Lockout-Tagout Awareness Toolbox Talk

WHAT'S AT STAKE?

Lockout/Tagout (LOTO) is a safety procedure used to ensure proper shut-off and prevent the inability to start up machines prior to completion of maintenance or repair work. It is a necessary part of working in industrial settings. These practices are required to protect everyone who works with and around potentially dangerous equipment. For that reason, it is important that training takes place for employees authorized to carry out LOTO procedures as well as employees who will be affected by the use of these practices.

WHAT'S THE DANGER?

Lockout/Tagout (LOTO) is the number one most-cited regulation by OSHA in manufacturing. Further, LOTO ranks among the top 10 for all industries. Almost 95 percent of citations involve improper training for LOTO. Workers injured due to improper LOTO procedures results in 24 days away from work on average.

About 3 million workers in the U.S. are employed to repair or service equipment and machinery. OSHA reports that the number of Lockout/Tagout (LOTO) deaths each year ranges from 150 to 200 people. Additionally, each year about 60,000 LOTO accidents occur. To prevent these accidents from happening, follow planned LOTO procedures.

Lockout Devices hold energy-isolation devices in a safe or "off" position. They provide protection by preventing machines or equipment from becoming energized because they are positive restraints that no one can remove without a key or other unlocking mechanism, or through extraordinary means, such as bolt cutters.

Tagout Devices by contrast, are prominent warning devices that an

authorized employee fastens to energy-isolating devices to warn employees not to reenergize the machine while he or she services or maintains it. Tagout devices are easier to remove and, by themselves, provide employees with less protection than do lockout devices.

HARMFUL EFFECTS OF HAZARDOUS ENERGY

Workers servicing or maintaining machines or equipment may be seriously injured or killed if **Hazardous Energy** is not properly controlled. Injuries resulting from the failure to control hazardous energy during maintenance activities can be serious or fatal! **Injuries may include electrocution, burns, crushing, cutting, lacerating, amputating, or fracturing body parts**, and others.

- A steam valve is automatically turned on burning workers who are repairing a downstream connection in the piping.
- A jammed conveyor system suddenly releases, crushing a worker who is trying to clear the jam.
- Internal wiring on a piece of factory equipment electrically shorts, shocking worker who is repairing the equipment.

Craft workers, electricians, machine operators, and laborers are among the millions of workers who service equipment routinely and face the greatest risk of injury.

HOW TO PROTECT YOURSELF

FIVE IMPORTANT CATEGORIES OF LOTO TRAINING

1. **Maintenance and Testing**

While you are running through training, the team effort allows for all the relevant parties to assess any potential issues with the equipment. It is always a good idea to know what problems you are likely to face when working with machinery, so training can be a perfect time troubleshoot your technology while using the LOTO procedure. As LOTO is about reducing the risks of hazardous energy, it is helpful to know how equipment is working.

Going through the process of demonstrating a LOTO procedure makes you stop and focus. With a more meticulous training assessment where other people are looking on with authorized employees, it can be easier to identify issues. Even with proper shut off procedures, hazards can still crop up when equipment is malfunctioning. You could also have broken LOTO devices causing issues. Training directs focus, and with that, you can anticipate hazards from damaged or improperly functioning equipment.

2. **Increased Familiarity with Relevant Devices**

It is easy to take it for granted that employees will know the right way to use LOTO devices, but when it comes to safety, you never want to rely on assumptions. The best way to know that everyone using the tags and locks correctly is to train everyone on the usage. Not only how things are meant to affix to equipment and machinery but also the mistakes that can be made.

Everyone who is trying to follow the rules thinks they are following the rules. Training allows everyone to check up on one another. This is also very important for getting workers familiar with common misconceptions about the devices. How tags can fall off and the devices that require group lockouts. There may also be certain equipment that is rarely used, so training might be the only opportunity to practice procedure with it before use becomes a necessity.

3. **Improved Issue Identification**

With everyone trained on the expectations and usage of lockout/tagout practices, there will be more people that can tell when something’s not right. A team is only as strong as its weakest link, and sometimes that link can be higher up in the chain. Because daily operations will limit the use of LOTO procedures to authorized workers, training might be the only opportunity affected workers will get to become familiar with the protocols being used for their benefit.

Safety meetings can be significantly improved by having more employees be knowledgeable about the safety expectations of their peers and their superiors. More people can have something to say

about the way procedures are being used and feel more involved and invested in these meetings. Training in this way creates safety nets for human error. Expecting perfection is a great way to keep yourself blind to problems. Anticipate the need for universal oversight, and if the authorized users never have an issue, you can have that fact corroborated throughout the chain of command.

4. **Make the Process Less Daunting**

Anything can seem complicated if you have no experience with it. What training does is demystify the procedures. It allows for questions to be asked and mistakes to be made when they will not be harmful or lead to a tremendous disaster. But along with making those using the LOTO procedures comfortable with using them, it can also make supervisors or at ease about inspections and general safety.

LOTO inspections should take place once a year, and when training has not taken place effectively, everyone can be rather hesitant or stressed out about the processes. Instead of waiting for an assessment to tell you that mistakes have been made consistently or processes have been misunderstood, training can sort these issues out to avoid any type of post or pre-assessment unpleasantness.

5. **Safety Plan Refinement**

Training with safety gets everyone thinking about safety. While training with LOTO procedures you might find that you are unwittingly violating an OSHA requirement. Going around to simulate a practice LOTO inspection can double as a general practice safety inspection. Practice serves as a great reminder of what is expected in terms of safety.

You can also use training to find out what types of issues crew members are having when they use LOTO devices or procedures. If there is an issue with keys breaking off in locks, slowing down padlock removal or generally creating the problem of constantly replacing lockout equipment, you can work out procedures for when existing procedures go awry. Tags could be falling off all the time and require the use of secondary securing. Whatever the issue

is with the plans you have, you can find them by training.

LOCKOUT PROGRAM RESPONSIBILITIES

Management is responsible to:

- Draft, periodically reviewing, and updating the written program.
- Identify the employees, machines, equipment, and processes included in the program.
- Provide the necessary protective equipment, hardware and appliances.
- Monitor and measure conformance with the program.

Supervisors are responsible to:

- Distribute protective equipment, hardware, and any appliance; and ensuring its proper use by employees.
- Make sure that equipment-specific procedures are established for the machines, equipment and processes in their area.
- Make sure that only properly trained employees perform service or maintenance that require lockout.
- Make sure that employees under their supervision follow the established lockout procedures where required.

Authorized individuals are responsible to:

- Follow the procedures that have been developed.
- Report any problems associated with those procedures, the equipment, or the process of locking and tagging out.

FINAL WORD

The test for lockout – tagout procedures is to control hazardous energy while servicing or performing maintenance or machinery or other equipment. Types of hazardous energy included electrical, hydraulic, mechanical, pneumatic, gravitational, chemical and thermal.

Machine Guarding Toolbox Talk

WHAT'S AT STAKE?

Manufacturers design their machines to protect operators from coming into contact with hazardous parts. Despite this, machines cause more than 18,000 injuries—including amputations, lacerations, and crushing injuries—in the United States each year. Many of these injuries were caused by unsafe operation or improper maintenance. **Machine guards**, or barriers between the operator and dangerous parts, are one of the most common strategies that manufacturers use to make their tools safer.

WHAT'S THE DANGER?

Crushed hands and arms, severed fingers, blindness – the list of possible machinery-related injuries is as long as it is horrifying. There seem to be as many hazards created by moving machine parts as there are types of machines. Safeguards are essential for protecting workers from needless and preventable injuries.

A good rule to remember is: Any machine part, function, or process which may cause injury must be safeguarded. When the operation of a machine or accidental contact with it can injure the operator or others in the vicinity, the hazards must be either controlled or eliminated.

HAZARDOUS MECHANICAL MOTIONS AND ACTIONS

A wide variety of mechanical motions and actions may present hazards to the worker. These can include the movement of **rotating members, reciprocating arms, moving belts, meshing gears, cutting teeth, and any parts that impact or shear**. These different types of hazardous mechanical motions and actions are basic in varying

combinations to nearly all machines, and recognizing them is the first step toward protecting workers from the danger they present.

The basic types of hazardous mechanical motions and actions are:

Motions

- rotating (including in-running nip points)
- reciprocating
- transversing

Actions

- cutting
- punching
- shearing
- bending

Motions

Rotating motion can be dangerous; even smooth, slowly rotating shafts can grip clothing, and through mere skin contact force an arm or hand into a dangerous position. Injuries due to contact with rotating parts can be severe.

Collars, couplings, cams, clutches, flywheels, shaft ends, spindles, meshing gears, and horizontal or vertical shafting are some examples of common rotating mechanisms which may be hazardous. The danger increases when projections such as set screws, bolts, nicks, abrasions, and projecting keys or set screws are exposed on rotating parts.

NON – MECHANICAL HAZARDS

Non-mechanical hazards that can injure machine operators or personnel working in the vicinity of machinery. These hazards include flying splinters, chips or debris; splashes, sparks or sprays that are created when the machine is operating. These hazards can be prevented through the use of machine guarding and wearing/use of required personal protective equipment (PPE).

HOW TO PROTECT YOURSELF

MACHINE GUARDS

There are several different types of **machine guards**. Guards are materials that keep workers from having direct contact with moving parts and other dangerous areas of a machine. Some guards also protect workers from shavings, flying shards or metal sparks created by working machines. The Occupational Safety and Health Administration (OSHA) requires any machine part that could cause injury to be guarded. Guard design and material will vary from machine to machine and from tool to tool.

Fixed Guards

Fixed guards are permanently attached to the machine or tool, don’t have any moving parts, and can’t be moved while the machine is in use. They’re most often used to enclose the point of operation, or other hazards that the operator doesn’t need to interact with, like fan blades or flywheels. Because fixed guards are permanent features of the machine, they must be disassembled and removed to perform any kind of adjustment or maintenance.

Adjustable Guards

Adjustable guards, like fixed guards, are permanent, but they can be adjusted to allow the machine to handle different sizes of material. They must be manually adjusted and locked into place, so all employees who will operate adjustable guards must be trained on their use. If improperly adjusted or locked, adjustable guards can fail to prevent contact with moving parts, causing serious or even fatal injury.

Self-Adjusting Guards

Self-adjusting guards serve the same purpose as adjustable guards, but automatically adapt to the size of the material. When the machine is at rest, these guards sit all the way down. When the machine is in use, the operator feeds material into the machine, which opens the guard just enough to let the material in. These

guards are commonly found on table saws and woodworking tools.

Interlocking Guards

Interlocking guards, also known as barrier guards, automatically shut off or disengage the power source when the guard is open or removed. These are particularly useful in situations where operators need to be able to open the guard or access the guarded parts of the machine, such as when clearing jams. These guards allow safe access to interior parts of the machine without requiring a total disassembly. However, they can be easy to open on accident and require careful adjustment and maintenance.

Requirements for Guards

- **Prevent contact**

The guard must prevent hands, arms, and any other part of a operator's body from making contact with dangerous moving parts.

- **Secure**
  Operators should not be able to easily remove or tamper with the guard. Guards and safety devices should be made of durable material that will withstand the conditions of normal use. They must be firmly secured to the machine.
- **Protect from falling objects**

The guard should ensure that no objects can fall into moving parts.

- **Create no new hazards**

A guard cannot create a hazard such as a shear point, a jagged edge, or an unfinished surface that could cause a laceration.

- **Create no interference**

Any guard that prevents the operator from performing the job quickly and comfortably might soon be overridden or disregarded.

- **Allow safe lubrication**

If possible, operators should be able to lubricate the machine

without removing the guards.

Training Requirements:

Instruction in the safe use and care of machines and supervised on-the-job training are essential in preventing injuries. Only trained employees/students should operate machinery.

Training should include:

- Review of safety measures such as: knowing the hazards in the work area, including machine-specific hazards; machine operating procedures; lockout / tagout procedures; and safe work practices such as the buddy system.
- The purpose and proper use of machine safeguards.
- All procedures for responding to safeguarding problems such as immediately reporting unsafe conditions such as missing or damaged guards and violations of safe operating practices to supervisors.

FINAL WORD

Crushed hands and arms, severed fingers, blinders are just a few of terrifying machinery related injuries. The safety rule to remember: any part of the machine, function, or process which may cause injury must be safeguarded.

Means of Egress Toolbox Talk

WHAT'S AT STAKE?

MEANS OF EGRESS DEFINITION:

A continuous and clear path from any occupied portion of a

building to a public way, such as an outdoor sidewalk. A means of egress consists of three parts:

1. **The exit access –** path within the building that leads to an exit
2. **The exit –** doors to the outside, enclosed exit stairways, and horizontal exits
3. **The exit discharge –** the route from the exit to the public way

Part 1: The Exit Access

When the IBC talks about "accessible," it means that somebody in a wheelchair can use whatever *thing* they are referring to. Therefore, an "accessible space" means that a person in a wheelchair can enter and exit that space via an "accessible means of egress" (i.e. walkway, ramp, or elevator).

Accessible spaces must have two accessible means of egress, and they are typically required to be no less than 36″ wide.

For Non-accessible spaces, which are floors above or below the ground floor, the accessible pathway must lead to an exit stairway, elevator, or horizontal exit. These areas serve as an Area of Refuge where emergency responders will come to help people in wheelchairs.

Part 2: The Exit

The exit consists of an elevator with standby power or exit stairway and the exit door on the ground floor.

Part 3: The Exit Discharge

The exit discharge consists of either an accessible route, such as an ADA ramp or walkway, or a stair and platform with a refuge area.

Another commonly confused word is "egress."

Egress is another word for "exit", and is used in building code to refer to the means by which somebody can exit a building. For

example, a fire escape is defined as a “means of egress” because that’s how somebody can get out of a building if there was an emergency. Most states and townships have building code that requires means of egress on each floor.

WHAT’S THE DANGER?

Slips, Trips and Falls

All roadways, paths, stairs, steps, etc. must be maintained in good condition and must not subject employees to risks to their health or safety. They must be free from **slipping and tripping** hazards and suitable arrangements must be in place to prevent falls.

The most likely injury at places of access and egress to the site are those associated with **slips and trips**. The principal control is the provision and maintenance of suitable surfaces. For an entrance into an existing building undergoing refurbishment, barrier matting can prevent floors from getting wet and slippery. In wet conditions staff must either wipe their feet or the mat will need to be large enough to take approximately seven or eight paces to traverse. Every effort should be made to prevent movement of the matting so careful selection is essential.

HEIGHT

In the context of access and egress, **Principal Hazards** from working at height include:

- items dropped or falling from buildings and scaffolds at the boundaries and entrances to a site
- the placement of ladders and scaffolding blocking or impeding access.

HOW TO PROTECT YOURSELF

General Safety Regime

Interior: Buildings/Structures

Recommendations

The condition of all walkways, roadways, staircases, steps, etc. be checked regularly, with suitable records kept. Such checks should form part of the active monitoring regime of the occupier of the premises. Checks should include visual examination of the ground for defects, wear and slipping and tripping hazards as well as checks on the operation and adequacy of the lighting and the condition of handrails, warning notices, etc. All defects must be report and effective repairs undertaken by a competent person.

Poor access/egress may lead to workplace accidents – Floors

About a third of all workplace accidents arise from slips, trips and falls. Many of these accidents are due to poor housekeeping, but others arise from poor conditions, such as defects in the floor, poor lighting and spillages. The **Workplace, (Health, Safety and Welfare) Regulations 1992,** require that every floor in a workplace shall be of a construction such that the floor is suitable for the purpose for which it is used. They must also be of sound construction and should have adequate strength and stability taking account of the loads placed on them and the traffic passing over them.

Main Entrances

The main routes into and out of the premises may take many forms, such as: ordinary swing doors, powered revolving doors, push revolving doors, automatic opening doors, etc. Where revolving or automatic doors are provided, alternatives means of access and egress should also be considered.

Doors

Doors and gates must be suitably constructed, and where necessary fitted with appropriate safety devices. In particular, sliding doors and gates must be fitted with devices to prevent them from leaving their tracks, upward opening doors and gates must be fitted with devices to prevent them from falling back, powered doors and gates must have suitable and effective means to prevent trapping type injuries and must be able to be operated manually

unless they open automatically during a power failure, and doors and gates which are capable of being opened from either direction (swing doors, etc) must provide a clear view of both sides when closed.

Staircases, Landings and Corridors

Staircases should be in good condition, ideally with handrails on both sides of the staircase. The staircases, landings and corridors should be well lit, free from obstructions and slipping and tripping hazards.

Where there are holes in the floor, suitable arrangements must be made taken against accidents (to prevent people from being injured as a consequence of the holes) until such time as they can be made good.

Ramped Pedestrian Access

Ramped pedestrian access (especially when provided for disabled persons) should provide safe and secure access and egress.

Lifts and Lift Motor Rooms

Passenger lifts should be tested and inspected by a competent person at least once every six months although this frequency may be reduced to once in every twelve months for goods lifts that are not used to transport people.

Suitable arrangements should be made for the servicing and maintenance of lifts and for the rescue of people trapped due to lift failure. Lifts should be fitted with a suitable means of raising the alarm. Lift motor rooms should be clearly identified and should be kept locked and should only be accessed by competent persons (such as lift engineers).

Fixed Vertical Ladders, Etc

Fixed vertical ladders are not usually acceptable as a means of access to a work area, although there are several obvious exceptions.

Fixed ladders should not be provided as a means of access in circumstances where it would be practical to install a staircase. Access between floors should not normally be by way of ladders (or steep stairs), although these may be used where a conventional staircase cannot be accommodated. It should be noted that stairs are much safer than ladders; especially when loads are to be carried.

External Areas and Building Façade

The external areas of the premises should be inspected regularly, including checks on the condition of the building façade and all structure attached to the building, such as lights, aerials, CCTV cameras, flagpoles, etc. Similarly, checks should be carried out for all external areas, including car parking areas, roads and footpaths, fencing, lighting, etc. Any defects should be addressed and made safe.

Fire Escape Routes

Fire escape routes must be kept clear and in a good state of repair. In some instances, these may include external metal staircases and even over the roof escape routes that pass into or through other premises.

