

How can ROSS CONTROLS® help you with machine safety or machine guarding as it has become known?

ROSS employs a team of Global Industry Specialists with vast experience in fluid power applications with special emphasis on SAFETY. Scattered around the globe, the ROSS Safety Team participates on industry standards committees that set policy and best practices for machine guarding. Most people (in the U.S.) have heard of and are quite familiar with OSHA. However, many would be surprised to learn that OSHA laws are based on the technical recommendations of many specific industry or standards organizations, such as the Robotics Industry Association (RIA), the Packaging Machinery Manufacturers' Institute (PMMI), the American National Standards Institute (ANSI), and the International Organization for Standardization (ISO). Because ROSS' Global Industry Specialists for SAFETY sit on technical committees of many of these organizations, they are intimately knowledgeable of the standards that are the basis of the industry standards as well as OSHA regulations, and that means they understand the reasoning behind the standards and especially how to identify areas of risk and consider appropriate measures to achieve compliance with the relevant SAFETY standards and regulations.

Our SAFETY team is ready to help you understand these standards and best practices in order to improve worker SAFETY, reduce the likelihood of equipment damage, and increase productivity. Through the use of our educational programs and materials such as our book "Fluid Power Safety for Machine Guarding" and the accompanying CD-ROM "Risk Locator for Machinery with Pneumatic Power", you can begin to understand the issues of Control Integrity, Lockout/Tagout (LOTO), Risk Assessment, and Alternative Methods of Lockout for production related tasks. We can advance your understanding of the appropriate standards which are applied for machine safeguarding.

Of course, we have the products you need to improve the safety of your equipment, too; products ranging from Pilot Operated Check Valves for non-critical applications to the ever important Control Reliable Double Valves for the most critical machine safety applications. We have available a wide range of products for LOTO (energy isolation), load holding (pilot operated checks) – both single and dual channel, and broken hose protection (hose whip) to name a few. Where applicable, a pressure sensing port for trapped pressure release verification is always included, and we have options for visual verification (pop-up indicator or gauge) or electrical feedback (transducer). Many of our products have third party certifications, having undergone testing and verification of valve functionality in adherence to the appropriate safety categories for the product.

Important information for your consideration:

- 1) Safety doesn't end with the wire! Although, in most cases, controls engineers are familiar with the safety principles of machine guarding with regard to electronic/electrical controls, most are unaware that the fluid power components that are the final control elements must be considered as part of the safety control system. We find that quite often the electrical portion of a machine's safety control system has been designed to meet all the current requirements of the required safety category (as determined by a task based risk assessment), only to be connected to a control valve that is not of the same safety category. Control Integrity dictates that the overall safety category rating of a system is only as good as the lowest rated component in the system. For example, a safety circuit that has been designed for a Category 4 (control reliable) application and integrates a Category 2 pneumatic dump device would result in a Category 2 system instead of a Category 4 system.
- 2) The National Institute for Occupational Safety and Health (NIOSH) determined in a review of 152 accidents, that 82% were due to failure to completely de-energize, isolate, and dissipate energy, 11% were due to failure to lockout after de-energization, and 7% were due to failure to verify the energy source was dissipated after locking out. During

the investigation of these accidents, it was determined that all of the fatalities could have been prevented if comprehensive hazardous energy control procedures had been implemented and followed. *Lockout is the # 2 cited violation by OSHA.*

- 3) A frequently overlooked problem in fluid power (pneumatics and hydraulics) is trapped, unreleased, energy. Removing the pneumatic or hydraulic energy source may create another unsafe condition. Unsafe, unexpected machine movement can occur upon the reapplication of energy.