



**University of Arizona
Machine Guarding & Safeguarding of Machinery Program
Environmental Health & Safety (EHS)
Program Administrator: Director, EHS
Master Program Document**

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1. PURPOSE

This Machine Guarding & Safeguarding of Machinery Program establishes minimum safety requirements for the identification, safeguarding, operation, maintenance, and inspection of machines and mechanical equipment at the University of Arizona (UA). The purpose of this program is to:

- Prevent any and all injuries and fatalities related to unguarded or inadequately guarded machinery
- Establish minimum safeguarding expectations for machine operation, maintenance, setup, and decommissioning
- Define roles and responsibilities for machine owners, supervisors, users, maintenance staff, and EHS
- Standardize inspections, investigations, corrective actions, training, documentation, and oversight
- Ensure compliance with OSHA, applicable consensus standards, and University policies
- Create a framework for continuous improvement in machine safeguarding, reliability, and safety culture

This program is based on, but not limited to:

- 29 CFR 1910 Subpart O – Machinery and Machine Guarding (including 1910.212, 1910.213, 1910.215, 1910.219)
- 29 CFR 1910.147 – The Control of Hazardous Energy (Lockout/Tagout)
- 29 CFR 1910 Subpart I – PPE (as applicable)
- 29 CFR 1910 Subpart S – Electrical (as applicable)
- ANSI B11 Series – Safety of Machinery (as applicable by machine type)
- NFPA 79 – Electrical Standard for Industrial Machinery (where applicable)

2. SCOPE

This program generally applies to:

- All University of Arizona employees (faculty, staff, and student employees) and non-employees who operates, sets up, maintains, cleans, services, repairs, or supervises machinery
- Contractors, subcontractors, and vendors performing work on university property
- Volunteers working in university-sponsored activities
- All University-owned, leased, operated, or controlled facilities



2.1. Covered Populations

This program applies to all individuals who may be exposed to machine-related hazards in University-controlled workplaces, including but not limited to:

- Faculty
- Postdoctoral associates
- Graduate assistants
- Instructional staff
- Staff:
- Student employees
- Temporary employees
- Visiting researchers
- Facilities and maintenance personnel
- Contractors and vendors operating within University-controlled areas

Students in instructional settings may be covered when hazard exposure may occur as part of laboratory, studio, shop, or instructional activities.

Instructional units may provide hazard awareness training relevant to the course materials as approved by EHS.

2.2. Covered Equipment

Examples of covered equipment include (not exhaustive): table saws, band saws, drill presses, grinders, sanders, lathes, milling machines, presses, mixers, conveyors, compactors, shredders, shop fans with exposed blades, belt/chain drives, couplings, rotating shafts, powered rollers, automated lab equipment with pinch points, and similar.

When uncertainty exists about whether a piece of equipment requires guarding or safeguarding, EHS shall be contacted for evaluation and determination. Until assessed, equipment shall be treated as requiring guarding and/or administrative controls to prevent exposure.

2.3. Covered Locations

This program, with potential additional compliance programs, applies to all University of Arizona owned, operated, and leased facilities with machine-related hazards.





3. DEFINITIONS

Machine Guard / Guarding: A physical barrier that prevents contact with hazardous moving parts or contains hazards (chips, sparks). Guards may be fixed, interlocked, adjustable, self-adjusting, or perimeter guards.

Safeguarding Device: A device that reduces risk by preventing, detecting, or stopping exposure (e.g., light curtains, presence-sensing devices, two-hand controls, safety mats, interlocks, emergency stop circuits, braking systems).

Point of Operation: The area on a machine where work is performed on the material (cutting, shaping, forming, boring, grinding, stamping).

In-Running Nip Point: A hazard created when parts rotate toward each other or when a rotating part meets a tangentially moving part (belts/pulleys, rollers, gears).

Power Transmission Apparatus: Mechanical components that transmit energy from the power source to the point of operation (shafts, belts, pulleys, chains, gears, couplings, flywheels).

Competent Person (Machine Safeguarding): An individual capable of identifying existing and predictable machinery hazards and who has authorization to take prompt corrective measures. Competency requires relevant training and documented experience with machine guarding concepts and the applicable equipment types.

