

 <b>WAKE FOREST</b> UNIVERSITY	SAFETY_003	Revision Date: 11-29-14
	<b>MACHINE GUARDING</b>	Developed by: Environmental Health & Safety  Approved by: AVP Strategy and Operations <i>Amulya</i> 11/29/14
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**1. PURPOSE**

Machine guarding is enforced in an effort to control or eliminate hazards created by accidental operation or contact with equipment or tools which could injure the operator or others in the general vicinity. OSHA requires guarding for any machine where machine parts, functions, or processes may cause injury. The need for machine guarding may be found in machine shops in academic departments, maintenance shops, print shops and other areas where mechanical equipment is used.

**2. REFERENCE**

29 CFR 1910.211

**3. DEFINITIONS**

*Authorized person* means one to whom the authority and responsibility to perform a specific assignment has been given by the employer.

*Block* means a short block of wood, provided with a handle similar to that of a plane and a shoulder at the rear end, which is used for pushing short stock over revolving cutters.

*Guard* means a barrier that prevents entry of the operator's hands or fingers into the point of operation.

*Hand feeding tool* means any hand held tool designed for placing or removing material or parts to be processed within or from the point of operation.

*Pinch point* means any point other than the point of operation at which it is possible for a part of the body to be caught between the moving parts of a press or auxiliary equipment, or between moving and stationary parts of a press or auxiliary equipment or between the material and moving part or parts of the press or auxiliary

*Point of operations* means that point at which cutting, shaping, boring, or forming is accomplished upon the stock.

*Push stick* means a narrow strip of wood or other soft material with a notch cut into one end and which is used to push short pieces of material through saws.

*Safety system* means the integrated total system, including the pertinent elements of the press, the controls, the safeguarding and any required supplemental safeguarding, and their interfaces with the operator, and the environment, designed, constructed and arranged to operate together as a

unit, such that a single failure or single operating error will not cause injury to personnel due to point of operation hazards.

#### **4. RESPONSIBILITY**

##### **Environmental Health and Safety (EHS)**

Environmental Health and Safety will provide assistance as requested in selecting appropriate safety systems and Personal Protective Equipment (PPE), assist in coordination of training at the request of supervisors.

##### **Supervisor / Department**

Supervisors and department heads must ensure machines are equipped with appropriate safety system, provide PPE to operators as necessary, and provide machine specific training to authorized persons (operators). They must also ensure operators do not disable or remove machine guards.

Supervisors and department heads is responsible for the safe operation of machinery and guards. If a piece of equipment is missing guards or is unsafe to operate, the supervisor is responsible to take piece of equipment out of service and apply LOTO devices.

##### **Employee**

Only trained employees may operate a machine that requires machine guarding.

Operators are responsible for operating machines with the guards in place, with proper PPE as required, and for operating per the manufacturer's specifications.

Individual operators are responsible for reporting any equipment that is not working properly, has missing or damaged safety system, or appears to be unsafe in any way.

#### **5. PROCEDURE**

One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, pinch points, rotating parts, flying chips and sparks. Examples of guarding methods are—barrier guards, electronic safety devices, and point of operation guarding.

Guards shall be affixed to the machine where possible. The guard shall be such that it does not offer an accident hazard in itself.

The point of operation of a machine, whose operation exposes an employee to injury, shall be guarded.

Hand feeding tools such as push stick or block for placing and removing material must be used for easy handling of material without the operator placing a hand in the hazard area. Such tools shall not be in lieu of other guarding required by this section, but can only be used to supplement protection provided.

While operating machines, do not wear:

- (a) Loose fitting shirts that could become entangled in moving parts
- (b) Jewelry such as rings and bracelets that can catch on parts and lead to a body part being pulled into moving equipment.

**Protective Clothing and Protective Equipment**

When necessary, in addition to machine guards PPE may also be required while operating machines. In order to provide adequate protection, PPE and selected protective equipment must always be:

- 1. Appropriate for the particular hazards
- 2. Maintained in good condition
- 3. Properly stored when not in use to prevent damage or loss
- 4. Kept clean, fully functional, and sanitary

**6. TRAINING**

Training is required for new operators, maintenance, and set-up personnel when any new or altered equipment is put into service or when operators are assigned to different machines or equipment on a temporary basis. Training will include:

- 1. Description and identification of the hazards associated with particular machines.
- 2. Safety systems and how they provide protection and hazards for which they are intended.
- 3. How and under what circumstances safeguards can be removed and by whom (in most cases only a maintenance worker or a representative from the manufacturer).
- 4. What to do if a safety system is damaged, missing, or unable to provide adequate protection.

**7. REVISIONS**

<b>REVISION</b>	<b>REVISION DATE</b>
Revision for Approval by AVP Strategy and Operations. Define Associate Vice President for Strategy and Operations	<b>1/22/2015</b>