Features, Advantages, and Benefits of the Eclipse P&T Sample Concentrator

OICO NASDAQ LISTED

SYSTEM CERTIFICATION ISO 9001:2000 SGS

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OI Market Advantages

- Principle advantages of the Eclipse in the marketplace are three-fold:
  1. Reliable water management for low maintenance operation and proven performance on difficult applications
  2. Fastest cycle times to maximize sample throughput and laboratory productivity
  3. Superior data quality that no other P&T sample concentrator can match
- The features and options of the Eclipse are all designed to optimize these three advantages and to distinguish it from other concentrators in the marketplace.

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OI Analytical's 20-Year History with P&T

- 1986 – 1st microprocessor-based P&T
- 1987 – 1st patented resistive trap heating
- 1990 – 1st air sampling capability on P&T
- 1992 – 1st patented H_2O management system
- 1992 – 1st patented Infrasparge™ sample heater
- 2002 – 1st method-compliant dual P&T system
- 2003 – 1st P&T with touchscreen user interface
- 2003 – 1st sparge overfill protection and patented foam sensing/busting protection
- 2004 – 1st P&T to offer Chinese language interface
- 2006 – 2nd generation of fully automated pH measuring, recording, and reporting

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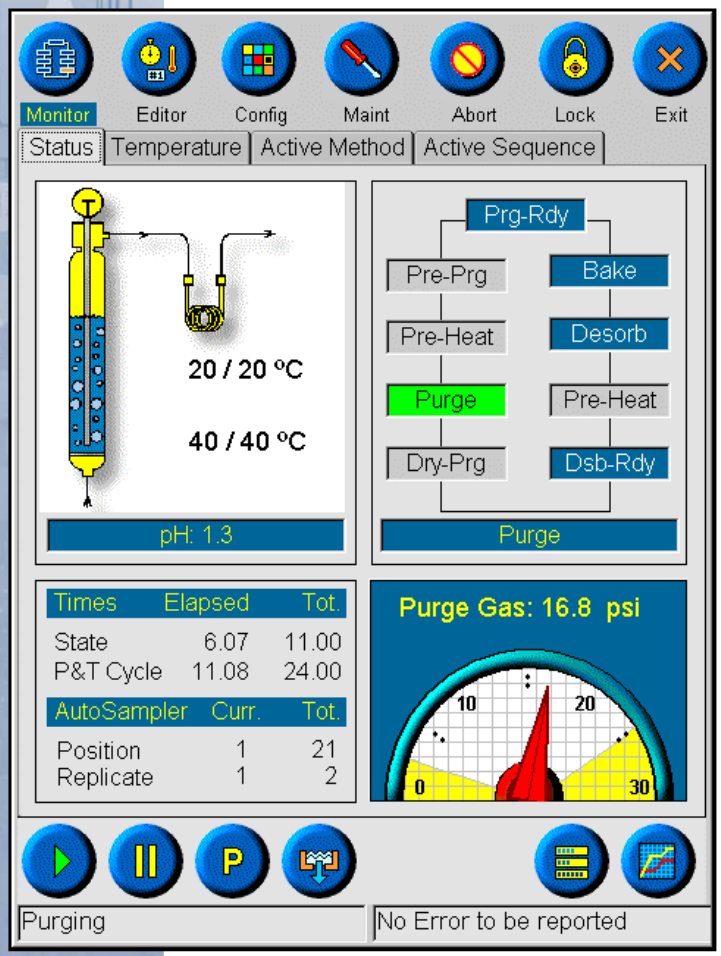
Feature: Full-Color User Interface with Touchscreen



- Advantage: Easy-to-use, intuitive interface is operated via a full-color touchscreen or a networked PC using the same software program.
  - Eclipse also available in low-cost PC-only version without the touchscreen
  - Software also available in Chinese version
- Benefit: Simplifies the operation, maintenance, and troubleshooting of the instrument.
  - Reduces errors and new user learning curve
  - Only one program must be learned

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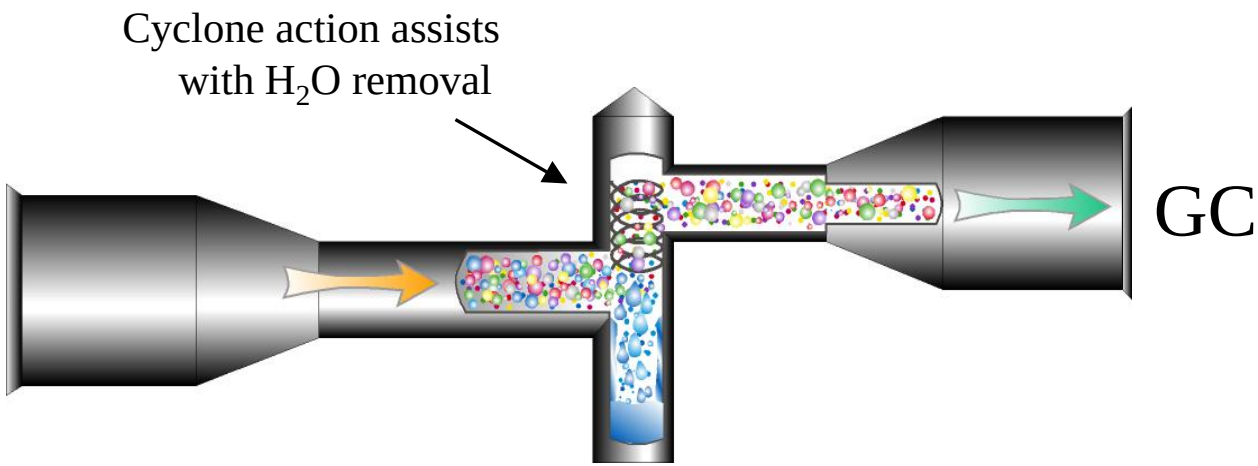
Feature: Patented Cyclone Water Management™

- Advantage: During the desorb state, removes and vents >96% of the water purged onto the trap.
  - Comes standard on all Eclipse P&Ts
- Benefit: Prevents water transfer to the GC column, improves data reproducibility, produces better chromatographic resolution, and minimizes MS downtime.



