

PREVENTING HAND INJURIES

RECOGNIZING HAZARDS AND UNDERSTANDING THEM

1. PINCH POINTS
2. LINE OF FIRE
3. BODY POSITIONING

AGENDA



Introduction/Hand injuries



Hand Injuries and their root causes



Prevention of Hand Injuries



PPE (Where Gloves)!!!



Hazard Recognition Pinch Points Line of Fire and Body Positioning



Hand hazards

- Mechanical hazards
- Heat
- Bio-hazards
- Hazards by tool/equipment handling
- Chemical hazards
- Pinch Points

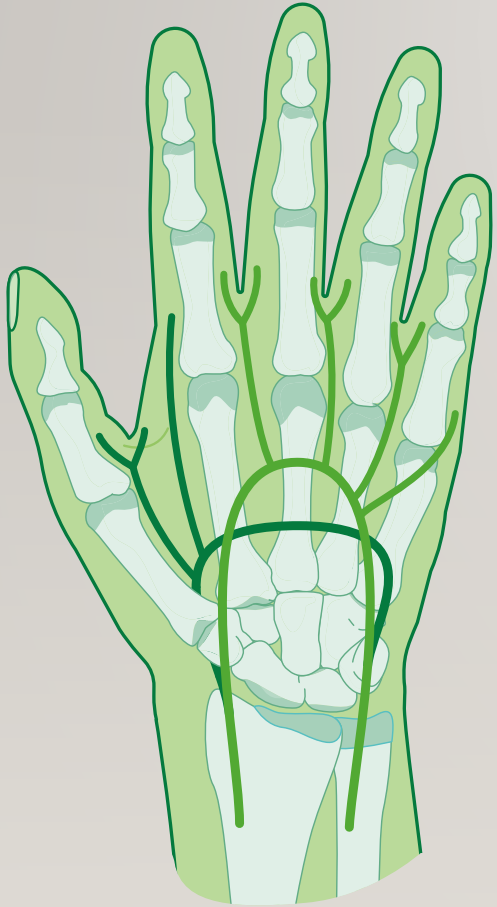


4 steps to Recognizing Hazards



Workshops to Educate the Workforce

HAND INJURIES



Hand injuries are difficult to repair because of the complexity of the hand

After a hand injury, the hand may not function as it did before the injury due to loss of:



Motion



Dexterity



Grip



TYPES OF INJURIES

Cuts, fractures, punctures and amputations (Pinch Points due to Line of Fire and poor body positioning)

- Cuts or lacerations – May sever nerves, tendons or muscle or become infected (Improper PPE, Improper Tools)
- Fractures can damage nearby tissue and be difficult to repair (Falls, Falling Objects)

Dermatitis and burns are caused by direct contact with chemicals, detergents, metals, or very hot or cold objects

- Dermatitis may show up immediately after contact with a chemical causing the skin to become red, swollen, itchy, or burning, and may develop blisters
- Dermatitis may develop after several contacts with chemicals known as sensitizers – Nothing happens initially, later contacts with the chemical produce an allergic reaction

Carpal tunnel syndrome results from prolonged repetitive work with the hands – This condition can be disabling and can have a variety of temporary symptoms like swelling, tingling, numbness, and pain in the hands or fingers

HAND INJURIES

To avoid hand injuries:

- Know the hazards and dangers in the job to be done
- Be aware of pinch points
- Be aware of hot areas
- Be aware of rotating or moving surfaces
- Automated machinery may be controlled by remote control, or delayed timing devices that cause the machine to start automatically
- Do not wear loose clothing and jewelry as it may be caught in moving machinery
- Never remove machine safeguards or operate machinery with safeguards removed

