

Ask the expert



How do I choose tools that are best suited to my hand size and grip?

Drop into any hardware store or home-improvement center, and you're likely to find aisles full of tools labeled "ergonomic." Ergonomics is the science of designing and producing tools, furniture and other work-related implements that improve a worker's efficiency while reducing discomfort, fatigue and risk of injury.

"Ergonomically enhanced tools can include helpful features like angled handles, padded hand grips and nonslip coatings. However, no matter how impressive a tool's design is, it's almost impossible for it to be universally ergonomic since human physiques and project applications vary greatly from one to the next," says Paul Holstein of online retailer **CableOrganizer.com**. "Whether you're shopping for a set of ergonomic tools or just trying to select the right one for the job from an existing collection, the key things to consider are whether the tool fits your hand, how well it suits the job being done, and if it eases your work and prevents you from straining in ways that could lead to injury."

To make the decision process a little easier, CableOrganizer.com offers these guidelines for choosing the right ergonomic hand tool

for your body type and the job at hand:

■ Because finger size and placement differs from person to person, avoid using tools whose handles have built-in finger grooves. When fingers don't naturally align with grooves, excessive pressure from the raised groove edges can cause discomfort and injury.

■ Choose tools with handles that are covered in a soft material like foam or flexible plastic. Cushioned handles are comfortable for long hours of use, provide a much firmer grip and cut down on slippage. Hard-handled tools can be quickly and inexpensively converted by adding a sleeve.

■ Ensure that tool handles are free of sharp edges and seams

See EXPERT on Page 6E

that might irritate or cut the hands.

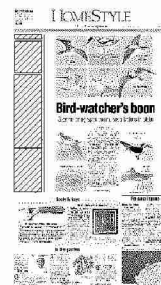
■ When selecting double-handed gripping and cutting tools, opt for ones with spring-loaded handles that will automatically return to the open position.

■ If you need to forcefully pinch or grip an object for an extended amount of time, prevent muscle strain by switching from standard pliers to a clamp or grip.

■ Use tools that allow you to work with your wrist in a straight position.

■ For tasks that require force such as torquing screws and nuts, hammering, and heavy chiseling, choose single-handle tools with handle diameters that range from 1 1/4 inches to 2 inches. Larger handles allow fingers to wrap comfortably around the tool in a power grip, which prevents slippage and reduces stress and impact on hands, fingers and wrists.

■ For tasks that call for more precision and delicacy (like fine chiseling and driving miniature screws), select single-handle tools whose



grips fall within the 1/4-inch to 1/2-inch range. The smaller diameter handles make it easy to comfortably grip tools between the fingertips without overexerting fingers, knuckle joints or hand muscles.

■ Just as grip diameter affects work with single-handle tools, the grip span of pliers, snips, cable cutters and other double-handled tools can either make your job easier or cause hand fatigue. For maximum comfort and efficiency for tasks that require more force (like gripping with large pliers, cutting wires or snipping through sheet metal), choose tools with a maximum open-grip span of 3 inches, and a closed-grip span no less than 2 inches across.

■ Detailed jobs that involve grasping small parts and components with pincers, tweezers or tongs are best done with double-handle tools whose grip spans range from no less than 1 inch (closed) to no more than 3 inches (open).

■ When a work space is tight but the task requires a good deal of force, use power-grip tools (with handle diameters

from 1 to 2 inches), which are grasped with the entire hand instead of just pinched between the fingertips. This type of grip lets you finish the job in far less time with far less physical stress.

■ Tool length should be matched to space constraints. Excessively long tools can force you to assume awkward work postures and wrist positions when you're trying to reach components in cramped areas. Instead, choose short-handled tools that give you the freedom to meet the target work area directly while keeping your wrist straight.

■ The palms of your hands are full of pressure-sensitive nerves and blood vessels. To avoid damaging these during high-force tasks, make sure the handles of your tools are long enough that their ends won't press into your palms. To measure, hold your hand palm up, with fingers together and thumb against the side of your hand. As long as the tool's handle is longer than the widest part of your hand (the span from the outer edge of your pinkie to the outer edge of your thumb), it's safe to use.