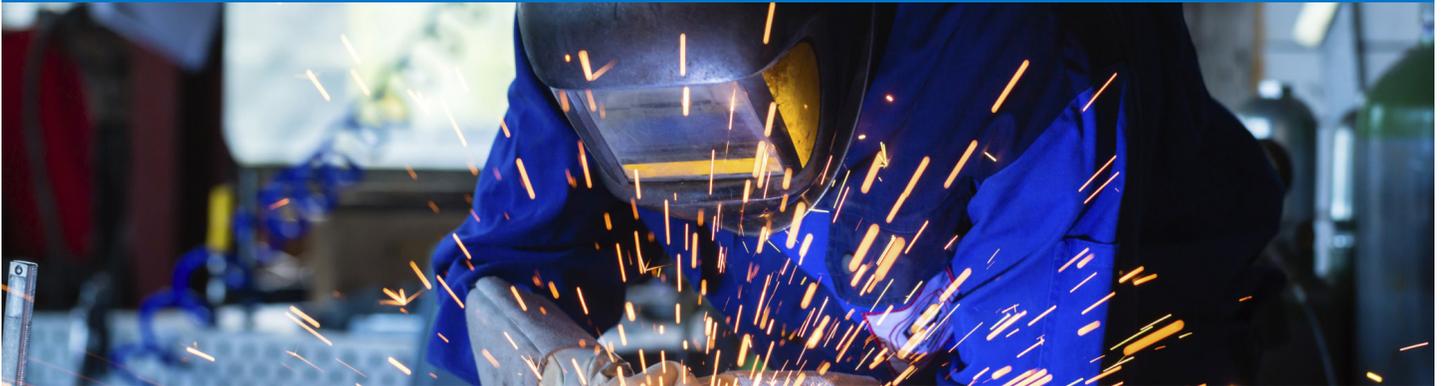


Better Business Starts with Safety. Safety Starts at BWC.



## Injury Prevention for the Manufacturing Industry

The manufacturing industry is an important part of Ohio's economy. Ohio is the third largest state in terms of manufacturing and close to 16 percent of the workforce works in the manufacturing sector. This fact sheet:

- Increases awareness of the primary injury/illness hazards in the manufacturing Industry;
- Offers recommended hazard control measures;
- Provides a partial list of the vast resources available from BWC.

### Industry specific facts

- Each year, approximately 18,000 employees in the manufacturing industry sustain injuries that result in workers' compensation claims.
- Each year, an average of 18 Ohioans in the manufacturing industry lose their lives due to occupational injuries or illnesses.
- Approximately 15 percent of worker's compensation claims result eight or more days away from work and cost an average of \$29,000 per claim.
- Slips, trips and falls and overexertion are the primary causes for 55 percent of all injuries that result in eight or more days away from work.

The manufacturing industry includes establishments engaged in the mechanical, physical or chemical transformation of materials, substances, or components into new products often using power-driven machines and materials-handling equipment.

BWC has a variety of safety and health services that can assist you with addressing hazardous conditions in your workplace. These include On-site Consultation, Safety Intervention Grants, Training and Video Library Services.

Some of the most hazardous work activities in manufacturing include setting up, operating and servicing machinery, working with dangerous chemicals and substances, working near moving machinery and vehicles and moving heavy materials and equipment.



# Injury Prevention for the Manufacturing Industry

Below is one of the primary hazards and/or causes of injuries in the Manufacturing Industry. We recommend the following control measures and BWC resources to help prevent this type of accident from happening in your business. For more information connect with a BWC safety consultant at 1-866-569-7805 or via email at [besafe@ohiobwc.com](mailto:besafe@ohiobwc.com).

Primary hazard/cause:

## Open wounds from handling or striking against sharp objects

Recommended control measures	BWC resources for assistance
<ul style="list-style-type: none"><li>• Minimize sharp edges on parts, containers, machinery and materials.</li><li>• Provide knives and cutters with self-retracting blades.</li><li>• Store knives and sharp objects to protect them from accidental contact.</li><li>• Ensure the use of appropriate, well-fitting gloves and protective clothing.</li></ul>	<p><b>Safety consulting services</b> e.g. Hazard assessment, personal protective equipment (PPE) assessment</p> <p><b>Training courses</b></p> <ul style="list-style-type: none"><li>• Preventing Cuts and Lacerations Online</li></ul> <p><b>Videos</b></p> <ul style="list-style-type: none"><li>• Safety Cutting Tools: Using Cutters Safely #420058</li><li>• PPE: Your Defensive Line #420387</li><li>• Knife Safety in the Workplace #420421</li></ul> <p><b>Safety talks</b></p> <ul style="list-style-type: none"><li>• Preventing Cuts and Lacerations</li><li>• Utility Knife</li></ul> <p><b>Educational guides</b></p> <ul style="list-style-type: none"><li>• What are Hand Tools?</li><li>• What are Power Tools?</li></ul>

