Machine Guarding

Introduction
Importance of Machine Guarding

Eight out of ten workplace fatalities and 1 in 4 workplace injuries involve mechanical equipment.

Machine guarding saves lives and limbs.
After reviewing this presentation individuals:
1. Should be able to identify hazards & machines that are in need of guarding;
2. Understand some of the guarding methods available; and
3. Be able to identify unsatisfactory guards.
Machine guarding helps prevent serious injuries by protecting individuals in the area of a machine from hazards presented by the operation of the machine. For instance barrier guards can prevent individuals from contacting moving parts.

Machine guarding includes the use of barrier guards, presence sensing devices (e.g. light curtains) and other electronic safety devices.

Don't Use Machines That Aren't Guarded Properly!!!
Two Danger Areas of Every Machine

The location where materials are processed (point-of-operation)

Both Areas Must Be Guarded

The location where machine parts transfer power (power transmission apparatus)
Hazards That Need to be Guarded

- Rotating
- In-going Nip Points
- Transversing
- Reciprocating

- Cutting
- Punching
- Shearing
- Bending
Government standards require that guards be affixed to the machine if it is possible to do so. Hence, the most common method of machine guarding involves the use of barrier guards attached to machines.

All guards must be correctly and securely fitted **BEFORE** operating a machine.

If you suspect a machine is missing a guard then **DO NOT USE IT!** And, report the condition to your supervisor.
Barrier Guards

The most common form of machine guarding.
Fences and other barriers surrounding a machine can be used to guard a machine when guards can't be affixed to the machine.
Barrier guards should be provided with a safety interlock when it is possible to move the guard and reach the danger zone of the machine before the risk due to function of the machine has ceased. The interlocked guard must be designed to:

1. Prevent the start of hazardous machine functions until the guard is closed and locked; and
2. Remain closed and locked until the risk of injury from the hazardous machine functions cease.

Example: The front doors to this mill provide machine guarding and are interlocked with the drive mechanism. The doors have to be closed for the mill to operate.

**NEVER DEFEAT OR BY-PASS AN INTERLOCK!!!**
If you can reach through a guard to the danger point then the machine is not guarded properly – don't use it!!

Use of Mesh for Guards
Use presence sensing devices when barrier guards won't work. Presence sensing devices are interfaced with machine controls to stop dangerous parts of a machine from operating when a danger zone is entered.

Examples:
- Photo-electric light curtains
- Infra-red scanners
- Pressure mats
Machine users must be trained by their supervisor to understand machine hazards, how to safely perform their work and what guarding is necessary for each machine they will operate.

Training records are to be submitted to your department.