

Enhancing Lockout / Tagout Procedures – How Do I Perform Full Power Isolation?

ANSI/ASSE Z244.1-2016 The Control of Hazardous Energy Lockout, Tagout and Alternative Methods

The American National Standard Institute included examples of practical and useful applications of alternative risk reduction methods when writing the latest edition of the lockout / tagout standard. Access to the document is a must have for factory and maintenance managers across the United States looking to implement lockout/tagout procedures.

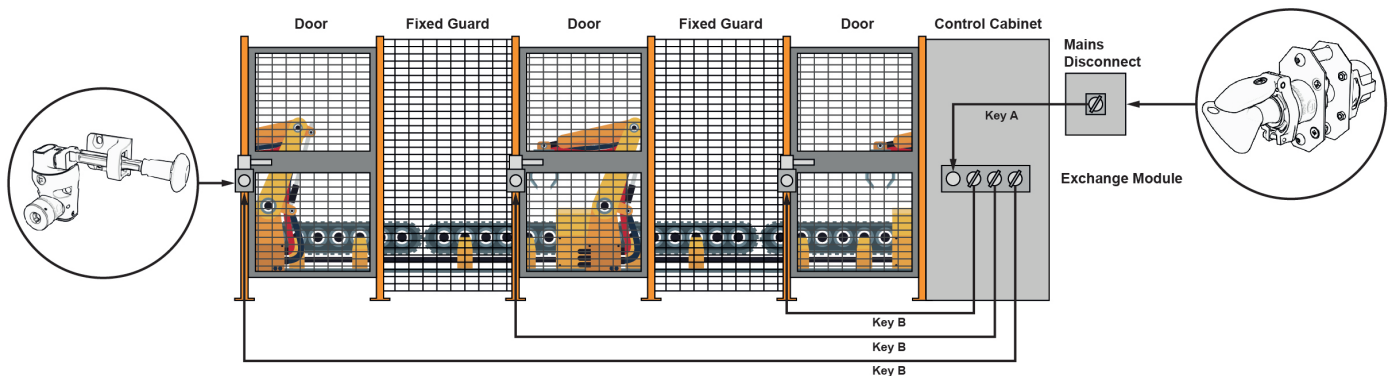
Employers are often faced with difficult decisions to make when employees are found not to be following LOTO procedures. Humans in their nature can forget to apply every step of such procedures – is it better to apply disciplinary actions for LOTO violations or look at enhancing procedures with more of an engineering controls approach that cannot be forgotten or avoided?

This thought helps to understand why Z244.1 includes examples of trapped key technology being used as an enhanced version of lockout/tagout. In applications requiring mains isolation, a mechanical trapped key system can be used on access points to equipment ensuring that full power isolation takes place before access is permitted.

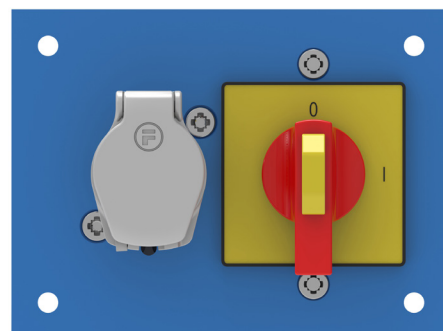
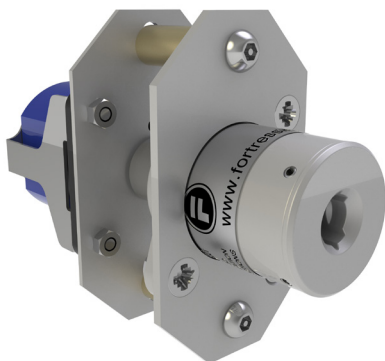
Example 2: Alternative Risk Reduction Measures for Mains Isolation for Machines/Equipment within ANSI/ASSE Z244.1 includes the following recommendations of how to incorporate trapped key for mains isolation:

1. “Directly driving the contacts via a trapped key fitted to the shaft. This method would work on units that are small enough to allow the trapped key to drive directly.”
2. “Having a cam mechanism and bolt lock module for units that are too large for the trapped key to directly drive.”

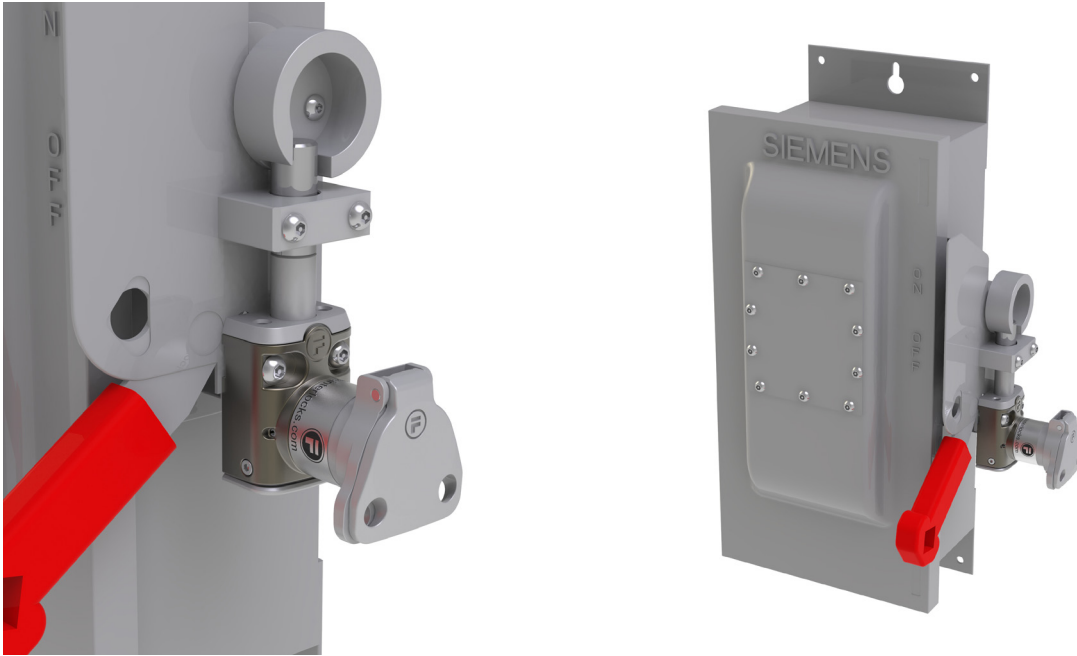
It also includes a useful image of key switch and cam locking arrangements for the readers of Z244.1 to visualise an application to multiple access points.



Fortress can offer a variety of directly driven key switch variants up to 63A contacts with a choice of contact arrangements. Typically those looking for three phase isolation utilise a 4 Normally Open switch. For those applications with larger switches or custom arrangements the keys can be mechanically interlocked into a switch handle arrangement in a Switch Control Unit (SCU).



In the case of retrofitting disconnects or hydraulic/pneumatic power already installed on equipment, the Fortress bolt module comes into play. A stainless steel bolt can be driven into a cam mounted on the power source, once the bolt is shot and the key is free it is impossible to return power. The key can then be carried to a single access point or used for multiple access points via a key exchange.



Lock elements are available in die cast or stainless steel construction while switch and enclosure variants can be specified based on customer requirements.

Get in contact with your local Fortress representative to discuss requirements.