



Vacuum Immersion Test Set

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Categories:

- Materials and Manufacturing
- NSWC Crane

Keywords:

- Crane
- Materials and Manufacturing
- Seals
- Testing

The U.S. Navy seeks a partner for licensing and collaboration on a vacuum immersion test set for leak testing.

A variety of sealed structures which have been sealed during the manufacturing process require testing to determine if the seal is still leak-proof. Sealing can be done in combination with other manufacturing or testing steps such as insertion of one or more gasses within the sealed structure. Leak testing or seal integrity testing is necessary to ensure the desired effects are provided and predictable through a life cycle including shelf life, transportation, and use.

One method of testing can require manual heavy lifting of the test apparatus, substantial time, and/or substantial effort to perform the testing. This approach is labor intensive and can lead to testing devices improperly locked in a test set which can create a safety issue such as injuries to the test operator or a burst test enclosure.

NSWC Crane has developed and patented an automated leak test apparatus for testing sealed structures to verify seal integrity during the life-cycle of a device. The test set includes a vacuum test chamber capable of withstanding a pressure differential, a removable vacuum tight cover, an actuator for raising or lower the container, a platform adapted to hold the device under test and enable it to move inside of the container, and holes designed to permit the free flow of gas or fluid past the test fixture or platform. The ability of the container to move up or down relative to the text platform reduces the likelihood of injury to the test operator as well as the human error problem with current testing solutions.

The new automated test set can be used to test a variety of devices by changing out the test plates. This will lead to only requiring a single test set-up instead of different set-ups for each

device to be tested. Additionally, the test set is designed to use a variety of gasses or liquids such as water, isopropyl alcohol or other substance.

People:

- Farmer, Harry (Project leader)
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