**Guarding of Other Power Transmission and Functional Components**

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[Name of Farm]

**Disclaimer:** The following Guarding of Other Power Transmission and Functional Components program is provided only as a template guide to assist employers and employees in complying with the requirements of 29 CFR 1928.57. It is not intended to supersede the requirements of the standard. An employer should review the standard for particular requirements which are applicable to their individual situation and make adjustments to this program that are specific to their business. An employer will need to add information relevant to their particular facilities in order to develop an effective, comprehensive program.

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[Name of Farm]

**I. PURPOSE**

This program will help to reduce the incidence of entanglements with power transmission components on farm field and farmstead equipment which are not property guarded. The purpose of the written Guarding of Power Transmission and Functional Components program is to ensure that employers and employees know about how to protect themselves from equipment entanglement injuries. The program ensures that:

A. The power transmission and functional components of all farm field and farmstead equipment are properly guarded and labeled to the fullest extent possible.

B. Maintenance of the guarded equipment is performed under clear protocols for injury prevention.

C. Employees are trained in what constitutes proper guarding and maintenance protocols.

D. Identifies by job title who has the responsibility for maintaining the program, updating equipment inventory inspections, conduct training, etc.

**Note:** This written program will be available to all employees for review upon their request and will be located in the following area:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[Location]

**II. AUTHORITY AND REFERENCE**

Occupational Safety and Health Administration (OSHA) 29 CFR 1928.57 (Click for link to OSHA webpage [29 CFR 1928.57](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10958) )

**III. DEFINITIONS**

**"Farm field equipment"** means tractors or implements, including self-propelled implements, or any combination thereof used in agricultural operations.

**"Farmstead equipment"** means agricultural equipment normally used in a stationary manner. This includes, but is not limited to, materials handling equipment and accessories for such equipment whether or not the equipment is an integral part of a building.

**"Ground driven components"** are components which are powered by the turning motion of a wheel as the equipment travels over the ground.

A **"guard" or "shield"** is a barrier designed to protect against employee contact with a hazard created by a moving machinery part.

**"Power take-off shafts"** are the shafts and knuckles between the tractor, or other power source, and the first gear set, pulley, sprocket, or other components on power take-off shaft driven equipment.

**IV. APPLICATION**

This program applies to the use of any power transmission and functional component which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

**V. RESPONSIBILITY FOR COMPLIANCE**

A. The administration of this program will be the responsibility of

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(person/position designated)

The administrative responsibilities of this individual/position will include:

1. Identification of the employees to be included in the Guarding of Power Transmission program.

2. Inspection and maintenance of all power transmission guarding on farm equipment.

3. Coordination and supervision of employee training.

4. Coordination and supervision of the facility's Guarding of Power Transmission program.

5. Coordination and supervision of required recordkeeping.

6. Periodic evaluation of the overall program.

B. Employees are responsible for following all safe work practices and using proper precautions required by the guidelines in this program.

**VI. METHODS OF GUARDING**

A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(person/position designated)

is responsible for inspecting and evaluating compliance of all power transmission and functional component guarding of equipment located on the farm. He/she will protect employees from coming into contact with hazards created by moving machinery parts through the installation and use of a guard or shield whenever possible or guarding by location whenever a guard or shield or guarding by location is infeasible, by using a guardrail or fence.

1. Guard or Shield: Where guards are required, they shall be designed and located to protect against inadvertent contact with the hazard being guarded.

2. Guarding by Location. A component is guarded by location during operation, maintenance, or servicing when, because of its location, no employee can inadvertently come in contact with the hazard during such operation, maintenance, or servicing. Where the employer can show that any exposure to hazards results from employee conduct which constitutes an isolated and unforeseeable event, the component shall also be considered guarded by location.

3. Guarding by Railings. Guardrails or fences shall be capable of protecting against employees inadvertently entering the hazardous area.

B. The responsible person will inspect Power Transmission guarding to be sure it meets the following standards:

1. Functional components, such as choppers, rotary beaters, mixing augers, feed rolls, conveying augers, grain spreaders, stirring augers, sweep augers, and feed augers, which must be exposed for proper function, shall be guarded to the fullest extent which will not substantially interfere with the normal functioning of the component.

2. Sweep arm material gathering mechanisms used on the top surface of materials within silo structures shall be guarded. The lower or leading edge of the guard shall be located no more than 12 inches above the material surface and no less than 6 inches in front of the leading edge of the rotating member of the gathering mechanism. The guard shall be parallel to, and extend the fullest practical length of, the material gathering mechanism.

3. Exposed auger flighting on portable grain augers shall be guarded with either grating type guards or solid baffle style covers as follows:

a. The largest dimensions or openings in grating type guards through which materials are required to flow shall be 4 ¾ inches. The area of each opening shall be no larger than 10 square inches. The opening shall be located no closer to the rotating flighting than 2 ½ inches.

b. Slotted openings in solid baffle style covers shall be no wider than 1 ½ inches, or closer than 3 ½ inches to the exposed flighting.

4. The mesh or nip-points of all power driven gears, belts, chains, sheaves, pulleys, sprockets, and idlers shall be guarded.

5. All revolving shafts, including projections such as bolts, keys, or set screws, shall be guarded, except - smooth shaft ends protruding less than one-half the outside diameter of the shaft and its locking means; smooth shafts and shaft ends (without any projecting bolts, keys or set screws), revolving at less than 10 rpm; and on feed handling equipment used on the top surface of materials in bulk storage facilities.

