

OSHA Machine Guarding Compliance Guidelines



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Meet Today's Presenter

- More than 35 years of experience in General Industry Compliance
- OSHA 10/30 authorized instructor
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Presentation Overview

- OSHA's Top Ten for 2021
- General Requirements
 - Machine Guarding
 - Control of Hazardous Energy (LOTO)
- The OSHA Amputation NEP
- Myths & Facts
- Current OSHA Citations & Penalties
- OSHA Cooperative Programs
- Q/A



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OSHA 2021 Top Ten Citations

1. Fall Protection: 29 CFR 1926.501 - 5,295 violations
2. Respiratory Protection: 29 CFR 1910.134 - 2,527 violations
3. Ladders: 29 CFR 1926.1053 - 2,026 violations
4. Scaffolding: 29 CFR 1926.451 - 1,948 violations
5. Hazard Communication: 29 CFR 1910.1200 - 1,947 violations
-  6. Lockout/Tagout (Control of Hazardous Energy): 29 CFR 1910.147 - 1,698 violations
7. Fall Protection (Training): 29 CFR 1926.503 - 1,666 violations
8. Eye and Face Protection: 29 CFR 1926.102 - 1,452 violations
9. Powered Industrial Trucks (Forklifts): 29 CFR 1910.178 - 1,420 violations
-  10. Machinery and Machine Guarding: 29 CFR 1910.212) - 1,113 violations

Note: Data through March 2022

Machinery & Machine Guarding

29 CFR 1910.212-213, 217 & 219

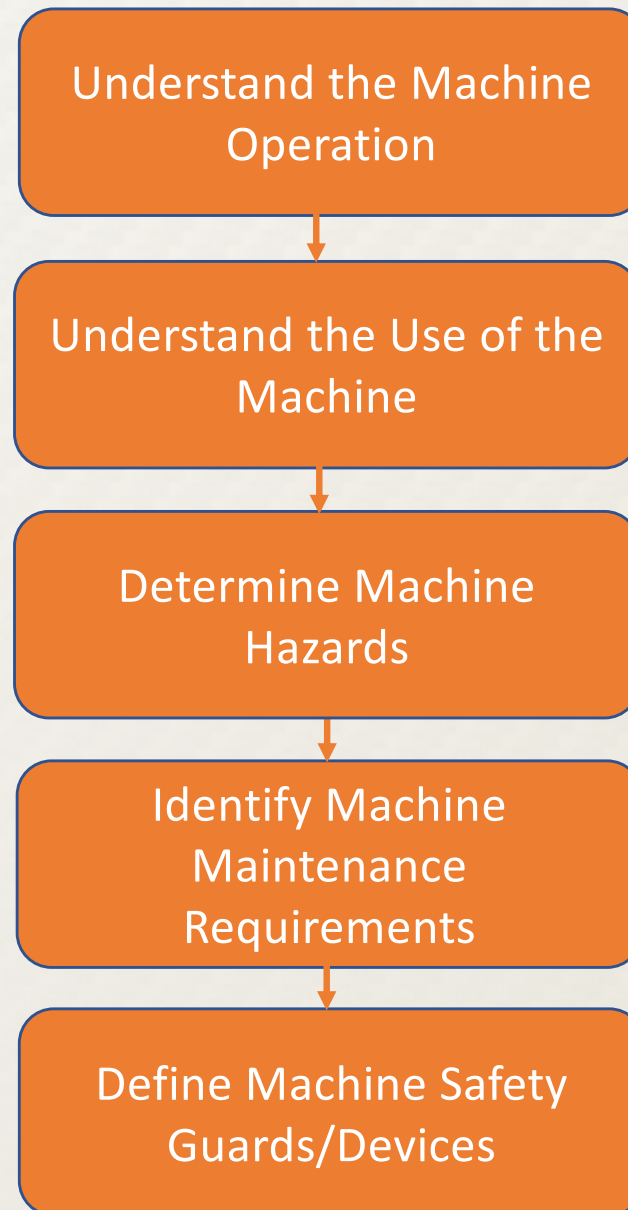
This standard covers guarding of machinery to protect the operator and other employees in the machine area from hazards such as those created by:

- Point of operation
- Ingoing nip points
- Rotating parts
- Flying chips/sparks

Top 3 Sections Cited

1. **29 CFR 1910.212(a)(1):** Types of Guarding. One or more methods should be provided to protect the operator & others.
2. **29 CFR 1910.212(a)(3):** Point of Operation (POO) guarding.
3. **29 CFR 1910.217(h):** Conduct & document employee training and communications.