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Feature: Patented Infra-Sparge™ Sample Heater Option

- Advantage: Rapid, accurate, and consistent heating of all water samples.
- Benefit: All samples are heated to precisely the same temperature, providing consistent results, lower calibration % RSDs, improved recoveries, and lower MDLs.
  - Faster and more accurate than “sleeve”-type heaters

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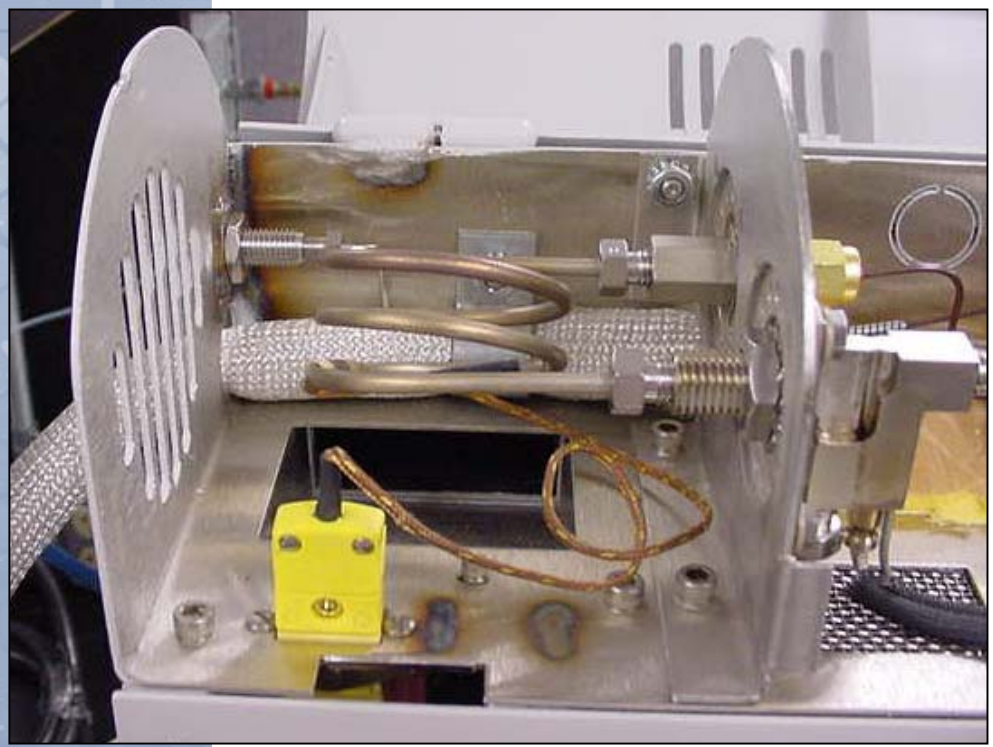
Feature: Direct Resistance Trap Heating



- Advantage: Uniform heating rates of >1,000 °C/min result in rapid analyte desorption from the trap and transfer of a narrow analyte band to the GC column.
  - No band broadening
- Benefit: Improved peak shapes, shorter desorb and overall cycle times, less water transferred to the column.
  - Faster trap cool down

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Feature: Patented Foam Buster™ Option

- Advantage: Effectively breaks bubbles associated with foam and allows their return into the sparger.
  - Works with 5- and 25-mL spargers
- Benefit: Prevents contamination of internal sample pathway upstream of the sparge vessel and avoids downtime caused by foaming samples.

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Feature: Patented Foam Sensor™ Option

- Advantage: Detects the presence of foam inside the sparger and stops the purge gas before the foam contaminates or damages the sample pathway.
  - Outside the glassware to provide full view of the sparger
- Benefit: Senses when foaming occurs and prevents contamination of the internal sample pathway.
  - Avoids costly downtime caused by foaming samples

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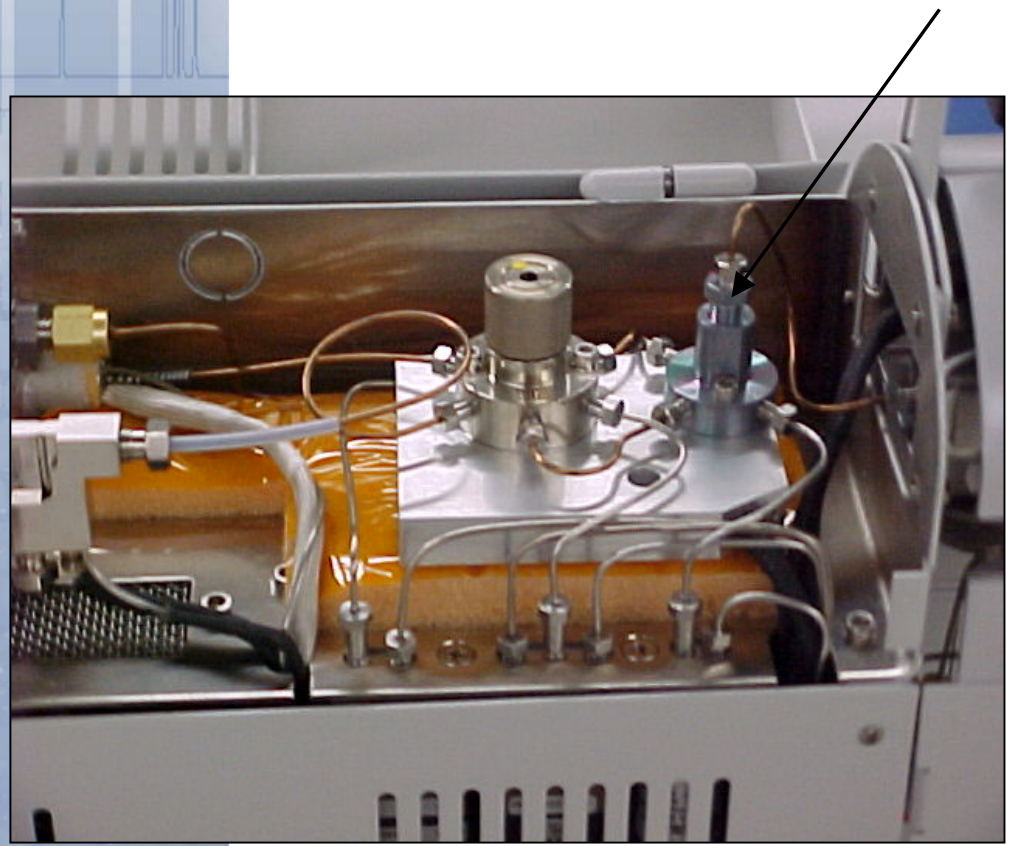
Feature: In-Line Foam Filter



- Advantage: Protects against foaming and prevents particulates from moving upstream into the sample pathway.
- Benefit: Prevents foam and particulates from reaching the 6-port valve.
  - Fitting also available with the filter for clean water applications

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Feature: Sparge Overfill Sensor (SOS™) Option

- Advantage: Checks the sparger for the presence of water prior to sending the next sample from the autosampler. If water is detected, automatically drains.
- Benefit: Prevents accidental over-filling of the sparger and resulting instrument flooding.
  - Prevents time and expense associated with repairs to P&T and GC/MS

