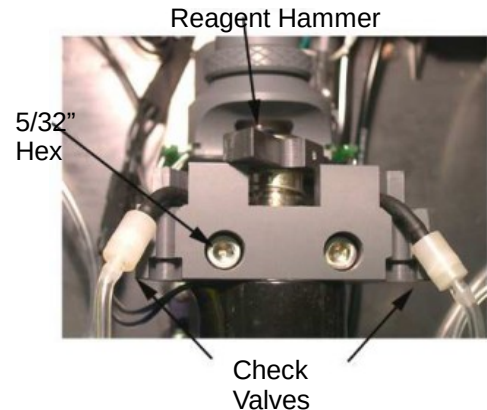
- **REMOVE THE REAGENTS** (In the interests of safety, remove the reagents and store separately)
- **If removing to a workbench for service**
  - **Flush the reagent lines with DI water before removing from the wall**
  - **Disconnect water and drain lines and drain remaining water from them**
  - **Disconnect power and other electrical connections**

## To replace Check Valves and Duck Bills First Remove the Reagent Pump

The reagent pump assembly includes the solenoid, the hammer, the pump body and the mounting plate. This is the device responsible for compressing the black reagent pump tubes which, along with the check valves moves a controlled amount of reagent from the reagent bottles to the water in optics assembly.

### Reagent Pump Removal Procedure

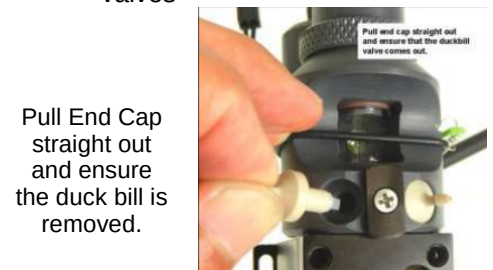
- Loosen the hammer thumb screw.
- Cock or remove the hammer.
- Disconnect the pump cable if necessary.
- Remove the check valves from the seats by pulling them down gently until they are released.
- Loosen and remove the two hex screws to remove the reagent pump.



## REPLACING THE CHECK VALVES, DUCK BILLS & End Caps.

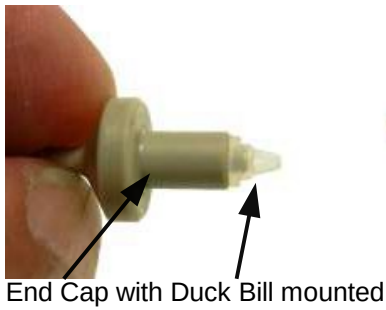
NOTE: Do not remove the End Cap retainer screw completely, just loosen the screw for the End Cap retainer and turn the retainer to a vertical position (as shown below). Carefully remove each End Cap. The Reslyn Duckbill valve is located on the end of the End Cap. Usually the Duckbill valve comes out with the End Cap as shown, if it does not come out attached to the End Cap, make sure it to remove it prior to installing new Duckbills and End Caps. You may need the included dental pick or a pair of tweezers to retrieve it. The old Duckbill may be either white or black in color.

- Install the new Duckbills and End Caps
- Carefully return the End Cap retainer screw to horizontal
- Re-install the reagent pump assembly
  - Reconnect the wiring, if removed. Route the wire correctly to avoid interference with reagent bottles



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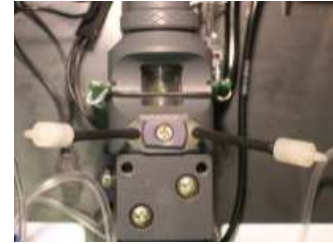




End Cap with Duck Bill mounted



Check Valve with Pump Tube  
Note Flow Direction



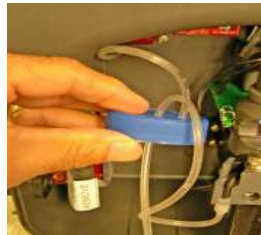
Remember to install the new pump tubes and check valves before re-assembling the reagent pump.

### Annual Reagent Cap Assembly Replacement

The Reagent Cap Assemblies need to be changed annually.

Follow the steps below:

1. Replace the two Cap Assemblies. The “notched” tube end goes into the reagent bottle and the other end of that fitting connects to the check valve. The other tube connects to the vent fittings on the back of the CLX housing.



### Replacing the CLX Cuvette

The glass cuvette can easily be removed for cleaning or replacement. To replace the cuvette, loosen (**DO NOT REMOVE**) the knurled top. The cuvette will pop out. There is a spring behind the cuvette which will facilitate removing the cuvette. In some cases it may be necessary to gently “spin” the cuvette to allow it to release more readily. To remove the cuvette, pull the black O-ring down. If needed clean the O-Rings the cuvettes seats against with a soft tool such as a Q Tip. Make sure there is no debris left on the O-Ring which might prevent proper seating of the cuvette.



Reverse the procedure to install the new cuvette, ensuring that the new cuvette is seated properly against the top and bottom O-Rings. After replacing the cuvette, ensure that the knurled top is hand tight. When water is first applied check for water leaks.