Machine Risk Assessments



Types of Guarding

Guards provide a physical barrier that prevents access to the hazardous areas. They should be secure & strong and not allow operators to bypass, remove or tamper with them. Guards should not obstruct the operator's view or prevent the operator from safely performing their operation:

1. Fixed
2. Adjustable
3. Self-Adjusting
4. Interlocking Barrier Guards



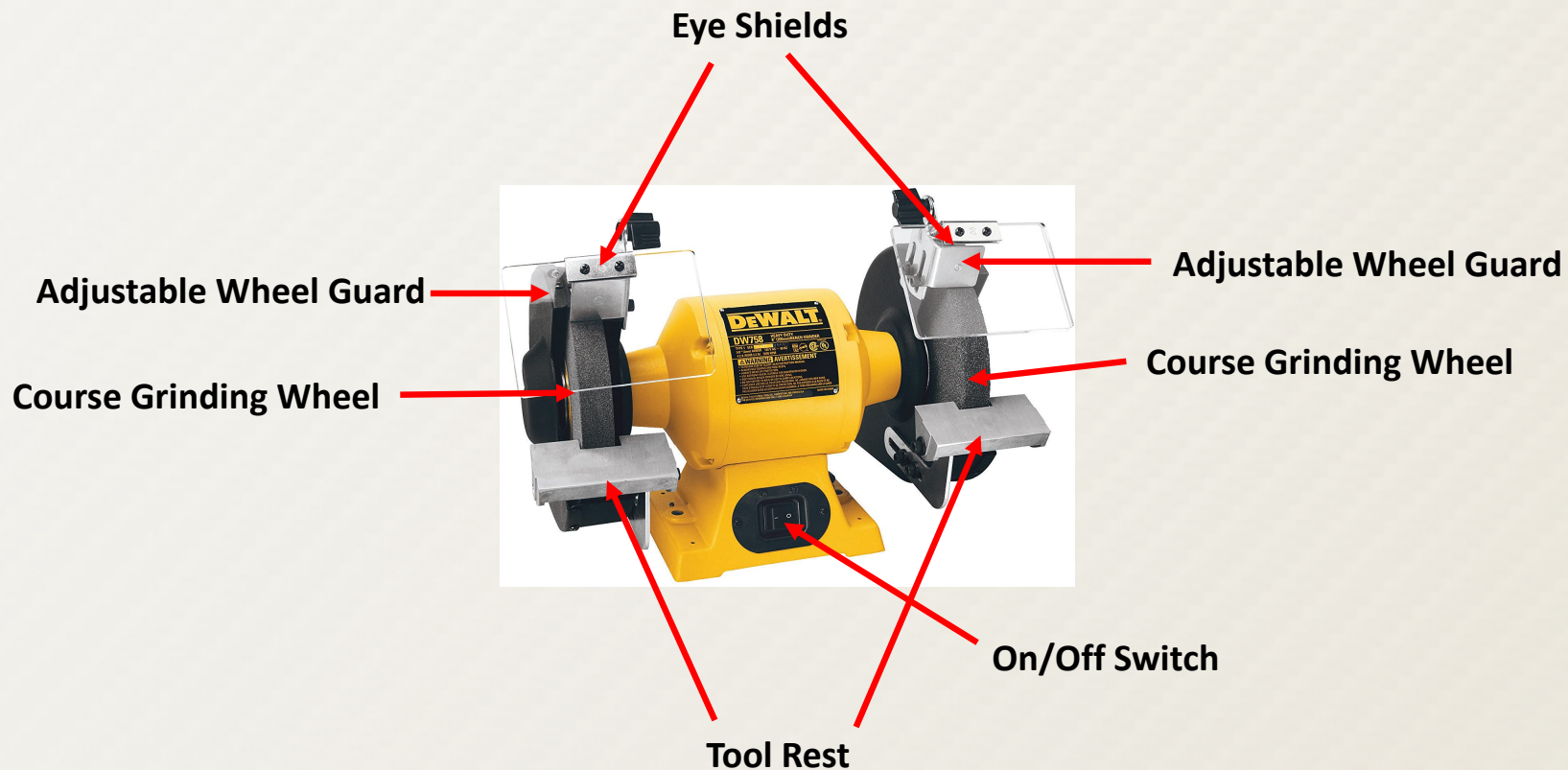
Types of Devices

Devices help prevent contact with the Point of Operation and may replace or supplement guards. Devices can interrupt the normal cycle when an operator's hands are near the POC. They must allow for safe lubrication and maintenance and not create hazards or interference. They should be secure, tamper-resistant and durable:

1. Presence Sensing
2. Pressure Sensing
3. Two-Handed Controls
4. Restraint & Pullback



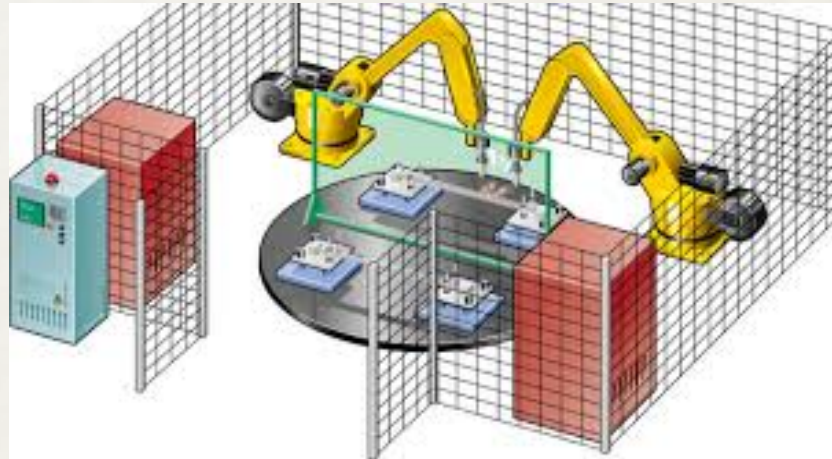
Traditional Bench Grinder



Risk Considerations

- Tool Rests – Rigid & clamped securely. Adjusted to within 1/8” of G/wheel
- Eye Shields - Attached and functional
- Adjustable Wheel Guard – Adjusted to within a 1/4” of the G/wheel
- Conduct a ring test
- Appropriate PPE

Safeguarding Robotics



Guarding Considerations

- References (ANSI/RIA 15.06, ISO 10218 1&2, CSA-Z434)
- Collaborative vs Industrial
 - Types of Guarding
 - Training

Machine Guarding Training

The employer shall train and instruct the operator in the safe method of work before starting work on any equipment or operation covered by this section. The employer shall insure by adequate supervision that correct operating procedures are being followed. It shall also be the responsibility of the employer to insure the original and continuing competence of personnel caring for, inspecting, and maintaining power presses.

1. Prior to Initial Operation
2. Periodic Inspections
3. Equipment Modifications
4. Retraining Requirements
5. Training Certification & Documentation

Machine Guarding Myths & Facts

Myth #1:

New machinery and equipment are always safe because their manufacturers built and sold them fully compliant with current OSHA standards.

Myth #2:

Older machinery and equipment (pre-1971) are “grandfathered” and exempt from OSHA machine guarding standards.

Myth #3:

An e-stop can have a cover as long as it isn’t locked.

Myth #4:

OSHA standards on machine guarding and equipment are guidelines and not mandatory.