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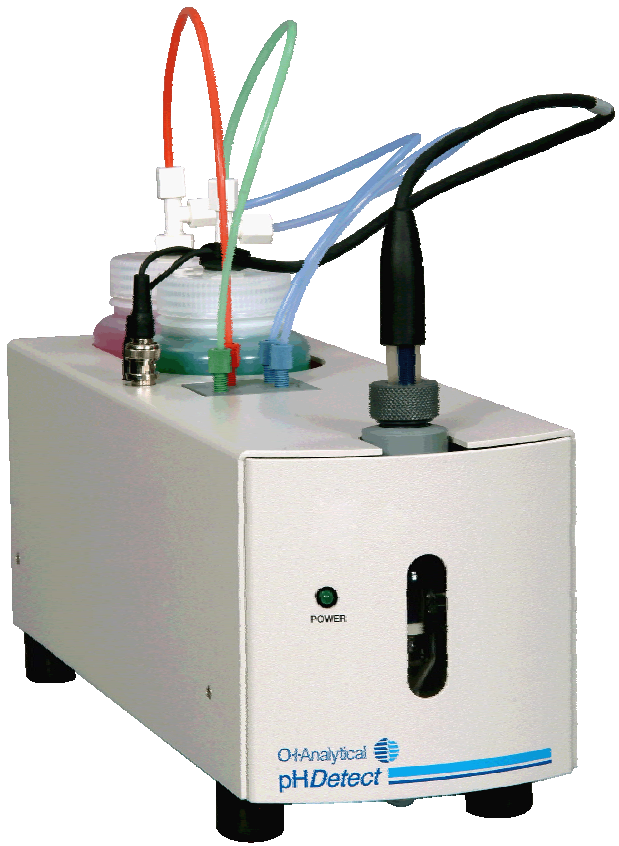
Feature: pH*Detect*™ Option



- Advantage: Fully automates the measuring, recording, and reporting of USEPA required pH measurement in all water samples.
- Benefit: Saves time, labor, and materials associated with manually measuring the pH of hundreds of water samples.
  - Electronic confirmation and documentation for autit purposes
  - Works with 4551A or 4552

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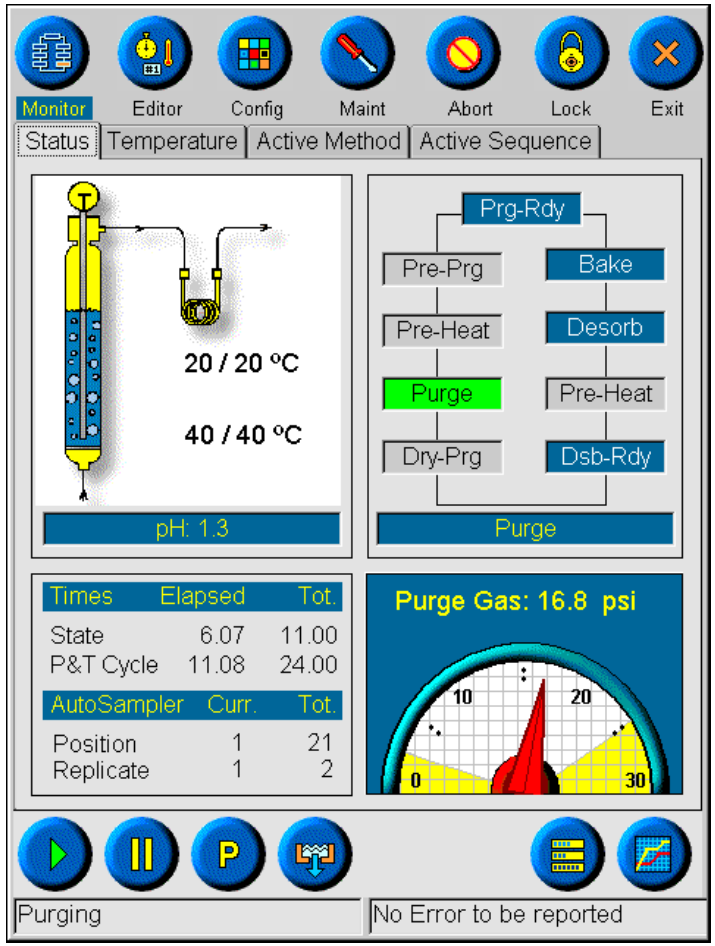
Feature: Fastest P&T Cycle Time in the Industry



- Advantage: The combined benefits of effective water management, rapid trap heating and cooling, accurate sample heating, and automated pH measurements result in the fastest and most completely automated P&T in the industry.
  - Faster than the Velocity XPT or the Encon
- Benefit: runs more samples in less time to maximize laboratory throughput and profitability.
  - Minimizes downtime for repairs

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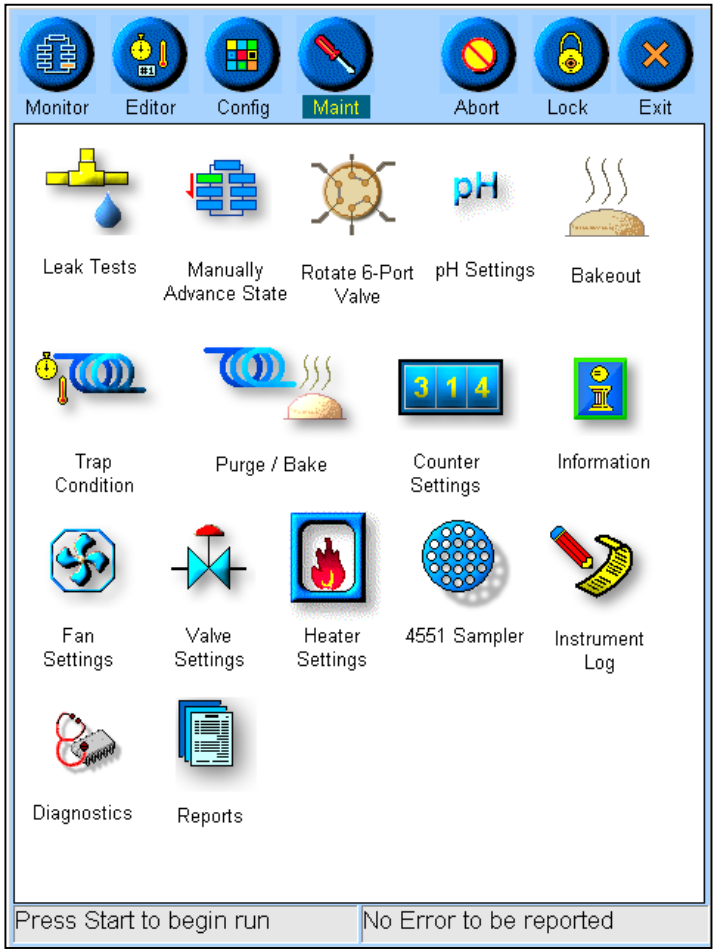
Feature: One-Button Maintenance Functions



- Advantage: Perform all routine maintenance functions – such as leak test, trap conditioning, and bake-out – easily and automatically using single-button icons.
- Benefit: Simple to learn and use. Automatic routine maintenance functions save time. Electronic logging provides a record for audits, troubleshooting, and reference.

