

Optional Information

Name of School:

Date of Inspection:

Vocational Program/Course/Room:

Signature of Inspector:

**Guarding of Farm Equipment  
Self Inspection Checklist**

**Guidelines:** This checklist covers the regulations issued by the U.S. Department of Labor - OSHA under the Agricultural standard 29 CFR 1928.57 which was adopted by reference. It applies to hazards associated with moving machinery parts of *farm field equipment* and *farmstead equipment*. Definitions of italicized terms are provided at the end of the checklist to help you understand some of the questions. This checklist does not address the regulations dealing with cotton gins. If cotton gins are encountered, consult 29 CFR 1928.57.

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| <p>1. Have operating instructions been provided at the time of initial assignment and at least annually thereafter for all who come in contact with covered equipment relative to the safe operation and servicing of all farm equipment, including at least the following safe operating practices? [29 CFR 1928.57 (a)(6)]</p> <p>(i) Keep all guards in place when the machine is in operation;</p> <p>(ii) Permit no riders on <i>farm field equipment</i> other than persons required for instruction or assistance in machine operation;</p> | <p>Y N N/A DK</p> |
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Comments/Corrective Action:

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- (iii) 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 teacher shall instruct the students as to all steps and procedures which are necessary to safely service and maintain the equipment;
- (iv) Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine; and
- (v) Lock out electrical power before performing maintenance or service work on *farmstead equipment*.

Note: Many injuries occur while cleaning, repairing, and adjusting machinery. In addition to being sure that the equipment is shut off with the key removed or the power locked out, it is important to be sure that the machinery or components (such as headers or buckets) cannot come down on the service person. On hydraulically-raised equipment, the manufacturer's hydraulic cylinder safety stops should be used, if they were provided. If cylinder stops are not available, solid blocking should be used. Once cylinders are blocked, and the engine is shut off and the key removed, the hydraulic control levers should be rocked to relieve the pressure for the hydraulic cylinders. Sufficient pressure can be stored in the hydraulic system to inject fluid under the skin of a worker attempting to service the system, causing severe infection or injury.

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If jacks are needed, they should be placed on firm, level surfaces, but solid blocks should be used to hold the machine in position. Jacks or hydraulic should not be relied on for support; these can slip or develop leaks and the service person can be crushed.

Trying to stop rotating machinery with a piece of wood or metal can draw the service person into the machine, or cause injury with flying pieces. Rotating machinery should always be serviced according to manufacturer specifications. For example, manufacturer torque specifications should be observed when replacing a knife, blade, or fin or rotating equipment. At the speeds at which farm equipment rotates, a loose nut, bolt, or part can become a lethal projectile.

2. Have all students/teachers been protected against coming in contact with the hazards created by moving machine parts by either (i) or (ii) below? [29 CFR 1928.57(a)(7)] Y N N/A DK
- (i) Through the installation and use of a guard or shield or *guarding by location*; or
  - (ii) Whenever a guard or shield or *guarding by location* is infeasible, by using a guardrail or fence.

Note: The clothing worn while working around moving machine parts can also help prevent entanglement. Work clothing should be well-fitting, zippered or buttoned, and not open. Frayed clothes, jackets, and sweatshirts with drawstrings, and boots or shoes with long shoelaces should be avoided. A shoelace or loose string, thread, flap of cloth, or the corner of a jacket can become entangled very easily.