Active monitoring of premises

It is recommended that the premises are monitored regularly to ensure that all access routes and equipment are in good condition and are free from obstructions and tripping hazards.

FINAL WORD

“Means of Egress” under OSHA data nomenclature is changing to conform to plain understandable English. By so doing, employers, employees and others will better under the obligations of employers and safety and health protections for employees. “Means of egress” will be changed to Exit Routes.

Office Safety Toolbox Talk

WHAT'S AT STAKE?

Office safety is a duty and moral responsibility of every company. The Occupational Safety and Health Administration (OSHA) states office safety as an obligation and that employers must provide a workplace free from serious hazards. Ensuring office health and safety promotes the wellness of both employees and employers and avoids the likelihood of accidents that may result in property damage, injuries or, worse, loss of life.

WHAT'S THE DANGER?

FIVE OF THE COMMON OFFICE HAZARDS:

1. **Slips, Trips and Falls**

Universal slip, trip and fall culprits include unattended spills, wet floors, exposed cords, unstable work surfaces, uneven floors, loose rugs and cluttered areas.

2. **Ergonomic Injuries**

Office workers spend many hours a day seated at a desk, working on a computer, resulting in ergonomic strains and other injuries related to posture and repetitive movement. These types of hazards can be difficult to detect.

3. **Eye Strain**

Spending a large portion of your workday at the computer can cause eyestrain, according to the Mayo Clinic. Eyes may become dry and

irritated, and workers may begin having trouble focusing. Light levels should be suitable for the work task—for instance, manual detail work may require higher levels of lighting, but staring at a computer monitor does not, the NSC said.

4. **Fire Safety**

According to the latest available data, fire departments responded to approximately 17,500 office fires in 2012, which resulted in $643 million in property damage, according to the National Fire Protection Association.

5. **Indoor Air Quality**

The prevalence of poor indoor air quality has contributed to a rise in occupational asthma and other respiratory disorders, chemical sensitivity and allergies, according to the NSC. Some of the reasons for poor air quality are inadequate ventilation systems; office overcrowding; the presence of cleaning chemicals and pesticides; water damage and mold growth; cubicle design that blocks off air flow to work areas; too much or too little humidity; and poor housekeeping, which leads to dirty work environments.

HOW TO PROTECT YOURSELF

EVALUATE THE OFFICE FOR POTENTIAL HAZARDS

1. Ergonomics

Take a moment to pause and consider how you're sitting. Is your back straight? Are your shoulders hunched over? Can your feet reach the floor? Is your computer monitor or mobile device screen too close or too far away? These inconveniences may seem small on a day-to-day basis, but if you sit hunched over or strain to see your monitor every day for ten years, you could cause serious damage to your body. This can lead to pain, numbness, tingling and even musculoskeletal disorders, or MSDs. MSDs include carpal tunnel, leg numbness, and chronic pain in the neck, back or shoulders.

To avoid MSDs, you should train your employees to set up their workplaces to provide neutral body positioning. To achieve neutral body positioning, adjust your chair and desk so that you hands, wrists and forearms are straight and parallel to the floor. Then, keep your head level and balanced, your shoulders relaxed and your elbows close to your body. Your knees should be at the same height as your hips and should be parallel to the floor. Your feet should be fully supported by the floor or by a footrest.

2. Physical Layout

A poor office layout can distract employees, decrease productivity and morale, and put employees at risk for trips, falls, bumps and other injuries. Desks should be placed at least three feet apart, and office equipment like computers and printers shouldn’t be placed on the edge of desks. Employees shouldn’t sit beneath an uncovered vent that dumps hot or cold air on them. Filing cabinets should be closed when not in use, and cords should be neatly organized where they don’t present tripping hazards and aren’t rolled over by desk chairs.

3. Lighting

Too much lighting can cause glare on computer screens, which can cause eye fatigue and strain. Employees should never sit with their backs to a window. Too-bright offices can be made dimmer by removing one of the rods in overhead fluorescent lighting. Too-dark offices can be made brighter with task lamps.

4. Air Quality

Poor air quality, caused by construction elsewhere in the building, mold and mildew, or unpleasant odors, can cause respiratory illness, dizziness, and more. You should keep all common areas, especially kitchens, clean and free from spoiled food. If you suspect that your office has mold or mildew problems, you can call a professional to measure the mold levels in each room.

5. Noise Levels

High noise levels can trigger headaches or migraines and distract your employees from their work. This is particularly common in open office environments. To combat this, you can move desks farther apart, turn down the ringers on all phones, require employees to use headphones when listening to audio at their computers, and move noisy office machines away from desks.

6. Storage

When storing boxes of files, papers or other flammable materials, you should be sure to never store them near an ignition source, like a water heater. Stack the heaviest objects or boxes on the bottom and the lightest objects on top. Consider securing storage racks to the wall with a wall anchor so they don’t tip over, and never store objects in walkways where they could present a tripping hazard.

7. Electrical Equipment

About 6,000 office fires are reporting every year in the United States. Many of these are caused by malfunctioning or improperly used electrical equipment. Office fires are particularly dangerous because most office equipment, like chairs and machinery, give off toxic fumes as they burn. Inspect all electrical equipment, like monitors, fax machines, and space heaters, for damaged cords and plugs. Make sure that your employees are not overloading electrical outlets with multiple power strips or plugging multiple extension cords into each other. Train your new and existing employees over what types of electrical equipment are and are not allowed in your workplace.

TOP SEVEN SAFETY TIPS FOR OFFICE WORKERS TO PREVENT WORKPLACE INJURIES

1. Make sure your desk setup is ergonomic

To maintain a neutral posture, your head should be centered over your neck and shoulders, wrists flat and elbows resting comfortably at your side. If your feet won’t touch the ground unless you lean forward, use a footrest.

2. Take regular breaks to get up and move around

Sitting all day puts office workers at risk for numerous health problems. Our warm up and stretching guide gives you easy exercises you can do at work.

3. When it’s slippery due to ice and snow, walk like a penguin when entering and leaving your office

Winter slips and falls in parking lots are extremely common. To avoid them, walk like a penguin by walking flat footed taking short, slow steps. It’s also important to wear sensible footwear and carry only what you can handle.

4. Use a headset for prolonged or frequent phone use

Cradling the phone between your shoulder and ear can cause neck and back pain.

5. Keep your workplace tidy

Clean up spills immediately, keep aisles free of clutter, and tie up or secure cords so they don’t pose a trip hazard.

6. Don’t let electrical cords create a fire risk

Avoid running electrical cords under carpet or through windows and doorways. Also, don’t fasten them with unapproved devices, such as staples.

7. Know your office emergency procedures

Make sure you know what to do in the event of a fire, storm, violent intruder, medical problem or other emergency.

FINAL WORD

Because of the general perception that construction or oilrig work is much more dangerous than office environment work, much more education is needed to dispel that perception. Along with fractures, dislocations, strains, sprains and contusions, in recent years illness has increased among the office worker

population.

Pneumatic Tools Safety Talk

WHAT'S AT STAKE?

Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders.

Pneumatic Tools and Air compressors include:

- Drills
- Grinders
- Impact wrenches
- Nailers
- Riveters
- Sanders
- Saws
- Screwdrivers
- Staplers

WHAT'S THE DANGER?

Workers can be injured by pneumatic power tools when:

- **Attachments or fasteners are not secured properly and fly off the tool.** To control this hazard, make sure your pneumatic impact tools to have safety clips or retainers that prevent dies and tools from being accidentally expelled from the barrel.
- **The operator misses the intended surface, and a nail or staple strikes a bystander.** To prevent this from happening, make sure all handheld pneumatically powered tools used for

driving nails, staples, and similar fasteners that operate at 100 psig (pound-force per square-inch gauge) or more line pressure are equipped with a safety device that prevents the tool from operating unless the muzzle is in contact with a surface.

- **Hoses are accidentally disconnected from the tools.** An unconnected high-pressure hose is a flogging hazard to workers in the area. To prevent this, make sure that all hose connections on pneumatic power tools, including the one at the tool, are secured by a positive locking device to prevent accidental disconnection. Alternately, a ball check device or equivalent can be provided at the air source.
- **Hoses fail.** As when pressurized hoses become disconnected, a hose that fails can whip around wildly, creating a hazard. To prevent damage to hoses, make sure that the manufacturer's safe operating pressures for hoses, pipes, valves, filters, and other fittings are not exceeded. Also, make sure that hoses with greater than a half-inch inside diameter have a safety device to reduce pressure in case of hose failure. Hoses must not be used to lift or lower tools.
- **Tools are accidentally activated.** Workers may trip on air hoses or in some other fashion accidentally activate pneumatic tools. For this reason, pneumatic nailers and staplers must be disconnected from their air supply at the tool when not in use or unattended.

HOW TO PROTECT YOURSELF

There are six important characteristics of Pneumatic Tools that dictate measures to prevent injuries with use of these power tools.

1. **Air pressure**

Electrical tools are powered from a source that provides a well-regulated standard current. However, with air powered tools, air may be delivered at varying pressures and flows. If the pressure/flow exceeds the manufacturer's rating, the tool itself could over-speed, delivering too much torque or other excessive

force. This is hazardous due to the increased possibility of tool or workpiece breakage. Inadequate pressure or flow could also result in an underperforming tool. This may prompt you to apply excessive force in your work, possibly causing tool breakage and injury. Adjust your air pressure to the manufacturer’s rating. Make sure hoses are of the correct inside diameter and are not kinked or crushed. Your compressor and receiver must have enough capacity to deliver air in an amount sufficient to properly operate all attached tools.

2. **Noise Levels**

Pneumatic tools discharge exhaust air at the tool itself or nearby. Frequently, this air is not muffled and therefore pneumatic tools can be much noisier than electric tools. As prolonged exposure to loud noise can damage your hearing, precautions should be taken. Either effective mufflers can be installed on the exhaust, or hearing protection should be worn.

3. **Oil & Air Quality**

The discharge of air can cause concerns. The air feeding the tool may contain oil or antifreeze, discharging contaminated air into the environment around you. Special precautions may be needed in confined or poorly ventilated spaces. If oil-contaminated air discharges near where you grip the tool, your hands may become oily, resulting in a dangerous loss of grip. It helps to frequently wipe both your hands and the tool and to be sure you are not over oiling the tool. To eliminate the hazard, find a replacement tool with a better design.

4. **Air Temperature**

If the air discharges on your hand, you can feel that it is cold. Under certain conditions, the temperature could be low enough to cause frostbite, stiffen your fingers, or even make you more susceptible to certain types of cumulative trauma injuries. Again, this may indicate poor tool design. Gloves may help if they can be worn without creating the additional hazard of becoming caught up in any rotating or reciprocating parts.

5. **Shock Potential**

Air powered tools are not grounded or double insulated so if you contact a live wire while working with a pneumatic tool, you can be shocked. Make certain all electric power in the immediate work area is isolated.

6. **Whipping Hose Danger**

If an electric cord were to break, there is generally not much danger unless you come in contact with the conductors. However, a severed air hose can whip around violently until the air is shut off. You may be injured by the whipping hose or while scrambling to get out of its way. Protect the hose from physical damage. When using quick disconnect type fittings, install the male end of the tool.

USE PNEUMATIC TOOLS SAFELY

- Review the manufacturer’s instruction before using a tool.
- Wear safety glasses or goggles, or a face shield (with safety glasses or goggles), and, where necessary, safety shoes or boots and hearing protection.
- Post warning signs where pneumatic tools are used. Set up screens or shields in areas where nearby workers may be exposed to flying fragments, chips, dust, and excessive noise.
- Ensure that the compressed air supplied to the tool is clean and dry. Dust, moisture, and corrosive fumes can damage a tool. An in-line regulator filter and lubricator increases tool life.
- Keep tools clean and lubricated, and maintain them according to the manufacturers’ instructions.
- Use only the attachments that the manufacturer recommends for the tools you are using.
- Be careful to prevent hands, feet, or body from injury in case the machine slips or the tool breaks.
- Reduce physical fatigue by supporting heavy tools with a counter-balance wherever possible.

HANDLE AIR HOSES PROPERLY

- Use the proper hose and fittings of the correct diameter.
- Use hoses specifically designed to resist abrasion, cutting, crushing and failure from continuous flexing.
- Choose air-supply hoses that have a minimum working pressure rating of 1035 kPa (150 psig) or 150% of the maximum pressure produced in the system, whichever is higher.
- Check hoses regularly for cuts, bulges and abrasions. Tag and replace, if defective.
- Blow out the air line before connecting a tool. Hold hose firmly and blow away from yourself and others.
- Make sure that hose connections fit properly and are equipped with a mechanical means of securing the connection (e.g., chain, wire, or positive locking device).
- Install quick disconnects of a pressure-release type rather than a disengagement type. Attach the male end of the connector to the tool, NOT the hose.
- Do not operate the tool at a pressure above the manufacturer’s rating.
- Turn off the air pressure to hose when not in use or when changing power tools.
- Do not carry a pneumatic tool by its hose.
- Avoid creating trip hazards caused by hoses laid across walkways or curled underfoot.
- Do not use compressed air to blow debris or to clean dirt from clothes.

FINAL WORD

Pneumatic tools offer great versatility and the capability to get a job done quickly and efficiently. As with any energized equipment there is the potential for harm to people or property.

Poison Ivy Toolbox Talk

WHAT’S AT STAKE?

Poison ivy sap is present in nearly every part of the plant, including the leaves, stems, and roots.

The sap contains an oil called urushiol, which is a pale yellow, sticky, oily substance that is also present in poison oak and poison sumac.

WHAT’S THE DANGER?

Poison ivy rash is caused by an allergic reaction to an oily resin called urushiol (u-ROO-she-ol). This oily resin is in the leaves, stems and roots of poison ivy, poison oak and poison sumac.

The rash usually appears within 3 days of the exposure to the oil, but the time frame can vary significantly. The more sensitive a person is to poison ivy, the faster the rash may appear.

Signs of a reaction

- intense itching
- red skin or red streaks
- red bumps, which are called papules
- swelling
- blisters, often developing in lines and oozing
- crusting skin

The rash is not contagious, and it does not spread to other areas of the body. If it appears to be spreading, this will be due to a delayed reaction or further contact with objects that remain contaminated.

HOW TO PROTECT YOURSELF

First comes the itching, then a red rash, and then blisters. These

symptoms of poison ivy, poison oak, and poison sumac can emerge any time from a few hours to several days after exposure to the plant oil found in the sap of these poisonous plants. The culprit: the urushiol oil. **Here are some tips to avoid it.**

Recognize Poison Ivy, Poison Oak, and Poison Sumac

- **Poison Ivy:** Found throughout the United States except Alaska, Hawaii, and parts of the West Coast. Can grow as a vine or small shrub trailing along the ground or climbing on low plants, trees and poles. Each leaf has three glossy leaflets, with smooth or toothed edges. Leaves are reddish in spring, green in summer, and yellow, orange, or red in fall. May have greenish-white flowers and whitish-yellow berries.
- **Poison Oak:** Grows as a low shrub in the Eastern and Southern United States, and in tall clumps or long vines on the Pacific Coast. Fuzzy green leaves in clusters of three are lobed or deeply toothed with rounded tips. May have yellow-white berries.
- **Poison Sumac:** Grows as a tall shrub or small tree in bogs or swamps in the Northeast, Midwest, and parts of the Southeast. Each leaf has clusters of seven to 13 smooth-edged leaflets. Leaves are orange in spring, green in summer, and yellow, orange, or red in fall. May have yellow-greenish flowers and whitish-green fruits hang in loose clusters.

Poison Plant Rashes Not Contagious

Poison ivy and other poison plant rashes can’t be spread from person to person. But it is possible to pick up the rash from plant oil that may have stuck to clothing, pets, garden tools, and other items that have come in contact with these plants. The plant oil lingers (sometimes for years) on virtually any surface until it’s washed off with water or rubbing alcohol.

Plant Oil Touches Skin

The rash will occur only where the plant oil has touched the skin,

so a person with poison ivy can’t spread it on the body by scratching. It may seem like the rash is spreading if it appears over time instead of all at once. But this is either because the plant oil is absorbed at different rates on different parts of the body or because of repeated exposure to contaminated objects or plant oil trapped under the fingernails. Even if blisters break, the fluid in the blisters is not plant oil and cannot further spread the rash.

TIPS FOR TREATMENT

Don’t scratch the blisters. Bacteria from under your fingernails can get into them and cause an infection. The rash, blisters, and itch normally disappear in several weeks without any treatment.

You can relieve the itch by:

- Using wet compresses or soaking in cool water.
- Applying over-the-counter (OTC) topical corticosteroid preparations or taking prescription oral corticosteroids.
- Applying topical OTC skin protectants, such as zinc acetate, zinc carbonate, zinc oxide, and calamine dry the oozing and weeping of poison ivy, poison oak, and poison sumac. Protectants such as baking soda or colloidal oatmeal relieve minor irritation and itching. Aluminum acetate is an astringent that relieves rash.

GET MEDICAL HELP IF:

- You have a temperature over 100 degrees Fahrenheit.
- There is pus, soft yellow scabs, or tenderness on the rash.
- The itching gets worse or keeps you awake at night.
- The rash spreads to your eyes, mouth, genital area, or covers more than one-fourth of your skin area.
- The rash is not improving within a few weeks.
- The rash is widespread and severe.
- You have difficulty breathing.

It’s an oil in these plants that causes the rash. By taking some precautions, you may be able to prevent the oil from getting on your skin. Here’s what you can do:

Protect your skin when outdoors: Poison ivy and oak grow in all states, except Alaska and Hawaii. Poison sumac is found in many states. When you'll be in a wooded area or place known to have poisonous plants, you can:

- **Cover up with clothing:** Wear long sleeves, pants, socks, and boots. If you'll be working with plants, wear gloves.
- **Apply an ivy blocker to your skin:** If you know you'll be in an area with lots of underbrush, this can give you an extra layer of protection. It's meant to be used along with long pants, gloves, and other clothing. You'll find these non-prescription products online and in stores.

