



Designers and Manufacturers  
of Custom Adhesive Application and Automatic Spraying Equipment  
**electromatic** automatic airless spray and extrusion equipment  
**thermopulse** hot melt and cold adhesive systems  
**compuspray** automatic test panel spray units

## Hazardous Energy and Lock Out for Adhesive Systems.

In 1989, the Occupational Safety and Health Administration (OSHA) passed a standard, 29CFR Part 1910, section 147, requiring lockout and / or tagout procedures for the control of a hazardous energy source during maintenance.

[https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9804](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9804)



Other collections of safety standards such as the *Machinery Directive* 2006/42/EC for CE compliance in Europe have similar requirements in EN 1037 *Safety of machinery*. For the packaging and converting industries, there is ANSI/PMMA B155.1:2006 *Safety Requirements for Packaging Machinery and Packaging-Related Converting Machinery*.

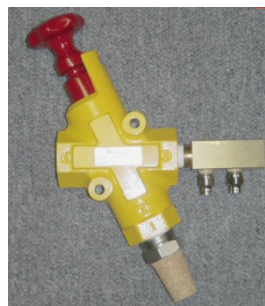
These standards address design, practices and procedures that are necessary to disable and release potentially hazardous energy while maintenance and servicing activities are being performed. Lockout is the procedure which ensures that all power to a piece of equipment is isolated, locked or blocked and all stored energy is dissipated using a method that cannot be readily removed or bypassed.

### Many older fluid systems with pneumatically powered pumps do not comply completely with these requirements.

**First**, many older systems were designed with either a simple exhausting on off valve or using a quick connect air chuck as a disconnecting device. At the time of manufacture, this was acceptable design practice but the requirements have become more specific and they are no longer appropriate. The simple valve typically is not capable of being locked out and the present requirements require full port size valves for the exhaust port. The quick connect solution has problems with Lockout and assuring reconnection does not happen with a different air source.

**Secondly**, pneumatic pumps, diaphragm or piston types, have check valves on the output of each pumping section that are required for the pump to operate. When the pump pressurizes the system, these check valves prevent the pressurized fluid from flow back into the pump. When the air source is removed from the pump, the remaining compressed air is exhausted from the pneumatic side of the system releasing that stored energy. Energy is still stored in the fluid side of the pumping system. In most systems, there is NO automatic method to release the stored fluid pressure and release that stored energy. In high pressure fluid dispensing, such as airless spray, this energy is large and dangerous.

**Spraymation has packaged solutions** that will easily fit into existing systems with pneumatic pumps and provide lockout and zero pneumatic and fluid energy safety for maintenance activities. This solution consists of an approved lockable push/pull pneumatic isolation valve for the air side. They also include a pneumatically controlled fluid dump valve, suitable for working pressures to 2500PSI (172bar) that automatically opens and relieves the fluid pressure (energy) when the compressed air is removed from the pump. Additionally a pressure gage and a redundant lockable manual valve are provided so a maintenance person can be absolutely sure the pressure and energy have been relieved.



308548 Lockable Pneumatic Isolation valve



308557 Automatic Fluid Dump Valve



**Designers and Manufacturers**  
**of Custom Adhesive Application and Automatic Spraying Equipment**  
**electromatic** automatic airless spray and extrusion equipment  
**thermopulse** hot melt and cold adhesive systems  
**compuspray** automatic test panel spray units

April 14, 2010