

# Machine Guarding

## I PURPOSE

To ensure that any equipment and machinery with a potential to injure people is properly protected in order to guarantee the people's safety.

## 2 SCOPE

This procedure applies to all operating areas, projects, exploration activities and offices, and for all employees and contractors.

## 3 DEFINITIONS

### **Guard**

Any machinery or equipment part designed to prevent person from contacting gears, sprockets, chains, drive, head and take up pulleys, flywheels, couplings, shafts, fan blades, saw blades, and similar moving parts that can cause injury..

## 4 RESPONSIBILITIES

### **Employees / Workers performing the work**

Verify all guards are in place and maintained in good condition during work place and equipment inspection.

Report any missing or substandard guards on the machinery or equipment to your Supervisor immediately.

Lock out equipment before working in or near the equipment with out the guards in place.

### **Maintenance**

Remove guards during maintenance activities only after energy isolation has been completed.

Reinstall guards before putting machinery or equipment back into service.

### **Supervisors**

Shall be familiar with the COMPANY, as well as MSHA, OSHA and State, guarding standards and requirements.

Ensure employees and contractors are familiar with and following the provisions of this standard.

Ensure machinery and equipment not properly guarded is shut down, locked out, and a "Do Not Operate" tag is in place until such time as repairs have been completed.

Line supervisors must perform informal inspections of guards on a routine basis to ensure their adequacy.

## 5 PROCEDURE / GUIDELINE

### General Standards

Work place and equipment inspections shall be used to identify potential guarding problems on a daily basis.

All new or operational equipment must be evaluated by qualified personnel in order to analyze possible location changes of sampling and lubricant supply points and the risks they present. In addition, qualified personnel will assess pulleys, belts, fans and transmission points near machinery to verify the adequacy of guarding.

Guards must be installed on every exposed mobile part, such as: gear trains, transmission belts, chain belts, propeller shafts, collars, coupling flanges, guillotine blades, circular saws, tooth gears, press dies, etc. which could expose persons to the moving parts.

Moving machine parts located at least seven feet from walking and working surfaces shall be considered guarded by location.

Conveyors next to travel ways shall be equipped with emergency stop devices to readily deactivate the drive motor. Hand rails, positioned to prevent persons from falling on or against the conveyor may be used in lieu of emergency stop devices.

Handrails or fencing designed to keep personnel from moving machine parts shall not be crossed or entered into unless the equipment is shut down and locked out according to the COMPANY Energy Isolation standard.

Stationary grinding wheels will be equipped with peripheral hood capable of withstanding the force of a bursting wheel and enclosed not less than 270 degrees of the peripheral wheel. The tool rest shall be adjusted so the rest is no further than 1/8 of an inch from the wheel and the tongue guard, if equipped, is 1/4 of an inch from the wheel.

Portable extension lights and other lights that by their location present a burn or shock hazard to persons shall be guarded.

Whenever hazards to persons working or traveling nearby are created by belt breakage, a guard must be provided to contain the broken belt.

### Guards shall:

Be of substantial construction and material to withstand the vibration, shock, and wear to which they will be subjected during normal operation;

Be secured in place while machinery is being operated, except when necessary testing or making adjustments, which cannot be done without the removal of the guard. Testing and adjustments with out guards in place should be done by properly trained maintenance personnel only;

Have openings not greater than ½ inch,

Not create additional hazards;

Be designed and fabricated, to the extent practical, to such dimensions and weights that one person is able to physically install and remove the individual guard components;

Be designed, installed for the specific machine, OEM whenever possible, and considered a permanent part of the equipment or machinery;

Not have holes cut into them to facilitate lubrication or adjustment, rather the lubrication ports shall be extended beyond the guards;

Not impede exit or entrance routes;

Not be modified except with approval of a qualified engineer;

### **Inspections, Testing and Maintenance**

A formal preventative maintenance program must be in place to ensure machine guards, emergency stops and safety devices are maintained in good work order.

Records of this program, which should include the inspection and maintenance records, must be documented and kept.