

Bubble Leak Submersion Testing

Overview:

Bubble leak submersion testing is a common and effective method for detecting leaks in vacuum systems. This technique involves submerging the entire test component in a liquid solution. When a leak occurs, bubbles will form at the point of leakage, making it easy to identify.

Procedure:

1. **Prepare the liquid solution:** Fill the vacuum chamber with your liquid solution
2. **Submerge the test component:** Ensure the entire system is submerged, including all connections and fittings.
3. **Evacuate the system:** Turn on the vacuum pump, open the vacuum isolation valve and allow the system to reach its desired vacuum level.
4. **Observe for bubbles:** Look for bubbles forming at the surface of the liquid solution. These bubbles indicate a leak.
5. **Identify the leak:** Carefully examine the submerged areas to pinpoint the exact location of the bubble formation.

Advantages of Bubble Leak Submersion Testing:

- **Simple and cost-effective:** Requires minimal equipment setup and is easy to perform.
- **Highly sensitive:** Can detect even small leaks.
- **Visual inspection:** Provides a clear visual indication of the leak's location.
- **Suitable for a wide range of applications:** Can be used for various test components

Limitations:

- **Requires submersion:** May not be suitable for large or heavy systems that cannot be easily submerged.
- **May not detect very small leaks:** For extremely sensitive applications, a cameras and sensors may assist in identifying leak channels

By following these guidelines, you can effectively use bubble leak submersion testing to identify and repair leaks in your vacuum system.