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| 3. | When guards are used to provide protection required by this section, are they designed and located to protect against inadvertent contact with the hazard being guarded? [29 CFR 1928.57(a)(8)]  | Y N N/A DK |
| 4. | Unless otherwise specified, is each guard and its support capable of withstanding the force that a 250 pound individual, leaning on or falling against the guard, would exert upon that guard? [29 CFR 1928.57(a)(8)(ii)]  | Y N N/A DK |
| 5. | Are all guards free from burrs, sharp edges, and sharp corners, and securely fastened to the equipment or building? [29 CFR 1928.57(a)(8)(iii)]  | Y N N/A DK |
| 6. | Whenever a moving machinery part presents a hazard during servicing or maintenance, is it required that the engine be stopped, the power source disconnected, and all machine movement stopped before servicing or maintenance is performed? [29 CFR 1928.57(a)(11)] | Y N N/A DK |

Note: Exceptions to this requirement include 1) the equipment must be running to be properly serviced or maintained; 2) the equipment cannot be serviced or maintained while a guard or guards otherwise required by this standard are in place; and 3) the servicing or maintenance can be safely performed. Trying to stop rotating machinery with a piece of wood or metal can draw the service person into the machine, or cause injury with flying pieces.

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### Farm Field Equipment

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| 7.  | Are all power take-off shafts, including rear, mid- or side-mounted shafts, guarded either by a master shield or by other protective guarding? [29 CFR 1928.57(b)(1)(i)]   | Y N N/A DK |
| 8.  | Are all tractors equipped with an agricultural tractor master shield on the rear power take-off, except where the design of the power take-off driven equipment requires removal of the shield? [29 CFR 1928.57(b)(1)(ii)]   | Y N N/A DK |
| 9.  | Does the master shield have sufficient strength to prevent permanent deformation of the shield when a 250 pound operator mounts or dismounts the tractor using the shield as a step? [29 CFR 1928.57(b)(1)(ii)]  | Y N N/A DK |
| 10. | Is power take-off driven equipment guarded to protect against employee contact with positively driven rotating members of the power drive system, including that portion of the tractor power take-off shaft which protrudes from the tractor if the master shield is removed? [29 CFR 1928.57(b)(1)(iii)] | Y N N/A DK |
| 11. | Are signs placed at prominent locations on tractors and power take-off driven equipment specifying that power take-off driven system safety shields must be kept in place? [29 CFR 1928.57(b)(1)(iv)]  | Y N N/A DK |
| 12. | Is the mesh or nip points of all power driven gears, belts, chains, sheaves, pulleys, sprockets, and idlers guarded? [29 CFR 1928.57(b)(2)(i)]   | Y N N/A DK |

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| 13. | Are all revolving shafts, including projections such as bolts, keys, or set screws, guarded, except smooth shaft ends protruding less than one-half the outside diameter of the shaft and its locking means? [29 CFR 1928.57(b)(2)(ii)]  | Y N N/A DK |
| 14. | Are ground driven components guarded? [29 CFR 1928.57(b)(2)(iii)]  | Y N N/A DK |
| 15. | Are all functional components, such as snapping or husking rolls, straw spreaders and choppers, cutterbars, flair rotors, rotary beaters, mixing augers, feed rolls, conveying augers, rotary tillers, and similar units, which must be exposed for proper function, guarded to the fullest extent which will not substantially interfere with normal functioning of the component? [29 CFR 1928.57(b)(3)] | Y N N/A DK |
| 16. | Are guards, shields, and access doors in place when equipment is in operation? [29 CFR 1928.57(b)(4)(i)]   | Y N N/A DK |
| 17. | Where removal of a guard or access door will expose a person to any component which continues to rotate after the power is disengaged, has the teacher provided, in the immediate area, the following? [29 CFR 1928.57(b)(4)(i)]   | Y N N/A DK |
|     | (a) A readily visible or audible warning of rotation; and  |            |
|     | (b) A safety sign warning the student to:  |            |
|     | (1) Look and listen for evidence of rotation; and  |            |
|     | (2) Not remove the guard or access door until all components have stopped.   |            |

