

## APPENDIX 6

### Machine Guarding

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#### WAC 296-806-100

Machines and their moving parts create the potential for workplace injuries. Installed and used properly safeguards can protect workers by helping to reduce or control machine hazards.

WAC 296-806 applies if you have machines or machine operations in your workplace. For requirements on hand-held tools go to Portable Power Tools, WAC 296-807. (An Appendix in this manual.)

#### WAC 296-806-200 - Scope.

This section applies to all machines in your workplace. It is organized into the following four categories:

- General requirements
- Safeguarding requirements
- Safeguarding methods
- Requirements for specific machine hazards

This written program deals with the general requirements of the WAC and general safeguarding requirements and methods. For specific machine requirements, refer to WAC 296-806, the NIOSH Standards and/or the manufacturer's operations manual.

**WAC 296-806-20002** - Ensure that machines designed to stay in one place are secured so they will not move or change position during use.

**WAC 296-806-20004** - Ensure that employees working around dangerous machines are protected from slipping on smooth, oily, or otherwise slippery floors by providing one of the following types of floor covering:

- Non-slip matting
- Grating
- Non-slip composition flooring
- Some other effective floor treatment

**WAC 296-806-20006** - Ensure that work areas around machinery are designed with enough space so each operator:

- Can clean and handle material without interference from other workers or machines.
- Does not have to stand in the way of passing traffic.
- Provide enough space so employees can bring in and remove materials safely. Note: 36" clearance on all accessible sides is recommended.

**WAC 296-806-20010** - Ensure that foot-operated controls are located or guarded so that unintentional movement to the "ON" position is unlikely. Ensure that machines will not automatically restart when power is restored after a power failure, if restarting would create a hazard for employees.

**WAC 296-806-20012** - Ensure that emergency stop controls, if required, meet all of the following:

- Are red in color
- Are easily reached from the operator's normal work position
- Are kept in a good working condition
- Have to be manually reset before a machine can be restarted

**WAC 296-806-20018** - Ensure that hand feeding and retrieval tools meet these requirements:

- Are suitable for the work to be done
- Do not create a hazard when used
- Are of a size and shape that will keep the operator's hands outside the hazardous area
- Are constructed so they will not shatter if they come in contact with the machine tool or tooling

**WAC 296-806-20020** - Ensure that power-driven machinery is completely stopped before either making adjustments or repairs, OR, removing material or refuse from the machine.

**WAC 296-806-20028** - If a specific safeguarding method in this chapter is required for machinery or machine parts found in your workplace, follow the specific requirement.

In the absence of a specific safeguarding method, choose a method or combination of methods from the “Safeguarding Methods” section of WAC 296-806.

Examples of safeguarding methods include:

- Guards
- Devices
- Safeguarding by distance
- Safeguarding by location

**WAC 296-806-20030** - Employees must be protected from hazards created by nip or shear points by using one or more safeguarding methods.

**WAC 296-806-20032** - Employees must be protected from hazards created by rotating or revolving parts by using one or more safeguarding methods.

**WAC 296-806-20034** - Employees must be protected from hazards created by reciprocating or other moving parts by using one or more safeguarding methods.

**WAC 296-806-20036** - Employees must be protected from hazards created by flying objects, including chips, sparks and fluids by using one or more safeguarding method.

**WAC 296-806-20042** - Ensure that guards do not create additional hazards such as sharp edges or pinch points between the guard and moving machine parts. Guards must be:

- Made of durable materials.
- Strong enough to withstand the forces to which they are exposed.
- Securely fastened to the machine, if possible, or to the building structure if they cannot be attached to the machine.

Guards must protect employees by doing both of the following:

- Preventing hands or other body parts from reaching through, over, under, or around the guard into the hazard area; AND
- Preventing objects or debris from falling onto or being thrown towards an employee.

Barrier guards must:

- Be properly installed, adjusted, and maintained.

- Have no opening at any point larger than shown in Table 200-1, Largest Allowable Guard Opening.

Refer to WAC 296-806, Table 200-1 for Largest Allowable Guard Opening (inches)

**WAC 296-806-20044** - Ensure that devices used to safeguard employees do either of the following:

- Stop the motion of a moving part before an employee comes in contact with it and has to be manually reset before machines can be restarted; OR
- Be designed and constructed to prevent the operator from having any part of their body in the danger zone during the hazardous part of the operating cycle.

**WAC 296-806 - Summary.**

In order to fully protect your employees from machine hazards, you need to refer to the entire WAC Chapter 296-806 for details relating to machine guarding.

## **NIOSH General Guarding Checklist**

Answers to the following questions should help you determine the safeguarding needs of your own workplace, by drawing attention to hazardous conditions or practices requiring correction.

### **Machinery**

1. Do the safeguards provided meet the minimum WISHA requirements?
2. Do the safeguards prevent workers' hands, arms, and other body parts from making contact with dangerous moving parts?
3. Are the safeguards firmly secured and not easily removable?
4. Do the safeguards ensure that no objects will fall into the moving parts?
5. Do the safeguards permit safe, comfortable, and relatively easy operation of the machine?
6. Can the machine be lubricated without removing the safeguard?
7. Is there a lockout/tagout system for shutting down the machinery before safeguards are removed?
8. Can the existing safeguards be improved?
9. Is there a safeguard provided for the power transmission part(s)?
10. Does it keep the operator's hands, fingers, and body out of the danger area?
11. Is there evidence that the safeguards have been tampered with or removed?
12. Could you suggest a more practical, effective safeguard?
13. Are there any unguarded gears, sprockets, pulleys, or flywheels on the apparatus?
14. Are there any exposed belts or chain drives?
15. Are there any exposed set-screws, key ways, collars, etc?
16. Are starting and stopping controls within easy reach of the operator?
17. If there is more than one operator, are separate controls provided?
18. If there is more than one operator, can one start the machine and injure the other operator?

### **Training**

19. Do operators and maintenance workers have the necessary training in why and how to use the safeguards?
20. Have operators and maintenance workers been trained in where the safeguards are located, how they provide protection, and what hazards they protect against?

21. Have operators and maintenance workers been trained in how and under what circumstances guards can be removed?
22. Have workers been trained in the procedures to follow if they notice guards that are damaged, missing, or inadequate?

### **Other Concerns**

#### **Protective Equipment and Proper Clothing (See Appendix B in this manual for PPE requirements)**

23. Is personal protective equipment required?
24. If personal protective equipment is required, is it appropriate for the job, in good condition, kept clean and sanitary, and stored carefully when not in use?
25. Is the operator dressed safely for the job (i.e., no loose-fitting clothing or jewelry)?

#### **Machinery Maintenance and Repair (See Appendix 1 in this manual for LO/TO requirements)**

26. Have maintenance workers received up-to-date instruction on the machines they service?
27. Do maintenance workers lock out the machine from its power sources before beginning repairs or clearing jams?
28. Where several maintenance persons work on the same machine, are multiple lockout devices used?
29. Do maintenance persons use appropriate and safe equipment in their repair work?
30. Is the maintenance equipment itself properly guarded?
31. Are maintenance and servicing workers trained in the requirements of WAC 296-803, lockout/tagout hazard, and do the procedures lockout/tagout exist before they attempt their tasks?