Patented ‘Purge Seal Technology’ Controls Background to Detect Micro-leaks with Repeatable Accuracy

TracerMate CS Multiple Single-point Control and Automated Leak Testing

Hand-held Purging Clam Shell

INFICON Mass Spectrometer

TracerMate CS
Patented Nitrogen Purge Testing Technology

The TracerMate CS Nitrogen Purge System is a tracer gas leak test method that is used to force ambient background from a leak test area and replace it with pure Nitrogen. Tracer gas sniffer leak detectors sample background to detect Helium escaping from a leak. Atmosphere has trace amounts of Helium in it, and when analyzed for Helium content, background Helium fluctuations make it difficult to consistently distinguish good from bad product resulting in false leak failures.

The CTS patented Nitrogen purge clam shell test method solves this problem. Utilizing low pressure Nitrogen, the system creates a ‘Helium-free’ environment for the Mass Spectrometer to sample and detect micro-leaks.

Patented Clam Shell Device

The CTS clam shell device has inner and outer chambers that surround the part test area. The chambers have ports to allow Nitrogen to enter the cavity and force out ambient atmosphere. During the leak test cycle, the inner chamber collects the tracer gas leaking from the part. The outer chamber provides a constant low positive pressure Nitrogen curtain to hold back and prevent ambient background from entering, effectively isolating the inner chamber.

System Highlights and Benefits

- The patented Nitrogen purge testing method provides superior background control, reducing the need for large chamber hard vacuum test systems
- Nitrogen purge technology increases the sensitivity of a ‘sniffer-type’ leak detector for improved accuracy
- Low pressure Nitrogen reduces background to 10-7 atm-cc/s range
- Concentrated Nitrogen gas isolation chamber increases sensitivity to accurately detect micro-leaks
- Hand-held purging clam shells are small, custom designed, and easily maneuvered to clamp over components, fittings and joints
- Custom benchtop purging clam shell fixtures are designed to fit a broad range of applications
- TracerMate CS is an ‘all-in-one’ tracer gas management system:
  - The instrument provides evacuation, test pressure, a gross leak test, the tracer gas backfill, and the exhaust process
  - TracerMate CS integrates easy to control operation and manage test results
- Nitrogen purge leak test technology can be used in a broad range of heating and cooling applications