Wash everything after being outside: After being outdoors in a woody area or a place where poisonous plants may grow, you want to make sure you wash off any oil. To do this, put on a pair of disposable gloves and:

- **Machine-wash the clothing you wore.** This includes hats and gloves. Wash everything in hot water and detergent as soon as you get home. The disposable gloves help you avoid getting oil on your skin. Be sure to wear the gloves while taking off your clothes and putting them in the wash machine.
- **Clean all tools and other equipment by wiping them down with rubbing alcohol or washing them with soap and lots of water.** The oil can remain on a surface for months or years until it's washed off.
- **Bathe pets.** The oil from these plants can stick to their fur.

Take a shower. You'll want to take a lukewarm shower and wash gently. Be sure to wash under your nails and rinse well.

FINAL WORD

Education is key in dealing with poison ivy. Central is to expose two significant misconceptions. The first is poison ivy rash is not spread by weeping blisters and, secondly, poison ivy cannot be spread from person to person (ie) not contagious.

Safety Signage Toolbox Talk

WHAT'S AT STAKE?

Safety signs are one of the main means of communicating health and safety information to employees, contractors, service users and members of the public.

Safety signs should be easy to understand and should also be easy to see and read.

Signs and signals should include:

- fire alarms
- illuminated signs
- hazard signs on chemicals
- fire signage/escape routes
- prohibition notices
- warning signs
- hazard signs

WHAT'S THE DANGER?

SAFETY SIGN COLOURS

Red signs are for prohibition, danger or for alarm. They are round shaped with a black pictogram on a white background and the red edging should be at least 35% of the surface area of the sign.

Yellow or Amber are warning signs used for caution or for taking precautions. They will be triangular in shape with a black pictogram on a yellow background with black edges. The yellow part should be at least 50% of the area of the sign.

Blue signs are for instruction or for information, for example,

wear Personal Protective Equipment (PPE). They are a round shape with a white pictogram on a blue background. The blue part of the sign should be at least 50% of the area of the sign.

Green signs are for emergency escape routes or first aid. They are rectangular in shape with a white pictogram on a green background. The green part of the sign should be at least 50% of the sign.

Red (fire-fighting signs) give instructions for and the location of firefighting equipment. They are rectangular in shape with a white pictogram on a red background. The red part of the sign should be at least 50% of the sign.

Safety signs also encompass **NOTICE** signs as well as Safety Instruction signs and keep your workers well-informed. These types of signs will alert workers of where first aid kits are, the locations of emergency eyewash stations, and otherwise give information in a clear and concise manner. ANSI has included these signs to their Z535 standard.

While many signs are mandatory signs to have in the workplace, adding other types of informational signs can greatly contribute to worker’s safety. Other types of signs that should be considered include:

- **Traffic control signs:** If a facility has vehicle and pedestrian traffic, stop signs, yield signs, and other types of traffic control signs will keep forklifts and pedestrians safe.
- **Prohibition Signs:** Remind people not to smoke, not to enter certain areas, not to use their cell phone, etc. with prohibition signs.
- **Security signs:** These signs help to protect people and property by keeping people out of certain locations.
- **Office Signs:** Every facility, even a typical office, has a need for safety signs. Signs used for office purposes often provide directions or instructions regarding tasks.

HOW TO PROTECT YOURSELF

Employers have a duty to use signs to warn workers, contractors and visitors about hazards. Additionally, safety signs reinforce training, meet safety compliance regulations and provide visitors with legally adequate warning, protecting your company from liability.

One of the easiest ways to warn everyone of **hazards** is to follow **safety sign and marking requirements.**

Here is an overview of some key steps in meeting requirements set by OSHA and updated regulations:

Assessment

It’s important to properly assess how well signs are used at your worksite. Walk through the workplace and note all hazards as well as the location of existing safety posters, signs, tags and markings.

Design

Before deciding on your signs, you need to look through the regulations concerning the specific shape, color and design of safety signs and note all the information you require to be compliant.

- Red is for danger tags that are to be used in major hazard situations where an immediate hazard presents a threat of death or serious injury.
- Orange is for warning tags that signify a hazardous situation that, if not avoided, could result in serious injury or death.
- Yellow is for caution tags that are to be used in minor hazard situations where a potential hazard or unsafe practice presents a lesser threat of an injury.
- Fluorescent orange or red-orange is for biological hazards.

You also need to make sure you understand the difference between different types of signs in order to use them efficiently and

correctly. For example:

- Notice signs provide information about equipment, areas, maintenance, instructions, and directions unrelated to personal injuries.
- General safety signs share information relating to first aid, medical equipment, sanitation and other topics. For example, they can mark emergency exits or eye-wash stations.
- Blue non-hazard signs can cover anything from directions and procedures to marking washrooms. They don't communicate hazards and are purely information-centered.

Wording

Your safety signs should use their message (and symbols) to clearly state the nature of the hazard, the consequence of interacting with it, and instructions on how to avoid it.

Don't forget the size of the letters on your sign. Are they large enough to be read from a safe reading distance? Or in unfavorable conditions? Make sure you signs follow the guidelines regarding the correct size of the letters depending on the circumstances.

Signage Materials

Signs should be made of the right material for your workplace, hazard area and the environmental conditions. Consider these factors:

- What are the environmental conditions in the area where you want to place the sign? Is it indoor or outdoor? What is the temperature?
- What is the sign's fade resistance? Will it fade quicker due to certain factors?
- What are the lighting conditions? Consider whether your signs have to be seen in the dark or under emergency lighting. Are fluorescent or photo luminescent signs a better option?
- Will the signs be regularly cleaned? Are housekeeping solutions going to damage the sign? Will the sign be affected by washdown conditions?

Placement

When affixing and placing the signs in their relevant areas, keep in mind that the signal word **(WARNING, CAUTION, DANGER)** must be readable from at least five feet away (1.52 m). This is because a person reading the sign must enough have time to follow the sign’s instructions safely.

Signs should be placed so that they are easily noticeable and clearly visible. They mustn’t be obstructed from view or create a hazard themselves (such as a warning sign that prevents the reader from seeing the hazard it’s warning against).

Training

Provide training to all employees on the meaning of the signs and tags used in the workplace.

Employees must recognize which signs indicate immediate danger, know the difference between danger and caution signs, and always take proper precautions. Signs might seem clear and understandable, but it’s not enough to put them up and expect everyone to comply. Education and training are a huge part of safety, and if you want to ensure a safe work environment for your workers then training cannot be ignored.

FINAL WORD

Signage might appear to be a minor aspect of safety, but it helps warn workers of hazards so don’t ignore it, do your research and invest in appropriate and OSHA-compliant signs. You’ll be protecting your workers as well as your company.

Snow Removal Safety Talk

WHAT'S AT STAKE?

People who live in Northern climates are used to dealing with the fun and frivolity of snow through sports and outdoor recreational fun. People become acclimated to snow removal whether it is in front of an office building, on a roof, or, on a driveaway.

WHAT'S THE DANGER?

The Occupational Safety and Health Administration (OSHA) urges employers, workers, and general public to be aware of the hazards involved when removing snow from rooftops, in and around commercial/business, public spaces and private property.

Workers who perform these activities (for example, building maintenance workers) may have little experience or training on the **Hazards** of such operations or work.

Significant Hazards

Workers removing snow face other significant hazards in addition to falls from roofs, including:

- Amputations, eye injuries, and other injuries associated with the use of snowblowers and other mechanized equipment.
- Falls from roof – top snow removal operations resulting in fatalities.
- Collapses or tip-overs when using aerial lifts.
- Entrapment and suffocation under falling snow drifts or snow piles.

AVOID OTHER HAZARDS

Exposure to Cold

Exposure to cold can cause injury and illness in workers removing snow. Cold exposure can cause frostbite (freezing in the deep

layers of skin and tissue) and hypothermia (drop of body temperature to less than 95˚F).

Physical exertion

Physical exertion during snow removal can also cause injuries and illnesses. Snow removal can be strenuous, particularly because cold weather can be taxing on the body, and can create the potential for exhaustion, dehydration, back injuries, or heart attacks, and can increase the risk of falls.

AVOID ELECTRICAL HAZARDS

Workers may face electrical hazards such as electrocution and electric shock from power lines or snow removal equipment.

- Use extreme caution when working near power lines. Always treat power lines, wires and other conductors as energized, even if they are down or appear to be insulated.
- Maintain a distance of at least 10 feet from any power line, as required by 1910.333(c)(3).
- Make sure that all electrically powered equipment is grounded (third prong on a three-prong plug is not missing) and includes a ground-fault circuit interrupter (GFCI) in the circuit.
- When using snow rakes, use extendable, nonconductive poles and designate workers as monitors to maintain 10 feet from snow rakes to overhead power lines.

HOW TO PROTECT YOURSELF

ICE PREVENTION / REMOVAL TIPS

- Purchase a good shovel. Lightweight plastic or aluminum coating with nonstick finishes will make your job a lot easier. You may be tempted to get a shovel with a large blade – however, that means you'll be pushing more weight and tire out quicker. A pusher is a great tool for lightweight, fluffy snow removal. You'll want to grab these and have them handy before storms hit.

- Use a melter (magnesium chloride garden sprayer within a few hours before the storm hits. It can help melt snow of 2 inches or less, and keep ice from bonding to the surfaces of your plants.
- Although rock salt is affordable and does work with temperatures above 12 degrees F, it's really hard on grass & shrubs, and can start eating away at concrete. If you're willing to spend a little more, consider a magnesium chloride or calcium chloride salt that are still not good for plants, but cause much less damage.
- Sand or kitty litter will help make walkways easier to maneuver through, and prevent slipping.
- Place a drop cloth or tarp over walkways or steps. This will not only protect the ground and steps, but it will create a simple and quick way to remove the snow and prevent ice from forming!

Removal Tips

- If you have shrubs covered in snow or ice, leave them alone. Don't try to remove the snow and ice – let it melt off naturally. Shaking it off could injure the plants.
- If possible, make sure you are shoveling – even when it's still snowing. The more the snow accumulates, the harder time you'll have cleaning it out of the way. If the sun is shining, shovel down so that the concrete is exposed to the sun, to help prevent ice from forming.
- Door locks, steps, windows and walkways can accumulate ice during a storm. To get rid of the ice safely, pour lukewarm water over the area, then remove the runoff right away. Repeat this until the ice is gone. Don't use hot water, as the temperature difference can cause windows to crack, metal to warp and even eventually crack concrete!
- A leaf blower can double as a snow blower for light snow accumulation on your plants, patio, vehicles and walkway.
- Use the kids! Instead of making snow removal from your driveway and walkways a chore, make it into a game! Have a snowball fight or snowman building contest, where all snow for the activities must come from the walkway and driveway!

Body Strain

Snow removal can be strenuous and can create the potential for exhaustion, dehydration, back injuries or heart attacks. Tips to minimize overexertion for workers include:

- Moving small amounts of snow at a time, especially if snow is wet and heavy.
- Using proper lifting form—keeping the back straight and lifting with the legs.
- Taking frequent breaks and drinking fluids, however, avoiding caffeine or alcohol.

PROTECT PEOPLE ON THE GROUND

Workers standing on the ground must also be protected during snow removal operations.

Employers should mark a safe work zone—keeping people back 10 feet from the point where snow is expected to be blown or fall—and require eye and head protection, especially when removing ice.

Snow removal can be dangerous business, particularly when removing snow and ice from rooftops and other elevated structures.

OSHA's General Duty Clause imposes a duty on employers to protect workers from recognized serious hazards in the workplace, including snow removal from roof and other elevated structures.

THE DUTY OF CARE:

Before the work begins, employers should:

- Plan ahead for safe snow removal from roofs.
- Check the worksite for any hazards.
- Limit when and where workers will be required to go on the roof to remove snow.
- Use snow removal procedures that lower the risk of roof or structure collapse.
- Whenever possible, use engineering controls to clear ice and snow without getting on the roof (use aerial lifts and/or ladders to apply de-icing materials, use snow rakes or drag

lines from ground). Engineering controls protect workers from fall hazards covered by snow and ice.
- Require all employees to follow manufacture instructions for using mechanical equipment safely.

Employers must also:

- Train workers to identify fall and electrical hazards.
- Train workers on appropriate protective equipment, fall prevention, and electrical standards.
- Provide fall protection equipment that is in good working order.
- Train workers to use ladders, aerial lifts and protective equipment per manufacture guidelines.
- Have a plan for rescuing a worker caught by a fall protection system.

FINAL WORD

When conversation swirl around dangerous jobsites, construction, oil rigs, chemical plants come to mind very quickly. Snow removal usually is last in a list of dangerous activities or jobs. But in a cold analysis, snow removal procedures and physical impact on general public and workers has a significant impact. There is much more than “meets the eye” once one investigates the full scope of snow removal domestically, commercially and the health effects.

Snow Thrower Safety Talk

WHAT’S AT STAKE?

A **snow thrower** is single-stage machine, meaning it gathers snow and tosses it out a chute in a single motion. The power generated

by a horizontal spinning auger picks up the snow while also creating the force that expels snow out of a discharge chute, usually to a distance of 15 to 25 feet away.

FUNCTIONALITY

Because they’re smaller and less powerful than snow blowers, snow throwers are better suited to removing light snow accumulations of about eight to nine inches, maximum. The top of the front intake chute on a snow blower is higher than it is on a snow thrower, so snow blowers can tackle deeper drifts and accumulations of 15 inches or more. In addition, small snow throwers are often not self-propelled, which also makes it more difficult for the operator to physically push them in thicker snow accumulations.

WHAT’S THE DANGER?

Snow blowers or throwers are useful, but according to the U.S. Product Consumer Safety Commission, more than 4,000 people visit the emergency room every year due to snow blower injuries.

Fingers/Hands

The most common injury associated with snow blowers involves damage to the fingers and hands due to people trying to unclog the machine with their bare hands. This should be avoided at all times because the revolving parts of the impeller blades can cause serious cuts and even amputation.

Clogging

If the machine clogs, the first step should be to turn it off and disengage the clutch. Give at least 5 minutes for the blades to stop revolving, and use a tool such as a stick or the handle of a broom to unclog the auger or discharge chute.

Know the Snow

Caution should be exercised when directing the discharge chute. Keep the chute out of the path of people passing by and other delicate areas. There is always a risk of hard objects being

trapped in the snow blower and being discharged with a lot of force from the chute, causing damage to other surfaces upon impact.

Weather Dangers

The snow blower should only be operated when there are good light and visibility. Operating the machine in the dark or when it is raining/snowing can lead to **risks** such as **slippery conditions, clogging of the machine, or reduced visibility of oncoming objects.**

HOW TO PROTECT YOURSELF

Snow throwers, are an easy way to keep the snow off your driveway or commercial premises during the winter months. Like any piece of power equipment, snow thrower safety should be a top priority. With these snow throwers tips, you can keep the snow off your premises safely in less time and energy than a shovel.

THE TURN – ON TIPS

- Make sure that you are familiar with all snow thrower controls and their proper operation. Also, you've read the valuable snow thrower safety tips in the operator's manual. It's important to know how to stop the snow thrower and disengage it quickly.
- Never allow children under 14 years of age to operate a snow thrower. Children 14 and over should read and understand the instructions and safe operation practices that are described in the manual. Be sure to go over snow thrower safety with children over 14 before they power on the snow thrower.
- Plan the pattern for your snow thrower to avoid discharge of material towards roads, bystanders, your home and other objects. Thrown objects can cause serious injury.
- Inspect the area where the snow thrower is to be used. Be sure to remove all doormats, newspapers, sticks, boards and other objects which could be tripped over or thrown by the snow thrower auger/impeller.
- For proper snow thrower safety, always wear protective

eyewear during operation. It is also important to use safety equipment while performing an adjustment or repair to protect your eyes.

- Be aware that clothing can become entangled in moving parts of the snow thrower. Do not wear jewelry, long scarves or other loose clothing items while operating a snow thrower.
- For snow throwers with an electric start engine, be sure to use a grounded three-wire extension cord and receptacle.
- To clear gravel or crushed rocks, adjust the snow thrower collector housing height.
- Before starting the snow thrower engine, be sure to disengage all control levers.

OFF AND RUNNING

- Keep snow thrower safety as your goal once the engine is started. Never attempt to make any adjustments or repairs to the snow thrower while the engine is running, except where specifically mentioned in the operator’s manual.
- Create a safety area around the snow thrower to keep bystanders, pets and children away from the equipment. The safety area should be at least 75 feet around the snow thrower while it is in operation. Stop the snow thrower if anyone enters the area.
- Keeping snow thrower safety in mind, exercise caution to avoid slipping or falling. When the snow thrower is in reverse, pay special attention to your footing.
- It will take a moment for the snow thrower to adjust to cold weather. Before clearing snow, let the engine and machine adjust to outdoor temperatures.
- For snow thrower operation safety, do not use a snow thrower on steep slopes. Use extreme caution when clearing snow from mild slopes. If it is snowing hard or there is minimal visibility, do not use the snow thrower.
- When the snow thrower engine is on, never use your hands to clear a clogged chute assembly. Shut off engine and remain behind the handles until all moving parts have stopped before unclogging. Notice that the snow thrower chute clean-out tool is conveniently clipped to the rear of the auger

housing. Use it to safely clean out the snow thrower chute.

FINAL WORD

Each year, hundreds of thousands of people suffer serious damage to their fingers or hands due to the improper handling of snow blowers. Most commonly, the tips of the fingers need to be amputated, so preventing the injury initially is key.

Injuries usually occur when the snow is heavy, wet, or has accumulated several inches. The snow clogs the exit chute of the machine, and the person using the machine tries to unclog this using his/her hand. Unfortunately, the blades still can rotate when the machine is off, and these cut whatever is in their path.

Construction Site Safety Toolbox Talk

WHAT'S AT STAKE?

Construction is a high hazard industry that comprises a wide range of activities involving construction, alteration, and/or repair. Construction workers engage in many activities that may expose them to serious hazards, such as falling from rooftops, unguarded machinery, being struck by heavy construction equipment, electrocutions, silica dust, and asbestos.

WHAT'S THE DANGER?