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## Farmstead Equipment

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| 18. | Are all power take-off shafts including rear, mid-, or side-mounted shafts, guarded either by a master shield or other protective guarding? [29 CFR 1928.57(c)(1)(i)]   | Y N N/A DK |
| 19. | Is power take-off driven equipment guarded to protect against contact with positively driven rotating members of the power drive system? [29 CFR 1928.57(c)(1)(ii)]   | Y N N/A DK |
| 20. | Where power take-off driven equipment is of a design requiring removal of the tractor master shield, does the equipment also include protection for that portion of the tractor take-off shaft which protrudes from the tractor? [29 CFR 1928.57(c)(1)(ii)] | Y N N/A DK |
| 21. | Are signs placed at prominent locations on power take-off driven equipment specifying that power driven system safety shields must be kept in place? [29 CFR 1928.57(c)(1)(iii)]  | Y N N/A DK |
| 22. | Is the mesh or nip points of all power driven gears, belts, chains, sheaves, pulleys, sprockets, and idlers guarded? [29 CFR 1928.57(c)(2)(i)]  | Y N N/A DK |
| 23. | Are all revolving shafts, including projections such as bolts, keys, or set screws, guarded? [29 CFR 1928.57(c)(2)(ii)]   | Y N N/A DK |

Note: Exceptions this requirement include: 1) smooth shafts and shaft ends (without any projecting bolts, keys, or set screws) revolving at less than 10 rpm, on hand feeding equipment used on the top surface of material in bulk storage facilities; and 2) smooth shaft ends protruding less than one-half the outside diameter of the shaft and its locking means.

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| 24. | Are all 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, guarded to the fullest extent which will not substantially interfere with the normal function of the component? [29 CFR 1928.57(c)(3)(i)] | Y N N/A DK |
| 25. | Are sweep arm material gathering mechanisms used on top surfaces of materials within silo structures guarded? [29 CFR 1928.57(c)(3)(ii)]   | Y N N/A DK |
| 26. | Is the lower or leading edge of the guard located no more than 12 inches above the material surface and no less than 6 inches in front of the leading edge of a rotating member of the gathering mechanism? [29 CFR 1928.57(c)(3)(ii)]   | Y N N/A DK |
| 27. | Is the guard parallel to, and extend the fullest practical length of, the material gathering mechanism? [29 CFR 1928.57(c)(3)(ii)]   | Y N N/A DK |
| 28. | Is exposed auger flighting on portable grain augers guarded with either grating type guards or solid baffle style covers as follows? [29 CFR 1928.57(c)(3)(iii)]   | Y N N/A DK |
| (a) | The largest dimension or opening in grating type guards through which materials are required to flow shall be 4-3/4 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 2-1/2 inches.   |            |

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- (b) Slotted openings in solid baffle style covers shall be no wider than 1-1/2 inches or closer than 3-1/2 inches to the exposed flighting.
29. Are guards, shields, and access doors in place when the equipment is in operation? [29 CFR 1928.57(c)(4)(i)] Y N N/A DK
30. When removal of a guard or access door will expose a student to any component which continues to rotate after the power is disengaged, does the teacher provide, in the immediate area, the following? [29 CFR 1928.57(c)(4)(ii)] Y N N/A DK
- (a) A readily visible or audible warning of rotation; and
- (b) A safety sign warning the student to:
- (1) Look and listen for evidence of rotation; and
- (2) Not remove the guard or access door until all components have stopped.
31. Is the application of electrical power from a location not under the immediate and exclusive control of the person maintaining or servicing the equipment prevented by? [29 CFR 1928.57(c)(5)(i)] Y N N/A DK
- (a) Providing an exclusive, positive locking means on the main switch which can be operated only by the student or students performing the maintenance or servicing; or

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- (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.

32. Are all circuit protection devices, including those which are an integral part of a motor, of the manual reset type, except where? [29 CFR 1928.57(c)(5)(ii)] Y N N/A DK

- (a) The teacher can establish that because of the nature of the operation, distances involved, and the amount of time normally spent by students 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 students 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 student that unless the electrical disconnect switch is utilized, the motor could automatically reset while the student is working on the hazardous component.

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## 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.

*Guarding by Location* means guarded by location during operation, maintenance, or servicing when, because of its location, no employee can inadvertently come into contact with the hazard during such operation, maintenance, or servicing.

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