LACO TECHNOLOGIES

APPLICATION NOTE

NOTE #01-09

LEAK TESTING HIGH VOLTAGE SWITCHGEAR

SCOPE

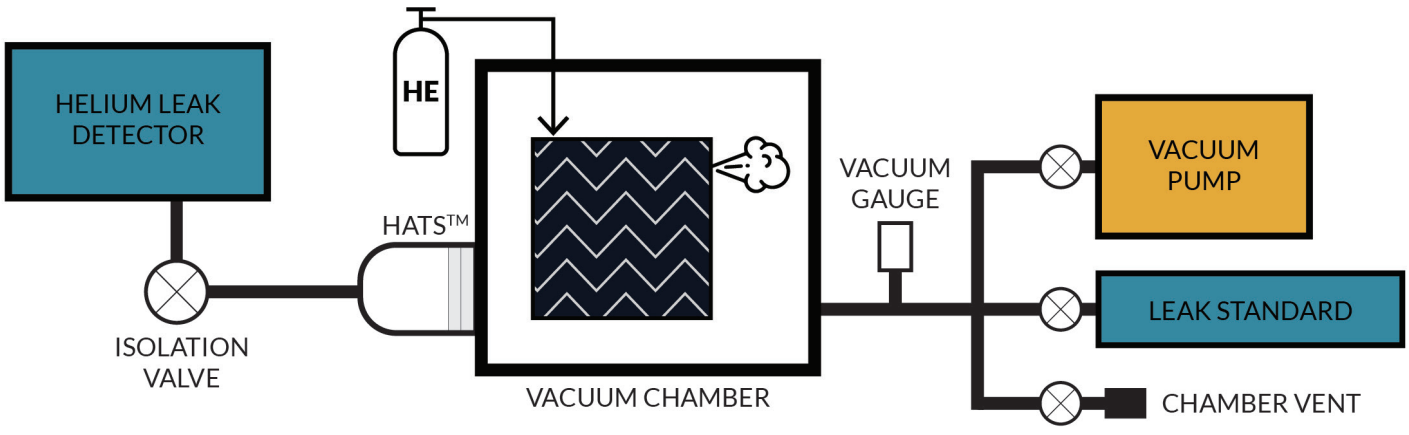
This application note covers leak testing of heavily contaminated products.

BACKGROUND

In some leak test applications production part contamination cannot be avoided. These contaminants might include oil, grease, water, dust, lint or a combination of all. Heavily contaminated parts can reduce leak test system's efficiency and functionality, cause equipment failure and can require excessive equipment maintenance. LACO has developed the patented Hybrid Accumulation Test System (HATS™ U.S. Pat. No. 7,905,132) to address these contamination issues.

DESCRIPTION

HATS™ (U.S. Pat. No. 7,905,132) isolates the mass spectrometer helium leak detector from the contaminated part; an internal device allows helium to pass to the leak detector while preventing contamination from migrating to the detector. A partial (rough) vacuum is provided in the test chamber to improve system response time and improve gas mixing. This can be accomplished by using a simple venturi pump setup and does not require traditional high vacuum valves. With a partial vacuum chamber pump down times are much quicker. Additionally, because only a rough vacuum is required, the outgassing effects from contamination on the test part do not negatively impact the cycle time.



HATS™ SYSTEM CONFIGURATION

BENEFITS

- Fast cycle times in small and medium size chambers
- Quantifiable results
- Simple sequence programming
- Simple tooling and vacuum hardware
- High vacuum system and mass spectrometer are completely isolated from contaminants and test parts
- High vacuum not needed to perform tests
- Range of sensitivity: 10^{-5} atmcc/sec and higher

SUMMARY

HATS™ (U.S. Pat. No. 7,905,132) both protects expensive leak detectors from damage due to part contamination and improves efficiency and functionality of the leak test.

RELATED PRODUCTS

LACO Technologies engineers custom equipment including turn-key, automated helium and HATS™ (U.S. Pat. No. 7,905,132) test systems.