6. Strength and design of guards.

a. Unless otherwise specified, each guard and its supports shall be capable of withstanding the force that a 250 pound individual, leaning on or falling against the guard, would exert upon that guard.

b. Guards shall be free from burrs, sharp edges, and sharp corners, and shall be securely fastened to the equipment or building.

7. Ground driven components shall be guarded in accordance with standards above if any employee may be exposed to them while the drives are in motion.

**VIII. POWER TRANSMISSION SERVICING PROTOCOLS**

A. Access to moving parts.

1. Guards, shields, and access doors shall be in place when the equipment is in operation.

2. Where removal of a guard or access door will expose an employee to any component which continues to rotate after the power is disengaged, the employer shall provide, in the immediate area, the following:

a. A readily visible or audible warning of rotation; and

b. A safety sign warning the employee to look and listen for evidence of rotation; and not remove the guard or access door until all components have stopped.

B. Electrical disconnect means.

1. Application of electrical power from a location not under the immediate and exclusive control of the employee or employees maintaining or servicing equipment shall be prevented by:

a. Providing an exclusive, positive locking means on the main switch which can be operated only by the employee or employees performing the maintenance or servicing; or

b. In the case of material handling equipment located in a bulk storage structure, by physically locating on the equipment an electrical or mechanical means to disconnect the power.

2. All circuit protection devices, including those which are an integral part of a motor, shall be of the manual reset type, except where:

a. The employer can establish that because of the nature of the operation, distances involved, and the count of time normally spent by employees in the area of the affected equipment, use of the manual reset device would be infeasible;

b. There is an electrical disconnect switch available to the employee within 15 feet of the equipment upon which maintenance or service is being performed; and

c. A sign is prominently posted near each hazardous component which warns the employee that, unless the electrical disconnect switch is utilized, the motor could automatically reset while the employee is working on the hazardous component.

**VII. OPERATION INSTRUCTIONS**

At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all covered equipment with which he is or will be involved, including at least the following safe operating practices:

A. Keep all guards in place when the machine is in operation;

B. Permit no riders on farm field equipment other than persons required for instruction or assistance in machine operation;

C. Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain the equipment;

D. Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine;

E. Lock out electrical power before performing maintenance or service on farmstead equipment.

**X. INFORMATION TO CONTRACTORS**

A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(person/position designated)

is responsible for providing outside contractors with with any and all information regarding power transmission guarding and potential hazards.

**XI. PERSONNEL POLICIES**

When an employee is not following safety and health rules regarding working with power transmission and functional components, disciplinary action will be taken.

**LIST OF SAMPLE FORMS**

**Form 1**  Power Transmission & Functional Components Guarding Annual Program Summary

**Form 2**  Machine Guarding Checklist

**Form 3** Employee Power Transmission Equipment Operation Training Record

Form #1 **POWER TRANSMISSION & FUNCTIONAL COMPONENTS GUARDING ANNUAL PROGRAM SUMMARY**

**Training**

|  |  |  |
| --- | --- | --- |
|  | **Number of Training**  **Courses Presented** | **Number of Employees Trained** |
| **New-employee training** |  |  |
| **Machine-specific training** |  |  |
| **New machine training** |  |  |
| **Other training** |  |  |
| **Total courses/employees** |  |  |

**The following activities have been completed:**

\_\_\_\_\_ Written program is up to date.

\_\_\_\_\_ All machine guarding is in place, damaged or missing shields have been replaced.

\_\_\_\_\_ All training is up to date.

**If any of the above activities are not complete, explain:**

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**Completed By:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Form #2 **MACHINE GUARDING CHECKLIST**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Machine Guarding Checklist** | **Yes** | **No** | **N/A** | **Comments** | **Date** |
| 1 | Has annual training for employees on machine guarding and safe operation been conducted in accordance with 1928.57(a)(6) and documented with a sign-in roster? |  |  |  |  |  |
| 2 | Are all guards and shields in place and in good condition? |  |  |  |  |  |
| 3 | Are all PTO shafts properly shielded? |  |  |  |  |  |
| 4 | Are PTO Master shields in place and in good condition? |  |  |  |  |  |
| 5 | Are safety latches, jack stands, and/or other safety locks in working order to prevent equipment from falling? |  |  |  |  |  |
| 6 | Are warning labels readable and in place? |  |  |  |  |  |
| 7 | Are fans that are less than 7 feet from the working surface protected with guards that have openings not greater than ½”? |  |  |  |  |  |
| 8 | Is all feed handling and material handling equipment properly shielded? |  |  |  |  |  |
| 9 | Are grain auger inlet grills in place? |  |  |  |  |  |
| 10 | Are openings in grain auger inlet grills not greater than 4.75”? |  |  |  |  |  |
| 11 | Are the openings in grain auger inlet grills not closer than 2.5” from the flighting? |  |  |  |  |  |

Form #3  **EMPLOYEE POWER TRANSMISSION EQUIPMENT OPERATION TRAINING RECORD**

The following employee(s) have completed training in Guarding of Power Transmission and Functional Components Operation. Each trained employee is now knowledgeable in all 5 different training topics covered in the Safe Operation and Servicing of Power Transmission and Functional Components.

1. Keep all guards in place when the machine is in operation.

2. Permit no riders on farm field equipment other than persons required for instruction or assistance in machine operation.

3. Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain the equipment.

4. Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.

5. Lockout electrical power before performing maintenance or service on farmstead equipment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Employee's Name** | **Employee's Signature** | **Date of Training** | **Trainer** | **Trainer's Signature** |
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