

Agricultural Machinery Hazards – Be Aware of Inherent Risks

A THOROUGH SAFETY REPORT COURTESY OF TED WHITWORTH, FARM SAFETY ASSOCIATION

The very fact that agricultural machinery uses tremendous power to do work makes its operation a potential hazard for both the operator and bystanders. Even though manufacturers try to ensure that their machinery is as safe as possible, the nature of some work creates inherent hazards which cannot be removed. Most accidents involving agricultural machinery can be attributed to human error.

In many cases, the operator forgot something, took a shortcut or risk, ignored a warning, wasn't paying close attention or failed to follow safety rules. Accidents with agricultural machinery can be crippling or even fatal. It is important to recognize and be alert to possible hazards and to take precautions to avoid injury.

There are many different kinds of agricultural machinery – mowers, tractors, grinders, blowers, augers, etc. – but they all have similar characteristics and similar hazards. You can be cut, crushed, pulled in or struck by an object thrown by these machines.

They can have cutting edges, gears, chains, revolving shafts, rotating blades, levers and similar hazards. You can also be injured if you fall while working on or near any of these machines.

Some machine parts cannot be completely shielded in order to do their job. For instance, a cutting blade cannot be totally enclosed, or it could not cut. Operators remove guards for maintenance and often they don't get replaced. This creates a potentially dangerous situation.

Most agricultural machines have similar or common components to do their work. A basic understanding of these and the hazards which they pose will heighten your safety awareness and prevent injury.

Shear Points

Shear points are created when the edges of two objects are moved closely enough together to cut a soft material, as in the case of a pair of shears or an auger.

Cutting points are created when a single object moves forcefully or rapidly enough to cut, as in the case of a sickle blade.

Both shear and cutting points are created on machinery designed to cut and on those that are not designed to cut, as in an auger. They are hazards because of their cutting force, and because they often move so rapidly that they may not be visible. It can be easy to forget that they are operating.

Because some cutting and shearing points cannot be guarded, it is important to be aware of the hazard and to be especially alert when they are operating.



It is also important to warn others and to look out for their safety because of the danger of thrown objects while using cutting-type equipment.

Pinch Points

Pinch points are formed when two rotating objects move together and at least one of them moves in a circle. For example, the point at which a belt runs onto a pulley is a pinch point.

Belt drives, chain drives and gear drives are other sources of pinch points in power transmission devices.

Fingers, hands and feet can be caught directly in pinch points, or they may be



SUPPLIERS OF TOP QUALITY BENT AND BLUE GRASSES WITHOUT NETTING

(416) 364-5700

TOLL FREE 1-877-727-2100

www.zandersod.com



8400 Huntington Rd.
R.R. 1, Woodbridge, ON

1-877-856-7333
or 905-856-7333

Since 1956

Make the Switch to Quality

Quality Seeds for Sod Growers,
Golf Courses, Sports Facilities,
Municipalities & Landscape Contractors

www.qualityseeds.ca

District Sales Managers

Peter Coon, Cell: 705-715-3760

John Konecny, Cell: 905-376-7044

Larry White, Cell: 519-636-8327

drawn into the pinch points by loose clothing that becomes entangled. Contact may be made by just brushing against unshielded parts or by falling against them.

You can become entangled in pinch points if you take chances and reach over or work near rotating parts. Machines move too fast to get out of a pinch point once you become caught in it.

To avoid injury from pinch points, be aware of the areas where pinch points occur and avoid them. Wear clothing that fits well and is not loose or floppy. Never reach over or work near rotating parts. Turn off machinery to work on it. Always replace shields if you must remove them for maintenance.

Wrap Points

Rotating shafts are the most common source of wrap point accidents, although any exposed machine part that rotates can be a wrap point. A cuff, sleeve, pant leg

or just a thread can catch on a rotating part and result in serious injury. Entanglement with a wrap point can pull you into the machine, or clothing may become so tightly wrapped that you are crushed or suffocated. In other cases, you could be thrown off balance and fall into other machine parts.

Even a perfectly round shaft can be a hazard if there is enough pressure to hold clothing against the shaft. Shafts that are not round increase the hazard significantly. Clothing is more likely to catch if there is a little mud or a nick on the shaft. Ends of shafts which protrude beyond bearings are also dangerous. Universal joints, keys and fastening devices can also snag clothing.

Check all equipment for potential wrap points, and shield those that can be shielded. Place warnings on those that cannot be covered, or paint them a bright color, perhaps with wide stripes. Be aware of wrap points and be alert to their danger.

Crush Points

Crush points are created when two objects move toward each other or one object moves toward a stationary one. For example, hitching tractors to implements may create a potential crush point.

Failure to block up equipment safely can result in a fatal crushing injury. A jack may slip, a hose or overhead support may break, or the equipment may roll. Be sure to take extra precautions when working with machinery that is raised for any reason.

