

Maintenance from an Engineer's Perspective

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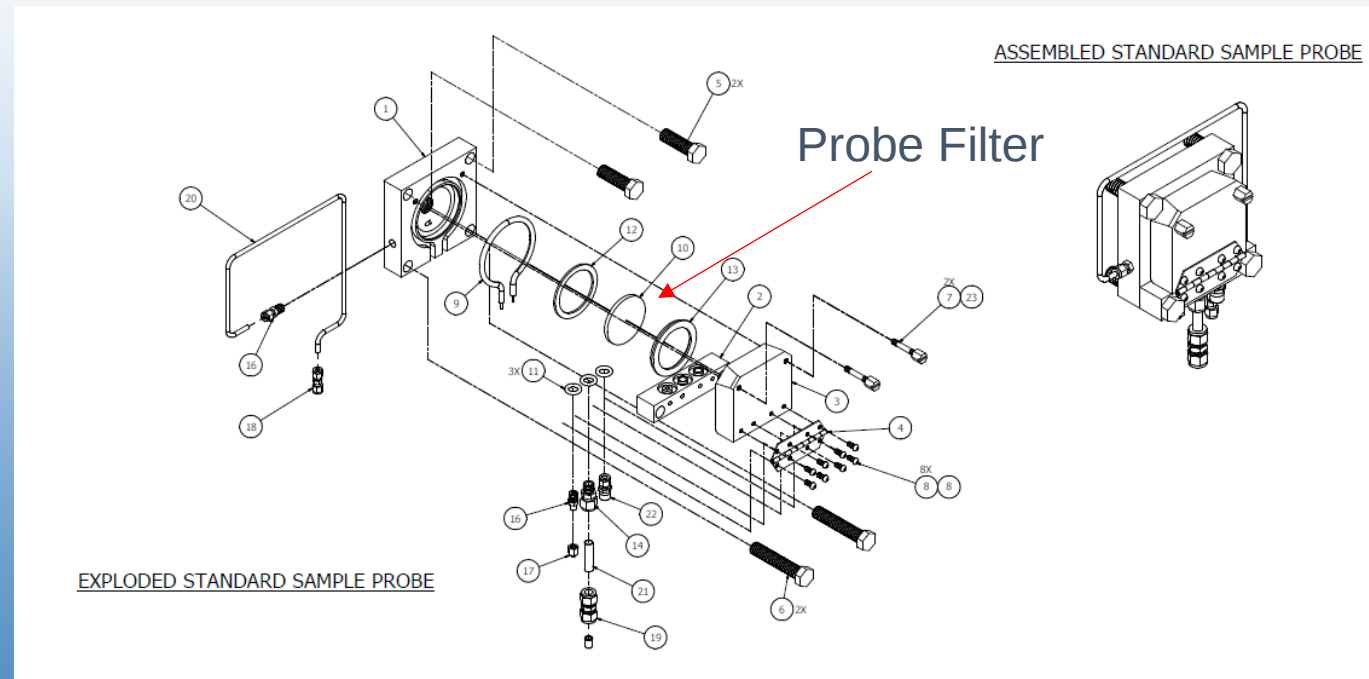
Why Perform Maintenance?

- Equipment Performance
 - Analyzer accuracy
 - Steady sample flow
- Improves Longevity of System Components
 - Less wear and tear on parts
- Prevents Damage to Other Equipment
 - Catching hazards early helps save equipment downstream
 - Making sure system is functioning properly

How Often Do You Perform Maintenance?

- Probe Filter
 - Every Year?
- Dry Air Filter
 - Every Quarter?
- NH3 Scrubber
 - Every 6 Months?
- Leak Tests
 - Yearly?

Primary and Secondary Air Filters



Do You Need To Perform Maintenance?

- Short Answer: YES!
- But if the system seems fine, why bother?
 - Systems can have minor, hard to detect problems that turn into bigger ones over time
 - Better be preventative than reactive
 - Damage can cause potential CEMS downtime for several weeks or months
 - Minor components are cheaper than major components

Potential Harm From Bad Maintenance

- Particulate in sample lines
- Failing sample/analyzer pumps
- NH₃ crystallization in lines and equipment

NH₃ (Ammonia) Crystallization