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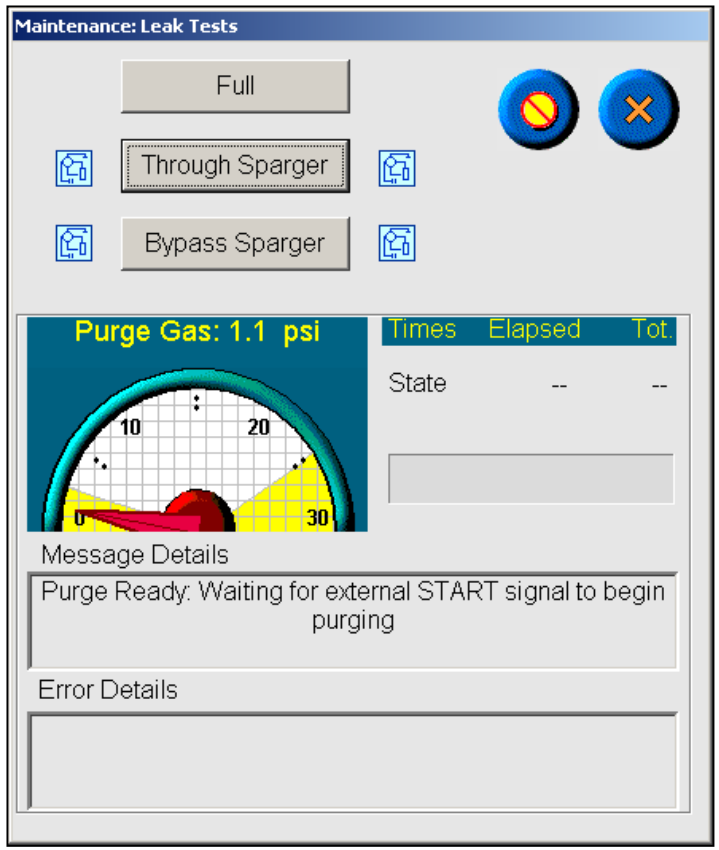
Feature: Automated Leak Test



- Advantage: Automatically performs a full system leak test from an icon on the Maintenance screen, records the results in an electronic log file, and provides feedback on locating any leaks.
- Benefit: Automates a routine maintenance procedure and simplifies the process of troubleshooting.
  - Provides electronic log of all results for audits

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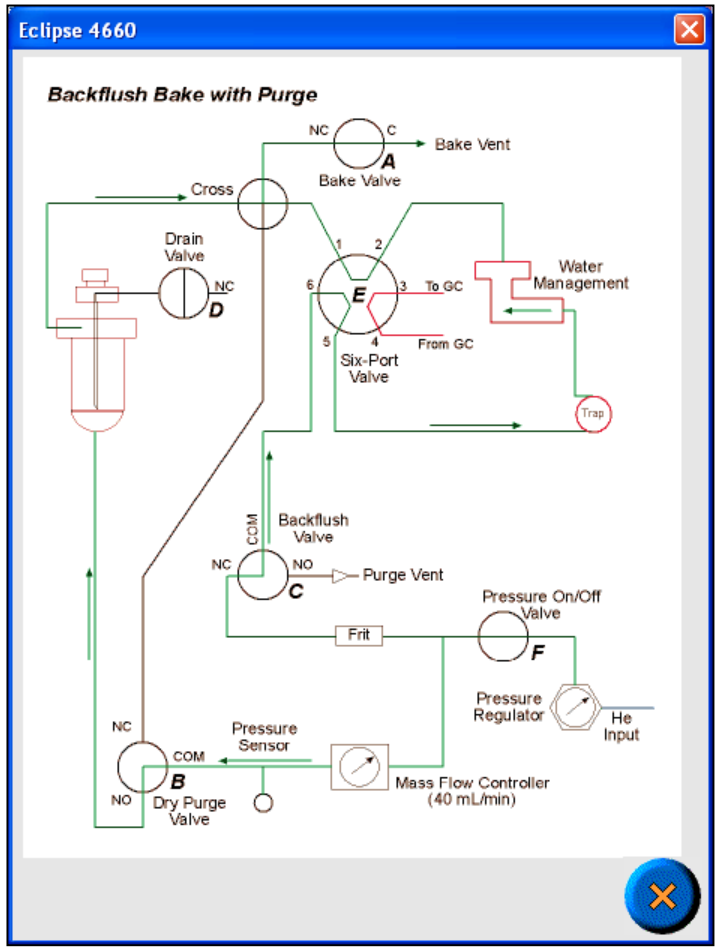
Feature: Full-Color Flow Diagrams



- Advantage: Full-color, on-screen flow diagrams show valve positions and direction of flow for each state in the P&T cycle.
  - Available on instrument touchscreen and on PC version
- Benefit: Reduces system downtime by simplifying the troubleshooting process.

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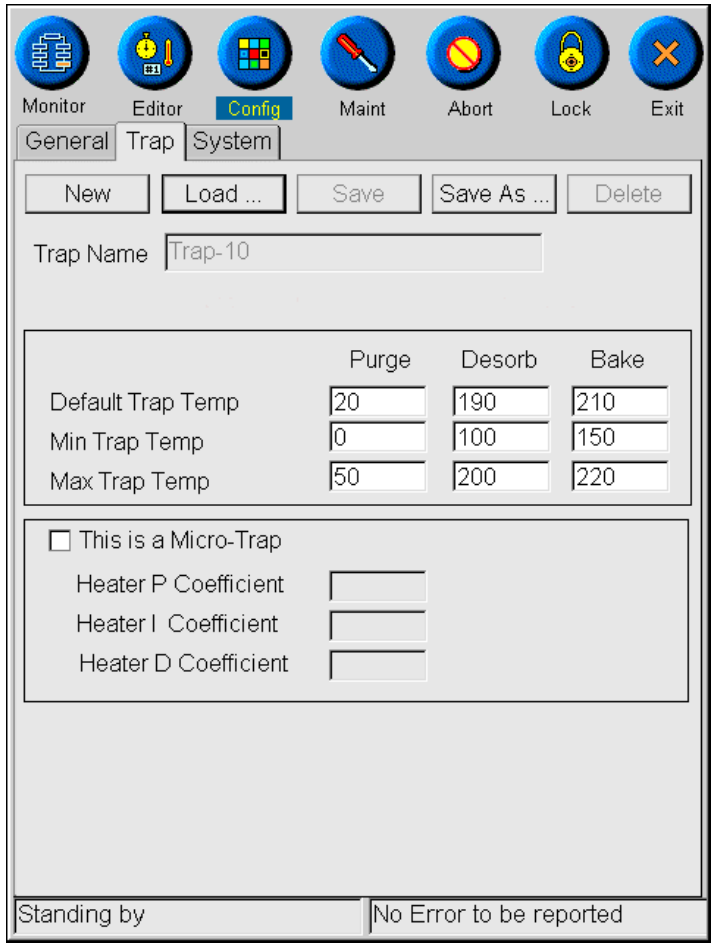
Feature: Trap Library with Default Temperatures



- Advantage: Trap library of the most common trap types available from a drop-down menu. Automatically updates recommended trap temperatures for Purge, Desorb Preheat, Desorb, and Bake.
- Benefit: Guides the operator through the process of defining a method and minimizes the potential for using the wrong temperature setting.

