

Shop Hand Tool Overview

Cutting Tools

Hack Saw

- cutting metal
- blades replaceable

Wood Saw

- cutting wood or plastic
- Blade can be re-sharpened

File

- Used to remove small amounts of material
- Remove burrs or round edges
- Flat, round, triangular

Drills

Twist Bits

- Long with spiral flutes to remove cut material
- Used to drill wood, plastic or metal
- Used in hand drill, drill press, mill or lathe
- Only cuts in vertical direction

Hole Saw

- Used to cut large holes, 1" or larger
- Makes hole by cutting plug of material
- Cuts wood and plastic, not good for metal

Center Drill

- Short double-ended drill
- Less flexible and more accurate than a longer bit
- Use to before using a twist bit

Punch

- Used to mark indent in metal prior to drilling
- Manual punch struck with hammer
- Spring-loaded punch pushed by hand, no hammer

Spade Bit

- Flat bit with pointed center
- Used to cut large holes in wood or plastic
- Not for drilling metal

Taps

- Used to create threads in a hole
- Used with a tap wrench
- Done by hand, not with machinery
- Use caution, taps break easily and are hard to remove
- Always use oil when tapping

Mill Bit

- Used in mill
- Has 2, 4 or more spiral flutes used for cutting
- End mills can cut horizontally, not vertically
- Slot mills can cut horizontally and vertically

Fasteners

Rivets

- Used to attach thin materials like sheet metal
- One-way fastener
- Need to drill a hole through both pieces
- Fastened with a rivet gun
- Disassembled by drilling only

Zip Ties

- Long plastic strips with tail and head
- One-way fastener
- Used for light duty fastening
- Insert tail into head to lock
- Fastening distance is adjustable
- Disassembled by drilling only

Screws

- Threaded fastener
- English and Metric
- Sized by diameter and number of thread, 1/4-20, M6x1
- Different types of heads
- Flat, round, button, socket cap, hex, set screw
- Used with nut or threaded hole
- Washers used to spread out clamping force
- Nylock nut prevents loosening

Fastener Tools

- Screwdrivers types - Flat, Phillips, Torx
- Allen wrenches
- Nut drivers - hex heads
- Crescent wrench
- Open or box end wrench
- Socket and socket wrench

Other Tools

- Claw and ball peen hammer
- Mallet or dead blow hammer
- Pliers-regular, needle nose
- Diagonal cutter
- Vise grips
- Channel locks
- Combination square
- Tape measure
- Tin snips- straight, left, right
- Level