



# EXOTIC

AUTOMATION & SUPPLY

## Fluid Power LOTO Safety Solutions

### Manual Lock Out Tagout



Three-way hydraulic blocking, venting, locking, manual valve with sequencing plates in insure correct order and complete process of shutdown and setup steps.



### Exotic LBVV Series

Lockable only when the supply is blocked and downstream is vented to tank position.

Available in SS or Carbon Steel  
1/2" to 2 1/2" Ports

### Alternative Methods

#### Automatic Lock Out Tagout Energy Isolation



Redundant, 3/2 NC hydraulic control-reliable energy isolation valve



#### Exotic CREI Series

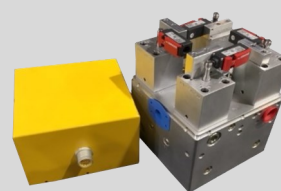
If a risk assessment based upon EN ISO 13849-1 determines that a performance level, PL, of d or e, CAT 3 and CAT 4, the Exotic CREI0XB1 is an externally-monitored safe choice.

Flows from 15 to 60 GPM  
at 200 psi ΔP

#### Automatic Lock Out Tagout Energy Isolation



Redundant, 3/2 NC hydraulic control-reliable energy isolation valve



#### Exotic CREI Series

If a risk assessment based upon EN ISO 13849-1 determines that a performance level, PL, of d or e, CAT 3 and CAT 4, the Exotic CREI0XX is an externally-monitored safe choice.

Flows from 75 to 330 GPM  
at 200 psi ΔP

#### Automatic Lock Out Tagout Blocking



Redundant, 2/2 NC hydraulic control-reliable blocking valve.

#### Exotic CRBL Series



If a risk assessment based upon EN ISO 13849-1 determines that a performance level, PL, of d or e, CAT 3 and CAT 4, the Exotic CRBLXX is an externally-monitored safe choice.

HYDRAULIC

3/2 locking manual spool valve with exhaust port larger than inlet port for fast dump to safe condition. Lockable only in the supply blocked & downstream vented to atmosphere position.



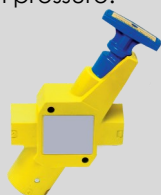
### Parker LV Series

Available in aluminum or 316 SS  
1/4" to 2" Ports

EZ Series all the LOTO features described above plus an adjustable soft start feature for gradual, safe buildup of downstream pressure.

### Parker EV Series

3/8" to 1 1/4" Ports



Redundant, 3/2 NC pneumatic control-reliable energy isolation valve with exhaust port larger than inlet port for fast dump to safe condition.



### Parker P33 Series

If risk assessment based upon EN ISO 13849-1 determines that a performance level, PL, of d or e, CAT 3 and CAT 4, the Parker P33 is an externally monitored safe choice.

Flows up to 265 SCFM

P33 Series all the LOTO features as P33 Series plus a soft start feature for gradual, safe buildup of downstream pressure.

### Parker P33 with Soft Start



PNEUMATIC

### Where are they used?

- Hydraulic Presses
- Rubber Molding
- Coil Slitting Lines
- Actuator Isolation
- Paper Processing & Roll Handling
- Metal Forming:
  - Cutting
  - Bending
  - Punching
  - Forming



### What is Control Reliable?

“Control Reliability”, essentially states that the safety system be designed, constructed and installed such that the failure of a single component within the device or system should not prevent normal machine stopping action from taking place, and shall prevent a successive machine cycle from being initiated until the failure is corrected. To achieve “Control Reliability”, a device should feature both redundancy and fault detection.

### Safety Standards Defined:

The EN 954-1 standard (Categories B-4) that has been the staple of safety definition is being phased out and replaced by ISO-13849-1 PL (Performance Level). Below are the brief summaries of requirements for each definition: PLe gives the best reliability and is equivalent to that required at the highest level of risk.

**ISO-13849-PLd (Safety Category 3):** The safety control system must be designed such that a single fault will not lead to a loss of the safety function. Where practical, the single fault will be detected. This requires redundancy from the safety device through the load control device. Multiple faults may lead to a loss of the safety function.

**ISO-13849-PLe (Safety Category 4):** The safety control system must be designed such that a single fault will not lead to a loss of the safety function and will be detected at, or before, the next demand on the safety system. If this is not possible, then the accumulation of multiple faults must not lead to the loss of the safety function. This also requires redundancy from the safety device through the load control device. Here multiple faults must not lead to a loss of the safety function.

### LOTO Alternative Methods:

The ANSI/ASSE Z244.1 Lockout/Tagout control of Hazardous Energy addresses alternative methods of controls. Alternative methods of control only apply to routine, repetitive tasks that are integral to the production process and are based on risk assessment. The machine must still have a standard lockout system for repairs and other tasks.

Alternative methods of controls save time by incorporating a single lock-point that simplifies the lockout process and increases safety by eliminating the chance of a lockout point being missed. Z244.1 also recognizes that under certain circumstances, the complete removal of stored energy could increase the hazard potential.

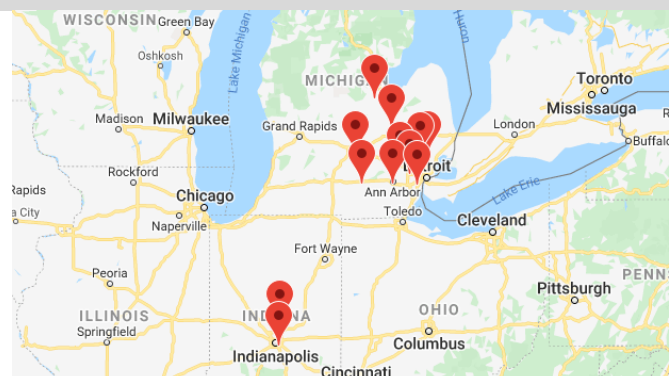
Incorporating **alternative methods** either by using a **single point lockout** or by **partial de-energization** can increase safety and productivity.



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