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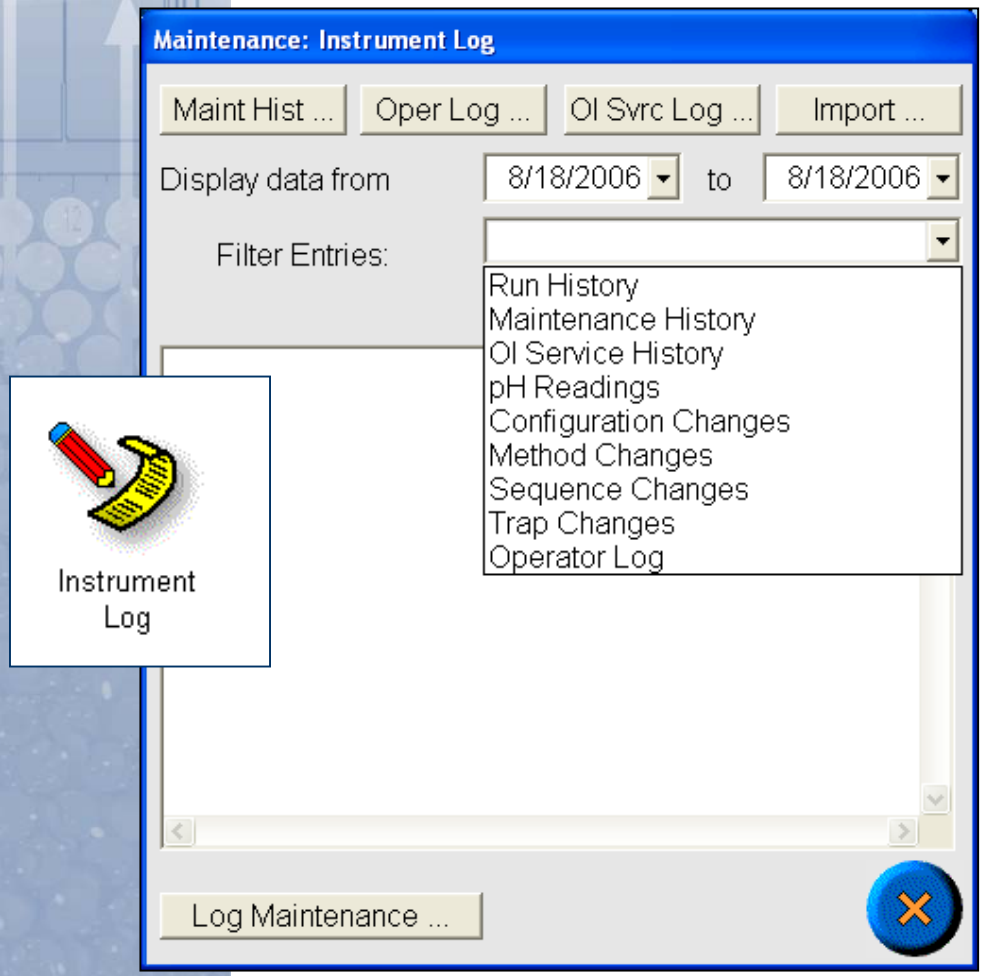
Feature: Electronic Logging



- Advantage: Electronically logs and stores all events, faults, and errors.
- Benefit: Electronic confirmation and documentation for accurate record keeping. Aids in troubleshooting to find problems quickly and easily, minimizing system downtime.

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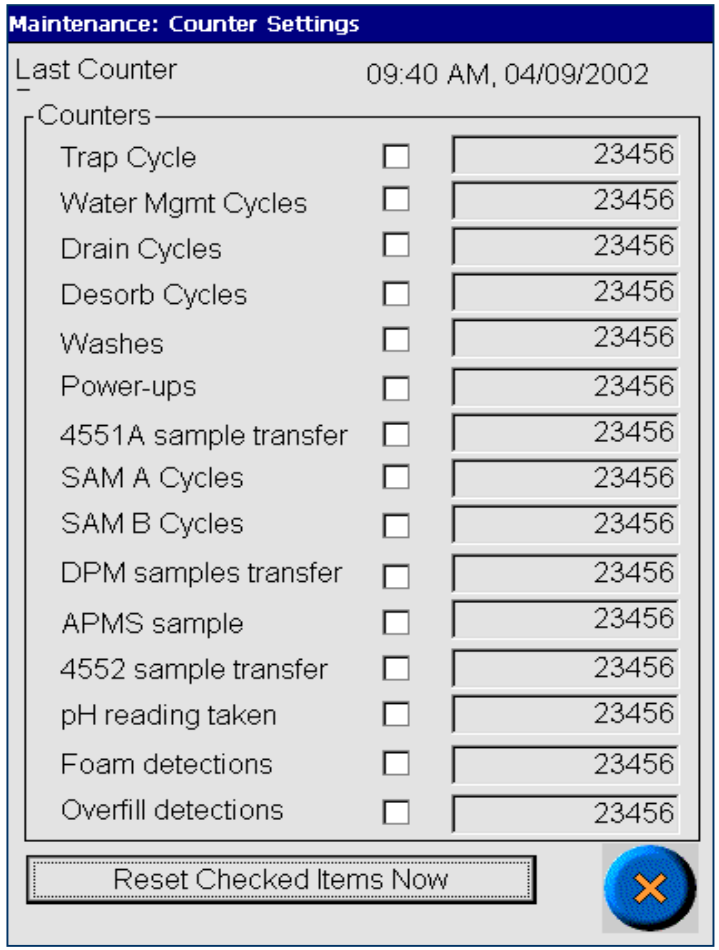
Feature: Counters for All Critical Functions



- Advantage: Counts the number of cycles for traps, water management fittings, drain cycles, foam and overfill events, power-ups, etc.
- Benefit: Provides in-depth information for tracking consumables usage and to assist with troubleshooting.

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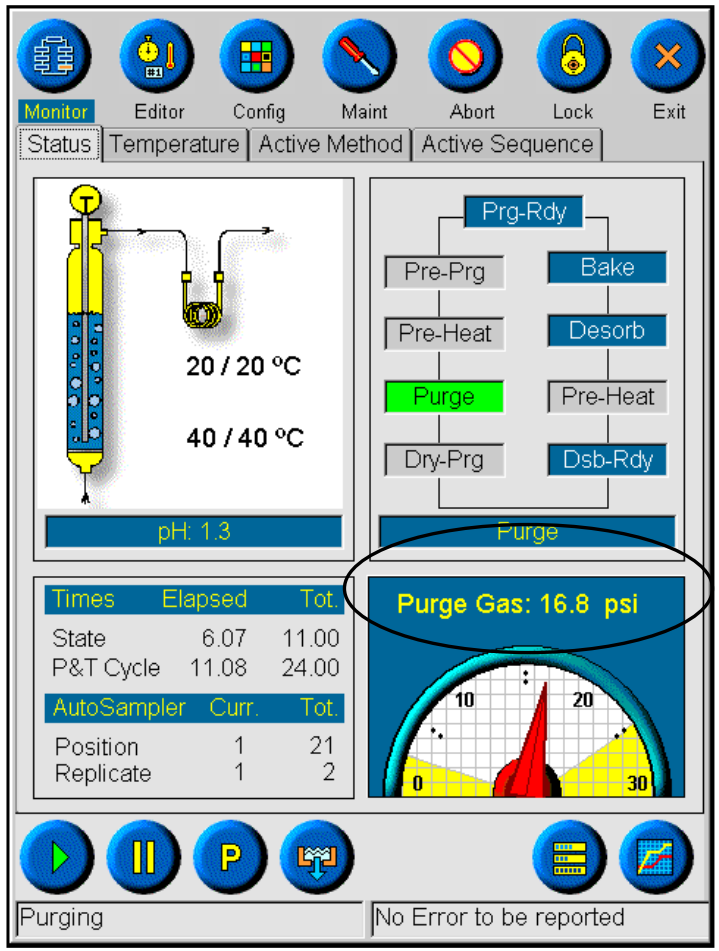
Feature: Electronic Pressure Monitoring



