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Farm Equipment Safety

Safety Meeting Packet

Protect Your Workforce



The National Safety Council labeled agriculture as one of the most hazardous industries in the nation. Farm workers are exposed to many different safety and health hazards. Farming accidents cause thousands of worker injuries and hundreds of deaths each year. A substantial risk for injury and death in agriculture comes from the use of tractors and other farm equipment, making it important to be aware of safety mechanisms and procedures.

Training

Workers who operate agricultural equipment must be trained to safely operate and servicing of the equipment. The Occupational Safety and Health Administration (OSHA) requires that training be provided at the time of assignment and at least once per year from that point forward. General equipment training shall include:

- Keeping guards in place while in operation
- No riders, unless needed for instruction or assistance
- Stop the engine, disconnect the power, and wait for the machine to stop before servicing, adjusting, or cleaning
- Do not start or operate equipment around others
- Lock out power before maintaining or servicing

Tractor instruction must also include:

- Securely fastening seat belt if there is a ROPS
- Avoid operation near ditches, embankments, and holes
- Reduce speed to turn, cross slopes, or operate on rough, slick, or muddy surfaces
- Stay off steep slopes, avoid jerky turns, starts or stops
- Be mindful of the path of travel, especially on row ends, roads, or around trees
- Hitch only to the drawbar and hitch points per the manufacturer's instructions
- When stopped, set the brakes and park lock, if available

Roll-Over

Protective Structure (ROPS)

Tractor rollovers are a leading cause of worker deaths. Most of these incidents occur when farm vehicles turn on their side or tip over backward. OSHA requires that all agricultural tractors manufactured after October 25, 1976 be equipped with a roll-over protective structure (ROPS), unless they are exempted low-profile tractors.

Structure

A ROPS includes a protective structure that has been tested according to OSHA standards. The requirements vary based on tractor type (wheel versus track) and use (agricultural versus construction), but generally include both side and rear impact and vehicle upset testing.

Seatbelts

An agricultural tractor with a ROPS must also have a seatbelt that meets the requirements in the Society of Automotive Engineers Standard SAE J4C with a few exceptions:

- A suspended seatbelt must be attached to the movable portion of the seat.
- The seatbelt anchor must withstand a static tensile load of 1,000 lbs. at 45 degrees from horizontal.
- The seat mount must withstand 1,000 lbs. plus four times the weight of the seat components applied at 45 deg. from horizontal in a forward and upward direction.
- The seat mount must also withstand a 500-lb. belt load plus twice the weight of seat components applied at 45 deg. from horizontal in an upward and rearward direction.
- Seatbelt webbing shall resist acids, alkalis, mildew, aging, moisture, and sunlight at least as well as untreated polyester fiber.



Labeling

Every ROPS must have a permanently attached label indicating:

- Manufacturer/fabricator name and address
- Model number
- Tractor makes, models, or series numbers the ROPS is designed to fit
- Indication that the ROPS was tested in accordance with OSHA requirements

Guarding

Agricultural equipment must employ guards, guardrails, or fences if guards cannot be used. A guard must generally withstand the force of a 250-lb. person leaning or falling on the guard, but OSHA standards also outline requirements for specific types of equipment or components.

Power Take-Off Shafts

Power take-off (PTO) shafts rotate at a high rate of speed and can quickly catch loose-fitting clothing. Workers must be protected from coming into contact with the hazards created by a rotating PTO. A master shield must be attached to the tractor at the rear power take-off. The shield should be strong enough to support the weight of a 250-lb. worker using it as a step without bending.



If the master shield must be removed, there must also be protection where the power take-off shaft extends from the tractor. Plastic power shaft shields provide protection by fitting over the ends of the power shaft.

Signage must also be placed prominently on tractors and power take-off driven equipment that identifies the need to keep safety shields in place.

Other Transmission Components

The mesh or nip points of power-driven belts, gears, chains, sheaves, pulleys, sprockets, and idlers must have guards. Revolving shafts must also be guarded, unless:

- The shaft is smooth and revolves at less than 10 rpm on feed handling equipment.
- The smooth shaft end protrusion is less than ½ the outside diameter of the shaft and its locking means.

Functional Components

Some components, like choppers, rotary beaters, feed rolls, grain spreaders, and augers must be exposed to function. In those cases, the component must be guarded as much as possible without interfering with its function. Requirements by component can be found in the OSHA standards 29 CFR 1928.57(c)(3).

If removal of a guard or access door exposes a worker to a component that may rotate after power has been disconnected, the employer must take additional safety precautions. In the immediate area around the component, there must be a visible or audible warning of rotation and a sign that warns the worker to look and listen for rotation and not remove the guard or access door until all components have stopped.

Electrical Disconnect

Employers must prevent application of power from a location not under immediate and exclusive control of the workers servicing the equipment. This can be done by providing an exclusive, positive locking means on the main switch that can be operated only by the worker(s) performing the servicing, or by locating a means to disconnect the power directly on the equipment if it is material-handling equipment in a bulk storage structure.

Circuit protection devices, including those that are part of a motor, must be manually reset unless:

- Use of a manual reset device would be infeasible due to the nature of operations, distances involved, and time normally spent in the area, or
- There is an electrical disconnect switch within 15 feet of equipment being serviced, and a sign is posted near each hazardous component warning that the machine could automatically reset unless the disconnect is used.

Cotton Ginning Equipment

The OSHA standard for agricultural machine guarding includes requirements specific to cotton ginning equipment that covers power transmission components, functional components, and warning devices. The detailed requirements can be found in 29 CFR 1958.57(d).

Worker Training

It's recommended that employers educate their workers about safety requirements, Roll-Over Protection Systems, and machine guarding.

- Review the OSHA training requirements for equipment
- Identify additional safety training requirements for the work area.

- Review the requirements for a ROPS.
- Discuss the location and items found on a ROPS identifying tag/label.
- Identify worksite equipment that uses guarding.
- Address appropriate uses of guarding and procedures for reporting faulty or missing guards.
- If power take off is used, review the guarding used.
- Discuss electrical disconnect.

For additional information, please review:

- 29 CFR 1926, Subpart W – Rollover Protective Structures; Overhead Protection
- 29 CFR 1928, Subpart C – Employee operating instruction
- 29 CFR 1928.57 – Guarding of farm field equipment, farmstead equipment, and cotton gins



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Farm Equipment Safety

Safety Meeting Attendance Acknowledgement

Company Name _____
 Department / Division _____
 Meeting Date & Time _____ AM PM
 Meeting Location _____
 Name & Title of Individual Conducting Meeting _____

Key Meeting Discussion Points / Important Reminders:

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Internal Procedures Reviewed:

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By signing this document, you confirm your attendance at the meeting and acknowledge the issues addressed above!

Employees in Attendance

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Employees not present: _____

Suggestions/Recommendations to improve workplace safety and health: _____

Actions Taken: _____

Manager/Supervisor: _____ Date: _____

Disclaimer:

The information provided above was assembled using multiple resources. However, these materials do not contain ALL the information available regarding the required safety standards under local, provincial, state, or federal law for your industry.