National Emphasis Program



OSHA INSTRUCTION

U.S. DEPARTMENT OF LABOR

Occupational Safety and Health Administration

DIRECTIVE NUMBER: CPL 03-00-022

EFFECTIVE DATE: 12/10/2019

SUBJECT: National Emphasis Program on Amputations in Manufacturing Industries

Executive Summary

This Instruction provides updated guidance to the OSHA National, Regional, and Area Offices for continued implementation of its NEP to identify and reduce or eliminate amputation hazards in manufacturing industries. OSHA's enforcement history shows that employees are often injured when machinery or equipment is not properly guarded or maintained. This NEP targets industrial and manufacturing workplaces having machinery and equipment that can potentially cause amputations.

National Emphasis Programs

Current Active Programs
Amputations (2019)
Combustible Dust (2008)
COVID-19 (2021)
Federal Agencies (2008)
Hazardous Machinery (2015)
Hexavalent Chromium (2010)
Lead (2008)
Outdoor & Indoor Heat-Related Hazards (2022)
Primary Metal Industries (2014)
Process Safety Management (2017)
Shipbreaking (2016)
Silica (2008)
Trenching & Excavation (1985)

Severe Injury/Illness Reporting & Recording

Employers must report:

- All work-related fatalities:
Within 8 hours
- Other work-related within 24 hours:
 - In-patient hospitalization
 - **Amputations**
 - Loss of an eye

Note: Failure to report can bring fines up to \$14,502. per instance.

Control of Hazardous Energy (LOTO)

29 CFR 1910.147

This standard outlines the minimum requirements for the control of hazardous energy during servicing and maintenance of machines & equipment.

Top 3 Sections Cited

1. **29 CFR 1910.147(c)(4):** Implement an effective energy control procedure.
2. **29 CFR 1910.147(c)(6):** Conduct periodic inspections.
3. **29 CFR 1910.147(c)(7):** Conduct and document employee training & communications.

Common Energy Sources

- Chemical
- Electrical
- Hydraulic
- Mechanical
- Pneumatic
- Radiation
- Thermal
- Gravitational
- Stored



Shutdown & Startup Procedures

Application of LOTO:

- ID energy sources & shut off
- Notify & brief affected EE's
- Shutdown the equipment
- De-energize/isolate
- Apply LOTO devices
- Release stored energy
- Verify zero energy state
- Perform servicing or maintenance

Release of LOTO:

- Inspect machine / area
- Confirm employees are clear
- Verify controls in neutral
- Remove LOTO devices
- Re-energize
- Notify affected EE's
- Startup

Equipment Requirements

1. Locks
2. Tags
3. Hasps
4. Others



Lockout/Tagout Training

The employer shall provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of energy controls are acquired by employees. The training shall include the following:

1. Energy Control Procedures
2. Authorized, Affected & Other Employees
3. Limitations of Tagout Procedures
4. Periodic Inspections
5. Retraining Requirements
6. Training Certification & Documentation

Lockout/Tagout Myths & Facts

Myth #1:

Only the servicing, or maintenance personnel, need to be trained on Lockout/Tagout procedures.

Myth #2:

Lockout/Tagout locks need not be unique to any other types of locks used in your establishment.

Myth #3:

An authorized person can use an e-stop to perform minor service without lockout.

Myth #4:

If the employee who applied the lock isn't available to remove it, the lock must be cut off.

Current OSHA Citations & Penalties

TYPE OF VIOLATION	MINIMUM PENALTY	MAXIMUM PENALTY
OTHER THAN SERIOUS SERIOUS POSTING REQUIREMENTS	OTS - \$0. per violation Serious - \$946. per violation Posting - \$0. per violation	\$14,502. max. per violation
WILLFUL & REPEAT	\$9,639. per violation	\$145,027. max. per violation
FAILURE TO ABATE	N/A	\$14,502. per day beyond the abatement date.

