THE HIGH MAINTENANCE MYTH

Misconceptions about chlorine probes & motorized amperometric chlorine analyzers

By Foxcroft Equipment & Service Co.

While discussing motorized bare electrode amperometric chlorine analyzers we've heard:

- We don't want it, it's got motors and moving parts.
- It's high maintenance.
- We want membrane covered chlorine sensors they're reagentless, bufferless and low maintenance.



What You're Not Told About Membrane Covered Chlorine Sensors:

- Membrane covered sensors work well - if the water's clean.
- But if your measuring cell looks like this, you'll be cleaning membranes every few days.
- Not the low maintenance you expected.



Contaminants Clog the Membrane

Drinking Water

- Iron, manganese, calcium, turbidity, total dissolved solids above EPA Primary and Secondary Drinking Water Standards.
- Hydrogen Sulfide
- Corrosion inhibitors

Wastewater

 Stained or colored tertiary treated water can still be problematic, even if contaminants are in insignificant concentrations

Your Chlorine Sensor Can't Work In Water That Does This

It affects bare electrode analyzers too, but they can be cleaned more easily

FX-CLv2 ports are large to resist clogging, vinegar pH buffer helps clean and slows rate of scale buildup





That's Why Foxcroft Offers a Tool for Each Application

 For clean, filtered water use membrane covered sensors



 Use bare electrode FX-CLv2 for wastewater or water high in iron, calcium, organics, suspended solids, hydrogen sulfide or corrosion inhibitors



The Motors Last Longer Than Expected

Designed to run 24/7 for years

- The FX-CLv2 uses 24VDC brushless motors to clean the electrodes and feed distilled white vinegar.
- 24VDC motors run cool, lubricant doesn't liquefy and leak out.
- Vinegar helps clean the system and lowers pH for accurate readings.

Even the "hot motors lasted longer than expected

- The 120VAC motors used in older analyzers were often too hot to touch, but still lasted 3 to 5 years or more.
- We've had ZERO replacement 24V motor sales in 3 years and counting. Life span expected to exceed 120V motors

Moving Parts Means Friction!

- The motor turns the mixing paddle, which rotates PVC balls that mix the solution & clean the measuring electrode and negative cell.
- Even with friction the paddle and balls last several years, negative cell lasts one to one and a half years.



One Hour Or Less Once A Year Is Not High Maintenance

| Part | Frequency (under normal use) | Installation Time |
|---|------------------------------|-------------------|
| Negative cell only | Yearly | 20 minutes |
| Mixing paddle only | 1-3 years or more | 20 minutes |
| Complete PM kit (includes above parts) | Yearly recommended | 1 hour |
| Mixing motor | 3-5 years or more | 30 minutes |
| Pump motor | Unknown, 3 years min. | 15 minutes |
| Pump head | Unknown, 3 years min. | 3-5 minutes |

Many customers only replace the negative cell every 1 to 1-1/2 years

Compare to quarterly tubing replacement & reagents for DPD analyzers

Simple Design Means You Can Do The Work, For Less Money

There are few parts, they're easy to handle and install by your personnel. You don't need costly startup or a service contract performed by a factory technician.



If Maintenance Were Such An Issue We Wouldn't Have:

- A city in Florida with 25 analyzers
- A city in Texas with over 30 analyzers
- Many with 5-10 analyzers or more
- Customers with analyzers up to 20 years old
- A Connecticut customer: "It held calibration for a year, I never had to tweak it". He recently ordered 4 more.

Wasted Time And Money

- Foxcroft has replaced many heavily advertized brands of probe systems assumed to be the best solution; until the membranes clogged.
- A water system retrofitted 10 well sites:
 - Iron clogs the sensors, they can't use a new \$60,000 SCADA to control dosing.
 - Trips to each well for cleaning every few days.
 - 6 months of trying work-arounds, eventually a refund is granted.
 - We install a trial bare electrode FX-CLv2; readings are "dead nuts on" out of the box and the SCADA works. After a month of no maintenance or re-calibration they replace all units. 2 years later the cost of maintenance parts totals less than \$350.00 for 10 analyzers

Don't Assume, Look a Little Closer

- Probe based amperometric chlorine analyzers dominate marketing efforts and materials. They are cost effective and accurate tools.
- Many offer probe systems regardless of suitability, because they only have that one type of chlorine analyzer.
- We offer them, but only for filtered, clean water.
- Bare electrode analyzer maintenance is actually less than assumed
- You may have no choice depending on your water quality.

Your Water Determines The Analyzer Type

- Foxcroft uses experience, your application and water quality to determine if a probe or bare electrode type is best for your application.
- If our product won't work we tell you and pass on the sale; no one benefits from an angry customer with a useless product.

Need assistance? 800-874-0590, email <u>sales@foxcroft.com</u>, or visit www.foxcroft.com for more information