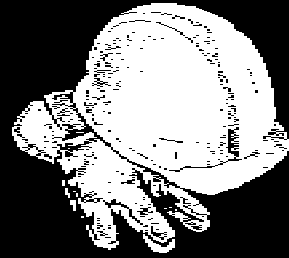



TRAINING GUIDE

PORTABLE POWER TOOLS



2001

Before you begin the meeting...

- Does this topic relate to the work the crew is doing? If not, choose another topic.*
- Did you read this Training Guide and fill in the blanks where the  appears? (To find the information you need, look over the Safety Walkaround Checklist for this topic.)*
- Did you bring two power tools used on the site (for example, a circular saw and a jackhammer) to use in the tool safety demonstration?*

Begin: Most of us use power tools every day. Generally we don't get hurt. But every year in California, portable power tools injure almost 1,800 construction workers seriously enough to keep them off the job.

Working with power tools, you can get an electric shock, lose a finger, lose an eye, or go deaf. It's especially dangerous to use a tool that's defective, that's been modified, or that's not designed for the job. Of course, you can also get injured if you use any tool carelessly.

Power tools can also contribute to "ergonomic" injuries. These are injuries to the muscles, tendons, joints, and nerves. They include strains and sprains, tendinitis, and carpal tunnel syndrome. Ergonomic injuries can happen right away or develop over time.

You or a crew member may want to add a personal story about portable power tools.

Next, discuss with the crew what power tools are being used at this particular job site:



ASK THE CREW THESE QUESTIONS:

After each question, give the crew time to suggest possible answers. Use the information following each question to add points that no one mentions.

1. We use many kinds of power tools in construction. They may be air-powered, gasoline-powered, electric, or hydraulic. What do you think are the most common injuries from working with these tools?

- Electric shock
- Flash burns
- Falling
- Eye injuries
- Hearing loss
- Crushing or losing a body part
- Ergonomic injuries.

2. What safety rules should you keep in mind when you use portable power tools?

- Use the right tool for the job. Never use a tool for a job it wasn't designed to do. Make sure you're familiar with your tools and know how to use them properly.
- Select tools that fit the hand comfortably, have soft grips that don't cut into your hand, and are not too heavy.
- Select tools with reduced vibration and noise levels.
- Keep secure footing and balance when you use tools. The area where you're standing shouldn't be slippery or cluttered.
- Use tools on a stable work surface. Hold the work with a vise or clamps if necessary.
- Use tools in a well-lighted area.
- Avoid awkward positions when using power tools. Some tools are poorly designed and force you to work with unnecessary strain on your wrist, arm, shoulder, or back. Use tools with a better design.
- Make sure you have enough space to work, and can keep your body at a comfortable angle to the work. Adjust the position of the tool, or the orientation of the work surface, to minimize bending your wrist or body, reaching, or twisting.
- Keep tools where they belong. Never leave them on a ladder, scaffold, or overhead work space. Keep them where they won't fall on someone or trip someone.
- Don't use powder-actuated tools unless you have a valid operator's card for the specific tool involved. You need special training.

3. How do you make sure your power tools stay in safe condition?

- Keep tools clean. Inspect them every day. Check blades, bits, and other cutting parts prior to each use. Make sure they are sharp, and not worn or cracked. Check chucks, collars, and other tool holding parts to make sure they are in good operating condition. Tag tools and take them out of service if there's a problem.
- Make sure tools have guards on their blades, bits, rollers, chains, gears, sprockets, and other dangerous moving parts.
- Never remove guards. Don't tie them back or modify them either.

4. What can you do to avoid shocks from electric power tools?

- Make sure tools have a 3-wire cord and are grounded. (Double-insulated tools don't need a ground.)
- Don't remove the third prong (the ground prong) from a plug. If you use an adapter (3-prong plug to 2-hole outlet), make sure it's grounded.
- Check tools and cords daily for cracks, exposed wire, and breaks in the insulation.
- If a tool buzzes, report it immediately and have an electrician check it out. Either the wiring or the tool itself may be defective.
- Don't use ordinary household extension cords. Use 3-wire cords intended for heavy duty. Don't run them near water, other liquids, or metal which can carry current.
- Don't touch any electrical equipment when the equipment is wet, you're wet, you're sweating, or you're standing on a wet surface.

5. What is a GFI grounding system and why is it important?

- A GFI is a ground fault interrupter. It senses ground faults (accidental electrical paths to ground) and cuts off all power in the circuit.
- For example, if there is a short in a power tool, the metal casing can become “live.” A GFI will cut off power before you can get a serious shock.
- Most 110-120 volt circuits must have GFIs unless the company has an “assured equipment grounding conductor program.” (This is a program where the company does regular testing of the ground on plugs, outlets, cords, and other electrical equipment. Inspection marks are placed on equipment and records are kept.)



On this site, we use: GFIs Grounding conductor program Both

6. (Show the two power tools you brought to the meeting, such as a circular saw and jackhammer. Ask:) What are the required safety features of these tools?

Demonstrate the safety features of the tools you have chosen. For example:

Electric circular saw

- Three-wire plug (with ground)
- Double-insulated (if applicable)
- Fixed guard on upper teeth
- Hinged guard on lower teeth
- Switch requiring constant contact (spring-loaded trigger, etc.) with hold button
- Trigger releases with one single motion
- Blade is in good condition (not cracked or worn) and securely attached.

Jackhammer

- Keeper for the bit
- Hand guards
- Switch requiring constant contact (spring-loaded trigger, etc.)
- Single motion release lock
- Rubber grips to reduce vibration.

Safety features of the particular tools you are demonstrating:



7. (With the same two power tools you have just demonstrated, ask:) What kind of personal protective equipment should you use when you work with these tools?

Most tools

- eye protection (goggles, or safety glasses with side shields)
- gloves
- foot protection (safety shoes or boots).

Jackhammers

- eye protection (goggles, or safety glasses with side shields)
- special gloves that reduce vibration
- foot protection (steel covering over whole foot, not just toes)
- hearing protection (ear plugs or muffs).

Protective equipment for the particular tools you are demonstrating:



If you have to use any of the personal protective equipment (PPE) that we've discussed, the company is required to supply it and train you in its use.


CAL/OSHA REGULATIONS

Explain: Most of the safety measures we've talked about are required by Cal/OSHA. We have to take these precautions—it's the law. Also, Cal/OSHA recently adopted a new ergonomics standard. On any construction job, if there has been more than one ergonomic injury within a year to workers doing the same task, the company must take steps to identify and correct these hazards. We must also provide relevant training. I have a Checklist of the Cal/OSHA regulations on portable power tools. If you'd like to know more, see me after the meeting.

COMPANY RULES

(Only if applicable.) Besides the Cal/OSHA regulations, we have some additional company rules about portable power tools.

Discuss company rules: _____



COMMENTS FROM THE CREW

Ask: Do you have any other concerns about portable power tools? Do you see any problems on our job? (Let the steward answer first, if there is one.)

What about other jobs you've worked on? Have you had any experience with portable power tools that might help us work safer on this job?

