



Grain Auger Safety Training Program



Goal

This program provides information on a potentially dangerous piece of farm equipment, the grain auger. This machinery is responsible for severe injuries and deaths to farmworkers and granary operators.

Objective

Farmers, ranchers, and granary operators will identify dangers associated with grain augers and take the necessary precautions to reduce the associated risks.

Background

On a per-hour-of-use basis, augers are one of the most dangerous agricultural machines. Most auger accidents are operator-caused. Auger-related injuries most often result from the following **types of accidents**:

- contact with or entanglement in the exposed screw at the intake;
- entanglement in a drive belt;

- struck by an uncontrolled spinning crank used to raise or lower the auger;
- entanglement in a power take-off (PTO) drive shaft; or
- contact with overhead power lines.

Typical auger-related accidents include lacerations, fractures, amputations, and electrocutions. Fatal injuries result primarily from two types of accidents: **electrocution and entanglements**. Electrocution most often occurs when moving a raised grain auger, and it comes in contact with overhead power lines. Entanglement occurs when individuals come in contact with moving parts. A common cause of these accidents is the lack of machine guarding, even though the shields do not significantly affect the grain feeding into the auger. These accidents and deaths often involve inexperienced labor.

Description

The grain auger consists of a tube containing a solid shaft in the center with flighting, a spiral of flat steel welded onto the center shaft. As the

center shaft turns in a clockwise direction, the flighting pulls the grain in and pushes it up the shaft. The metal tube protects the operator from contact with the rotating blade, but severe injuries or deaths can occur when a worker's leg or arm gets pulled into the end of the auger.

Augers vary in size, generally ranging from 4 to 15 inches in diameter and from several feet to 100 feet or more in length. These machines can be independent, portable, or integrated with another piece of machinery or grain storage system, such as a fixed component of a combine, grain dryer, grain wagon, storage bin system, or silo unloader. Augers can also be self-powered with an electric motor or gasoline or diesel-fueled engine driven by power transferred from a second piece of equipment through a PTO shaft or series of gears, chains, belts, and pulleys.

Recommendations

The following precautions will substantially reduce the risks associated with grain auger use:

- Educate all farmworkers and granary operators on the safety procedures and hazards associated with augers.
- Always perform a pre-operation safety inspection, checking fastener tightness, belts, chains, oil levels, and the winch cable.
- Make repairs and adjustments before starting the auger.
- Use barriers, such as fences, to prevent people not involved in an auger's operation from entering the area.
- Pay attention to the job; do not daydream or operate augers while tired or distracted.
- Do not ramp-up augers to reach tall storage bins.
- Never allow inexperienced individuals to operate an auger without direct supervision from an experienced operator.
- Do not allow children less than 18 years of age to operate an auger or enter the area near an auger.

- Before starting an auger, the operator should ensure all protective shields, as supplied by the manufacturer, are in place and in good condition. According to the Occupational Safety and Health Administration's (OSHA) agricultural standard, [29 Code of Federal Regulations \(CFR\) 1928](#), guards on augers are required and must be consistent with their designed use.
- Before service or repair, shut the power off, then "lock" and "tag" the auger's power source according to OSHA's lockout/tagout standard, [29 CFR 1910.147](#). Lockout is the process of preventing power from coming on while the equipment maintenance or repair is in progress. Tagout is putting a tag on the on/off switch to show that the power is disabled and why.
- Never wear loose clothing or jewelry, or leave long hair untied while operating a grain auger.
- Never step or jump on or over an auger while it is in operation.
- Lower grain augers to a horizontal position before moving from one location to another. Look for power lines and know their locations before raising an auger into position.
- Ensure sound footing is maintained while working around augers.
- Place portable augers on dry, level ground or a gravel pad. Remove spilled grain between loads and turn off the equipment each time.
- Never use hands or feet to redirect the flow of grain or other material into the auger. Extremities can get caught in the auger.
- Pay attention to all entanglement hazard-warning labels. While auger injuries and deaths are preventable, amputations resulting from hand, arm, foot, and leg entanglement remains a high risk when using this equipment.

Review Questions

1. What safety practices should be followed before the service or repair of an auger?

- a. Shut off the power, remove the fuse from the power panel, and tell co-workers not to touch the power panel.
- b. Detach auger wiring from the power source, place a note on the power panel to warn co-workers, and use a test meter to verify that power is de-energized.
- c. Shut off the power to the auger, then lock-out and tagout the power source.
- d. None of the above.

2. How should augers be transported?

- a. Fully extend augers so that it is easier to position the auger once at the destination.
- b. Lower grain augers to a horizontal position before moving and transporting.
- c. Completely dismantle augers for ease of transport.
- d. Augers are fixed equipment and are never subject to transport.

3. Why should hands or feet never be used to direct the flow of grain or other material into the auger?

- a. Hands and feet are too small to direct the flow of grain effectively.
- b. Hands and feet will contaminate the grain and cause it to spoil.
- c. It is essential to hold onto the auger by hand to hold it in place.
- d. Hands or feet will likely become entangled in the auger, and amputation will result.

4. Before operating an auger, what safety measures should be in place?

- a. Perform a pre-operation safety inspection, install personnel barriers, such as fences, and ensure all protective shields are in place and in good condition.
- b. Remove all nonessential personnel from the work area and ensure that the auger blade is as sharp as possible.
- c. Since the auger is fully enclosed, no extra safety measures are necessary.
- d. Since OSHA does not apply to farms, no safety measures are required.

Answers

1. c
2. b
3. d
4. a



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1-800-252-7031, Option 2

*The Texas Department of Insurance,
Division of Workers' Compensation (DWC)-Workplace Safety
P.O. Box 12050
Austin, TX 78711-2050*

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