Worker / Operator: A person who has been trained, evaluated (where required), and authorized by their supervisor to operate specific equipment within defined limits.

Service / Maintenance Activity: Tasks such as cleaning, unjamming, clearing jams, blade changes, tooling changes, setup, calibration, lubrication, troubleshooting, repair, and any task requiring access to hazardous energy or moving parts.

Hazardous Energy: Electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravitational, or stored energy that can cause injury if unexpectedly



released or if equipment starts up.

Lockout/Tagout (LOTO): Procedures and devices used to control hazardous energy per 29 CFR 1910.147 to prevent unexpected startup or energy release during servicing and maintenance. Procedures can be written by a competent individual, whether in EHS or local to the unit, with reference to all applicable LOTO standards and the machine requirements.

Unit: Any University college, school, unit, program, or other operating unit.

Unit Leader(s): Any person of authority and responsibility, from supervisor to senior university leader, within a Unit.

Workers: Refers to all employees, non-employees, or administrators that are or may be exposed to machine hazards.

Employees: All University employees, including faculty, staff, graduate assistants/associates, and student workers, whether their employment is full-time, part-time, permanent, or temporary.

Non-Employee: All University students, affiliates, associates, volunteers, and interns who are granted status (enrollee, DCC, etc.) by the University, who are participating in a university-sanctioned program to benefit educationally and/or professionally.

Administrative/Other: Any UA affiliated person who does not fit within the Employee or Non-Employee category, such as a vendor providing services.

4. ROLES AND RESPONSIBILITIES

Environmental Health & Safety (EHS)

- Overall administration, management, and enforcement support for this program
- Developing, maintaining, and distributing written program requirements, templates, and tools
- Providing technical support for safeguarding selection (guards/devices, hierarchy of controls)



- Conducting or supporting and documenting hazard evaluations and risk assessments for machinery
- Establishing minimum inspection expectations and audit protocols
- Providing or coordinating training, and maintaining program-level training documentation standards
- Investigating serious incidents, near misses, or systemic safeguarding failures
- Reviewing and approving department-specific machine safeguarding procedures where required
- Supporting procurement guidance for compliant machinery, guarding retrofits, and safety devices
- Maintaining program review cadence and implementing updates based on regulatory changes and lessons learned

Unit Leadership

- Ensuring unit-level compliance with this program
- Designating competent supervisors with machine guarding safety responsibilities
- Supporting any worker, including supervisors, who stop work due to machine guarding or related concerns
- Ensuring budget allocation for safety equipment and training
- Reviewing incident reports and implementing corrective actions
- Participating in annual program review

Supervisors

- Identifying machinery under their control and ensuring inclusion in a machine inventory
- Ensuring machines are guarded before use and that guards are maintained in place and functional
- Ensuring only trained/authorized users operate equipment
- Ensuring service/maintenance activities follow lock out/tag out (LOTO) where applicable
- Ensuring inspections occur on schedule and deficiencies are corrected promptly, and paperwork is maintained for inspection
- Removing unsafe machinery from service immediately when guarding is missing/defeated/damaged



- Ensuring procurement of compliant replacement guards, interlocks, tooling, and PPE
- Coordinating with EHS and vendors for installations, modifications, or high-risk equipment (high-energy, high-speed, history of incidents, frequent use, student access)
- Ensuring documentation is retained as required by this program

Machine Owner / Equipment Custodian

- Each unit shall designate a Machine Owner / Equipment Custodian for each machine or machine group (a Machine Owner may be designated for multiple pieces of equipment/machines) responsible for:
 - Maintaining the machine's safeguarding configuration and documentation (manuals, guarding drawings, inspection records)
 - Ensuring guards and safeguarding devices are not removed, bypassed, or modified without review and written approval from the Machine Owner and EHS
 - Ensuring the machine is evaluated when processes change (new material, new tooling, new task) or for non-routine processes
 - Coordinating service, repair, retrofit, and replacement guarding needs
 - Ensuring machine-specific operating rules, including LOTO requirements, are posted or made readily accessible where required

