ESTVOLD OILFIELD SERVICES

MACHINE GUARDING POLICY

Document Number: EST-HSE-115
Title: Machine Guarding Policy
Revision: 1
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Owner: HSE Department

Policy Control Item	Policy Information
Company	Estvold Oilfield Services
Document Type	Policy / Program Manual / Field Forms / Machine Guarding and Audit Package
Applies To	All employees, supervisors, contractors, machinery, rotating equipment, shops, yards, maintenance areas, customer sites, vehicles, and field operations
Program Intent	Machine guarding compliance, employee protection, equipment safety, hazard recognition, exposure prevention, inspection discipline, corrective action, and continuous improvement
Regulatory Alignment	OSHA machine guarding expectations, rotating equipment safety principles, pinch point protection requirements, lockout/tagout coordination, PPE requirements, and client safety expectations
Revision	Comprehensive V2 - Editable Master
Approval	Management / HSE / Operations

INCLUDED IN THIS PACKAGE

- Expanded Machine Guarding Program manual
- Roles, responsibilities, and leadership accountability expectations
- Machine guarding hazard recognition and exposure prevention guidance
- Rotating equipment, pinch point, coupling, belt, pulley, chain, and shaft protection expectations
- Guard removal authorization and LOTO coordination requirements
- Startup verification, inspection, emergency stop, and interlock review expectations
- Trend analysis, KPIs, audit expectations, and management review
- Stop Work Authority, serious risk escalation, and corrective action framework
- Contractor and third-party guarding expectations
- Comprehensive forms package, logs, and field implementation tools

DOCUMENT CONTROL

Revision	Date	Description of Change	Approved By
0	Initial Release	Original controlled document issue	Management
1	Current Draft	Expanded machine guarding manual and forms package	Management
2	Current Revision	Comprehensive management-system language, implementation requirements, field forms, KPI tracking, and audit tools expanded	Management / HSE / Operations

This document is considered a controlled safety management document. Printed copies are considered uncontrolled unless verified current through the company safety management system or authorized document control location.

DISTRIBUTION AND CONTROL

Controlled copies may be distributed to HSE, operations management, field supervision, maintenance personnel, training coordinators, company shared safety systems, client-required safety documentation platforms, and locations where machinery or rotating equipment exposure may occur.

HOW TO USE THIS MANUAL

- Use Sections 1-26 as the governing machine guarding program standard.
- Use the Supervisor Quick Response Guide during equipment inspections, maintenance planning, guarding deficiencies, and operational changes.
- Use Forms A-L as field-ready documentation tools for guarding assessments, inspections, guard removal, corrective action, and incident review.
- Review machine guarding trends monthly and assign corrective actions with accountable owners and due dates.
- Use Stop Work Authority immediately when guards are missing, rotating equipment is exposed, emergency stops fail, or serious injury potential exists.

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1. PURPOSE AND POLICY STATEMENT

Estvold Oilfield Services is committed to protecting employees, contractors, visitors, and client representatives from hazards associated with machinery, rotating equipment, and moving mechanical components during company operations. Machine-related hazards may include pinch points, rotating equipment exposure, caught-between hazards, entanglement, crush injuries, flying debris, unexpected startup, and unexpected equipment movement.

This program establishes a comprehensive management-system framework for machine guarding, equipment inspection, hazard recognition, maintenance controls, guard removal authorization, startup verification, corrective action tracking, employee involvement, and continuous improvement. No production expectation, operational pressure, or client demand shall take priority over employee health and safety.

2. SCOPE AND APPLICATION

This program applies to all Estvold Oilfield Services employees, temporary workers under company supervision, supervisors, management personnel, contractors, and company-controlled worksites involving machinery or rotating equipment exposure.

The program applies to maintenance activities, fabrication operations, shop operations, rotating equipment, conveyors, drive systems, pumps, grinders, compressors, power transmission systems, fans, belts, chains, pulleys, shafts, couplings, portable equipment operations, and any work activity involving moving mechanical parts.

3. REGULATORY ALIGNMENT AND REFERENCES

This program is written to align with OSHA machine guarding expectations, rotating equipment safety principles, pinch point protection requirements, lockout/tagout expectations, applicable client standards, and company safety management requirements. It is intended to support compliance while providing practical field implementation expectations.

4. DEFINITIONS

Machine guard: A physical barrier, device, shield, cover, or enclosure intended to prevent employee contact with hazardous moving parts.

Pinch point: Any area where body parts may become caught between moving parts, between moving and stationary objects, or between materials and equipment.

Rotating equipment: Machinery containing rotating or moving components capable of causing injury through contact, entanglement, struck-by exposure, or caught-between exposure.

