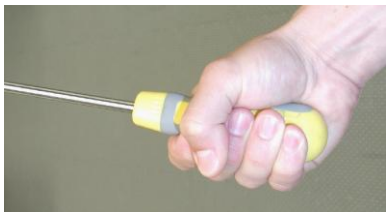
Choose the Proper Hand Tools for You

FACT SHEET 88-013-0311

Hand tools are designed to extend and reinforce the range, strength, and effectiveness of a person's upper limbs. However, poorly designed tools or risk factors—such as non-neutral positions, mechanical compression, vibration, and forceful exertions—can lead to injuries, accidents, and work-related musculoskeletal disorders (WMSDs).

Selecting the proper tool based on the task and worker's characteristics (e.g., hand dimensions and strength) significantly reduces the risk of WMSDs and ultimately will result in increased productivity.



Handle with proper diameter.

Tips for Selecting Hand Tools

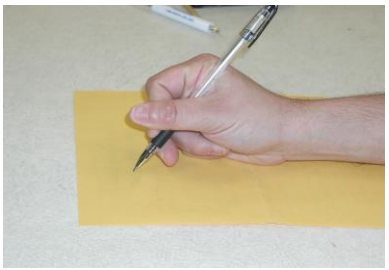
Tools used for power require high force.

- For single-handle tools, select a tool that feels comfortable with a handle diameter of 1¼ to 2 inches.
- For double-handle tools, like pliers, select a tool with a grip span that is at least 2 inches when fully closed and no more than 3½ inches when open.
- For tasks requiring high force, select a tool with a handle length longer than the widest part of your hand (about 5 inches).

Handle length longer than width of hand.

Tools used for precision or accuracy require low force.

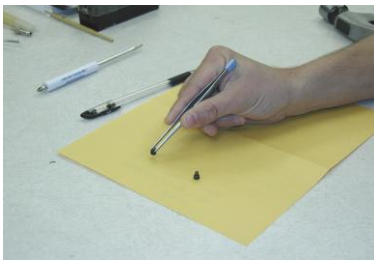
- For single-handle tools used for precision tasks, select a tool with a handle diameter of ¼ to ½ inch.



Small diameter handle for precision tasks.

U.S. Army Public Health Command (Provisional)
Ergonomics
Aberdeen Proving Ground, MD 21010-5403
Commercial (410) 436-3928/DSN 584-3928

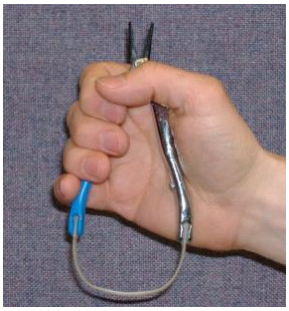
- For double-handle tools used for precision tasks, such as tweezers, select a tool with a grip span that is not less than 1 inch when fully closed and no more than 3 inches when fully open.



Tweezers for precision tasks.

- For double-handled pinching, gripping, or cutting tools, select a tool handle that is spring loaded.

- Select a tool that allows you to maintain a straight wrist posture.



Spring loaded pliers.

Bent angle knife for vertical cutting.

- Select a tool that can be used by both hands.