Nearly 6.5 million people work at approximately 252,000 construction sites across the nation on any given day. The fatal injury rate for the construction industry is higher than the

national average in this category for all industries.

Potential Hazards in Construction

- Falls from heights
- Trench collapse
- Scaffold and ladder collapse
- Electric shock
- arc flash/blast
- Failure and/or improper PPE

HOW TO PROTECT YOURSELF

Prevention/Protection

Potential Hazards abound in the fast revolving, dynamic construction sector. Preventive and precautionary steps must be taken to avoid Hazards that injure and kill workers.

Scaffolding

Hazard: When scaffolds are not erected or used properly, fall hazards can occur. About 2.3 million construction workers frequently work on scaffolds. Protecting these workers from scaffold-related accidents would prevent an estimated 4,500 injuries and 50 fatalities each year.

Solutions:

- Scaffold must be sound, rigid and sufficient to carry its own weight plus four times the maximum intended load without settling or displacement. It must be erected on solid footing.
- Unstable objects, such as barrels, boxes, loose bricks or concrete blocks must not be used to support scaffolds or planks.
- Scaffold must not be erected, moved, dismantled or altered except under the supervision of a competent person.
- Scaffold must be equipped with guardrails, midrails and toeboards.

- Scaffold accessories such as braces, brackets, trusses, screw legs or ladders that are damaged or weakened from any cause must be immediately repaired or replaced.
- Scaffold platforms must be tightly planked with scaffold plank grade material or equivalent.
- A “competent person” must inspect the scaffolding and, at designated intervals, reinspect it.
- Rigging on suspension scaffolds must be inspected by a competent person before each shift and after any occurrence that could affect structural integrity to ensure that all connections are tight and that no damage to the rigging has occurred since its last use.
- Synthetic and natural rope used in suspension scaffolding must be protected from heat-producing sources.
- Employees must be instructed about the hazards of using diagonal braces as fall protection.
- Scaffold can be accessed by using ladders and stairwells.
- Scaffolds must be at least 10 feet from electric power lines at all times.

Ladders

Hazard: Ladders and stairways are another source of injuries and fatalities among construction workers. OSHA estimates that there are 24,882 injuries and as many as 36 fatalities per year due to falls on stairways and ladders used in construction. Nearly half of these injuries were serious enough to require time off the job.

Solutions:

- Use the correct ladder for the task.
- Make sure that ladders are long enough to safely reach the work area.
- Mark or tag (“Do Not Use”) damaged or defective ladders for repair or replacement, or destroy them immediately.
- Never load ladders beyond the maximum intended load or beyond the manufacturer’s rated capacity.
- Be sure the load rating can support the weight of the user, including materials and tools.
- Avoid using ladders with metallic components near electrical

work and overhead power lines.

Trenching

Hazard: Trench collapses cause dozens of fatalities and hundreds of injuries each year.

Solutions:

- Never enter an unprotected trench.
- Always use a protective system for trenches feet deep or greater.
- Employ a registered professional engineer to design a protective system for trenches 20 feet deep or greater.
- Protective Systems:
- Sloping to protect workers by cutting back the trench wall at an angle inclined away from the excavation not steeper than a height/depth ratio of 11 2 :1, according to the sloping requirements for the type of soil.
- Shoring to protect workers by installing supports to prevent soil movement for trenches that do not exceed 20 feet in depth.
- Shielding to protect workers by using trench boxes or other types of supports to prevent soil cave-ins.
- Always provide a way to exit a trench—such as a ladder, stairway or ramp—no more than 25 feet of lateral travel for employees in the trench.
- Keep spoils at least two feet back from the edge of a trench.
- Make sure that trenches are inspected by a competent person prior to entry and after any hazard-increasing event such as a rainstorm, vibrations or excessive surcharge loads.

Cranes

Hazard: Significant and serious injuries may occur if cranes are not inspected before use and if they are not used properly. Often these injuries occur when a worker is struck by an overhead load or caught within the crane’s swing radius. Many crane fatalities occur when the boom of a crane or its load line contact an overhead power line.

Solutions:

- Check all crane controls to insure proper operation before use.
- Inspect wire rope, chains and hook for any damage.
- Know the weight of the load that the crane is to lift.
- Ensure that the load does not exceed the crane’s rated capacity.
- Raise the load a few inches to verify balance and the effectiveness of the brake system.
- Check all rigging prior to use; do not wrap hoist ropes or chains around the load.
- Fully extend outriggers.
- Do not move a load over workers.
- Barricade accessible areas within the crane’s swing radius.
- Watch for overhead electrical distribution and transmission lines and maintain a safe working clearance of at least 10 feet from energized electrical lines.

FINAL WORD

Progress is being forged to lower injuries and fatalities in constantly evolving construction business across North America. Prospects are daunting, but achievable provided all preventive and precautionary measures are taken to protect worker. That is the test for the construction matrix to safeguard the most valuable asset – our workers.

Fire Safety Toolbox Talk

WHAT'S AT STAKE?

Fire safety is incredibly important for every workplace no matter the industry, since they can happen anywhere at any time. Each facility should adhere to established fire codes, perform a thorough assessment of present fire hazards, have an extensive understanding of fire suppression equipment, and have a comprehensive emergency plan in place. Through training and preparation, you can help reduce the risk of a fire breaking out in your facility, and ensure that workers know what to do if one does occur.

WHAT'S THE DANGER?

FIRE HAZARDS COMMON TO MANY OPERATIONS

Recognizing the types of risks you might face begins with identifying and understanding those hazards. **Consider these common sources of workplace fire hazards or ignition sources when assessing fire risk:**

- Process machinery that can overheat or generate excessive mechanical friction or static electricity.
- Systems using combustible hydraulic fluids.
- Hot work activity (e.g., welding, brazing, cutting and grinding).
- Industrial furnaces or ovens.
- Controls and safety interlocks on fuel fired boilers and hot water heaters, which can present a risk if inadequate or poorly maintained.
- Spray painting and use of flammable or combustible liquids.
- Accumulation of combustible dusts from manufacturing processes.
- Operations using flammable gases.
- Stacked storage of combustible materials that may impact the effectiveness of sprinklers and impede responding fire departments.
- Electrical equipment, wiring, load centers, junction boxes, circuit breakers, transformers and motors, all of which can

present a hazard if improperly installed or maintained.
- Inadequate tobacco smoking controls.

UNIQUE FIRE RISKS

There may be fire hazards associated with exposures that are unique to your particular type of operation. **For example, in the metals industry, the following hazards may exist:**

- Combustible metal dusts.
- Pyrophoric materials (substances that ignite instantly upon exposure to oxygen).
- Water-reactive metals.
- Combustible and flammable liquids.
- Dip tanks using hazardous materials.
- Heat-treating operations.

HOW TO PROTECT YOURSELF

GENERAL PRECAUTIONS IN THE WORKPLACE

Eliminate workplace fire hazards:

- Damaged electrical outlets, cords, cables, etc.
- Overloaded outlets and circuits
- Combustible objects in unsecured locations (included excessive trash and recycling)—keep these far from electrical equipment!
- Fire exit obstacles

Keep workspace and equipment clean, dry, and well-ventilated, and especially clean of oil and dust.

PREPARE FOR EMERGENCIES

- Follow workspace protocol and guidelines to ensure safety and health; know and understand rules and procedures concerning fire emergencies.
- Ensure that smoke alarms and sprinkler systems are installed, working properly, and are not blocked.
- Conduct regular fire drills.

12 TIPS TO ENSURE A FIRE-SAFE WORKPLACE:

Step 1. Get Organized– Practice good workplace housekeeping. Clutter contributes to fires by providing fuel and by preventing access to exits and emergency equipment.

Step 2. Designated Smoking Areas – Smoke only in designated areas, and extinguish smoking materials safely. Never smoke in storerooms or chemical storage areas.

Step 3. Fire Extinguishers – Maintaining the appropriate type and number of fire extinguishers and learn how to properly use a fire extinguisher.

Step 4. Electrical Hazards – Report all electrical hazards. Many fires start in faulty wiring and malfunctioning electrical equipment.

Step 5. Access to Control Panels – Electrical control panels need to have free access maintained so that the electric could be shut off easily.

Step 6. Maintenance – Maintain machinery to prevent overheating and friction sparks.

Step 7. Sprinkler Systems & Smoke Detectors – Never block sprinklers, firefighting equipment or emergency exits. Observe clearances when stacking materials. Testing of sprinkler systems and smoke detectors at least annually.

Step 8. Chemical Safety – Use and store chemicals safely. Read the label and the Material Safety Data Sheet to determine flammability and other fire hazards. Provide adequate ventilation when using and storing these substances.

Step 9. Waste Control & Storage – Control the accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency.

Step 10. Prevent Ignition – Use all precautions to prevent ignition in potentially explosive atmospheres such as those

containing flammable liquid vapors or fine particles. Use non-sparking tools, and control static electricity as required.

Step 11. Exits – Emergency exit diagrams should be posted and emergency exits should be well lit with neon-regulation signs.

Step 12. Contact Info – Employees should have a list of emergency contact phone numbers in case of emergency. Remember that people will often panic in an intense situation; therefore basics such as the company address, phone number and floor plan should be posted.

Prevention is always better than cure and it’s best to avoid catastrophe in the first place or at least minimize the damage. The simple truth is that fire emergencies and disasters can strike anyone, anytime, anywhere. So if a fire does break out in your workplace **A-C-T, DON’T PANIC**

A – ASSESS THE SITUATION

C – CHOOSE YOUR RESPONSE

T – TAKE ACTION

FINAL WORD

Practice, Practice, Practice,

Can you feel your way out of the office and building with your eyes closed, or in the dark? Do you know multiple escape routes? Do you know the low windows from which you could jump? Do you instinctively use the back of your hand to feel a door’s heat, and do you remain crouched down as close to the floor as possible?

Forklift Safety Toolbox Talk

WHAT'S AT STAKE?

Everyone knows that forklifts drive the engine of our warehouses, plants and other industrial settings. Forklifts move, lift and carry material and merchandise to and for consumers. Unfortunately, fatalities occur in forklift operations throughout our economy.

The most common way someone dies in an accident involving a forklift is when the vehicle tips over. Forklift injuries occur most commonly in the manufacturing sector, followed by the construction, wholesale trade, and transportation industries.

WHAT'S THE DANGER?

American workers face a wide variety of dangers in the workplace, and accidents that occur at work can cause serious or fatal injuries. Forklift accidents are unfortunately common, and many can be prevented by following simple safety recommendations. In the United States, there are 61,800 forklift accidents per year, with 34,900 of these accidents resulting in serious injury. Most unfortunately, there are about 85 forklift accidents every year in which one or more people die.

HERE IS A BREAKDOWN OF THE MOST COMMON CAUSES OF FORKLIFT ACCIDENTS:

1. **Poorly Trained Driver**

A poorly trained driver might not know how to respond to a changing workplace. New inventory, obstacles and employees, or changes in floor gradient, can all cause problems for an inexperienced operator. It helps to incorporate a comprehensive certification process in the operators' training program.

2. **Speeding**

All too often, drivers become comfortable and drive irresponsibly. In some cases, workers are under pressure to finish the job quickly or meet a time line. OSHA advises drivers to stay at or below 5 miles per hour. Even if the vehicle stops, the load may topple during harsh braking.

3. **Operating a Forklift with an Elevated Load**

This happens often in all sorts of industries. OSHA regulations encourage drivers to carry loads as near to the ground as possible, approximately 4 inches from the floor

4. **Improper Turning**

Forklifts are designed to balance heavy loads. So without a load, they're not necessarily the sturdiest machines. Turning a corner too fast can cause the lift to tilt to one side. The correct approach is to slow down well before the turn and maintain a gradual speed through the entire rotation.

5. **Insufficient Warnings and Markings**

In workplaces with both foot- and forklift traffic, it's an absolute necessity to mark forklift zones. Even if people must walk through these zones on a regular basis, they know when to watch out for heavy machinery. There are a number of ways to mark a forklift zone. While paint and standing signs work, floor tape is perhaps the most efficient option. If any wears or tears happen, it's easy to replace a small section of tape, which isn't true for standing signs or even paint. Also, floor tape is easy to apply, and you don't have to shut down production to get the job done.

6. **Giving Rides or Riding on the Forklift Load**

This is a common case of irresponsible operation. Under no circumstances should a driver transport a worker on a forklift load. Likewise, workers that are helping to load the truck should never use their body parts to balance a load.

7. **Workplace Design**

When purchasing forklifts, make sure it’s the right design for your needs. If you work in a warehouse with minimal aisle space, invest in a narrow-aisle lift. Workplace design can have a major impact on safe forklift operation.

HOW TO PROTECT YOURSELF

TAKE THESE STEPS TO PROTECT YOURSELF IF YOU OPERATE AROUND FORKLIFTS

- Do not operate a forklift unless you have been trained and licensed.
- Use seatbelts if they are available.
- Report to your supervisor any damage or problems that occur to a forklift during your shift.
- Do not jump from an overturning, sit-down type forklift. Stay with the truck, holding on firmly and leaning in the opposite direction of the overturn.
- Exit from a stand-up type forklift with rear-entry access by stepping backward if a lateral tip over occurs.
- Use extreme caution on grades or ramps.
- On grades, tilt the load back and raise it only as far as needed to clear the road surface.
- Do not raise or lower the forks while the forklift is moving.
- Do not handle loads that are heavier than the weight capacity of the forklift.
- Operate the forklift at a speed that will permit it to be stopped safely.
- Slow down and sound the horn at cross aisles and other locations where vision is obstructed.
- Look toward the travel path and keep a clear view of it.
- Do not allow passengers to ride on forklift trucks unless a seat is provided.
- When dismounting from a forklift, set the parking brake, lower the forks or lifting carriage, and neutralize the controls.
- Do not drive up to anyone standing in front of a bench or other fixed object.

- Do not use a forklift to elevate workers who are standing on the forks.
- Elevate a worker on a platform only when the vehicle is directly below the work area.
- Whenever a truck is used to elevate personnel, secure the elevating platform to the lifting carriage or forks of the forklift.
- Use a restraining means such as rails, chains, or a body belt with a lanyard or deceleration device for the worker(s) on the platform.
- Do not drive to another location with the work platform elevated.

The following safety tips can help you address some of the most dangerous circumstances and keep your forklift operators and other workers safe:

1. **No unauthorized operators.** Forklift operators must have special training that is specific to both the workplace and the type of forklift they will be operating. Unauthorized workers operating forklifts—such as an employee who jumps on the forklift to move an item "just to help out"—are extremely dangerous to themselves and others. Make sure that all of your workers know that only trained operators can operate forklifts. Also, be sure workers under age 18 know that it is illegal for minors to operate forklifts.
2. **Handle with care.** The forklift itself is a hazard, but the load can be, too. Train operators and other workers to stack and secure the load so that it will not shift during transport. When the forklift is in motion, the load should be carried as close to the ground as possible
3. **Keep clear of the load.** A raised load on a forklift is just like any other raised load—a hazard to anyone close enough to be struck by it if it falls. Emphasize to forklift operators and other workers that they have to stay clear of raised loads—not just out from under them but out from in front of them and a clear distance to the side, too. That distance may need to be larger as the load is raised higher.
4. **Use the right forklift.** The forklift has to be made for the

conditions it will be used in—indoor, outdoor, or both; rough terrain or smooth concrete; or potentially flammable atmospheres. Even the load must be considered when choosing a forklift, such as how much the load weighs and how the load will need to be maneuvered.

5. **Know the territory.** Terrain affects forklift balance and handling; for example, even a pothole can be a tip-over hazard under unfortunate circumstances. Forklift operators need to know how to safely navigate up and down slopes and around corners, both with and without a load. If they work outdoors they also need to know how to deal with weather conditions. Workers who will be loading and unloading trucks or railcars need to know how to secure dock plates and bridge plates.
6. **Maintain visibility.** The hazard that kills a forklift operator or other worker could be the one he or she never sees coming. Provide clearly visible markings at edges of loading docks and other areas where forklifts could roll off, along with other precautions such as guardrails and chains. Warn drivers that going from bright light to dim light can blind them just long enough for them to strike another object or person, so they need to take special care under these conditions. Don’t stack materials at corners in a way that obstructs an operator’s visibility, and use mirrors to show both operators and pedestrians what’s coming around the corner.
7. **Separate the men from the machines.** The combination of forklifts and workers on foot is a deadly one—usually for the worker on foot. As much as possible, create separate aisles for workers on foot and mechanical equipment. Instruct operators to look in the direction of travel at all times and keep a clear view of where they’re going.

FINAL WORD

Treat forklifts with respect we cannot do without forklift operations in our industrial and manufacturing world. But we can do without the injuries, illnesses and fatalities that occur in

forklift operations.

Hand and Portable Power Tools Safety Talk

WHAT’S AT STAKE?

Hand and power tools are a common part of our everyday lives and are present in nearly every industry. These tools help us to easily perform tasks that otherwise would be difficult or impossible. However, these simple tools can be hazardous and have the potential for causing severe injuries when used or maintained improperly. Special attention toward hand and power tool safety is necessary in order to reduce or eliminate these hazards.

WHAT’S THE DANGER?

Hand Tools

Hand tools are tools that are powered manually. Hand tools include anything from axes to wrenches. The greatest hazards posed by hand tools result from misuse and improper maintenance.

Electric Tools

Employees using electric tools must be aware of several dangers. Among the most serious hazards are electrical burns and shocks.

Portable Abrasive Wheel Tools

Portable abrasive grinding, cutting, polishing, and wire buffing wheels create special safety problems because they may throw off flying fragments. Abrasive wheel tools must be equipped with

guards that: (1) cover the spindle end, nut, and flange projections; (2) maintain proper alignment with the wheel; and (3) do not exceed the strength of the fastenings.

Pneumatic Tools

Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders.

There are several dangers associated with the use of pneumatic tools. First and foremost is the danger of getting hit by one of the tool’s attachments or by some kind of fastener the worker is using with the tool.

