

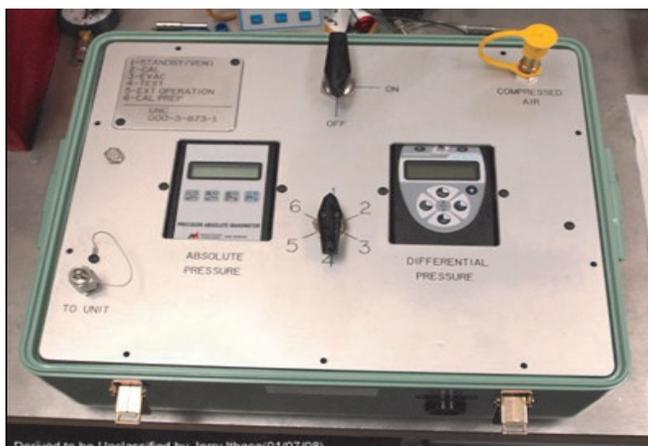
HIGH ACCURACY NON-A/C POWERED LEAK TESTER AND VOLUME CALIBRATOR

US Pat. No.: 8,201,438

Technology Readiness Level: 6

Representative prototype is tested in a relevant environment

This novel invention relates to a portable, pneumatically-controlled instrument capable of generating a vacuum (less than 10 Torr), calibrating volumes, and performing quantitative leak tests, all without the use of A/C power. This means testing will not be disrupted when working in sensitive or hazardous environments (e.g., flammable or poisonous gases, lightning storms). No warm-up time is required for testing, with highly accurate results being generated within minutes.



Derived to be Unclassified by Jerry Ithaca(01/07/08)

INDUSTRIES & APPLICATIONS

- Semiconductor Industry: the ability to detect leaks of highly flammable gases (such as hydrogen) is crucial to employee safety as well as project success. This novel technology would allow for gas leak detection in semiconductor processes without introducing electricity into the environment.
- Solar Power Generation: this technology could potentially provide a much safer method of pumping hydrogen into Stirling Engines which could then be used to generate electricity.
- Space Industry: reducing the level of moisture present within a payload is critical to mission success as water can lead to moisture contamination which is often detrimental to experimental data. The absence of A/C power also eliminates issues with electrostatic discharge (ESD) which often has a fatal effect on on-board electronics

TECHNICAL BENEFITS

- No A/C power required: improved safety when working with flammable materials and continuous testing even in hazardous conditions
- Fully pneumatically controlled, does not require an operator to actuate process valves
- Small size, can easily be taken into the field