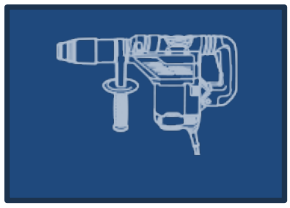
DRILLS, HAMMER DRILLS, ROTARY HAMMERS & HAMMERS

Power tools require operator respect in specific ways. They must be used carefully and kept in safe operating condition, whether they are in the hands of a professional tradesman, an amateur do-it-yourselfer, or a vocational student. *The demands of safety apply to all*. The material presented here is a compilation of carefully selected safe use precautions as they relate to specific electric power tool CAUTIONS, WARNINGS and DANGERS. The purpose is to highlight the safe use of specific tools that have a potential of causing injury if ignored. The warnings and instructions on the power tool and in its operator's manual provide the best source of safety information for the tool. Read and understand the contents and follow the advisements of operator's manuals on each specific power tool and all related accessories. This is considered essential to the safe operation of any power tool. Review PTI's *Safety is Specific* publication for general power tool safety.



Portable hand-held drills, hammer-drills, rotary hammers and hammers are undoubtedly the most widely used power tools in the world. They are grouped into three general categories: drills, hammer-drills/rotary hammers; and hammers. They are used to drill holes and drive fasteners and chip or demolish a wide variety of materials.

Good Personal Safety is a Must

Following good safety practices when using drills, hammer-drills, rotary hammers, and hammers is a must. Make a habit of including safety in all your activities.

- Use the appropriate mask or respirator in dusty work conditions. Comply with OSHA 1926.1153 Respirable Crystaline Silica Rules
- Wear proper hearing protection when using hammer-drills, rotary hammers, and hammers. Wear proper hearing protection as needed for drills.
- Crowded, cluttered work areas that can cause tripping or loss of balance are particularly dangerous.
- Never touch or place hands or other body parts near moving parts.

What Type of Tool do you Have?

Using the right tool will get the job done faster and more safely.

- Drills are among the most widely used power tools in the world. They are used to drill holes and drive fasteners into a wide variety of materials.
- Hammer Drills and Rotary Hammers use impacting action in combination with rotation of the specially designed "percussion bit" to drill holes or drive fasteners in concrete, masonry, pavement and similar materials. Often, these tools have different operating modes; hammering with rotary motion, rotation- only, and hammering-only.
- Hammers (also called breakers, chipping hammers or percussion hammers) have a back and forth hammering action, without rotation. They are most often used for light-to-medium demolition or shaping of concrete, masonry, asphalt and similar materials.

Choose the Right Tool and Bit

Choosing the correct tool and the proper accessory for your application can help to reduce the risk of serious injury. When used according to the manufacturer's instructions, the proper tool and accessory will make the job safer and faster.

- Does the bit shank fit properly into the chuck? Check the tool's operator's manual for the type of shank necessary (e.g., round, SDS-Plus, SDS Max, Hex, Spline).
- Is the tool's capacity adequate for the accessory? Make sure the size of the bit is equal to or less than the capacity on the tool's nameplate.

Know your Workpiece

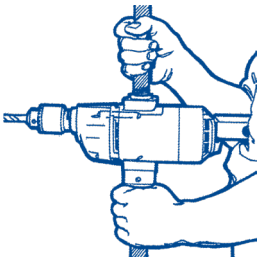
Know what is behind a workpiece before you do the job. Do not drill or chip into existing walls or other blind areas where electrical wiring, water, or gas pipes may exist. If this situation is unavoidable, disconnect all fuses/circuit breakers, and shut off any water and gas lines feeding this work site.

Before Drilling or Hammering...

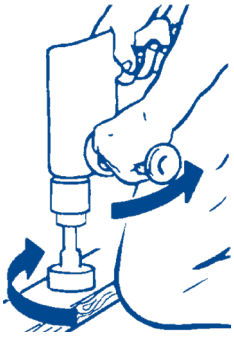
Before working, make sure the tool and its accessories are in proper working order and the tool is set to the correct operating mode. Failure to do so may increase your risk of injury and may result in binding, stalling, and loss of control. These situations may cause the tool to twist or an accessory to break, causing an injury.

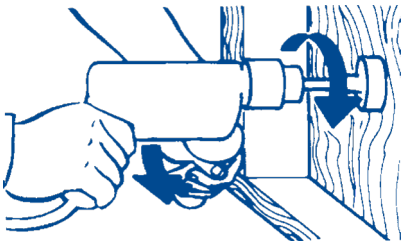
- Be sure the trigger turns the tool “on” when it is pulled and “off” when it is released. A trigger “lock-on” and lock release must also work correctly.
- Check carefully for loose power cord connections and frays or damage to the cord and plug. Replace damaged tool /extension cords immediately. For grounded tools, equipped with a three- prong plug, make sure the grounding prong is in good condition.
- For tools with a chuck, be sure the chuck is tightly secured to the spindle. This is especially important on reversible type drills. The chuck could loosen and come off the drill.
- Tighten the bit securely in the chuck. Remove all chuck keys or wrenches before starting the drill.
- Tighten any auxiliary (side) handles provided with the tool.

When Drilling or Hammering...



- Firmly grasp the trigger handle and auxiliary handle (if provided) to maintain control.
- Always hold or brace the tool securely. Brace against stationary things for maximum control.
- In a binding situation, the tool will react in the opposite direction of the turning bit. When drilling into the workpiece (clockwise), the tool will try to spin counterclockwise.
- Don’t force the tool– apply enough pressure to keep the bit drilling or chipping smoothly. If the motor slows down, relieve the pressure. Too much pressure can damage the bit and cause you to lose control of the tool.





- If the bit binds in the workpiece, release the trigger immediately. Unplug the tool or remove the battery, and then free the bit from the workpiece. Do not use a lock-on button when drilling in warped, pitched, knotty, or imbedded materials (e.g., reinforcing bars in concrete) where binding may be more common. Do not try to free a jammed bit by starting and stopping the tool.
- As you get close to breaking through the workpiece, reduce pressure and allow the bit to pass through the hole easily.
- Always keep a firm footing when using power tools. Be sure you have balance and control before you start the job.
- Remove material or debris from the area, especially if it could be ignited by hot chips or friction or will become a tripping hazard.

When Done...

Unplug tool or remove the battery immediately after use, before removing or changing the bit and before performing any service or maintenance on the tool. Store the tool in a dry place.

NOTICE

The contents are not meant to be, nor should they be considered, an absolute or complete presentation of the safety measures and procedures that relate to using the power tools covered. Obviously every possible application cannot be foreseen. This brochure’s purpose is to highlight only some important safety and safety related information compiled from the experience of Institute members and other reliable safety oriented sources. Individual manufacturers’ tool operator’s manuals, shipped with tools and accessories, are recommended as a final source for proper procedures for specific tool usage.