- Advantage: Constant electronic read-out of system pressure on the instrument screen for easy access and monitoring.
  - Audible low pressure alarm
- Benefit: Facilitates user monitoring of system pressure from the main instrument screen or the PC.
  - Simplifies maintenance and troubleshooting

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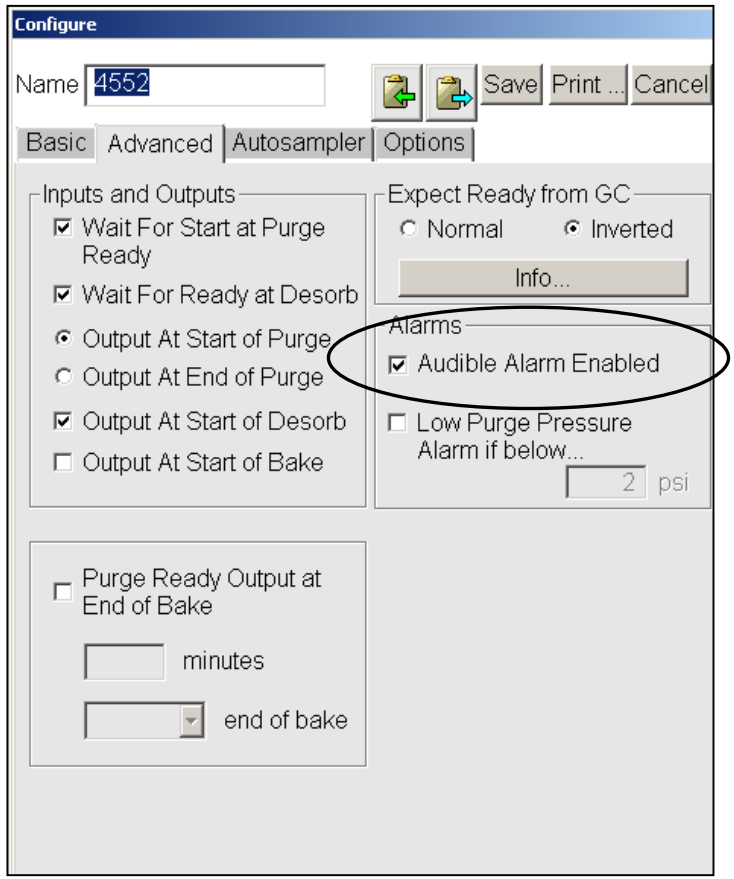
Feature: Audible Alarms for Error Conditions



- Advantage: Audible alarms for most standard errors can be enabled or turned off from the system configuration screen to alert the user to instrument conditions that may need attention, such as low purge gas pressure.
- Benefit: Minimizes system downtime. Prevents loss of data from samples that would have been run when the system was in an error condition.

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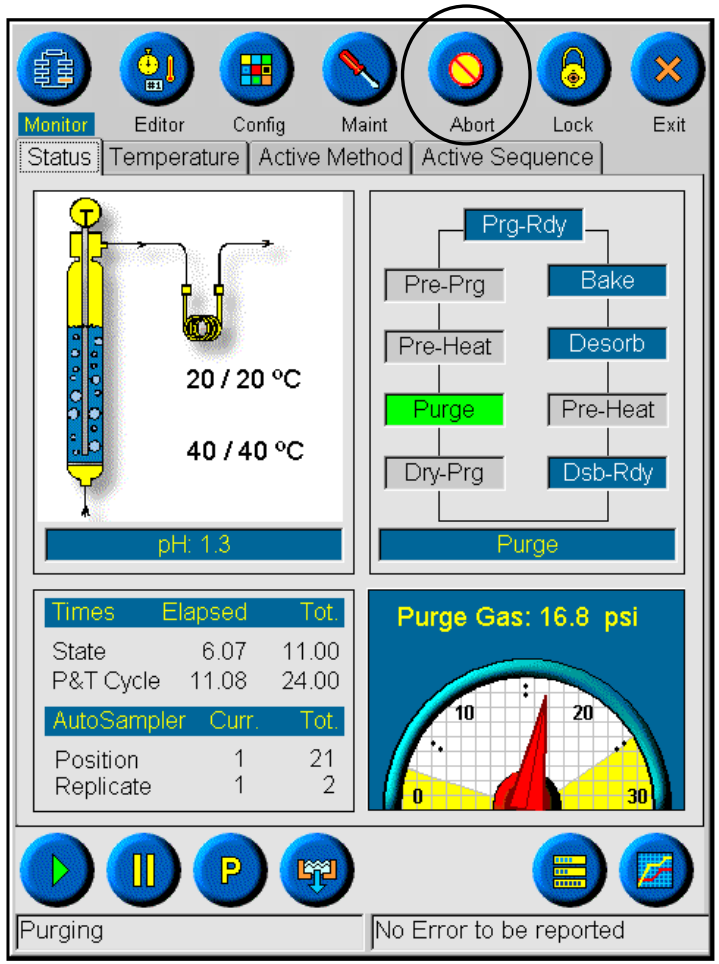
Feature: Rapid Abort Capability



- Advantage: Single-button manual abort function interrupts operation at any time and is accessible from all of the primary function screens and menus.
- Benefit: Quickly and easily interrupts operation of the instrument when an error condition (e.g. foaming or low pressure) is present.
  - Prevents system contamination and loss of samples
  - Minimizes downtown