Workers / Operators

- Being authorized by the Machine Owner and/or a competent person to use any and all equipment to be used
- Responsible for operating only machines they are trained and authorized to use
- Conducting pre-use checks (including guards, emergency stops, and obvious defects)
- Never removing, defeating, or bypassing guards or safety devices unless reviewed and approved in writing by the Machine Owner and EHS
- Stopping work and reporting deficiencies immediately
- Following posted procedures, tool limitations, and PPE requirements
- Using safe work practices (body positioning, push sticks, clamps, correct tooling, chip management)



- Never performing service/maintenance tasks that require access to hazardous moving parts without required controls (including LOTO where applicable)

Maintenance Personnel / Shop Technicians

- Following LOTO requirements and machine-specific energy control procedures
- Verifying guarding is restored and functional after maintenance
- Validating safety devices/interlocks are operational before returning equipment to service
- Documenting repairs that impact safeguarding and notify the Machine Owner and supervisor
- Coordinating with EHS for non-standard modifications or safeguarding changes

Contractors and Vendors

- Providing competent personnel and follow OSHA-compliant safeguarding practices
- Complying with University coordination requirements, including controlled access, barricading, and exposure prevention
- Not removing or defeating University safeguards without written authorization (from the Machine Owner) and an alternative safeguarding plan
- Maintaining safe conditions for University personnel who may be adjacent to their work

Stop-Work and Hazard Abatement Authority

EHS retains the authority to require immediate corrective action where machine guarding hazards present. EHS may require:

- Immediate correction of deficiencies.
- Temporary suspension of operations
- Mandatory retraining
- Supervisor corrective action plans
- Escalation to Unit Leadership

Stop-work authority is exercised procedurally and proportionally and is intended to prevent injury, exposure, regulatory citation, or institutional liability.



Escalation and Accountability Structure

Accountability for safety and compliance follows this escalation structure:
Supervisor → Unit Leadership → Environmental Health & Safety (EHS)

If deficiencies are identified:

- Supervisor is notified and corrective action(s) required.
- If unresolved, corrective action(s) and deadlines are communicated to Unit Leadership.
- If systemic, high-risk, repeated, or unresolved after escalation to Unit Leadership, EHS may intervene directly with authority from their senior leadership

This structured escalation ensures procedural accountability while maintaining institutional oversight.

5. EQUIPMENT IDENTIFICATION AND RISK ASSESSMENT

5.1. Machine Inventory

EHS and units shall maintain a current inventory of machinery, at minimum including:

- Machine name/type, manufacturer, model, serial number
- Location (building/room/shop/lab)
- Department owner and designated Machine Owner/Custodian
- Primary hazards (point of operation, nip points, rotating parts, ejected materials, etc.)
- Safeguarding method(s) in place (guard type, devices, interlocks)
- LOTO applicability and energy sources (if applicable)
- Inspection frequency and last inspection date
- Training/authorization requirements (who may operate)

5.2. Hazard Identification

Hazard identification must evaluate, as applicable:

- Point-of-operation exposures
- Power transmission hazards (belts, pulleys, chains, sprockets, shafts)
- In-running nip points and pinch points
- Crushing/shearing/entanglement hazards
- Flying chips, sparks, or fragments
- Hot surfaces, sharp edges, noise, vibration, and dust



- Unexpected startup and stored energy hazards
- Ergonomic and struck-by hazards related to materials handling

5.3. Risk Assessment and Safeguarding Determination

Safeguarding selection shall follow the hierarchy of controls and, where feasible, recognized consensus standards for the machine category. When risk is elevated (high-energy, high-speed, history of incidents, frequent use, student access), EHS may require a more formal assessment and/or engineered safeguarding upgrades.

6. SAFEGUARDING STRATEGY AND PRE-WORK PLANNING

6.1. Pre-Use Evaluation (New Machines / New Tasks)

Before a new machine is placed into service (or an existing machine is used for a new task), the unit shall ensure:

- Safeguarding is in place and appropriate for intended use
- Machine manuals and guarding requirements are readily available
- Emergency stop(s) are present (as applicable) and tested per the manufacturer instructions and requirements
- Electrical/mechanical integrity checks completed
- Required PPE identified (eye/face, hearing, hand protection as task-appropriate, etc.)
- LOTO requirements identified for service/maintenance activities
- Worker training and authorization completed

6.2. Safeguarding Plan for Modifications / Retrofits

When machines are modified, relocated, or retrofitted:

- Safeguarding must be evaluated and updated as needed
- Interlocks/safety circuits may not be altered without review and written approval from the Machine Owner and EHS
- Units must coordinate with EHS for non-standard safeguarding changes
- Changes must be documented and communicated to affected users

6.3. Work Planning for Non-Routine Tasks



For non-routine tasks (unusual materials, unique setups, special tooling, experimental operations, etc.), the supervisor/Machine Owner shall ensure:

- A task-specific hazard review is conducted and documented (EHS can provide templating and support)
- Safeguarding remains effective for the setup
- Additional controls are implemented as necessary (jigs, fixtures, clamps, barriers, remote operation, reduced speed, etc.)
- Only appropriately skilled/authorized individuals perform the task
- A stop-work expectation is reinforced

7. OPERATIONAL CONTROLS

7.1. General Operating Requirements

The following rules apply to all machinery unless a stricter machine-specific procedure applies:

- Guards and safeguarding devices must be in place and functional before operation
- Guards may not be removed, bypassed, wedged open, taped down, or otherwise defeated
- Loose clothing, jewelry, unsecured hair, and anything else that may pose a “caught in” hazard are prohibited where entanglement risk exists
- Only proper tooling/accessories shall be used, per manufacturer specifications and requirements (correct blades, wheels, guards, tool rests)
- The operator must maintain safe positioning and keep hands clear of hazard zones
- Machines must be shut down and made safe before adjustments, clearing jams, or cleaning
- Housekeeping must control slip/trip hazards and combustible dust accumulation where applicable

7.2. Minimum Guarding Requirements

Safeguards must prevent contact, be secure/durable, not create new hazards, not interfere unreasonably, allow safe servicing or require LOTO, and withstand the environment.

Guard Types (Examples)



Fixed guards; interlocked guards; adjustable/self-adjusting guards; perimeter guards; presence-sensing devices; two-hand controls (where appropriate); etc.

Specific Equipment Expectations (Baseline)

Departments shall ensure machine-specific requirements are met (grinders, saws, belts/chains/shafts, fans, presses/high-energy equipment). Specialized OSHA/ANSI requirements apply; EHS can provide support but units may need to purchase the standards for additional compliance requirement information.

7.3. Pre-Use Check Requirements

Before use, the worker/operator must verify:

- The required guard(s) are present and secure
- Safety devices/interlocks (if present) appear functional and not defeated
- Emergency stop (if present) is accessible and functional (per local procedure)
- Tooling is appropriate and in good condition
- Work area is clear (including floor); lighting is adequate; chips/sparks are controlled
- Required PPE is worn and properly used
- They are properly trained to use this piece of machinery for the intended purpose

7.4. Removal from Service Requirements

Equipment must be immediately removed from service and secured when:

- A required guard is missing, damaged, or ineffective
- A safety device/interlock (including e-stop) is malfunctioning or defeated
- The machine behaves abnormally (unexpected movement, unusual noise, vibration, electrical smell, etc.)
- There is evidence of unauthorized modification
- The task requires exposure that cannot be controlled with available safeguards

The minimum action required is to tag the machine “OUT OF SERVICE – DO NOT USE,” prevent operation, and notify the supervisor/Machine Owner. The Machine Owner or EHS may authorize a return to service.



7.5. Maintenance, Cleaning, and Jam Clearing

If an activity exposes a person to hazardous moving parts or hazardous energy:

- LOTO requirements apply unless reviewed and approved in writing by the Machine Operator and EHS
- Energy must be controlled and verified
- Guards must be reinstalled and verified functional before return to service
- Documentation must be updated and provided to Workers when safeguarding is changed or repaired

This program does not replace LOTO. When servicing/maintenance exposes workers to hazardous energy or moving parts, 29 CFR 1910.147 applies. Whenever more stringent requirements exist between this safety program and others, the more stringent requirements shall apply.

8. TRAINING

8.1. Training Authority and Responsibility

EHS provides, as well as supports unit-driven and provided, machine guarding training programs for the University of Arizona community. Training may be delivered through:

- Direct instruction by EHS personnel
- EHS-approved (via documented train-the-trainer programming) unit-level trainers
- Online training modules created or approved by EHS
- Vendor-provided training, as approved in writing by EHS

8.2. Conditions Requiring Training

Initial Training

All workers must receive machine guarding training for every machine they may work on prior to using that machine. Training can be provided by EHS, unit-level trainer, or vendor and must minimally cover requirements specified below.



