Overview:

Chisels come in different sizes (both the grip and the blade), weights, and materials depending on their use (photos 1 and 2). Chisels are used with either a power or modified precision grip depending on the chisel's size and an individual's work preference. Some workers use a power grip (with their hand completely around the chisel stock) since that lessens fatigue, while others use a precision or pinch grip with some fingers resting on the materials being worked with to position the chisel more precisely.

Photo 1 – Point Chisel

Photo 2 – Brick Chisel

Tips for what to look for:

⇒ **Grip size.** A chisel's diameter or "stock" measurement will help you determine a chisel's grip size. While the best handle diameter is the one closest to your hand's actual grip size for a power grip, the diameter for a modified precision grip would be smaller, between 1" and 2" around (a diameter of 0.3" to 0.6"), or somewhat larger depending on how you typically grip the tool. Using a grip size that closely matches your own will reduce the amount of force needed to hold the chisel. Less force will reduce fatigue and risk of injury.

⇒ **Striking area.** Caps or hand guards on the top of chisels can protect your hand and fingers from overstrike injuries. ***Note:*** make sure when using a tool with a cap or guard that it does not reduce the visibility of the material being worked on or the positioning of the tool.

⇒ **Shock and vibration.** Striking a chisel creates vibration and increases your risk for injuries to the nerves in your fingers and wrists. Cushioning can help to reduce both vibration and cold.

⇒ **Weight.** Lighter weight tools are generally recommended, but in the case of chisels it is important to select one made out of a material that will be strong enough for the task to avoid chips, mushrooming , and related hazards.

Applying the tips:

⇒ Using a chisel with a cushioned grip can reduce the grip strength needed to hold the tool area. Some chisels come with cushioned grips or you can add one using a padding kit.

⇒ Cushioned grips can also reduce the risk of shcok and vibration-related injuries. Another option to reduce vibration is to use a device that moves your hand away from the risk.

⇒ Devices that move your hand away from the vibration risk can also reduce the risk for overstrike injuries (such as bruising, fractures, etc.) Using a chisel that comes with a hand guard or allows you to add a guard is another option to protect your hands against overstrike injuries.

⇒ Wearing gloves may also help create a cushion, increase the size of the handle area, and reduce shock and vibration. Depending on the materials and products you are working with a specific type of glove may be recommended or required to avoid skin disorders, such as burns and dermatitis. *Note: some workers have reported a reduced sense of touch and needing a stronger grip to hold on to tools when wearing gloves. Using a hand tool with a non-slip grip area or adding an anti-slip material may help.*

⇒ **If you already have a hand/arm injury or condition such as tendonitis, arthritis, or carpal tunnel syndrome,** it is particularly important to consider using the lightest, smallest chisel for the job and one with features that reduce vibration risks.

Example:

Worker Hand Measurements = hand size (length from wrist crease to tip of middle finger) of about 7-1/4" (or 7.25"), with a grip diameter of about 1-2/5" (or 1.4"), a grip size of about 4-3/5" (or 4.6"), and a palm size of 3".

Choices:

A 3" brick chisel with a diameter or stock of 1.1", with a grip area of roughly 3-1/2", and weighing 1.1lbs (17 oz).

Or

A 3" brick chisel with a striking cap and cushioned grip, a 1-3/8" diameter or stock a grip area of about 4 2/5" and weighing 1.6 lbs (22 oz).

What the worker in this example should consider:

⇒ The first option provides maximum visibility of the worker's task and weighs less.

⇒ The second option includes features that reduce the risk for injury including: a striking cap to reduce overstrike injuries and a cushioned grip, which increases the grip size to more closely match the worker's and reduces the amount of strength needed to hold and control the chisel, the risk of vibration-related injuries, and exposure to cold.

To learn more, visit www.choosehandsafety.org for information on how to determine your hand-size, use this information when selecting tools, examples of hand tools., and other ways to protect your hands.

Photos: *Tools supplied for photos courtesy of the Masonry r2p Partnership (BAC, ICE and IMI).*

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