Bipartisan Budget Act of 2015 – Aug 2016 (Effective Jan 2022)

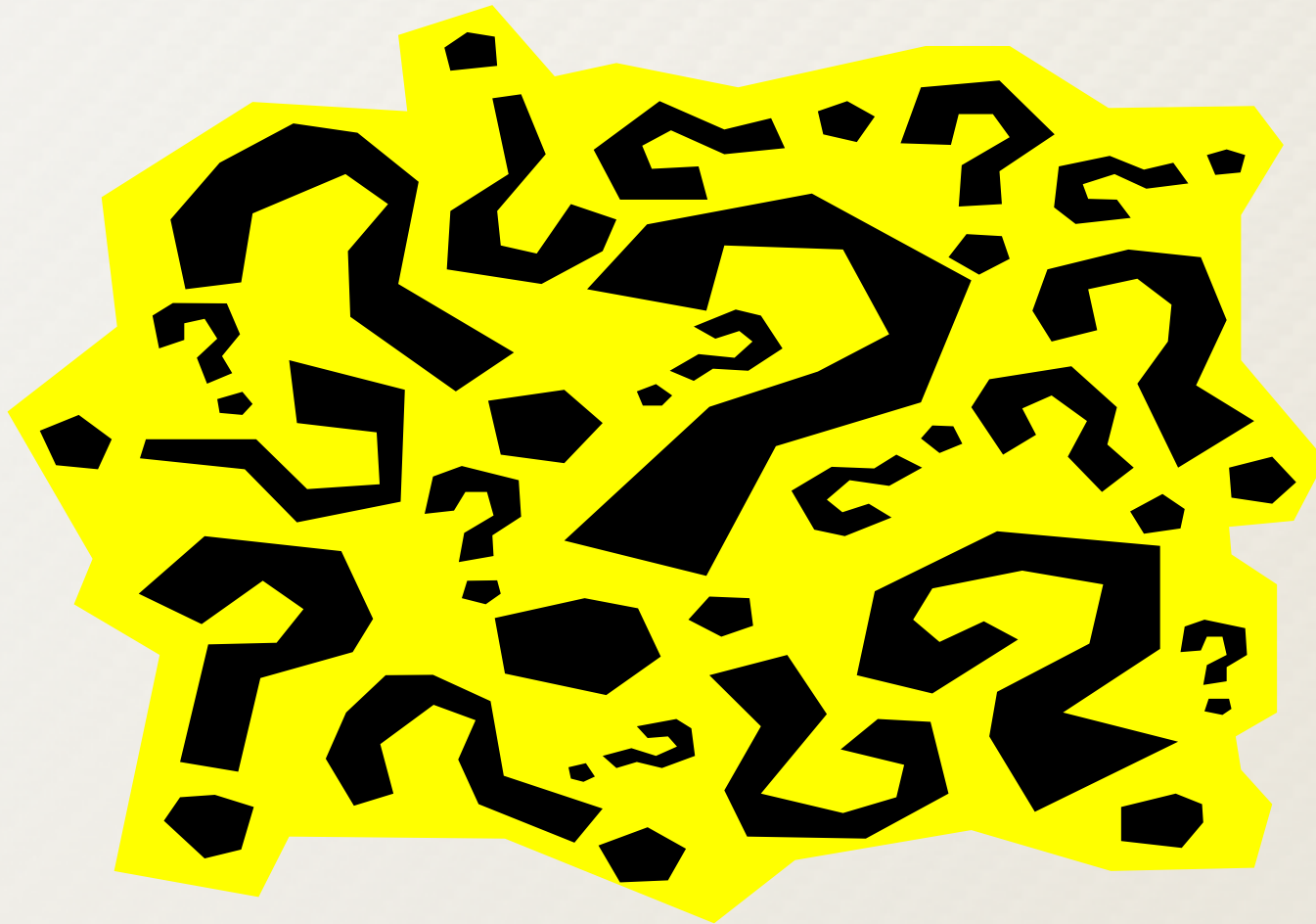
Note: State Plan states that operate their own OSHA Plans are required to adopt maximum penalty levels that are at least as much as federal OSHA.

OSHA's Cooperative Programs

OSHA offers the following cooperative programs under which businesses, labor groups, and other organizations can work cooperatively with the Agency to help prevent fatalities, injuries, and illnesses in the workplace, including heat-related illnesses. If your organization is located in a State with OSHA-approved State Plan, please contact your state agency for information about cooperative programs.



Questions?



Thank You for Your Participation

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