Supervisors should receive additional training from EHS or their unit leadership upon assignment of supervisory duties, including assessments, incident reporting obligations, and more

Additional Training

Retraining shall be provided to any previously trained worker when:

- Changes in the workplace render previous training obsolete,
- Changes in the types of controls to be used render previous training obsolete,
- As shown through demonstration (incident, injury, near miss, etc.), potential or known inadequacies are identified in an affected worker's knowledge or use of assigned machine guarding safety controls to indicate that they have not retained the requisite understanding or skill to properly utilize them
- Routine refresher training should be provided to all exposed workers annually and may be required for specific workers at on a more frequent basis

Training Content Requirements

Training must cover, minimally: hazard recognition; guarding purpose/types; no bypass/removal; pre-use checks; safe practices; PPE; when LOTO applies; incident reporting; stop-work authority. All training content must be customized per the machine, manufacturer, and to meet any applicable industry consensus standards (such as ANSI).

9. DOCUMENTATION AND RECORDKEEPING

Required records may include inventory, inspections, corrective actions, maintenance/repair impacting safeguarding, training/authorization, incidents/near misses, audits/annual reviews, and procurement documentation where relevant. EHS will coordinate with units on maintenance of these records, including training and inspections, to ensure records are readily available.

Routine Inspections



Units should perform routine machine safeguarding inspections using a standardized checklist. Inspections verify:

- Guards are present, secure, and effective
- Point-of-operation safeguarding is adequate for typical tasks
- Power transmission guarding is intact
- Interlocks/safeguarding devices are functional and not bypassed
- Emergency stops (if present) are functional and accessible
- Signage and operating rules are posted as required
- Housekeeping and chip/dust controls are adequate

Program Reviews

EHS will conduct periodic program reviews, including but not limited to:

- Documentation review (inventory, inspection records, corrective actions)
- Field verification of safeguards on sampled equipment
- Interviews with supervisors/operators
- Review of incident/near-miss trends
- Verification of training and authorization practices

Program revisions occur when: regulations change, new machinery/technology is introduced, incidents reveal gaps, audits identify systemic issues, or organizational changes affect ownership/supervision/maintenance.



10. REFERENCES

Regulations and Codes

- Occupational Safety and Health Administration (OSHA). 29 CFR 1910 Subpart O – Machinery and Machine Guarding (including 1910.212 General Requirements for All Machines; 1910.213 Woodworking Machinery Requirements; 1910.215 Abrasive Wheel Machinery; 1910.219 Mechanical Power-Transmission Apparatus)
- OSHA. 29 CFR 1910.147 – The Control of Hazardous Energy (Lockout/Tagout)
- OSHA. 29 CFR 1910 Subpart I – Personal Protective Equipment (as applicable to machinery tasks, including hazard assessment and PPE use requirements)
- OSHA. 29 CFR 1910 Subpart S – Electrical (as applicable to machinery, electrical controls, and safe electrical work practices)
- National Fire Protection Association (NFPA). NFPA 79 – Electrical Standard for Industrial Machinery (latest adopted edition as applicable to industrial machinery electrical systems)

Consensus Standards

- American National Standards Institute (ANSI). ANSI B11 Series – Safety of Machinery (as applicable to the specific machinery type and safeguarding method)



11. APPENDICES

The following appendices support implementation, documentation, training, inspection, auditing, and continuous improvement for the University of Arizona Machine Guarding & Safeguarding of Machinery Program. These appendices are integral components of the program and shall be used as applicable by all University departments and University-controlled operations where machinery hazards exist.

11.1. SHOP MACHINE INVENTORY & INSPECTION TEMPLATE

Purpose: Each University of Arizona shop, laboratory, studio, maker space, instructional area, or University-controlled space with machinery hazards shall maintain a current inventory of machinery under its control to support hazard identification, inspections, training/authorization, corrective action tracking, and audits.

Ownership and Accountability: Accountability is assigned **per shop/space** (under common supervision), not per individual machine operator.