HAND HAZARDS



Bee stings



Chemicals

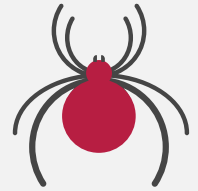


Punctures



Biohazard

Blood-borne pathogen



Insect bites



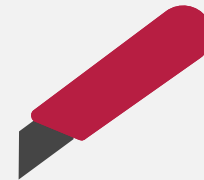
Rotating equipment



Extreme temperatures



Pinch points



Cuts



Vibrating equipment



Repetitive motion

HAMMERS



Never use a hammer with a splintered, cracked, or loose handle



Don't use hammers with rounded striking faces



Use the correct hammer for the job



Don't strike a hammer face with another hammer

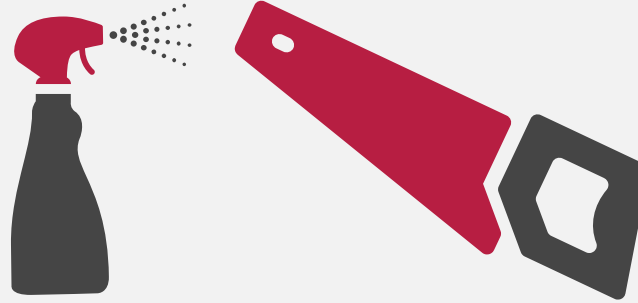


Don't use nail hammer claws as a pry bar

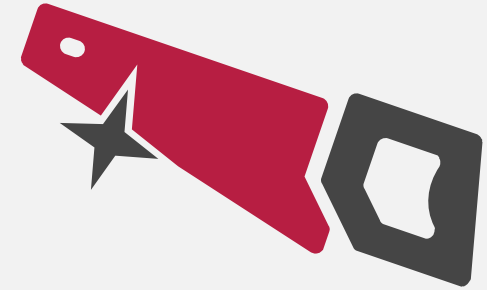
HAND SAWS



Use **moderate pressure** on hack saws to **prevent blade failure**

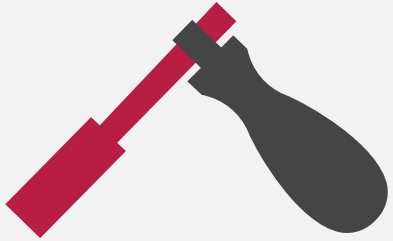


Spray saw blades **lightly with lubricant** prior to use



Keep blades **sharp**

CHISELS



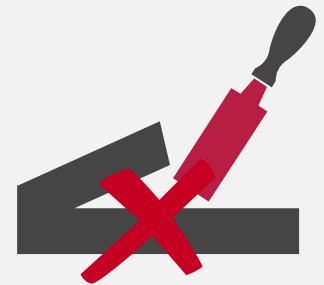
When possible,
use a **safety chisel**
(away from body)



Don't use chisels with
mushroomed heads



Use the **correct**
chisel for the job



Don't use chisels
as **pry bars**

WRENCHES



Use the **correct sized** wrench for the job (e. g. with chipped teeth)



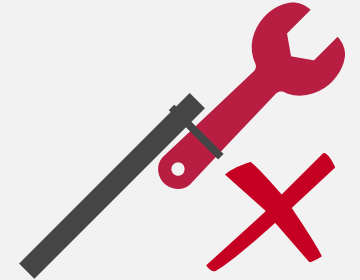
Don't use pliers with **worn grooves** or **crescent** wrenches with **worn** or **sprung jaws**



Don't use **pliers** or **crescent** wrenches on **over-tight bolts** and **nuts**

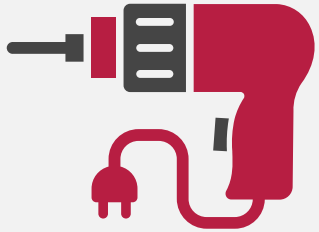


Pull on wrenches rather than **pushing** them



Never use a **cheater bar** on a wrench

PORTABLE POWER TOOLS



Disconnect power tools when **not in use** and before **changing bits, blades, and other accessories**



If a power tool binds **STOP!** and **reassess the job**



Wear **anti-vibration** gloves when using power tools that vibrate excessively



Never remove **guards!**



Ground power tools unless **double insulated**



Don't wear bulky gloves if they can get caught on **rotating parts**

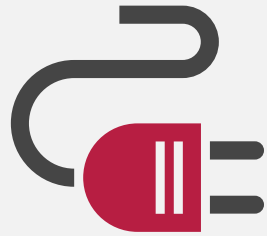


Secure work **in or on a bench** – Don't hold it in your hand!

