

5 QUESTIONS WITH AN EXPERT

Are Your Press Controls Safe?



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We use light curtains in our pressroom. My press operators are safe, right?

Light curtains by themselves do not make the press safe to operate. In fact, if not used properly, they can give operators a false sense of security. Consider these issues when using light curtains:

- **Safe distance.** OSHA, ANSI and CSA publish a safety-distance formula. When using the formula correctly, metal formers will mount the light curtains at a distance far enough from the pinch point so that when an object triggers the curtain, the press will stop before someone can become pinched, or worse. Mounting the light curtains closer than the safe distance possibly can prevent the press from reacting quickly enough to avoid injury.

- **Safe distance changes.** Over time, the brake on a press will wear and the stopping time will increase, causing the required safety distance to increase.

- **Unguarded areas.** Along with light curtains, stampers may need to install additional hard guarding around a press, to prevent the entry of hands or fingers into the point of operation by reaching through, over, under or around the light curtains.

- **Shops operating older light curtains** should verify with the manufacturer that they meet current safety standards.

- **Existing press controls.** When using light curtains as a primary safety device, the press controls must be “control reliable” and include a brake monitor.

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We installed a brake monitor. Does the press now comply with standards?

Not necessarily. Brake monitors basically are reporting devices that will not control the stopping of a press. They will provide the amount of time it takes for the ram to stop when the clutch is turned off, and prevent another stroke when exceeding the programmed maximum stopping time. To make a press compliant and safe, also consider and address the clutch/brake controls and press guarding.

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How can we calculate safety distance?

According to OSHA 1910.217(c)(3)(vii)(c), calculate safety distance (Ds) by the formula:

D_s (in.) = 63 in./sec. x T_s , where:

63 in./sec = hand-speed constant; T_s = stopping time of the press (measured at approximately 90-deg. crankshaft rotation position (sec))

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One of our press controls still employs the original relay-logic clutch/brake circuit. Does it comply with standards?

Typically, these controls do not comply with current safety standards. Often, the original controls have been jumped out, relays replaced and/or modified. While the maintenance crew typically has good intentions, sometimes they will alter the original control circuits to get a press back up and running. In doing so, they likely will unintentionally change important details put in place as part of the original control's safety system. In addition, many original relay circuits do not meet the requirement of “control reliability,” and other requirements of current standards.

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For applications requiring use of a foot pedal, what do we need to know to safeguard our operators?

Consider several factors when using foot pedals to control press actuation. Here we present a few of the most critical factors; review OSHA 1910.217(b)(4) for more details:

- The press controls must meet all OSHA, ANSI and CSA requirements.
- Equip the press with light curtains (or pullbacks), set at the proper distance.
- Protect the foot-pedal mechanism from unintended operation—place a shroud or guard over the pedal, install an anti-trip kick plate, etc.
- The selection method between hand and foot actuation must be supervisory controlled (removable key switch, etc.).
- Only use the foot pedal in single-stroke mode, and use two-hand control for inching or jogging the press.

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Note: Information presented is for reference only and does not replace current OSHA, ANSI and CSA regulations. Toledo Integrated Systems advises companies operating presses to review the current standards to ensure compliance.