

The Problem

When conducting multiple tests using different test pressures, operators face the problem of constantly adjusting manual air pressure regulators.

A cracking pressure test (often used for valve testing) frequently requires multiple ramp rates. Operators must adjust manual flow controls to various ramp rates needed for the different tests.

Manual pressure controls are subject to operator error when setting test pressure. And bumping the regulator control is a possibility when using the equipment in production settings.

The Solution

An electronic regulator is a sophisticated electro-pneumatic device programmed by setup personnel to supply the exact test pressures.

The programmable regulator can also be set to slowly increase pressure over time. This provides a variety of consistent ramp rates often used in crack, burst and valve testing.

Because the regulator is programmed, it can supply different test pressures or ramp rates for different programs and no operator adjustment is needed.

How It Works

The programmable regulator works like this:

- The tester is set to Program Mode.
 - In the program setup screen, enter test pressure values using normal programming methods.
 - Different test pressures can be entered for each of the tester's stored programs.
- Depending on the tester model, as many as 20 different test pressures can be entered.
- When in Run Mode, the electronic regulator automatically goes to the set test pressure to provide the desired pressure or ramp rate for one or multiple products. (Figure 1)

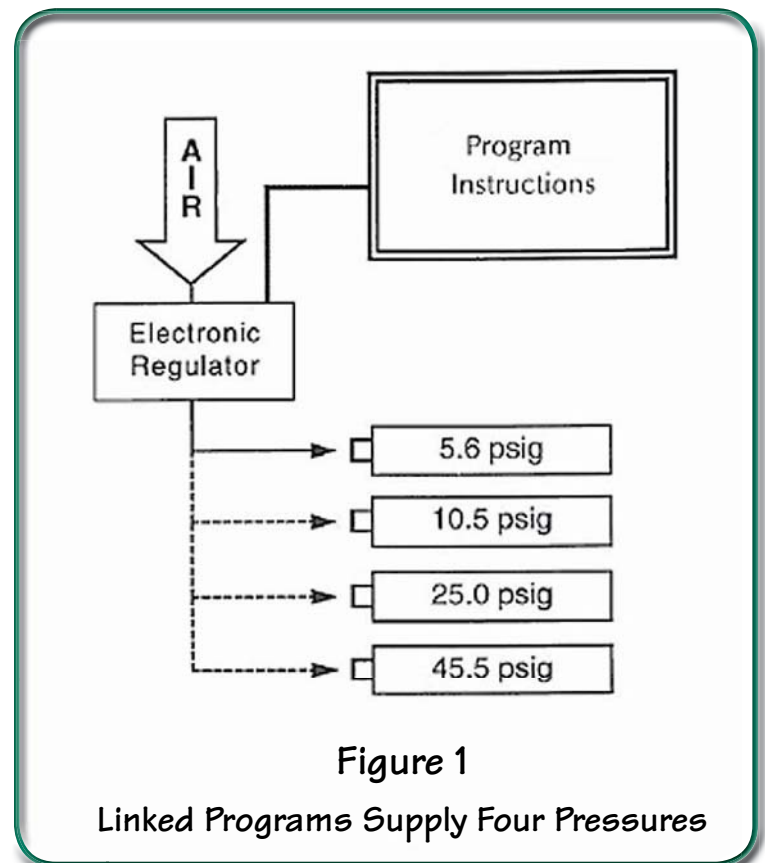


Figure 1

Linked Programs Supply Four Pressures

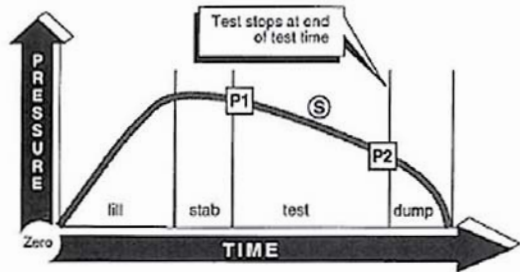


Figure 2
Automatic Test Pressure Curve

Test Pressure

Test Pressure is the pressure to which the tester inflates the product before beginning to look for a pressure drop over time.

The programmable regulator automatically supplies the necessary pressure to achieve the desired test pressure. (Figure 2)

Ramp Rate

Used in crack, creep and burst testing, Ramp Rate is the increase in pressure over time. The electronic regulator controls the ramping pressure. (Figure 3)

To program the ramp rate, a rate in pressure units per second is entered. For example, if 10 psi/s is entered, pressure goes up 10 pounds per square inch every second.

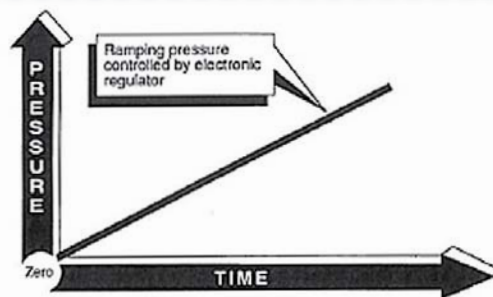


Figure 3
Automatic Ramping Pressure Curve

Applications

Consider using the programmable regulator option in any application where multiple test pressures or multiple ramp rates are needed.

The programmable regulator can be useful in bench or automated systems. One tester using the programmable regulator can be used in place of multiple machines set at different fixed pressures.

Use in critical applications where it is important to prevent users from changing the machine setup.

Please contact Uson to see how the programmable regulator can work in your next testing application.

Benefits

- Multiple test pressures run automatically
- Multiple ramp rates run automatically
- Eliminates manual pressure adjustment
- Eliminates manual flow control adjustment.
- Setup personnel can lock out user adjustments
- Perfect for bench or automation
- Contained in small enclosure
- Easy setup
- Replaces machines with fixed test parameters

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