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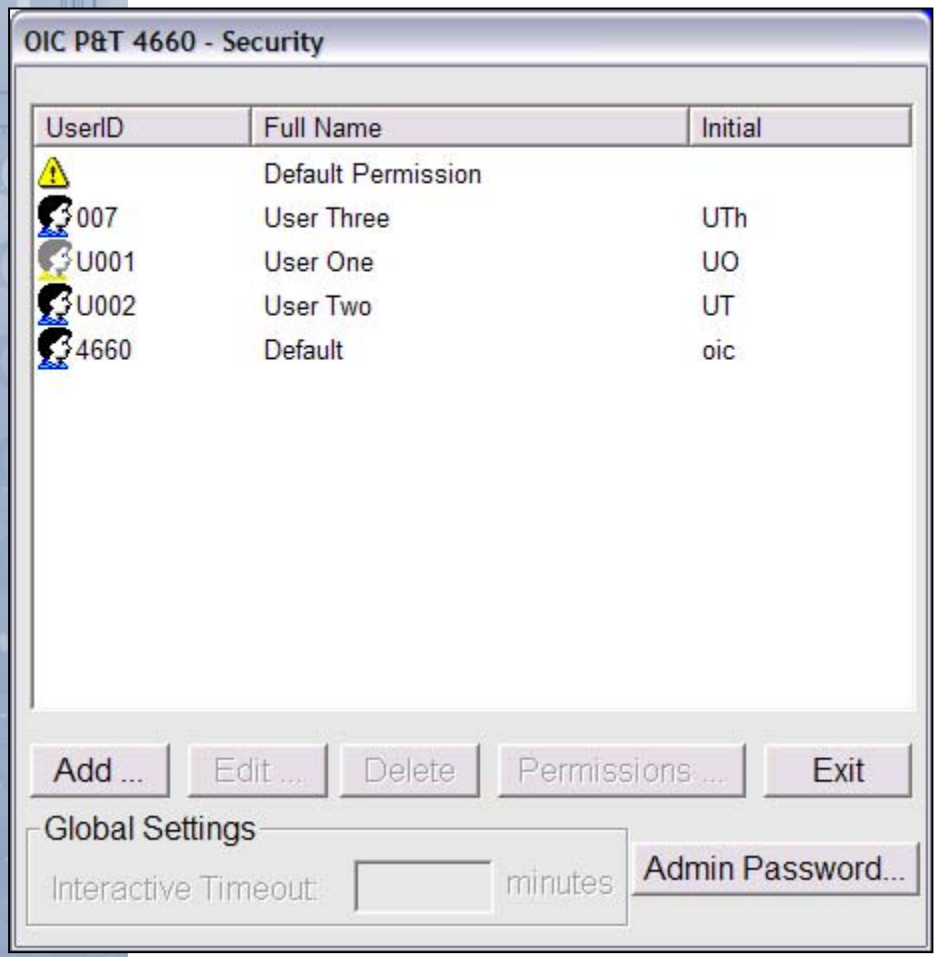
Feature: Different Levels of System Security



- Advantage: Lab manager can define different levels of access (e.g. ability to run methods or edit configurations) for different users.
- Benefit: Provides different levels of system security in large labs so that methods and configurations do not accidentally get deleted or changed.

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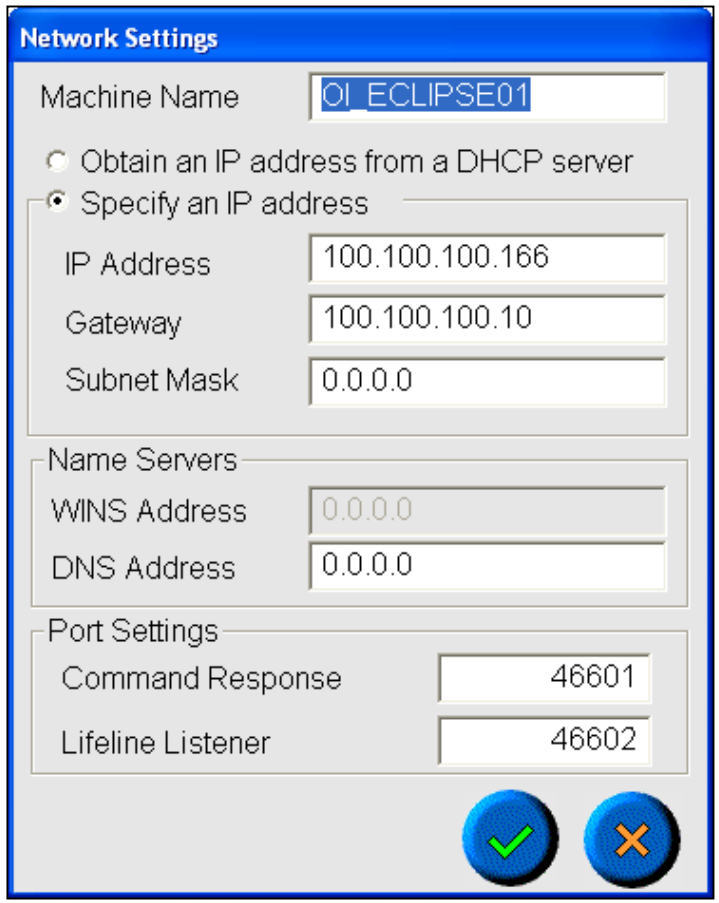
Feature: LAN Connectivity



- Advantage: the Eclipse can be added to the laboratory LAN for monitoring or operation from any networked PC and for streamlined reporting of pH data and maintenance log files.
- Benefit: Remote access system monitoring, reporting and exporting of pH data, and archiving of electronic instrument log files.

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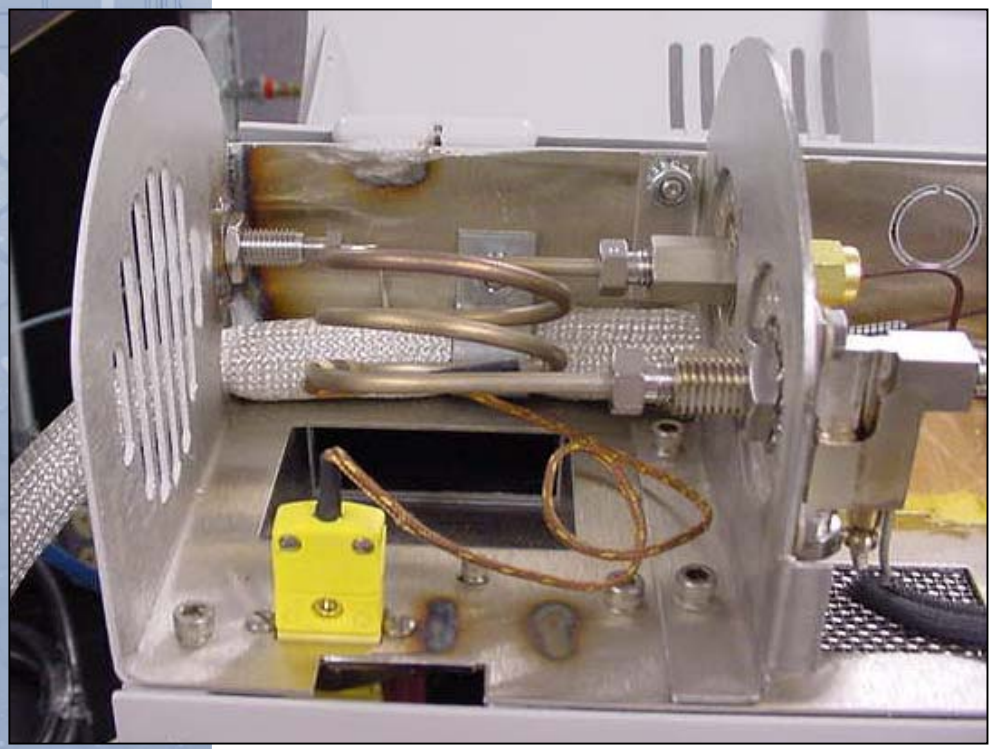
Feature: Rapid Trap Cooling



- Advantage: Fastest trap cool down in any P&T available. Trap does not require an insulating jacket or sleeve for heating, which makes the cool down after bake extremely rapid.
- Benefit: Fast cool down shortens instrument cycle time and maximizes laboratory productivity.

