FUNDAMENTAL 55: Hand and Power Tools



Key Takeaways:
– Learning the hazards associated with different types of hand and power tools.
– Learning some general steps that are necessary to prepare for safe hand and power tool use.
– Understanding some general actions that are necessary to operate different types of hand and power tools safely.

Course Description
As many as 400,000 emergency room visits each year are caused by power tool injuries.

Power tools do enable us to work much more productively, but hand and power tools also expose workers to flying objects like sparks and metal and wood splinters, electrical shock, and sharp blades and loud noises.

Employees have a primary role in safety as the tool users. You must have clear, established safety protocols for using each piece of equipment and you need to follow those procedures when using tools.

Initiately, when relying on training to operate equipment safely, employees must dress for the job by removing loose clothing or articles that could get caught in a tool’s moving parts, including jewelry if needed. Employees need to also wear correct personal protective equipment (PPE) when required; even with hand tools the job or the tool will often require specific personal protective equipment. PPE will only work if you wear it.

More basic safety precautions include:
– Working with the right tool for the job – a wrench is not a hammer.
– Understanding manufacturer instructions – don’t by-pass safety features.
– Avoid using a power tool by its cord.
– Do not yank a cord or hose to disconnect it from the power source.
– If needed, secure work with a clamp or vise to keep it from slipping.
– Ensure you keep footing and balance stable when working with dangerous tools.
– Be cognizant of the other people around you and keep them at a safe distance.

Misuse of tools happens when they are used for a job other than its intended purpose and can lead to tool failure. Ensure you never force or modify a tool to get the job done.

Anytime that tools aren’t properly maintained, they then become a hazard. Tools with dull blades do not perform as intended and cause more injuries than sharp tools, for example.

As well, when iron or steel tool work is around the presence of flammable substances, sparks can fly, causing an ignition hazard.

Although majority of power tools are now battery powered or work through compressed air via pneumatic pumps, the risk of electric shock remains a major hazard commonly resulting in accidents when working with power tools. Some steps to take for working with electric power tools safely include:
– Keep floors dry and clean to avoid slipping while working with or around dangerous tools.
– Prevent cords from presenting a tripping hazard.
– Evaluate any tool and cord damage before use.
– Work with tools that are double-insulated or have a three-pronged cord and are plugged into a grounded receptacle.
– Avoid using electric tools in wet conditions, unless they are approved for that use.
– Never exceed the design limitation of the tool.
– Always a ground fault circuit interrupter (GFCI) or an assured grounding program.
– Wear appropriate PPE.

Because the primary hazard of pneumatic tools is associated with the parts of the tool not being connected securely, safety measures require that you verify that tools are fastened securely before use.

Some steps you can take to work with pneumatic tools safely include:
– Avoid point a compressed air gun at anyone or press one against yourself or anyone else.
– In the case that you are finished using the tool, make sure that the pressure is released before you break the hose connections.
– Keep a safety clip or retainer to prevent attachments from being ejected during operation, and keep a chip guard when using high-pressure compressed air for cleaning. Ensure that you limit the nozzle pressure to 30 pounds per square inch.
– Be sure to wear eye protection – both head and face protection is recommended along with ear protection while working with noisy tools.
– Utilize screens to protect nearby workers from flying fragments and avoid storing a loaded air gun or leaving it unattended.