

# **Electrical Trades**

Electrician' s Tools Of The Trade

# Learning Objectives

- Identify the basic hand tools used in the electrical trades.
- Select the essential tools for each specific job.
- Maintain and use these tools safely.
- List factors to consider when purchasing hand tools.

# The Electrician's Tool Pouch

- The Electrician's tool pouch is essential in that it helps keep electrical tools organized. The tool pouch allows the right tools at hand which makes the job more efficient.
- The electrician must have proper tools for the job.
- Tools must be maintained and kept in good working condition.
- Certain tools are essential, and without them the electrician should not attempt to do any type of wiring.
- Listed are the basic hand tools that are essential to electrical wiring.



# Electrical Specific Hand Cutting Tools

## Needle-nose pliers

- Forming loops on small conductors
- Cutting and stripping small conductors



## Lineman's pliers (side cutters)

- Cutting large conductors
- Forming loops on large conductors
- Pulling and holding large conductors



## Diagonal pliers (dykes)

- Cutting small conductors
- Cutting conductors in limited spaces



## Wire strippers

- Stripping insulation from conductors
- Cutting small conductors
- Crimping wire lugs



# Electrical Specific Hand Tools

## Tap tool

- Equipping drill holes with bolt threads
- Retapping damaged threads
- Determining bolt size



## Center punch

- Making center tap in wood or metal for drilling



## Flat-blade screwdriver

- Installing and removing slot-head screws



## Phillips screwdriver

- Installing and removing phillips-head screws



# Electrical Specific Hand Tools

## Slip-joint pliers

- Holding couplings and conductors
- Tightening couplings and conductors



## Magnetic torpedo level

- Leveling conduit and equipment



## Keyhole saw

- Cutting holes in plasterboard for circuit boxes



## Conduit reamer

- Reaming burrs from cut conduits and EMT



# Electrical Specific Hand Tools

## Hacksaw

- Cutting large conductors and cables
- Cutting conduit, metal, or bolts



## Steel measuring tape

- Measuring conduit and cable



## Adjustable wrenches

- Used for turning bolts, nuts, and small pipe fittings



## Nut driver

- Installing and removing nuts and bolts
- Tightening and loosening nuts and long bolts



# Electrician's Essential Tools

## Electrician's hammer

- Driving and pulling nails
- Opening wooden crates and breaking plasterboard



## Electrician's knife

- Opening paper cartons
- Stripping cables and large conductors



## Circuit tester

- Checking circuits for power
- Checking fuses and breakers



## Hex key set (Allen wrenches)

- Installing and removing Allen screws





# Tools Used for Specialty Work

## Steel fish tape and reel

- Pulling conductors through conduit
- Pulling cables through insulated walls



## Conduit bender

- Bending conduit for conductor installation



## Rotating speed screwdrivers

- Used for trim work, installing switch and receptacles



## Sheet metal Cutters

- Used for cutting and trimming sheet metal



# Rules for care of hand tools

- There are many more hand and power tools that electricians will use in residential and commercial wiring.
- All tools should be used only for the purpose intended.
- It is the electrician's responsibility to keep his or her tools sharp, clean, and lubricated.
- A well maintained tool has a longer life and is safer than an improperly maintained tool.
- Repair tools when possible, but discard worn or damaged tools.



# Factors For Purchasing Tools

Factors to consider when purchasing tools are **size**, **design**, and **quality**.

- Always purchase the correct sized tools for the work to be done.
- Tools should be **designed** specifically for electrical work. Ex: Insulated handles, hammers with straight claws.
- The purchase of **quality** tools last longer which saves replacement cost.



# Remember

- Select the right tool for the job.
- Keep tools clean, lubricated, and in good working condition.
- Purchase good quality tools they are safer and will last longer.
- Repair tools when possible, but discard worn or damaged tools.