Isaac

Multi-Function Leak Tester

Downstream Occlusion Test

The Problem

Test and Production Engineers are often faced with the task of detecting occlusions in products quickly, accurately and inexpensively.

Mechanical pressure measuring devices such as tube and bellows pressure gauges are insensitive, slow, subject to operator errors. Dunk testing (looking for bubbles under liquid) is time consuming, cumbersome and leaves the subjectivity of the operator.

On the other hand, overly complicated flow testing equipment is probably too elaborate for the task. Custom designed PLC based test equipment is frequently expensive and difficult to program. Furthermore long-term engineering support becomes more difficult.

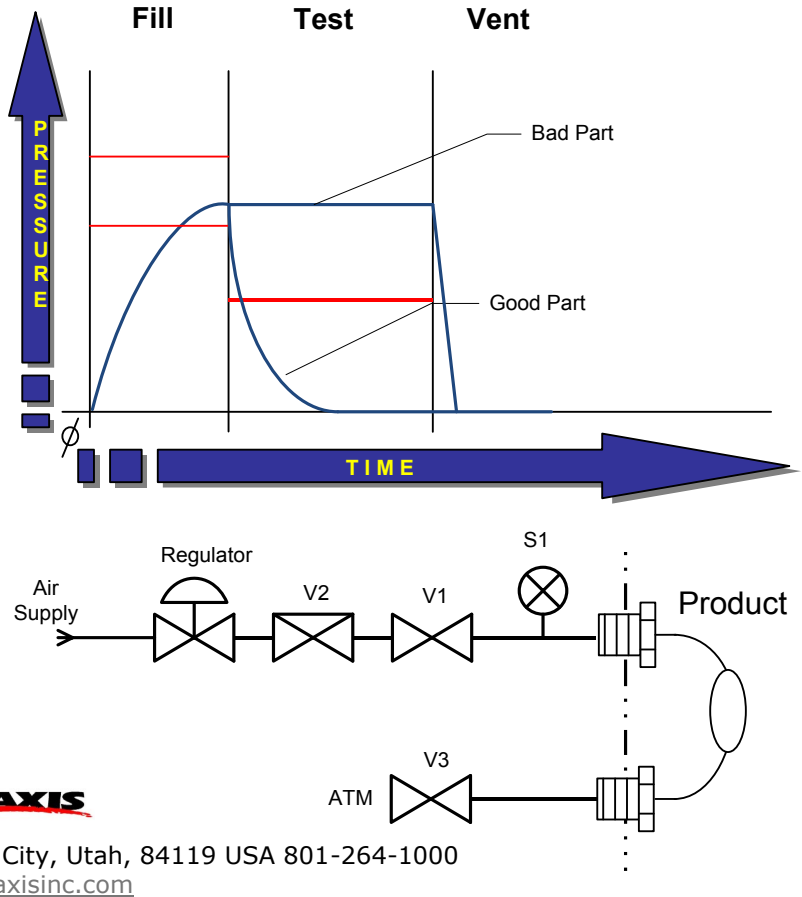
The Zaxis Solution

The off the shelf solution of Isaac of leak testers work like a pressure gauge, except the Isaac has the advantage of a high resolution (24bit) digital readout with timers and limit settings. Imagine an analog gauge with a resolution of 1/100,000 psi, and set-points to determine an allowable drop in pressure. If the pressure does not drop below the reject set point, the product is considered bad. If the pressure remains above the reject level the product is considered occluded.
Typically the occlusion test can be performed at the end of a pressure decay as a linked test without the need to disconnect the part.

How the Isaac Works

The Isaac occlusion tester works like this:

1. The product is attached to the test port and the test sequence is initiated.
2. The **Fill** step, pressurizes the part with regulated air through [V2] and [V1].
3. The valves are closed trapping air between [V1] and the product. No Settle is used in an occlusion test.
4. During the **Test** step the downstream port is opened to ATM through [V3} the loss of pressure is measured by the Isaac's pressure sensor[S1].
5. If a product exceeds the programmed reject value a pass indicator will be given along with the decay value.
6. A part that does not decay past the reject value is an occluded part and receives a reject light.



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Applications

Isaac pressure decay and occlusion testers are used frequently to test parts that were tested using simple analog pressure gauges or tested by looking for bubbles in a dunk tank.

The Isaac can be used to test both small and large volume parts. For small parts the extremely small internal volume will allow for very low test times allowing a high throughput of production. If a large part is to be tested, the pneumatics can be adjusted to maximize the potential of the tester.

Both rigid and flexible parts can be tested, making the Isaac the most flexible platform available.

Features

- High Sensitivity
- Extremely low internal volume (0.8cm^3)
- Small footprint.
- Available in a wide range of test pressures.
- Off the shelf delivery.
- Custom testing capabilities..
- Easily adapted to automation.
- Intuitive user interface.
- Simple calibration procedures.

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