Liquid Fuel Tools

Fuel-powered tools are usually operated with gasoline. The most serious hazard associated with the use of fuel-powered tools comes from fuel vapors that can burn or explode and also give off dangerous exhaust fumes. The worker must be careful to handle, transport, and store gas or fuel only in approved flammable liquid containers, according to proper procedures for flammable liquids.

Powder-Actuated Tools

Powder-actuated tools operate like a loaded gun and must be treated with extreme caution. In fact, they are so dangerous that they must be operated only by specially trained employees.

Hydraulic Power Tools

The fluid used in hydraulic power tools must be an approved fire-resistant fluid and must retain its operating characteristics at the most extreme temperatures to which it will be exposed. The exception to fire-resistant fluid involves all hydraulic fluids used for the insulated sections of derrick trucks, aerial lifts, and hydraulic tools that are used on or around energized lines. This hydraulic fluid shall be of the insulating type.

HOW TO PROTECT YOURSELF

Here are 10 quick and easy tips for safely working with hand and power tools.

1. **Inspect Your Tools**. Never issue or use a damaged or defective hand or power tool. Always make sure they are in good working order before and after each use.
2. **Pick The Right Tool.** Make sure you are using the correct tool for the task at hand. This also means using the right sized bits, blades and accessories on your power tools.
3. **Wear Your PPE**. Issue personal protective equipment to your employees and make sure they wear them properly. This comprises of items like safety goggles, hard hats, etc.
4. **DON’T ALTER YOUR TOOLS.** Never remove guards or disable safety devices on power tools. Don’t paint or cover up your tools as this could prevent you from noticing chips or cracks.
5. **Handle With Care.** Tools are not toys. Never throw or toss a tool in the direction of or directly to a coworker. Never use electrical cords to lower or lift a tool to get it to a workspace.
6. **Keep Your Distance.** When working with hand and power tools be sure you have enough room to safely operate without coming into contact with other objects or coworkers.
7. **Pick Up After Yourself**. Don’t leave idle hand tools lying around the job site. They can lead to tripping or be accidentally knocking on someone’s head.
8. **Unplug And Disconnect.** Don’t leave electric power tools plugged in when not in use, when making adjustments such as replacing blades and bits, or loading fasteners.
9. **Keep Your Workspace Clean.** A cluttered floor can lead to accidental trips or falls which can be extremely dangerous when working with hand and power tools.
10. **Get Trained Up.** Make sure you and your employees are thoroughly trained on the proper use of hand and power tools required for the task at hand.

Safety Tips For Specific Power Tools

1. **Portable Power Tools and Equipment**

Portable power tools are designed for a wide variety of uses. Circular saws, jigsaws, drills, hammer-drills, sanders, grinders, routers and numerous other power tools, save time and effort on the job. The increased use of power tools heightens the need for awareness of the hazards they present if not operated properly.

- Do not operate power tools or equipment unless you have been authorized to do so.
- Inspect tools daily to ensure that they are in proper working order. Do not use damaged or defective tools.
- Use tools for their intended purpose and in the manner intended.
- All power tools and electrical devices must be properly grounded.
- Keep guards and protective devices in place at all times. Never use equipment or tools from which guards have been removed.
- Do not use electric power tools and equipment when standing in water.
- Only qualified persons are to repair electric tools or equipment.
- All extension cords must be the 3-pronged type and made for hard use. (Designation types S, ST, STO, SJ, SJO, SJT, and SJTO.)

2. **Electric**

- Keep floors dry and clean to avoid slipping while working with or around dangerous tools.
- Keep cords from presenting a tripping hazard.
- Never carry a power tool by its cord.
- Use tools that are double-insulated or have a three-pronged cord and are plugged into a grounded receptacle.
- Do not use electric tools in wet conditions unless they are approved for that use.
- Use a ground fault circuit interrupter (GFCI) or an assured grounding program.
- Use appropriate PPE.

3. **Pneumatic**

   - Verify that all parts of the tool are fastened securely before use.
   - Never point a compressed air gun at yourself or another person.
   - When you are finished using the tool, make sure that the pressure is released before you break the hose connections.
   - Use a safety clip or retainer to prevent attachments from being ejected during operation, and use a chip guard when using high-pressure compressed air for cleaning. Be sure to limit the nozzle pressure to 30 pounds per square inch.

4. **Powder-Actuated**

   - Do not use a tool in an explosive or flammable atmosphere.
   - Inspect the tool before using it to determine that it is clean, that all moving parts operate freely, and that the barrel is free from obstructions and has the proper shield, guard, and attachments recommended by the manufacturer.
   - Do not load the tool unless it is to be used immediately.
   - Do not leave a loaded tool unattended, especially where it would be available to unauthorized persons.
   - Keep hands clear of the barrel end.
   - Never point the tool at anyone.

FINAL WORD

Hand and Power Tools are taken for granted today in our workplaces and in the Homefront. Life and work in general is much easier with these tools. At the same time, these powerful tools come with a cost!!! The potential for causing life debilitating injuries abound when these tools are not used or maintained properly.

Lift Chain Recertification

WHAT’S AT STAKE?

In lifting applications, chains are classed as safety components. It is assumed that the chain delivered by the manufacturer is free from defects and matches the requirements. The breaking of lifting chains, causing sudden falling of goods, may result in material or personal harm.

WHAT’S THE DANGER?

RISKS FROM INSTALLATION ERRORS

– If The chain fittings and pulleys are not aligned, Uneven load distribution occurs within the chain links. This may cause grinding of parts in the guide or the pulley causing loss of material, thus leading to a reduction in tensile strength.

– Many chains are attached with pins which are not delivered by the chain manufacturer. If the wrong connecting pin is selected, there may be an incorrect material, heat treatment or dimension tolerance.

– If there is damage to the chain by external forces (shock, media, twist, etc.) the operational safety is no longer guaranteed.

– If the chain is not inspected regularly, there is a risk that potential hazards will not be noticed at an early stage.

– When chains corrode, the following issues can occur: Reduction of breaking load, loosening of press fits or chain pins, and Stiff joints, thereby increasing the frictional forces.

– If the chain vibrates or shakes, non-uniform velocities may cause the lifted load to fall.

– Insufficient lubrication can cause increased chain wear, which

gives a change in the load distribution and/or a reduction of the material cross sections. The result would be a reduction in tensile strength.

– Stiff chain joints can result in a lack of proper positioning. The lift can drop at the bent location at any time.

– Twisted or loose pins may be an indication of overload or insufficient lubrication. The load capability of the chain is no longer guaranteed.

– Fatigue cracks may arise due to overload. If individual plates within the packed plates are cracked without the chain failing, the breaking load is reduced.

– The articulating area of the chain must be shielded against accidental contact by users to protect from pinching or crushing.

– Depending on the manufacturer, different materials, heat treatments and lubricants are provided. Application at high or low temperature conditions may lead to brittleness and/or loss of strength of the components.

Risk During Installation

- **Crushing of fingers/hands**: Incorrect assembly can entangle chain links and injure fingers. Injury can be caused by the hands/fingers being drawn into the chain drive, especially in the areas where the chains run around sheaves or sprockets.
- **Crushing of the feet:** To avoid serious injury from falling chains, safety shoes must be worn in the assembly area. When installing the chains in greater heights, the use of protective headgear is recommended.
- **Cuts from sharp edges**: Although chain plates are deburred, in some cases there can be sharp edges or pressed metal chips on the chain. To avoid injury, protective gloves should be worn.

HOW TO PROTECT YOURSELF

HOW TO SELECT THE PROPER CHAIN SLING

1. Determine the maximum weight of LOAD.
2. From the working load limit chart, determine the SIZE of the body chain. Be sure to consider the effect of the angles.
3. Determine the REACH for the selected angle by measuring the distance from the upper bearing surface of the master link to the bearing surface of the lower attachment.

Injury and Illness Prevention Program (IIPP), recommends that:

- The tools and equipment used are periodically inspected for defects and safety compliance, and are repaired or replaced as needed.
- Ensure employees who use cranes to lift loads of varying size and complexity are certified in rigging.

STEPS FOR CHAIN SLING SAFETY

Who should inspect chain slings?

A competent person (sometimes referred to as a designated person) is responsible for all sling inspections.

When should you inspect chain slings?

All slings (new, altered, modified, or repaired) should be inspected by a competent person before they are used in the workplace to make sure they are built to specifications, not damaged, and will be appropriate for the work being performed. It is useful if each chain has a metal tag with an identification number and load limit information.

A competent person must also inspect chain slings periodically, at least once a year. Inspection frequency is based on how often the sling is used, the types of lifts being performed, the conditions in which the sling is being used, and past experience with service life of similar slings and usage. Inspections must be recorded.

In addition to the inspections by a competent person, the user should inspect chain slings and accessories before each use.

How should chain slings be checked during inspection?

- Clean sling before inspection.
- Check identification tag
- Hang the chain up or stretch the chain out on a level floor in a well-lighted area. Remove all twists.
- Make a link-by-link inspection.
- Manufacturers’ reference charts show sling and hitch capacities. Record manufacturer, type, load limit and inspection dates.

Using chain slings safely

- Always know proper use procedures before attempting the lift.
- Inspect the slings and accessories before use for any defects.
- Replace broken safety latches.
- Do not exceed rated load of the sling.
- Do not force, hammer or wedge chain slings or fittings into position.
- Keep hands and fingers away from potential pinch points when tensioning slings and when landing loads.
- Make a trial lift and trial lower to ensure the load is balanced, stable and secure.
- Balance the load to avoid overstress on one sling arm or the load slipping free.
- Lower the working load limit if severe impact may occur.
- Pad sharp corners to prevent bending links and to protect the load.
- Position hooks of multi-leg slings facing outward from the load.
- Store chain sling arms on racks in assigned areas and not lying on the ground. The storage area should be dry, clean and free of any contaminants which may harm the sling.

What should you avoid when using chain slings?

- Avoid impact loading: do not jerk the load when lifting or lowering the sling. This motion increases the stress on the sling.
- Do not leave suspended loads unattended.
- Do not drag chains over floors or attempt to drag a trapped sling from under a load. Do not use a sling to drag a load.
- Do not use worn-out or damaged slings.
- Do not lift on the point of the hook.
- Do not trap slings when landing the load.
- Do not splice a chain by inserting a bolt between two links.
- Do not shorten a chain with knots or by twisting other than by means of an integral chain clutch.
- Do not force or hammer hooks into place.
- Do not use homemade connections. Use only attachments designed for the chain.
- Do not expose chain links to chemicals without the manufacturer’s approval.
- Do not stand or pass under a suspended load.
- Do not ride on sling.

FINAL WORD

The designated person is very important, since they determine if chain slings are safe enough to use in potentially dangerous workplaces situations.

Load and Unload Equipment

Safely

Download Instructor-Led Material

	
Meeting Kit	**PowerPoint**

WHAT'S AT STAKE?

Loading and unloading equipment should only be done by people with the relevant knowledge and experience. Heavy loads can be extremely dangerous if not handled correctly.

To ensure equipment is loaded and unloaded safely, personnel must have the appropriate training and experience.

WHAT'S THE DANGER?

Warning

In 2018, there were a reported 221,400 workplace related injuries in the transportation and warehousing industry reported to the Bureau of Labor Statistics.

Workers loading and unloading cargo are exposed to serious danger in that heavy objects may hit or fall on them if they don't follow the right loading and unloading safety procedures. Following the proper safety procedures will keep your warehouse organized and employee conditions safe.

RISK ASSESSMENT

Before loading and unloading equipment, a thorough risk assessment

should be carried out which considers every step of the job, including site risks and hazards, loading, transport, and unloading. This is particularly necessary in the case of an unfamiliar commodity or location and/or where there are unfavorable weather conditions.

If a specific risk or hazard that cannot be eliminated is identified, operations should not take place until control measures have been determined and implemented.

Safe Loading/Unloading Areas

Designated loading/unloading areas should be sectioned off where required, a check should be done for overhead electric cables, the area should be cleared of debris, and any uneven surfaces should be identified.

HOW TO PROTECT YOURSELF

GENERAL

- Pedestrians and workers not involved in the loading/unloading process should vacate the area, there should be no chance of vehicles coming into contact with stray cables or wires.
- Trailers must be parked on firm level ground so the load can be positioned evenly.
- A safe waiting place should also be available to all persons on a site that are not involved in the loading / unloading until the operation is completed and loads are appropriately restrained.
- All equipment should be loaded, positioned and secured in a safe and logical manner that eliminates the risk of movement and in a way that ensures no unnecessary risk while unloading.
- Load restraints should be checked periodically to ensure that there has not been any movement of the load during the journey and that there has not been any wear on the restraints themselves.

HOW TO LOAD HEAVY EQUIPMENT SAFELY

A load is only as strong as its weakest link. And those weak links often come not because a basic heavy equipment loading procedure wasn’t followed, but because it was—just in a rushed, halfhearted, or passive way.

1. **Designate Duties**

Before actual loading occurs, the team should have a clear understanding of who’s in charge of what. You’ll need someone to drive the equipment onto the deck, but you’ll also need a spotter to deliver hand signals and direct the driver up the ramp and onto the trailer bed. It’s likely they won’t have a clear line of site to do so themselves.

2. **Clean the Ramp and Trailer**

Ramps and trailer decks should be as dirt, oil, and debris-free as possible, especially if they are metal. This ensures the piece of loading equipment has as much traction as possible to move up its ramp. A clean ramp and trailer bed also means a dry one, clear of ice, snow, and water.

3. **Clear and Level the Loading Area**

Pick an uninhabited and even space to set up the ramp and perform loading.

You’ll also want to ensure the actual ground in the loading area is compact enough to bear the full weight of your loaded trailer. After rain or during seasons with thaw, the combined weight of these two vehicles has the potential to cause sinkage.

4. **Begin the Machine/Ramp Line-Up**

With the driver in the cab and a spotter positioned in plain view, begin driving the heavy equipment up the cleared ramp and onto the transportation vehicle’s deck.

Note that during this ramp movement, the machine’s center of gravity will shift. This is the most dangerous part of the loading

process, with the equipment’s weight caught momentarily in a point of limbo. Just keep moving gradually.

Also note that when appropriately positioned at final rest on deck, the majority of the equipment’s weight should be distributed toward the front of the trailer. This avoids fishtailing while en route.

5. **Start Chaining Down Heavy Equipment**

With the heavy equipment safely positioned on deck, you can initiate one of the most critical steps in the loading and unloading procedure — tying it down.

Reminders to achieve the proper way to chain down an excavator, loader, and more:

- **All chains fastened linearly, with downward force**, with no horizontal twists, bends, or angles
- **No slack**. Wrap excess chain around the rest of the link so it won’t come loose.
- **At least four chains in use.** Use two connecting to the trailer’s front corners and two connecting to the trailer’s back corners. The tension from these opposing forces should keep the equipment in place.
- **Always review chain and hook sizes**. You need to guarantee they’re complementary and tight, not mismatched.

HOW TO SAFELY UNLOAD HEAVY EQUIPMENT

There are key steps and risk-mitigation strategies to assure the success of this final step.

1. **Clear and Level the Unloading Site**

Before the transportation vehicle even arrives, take the time to review and clear the designated unloading area in the receiving yard. Wet and muddy ramps and uneven unloading ground make this part of the operation much harder than necessary.

This doesn’t stop at clearing away dirt and debris, either. Alert personnel of cargo schedules so only relevant crew members are in

the area when the transport vehicle arrives.

2. **Do a Walk Through**

Guide the transport vehicle to its exact unloading area. Once the vehicle is parked, have the ramp clean and ready for deployment. Line it up with the rear of the trailer bed as methodically as possible, taking time to match joints and eliminate any gaps between the trailer and the ramp.

With everything in place, conduct a final condition survey. Look over the equipment's tires and hitches to ensure their health. Review roles with personnel, appointing a spotter and an equipment operator just like during the loading process and before you begin breaking down the chain tie points.

3. **Free the Load**

Release chains and tie bounds one at a time, beginning with the rear corners. Unravel excess chain that may have been wrapped around the links, then start loosening tie downs with their ratchet-style wrench boomers. Do so carefully, as chains and binders have been wound and should still be tight and pressurized. You don't want a metal chain unexpectedly snapping up because joints and tension weren't adequately reduced with the ratchet boomer.

4. **Slowly Back the Heavy Equipment Down the Ramp**

Maintain a safe distance between the piece of equipment and its spotter. The equipment operator's visibility may become hindered, so position the spotter in a way where they're accessible but out of harm's way. Keep the rest of personnel away from the unloading site while the heavy machinery is in reverse. All attention should remain on safely ushering it down the ramp.

5. **Wrap It Up**

Do a final ground inspection of all equipment, the transport vehicle, anchor points, and tools before sending everyone on their way.

FINAL WORD

Workers loading and unloading cargo are exposed to serious danger in that heavy objects may hit or fall on them if they don’t follow the right loading and unloading safety procedures. Following the proper safety procedures will keep your warehouse organized and employee conditions safe.

Compressed Gas Cylinders Toolbox Talk

WHAT’S AT STAKE?

Compressed gas cylinders are a common item in many workplaces, from shops to laboratories and hospitals to restaurants and much more. Many workplaces contain compressed gas cylinders, and many other job sites involve workers using or coming into contact or proximity with compressed gas.

Compressed or liquefied gas cylinders are often used to store chemicals for industrial purposes. The compression of the chemicals allows for a large quantity of material to be stored in a relatively small space. Because cylinder contents are under high pressure (up to 2,500 pounds-per-square-inch, or psi), there can be physical and chemical hazards involved with the use of compressed gas cylinders.

WHAT’S THE DANGER?

THE PRESSURES AND RISKS OF COMPRESSED GAS

Compressed gas consists of three major groups.

- Liquefied Gases (such as anhydrous ammonia, chlorine, propane, nitrous oxide & carbon dioxide)
- Non-liquefied Gases (e.g. oxygen, nitrogen, helium & argon)
- Dissolved Gas (Acetylene is the common one)

What makes compressed gas hazardous is the pressures inside the cylinders, which can reach extremely high levels. When properly controlled, release of these pressures is a routine and safe event. Leaks and improper release, however, pose significant **Risk.**

Compressed gases also have a significant risk of fire and explosion. These come in the form of:

- Flammable Gases
- Oxidizing Gases
- Dangerously Reactive Gas

HAZARDS

Compressed gas also carries health risks (due to toxicity); inert gases reducing oxygen levels in the work environment; and risk of corrosion.