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Primary hazard/cause:

## Slips, trips and falls

Recommended control measures	BWC resources for assistance
<ul style="list-style-type: none"><li>• Identify potential slip, trip and fall hazards in and around the facility.</li><li>• Promptly repair and maintain floor surfaces and grounds.</li><li>• Minimize/clearly mark elevation changes and slip, trip and fall hazards.</li><li>• Repair and maintain equipment to prevent leaks and spills.</li><li>• Provide adequate lighting.</li><li>• Provide well-designed ladders, stepstools and work platforms.</li><li>• Insist on good housekeeping.</li></ul>	<p><b>Safety consulting services</b> e.g. Slip/trip/fall hazard assessment, housekeeping evaluation</p> <p><b>Training courses</b></p> <ul style="list-style-type: none"><li>• Preventing Slips/Trips/Falls Online</li><li>• Ladder/Stairway Safety Online</li></ul> <p><b>Videos</b></p> <ul style="list-style-type: none"><li>• Housekeeping (numerous titles)</li><li>• Fall Factors: Understanding and Preventing Slips, Trips and Falls #420430</li><li>• Slips, Trips, Falls: Stranger Than Friction #420025</li><li>• Ladder Safety (numerous titles)</li><li>• Tallest Tool in The Toolbox: Using Ladders Safely #420020</li></ul> <p><b>Safety talks</b></p> <ul style="list-style-type: none"><li>• Walking and Working Surface Safety</li><li>• Portable Ladder Safety</li><li>• Falls</li></ul> <p><b>Educational guides</b></p> <ul style="list-style-type: none"><li>• What is Fall Protection?</li></ul>

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Primary hazard/cause:

## Overexertion from manual materials handling and repetitive hand-intensive

Recommended control measures	BWC resources for assistance
<ul style="list-style-type: none"><li>• Assess manual material handling tasks to determine risks and solutions.</li><li>• Provide and use mechanical lifting assists for heavy objects and loads.</li><li>• Provide adequate space in storage and production areas for easy access and good body positioning.</li><li>• Simplify operations to reduce unnecessary handling.</li><li>• Purchase and package items in easily manageable quantities.</li><li>• Provide well-designed tools, fixtures and equipment.</li><li>• Structure jobs to provide variety in muscle groups used.</li><li>• Get employees involved in job improvements.</li></ul>	<p><b>Ergonomics consulting services</b> e.g. Material handling assessment, tool and workstation design evaluations</p> <p><b>Safety intervention grants</b> e.g. Material handling equipment, improved tools, fixtures, machines</p> <p><b>Training courses</b></p> <ul style="list-style-type: none"><li>• Avoiding Back Trauma Online</li><li>• A five step process for preventing WMSDs in your workplace Online</li><li>• Ergonomics: Basic Principles</li><li>• Ergonomics: Developing an Effective Process</li></ul> <p><b>Videos</b></p> <ul style="list-style-type: none"><li>• Back in Action #440001</li><li>• Ergonomics Awareness #440003</li><li>• Manual Material Handling Safety #430004</li><li>• Better Way to Lift #440088</li><li>• Overexertion: Injury Prevention #440069</li><li>• Principles of Safe Lifting &amp; Carrying #440082</li></ul> <p><b>Safety talks</b></p> <ul style="list-style-type: none"><li>• Back Injuries</li><li>• Mechanical Lifting Devices</li></ul> <p><b>Educational guides</b></p> <ul style="list-style-type: none"><li>• What is Ergonomics?</li><li>• What is Manual Materials Handling?</li><li>• What are Hand Tools?</li><li>• What are Power Tools?</li></ul>

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Primary hazard/cause:

## Getting struck by flying debris/moving objects or materials

Recommended control measures	BWC resources for assistance
<ul style="list-style-type: none"><li>• Properly guard machines and tools.</li><li>• Use screens or partitions to reduce flying debris and particles.</li><li>• Provide and enforce the use of eye and face protection and other PPE.</li><li>• Avoid using mechanically powered vehicles in proximity to workers.</li><li>• Isolate or cordon off areas where struck by hazards exist.</li><li>• Install mirrors at blind intersections.</li><li>• Clearly mark vehicle routes and pedestrian walkways.</li><li>• Use visual and auditory signals to warn of hazardous equipment movement.</li></ul>	<p><b>Safety consulting services</b> e.g. Machine guarding assessment, PPE assessment, job safety analysis</p> <p><b>Training courses</b></p> <ul style="list-style-type: none"><li>• Job Safety Analysis</li><li>• Machine Guarding Basics</li><li>• Personal Protective Equipment Selection Criteria</li></ul> <p><b>Videos</b></p> <ul style="list-style-type: none"><li>• Eye safety (numerous titles)</li><li>• Hand and power tool safety #420332</li><li>• Machine Guarding #420059</li><li>• Forklift Safety (numerous titles)</li><li>• Golf Cart &amp; LSV Safety: On and Off the Course #490006</li><li>• Pedestrian Safety in Industry #420356</li><li>• Walkie Stacker Safety #420908</li><li>• Reach Truck Safety #420022</li><li>• Operating Electric Pallet Jacks Safely #420447</li></ul> <p><b>Safety talks</b></p> <ul style="list-style-type: none"><li>• Safe Forklift Operation</li><li>• Loading Dock Safety</li><li>• Eye Protection</li><li>• Safety Shoes</li><li>• Hard Hats</li></ul> <p><b>Educational guides</b></p> <ul style="list-style-type: none"><li>• What are Powered Industrial Trucks?</li><li>• What is Personal Protective Equipment?</li><li>• What is Eye Safety?</li></ul>

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Primary hazard/cause:

## Getting caught in or between moving parts or objects

### Recommended control measures

- Ensure that all machines and tools are properly guarded.
- Provide adequate working space at machines.
- Lockout/tagout equipment to prevent injuries from intended start-up or energy release.
- Provide well designed handles on carts, containers, and access doors.
- Use visual and auditory signals to warn of hazardous equipment movement.

### BWC resources for assistance

#### Safety consulting services

e.g. Machine guarding assessment

#### Safety intervention grants

e.g. Advanced machine guarding

#### Training courses

- Mechanical Power Press
- Powered Industrial Trucks
- Lockout/Tagout and Safety Related Work Practices
- Advanced Lockout/Tagout

#### Videos

- Machine Guarding (numerous titles)
- Lockout/Tagout (numerous titles)

#### Safety talks

- Machine Guarding: The Hidden Danger
- Control of Hazardous Energy (Lockout/Tagout)

#### Educational guides

- What is Lockout/Tagout?

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Primary hazard/cause:

## Chemical and noise exposure

### Recommended control measures

- Determine employee exposures to noise and chemical hazards.
- Implement control measures to reduce exposure:
  - Enclose/automate contaminant-producing equipment;
  - Deploy local exhaust ventilation to capture air contaminants at the source;
  - Use other techniques (product substitution) to reduce airborne contaminants.
- Implement a hearing conservation program, if needed.
- Provide and enforce the use of personal protective equipment.
- Conduct hazard communication and PPE training.
- Identify all potential confined spaces.
- Establish safe entry and rescue procedures for each space.
- Prohibit unauthorized entry to confined spaces.

### BWC resources for assistance

#### Industrial hygiene consulting services

e.g. Air monitoring, noise monitoring, confined space identification and assessment

#### Safety intervention grants

e.g. Local exhaust ventilation, enclosed bulk material handling equipment, machine enclosures, noise dampening, compressed air silencers

#### Training courses

- Confined Space Assessment & Work
- Hazard Communication
- Health Hazards Awareness and Toxicology Basics
- Noise and Hearing Conservation
- Respiratory Protection
- Personal Protective Equipment Selection Criteria
- Welding and Brazing Safety
- What You Should Know About Combustible Dust

#### Videos

- Chemical Handling Safety: Flammables #490061
- Chemical Handling Safety: Solvents #490063
- Hexavalent Chromium Awareness #490168
- Hazard Communication (numerous titles)
- Respiratory Protection (numerous titles)
- Hearing Conservation (numerous titles)
- Personal Protective Equipment (numerous titles)
- Confined Space Entry: Plan & Prepare #420408

#### Safety talks

- New Hazard Communication Requirements
- Permit Required Confined Spaces
- Chemical Labels
- Exposing an Invisible Killer: Carbon Monoxide
- Working Safely with Chemicals

#### Educational guides

- What is Hazard Communication?
- What is Confined Space?
- What is Personal Protective Equipment?
- What is Respiratory Protection?

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