There are many different kinds of agricultural machinery, but they all have similar characteristics and similar hazards.

Crushing injuries most commonly occur to fingers that are crushed at the hitching point. Wait until the tractor has stopped before stepping into the hitching position.

AerWay® Groundhog for Sports fields

It's Simple - Regular Aeration is Your Best Investment



Turf experts agree regular aeration is the one thing that will immediately improve turf health and vigor

Deep tine "venting" aeration every two weeks will improve drought resistance, reduce weed pressure, and produce a resilient playing surface that will bounce back from the pressures of daily play. A choice of 4 tine options lets you satisfy all of your aeration requirements. AerWay® offers a range of systems from 48" to 15' wide, 3-point tractor mounted and pull-type.

Call toll Free: 1-800-883-0761



Advanced Aeration Systems

www.gcduke.com email: draycroft@gcduke.com

Turf Care Agronomics

• South-Western Ontario/Niagara

Duncan Brewer
905.536.0357
duncanb@turfcare.ca



• Greater Toronto Area

Mark Scenna
416.458.2396
marks@turfcare.ca



• Eastern and Northern Ontario

Bill Martel
705.627.3590
billm@turfcare.ca



TURF CARE

Turf Care Products Canada

200 Pony Drive, Newmarket, Ontario L3Y 7B6
Tel: 905-836-0988 • Fax: 905-836-6442 • www.turfcare.ca





Safety Snapshot

SAFETY...

**It's a management responsibility.
It's an individual's duty.**

Tips for Spring

- Operators need to be thoroughly familiar with mowing equipment, its operating characteristics, capacity and safety features.
- Work sites need to be prepared in advance.
- Operators are responsible for their personal safety and that of others.

Year Round Advice

- Know your machine.
- Don't operate a machine with missing or damaged protective devices.
- Prepare the work area.
- Protect yourself.
- Watch out for others.
- Use safe mowing practices.
- Ensure good and safe footing around machinery.
- Keep all work areas tidy.

If possible, arrange the hitch point so that the tractor can be backed into position without anyone between. Always know what the other person is doing.

The head or chest of an operator may be crushed between the equipment and a low beam or other part of a building. Usually, these accidents occur when operating the machine in reverse. Tree limbs are also potential hazards when working with tractors and other machinery.

To prevent being crushed or pinned, first, recognize the potentially dangerous situations, then, avoid them whenever possible.

Block all machinery securely if you must work under it. If an implement can roll freely, block its wheels so it cannot roll.

Free-Wheeling Parts

Many machine parts continue to spin after the power is shut off. Examples of this are rotary mower blades, fans, flywheels, etc. Never touch these parts until they have stopped moving completely. This may take as long as several minutes.

Springs

Springs are commonly used to help lift equipment such as shock absorbers and to keep belts tight. They can harbour potentially dangerous stored energy. Springs under compression will expand with great force when released, and springs that are stretched will contract rapidly when released. Know what direction a spring will move and how it might affect other machine parts when released, and stay out of its path.

Hydraulic Systems

Hydraulic systems store considerable energy. They lift implements, change the position of implement components, such as a bulldozer blade, operate hydraulic motors and assist in steering and braking.

Careless servicing, adjustment or replacement of parts can result in serious injury. High-pressure blasts of hydraulic oil can injure eyes or other body parts by burning or penetrating the tissue due to the liquid being hot. Leaks are a serious hazard.

Never inspect hydraulic hoses with your hands because a fine jet of hydraulic fluid can pierce the skin. Jet streams from even pinhole leaks can penetrate flesh. Get medical attention quickly, or you could lose that part of the body that was injected.

Use a piece of cardboard to test the hose for leaks. Before attempting any service on hydraulic systems, shut off the engine which powers the hydraulic pump.

Lower the implement to the ground and relieve the pressure. Follow the instructions in your operator's manual, because the specific procedures for servicing the systems are very important to your safety.

Pull-In Points

Pull-in points usually occur when someone tries to remove plant material or other obstacles that have become stuck in machinery parts. Always shut off the power before attempting to clear plugged equipment. ♦

PICKSEED®
good things growing ...

PICKSEED Canada Inc.
Box 304, Lindsay
Ontario K9V 4S3

1-800-661-4769

FAX (705) 878-9249

Doug MacMillan
Lindsay, ON
Cell: 705-878-6426

George Hall
Tillsonburg, ON
Cell: 519-281-3251

G.C. Duke EQUIPMENT LTD.
ISO 9002 REGISTERED

Paul Turner
Sales Representative
Cellular: (416) 566-0211

1184 PLAINS ROAD EAST, BURLINGTON, ON L7S 1W6
Burlington (905) 637-5216 Toronto (905) 338-2404
1-800-883-0761 • Fax: (905) 637-2009 • www.gcduke.com