

# Portable Power Tool Safety Training

A close-up, black and white photograph of a hand wearing a dark, textured work glove. The hand is firmly gripping a power drill, which is angled towards the right. The drill's chuck and part of its handle are visible. The background is blurred, showing what appears to be a workbench or a similar industrial setting. The overall tone is professional and focused on safety and tool use.

# Session Objectives

## **You will be able to:**

- Identify the hazards of portable power tools
- Take precautions against injury
- Use tool guards effectively
- Understand common safety practices for specific types of tools

# Types of Portable Power Tools

- Electric
- Pneumatic or air-powered
- Liquid fuel such as gasoline
- Hydraulic
- Powder-actuated



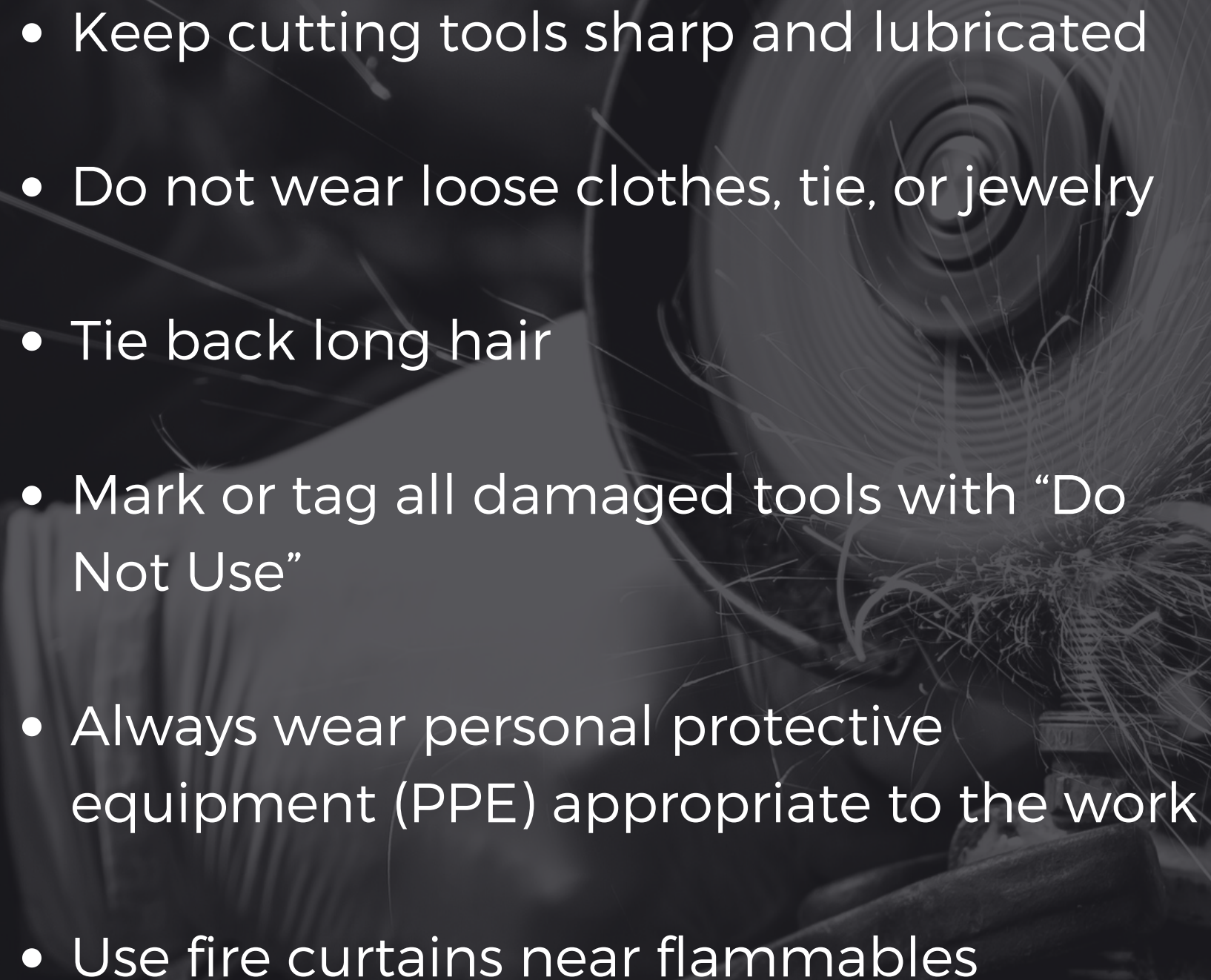
# Portable Power Tool Hazards

## MISUSE AND IMPROPER MAINTENANCE

- Hit by flying debris
- Hit by broken tool part
- Puncturing yourself with a sharp tool
- Explosion or fire when sparks from a tool ignite flammable or combustible materials
- Electric shock from a frayed or defective power cord
- Musculoskeletal disorders (MSDs) from repetitive misuse of a tool

# General Precautions for Operating Power Tools


- Never carry a tool or unplug it by the cord or hose
- Disconnect tools when they are not in use
- Make sure observers are at a safe distance
- Secure work with a vise, clamp, or other support
- Keep cords and hoses away from heat, liquids, and sharp edges
- Examine tools before each use to ensure they are not damaged

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- Keep cutting tools sharp and lubricated
  - Do not wear loose clothes, tie, or jewelry
  - Tie back long hair
  - Mark or tag all damaged tools with “Do Not Use”
  - Always wear personal protective equipment (PPE) appropriate to the work
  - Use fire curtains near flammables

# **General Precautions (cont.)**



# TOOL GUARDS

- **Important safety features of most power tools and are here to protect you from:**
    - **Point of operation hazards i.e., where the blade of a saw meets the material**