- Compressed gases can be toxic, flammable, oxidizing, corrosive, or inert. In the event of a leak, inert gases can quickly displace air in a large area creating an oxygen-deficient atmosphere, toxic gases can create poison atmospheres, and flammable or reactive gases can result in fire and exploding cylinders. In addition, there are hazards from the pressure of the gas and the physical weight of the cylinder. A gas cylinder falling over can break containers and crush feet. The cylinder can itself become a missile if the cylinder valve is broken off.
- When in proper working order, cylinders are fitted with valves and regulators to control the release of the contents. When there is a failure of the valve or when the cylinder is damaged or punctured, the pressurized contents can release violently. This sudden release can propel a cylinder up into the air 3/4 of a mile, or along the ground up to 30 miles per hour. The energy released may also cause the cylinder to spin, ricochet, or even crash through brick

walls. Uncontrolled releases from gas cylinders can pose a severe physical hazard.
- The contents of compressed gas cylinders can also pose a chemical hazard if they are accidentally released. The sudden release of these materials can create fire and explosion dangers, worker exposure to toxic or poisonous gases, or even asphyxiation (suffocation) danger if the released gas displaces room air.

HOW TO PROTECT YOURSELF

SAFE PRACTICES TO PROTECT YOU FROM THE HAZARDS OF COMPRESSED GASES:

- Read the MSDSs and labels for all of the materials you work with.
- Know all of the hazards (fire/explosion, health, chemical reactivity, corrosively, pressure) of the materials you work with.
- Know which of the materials you work with compressed gases are and check the label, not the cylinder color, to identify the gas.
- Store compressed gas cylinders in cool, dry, well-ventilated areas, away from incompatible materials and ignition sources. Ensure that the storage temperature does not exceed 52°C (125°F).
- Store, handle and use compressed gas cylinders securely fastened in place in the upright position. Never roll, drag, or drop cylinders or permit them to strike each other.
- Move cylinders in handcarts or other devices designed for moving cylinders.
- Leave the cylinder valve protection cap in place until the cylinder is secured and ready for use.
- Discharge compressed gases safely using devices, such as pressure regulators, approved for the particular gas.
- Never force connections or use homemade adaptors.
- Ensure that equipment is compatible with cylinder pressure and contents.
- Carefully check all cylinder-to-equipment connections before

use and periodically during use, to be sure they are tight, clean, in good condition and not leaking.

- Carefully open all valves, slowly, pointed away from you and others, using the proper tools.
- Close all valves when cylinders are not in use.
- Never tamper with safety devices in cylinders, valves or equipment.
- Do not allow flames to contact cylinders and do not strike an electric arc on cylinders.
- Always use cylinders in cool well-ventilated areas.
- Handle “empty” cylinders safely: leave a slight positive pressure in them, close cylinder valves, disassemble equipment properly, replace cylinder valve protection caps, mark cylinders “empty” or “MT,” and store them separately from full cylinders.
- Wear the proper personal protective equipment for each of the jobs you do.
- Know how to handle emergencies such as fires, leaks or personal injury.
- Follow the health and safety rules that apply to your job.

RESPONSIBILITIES

- **Managers/Unit Heads**– Managers/Unit Heads are responsible for ensuring that adequate funds are available and budgeted for the purchase of compressed gas cylinder equipment and related supplies. They will also be responsible for identifying the employees affected by this safety policy and ensure required training is accomplished.
- **Supervisors** – Supervisors will not allow any employee who has not received the required training to handle any compressed gas cylinders. Supervisors will also note defective cylinders and tag them for repair.
- **Employees –** Employees shall comply with all applicable guidelines contained in this safety policy and procedure. They shall report any defective or damaged cylinders to their supervisor.
- **Safety Department –** Safety Department provide prompt assistance to managers/unit heads, supervisors, or others as

applicable on any matter concerning this safety policy and procedure. Safety will assist in developing the required training. Safety will also work with Purchasing to ensure that all newly purchased compressed gas cylinders equipment and supplies comply with current safety regulations and this safety policy and procedure.

FINAL WORD

In most of the workplaces in our society from restaurants, stores and business operations to health, good agencies, compressed gas cylinders are commonplace. Workers in these sites are familiar in the transportation, handling and storage with compressed air. These workers are also cognizant of all the perils and risks that compressed air poses.

Computer Ergonomics Safety Talk

WHAT'S AT STAKE?

Many people spend hours a day in front of a computer without thinking about the impact on their bodies. They physically stress their bodies daily without realizing it by extending their wrists, slouching, sitting without foot support and straining to look at poorly placed monitors.

These practices can lead to cumulative trauma disorders or repetitive stress injuries, which create a life-long impact on health. Symptoms may include pain, muscle fatigue, loss of sensation, tingling and reduced performance.

WHAT’S THE DANGER?

Work-related musculoskeletal disorders (WMSDs) are commonly referred to as repetitive strain injuries (RSIs), cumulative trauma disorders (CTDs) or repetitive motion injuries (RMIs). These injuries can be prevented. Ergonomics is the science of applying designed equipment to the workplace or task to maximize the productivity of the worker, or **fitting the work environment to the worker**.

WORK/RISK FACTORS

Workplace design plays a crucial role in the development of an MSD. **There are three primary ergonomic risk factors.**

High task repetition. Many work tasks and cycles are repetitive in nature, and are frequently controlled by hourly or daily production targets and work processes. High task repetition, when combined with other risks factors such high force and/or awkward postures, can contribute to the formation of MSD. A job is considered highly repetitive if the cycle time is 30 seconds or less.

Many work tasks require high force loads on the human body. Muscle effort increases in response to high force requirements, increasing associated fatigue which can lead to MSD.

Repetitive or sustained awkward postures. Awkward postures place excessive force on joints and overload the muscles and tendons around the effected joint. Joints of the body are most efficient when they operate closest to the mid-range motion of the joint. Risk of MSD is increased when joints are worked outside of this mid-range repetitively or for sustained periods of time without adequate recovery time.

Exposure to these workplace risk factors puts workers at a higher level of MSD risk. It’s common sense: high task repetition, forceful exertions and repetitive/sustained awkward postures fatigue the worker’s body beyond their ability to recover, leading to a musculoskeletal imbalance and eventually an MSD.

HOW TO PROTECT YOURSELF

COMPUTER ERGONOMICS

Extended periods of time spent working at computer workstations may contribute to muscular and visual fatigue and discomfort. Maintaining any posture over time is fatiguing, no matter how well the workstation is set up. Also, the work actions in tasks such as continual data entry or word processing are highly repetitive, further contributing to discomfort and, possibly, to risk of injury.

Breaks from computer work are most effective in reducing discomfort when short breaks are taken frequently. They are more effective than working for long periods of time and taking longer breaks. Scheduling five minutes of non-computer work per hour provides relief from many of the postural and visual demands. In addition, for computer intensive tasks, attempts should be made to design jobs to include other duties.

DECIDE HOW THE COMPUTER WILL BE USED

Who will be using the computer?

If the computer will only be used by one person then the arrangement can be optimized for that person’s size and shape, and features such as an adjustable height chair may be unnecessary. If it’s going to be used by several people, you will need to create an arrangement that most closely satisfies the needs of the majority, and accommodate the extremes on a 1-1 basis.

How long will people be using the computer?

If it’s a few minutes a day then ergonomic issues may not be a high priority. If it’s more than 1 hour per day you should create an ergonomic arrangement. If it’s more than 4 hours then you should consider implementing an ergonomic arrangement.

CHAIR

Studies show that the best seated posture is a reclined posture of

100-110 degrees not the upright 90 degree posture that is often portrayed. There are significant decreases in postural muscle activity and in intervertebral disc pressure in the lumbar spine. Erect sitting is NOT relaxed, sustainable sitting, reclined sitting is.

POSTURE, POSTURE, POSTURE!

Good posture is the best way to avoid a computer-related injury. To ensure good user posture:

- Make sure that the user can reach the keyboard keys with their wrists as flat as possible (not bent up or down) and straight (not bent left or right).
- Make sure that the user's elbow angle (the angle between the inner surface of the upper arm and the forearm) is at or greater than 90 degrees to avoid nerve compression at the elbow.
- Make sure that the upper arm and elbow are as close to the body and as relaxed as possible for mouse use – avoid overreaching. Also make sure that the wrist is as straight as possible when the mouse is being used.
- Make sure the user sits back in the chair and has good back support. Also check that the feet can be placed flat on the floor or on a footrest.
- Make sure the head and neck are as straight as possible.

DOS & DON'TS

DO keep moving. Set an alarm to remind you if you need it! Sitting for long periods wreaks havoc on your spine and circulation. Get up, stretch, MOVE!

DON'T use a desk or chair that's not the proper height for your size. Everyone is different; find what works for you.

DO try to keep your body in a neutral posture, which creates the least strain on your body.

DON'T cradle your phone between your shoulder and ear.

DO keep your desk clear so you’re not forcing your body to work awkwardly around clutter.

DON’T keep your monitor too close or too far away, or hunch over a laptop. This can cause eye strain and headaches in addition to neck and back pain.

DO wear a headset if a good portion of your day is spent on the phone.

DO invest in workstation essentials that are ergonomic, and make sure they are adjusted to where you need them to be.

- Look for an office chair with proper lumbar support that adjusts to your body.
- A laptop raiser positions your laptop for optimum ergonomics while relieving eye and neck strain.
- A monitor arm makes it easy to adjust the height and position of your monitor to reduce upper back and neck pain.
- Use a footrest to reduce lower back pressure and increase blood flow.
- A bright, adjustable light can reduce headaches, eye fatigue and neck strain.
- Or try a standing desk to keep you moving! Less time spent sitting means less stress on your spine while increasing circulation and mental alertness.

FINAL WORD

Computer based “white collar work” is viewed as sedentary and does not have a relationship with movement. But bodies require movement to stay healthy and productive. It is now widely accepted that exercises be done in the computer work zone and that frequent breaks be taken for the over-all health of workers.

Confined Space Entry Procedures Toolbox Talk

WHAT’S AT STAKE?

Many workplaces contain areas that are considered “confined spaces” because while they are not necessarily designed for people, they are large enough for workers to enter and perform certain jobs. A confined space also has limited or restricted means for entry or exit and is not designed for continuous occupancy. Confined spaces include, but are not limited to, tanks, vessels, silos, storage bins, hoppers, vaults, pits, manholes, tunnels, equipment housings, ductwork, pipelines, etc.

Context is important to understand the danger of entering a confined space. One must be, careful to follow the very special precautions and procedures before entering. Even if you just are able to put your head through the opening of a confined space, you are entering. Confined spaces are not designed for someone to work in regularly, but workers may need to enter the confined space for tasks such as inspection, cleaning, maintenance, and repair.

WHAT’S THE DANGER?

THE HAZARDS ASSOCIATED WITH CONFINED SPACES INCLUDE:

- Toxic Atmosphere
- Oxygen Deficiency
- Chemical exposures
- Process-related hazards
- Physical hazards
- Safety hazards
- Trapped, Crushed, Or Buried
- Oxygen Enrichment
- Flammable or Explosive Atmospheres
- Flowing Liquid or Free Flowing Solids

- Excessive Heat

HOW TO PROTECT YOURSELF

1. PERMIT–TO–WORK PROCEDURE

Before anything else is done, the entry procedures must acquire a **permit-to-work form.**

The essential contents of a **permit-to-work system** include:

- **A written procedure,** which sets out how the system is to operate and clearly defines who may authorise particular jobs and who is responsible for specifying and implementing the necessary precautions
- A form, known as the **"permit-to-work form"**, which becomes a written and signed statement ensuring both the establishment of safe conditions for the work to commence and the maintenance of safe conditions for the duration of the work, including the provision of emergency arrangements
- A method of informing the persons carrying out the work of the exact identity, location, nature and extent of the job, the hazards involved and the precautions to be taken, and
- A system for ensuring the safe hand-back of the workplace after the job is completed and, in the case of confined space entry, after the space is vacated

2. SAFE SYSTEM OF WORK

The foundation of safe **System of Work** is driving up the necessary constituent elements

- Competence, training, supervision and suitability
- Permit-to-work procedure
- Gas purging and ventilation
- Dangerous residues
- Testing and monitoring of the atmosphere
- Mechanical, electrical and process isolation
- Respiratory protective equipment
- Other personal protective equipment

- Safe use of work equipment
- Communications
- Access and egress
- Flammable or explosive atmospheres
- Combustible materials

3. RISK ASSESSMENT

The next step in the process is conducting a risk assessment. Crucial to ensure all risks **all risk** are evaluated and controlled.

- What could be inside the space that would pose a risk?
    - Contents?
    - Oxygen Deficiency?
    - Previous Contents?
    - Oxygen Enrichment?
    - Residues?
    - Structure and Layout?
    - Contamination?
- What will be created due to the work carried out in the space?
    - Sources of Ignition?
    - Flammable Substances?
- What‘s outside the space that might pose a risk during the proposed work?
    - Inadequate Isolation?
    - Inadvertent Operation of Plant?
    - Nearby Work Activities?

4. SAFE ENTRY PROCEDURE

One of the core elements that a **confined spaces entry program** must include is a safe entry procedure. And one of the things required for entry into a confined space is an **entry permit.**

The **entry procedure** sets out the measures, procedures and practices taken to ensure the entry is carried out safely and in accordance with regulatory requirements. At a minimum, the **entry procedure** must do 8 things:

1. Require identification and evaluation of permit space

hazards before entry.
2. Specify acceptable conditions of entry, including but not limited to atmospheric conditions.
3. Allow for authorized entrants, i.e., workers authorized to enter the space, and/or workers' representatives to observe atmospheric monitoring and testing.
4. Require isolation of the permit space.
5. Specify the method that must be used to eliminate or control atmospheric hazards purging, inerting, flushing and/or ventilation.
6. Require that barriers to confined spaces be provided to protect entrants from hazards created by pedestrians, vehicles or other external factors.
7. Stipulate acceptable conditions must be verified throughout the duration of the entry.
8. Require cancellation of the entry permit and isolation of the permit space after the authorized entry ends or entry operation is completed.
9. **ENTRY PERMIT**

Specific examples of when an **entry permit** is required include any time the hazard and risk assessment determine the measures to control the risk involve the following:

- Atmospheric monitoring
- Isolation
- Lockout
- Ventilation
- Safeguarding devices
- Respiratory protection

FINAL WORD

A confined space can be more hazardous than regular workspaces for many reasons. To effectively control the risks associated with working in a confined space, a confined space hazard assessment and control program should be implemented for your workplace. Before putting together this program, make sure to review the specific regulations that apply to your workplace.

Bicycle Safety Toolbox Talk

WHAT'S AT STAKE?

Bicycling is one of the best ways to get exercise, see the sights and reduce your carbon footprint. However, bicyclists face a host of hazards. They often must share the road with vehicles, and injuries can happen even on a designated path.

Americans are increasingly bicycling to commute, for exercise, or just for fun. By law, bicycles on the roadway are vehicles with the same rights and responsibilities as motorized vehicles.

WHAT'S THE DANGER?

DAVID AND GOLIATH

In an incident between a car and a bike, the cyclist almost always will be the one with more severe injuries. Being cognizant of road hazards whether on a bike or in a vehicle can help avoid deadly encounters.

With about 80 million bicyclists sharing the road with motorized vehicles, it is vital bicyclists – and drivers – take some safety precautions.

In 2018, there were 857 bicyclists killed in motor vehicle crashes, a more than 6% increase from the year before. NHTSA's bicycle safety programs focus on the behaviors of bicyclists and motorists to reduce injuries and fatalities on our nation's roadways.

RISK OF CRASHES

Know some bicycle safety facts:

1. Regardless of the season, bicyclist deaths occurred most often between 6 p.m. and 9 p.m.
2. Bicyclist deaths occur most often in urban areas (75%) compared to rural areas (25%) in 2017.
3. Bicyclist deaths were 8 times higher for males than females in 2017.
4. Alcohol was involved in 37% of all fatal bicyclist crashes in 2017.

THREE CATEGORIES

There are three categories of issues that contribute to traffic crashes involving bicyclists and pedestrians: motorist behavior, non-motorist behavior, and infrastructure. Some of the issues overlap between categories.

- **Motorist** behaviors include speeding, distraction, lack of traffic law awareness, non-compliance with traffic laws, and alcohol or drug impairment.
- **Non-motorist** (i.e., pedestrian and bicyclist) behaviors include lack of traffic law awareness, non-compliance with traffic laws, poor conspicuity, and alcohol or other impairment.
- **Infrastructure** issues include inadequate separation between motorists and non-motorists, lighting, and signage or crosswalks.

HOW TO PROTECT YOURSELF

To Avoid Serious Injuries While Bike Riding Follow These Safety Tips:

- Never ride a bike without a helmet. The law requires anyone under the age of 17 to wear a properly fitted and fastened helmet, but all riders are strongly encouraged to use one. Head injuries, the most common cause of death among cyclists, can be reduced 85 percent by wearing a helmet.
- Wear bright clothing.
- Make sure your bike has reflectors. If you plan to ride at night, install a white light on the front and a red light on

the rear of the bike.
- Ride single file with the flow of traffic on the right side of the road.
- Use proper turning and stopping hand signals.
- When approaching an intersection, proceed with caution, looking left, right and left again. Walk the bike across the intersection.
- Make sure the bike is regularly maintained and all equipment is working. Tires should be properly inflated, and wheels straight and secure.

Cyclists, Check Your Equipment

Always inspect your bike prior to riding.

- The seat should be adjusted to the proper height and locked in place
- Make certain all parts are secure and working properly
- Check that the tires are inflated properly
- Make sure the bike is equipped with reflectors on the rear, front, pedals and spokes
- A horn or bell, a rear-view mirror and a bright headlight also are recommended

Plan to Be Seen

Make certain drivers can see you.

