Introduction to Hand Tools
Module 00103-09
Upon completion of this module, you will be able to:
1. Recognize and identify some of the basic hand tools and their proper uses in the construction trade.
2. Visually inspect hand tools to determine if they are safe to use.
3. Safely use hand tools.
1. Visually inspect the following tools to determine if they are safe to use:
   - Hammer
   - Screwdriver
   - Saw
2. Make a straight square cut using a crosscut saw.
3. Safely and properly use a minimum of three of the following tools:
   - Hammer and cat’s paw (to drive and pull nails)
   - Screwdriver (slotted or Phillips)
   - Adjustable wrench
   - CHANNELLOCK® pliers
   - Spirit level
   - Carpenter’s square and steel tape
   - Saw
Figure 1 Claw hammer.
Figure 2 Ball peen hammer.
Figure 3 Sledgehammers

DOUBLE-FACE LONG-HANDLED

DOUBLE-FACE SHORT-HANDLED

CROSSPEEN
Figure 4 Proper use of a long-handled sledgehammer.

DON'T SWING BEYOND YOUR HEAD.

DON'T SWING WITH YOUR HANDS BEHIND YOU.
Figure 5 Ripping bars and nail pullers.
Figure 6 Cold and wood chisels.

**COLD CHISELS**

1. PLASTIC CAP TO PROTECT BLADE

**WOOD CHISEL**

BEVEL

HEAD

50 mm

103F06B.EPS
Figure 7 Proper use of a wood chisel.
Figure 8 Chisel damage.
Figure 9 Punches.

- CENTER PUNCH
- PRICK PUNCH
- TAPERED PUNCH
Figure 10 Common screw heads.

1. SLOTTED
2. PHILLIPS
3. CLUTCH-DRIVE
4. TORX®
5. ROBERTSON®
6. ALLEN
Figure 13 Types of pliers.

- **SLIP-JOINT**
  - Jaws
  - Setting adjustment
  - Handles

- **LONG-NOSE**
  - Jaws
  - Pivot
  - Handles

- **LINEMAN**
  - Jaws
  - Handles

- **LOCKING PLIERS**
  - Jaws
  - Knob
  - Handles

- **TONGUE-AND-GROOVE PLIERS**
  - Jaws with teeth
  - Grooves
  - Handles
Figure 16 Nonadjustable wrenches.

- **OPEN-END**
- **BOX-END**
- **HEX KEY**
- **COMBINATION**
Figure 17 Striking wrenches.

12-POINT STRIKING WRENCH

6-POINT STRIKING WRENCH WITH STRAIGHT HANDLE
Figure 18 Adjustable wrenches.

- **Adjustable Nut**
- **Fixed Jaw**
- **Movable Jaw**

**Pipe Wrench**

**Spud Wrench**

**Adjustable End Wrench**
Figure 20 Sockets.
Figure 21 Ratchet handle.
Figure 22 Torque wrenches.

MANUAL

DIGITAL

FUTEK ADVANCED SENSOR TECHNOLOGY

TENSIOMETER (WIRE) AND DIAL
Figure 25 Standard tape measure.
Figure 26 Wooden folding rule.
Figure 27 Laser measuring tool.
Figure 28 Spirit levels.

END VIALS

CENTER VIAL

TWO-FOOT LEVEL

TORPEDO LEVEL

103F28A.EPS

103F28B.EPS
Figure 29 An air bubble centered between the lines shows level or plumb.
Figure 30 Digital (electronic) level.
Figure 31 Laser level.
Figure 32: Types of squares.

- **Carpenter's Square**
  - Blade
  - Tongue

- **Rafter Angle Square (Speed Square)**

- **Try Square**

- **Combination Square**
  - Blade
  - Head
Figure 33 Marking a line for cutting.
Figure 34 Using a combination square to mark a 90-degree angle.
Figure 35 Using a combination square to mark a 45-degree angle.
Figure 36 Plumb bobs.
Figure 37 Proper use of a plumb bob.
Figure 38 Mechanical self-chalkers.
Figure 40 Utility knife.
Figure 41 Types of saws.

- **Backsaw**: Blade, Handle, Teeth, Blade Holders
- **Compass Keyhole Saw**: Blade, Handle, Teeth
- **Coping Saw**: Frame, Blade, Handle
- **Drywall Saw**: Blade, Handle
- **Hacksaw**: Frame, Blade, Wing Nut, Handle
- **Handsaw**: Blade, Handle, Teeth
Figure 43 Types of files, rasps, and handles.
Figure 44 Parts of a file.

- **TANG**
- **HEEL**
- **BELLY**
- **POINT**

LENGTH

103F44.EPS
Figure 45 Proper use of a file.
Figure 46 File card.
Figure 47 Types of clamps. (1 of 2)
Figure 47 Types of clamps. (2 of 2)
Figure 49 Parts of a manual chain fall.
Figure 50 Come-alongs.
Figure 51 Shapes of shovel blades.

- **Spade**
- **Round**
- **Square**
Figure 53 Pick.
This course map shows all of the modules in the Core Curriculum: Introductory Craft Skills. The suggested training order begins at the bottom and proceeds up. Skill levels increase as you advance on the course map. The local Training Program Sponsor may adjust the training order.

Note that Module 00106-09, Basic Rigging, is an elective. It is not a requirement for level completion, but it may be included as part of your training program.
DIRECTION OF ROTATION DEPENDS ON DIRECTION OF THREADS ON BOLT
### Table 1  Types and Uses of Files

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rasp-cut file</td>
<td>The teeth are individually cut; they are not connected to each other.</td>
<td>Gives a very rough surface. Used mostly on aluminum, lead, and other soft metals to remove waste materials. Also used on wood.</td>
</tr>
<tr>
<td>Single-cut file</td>
<td>Has a single set of straight-edged teeth running across the file at an angle.</td>
<td>Used to sharpen edges, such as rotary mower blades.</td>
</tr>
<tr>
<td>Double-cut file</td>
<td>Two sets of teeth crisscross each other. Types are bastard (roughest cut), second cut, and smooth.</td>
<td>Used for fast cutting.</td>
</tr>
</tbody>
</table>