

The Problem

A variety of products must be leak tested by subjecting them to vacuum (negative pressure).

The first problem: generate the vacuum needed for testing with the knowledge that vacuum pumps can be loud, messy and quite expensive.

The second problem: put all the needed components into one small enclosure that can be used on the bench or in an automated machine.

The Solution

Sprint can be fitted with a built-in venturi vacuum generator to produce the negative pressure needed to leak test products subjected to low vacuum (typically in the 25 to 100 inches of water range).

Incorporating a negative pressure sensor, vacuum source, valving, and logic control, the Sprint iQ handles the task of vacuum testing on the bench in a small enclosure, and without cumbersome vacuum pumps.

Sprint iQ's pneumatically-driven vacuum source means low noise, no heat, and no maintenance. Because it is so small, it can be placed very close to the suction point. *No added floor space* is required.

How It Works

The Sprint iQ works like this:

- Product is attached to the test port and Sprint iQ's test program is started. (Figure 1)
- Positive pressure is applied to the vacuum generator through valve **V1**. The vacuum strength is set by the pressure regulator.
- Vacuum is supplied to the test port through valve **V2** from the vacuum regulator.
- When the test reaches the programmed vacuum level, valves **V1** and **V2** close.
- Negative pressure trapped between valve **V2** and the product is measured by the vacuum sensor **S**.
- If the negative pressure decays exceed the established setpoint, the tester turns on its fail light and sends a signal to the I/O port.

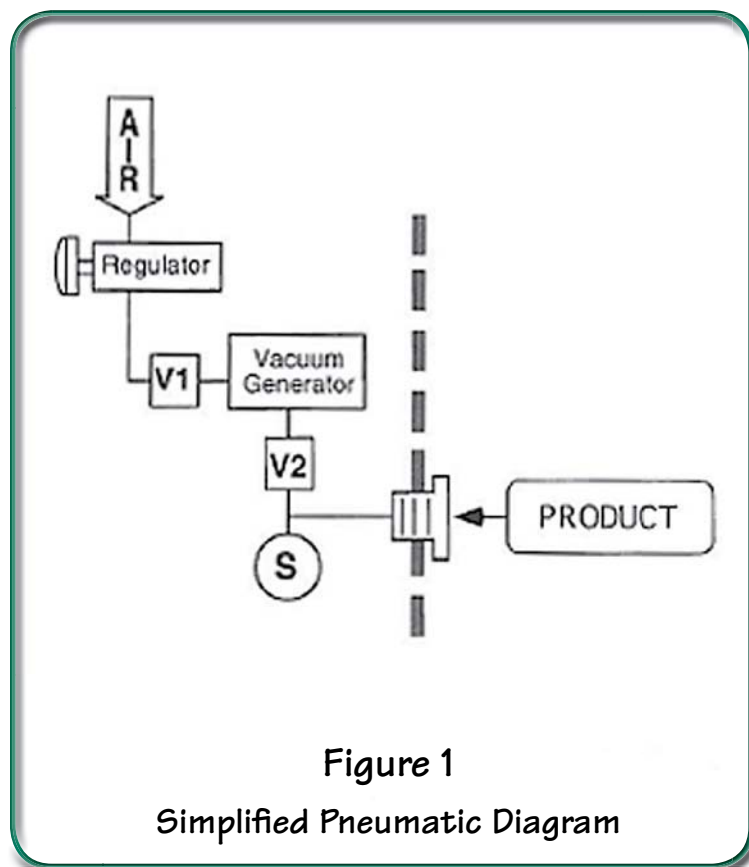
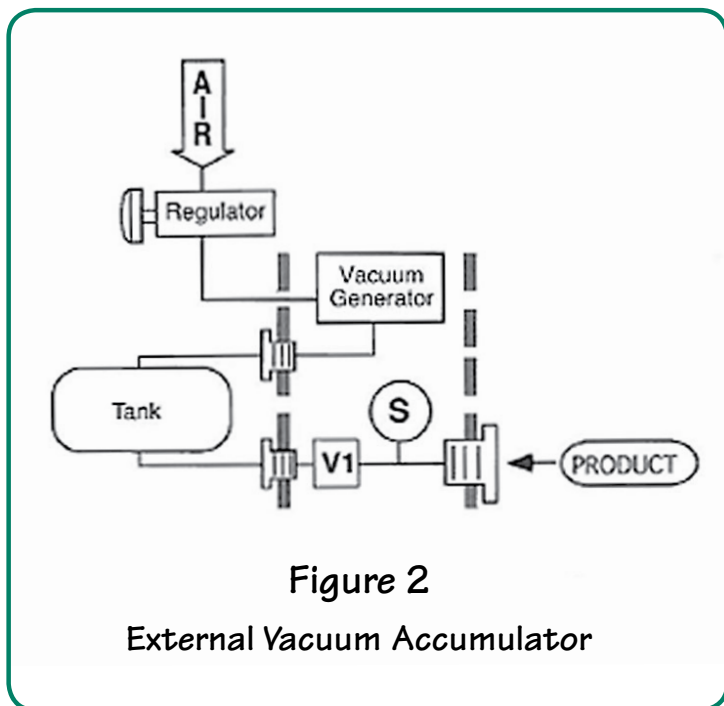


Figure 1

Simplified Pneumatic Diagram



Electrical Parameters

For testing larger products (greater than 1 liter), an external vacuum reservoir can be included in the test circuit. The vacuum tank (typically about 2 liters in volume) is connected so that negative pressure is supplied to the reservoir. (Figure 2)

When a vacuum accumulator is used, the vacuum generator generally runs continuously to maintain the vacuum reserve.

The vacuum tank makes it possible to test larger product without waiting for the vacuum generator to draw down the product to the desired vacuum during each test.

Other plumbing and valving arrangements are possible with the Sprint.

Engineering Units

The Sprint iQ allows the user to select vacuum units of psi, inches of water, millimeters of mercury or millibars.

Applications

Sprint iQ is typically used to leak test rather small products (less than 1 liter) at a fairly low vacuum (under 100 inches of water).

Products often tested with vacuum include valves, vacuum chambers, vacuum control devices, and vacuum-operated mechanisms.

The Sprint iQ can also be configured to simulate normal-use conditions on other products that operate using vacuum or are subjected to vacuum.

Please contact Uson to find out how a Sprint iQ vacuum tester can be applied to your testing needs.

Features

- Completely self-contained
- No vacuum pumps or extra sensors to buy
- All components in one small enclosure
- Fully calibrated and simple to maintain
- Perfect for bench or automation
- Small footprint of 8.5 by 15 inches
- Resolution of negative 1/100 psi
- User-Selectable engineering units.
- Interface for statistical process control

Uson L.P.

8640 N. Eldridge Parkway
Houston, Texas 77041
USA

Phone: +1-281-671-2000

Fax: +1-281-671-2001

info@uson.com

www.uson.com