

Falcon Applications

Head Lights and Tail Lights

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Automotive Headlights and Taillights Leak Tested with the Falcon System

- **Fast response with Leak Location**
- **Short cycle times for Total leak rate**
- **No effect from changes in part volume**
- **No effect from changes in temperature**
- **Automatic record of Leak Location**



There are many advantages to testing headlights and taillights utilizing the Falcon Leak Test System as an alternative to pressure decay or mass flow systems

The Falcon Leak Test System offers a new technology not previously available to test welded or glued plastic components. This technology overcomes the problems like part expansion and temperature changes experienced when testing with pressure decay or mass flow instrumentation. The Falcon system technology is not affected by part stretch or temperature.

The system utilizes a series of patent-pending Intelense sensors that are placed around the

perimeter of the part seams and at other possible leak locations. The part is pressurized with a helium mixture. The sensors detect the presence and magnitude of helium leaks in their proximity. Each sensor resolves leak rates to 1×10^{-5} scc/s. The Intelense sensor incorporates an on-board micro-processor that initiates data processing and talks through the PCS communication network to the Falcon System. Even with an elevated helium background, the Falcon System can differentiate the leak location and total part leak rate. At the end of the test, the Falcon screen displays the leak rate and a depiction of the leak location on a 3-D model of the part. This information can assist in improving the part's manufacturing process and throughput by the determination and documentation of the part's problem leak zones.



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The Falcon Leak Test System overcomes the challenges posed when testing with pressure decay or mass flow systems.

1. Parts stretch when pressurized. This varies from part-to-part and with part temperature and elasticity. As the part stretches its internal volume increases which causes a loss of pressure in a pressure decay system or flow in a mass flow system.
2. When parts are ultrasonically welded, there is residual heat in the plastic from the process. If the part is tested immediately after the bonding process, the cooling effect of the normalizing temperature will cause a loss of pressure in a pressure decay system or flow in a mass flow system.
3. Most pressure decay and mass flow systems can compensate for consistent change in volume or temperature, but any inconsistency results in non-repeatability or potentially false accepts or rejects of tests.

Because the Falcon System operates with a tracer gas and does not depend on the Ideal Gas Law, its performance is not affected by part volume or temperature variations during the test cycle.

The Falcon Leak Test System from Cincinnati Test Systems, Inc. simultaneously determines leak location and total leak rate, providing real-time process control. The breakthrough Falcon Leak Test System delivers unmatched performance, communication and control benefits that significantly enhance leak detection efficiency and effectiveness as well as eliminating the need for costly, additional leak tests.

The Falcon Leak Test System provides a cost effective solution that bridges the gap between traditional pressure decay technology and helium vacuum mass spectrometry. The Falcon System's advanced, on-screen graphics display provides precise visual recognition of the leak location and accurately identifies the leak rate for the operator. It also communicates the information to the designated factory communication network, ensuring the quick resolution of manufacturing deficiencies to avoid downtime and scrap production.

If there is an application you would like to discuss with us, please call

Cincinnati Test Systems at 513 367 6699