Developing and Implementing a Machine Guarding Risk and Reduction Plan

Practical Implications of Machine Guarding Assessments and Implementing Change
Machine Guarding Implementation in Mfg

- Machine Guarding Survey
- Job Safety Analysis
- Training – Operators / Mechanics
- Machine Guarding Daily Inspections
- Follow-up and Communication
- Production Demands, Safety Culture
- Bypass Issues
- Hand Tools
Machine Guarding Survey

- Facility Assessment
  - Inventory - Photos, Machine ID
  - Talk to Operators
- Develop Hierarchy of Risk
  - Full vs. Part Revolution
  - History of Incidents
- Capital Budget
Job Safety Analysis

- Point of Operation
- Variation in part design
- Feeding Mechanism
- Operator controls
- Other factors – layout, traffic
- Risk Value
Training - Machine Operators

- Job Safety Analysis - Review
- Safety Controls - Operation
- Daily Inspections
- Reporting discrepancies, shutting down
Training, Maintenance Mechanics

- Machine Safeguarding Principles
- Elimination of Gaps, Access, Reach-in
- Machine Safeguarding options
  - Interlocks, fixed barriers, two hand control, etc
- Function and Alignment
### Machine Guarding and Safety Device
#### Pre-Shift Function Check and Inspection Record

**WEEK OF:** __________________________

**DEPARTMENT:** _______________________

**MACHINE:** _____________________________

**ASSET (K) #:** ____________________________

Please mark with a “Y” (for yes) or an "N" (for no) in the boxes below

Report all "No" answers immediately to your Supervisor or Lead

### 1. Light Curtain(s):
- [ ] Not Applicable
- Is light curtain in Run mode and active (green light)?
- Do machine operations stop when light curtain field is interrupted?

### 2. Physical Guards/Barriers:
- [ ] Not Applicable
- Are all fixed physical guards/barriers in good condition and securely in place?
- Are all safety switches for removable physical guards working?

### 3. Pedestal Grinder Guarding:
- [ ] Not Applicable
- Are all tongue guards adjusted to no more than 1/4" of the grinding wheel?
- Are all tool rests adjusted to no more than 1/8" of the grinding wheel
- Is chip guard clean and in place?

### 4. Two-Handed Safety Switches:
- [ ] Not Applicable
- Does the machine only operate when both hand or finger switches are actuated simultaneously (within 3 tenths of a second)?

### 5. Other:
- Are all exposed parts of the machine adequately guarded?

**OPERATOR INITIALS:**

Please provide Corrective Action taken and/or Comments for every NO ("N") answer given above in the space below.

**Corrective Action/Comments/Other Safety Concerns:**

*Example:* Talked to Facilities on Thurs 3/14/02 to initiate work order to repair damaged guard rail. Machine shut down until repairs completed

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Supervisor Signature**

**Date**
Follow-up & Communication

- Operator Authority to Shut Down
- Supervisors and Leads
  - Corrective Action
  - Evaluate Similar Equipment
- Repair Materials - Available
- Test and Verify
Production Demands, Safety Culture

- Production Vs. Safety
  - A Balancing Act
  - What’s Normal and Acceptable
- Supervisors and Lead persons
  - Lead by example
  - Disciplinary Action
- Tools instead of hands
Bypass Issues

- Magnetic Interlock Switches
  - Solution: Male/Female
  - Guarding only on front of machine
  - Bystanders
  - Helpful Co-Worker
- Frequent Machine Malfunction
  - Preventive Maintenance
  - Prevent jammed parts
  - Repair/Replace damaged guarding
Hand Tools

- Picks instead of fingers for removing jammed parts
- Tooling/nests for part introduction, feeding into point of operation
Machine Guarding Implementation in Mfg

- **Culture**
  - Norms
  - Roles & Responsibilities
  - Eliminate all hazards

- **Awareness**
  - Training & Communications

- **Systems**
  - Routine Audits
  - Corrective Action & Follow-up
  - Metrics