

# Machine Guarding

Below is a list of typical equipment used in the printing industry. For each piece of equipment, there is a statement regarding guarding guidelines.

## **Corner Cutter**

Single and double machines, except manually operated machines, shall be provided with a guard in front of and to the side of the knives.

## **Corner Stayer**

Corner stayers with or without mechanical power shall be provided with an automatic device that will instantly stop the downward motion of the plunger, should the fingers of the operator come between the plunger and the anvil.

## **Cutter and Creasers**

Drum cylinder type of cutters and creasers shall be guarded to prevent the operator's hands being caught between the cylinder and the bed.

## **Rotary Scoring Machines**

Scorers having a roller diameter larger than 2 1/2-inches shall have a guard in front of in-running discs or blades that will prevent injury to the operator's hands while machine is in operation.

## **Job Platen Press (Class B)**

- Job platen presses with or without mechanical power shall be provided with one of the following:
- An automatic feed which does not require the operator's hands to be placed between the platen and bed, or
- An automatic stop which will prevent the platen from closing if the hand or hands of operator are caught between the platen and the bed, or
- A guard or gate, mechanically operated, which will throw the operator's hands out of the way as the press closes. If of the type which lifts the hands out of the danger zone the guard shall rise at least four inches above the platen as the press closes and descends by gravity or be drawn down by springs. The guard shall be arranged so that it will prevent a shear between the guard and the top of the platen, or
- Any other device that will prevent the platen from fully closing, if the hands of the operator are between the platen and bed.

## **Index Cutter (Class B)**

All knives or plungers used for cutting strips off ends of books and similar operations shall be provided with a guard that will prevent the operator's hands coming into contact with the cutting knife or plunger as it descends.

### **Guillotine Type Cutters**

- Each guillotine type cutter shall be equipped with a control which requires the operator to use both hands to engage the clutch.
- Each guillotine type cutter shall be equipped with a nonrepeat device, except programmed machines having barrier guards and/or devices which will effectively prevent employees' hands from entering the danger zone.
- Carriers shall be provided and used for transportation of guillotine type cutter knives.

### **Paper Box Ending and Edge Attaching Machines**

Paper box ending and edge attaching machines shall be provided with an automatic device which will prevent the application of injurious pressure if the fingers of the operator are between the top of the form and the pressure head.

### **Cylinder and Rotary Presses (Class B)**

The in-running sides of power operated rollers or cylinders shall be provided with a guard so arranged that the material can be fed to the rollers without permitting the operator's fingers to be caught between the rollers or cylinders.

### **Lithographic Presses**

The in-running side of the cylinder(s) and roller(s) shall be provided with a guard that will prevent the operator from being caught between the cylinders or rollers.

*EXCEPTION:* Sheet-fed lithographic presses of one horsepower or less, provided that cylinders and rollers are spring-loaded or cup-mounted, caution signs are posted in the vicinity of such presses, and operators are trained in their safe operation.

### **Embossing Machines**

Embossers of the head type shall be equipped with:

- A fixed guard enclosing front and sides of press with space for feeding stock. The guard shall be so arranged that the operator's fingers cannot go between the press and the die while feeding stock, or
- A fixed or a movable guard on the sides and a movable guard in front connected with the operating mechanism in such a manner that the operator's fingers cannot be caught by the press while feeding stock, or
- A starting device which requires the simultaneous action of both hands to trip the machine.

#### *EXCEPTIONS:*

1. Machines with feed such that the hands of the operator cannot come in contact with the die while feeding.
2. Hand-Fed Engraving Presses covered under Section 4445.

### **Paper Punches and Line Perforators (Class B).**

Mechanical or foot power punches and line perforators shall be provided with a device that will prevent the operator's fingers from entering the point of operation.

EXCEPTION: Paper punches and line perforators where the clearance between the opening for feeding stock does not exceed three-eighths inch when in the open position.

### **Slotters**

Slotters of vertical type:

- The knife shall be provided with a stripper, or
- Shall be provided with a guard in front of knives so arranged that the hands of the operator cannot come into contact with the knives while machine is in operation.

Rotary Slotter. A guard shall be provided in front of the knives so that the hands of the operator cannot come into contact with the knives while machine is in operation.

### **Hand-Fed Engraving Presses**

When employing the face-down method of printing, automatic or semi-automatic feeders shall be used where feasible. Where automatic feeders are not feasible, the following listed precautions shall be utilized:

- Stock material of sufficient size so that 2 inches or more of the material being printed projects in front of the closed die shall be used.
- A finger slot in the counterboard which is 2 inches or more from the die shall be used.
- A safety training program for press operators and maintenance personnel to assure safe operating practice and hazard awareness shall be instituted.
- A sign readily visible to the operator affixed to the press and warning of the point of operation hazard shall be in place.
- A positive locking device shall be installed on each manual control to protect the press operators from unexpected stroking of the ram. The device shall protect against unintentional engagement of the clutch and shall be engaged in all circumstances when employees are required to place their hands in the point of operation area such as setup, repairs, changing dies and clearing jams.