Guard removal authorization: Documented approval and control process used when a guard must be removed for maintenance, inspection, repair, cleaning, or troubleshooting.

5. MACHINE GUARDING HAZARD RECOGNITION

Machine guarding hazards may create severe injury exposure within seconds of contact. Employees shall recognize that exposed rotating shafts, belts, gears, chains, pulleys, couplings, fans, blades, nip points, pinch points, conveyors, and moving mechanical components can cause serious injury even during short-duration or routine tasks.

Employees shall also recognize that guarding hazards may occur when equipment is modified, guards are removed for maintenance, equipment is returned to service without verification, or work is performed near energized or operating machinery.

6. PROGRAM PHILOSOPHY AND CORE PRINCIPLES

The Estvold Oilfield Services Machine Guarding Program is based on the principle that employees shall be protected from moving mechanical parts through effective guarding, safe work planning, equipment inspection, maintenance controls, and disciplined operational decision-making.

Machine guarding shall be treated as a critical exposure control rather than an optional equipment feature. Guards, emergency stops, interlocks, shields, and protective devices shall be maintained, inspected, and respected as part of the company safety management system.

Core Principle	Field Meaning
Guarding before exposure	Employees are protected before operating or working near machinery
Inspect before use	Guards and safety devices are checked before work begins
Control energy for maintenance	LOTO is used when guards are removed or danger zones are entered
Verify before restarting	Equipment is not returned to service until guards are reinstalled and functional
Stop work without delay	Missing guards or exposed moving parts require immediate action

7. ROLES AND RESPONSIBILITIES

Employees are responsible for recognizing machine guarding hazards, reporting damaged or missing guards, using equipment safely, avoiding bypassing safety devices, following lockout/tagout requirements, and stopping unsafe work.

Supervisors are responsible for ensuring machine guarding requirements are maintained, inspections are completed, unsafe equipment is removed from service, guard removal activities are controlled, and employees understand the hazards associated with machinery and rotating equipment.

Management is responsible for supporting resources, equipment repair, training, inspections, corrective action closure, and accountability when guarding deficiencies or repeated equipment concerns are identified.

8. MACHINE GUARDING REQUIREMENTS

Machine guards shall be installed, maintained, and used according to manufacturer requirements and company expectations. Guards shall be designed and maintained to prevent contact with hazardous moving parts, prevent objects or body parts from entering danger zones, and withstand normal operating conditions.

Employees shall not bypass, remove, alter, disable, or defeat machine guards unless authorized under controlled maintenance procedures with hazardous energy properly isolated and verified.

9. ROTATING EQUIPMENT AND PINCH POINT PROTECTION

Rotating equipment, moving parts, belts, chains, couplings, pulleys, gears, shafts, conveyors, pinch points, and nip points shall be guarded or otherwise protected to prevent employee exposure.

Special attention shall be given to equipment that appears low-risk but has exposed rotating components, intermittent motion, stored energy, automatic startup potential, or maintenance access points. Pinch point hazards shall be addressed during task planning, equipment setup, material handling, and maintenance activities.

10. GUARD REMOVAL AND MAINTENANCE EXPECTATIONS

Guard removal shall only occur during authorized maintenance, servicing, inspection, cleaning, troubleshooting, or repair activities. Guard removal shall be planned, documented where required, and coordinated with lockout/tagout or equivalent hazardous energy control requirements before employees are exposed to moving parts.

Equipment shall not be returned to service until guards are reinstalled, secured, inspected, and verified operational. Temporary operation without guarding is prohibited unless approved through a controlled, risk-reviewed process with equivalent protection established.

11. MACHINE INSPECTION AND VERIFICATION REQUIREMENTS

Machines, guards, emergency stops, interlocks, pull cords, shields, covers, barriers, and safety devices shall be inspected regularly for damage, missing components, improper installation, loose hardware, bypassed systems, or operational concerns.

Deficiencies affecting employee protection shall be corrected before operation. Where immediate correction is not possible, equipment shall be removed from service, locked out, tagged, barricaded, or otherwise controlled until the hazard is corrected.

12. EQUIPMENT STARTUP AND OPERATIONAL CONTROLS

Equipment startup activities shall verify that guards are installed properly, access panels are secured, personnel are clear of hazards, controls are functioning correctly, and operational readiness is confirmed. Startup communication shall be clear when multiple employees, contractors, or departments may be affected.

Employees shall not reach around guards, perform adjustments on operating machinery unless specifically designed and authorized, or place themselves in line-of-fire, pinch point, or entanglement exposure zones.