SHOP TOOLS



Use a push stick to **cut small pieces**



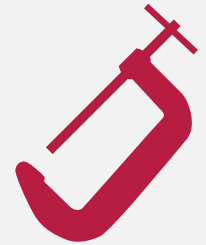
Unplug or Lockout tools before changing blades



Keep tools **sharp**



Never remove **guards!**



Use a **drill press** vise when drilling – Don't hold parts with your hands!

BENCH GRINDERS



Don't wear gloves when operating bench grinders



Never remove guards!



Maintain proper clearances on tool rests and tongue guards



Use vice grips when grinding small parts

Maintain tongue guard within 1/4" of the wheel



Maintain tool rest Within 1/8" of the wheel

Don't use grinders on aluminum unless the wheel is specifically intended for use with aluminum!

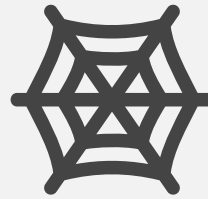
BITES AND STINGS



Use caution when moving debris piles or equipment which has been sitting for a long time



Don't stick your hands in holes, crevasses and other secluded places, including work boots which have been sitting for awhile



Avoid areas where insects' nest or congregate (garbage cans, stagnant pools of water, uncovered foods and areas where flowers are blooming)



Avoid dressing in clothing with bright colors



Avoid use scented soaps, perfumes or hair sprays



Implement pest control measures

PPE

MANY GLOVES FOR DIFFERENT APPLICATIONS



Cotton

Light duty material handling and cleanup work



Cotton



Leather/Impact

Equipment handling, general construction, heavy cleanup, welding, moderately hot or cold material handling



Leather/Impact

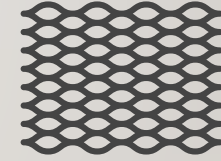


Shock absorbing

Operating rotary hammers and other vibrating equipment

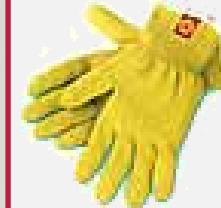


Anti-vibration



Kevlar or Wire mesh

Work with sheet metal, glass, or heavy cutting
These gloves Do Not provide puncture protection



Kevlar



Wire mesh

PPE

MANY GLOVES FOR DIFFERENT APPLICATIONS



Rubber, nitrile, neoprene, PVC, PVA and other synthetics

Chemical gloves must be chosen for the specific chemical being used



Nitrile



Neoprene



Polyvinyl Alcohol (PVC)

Polyvinyl Chloride (PVC)



Insulated

Extreme high and low temperatures



Welding



EXAMPLE WORKSHOP STATIONS

Area: Maintenance shop

Leader: Senior Maintenance Technician/Supervisor

Learning Objectives:

- Recognize common hand hazards associated with maintenance shop equipment
 - Forklifts, Manlifts, Drill presses, welders, grinders, lathes, band saws, etc...
- Discuss probability and severities for injury potential
- Overview of hazard controls such as guarding, blocking, emergency stops, PPE, etc.



HAZARD RECOGNITION (HANDS PLACEMENT)



Take Time to Recognize Hazards

Take time to focus on the task, think it through and recognize hazards. Slow down and inspect the work area to minimize the potential for an incident.

Before starting any task, consider **four simple steps** to **recognize and control hazards**. STOPWATCH 4 STEPS



Step One: Self-Check

- Am I rushing?
- Am I communicating well?
- Am I distracted?
- Am I fatigued?
- Am I frustrated?
- Am I complacent?



Step Two: Recognize the hazards

- How could the hazard change while I am doing this job?
- What happens if new people or equipment enter the work area?
- What could **reasonably** go wrong when doing this task?
- Is there a safer way to do this?



Step Three: Ask „What if?“

- Inspect the work environment for hazards
- What are the hazards associated with the task?
- Are there Life-saving Rules implications?
- Is there loss of containment potential?
- Are there environmental concerns?
- Are there other potential hazards?
- Ask yourself, “Am I following procedures?”



Step Four: Take action or stop work.

- Is there a serious unsafe condition?
If so, **Stop work** and consult with your leader.
- Do I need additional resources to do the job?
- Do I need additional protective measures to control the hazards?
- Am I protecting myself, others, the environment, and the process or equipment?
- Is there a safer way to complete this task?



**PREVENTING HAND
INJURIES**