[Machine Inventory and Inspection Template for Machine Guarding Program.xlsm](#)



11.2. HIGH-RISK EQUIPMENT QUICK CHECK (TOP 10 MACHINES)

Purpose: Fast verification for common high-risk machine types.

A. Inspection Information

Unit: _____
Shop Name: _____
Building & Room: _____
Machine Type (select):
☐ Table Saw ☐ Band Saw ☐ Drill Press ☐ Abrasive Wheel Grinder
☐ Lathe ☐ Milling Machine ☐ Sander (belt/disc/spindle)
☐ Press (manual/hydraulic/mechanical) ☐ Conveyor/Powered Rollers
☐ Mixer/Shredder/Compactor ☐ Other: _____
Machine ID/Tag #: _____
Date: ____ Inspector: _____

B. Minimum Quick-Check Items (All High-Risk Machines)

- ☐ Manufacturer/OEM guarding present and functional
- ☐ Point-of-operation hazard controlled for typical tasks
- ☐ No evidence of defeated/bypassed guards or interlocks
- ☐ Emergency stop accessible/functional where applicable
- ☐ Operator area clear; stable footing; lighting adequate
- ☐ Required PPE identified and used appropriately

C. Type-Specific Quick Checks

1. Saws (Table/Band)

- ☐ Blade guard present and functional (as applicable to saw type)
- ☐ Riving knife / splitter in place (table saw where applicable)
- ☐ Anti-kickback device functional where applicable
- ☐ Push stick/push block available and used for close cuts
- ☐ Fence/guide in good condition and used properly

2. Abrasive Wheel Grinder

- ☐ Wheel guard present and correctly positioned
- ☐ Tool rest adjusted and secure (within required clearance)
- ☐ Tongue guard/spark guard positioned appropriately
- ☐ Wheel condition acceptable (no cracks; ring test where required)
- ☐ Spark direction controlled; flammables not in path



3. Drill Press

- ☐ Chuck guard or equivalent guarding in place where applicable
- ☐ Work properly clamped/secured (no hand-holding of small parts)
- ☐ Belt/pulley housing guard in place
- ☐ Long hair/clothing secured; gloves use evaluated for entanglement

4. Lathe / Milling Machine

- ☐ Guarding for rotating parts in place (chucks, belts, couplings)
- ☐ Chip control (shielding/brush use; no hand removal)
- ☐ E-stop accessible and functional
- ☐ Work holding secure; tooling properly installed

5. Sanders

- ☐ Guards present; nip points controlled
- ☐ Dust collection/controls functional where applicable
- ☐ Work rest/table secure; no excessive gaps creating pinch points

6. Presses / High-Energy Equipment

- ☐ Point-of-operation safeguarding appropriate (may require specialty review)
- ☐ Two-hand controls / interlocks / barriers functional where applicable
- ☐ Clear "hands out" expectation reinforced; guarding cannot be defeated

7. Conveyors / Powered Rollers

- ☐ In-running nip points guarded
- ☐ Emergency stop pull-cords (if present) functional and accessible
- ☐ Barricades/perimeter guarding in place where exposure exists

D. Findings / Actions

Deficiencies Identified: ☐ No ☐ Yes

If **Yes**, list actions and whether removal from service is required:

Finding: _____

Action: _____

Inspector Signature: _____ Date: _____



11.3. OUT-OF-SERVICE / DO NOT OPERATE TAG REQUIREMENTS

- Tag must be Red, Yellow, or White
- Tag must have grommet and zip tie to secure it to equipment, or other means by which unauthorized removal of the tag is made difficult or discouraged
- Must include the following words (English & Spanish preferred):
 - OUT OF SERVICE – DO NOT USE or,
 - OUT OF SERVICE – DO NOT OPERATE
- Tag must include the following information:
 - Equipment Name/ID
 - Reason
 - Date
 - Name or Contact
 - Phone Number



11.4. AUTHORIZATION & TRAINING RECORD

12. Trainee Name		Date	
Trainer Name		Supervisor Name	
Machine/Equipment Authorized For			
Have all required training topics been covered and the Trainee been provided a copy of the Machine Guarding Written Program?			

