

## Powell Valve Closure Systems Stop Leaks at the Source - Vacuum Regulators Do Not

There is a common misconception that vacuum regulators protect against leaks of pressurized hazardous gases. It is reasoned the vacuum created in the feed line will draw outside air through any puncture or break in the line rather than allowing the chemical to flow out into the surrounding area. This misconception poses a potentially serious safety hazard.

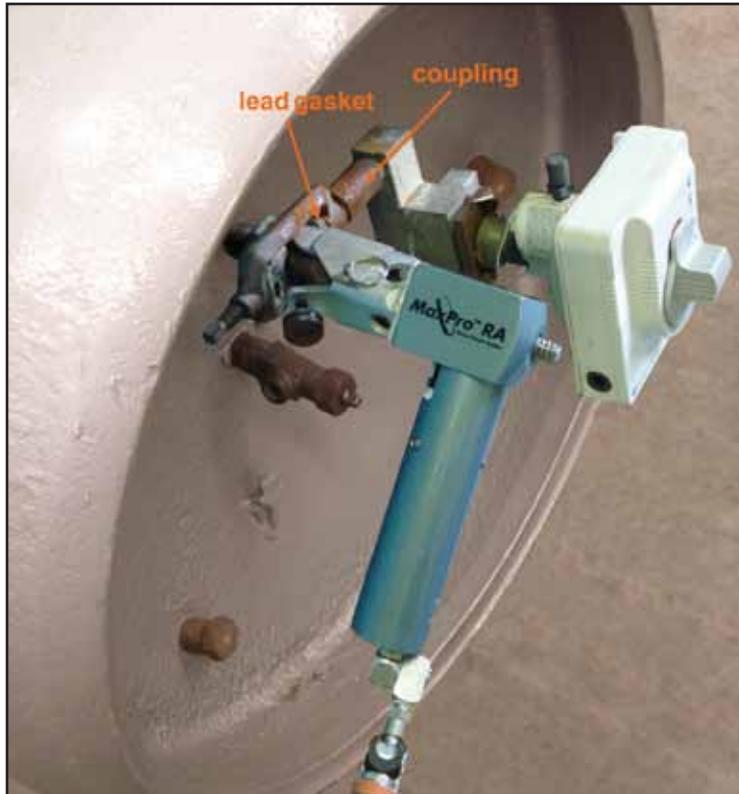


Figure 1: MaxPro™ RA installed on a ton container with a vacuum regulator.

Figure 1 highlights the lead gasket that seals the junction between the yoke on the vacuum regulator and the valve on the ton container. Even with a vacuum regulator installed and functioning properly, this junction is at the pressure of the ton container. There is no vacuum here. The lead gasket alone seals the internal pressure of the ton container and prevents the chemical from leaking out. If the vacuum regulator is bumped, or if the yoke loosens for any reason, the pressurized chemical will leak past this gasket.

Without a Powell Emergency Valve Closure System in place, any leak at the lead gasket could continue until a responder puts on a HAZMAT suit and enters the room to physically shut off the container valve. By that time, the leak could be reportable and hazardous. No vacuum regulator can stop this kind of leak, but Powell Emergency Valve Closure Systems can in less than 5 seconds.

### With or Without a Vacuum Regulator, Powell Valve Closure Systems Offer Complete Protection against Hazardous Leaks

*Powell Emergency Valve Closure Systems automatically respond to any alarm input, closing valves with 40 lb-ft of torque in less than 5 seconds.*

The Powell E-Pro® Electric Valve Closure System and Powell MaxPro™ RA Pneumatic Valve Closure System offers the most protection by closing the actual container valve. Both systems automatically respond to any alarm input, regardless if the leak originates at the lead gasket or downstream at another fitting.



## Piping Modifications Can Be Safely Made to Accommodate Most Vacuum Regulators

Some vacuum regulators used on ton containers can block direct access to the valve stem. In this situation, the vacuum regulator body can be moved out of the way by adding the appropriate couplings, nipples, or elbows. Occasionally, an additional yoke may be required, depending on the make and model of the vacuum regulator in use.

As long as forged steel 3000 lb fittings and appropriate sealants are used, these piping modifications will not add additional risk of a chemical leak because the MaxPro™ RA or E-Pro® will be mounted on the container valve. Even if the vacuum regulator must be mounted on a remote manifold in order to clear the valve closure actuator, the entire process will still be protected because the MaxPro™ RA and the E-Pro® will close the container valve at the very origin of the chemical flow.



Figure 2: E-Pro® Valve Closure System installed on a ton container with a vacuum regulator.

## Complete Line of Emergency Valve Closure Systems

Whatever your application, we can provide an emergency valve closure system to suit your needs. Powell is the only manufacturer that offers a full line of valve closure systems to accommodate containers of various sizes.

*For 20-ton bullet tanks and 90-ton railcars:*

- UniPro™ Pneumatic Valve Closure System

*For 150-lb cylinders and 1-ton containers:*

- MaxPro™ RA Pneumatic Valve Closure System
- E-Pro® Electric Valve Closure System

Extensive engineering and field testing go into every system we produce.

**That's Reliable Engineering. That's Powell.**



740 East Monroe Road  
St. Louis MI 48880  
Phone: 888.800.2310 (Toll Free)  
989.681.2158 (Local)  
Fax: 989.681.5013  
email: [info@powellfab.com](mailto:info@powellfab.com)  
website: [www.powellfab.com](http://www.powellfab.com)  
[www.valveclosures.com](http://www.valveclosures.com)  
**9001.12312009**