- Wear neon, fluorescent or other bright clothing
- Whenever possible, ride during the day
- If you must ride at night, wear reflective clothing and use flashing lights

Wear a Helmet

Helmets appropriate for bicycling should be worn by everyone – adults and children – on every bike ride regardless of length of the ride.

Follow these guidelines to properly fit the helmet:

- Adjust sizing pads or fit ring until the helmet is snug.

- Position the helmet level on your head, covering the forehead and not tipped backward or forward; this will be about one to two finger widths above the eyebrow.
- Adjust the side straps so they form a “V” shape under and slightly in front of your ears.
- Center the buckle on the chin strap under your chin.
- Buckle and tighten the chin strap until it is snug; no more than one to two fingers should be able to fit between the chin and strap.
- When fitted, the helmet should not rock more than 1 inch side to side or front to back on your head.

TIPS FOR EMPLOYEES

Bike riders can be at a disadvantage in traffic, so some caution is advised. With the following tips:

Plan your route. You don’t want to just get on your bike on Monday morning and take your usual driving route to work. Instead, work out a bike-friendly route beforehand.

Your bike route to work will probably be along side streets, bike lanes, and bike paths rather than heavily traveled “main drags.” Practice your route on your day off, and make sure you work out any tricky spots along with your new commute time.

Take advantage of public transit. If you have too far to go to bike the whole route, you may be able to use public transit for part of your trip.

Ride in the road. Beginning bikers may think sidewalks are safer, but bicycles belong—and are actually safer—in the roadway, following normal traffic rules.

Take care of your bike. If you’re not a skilled bike mechanic, keep your bike in good repair with an annual inspection at a bike shop.

Communicate. Be aware of the traffic around you, and make sure it’s aware of you. Use eye contact, hand signals, and a bike bell to let others know where you are and what you’re about to do.

Take up space. If you're riding along a line of parked cars, you're vulnerable to "dooming"—colliding with a car door when someone who doesn't see you opens it. Give parked cars a wide berth, even if it means that cars driving in your lane cannot pass.

Stay in control. Riding fast puts you at greater risk of losing control. Always go slowly enough that you can stop, turn, or otherwise maneuver as needed.

Be watchful. Look out for potholes and other roadway hazards and obstructions, and give yourself enough reaction time to avoid them safely.

FINAL WORD

Cyclists are increasing in droves not only in North America but all over the world. But the dangers of cycling are evident in the statistics that bear out the injuries and fatalities. Head injuries are the most common cause of death among cyclists. The most severe injurie are those to the brain that cause permanent damage.

Back Safety – Proper Lifting Procedures

WHAT'S AT STAKE?

Back injuries can be extremely painful and debilitating. According to the US Bureau of Labor Statistics, back injuries account for nearly 20 percent of all injuries and illnesses in the workplace. In fact, only the common cold accounts for more lost work days.

Although there is not a specific regulation for training employees on back safety, the General Duty Clause does require employers to provide employees with a workplace that is “free of recognized hazards,” and given the prevalence of back injuries in the workplace – it’s hard to not see it as a “recognized hazard.”

In fact, a back-safety program is key to dramatically reducing debilitating back injuries on the job.

Disabling back injuries are costly and all too prevalent. That’s why your company needs more than a quick fix approach to battling back pain.

WHAT’S THE DANGER?

We know when we’ve hurt our backs. Pain in the lower back is usually the first signal that an injury has occurred. Another signal is feeling fine while in a resting state but suffering lower back pain when sitting down or getting up. Getting around might also be more difficult, either from pain or stiffness.

Back injuries often occur when:

- An individual is lifting up an object
- Using improper lifting techniques such as lifting with the back and not the legs
- Lifting an object that is too heavy for the individual
- Twisting while lifting or carrying objects
- Repetitive lifting during a work task
- Poorly designed workstations and repetitive motions can also cause serious back problems.

Common causes of back pain from work procedures and processes.

- Exerting too much force such as by lifting or moving heavy objects.
- Repeating certain movements.
- An inactive job or a desk job,

ALL ABOUT BACK PAIN

The vast majority of low back pain is mechanical in nature. In many cases, low back pain is associated with spondylosis, a term that refers to the general degeneration of the spine associated with normal wear and tear that occurs in the joints, discs, and bones of the spine as people get older.

Examples of mechanical causes of low back pain include:

- Sprains and strains
- Intervertebral disc degeneration
- Herniated or ruptured discs
- Radiculopathy
- Sciatica
- Spondylolisthesis
- A traumatic injury
- Spinal stenosis
- Skeletal irregularities

HOW TO PROTECT YOURSELF

THE WAYS TO PREVENT BACK INJURIES

1. **The Hierarchy**

Eliminate – The best way to protect individuals against back injuries is to eliminate as many lifts as possible during the work day. Using equipment such as forklifts, heavy equipment, dollies, etc are the best way to achieve eliminating, handling and lifting objects by hand. Break down large or heavy objects that pose a hazard when lifting into smaller safer loads when possible.

Engineering Controls – Setup work areas that are ergonomically friendly to all employees. Install mechanical lifting devices and conveyor belts where feasible to limit handling objects. Install proper shelving and setup storage areas that keep objects and lifts within an optimal range. Keeping objects within the proper range helps keep employees from making awkward or dangerous lifts that can result in a sprain.

Administrative Controls – Use the buddy system when lifting any awkward or heavy objects. Agree on weight limits for lifting. For example, having a policy to not lift anything over 100lbs as a team without first involving a supervisor to see if there is a safer way to complete the lift is an administrative control. Also, always select employees who are physically capable of making the lifts of a task before the work begins.

Personal Protective Equipment such as back supports or back belts have not shown to be overly effective in preventing back injuries. These devices often create a false sense of security when completing lifts. Individuals should focus on stretching and using proper lifting techniques over using a back belt to keep them safe.

1. **THE LIFT**
2. **Plan the Lift**

By planning a lift, one can completely eliminate the risk of injury. If possible, use mechanical means to lift, move, and lower the materials, such as: forklifts, loaders, vehicles (transporting materials), dollies, wheelbarrows, wheel attachments on equipment, cranes, come-alongs, pry-bars…). If it is not practicable to use mechanical means, ask for assistance to help lift or move the load, or break the load down into smaller lifts. If this still is not practicable, ensure that you are capable of safely lifting the load, and ensure there are no, trip or slip hazards along the path you plan on carrying the load, then use proper lifting procedures.

2. **Make the Lift**

- Rule of Thumb: Look up as you lift!
- Face the load, stand with feet shoulder width apart with one leg ahead of the other.
- Ensure you have a good firm grip before lifting.
- Lift with your leg’s, and not your back and keep your back as straight as possible.
- Lift smoothly without jerking.

3. **Move the Lift**

- Avoid reaching out. Handle heavy objects close to the body. Avoid a long reach out to pick up an object.
- Avoid unnecessary bending. Do not place objects on the floor if they must be picked up again later.
- Avoid unnecessary twisting. Turn your feet, not your hips or shoulders. Leave enough room to shift your feet so as not to twist.
- Do not be tempted at the last moment to swing the load onto the deck or shelf by bending or twisting your back; it could end up being your last heavy load.

4. **Lower the Lift**

- The same technique used for lifting the load should be used for lowering the load.
- Watch your fingers for pinch points when lowering the load.

FINAL WORD

Back injuries are all too common in the workplace. Paying attention to proper lifting technique, asking your supervisor to consider re-designing how a job is performed, and asking for safety training are all ways you can prevent future back injuries. Good planning and safe work practices can help prevent these injuries.

Ergonomics Safety Talk

WHAT'S AT STAKE?

DEFINITION

Ergonomics is the process of designing or arranging furniture, products, systems and devices so that they fit the people that use

them to minimize the risk of injury or harm as a result. The aim is to create a comfortable, safe and productive workspace by bringing together health and design, with positioning and adjustment based on thing such as: Body size, Height, Strength, Skill, Speed, Sensory abilities (vision, hearing)

GOAL

The goal of ergonomics (i.e. the scientific study of people at work) is to prevent soft tissue injuries and musculoskeletal disorders (MSDs) caused by sudden or sustained exposure to force, vibration, repetitive motion, and awkward posture. To create an ergonomically sound work environment, NIOSH ergonomists and industrial hygienists recommend designing tasks, work spaces, controls, displays, tools, lighting, and equipment to fit employee's physical capabilities and limitations.

Work Days Lost

Every year, over 6.9 million working days are lost as a result of musculoskeletal disorders and generally progress over a period of time, especially in those who tend to endure prolonged sitting positions or repetitive motions.

WHAT'S THE DANGER?

CAUSES OF MSDS

Prolonged exposure to ergonomic risk factors can cause MSDs. Conditions likely to cause MSD problems include:

- Exerting excessive force.
- Excessive repetition of movements that can irritate tendons and increase pressure on nerves.
- Awkward postures, or unsupported positions that stretch physical limits, can compress nerves and irritate tendons.
- Static postures, or positions that a worker must hold for long periods of time, can restrict blood flow and damage muscles.
- Motion, such as increased speed or acceleration when bending

and twisting, can increase the amount of force exerted on the body.
- Compression, from grasping sharp edges like tool handles, can concentrate force on small areas of the body, reduce blood flow, nerve transmission and damage tendon sheaths.
- Inadequate recovery time due to overtime, lack of breaks and failure to vary tasks, leave inadequate time for tissue healing

MSDs can affect nearly all tissue in the body: nerves, tendons, tendon sheaths and muscles. The most frequently affected areas of the body are arms and the back.

COMMON SYMPTOMS OF ERGONOMIC INJURIES

Ergonomic problems most commonly arises in a person's neck, shoulders, back, or extremities. Depending on the condition, common symptoms can include:

- Tingling or numbing
- Dull and aching, sharp and stabbing, or burning pain
- Muscle weakness, decreased grip strength, or cramping
- Loss of coordination
- Decreased range of motion or discomfort
- Coldness or discoloration of the affected area
- Swelling of inflammation
- Joint stiffness
- Visual fatigue
- Blurred vision
- Burning or watery eyes
- Frequent headaches

HOW TO PROTECT YOURSELF

PREVENTION THROUGH ERGONOMICS

In recent years, potential ergonomic problems have become a major concern in many business environments. Many facilities are now devoting significant time and effort to controlling the twisting, turning, stretching, and other motions that place stress and

strain on employees’ bodies.

Risk Analysis

Assessing work-related hazards and minimizing injury risk is a critical part of controlling the cost of work-related injuries, keeping employees healthy, and returning injured employees to work faster. It is also a critical part of optimizing the selection and integration of new technology into the workplace in addition to identifying training requirements.

The following are important elements of an ergonomic process:

- **Provide Management Support –** A strong commitment by management is critical to the overall success of an ergonomic process. Management should define clear goals and objectives for the ergonomic process, discuss them with their workers, assign responsibilities to designated staff members, and communicate clearly with the workforce.
- **Involve Workers –** A participatory ergonomic approach, where workers are directly involved in worksite assessments, solution development and implementation is the essence of a successful ergonomic process. Workers can:
- Identify and provide important information about hazards in their workplaces.
- Assist in the ergonomic process by voicing their concerns and suggestions for reducing exposure to risk factors and by evaluating the changes made as a result of an ergonomic assessment.
- **Identify Problems –** An important step in the ergonomic process is to identify and assess ergonomic problems in the workplace before they result in CTDs.
- **Encourage Early Reporting of CTD Symptoms –** Early reporting can accelerate the job assessment and improvement process, helping to prevent or reduce the progression of symptoms, the development of serious injuries, and subsequent lost-time claims.
- **Implement Solutions to Control Hazards –** There are many possible solutions that can be implemented to reduce, control or eliminate workplace CTDs.

- **Evaluate Progress –** Established evaluation and corrective action procedures are required to periodically assess the effectiveness of the ergonomic process and to ensure its continuous improvement and long-term success. As an ergonomic process is first developing, assessments should include determining whether goals set for the ergonomic process have been met and determining the success of the implemented ergonomic solutions.

Dos & Don’ts

Think your work station might be contributing to your pain problems:

DO keep moving. Set an alarm to remind you if you need it! Sitting for long periods wreaks havoc on your spine and circulation. Get up, stretch, MOVE!

DO try to keep your body in a neutral posture, which creates the least strain on your body.

DO keep your desk clear so you’re not forcing your body to work awkwardly around clutter.

DON’T keep your monitor too close or too far away, or hunch over a laptop. This can cause eye strain and headaches in addition to neck and back pain.

DON’T use a desk or chair that’s not the proper height for your size. Everyone is different; find what works for you.

DON’T cradle your phone between your shoulder and ear.

DO wear a headset if a good portion of your day is spent on the phone.

DO invest in workstation essentials that are ergonomic, and make sure they are adjusted to where you need them to be.

- Look for an office chair with proper lumbar support that adjusts to your body.
- A laptop raiser positions your laptop for optimum ergonomics

while relieving eye and neck strain.
- A monitor arm makes it easy to adjust the height and position of your monitor to reduce upper back and neck pain.
- Use a footrest to reduce lower back pressure and increase blood flow.
- A bright, adjustable light can reduce headaches, eye fatigue and neck strain.
- Or try a standing desk to keep you moving! Less time spent sitting means less stress on your spine while increasing circulation and mental alertness.

FINAL WORD

Your body is not a “tool” that you can easily replace. If you injure your body, it could have lifelong negative consequences for you at work and in your non- work life. Treat it with kindness and intelligence.

Shoveling Safe Work Procedure

WHAT’S AT STAKE?

Shoveling is quite a simple task, but it is important to realize that it places a great deal of stress on the back and shoulders. If done incorrectly, or too much weight is lifted, it can cause a chronic (over use) or acute (immediate) injury.

WHAT’S THE DANGER?

SNOWBOARDERS, SKIING OR SHOVELING

When you picture dangerous winter activities, do you think of skiing or maybe snowboarding? You may be surprised that, on

average, only 38 Americans are killed each year in skiing and snowboarding accidents combined, compared to 100 deaths in the U.S. related to shoveling snow.

There are probably a lot more shovelers than skiers, but consider this other statistic for just one metro area: During the winter of 2014-15, CBS News reported that 18 people died in incidents related to shoveling snow in the Chicago area, and that was only through Feb. 15. Ages of the victims ranged from the 40s to 75.

How can shoveling be so dangerous? Think of a primarily sedentary 50-year-old man gulping down his coffee so he can go out on a cold morning to move hundreds of pounds of snow before he has to leave for work. He’s putting a lot of strain on his upper body in particular, in an aerobic activity that’s more strenuous than many sports. And he’s doing this while inhaling cold air.

The combination of an intense, unfamiliar exertion and cold air taxes the heart because it boosts blood pressure and heart rate, as well as the demand for oxygen. The cold also can make blood vessels constrict. People should avoid shoveling if they have heart disease or a high risk for it.

The Canadian research in question looked at more than 128,000 hospital admissions and more than 68,000 deaths due to heart attack. The focus was on the day after snowfalls in Quebec between 1981 and 2014. They found that the deeper the snow, the more men died of heart attacks. If the snowfall was about eight inches, they saw a 34 percent increase in deaths.

RISK ANALYSIS OF SHOVELING

Encourage workers to take the hazards of heavy work in cold weather seriously:

- Snow shoveling causes an average of nearly 100 deaths and 11,500 emergency department visits each year in the United States.
- The most frequently injured area of the body is the lower back (34%).
- Heart problems make up 7% of the injuries—but 100% of the

deaths.
- The most common cause of injuries was acute musculoskeletal exertion (54%).
- Slips or falls (20%) are the second most common cause of injuries.

Study Takeaway

A 17-year study on the health effects of snow shoveling discovered that from 1990 to 2006 approximately 195,000 people visited the hospital because of injuries caused by clearing snow. Unsurprisingly, 54% of the visits were for musculoskeletal exertion. (Heart attacks and slips, trips and falls were two other major contributors to shoveling-related hospital visits.) And with so much additional effort required of workers' backs off the job, there's bound to be an impact on the job.

Back pain can be caused by regular physical stress. So if you strain your back by lifting too much at home then you're more likely to hurt your back at work.

HOW TO PROTECT YOURSELF

GENERAL SAFETY PRECAUTIONS

- Make sure a good quality shovel is used.
- The shovel used should be designed for the material it is used on. e.g. a snow shovel for shoveling snow.
- Do not shovel more than you feel comfortable, e.g. the shovel does not have to be full if the material is heavy.
- If the material is wet, e.g. wet snow or soil after rainfall, it will be considerably heavier.
- Use a shovel with a small scoop.
- Do not shovel after a heavy meal.
- Take the weather into consideration: If it's hot take breaks and drink plenty of water. If it's cold dress in layers and go slow.
- If you are cold warm up first. Stressing muscles while the body is cold is a sure way to cause strains and sprains.
- Take regular breaks, pace yourself.

- If you are not fit, or not used to shoveling, or you have a heart condition, strongly considering asking someone else to shovel, or go extremely slow. It is not unheard of for people to have heart attacks while shoveling.

REDUCE THE RISK

Here is how you reduce your risk.

Shoveling Snow

- Avoid shoveling in the early morning when heart attacks most often occur.
- Warm up your muscles before shoveling.
- Don’t shovel soon after eating a heavy meal, drinking caffeinated beverages or smoking.
- Pace yourself, taking breaks every 15 minutes.
- When possible, push the snow, rather than lift it. When you do lift, pick up only a small amount at a time.
- Cover your head, and wear layers and skid-resistant footwear.
- Shovel the snow when it’s still fresh and powdery.
- Check with your doctor before shoveling if you’re sedentary and over 40, especially if you have risk factors or a history of heart disease.
- If you do experience chest pain, dizziness or other symptoms of a heart attack, chew an aspirin and call 911.

SHOVELING WET/HEAVY SNOW

- Use ice melt, salt, or sand to decrease the hazard of icy surfaces—and the stress of clearing them.
- Snow shoveling may cause a quick increase in heart rate and blood pressure.
- Cold air makes it harder to work and breathe, which adds extra strain on the body.
- Check with your doctor to see if you should be able to do at least moderate shoveling.
- Pick the right shovel for you. A smaller blade will require you to lift less snow, putting less strain on your body.
- Plastic shovels weigh less than metal shovels, and snow is

not as likely to stick to them. These factors add less weight to your load. Spray the blade with a lubricant to keep snow from sticking.