    - **Nip points – where moving parts of a tool might catch a hand or finger**
    - **Rotating parts such as a saw blade**
    - **Flying chips or sparks**
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# Guarded Power Tool Parts



The parts of a power tool that must always be guarded include:



- Gears, sprockets, and sprocket chain drives
- Belt and pulley drives, pulleys, and drums
- Hazardous revolving or reciprocating parts



- Exposed shafts and projecting shaft ends
- Collars, clutches, and couplings



# Protect Yourself- Use Guards



- **Never operate a tool without its guard in place**
- **Use the guard supplied by the tool manufacturer**
- **Never remove or disable guards**
- **Report any missing, broken, or disabled guards**

# Electric Tool Safety

- Operate tools within their design limitations
- Wear appropriate gloves and footwear
- Store tools in a dry location
- Do not use them in wet or damp locations
- Work areas should be well lighted

# Power Grinder Safety Practices

- Always use eye protection
- Turn off power when it's not in use
- Never clamp a hand-held grinder in a vise





# Pneumatic Tool Safety

- Always wear eye and hearing protection
- Make sure air hose connections are secure
- Ensure the safety clip for attachments is installed and secure
- Use screens to protect nearby workers
- Never point the tool at anyone

# Power-Actuated Tool Safety

- Do not use in an explosive or flammable atmosphere
- Inspect the tool prior to use
- Never point the tool at anyone
- Load the tool only when it is going to be used
- Keep hands clear of the barrel end



# Hydraulic Jack Safety

- Set up a jack so that the base rests on a firm, level surface
- Make sure the jack is centered
- Ensure that the jack head is against a level surface
- Be certain the lift force is applied evenly

# Safety Switches

Allows the tool to be turned off quickly to help prevent serious injury. Common types of safety switches include:



## Positive On-Off

- Found on platen sanders, disc sanders and grinders with less than 2" diameter discs, shears, and scroll saws



