

# OSU Machine Guarding -- Audit Checklist

OSU Building & Room # \_\_\_\_\_ Supervisor/PI \_\_\_\_\_ Date \_\_\_\_\_ Equipment Type \_\_\_\_\_  
 Audit Performed by \_\_\_\_\_

	Y	N	NA	COMMENTS
<b>A. General Requirements for Machines and Machine Guarding</b>				
1. Machine guards prevent worker's hands, arms, or other body parts from making contact with moving parts				
2. Guards are firmly secured and not easily removable				
3. Guards permit safe, comfortable, and relatively easy operation of the machine				
4. Machine controls within easy reach of the operator				
5. Procedures established to ensure machine is shut down before guard is removed				
6. Can the existing safeguards be improved?				
<b>B. Guarding of Mechanical Hazards</b>				
1. Point-of-operation guards provided and in place				
2. Gears, sprockets, pulleys, and flywheels guarded				
3. Belts and chain drives guarded				
4. Exposed set screws, key ways, collars, and the like guarded				
5. Guards provide for any other hazardous moving part of machine				
<b>C. Evaluation of Non-mechanical Hazards</b>				
1. Noise measurements taken, where necessary				
2. Chemical substances used in machine operations evaluated				
3. Electrical cords or connectors in good repair				
4. Personal protective equipment available, where necessary				
5. Operator dressed safely for the job				
<b>D. Training</b>				
1. Workers trained in the recognition of machine hazards and the importance of using safeguards				
2. Lockout/tagout training provide, where necessary				
3. Electrical safety work practices training provided, where necessary				
4. Personal protective equipment training provided, where needed				

## Key to OSU Machine Guarding Checklist

### **A. General Requirements for Machines and Machine Guarding**

1. Guards should be designed to prevent contact with any machine part, function, or process that could cause an injury.
2. Guards should be made of durable material that will withstand the conditions of normal use and should not be able to be easily removed or tampered with.
3. Machine guard design should allow normal operations to occur without creating any additional hazards.
4. Self-explanatory
5. Machine design should allow for routine lubrication and adjustment without removal of safeguards. When safeguards must be removed, safe procedures must be developed to insure that the machine has been shut down. A lockout/tagout program may be necessary.

### **B. Guarding of Machine Hazards**

1. Point-of-operation is the point where work is performed on the material, such as cutting, shaping, boring, or forming of stock. Point-of-operation guarding is complicated by the number and complexity of machines and by the different uses of individual machines.
2. Rotating parts (even smooth, slowly rotating shafts) can grip clothing or, through mere skin contact, force a hand or arm into a dangerous position. Guard should be designed to allow no contact with rotating parts.
3. Belts and chain drives create in-running nip point hazards where the belt or chain contacts the pulley or sprocket. Guards should be designed to allow no contact. Contact OSU EHS 4x7241 for additional information or assistance.
4. The normal hazards associated with rotating parts increase with projections such as set screws, key ways, etc., and must be guarded to prevent contact.
5. Reciprocating and transverse motions of machine parts are examples of other hazards which require guarding.

### **C. Evaluation of Non-mechanical Hazards**

1. Some machines are capable of producing noise levels which require hearing protection. Contact OSU EHS 4x7241 for additional information or assistance in measuring machine noise levels.
2. Cutting fluids, coolants, and any other substance used in machine operations should be evaluated before use for determining PPE and disposal requirements. The SDS, container label, or other product information can be helpful in determining if additional precautions will be necessary.
3. Replace frayed, exposed, or deteriorated wiring.
4. A hazard evaluation of the tasks that machine operators perform will help in determining if personal protective equipment is necessary. Sample hazard evaluation forms are available through OSU EHS 4x7241.
5. Loose-fitting clothing and jewelry should not be worn by machine operators. Long hair can also become entangled in rotating parts.

### **D. Training**

1. General training is available through OSU EHS 4x7241.
2. Training is required for all workers authorized to apply lockout/tagout devices. Training is also required for workers who are affected by the lockout/tagout activities of authorized workers. General training is available through OSU EHS 4x7241.
3. Workers who are exposed to energized electrical circuits operating at 50 volts or more must receive training based upon their assigned tasks and level of expertise. General training is available through OSU EHS 4x7241.
4. Workers must receive adequate training on Personal Protective Equipment selection and use. Documentation of the training must be maintained. Sample forms and general training are available through OSU EHS 4x7241