

# Annual Maintenance & Helpful Tips

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# Benefits of Regular Maintenance

- **Less Down Time**
- **System Longevity**
- **Personnel Productivity**
- **More \$\$\$**

# Probe Maintenance

- **Annual/Bi-Annual**

- Natural Gas – Annual
- Process Plants – Bi-Annual
- SCR – Annual ( Inspect Bi-Annually)

- **Tips**

- Inspecting ( High Vacuum, Low Flow)
- Filter/Gasket Replacement
- Closing ( SCR vs Stack )
- Cleaning ( Air, Pressure Washing )









# Sample Lines ( Umbilical )

- Visually Inspect
- Flow/Vacuum Issues?
  - Pressure Test / Vacuum Test
- Check Heat Trace @ Probe





# Instrument Air

- **Quarterly / Bi-Annual**
  - **Ensure Above 60+ psi**
  - **Replace Filters**
    - **Primary & Secondary**
    - **Inspect / Replace Desiccant Towers**





P1 304  
Inst. Air Filter

P1 304  
Inst. Air Filter

MP 305  
Inst. Air Secondary Filter

**HEATLESS DRYER**  
MODEL: P200-4036  
SERIAL: 0317  
U.S. PAT. NO. 3,882,881 AND FOREIGN PATENTS  
PATENT PENDING - SEE INSTRUCTIONS AND OTHER  
LITERATURE, COL. 03A20  
MAX. PRESS. 150 PSI  
MAX. FLOW 10 SCFM  
V. 120V/60HZ  
P200-4036  
DESICCANT TOWER 6"  
0317

CAUTION  
POLYCARBONATE





# Sampling System

- Replace Sample Filters
- Replace Scrubbers
- Inspect Tubing
- Inspect Peristaltic Pump / Tubing
- Inspect Water Bath / Cooler
  - Verify Correct Temp
  - Use Correct Water ( Distilled )
- Exercise Valves / Flow





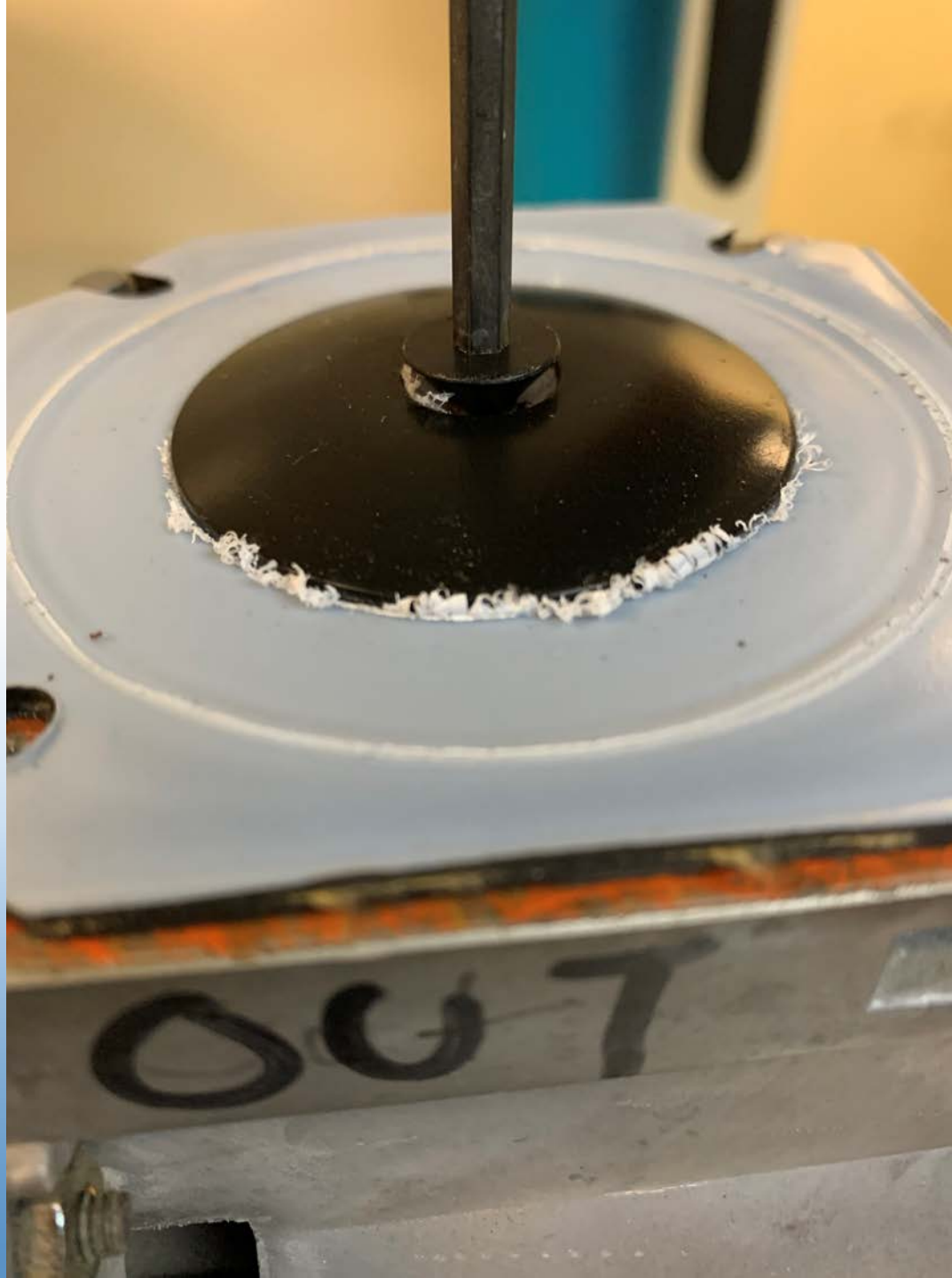




# Sample Pumps

- Listen – Too Loud? Too Much Vibration?
- Test With Vacuum Gauge
  - Good  $>15$  inHg ( 17-20 )
  - Rebuild  $<15$  inHg
- Rebuild Pump With Correct Kit
- Have Spare Pump
- Notate Results , Could Show A Pattern





# Analyzer Maintenance

- **Test Pumps**
- **Inspect / Replace Sample Filter**
- **Verify Display Readings Match DAHS Readings**
- **Clean Reaction Chamber**
- **Test NO<sub>2</sub> Efficiency ( >80% )**
- **Leak Check!!**
- **Notate Rxcel, Measure Detector**





# Check Drain System

- **Verify No Clogs**
- **Avoid Freezing**
- **Heat Trace For Colder Climates**



# Cylinder / Solenoid Check

- Leak Check
- Proper Way Of Cylinder Change
- Test Solenoids / Audit Solenoids





# Maintenance Programs

- **CISCO Does Offer A Variety Of Maintenance Programs**
- **Monthly, Quarterly, Bi-Annual, Annual.**
- **Interested? Contact...**
- **Walt Bastron – [wbastron@ciscocems.com](mailto:wbastron@ciscocems.com)**
- **Jason Radtke – [jradtke@ciscocems.com](mailto:jradtke@ciscocems.com)**
- **For A Quote [orders@ciscocems.com](mailto:orders@ciscocems.com)**

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# Questions?