Focus On: Selecting Hand Tools

The Risks

Using the wrong tool or using a tool incorrectly can cause debilitating ergonomic injuries. An increased risk of injury occurs when workers are frequently exposed to awkward postures, contact pressure, or a pinch grip. Over time, exposure to awkward postures or harmful contact pressures can contribute to an injury.

Be a Better Supervisor

Hand tools that fit a worker's hands and the job they are doing can reduce the risk of injury. Here are 11 tips for hand tool selection to share with your employees.

1. For single-handle tools used for power tasks: Select a tool that feels comfortable with a handle diameter in the range of 1 1/4 inches to 2 inches. You can increase the diameter by adding a sleeve to the handle. The power grip provides maximum hand power for high force tasks. All the fingers wrap around the handle.



2. For single-handle tools used for precision tasks: Select a tool with a handle diameter of 1/4 inch to 1/2 inch.
3. For double-handle tools (plier-like) used for power tasks: Select a tool with a grip span that is at least 2 inches when fully closed and no more than 3 1/2 inches when fully open. When continuous force is required, consider using a clamp, a grip, or locking pliers.



Closed Grip Span



Open Grip Span

7. For double-handle tools (plier-like) used for precision tasks: 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.
8. For double-handled pinching, gripping, or cutting tools: Select a tool with handles that are spring-loaded to return the handles to the open position.
9. Select a tool without sharp edges or finger grooves on the handle.



NO



YES

10. Select a tool that is coated with soft material. Adding a sleeve to the tool handle pads the surface but also increases the diameter or the grip 7 span of the handle.
11. Select a tool with an angle that allows you to work with a straight wrist. Bent handles are better than straight handles when force is applied horizontally (in the same direction as your straight forearm and wrist). Straight handles are better than bent handles when force is applied vertically.



NO



YES

12. Select a tool that can be used with your dominant hand or with either hand.
13. For tasks requiring high force: Select a tool with a handle length longer than the widest part of your hand – usually 4 inches to 6 inches. Prevent contact pressure by making sure the end of the handle does not press on the nerves and blood vessels in the palm of your hand. If the handle is too short, the end will press against the palm of your hand and may cause an injury.
14. Select a tool that has a non-slip surface for a better grip. Adding a sleeve to the tool improves the surface texture of the handle. To prevent tool slippage within the sleeve, make sure that the sleeve fits snugly during use.

See *Ergonomic Checklist for Hand Too Selection*.

https://choosehandsafety.com/sites/default/files/docs/NIOSH_guide_to_selecting_hand_tools.pdf