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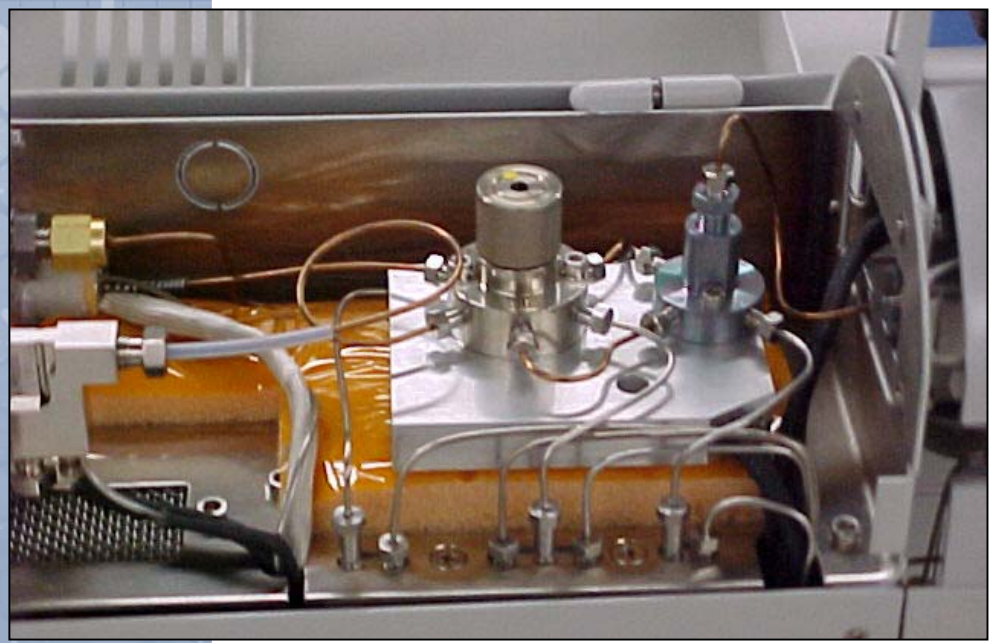
Feature: Shortest Internal Sample pathway



- Advantage: Sample pathway from the sparger to the trap is the shortest in the industry and is Silcosteel®-treated for inertness.
- Benefit: Prevents contamination, analyte loss, and active sites found with longer sample pathways. Improves overall performance, chromatography, and recovery of internal standards.

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Feature: Fully External Drain Lines

- Advantage: Sample drain line is completely external to the instrument chassis and does not come in contact with the instrument electronics.
- Benefit: Liquid sample never comes in the proximity of electronic components.
  - Minimizes system downtime and instrument failures

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Feature: Rapid Swap™ Modular Design

- Advantage: Easily exchange individual electronic and pneumatic modules in just a few minutes by loosening 4 captive fasteners and disconnecting 2 cables.
  - No need to disconnect ANY plumbing
- Benefit: Simplifies instrument maintenance. Perform maintenance on a module at your convenience while your GC system continues to analyze samples.

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Feature: Removable On-Trap Injection Port Option

- Advantage: Allows for manual injection onto the trap. Special design allows the injector to be removed during normal operation, eliminating potential contamination or leaks.
- Benefit: Facilitates a common troubleshooting technique for P&T-based systems.

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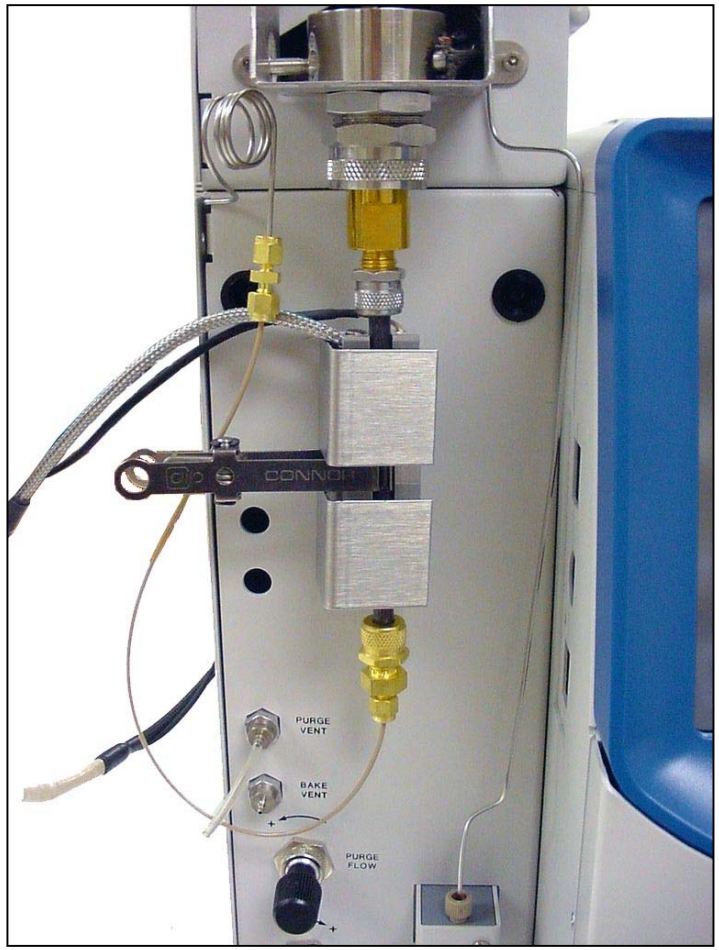
Feature: Air-Tube Desorber Option



- Advantage: Easy-to-install option replaces the Eclipse's sparger and provides the capability to analyze standard glass or SS air tubes.
- Benefit: A versatile and economical way to diversify the laboratory into air toxics analysis.

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Feature: Multiple Method Capability With 4551A

- Advantage: The Eclipse can be programmed to run multiple P&T methods within a single sequence with the 4551/SAM.
- Benefit: Fully automated method development and troubleshooting sequences. Run different USEPA method requirements within the same sequence.

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Feature: PT Express™ Dual P&T Operation Mode Option

- Advantage: Interface two Eclipse P&Ts and associated autosamplers with a single GC or GC/MS system.
  - Absolute data sequence integrity for single or dual P&T operation
- Benefit: Maximize laboratory productivity with guaranteed data integrity and full compliance with all USEPA methods.

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Feature: Fully Complies with All USEPA P&T Protocols

- Advantage: The Eclipse P&T Sample concentrator and associated autosamplers and options are fully compliant with all USEPA, CLP, State, EU, and ISO VOC methods, protocols, and audit requirements.
- Benefit: Easily meet or exceed all USEPA method quality control criteria and audit requirements.

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For a demonstration of the Eclipse in your laboratory, contact the OI Analytical Sales Department today.

For more information on OI Analytical's equipment, including instrument specifications and application notes, please go to our web site at www.oico.com.

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