PERNICKA CORPORATION

NEWS RELEASE

Breakthrough CHLD Hermetic Testing Method Approved by Military Standards Body

Pernicka Corporation's Cumulative Helium Leak Detection (CHLD) system – the first commercially available test unit – drives higher part reliability, lower recall rates

Fort Collins, COLO.—May 22, 2007—DSCC (Defense Supply Center Columbus) has approved and published the *Cumulative Helium Leak Detection* (CHLD) method – revised MIL-STD 750 for determining hermeticity of semiconductor packages and implantable electronic devices – pioneered and developed by the Pernicka Corporation.

CHLD is the only hermetic device testing method approved since the 1970s – exceeding the old test limit by four orders of magnitude – allowing manufacturers to detect minuscule leaks that can scrub military missions or cause failure rates resulting in costly product recalls and field failures. Higher part reliability can be achieved by testing to the tighter tolerances of CHLD, yielding longer operational life in high-reliability hermetic packages like cochlear implants, pacemakers, and hermetically-packaged semiconductors.

DSCC approval of the new method paves the way for Pernicka's groundbreaking *Model 700G Cumulative Helium Leak Detection* (CHLD) system, the first commercially available leak test unit to comply with the new standard.

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"Customers came to me with concerns about high failure rates due to leaks that were undetectable by the current MIL-STD," commented John C. Pernicka, founder & president of Pernicka Corporation. "I developed the CHLD method to find leaks at limits previously thought impossible, helping customers realize lower failure rates and higher device reliability, especially in the space/military and medical device industries."

The Model 700G CHLD system efficiently combines two previously required leak tests into a single, efficient operation. The new CHLD method, along with the Pernicka Model 700G CHLD system, delivers the following benefits to medical device, semiconductor and high-reliability parts manufacturers:

- *Accuracy* – The Pernicka Model 700G is the only system that can detect leaks less than $1x10^{-14}$ atm-cc/sec in implantable electronic medical devices - high-reliability space/satellite parts, and semi-conductor packages - reducing device recalls and increasing operational life.
- *Efficiency* – The Pernicka Model 700G combines fine and gross leak tests into a single, efficient operation that drives increased production efficiencies.
- *Flexibility* – The Pernicka Model 700G is the only system able to detect gases other than Helium including Krypton, Fluorocarbons, and Argon, eliminating the need for costly additional tests and delivering a level of verification not possible before CHLD.
- *Environmental Compliance* – CHLD does not use expensive Fluorocarbons or other toxic compounds, leaving no residues on implantable medical devices.

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PERNICKA CHLD

The Pernicka Model 700G CHLD system is now in production and can be viewed in operation at several commercial demonstration sites. For more information about Cumulative Helium Leak Detection (CHLD) please reference, "Test Method Standard Test Methods for Semiconductor Devices" (Revision: E, Dated: 20 November 2006) at: http://www.dscc.dla.mil/Downloads/MilSpec/Docs/MIL-STD-750/std750_1000.pdf

ABOUT PERNICKA CORPORATION

Pernicka Corporation, a privately-held manufacturing and services firm located in Fort Collins, Colorado, has solved complex engineering, manufacturing, research, and measurement problems in military and business applications for nearly 40 years. Pernicka's expertise and leadership in advanced vacuum technologies helps manufacturers of implantable electronic medical devices, high-reliability space/satellite parts, and semi-conductor packages realize higher part reliability, lower failure rates and environmental compliance. John C. Pernicka pioneered development of the Cumulative Helium Leak Detection (CHLD) method and now manufacturers the first commercially available CHLD system. For more information, please visit www.chldpernicka.com.

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