13. EMERGENCY STOPS, INTERLOCKS, AND SAFETY DEVICES

Emergency stops, interlocks, pull cords, two-hand controls, safety gates, guards, and other safety devices shall remain functional and shall not be bypassed, defeated, or disabled. These systems shall be inspected according to operational exposure and manufacturer expectations.

Any failure, bypass, or suspected malfunction of an emergency stop or safety device shall require immediate removal from service until evaluated and corrected.

14. WORKSITE HAZARD ASSESSMENT

Before work begins, supervisors and employees shall evaluate rotating equipment exposure, guard condition, pinch point hazards, maintenance activities, environmental conditions, access restrictions, emergency stop access, startup potential, nearby personnel exposure, and operational communication requirements.

Worksite hazard assessment shall be updated when work conditions change, equipment is modified, guards are removed, maintenance scope changes, or new personnel enter the work area.

15. LOTO COORDINATION AND MAINTENANCE CONTROLS

Machine guarding controls shall be coordinated with lockout/tagout requirements when servicing or maintenance may expose employees to hazardous energy, unexpected startup, stored energy, or moving mechanical parts.

Employees shall not rely on guards alone when work requires body placement into a danger zone. Equipment shall be isolated, stored energy controlled, and zero-energy state verified before maintenance work proceeds.

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16. CONTRACTOR AND THIRD-PARTY EXPECTATIONS

Contractors working on company-controlled sites are expected to comply with machine guarding expectations, lockout/tagout requirements, maintenance controls, and safe equipment operation expectations. Contractor equipment used on company worksites shall be maintained in safe condition and may be inspected or removed from use if guarding deficiencies are identified.

Contractor deficiencies shall be communicated promptly and corrective actions tracked where required.

17. DOCUMENTATION AND RECORDKEEPING

The company shall maintain inspection records, hazard assessments, guard removal authorization records, corrective action records, audit documentation, equipment maintenance documentation, incident review documentation, and training records according to company retention expectations.

18. INCIDENT REPORTING AND INVESTIGATION

Machine guarding incidents, equipment malfunctions, exposed moving parts, pinch point exposure, guard failures, bypassed safety devices, near misses, or unsafe conditions shall be reported immediately.

Incident reviews shall identify contributing factors, environmental conditions, communication issues, supervision concerns, maintenance concerns, equipment design issues, and corrective actions needed to prevent recurrence.

19. STOP WORK AUTHORITY

All employees and contractors have the authority and responsibility to stop work when machine guarding hazards exist, rotating equipment exposure cannot be controlled, emergency stops fail, guards are missing or damaged, or serious injury exposure exists. Employees shall not face retaliation for exercising Stop Work Authority in good faith.

20. TRAINING REQUIREMENTS

Training may include machine guarding expectations, rotating equipment hazards, pinch point recognition, emergency stop operation, maintenance controls, lockout/tagout coordination, equipment inspection expectations, guard removal controls, and Stop Work Authority. Refresher training may be required following incidents, repeated deficiencies, procedure changes, or observed unsafe work.

21. TREND ANALYSIS, KPIs, AND DATA REVIEW

Machine guarding data shall be reviewed periodically to identify recurring deficiencies, equipment types with repeated guard issues, delayed corrective actions, inspection gaps, training needs, and operational trends. Data review should support prevention rather than blame.

Metric	Purpose
Guarding Deficiency Rate	Identifies equipment or departments with repeated guarding issues
Corrective Action Closure	Verifies hazards are corrected in a timely manner
Inspection Completion	Confirms required machine inspections are being performed
Emergency Stop / Interlock Findings	Tracks critical safety device concerns
Incident and Near Miss Trends	Identifies where guarding controls or training need improvement

22. LEADERSHIP AND SUPERVISOR ACCOUNTABILITY

Leadership personnel shall visibly support the Machine Guarding Program by participating in field reviews, removing barriers to correction, supporting maintenance resources, reviewing trends, and reinforcing that guarded equipment shall not be bypassed for production convenience. Supervisors shall verify controls before work begins and shall address repeat deficiencies promptly.

23. AUDITING AND PROGRAM REVIEW

The company shall periodically review machine guarding practices, inspection quality, emergency stop functionality, corrective action completion, incident trends, documentation quality, employee feedback, contractor compliance, and program consistency. Audit findings shall be assigned to accountable owners and tracked through closure.

