Helium Leak Test Machine

General view

Technical Data

- Cycle time: Leak test: < 20s each part (depends on the volume of part and fixture) Compression: Typically 4 s per part (depends on the configured cycles and stabilization times)
- Leak test: Gross leak test: Verification of the enclosed outer pressure of the test part while evacuating the test circuit Helium leak test: Leak test with mass spectrometer, leak limit $1.0*10^{-8}$ … $1.0*10^{-6}$ mbar*l/s, test pressure 1.1...2.0 bar abs
- Test gas: Helium pureness 4.6 (99.996 %)
- Ventilation gas: Air or Nitrogen (selection by parameter)
- Machine dimensions: 3360 x 2380 x 1345 mm (L x H x W)
- Weight: < 2500 kg

Leak test with double stations

Brief Description

The test bench is used for helium leak verification of laser welded metal bellows. It is also possible to compress and strain bellows for adjusting the correct length.
Different bellow types can be tested/adjusted. The parameter change-over is simply done by selecting the type in the user software.
Leak test station:
The work piece will be loaded manually into one of 4 fixtures (two double stations). First, a gross leak test will be performed in order to sort out parts with obvious manufacturing faults. Afterwards the helium leak test will be done.
Compression station:
Up to 4 bellows can be loaded manually into the station. The parts will be compressed and strained in order to achieve the final length. If necessary, this cycle can be repeated several times automatically by parameter setup.

Highlights

- Leak rate limit of $1.0*10^{-8}$ mbar*l/s
- Leak measurement of two test parts in parallel with the possibility to do selective measurements in order to sort out a scrap part
- Compressing and straining station
- Vacuum pumps and leak detector on mobile wagons for easier maintenance
- Selection between air and nitrogen for ventilation of the vacuum circuit
- Comfortable type changeover for different bellow geometries
- Windows based operating interface for automatic and manual mode and process parameterization
- Touch screen HMI

Leak test fixture

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