- Pick up smaller loads of snow. It's best to shovel by sections. If you are experiencing snowfall levels of 12-inches or higher, take it easy and shovel 2 inches off at a time.
- Try to clear snow early and often—take frequent breaks. Begin shoveling/blowing when a light covering of snow is on the ground.
- Push snow rather than lift it when possible, especially when the snow is heavy

FINAL WORD

Snow shoveling is a strenuous activity comparable to weight lifting while walking on uneven and unstable ground and wearing heavy-duty clothing. Shoveling, although considered a "straight forward" task, has led to worker injuries due to improper technique. In order to avoid injury, proper techniques must be applied in our workplaces and homes.

Basic Electrical Toolbox SafetyTalk

WHAT'S AT STAKE?

STATIC AND DYNAMIC ELECTRICITY

All electrical systems have the potential to cause harm. Electricity can be either "static" or "dynamic." **Dynamic**

Electricity is the uniform motion of electrons through a conductor (this is known as electric current). Conductors are materials that allow the movement of electricity through it. Most metals are conductors. The human body is also a conductor.

Static Electricity is accumulation of charge on surfaces as a result of contact and friction with another surface. This contact/friction causes an accumulation of electrons on one surface, and a deficiency of electrons on the other surface.

Path or Loop

Electric current cannot exist without an unbroken path to and from the conductor. Electricity will form a “path” or “loop”. When you plug in a device (e.g., a power tool), the electricity takes the easiest path from the plug-in, to the tool, and back to the power source. This is action is also known as creating or completing an electrical circuit.

Installation / Maintenance of Electrical Systems

Almost every building has an electrical power, communications, lighting, and control system that is installed during construction and maintained after that. These systems power the lights, appliances, and equipment that make people’s lives and jobs easier and more comfortable.

Installing electrical systems in newly constructed buildings is often less complicated than maintaining equipment in existing buildings because electrical wiring is more easily accessible during construction. Maintaining equipment and systems involves identifying problems and repairing broken equipment that is sometimes difficult to reach. Maintenance work may include fixing or replacing parts, light fixtures, control systems, motors, and other types of electrical equipment.

WHAT’S THE DANGER?

FOUR TYPES OF INJURIES

1. **Electrocution (fatal)**

2. **Electric Shock**
3. **Burns**
4. **Falls**

These injuries occur as follows:

- Direct contact with exposed energized conductors or circuit parts. When electrical current travels through our bodies, it can interfere with the normal electrical signals between the brain and our muscles (e.g., heart may stop beating properly, breathing may stop, or muscles may spasm).
- When the electricity arcs (jumps, or “arcs”) from an exposed energized conductor or circuit part (e.g., overhead power lines) through a gas (such as air) to a person who is grounded (that would provide an alternative route to the ground for the electrical current).
- Thermal burns including burns from heat generated by an electric arc, and flame burns from materials that catch on fire from heating or ignition by electrical currents or an electric arc flash. Contact burns from being shocked can burn internal tissues while leaving only very small injuries on the outside of the skin.
- Thermal burns from the heat radiated from an electric arc flash. Ultraviolet (UV) and infrared (IR) light emitted from the arc flash can also cause damage to the eyes.
- An arc blast can include a potential pressure wave released from an arc flash. This wave can cause physical injuries, collapse your lungs, or create noise that can damage hearing.
- Muscle contractions, or a startle reaction, can cause a person to fall from a ladder, scaffold or aerial bucket.

HOW TO PROTECT YOURSELF

ELECTRICAL SAFETY BASICS

- Don’t work with exposed conductors carrying 50 volts or more.
- Make sure electrical equipment is properly connected,

grounded and in good working order.
- Extension cords may not be used as permanent wiring and should be removed after temporary use for an activity or event.
- Surge suppressors with built-in circuit breakers may be used long-term and are available with three, six and 15 foot-long cords.
- High amperage equipment such as space heaters, portable air conditioners and other equipment must be plugged directly into permanent wall receptacles.
- Do not access, use or alter any building's electrical service, including circuit breaker panels, unless you are specifically qualified and authorized to do so.
- Wet environments can increase the risk of an electrical shock.

Housekeeping and Maintenance

- Maintain at least 30 inches of clearance in front of electrical panels to ensure a safe environment for facilities workers.
- Make sure that all junction boxes are covered.

Avoid activities that requires training

- Working with exposed conductors carrying 50 volts or more
- Making repairs or alterations to any electrical equipment
- Opening up the case, or removing barrier guards, of any equipment that utilizes electricity
- Using any tools or a meter to measure for the presence of electricity
- Resetting a tripped circuit breaker, or replace a blown fuse

General Safety Tips For Working With Or Near Electricity

- Inspect portable cord-and-plug connected equipment, extension cords, power bars, and electrical fittings for damage or wear before each use. Repair or replace damaged

equipment immediately.

- Always tape extension cords to walls or floors when necessary. Do not use nails and staples because they can damage extension cords and cause fire and shocks.
- Use extension cords or equipment that is rated for the level of amperage or wattage that you are using.
- Always use the correct size fuse. Replacing a fuse with one of a larger size can cause excessive currents in the wiring and possibly start a fire.
- Be aware that unusually warm or hot outlets or cords may be a sign that unsafe wiring conditions exists. Unplug any cords or extension cords from these outlets and do not use until a qualified electrician has checked the wiring.
- Always use ladders made with non-conductive side rails (e.g., fibreglass) when working with or near electricity or power lines.
- Place halogen lights away from combustible materials such as cloths or curtains. Halogen lamps can become very hot and may be a fire hazard.
- Risk of electric shock is greater in areas that are wet or damp. **Install Ground Fault Circuit Interrupters (GFCIs)** as they will interrupt the electrical circuit before a current sufficient to cause death or serious injury occurs.
- Use a portable in-line Ground Fault Circuit Interrupter (GFCI) if you are not certain that the receptacle you are plugging your extension cord into is GFCI protected.
- Make sure that exposed receptacle boxes are made of non-conductive materials.
- Know where the panel and circuit breakers are located in case of an emergency.
- Label all circuit breakers and fuse boxes clearly. Each switch should be positively identified as to which outlet or appliance it is for.
- Do not use outlets or cords that have exposed wiring.
- Do not use portable cord-and-plug connected power tools if the guards are removed.
- Do not block access to panels and circuit breakers or fuse boxes.

- Do not touch a person or electrical apparatus in the event of an electrical incident. Always disconnect the power source first.

FINAL WORD

Electrical repairs must be carried out only by persons who are qualified and authorized to do so. Makeshift repairs of electrical equipment have resulted in many deaths in the workplace. Remember, you are in danger of electrocution if testing and repairs are done incorrectly.

Preventing Occupational Illness

WHAT'S AT STAKE?

The Injuries, Illnesses, and Fatalities (IIF) program produces a wide range of information about workplace injuries and illnesses. These data are collected and reported annually through the Survey of Occupational Injuries and Illnesses (SOII) and the Census of Fatal Occupational Injuries (CFOI).

An injury or illness is considered by the Occupational Safety and Health Administration to be work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing condition.

WHAT'S THE DANGER?

STATISTICS

In 2016, the U.S. Bureau of Labor Statistics reported 2.9 million

non-fatal workplace injuries and illness by private industry employers. This continues a steady, downhill trend since 2003. 5,190 fatal work injuries also occurred in 2016.

RECORDABLE CASES

Recordable cases include work-related injuries and illnesses that result in:

- Death
- Loss of consciousness
- Days away from work
- Restricted work activity or job transfer
- Medical treatment (beyond first aid)
- Significant work related injuries or illnesses that are diagnosed by a physician or other licensed health care professional. These include any work related case involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum.
- Additional criteria that can result in a recordable case include:
- Any needlestick injury or cut from a sharp object that is contaminated with another person’s blood or other potentially infectious material.
- Any case requiring an employee to be medically removed under the requirements of an OSHA health standard.
- Tuberculosis infection as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional after exposure to a known case of active tuberculosis.
- An employee’s hearing test (audiogram) reveals 1) that the employee has experienced a Standard Threshold Shift (STS) in hearing in one or both ears (averaged at 2000, 3000, and 4000 Hz) and 2) the employee’s total hearing level is 25 decibels (dB) or more above the audiometric zero (also averaged at 2000, 3000, and 4000 Hz) in the same ear(s) as the STS.

OCCUPATIONAL ILLNESSES

Skin diseases or disorders are illnesses involving the worker's skin that are caused by work exposure to chemicals, plants or other substances. Examples: Contact dermatitis, eczema, or rash caused by primary irritants and sensitizers or poisonous plants; oil acne; friction blisters, chrome ulcers; inflammation of the skin.

Respiratory conditions are illnesses associated with breathing hazardous biological agents, chemicals, dust, gases, vapors, or fumes at work. Examples: Silicosis, asbestosis, pneumonitis, pharyngitis, rhinitis or acute congestion; farmer's lung, beryllium disease, tuberculosis, occupational asthma, reactive airways dysfunction syndrome (RADS), chronic obstructive pulmonary disease (COPD), hypersensitivity pneumonitis, toxic inhalation injury, such as metal fume fever, chronic obstructive bronchitis and other pneumoconioses.

Poisoning includes disorders evidenced by abnormal concentrations of toxic substances in blood, other tissues, other bodily fluids, or the breath that are caused by the ingestion or absorption of toxic substances into the body. Examples: Poisoning by lead, mercury, cadmium, arsenic, or other metals; poisoning by carbon monoxide, hydrogen sulfide, or other gases; poisoning by benzene, benzol, carbon tetrachloride, or other organic solvents; poisoning by insecticide sprays such as parathion or lead arsenate; poisoning by other chemicals such as formaldehyde.

Hearing loss Noise-induced hearing loss for recordkeeping purposes is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more in either ear at 2000, 3000, and 4000 hertz and the employee's total hearing level is 25 decibels (dB) or more above the audiometric zero (also averaged at 2000, 3000, and 4000 hertz) in the same ear(s).

All other occupational illnesses Examples: Heatstroke, sunstroke, heat exhaustion, heat stress and other effects of environmental heat; freezing, frostbite, and other effects of exposure to low temperatures; decompression sickness; effects of ionizing

radiation (isotopes, x-rays, radium); effects of nonionizing radiation (welding flash, ultra-violet rays, lasers); anthrax; bloodborne pathogenic diseases such as AIDS, HIV, hepatitis B or hepatitis C; brucellosis; malignant or benign tumors; histoplasmosis; coccidioidomycosis.

HOW TO PROTECT YOURSELF

INJURY AND ILLNESS PREVENTION PROGRAM

An injury and illness prevention program, is a proactive process to help employers find and fix workplace hazards before workers are hurt. These programs can be effective at reducing injuries, illnesses, and fatalities. Not only do these employers experience dramatic decreases in workplace injuries, but they often report a transformed workplace culture that can lead to higher productivity and quality, reduced turnover, reduced costs, and greater employee satisfaction.

Thirty-four states and many nations around the world already require or encourage employers to implement such programs. **The key elements common to all of these programs are:**

- management leadership
- worker participation
- hazard identification and assessment
- hazard prevention and control
- education and training
- program evaluation and improvement.

THE PROGRAM EXPLAINED

- **Management leadership:** Management should establish overall goals for safety and health within the organization, then define the actions needed to meet these goals. Corporate leadership should designate one or more individuals to provide oversight for the program and provide sufficient resources for implementation.
- **Worker participation**: Consult with employees during development and implement of the program. Workers at various

levels may have a role in workplace inspections and incident investigations. Everyone should be encouraged to report hazards, safety concerns, near misses, injuries, and illnesses.

- **Hazard identification and assessment**: Identify, assess, and document workplace hazards using a variety of methods: workplace inspection, employee interviews, illness assessments and injury investigations.
- **Education and training**: Educate and train workers using a language they can understand. Review the procedures for reporting workplace injuries, illnesses, and other health and safety concerns. Include how to recognize, control, and eliminate existing and potential hazards. Education and training should be conducted periodically.
- **Program evaluation and improvement:** Periodically review the program to determine its success. Make any needed changes and keep working to improve the program and its results.

BENEFITS OF PREVENTION

Workplace injuries and illnesses not only have emotional and physical costs, but can also be a significant financial burden on businesses in terms of workers' compensation and fines. Additionally, there are indirect costs to consider:

- Replacement costs for damaged premises and equipment/machinery.
- Costs due to work stoppage when an accident occurs and is investigated.
- Lost productivity from recovering workers and/or training and hiring replacements.
- Administration costs to document the accident and follow-up with affected employees.

FINAL WORD

An injury and illness prevention program is a proactive process to help employers find and fix workplace hazards before workers are hurt. These program can be effective at reducing injuries,

illnesses and fatalities.

Avoiding Back Injury At Work

WHAT’S AT STAKE?

Back injury at work claims are one of the most common claims seen. According to the Health and Safety Executive (HSE) over a third of claims reported to them where an employee took over 3 days, or more, off work was due to manual handling. The Manual Handling Operations Regulations 1992 are designed to protect employees who are involved in manual handling and covers lowering, pulling, pushing as well as the more obvious lifting of objects.

Back pain is one of the most common reasons for missed work; 80 percent of the general population will suffer from a severe episode of lower back pain at least once in their lifetime. It’s one of the most common workplace injuries and costs the US $100 billion every year. Cross the pond to the UK and a staggering 3,204,000 working days were lost to back disorders in Great Britain in 2016/17. It’s a global problem.

WHAT’S THE DANGER?

CAUSES OF BACK PAIN

Whether it’s dull and achy or sharp and stabbing, back pain can make it hard to concentrate on your job. Unfortunately, many occupations – such as nursing, construction and factory work – can place significant demands on your back. Even routine office work can cause or worsen back pain. Understand what causes back pain at

work and what you can do to prevent it.

A number of factors can contribute to back pain at work. For example:

- Exerting too much force on your back – such as by lifting or moving heavy objects – can cause injury.
- Repeating certain movements, especially those that involve twisting or rotating your spine, can injure your back.
- An inactive job or a desk job can contribute to back pain, especially if you have poor posture or sit all day in a chair with inadequate back support.

JOB DUTIES CONTRIBUTE TO BACK INJURIES

The majority of back injury claims are from repetitive job duties, such as:

- Pushing
- Pulling
- Poor posture
- Heavy lifting
- Twisting
- Over-extension of the extremities or spine

Heavy lifting traumas top the list of the most commonly received on the job injury with thousands of worker's compensation claims filed yearly. This is partially due to the lack of federal regulations regarding requirements for lifting in the workplace. Without these guidelines, employers must craft their own policies and safety measures to prevent these painful conditions from happening.

OTHER CAUSES

More than half of the workers who experience low back pain spend the majority of their work day sitting down. In fact, if you work in the construction sector, you're more likely to be hit by a vehicle or a falling brick than you are to suffer a back injury.

Back pain for seated employees can occur in many ways. The most common cause is lower back pain as a result of prolonged sitting

in an uncomfortable position. The natural curve of the spine isn’t supported and as such, aches and pains begin to occur.

Another cause of workplace back injury is through manual handling. This can range from injuries sustained when lifting heavy objects to bending unsafely to pick up pieces of paper on the floor.

For some people, back pain is intermittent and can be managed. They only need to adjust their chair and they start to feel better. Over time and with some exercise, back pain can go away on its own. However, this is not the case for everyone.

Lingering Effects

The amount of time people take off due to back pain hits businesses hard. This is especially true for small businesses that don’t have the resources to maintain a proper level of service if people are off regularly, or off long term with some sort of back-related injury.

HOW TO PROTECT YOURSELF

TRIFECTA

Exercise/Diet/Weight

In order to achieve good physical health and fitness you need to fellow the TRIFECTA effect.

Exercise

- Exercise regularly. Activities such as walking, swimming and other low impact aerobic exercises are helpful for overall conditioning. Specific exercises to strengthen the back and abdominal muscles can also ward off back injuries.
- Combine aerobic exercise, such as swimming or walking, with exercises that strengthen and stretch your back muscles and abdomen. Exercises that increase your balance and strength can also decrease your risk of falling and injuring your back. Consider tai chi, yoga and weight-bearing exercises that challenge your balance.

- For most healthy adults, the Department of Health and Human Services recommends at least 150 minutes a week of moderate aerobic activity or 75 minutes a week of vigorous aerobic activity – preferably spread throughout the week – and strength training exercises at least twice a week.

Diet

- Start by eating a healthy diet. Make sure you get enough calcium and vitamin D. These nutrients can help prevent osteoporosis, a condition that causes your bones to become weak and brittle and is responsible for many of the bone fractures that lead to back pain.
- Keep your weight at a healthy level. Excess weight puts a strain on your back.

Weight

- Keep your weight at a healthy level. Excess weight puts a strain on your back.
- If you smoke, quit. Smoking reduces blood flow to your lower spine, which can contribute to spinal disc degeneration and slow healing from back injuries. Coughing associated with smoking can also cause back pain.

Other AIDS

- Maintain good posture. In particular, avoid standing or sitting in a “sway back” position. Pull in your abdomen and buttocks, and stand up straight.
- When doing work that requires standing for a long time, place one foot on a footrest and change your position from time to time.
- Fatigue can contribute to back injuries. Pay attention to how you feel and take rest breaks when you get tired.

Techniques for Proper Lifting

- Take a look at the object to be lifted. Is it heavy or awkward to lift?
- Plan your lift. Decide how to pick up the object, how you

will carry it and where you will set it down.

- If the load is too heavy or awkward to lift safely, get help.
- To pick it up, get as close to the item as possible. Squat down in front of it.
- Lift the load by bending your knees and keeping your back straight. Let your legs – not your back – bear the weight.
- Use equipment available to lift and move materials. Hoists, lifts, turntables, handcarts and other devices can be effective back-savers.

FINAL WORD

Back problems can be caused by accumulated small injuries. Take good care of your back at all times to help prevent painful and disabling injuries.