

# MIOSHA Fact Sheet



## Press Brakes: Operator Protection

**What is a press brake and what rules apply?** A press brake is a machine used to punch, form, and bend metal and is activated by a foot pedal, two hand controls, or both used in sequence. Press brakes are covered under General Industry Standard [Part 1, General Provisions](#), R 408.10034 (4) and (5).

**When is operator protection required while operating a press brake?** Any time a press brake is in use and there is a point of operation or a pinch point opening more than ¼ inch, operator protection is required. Without protection a press brake can cause severe injuries.

**What types of operator protection is used for press brakes?** Press brakes may have various types of operator protection available depending on how it is used. Refer to the Operator Protection Decision Flow Chart on page 2.

### Point of Operation Guards and Devices

**Presence sensing devices**, such as light curtains, are effective protection methods for press brakes. Light curtains can be set to activate during the hazardous part of the cycle and muted during the non-hazardous part of the cycle. Muting allows the bending to occur without interrupting the light curtains. Refer to diagram on page 2.

**Two hand controls** are effective when the parts are small, can be placed on holders, and don't require holding during the bend. Magnets and other devices can hold the part in place. Two hand controls can also be used to lower the ram to ¼ inch or less and then change to foot pedal to complete the bend.

**Pullbacks and restraints** can be used to prevent hands from entering the point of operation.

**Barrier guarding** is more common on press brakes when used in conjunction with other guards and devices. Barrier guards may protect exposed portions of the die other than where the bending takes place.

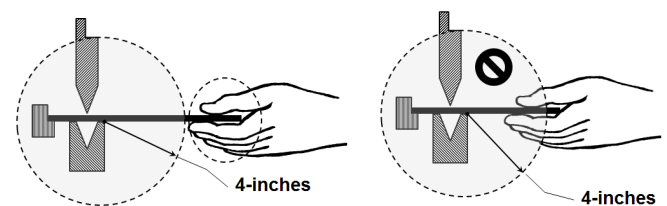
### Other Operator Protection

**Hand tools** are required if guards or devices are not used and the operator is required to hold work pieces within 4 inches of the point of operation. Tools must be designed to prevent hands from entering the point of operation. A sign must be in plain view on the machine stating, "Hand tools shall be used to hold stock."

Hand tools may be used in conjunction with other guards or devices such as restraints, pullbacks or barrier guards to allow the operator to place small parts in the point of operation.

If there are 25 or more work pieces of one specific bend, a guard or device is required, and hand tools are not permitted alone as protection.

**Safe distance** is a form of operator protection that should be used only when safeguarding by physical barrier or device is not feasible. Safe distance protection may be applied when the operator is not required to hold the work piece within 4 inches of the point of operation. Safe distance is measured 4 inches or more from tooling or the pinch point closest to the operator.

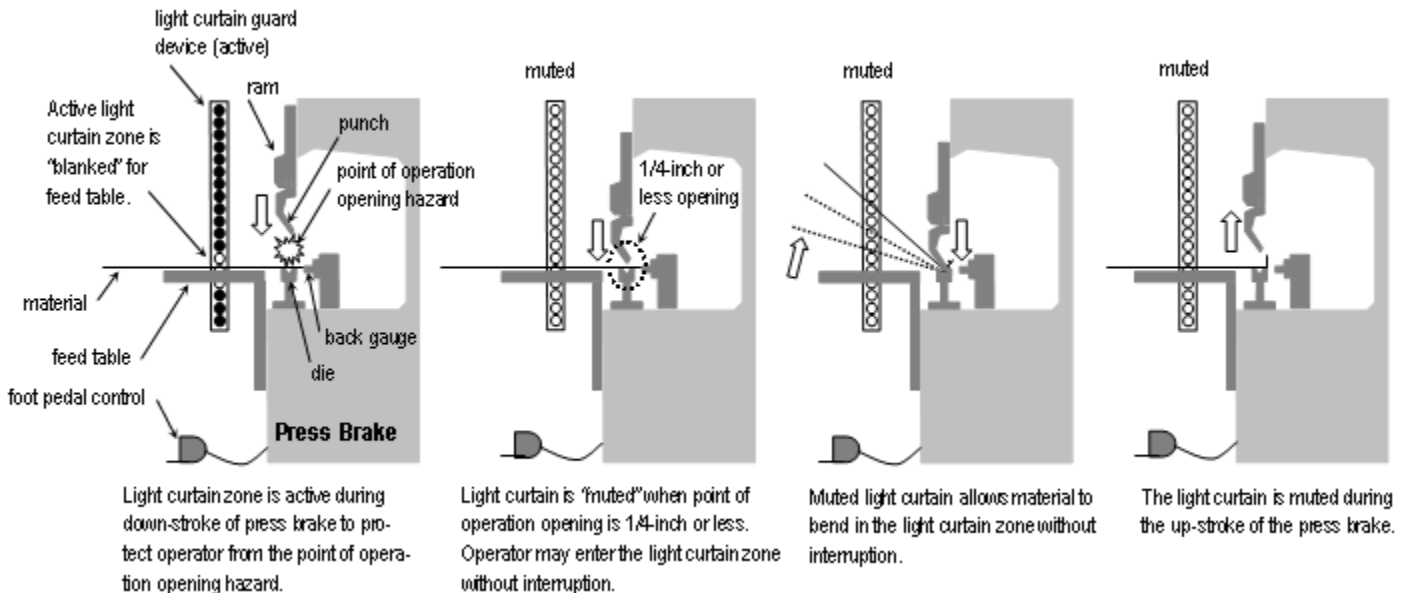


When a safe distance is used for operator protection there is an increased risk of injury. Point of operation guards and devices are more effective methods of operator protection.

**Foot pedals** must be protected from unintended operation. If a foot pedal is to be used for operation, an additional form of safeguarding will be needed if the hands are within 4 inches of the point of operation. Each operator must have their own control.

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### Light Curtain Function Example Diagram



### Press Brake Operator Protection Decision Flow Chart