24. SUPERVISOR QUICK RESPONSE GUIDE

Situation	Immediate Action	Key Documentation / Control
Missing guard identified	Stop equipment operation immediately	Inspection checklist
Rotating equipment exposure identified	Isolate and secure equipment	Hazard assessment
Unauthorized guard removal identified	Stop work and review controls	Guard removal authorization
Emergency stop failure identified	Remove equipment from service	Equipment inspection
Machine guarding incident occurs	Initiate reporting and review	Incident review form

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25. FORMS PACKAGE

The following forms are provided as editable templates. The company may convert these forms into electronic format, fillable PDF, shared drive logs, or safety management software entries as needed.

FORM A - MACHINE GUARDING HAZARD ASSESSMENT FORM

Item	Details / Comments
Date	
Equipment / Machine	
Supervisor	
Rotating Components Present	
Pinch Points Identified	
Guards Installed	
Emergency Stops Verified	
Maintenance Activity Planned	
LOTO Required	
Additional Controls Required	

FORM B - MACHINE GUARDING INSPECTION CHECKLIST

Item	Details / Comments
Guards installed properly	
No exposed rotating parts	
Emergency stops operational	
Interlocks functional	
No visible damage observed	
Warning labels/signage legible	
Equipment safe for operation	
Corrective action required	

FORM C - GUARD REMOVAL AUTHORIZATION FORM

Item	Details / Comments
Date	
Equipment	
Reason for Guard Removal	
LOTO Applied	
Authorized Personnel	
Work Scope Reviewed	
Guard Reinstalled	
Startup Verification Completed	
Supervisor Verification	

FORM D - ROTATING EQUIPMENT INSPECTION CHECKLIST

Item	Details / Comments
Belts / chains guarded	
Couplings guarded	
Shafts guarded	
Pulleys / gears guarded	
Pinch points controlled	
Housekeeping acceptable	
No bypassed devices observed	

FORM E - PINCH POINT EXPOSURE CHECKLIST

Item	Details / Comments
Pinch points identified	
Hands clear of danger zones	
Tools / aids available	
Material handling reviewed	
Communication established	
Line-of-fire exposure controlled	

FORM F - MACHINE MAINTENANCE VERIFICATION FORM

Item	Details / Comments
Equipment isolated	
Stored energy controlled	
Zero energy verified	
Guard removal authorized	
Repair completed	
Guard reinstalled	

Equipment tested before release	

FORM G - SUPERVISOR AUDIT AND OBSERVATION FORM	
Item	**Details / Comments**
Area observed	
Equipment reviewed	
Employee interaction completed	
Guarding condition acceptable	
Unsafe acts / conditions identified	
Corrective actions assigned	

FORM H - CORRECTIVE ACTION TRACKING FORM	
Item	**Details / Comments**
Action ID	
Issue Identified	
Responsible Person	
Due Date	
Interim Control	
Completion Date	
Effectiveness Verified	

FORM I - MACHINE GUARDING INCIDENT REVIEW FORM	
Item	**Details / Comments**
Date / Time	
Equipment involved	
Incident description	
Immediate actions taken	
Contributing factors	
Root cause review	
Corrective actions required	

FORM J - EMERGENCY STOP / INTERLOCK VERIFICATION FORM	
Item	**Details / Comments**
Equipment	
Emergency stop tested	
Interlock tested	
Pull cord tested	
Deficiency identified	
Removed from service	
Supervisor verification	

FORM K - EMPLOYEE TRAINING ACKNOWLEDGMENT	
Item	**Details / Comments**
Employee name	
Training date	
Topics reviewed	
Employee questions answered	
Trainer	
Employee signature	

FORM L - MANAGEMENT REVIEW TRACKING LOG	
Item	**Details / Comments**
Review date	
Trends reviewed	
High-risk findings	
Overdue corrective actions	
Resources needed	
Management sign-off	

26. APPENDICES

APPENDIX A - MACHINE GUARDING REFERENCE SUMMARY

This program is intended to support machine guarding expectations, rotating equipment protection practices, pinch point prevention principles, emergency stop functionality, LOTO coordination, and equipment safety management requirements.

APPENDIX B - ROTATING EQUIPMENT PROTECTION EXPECTATIONS

- Verify guards are installed and secured before operation.
- Control belts, chains, couplings, pulleys, shafts, gears, fans, blades, and other rotating components.
- Confirm emergency stops and interlocks are functional where installed.
- Remove damaged or deficient equipment from service until corrected.
- Review guarding expectations during maintenance planning and pre-task discussion.

APPENDIX C - MAINTENANCE AND GUARD REMOVAL EXPECTATIONS

- Use lockout/tagout when guard removal exposes employees to hazardous energy or moving parts.
- Document guard removal authorization when required.
- Reinstall and verify guards before startup.
- Communicate equipment status during shift change or personnel transition.
- Track corrective actions and verify effectiveness before closeout.