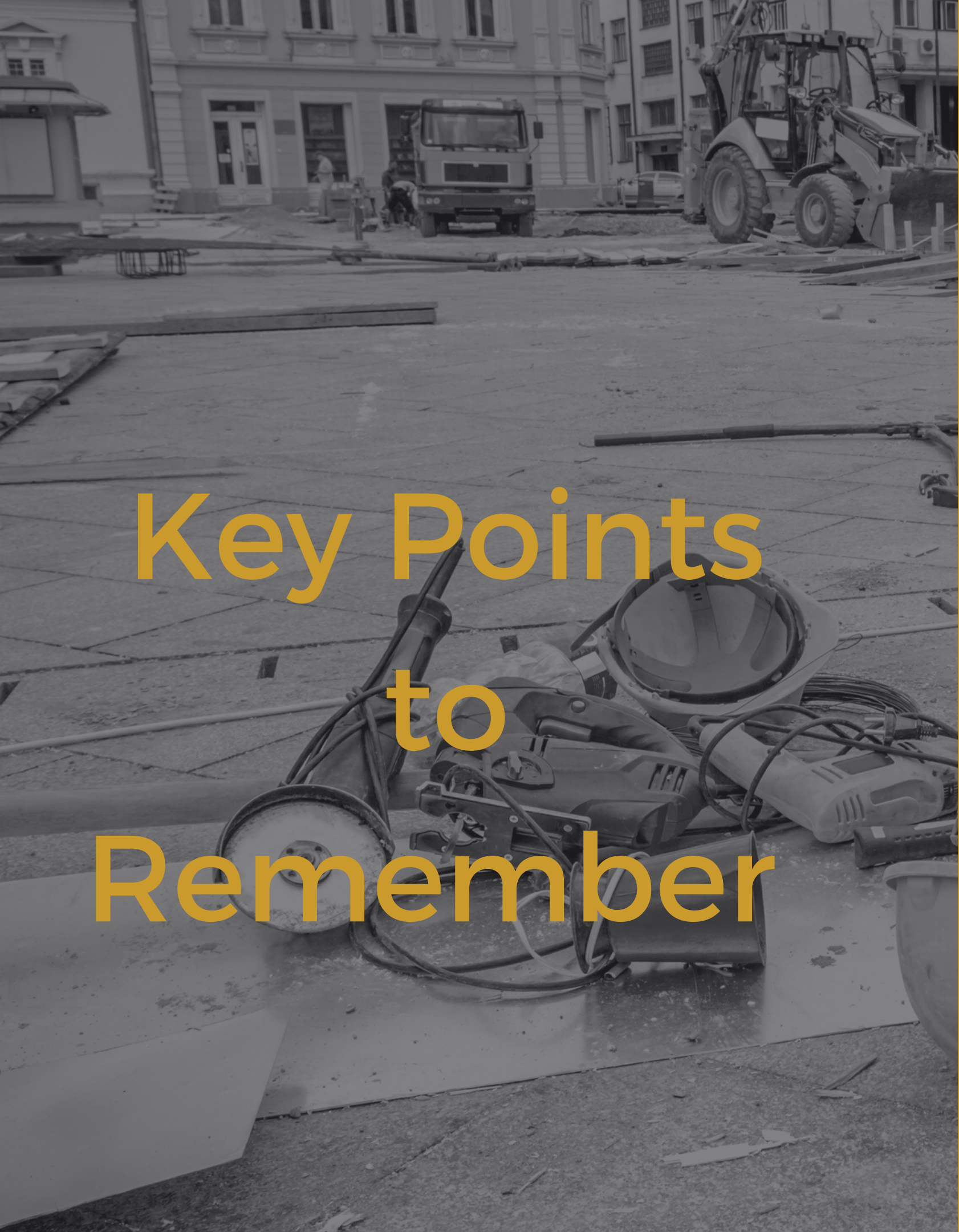
## Momentary On-Off

- Found on drills; tappers; fastener drivers; horizontal, vertical, and angle grinders; disc and belt sanders; and reciprocating and saber saws



## Constant pressure switch - auto shutoff

- Found on circular saws and chain saws



# Key Points to Remember

- Keep all tools regularly maintained
- Use the right tool for the job
- Examine each tool for damage before use
- Operate tools in accordance with the manufacturer's instructions
- Use the proper personal protective equipment (PPE)





# TAKE THE QUIZ

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