Trainee Signature: _____

Supervisor Signature: _____

Trainer Signature: _____



12.1. SAFEGUARDING CHANGE / MODIFICATION REVIEW FORM

Required For: • Equipment modification OR relocation • Guard replacement/redesign • New task/material/tooling introducing new hazards • Incident/near miss involving safeguarding or evidence of bypassing			
Machine/Equipment		Serial #:	
Building #		Room #	
Machine Owner		Supervisor	
Unit Name		Date & Time	
Change Type (check):	☐ Modification ☐ Relocation ☐ Guard replacement/redesign ☐ New task/process ☐ Other: _____		
Reason for change			
	YES	NO	NA
Were hazards re-evaluated and updated in the Machine Inventory?			
Were safeguards re-evaluated and updated in the Machine Inventory?			
Were training needs re-evaluated and all authorized users informed and re-trained?			
Were related LOTO energy control procedures updated?			
Was the e-stop/safety device functional testing completed and verified?			
Supervisor Signature			



Machine Owner Signature	
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12.2. QUICK GUIDE: SHOP SUPERVISORS & MACHINE OWNER

A. Set Up the Shop

- Confirm you are the designated Responsible Person (document locally).
- Confirm any other roles are also designated (Machine Owner(s), Technicians, Supervisor, etc.).
- Create/maintain the shop inventory.
- Create an inspection schedule for all machines.
- Maintain training/authorization tracking.

B. Establish Control

- Designate the Shop Responsible Person (document locally).
- Confirm all machines are inventoried.
- Ensure training and authorization system exists and is used.

D. Preparation for Use

- Confirm training is completed before use.
- Define supervision requirements for the unit and machine.
- Ensure only authorized technicians perform work and/or maintenance.

D. Enforce Safeguarding

- If guards are missing/defeated: remove equipment from service immediately.
- Apply Out-of-Service tag,
- Ensure corrective action is completed and verified before return to use.

E. Approve Authorization

- Approve operators only after training completion and readiness.
- Document authorization and acknowledgement.
- Trigger refresher training/re-authorization as required.

F. Run Inspections

- Gather prior inspection records and open corrective actions.
- Inspect each machine (or machine group) using EHS provided form, or form that meets or exceeds EHS inspection form.
- If high-risk, tag Out-of-Service immediately.



G. Corrective Actions

- Assign corrective actions to the appropriate party (supervisor, maintenance, vendor).
- Set target completion date.
- Verify correction and document closure.
- Confirm guards/safety devices functional before return to service, ensuring on authorized equipment owners and technicians perform work and release equipment for service.

H. Changes/Modifications

- If machine is modified/relocated/guard replaced, ensure it is in proper working condition (including all safeguards) prior to use; remove from service if necessary.
- If servicing exposes hazards: verify LOTO interface.
- Notify affected users of changes and confirm retraining/re-authorization.

I. Communication & Escalation

- If bypassing or repeat issues occur, notify Supervisor and EHS.
- When unsure, pause operation and request EHS review.



12.3. QUICK GUIDE: AUTHORIZED WORKERS & SERVICE TECHNICIANS

A. Before You Start (Every Use)

- Check guard is present and secure.
- Confirm safety devices/interlocks appear functional.
- Confirm emergency stop access (if present).
- Check tooling condition and setup.
- Clear the area; ensure proper lighting.
- Wear PPE required for the task.

B. While Operating

- Keep hands out of hazard zones.
- Use push sticks, clamps, jigs, or fixtures as needed.
- Never override guards or interlocks.
- Stop if anything feels abnormal.

C. If You Find a Problem

- Stop the machine.
- Do not use the equipment.
- Notify supervisor/instructor or Responsible Person.
- If tagged Out-of-Service, do not operate.

D. If You Are Servicing Equipment

- Determine whether the task exposes you to hazardous energy/moving parts.
- If yes, apply LOTO per 1910.147/manufacturer instructions and verify interface requirements.
- Perform work.
- Restore guarding and safety devices exactly as required.
- Function-check safety devices and emergency stop where applicable.
- Notify Responsible Person of any safeguarding change/repair details.
- Do not return equipment to service until safeguards are verified.
- Confirm corrective actions completed.
- Verify the correct guard is installed and secure.
- Verify interlocks/safety devices function.
- Remove Out-of-Service tag only when safe.
- Communicate return-to-service to users and update local records.