Lee Valley

Greenwood™ Bits

Caution: *Be sure to follow the safety instructions that came with your hand drill. Make sure the workpiece is free from nails or other foreign objects, and always maintain proper footing and balance. As with any power tool accessory,* ***always*** *wear eye protection when using this product.*

Stanley Powerbore® bits have not been available for some years now. In response to many customer requests, we have made a long-brad bit to fill the void. These high-carbon steel bits excel in soft wood and are exceptional in green wood, but are unsuitable for dry hard wood. An outlining spur ensures clean entry and does a superb job of severing even the most fibrous wood. The long brad minimizes wander and lets you drill into wood at an oblique angle. The large throat and narrow shank prevent choking in green wood and allow for easier chip clearing.

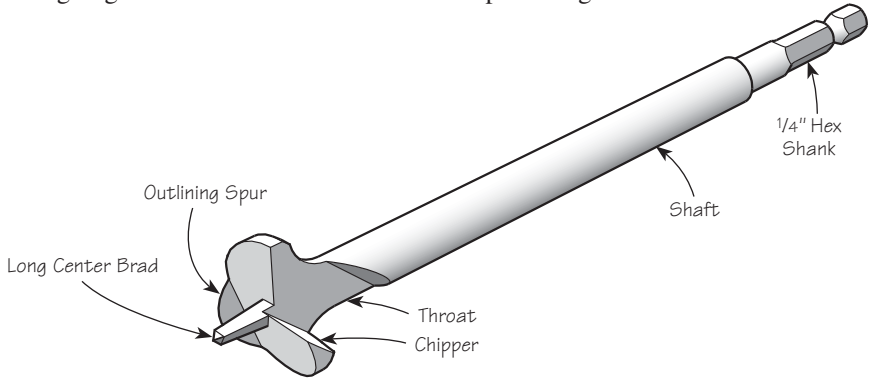

Figure 1: Lee Valley Greenwood bit.

Drilling Green Wood

Unlike the small chips and dust that are produced when drilling dry wood, the chips that are created when drilling green wood are usually large, thick, sometimes wet and often very long. These chips easily clog most twist drills. The strong and flexible fibers also create problems for Forstner and saw tooth bits. Our greenwood bits and the following techniques are designed to overcome these problems.

When drilling a deep hole in fresh green wood, it is rarely possible to complete the hole in one smooth motion. Because the chips will fill up the space behind the cutter head and will eventually stall the bit, it is important to clear out the chips frequently when drilling deep holes. The best way to do this is to back the bit out of the hole (with the drill running) until the chips fly out. Since the cutter head doesn't need to be completely removed from the hole to effectively clear the chips, you can take another cut without stopping. This reciprocating action of drilling and chip clearing is the most efficient way to drill holes with these bits. The depth of cut that can be taken with each pass will depend on many factors, including wood species and moisture content, but usually ranges from 1/8″ to 3/8″ between clearings.

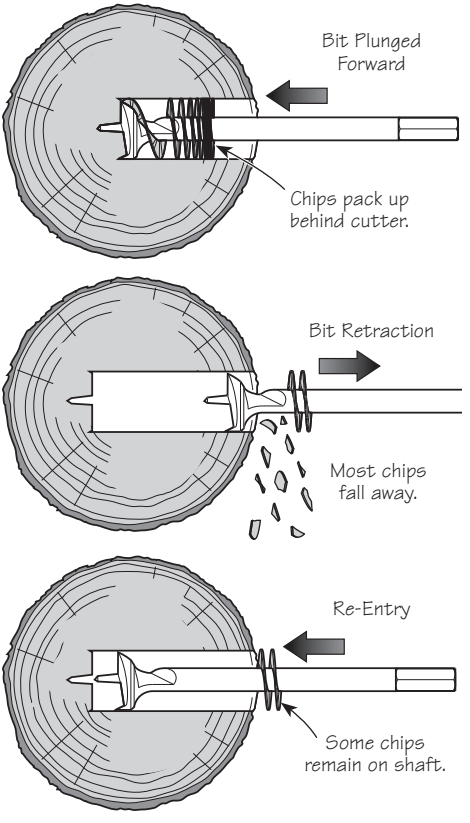

Figure 2: Reciprocating cutting action.

Drilling Dry Wood

When drilling holes through dry soft wood, the bits perform comparably to regular twist drills; however, due to the design of the cutter head, there is a greater likelihood of blast-out. You can minimize or prevent this by using a backing block, although this may not be effective if the workpiece is shaped. An alternative option is to bore from one side until the brad exits, then complete the hole from the other side using the brad hole to locate the center. This technique works well, but you will need to drill slowly and check frequently to see when the center brad begins to exit.

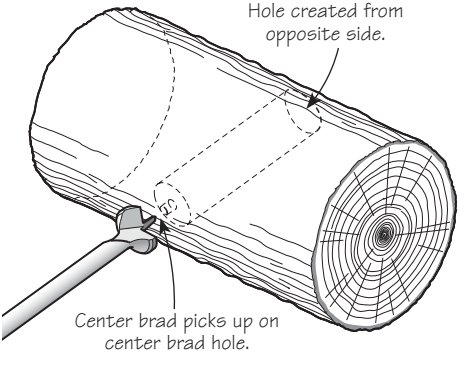

Figure 3: Preventing blast-out.

Tips and Tricks

Constant feedback on drill speed and feed rate is important for optimum performance and to prevent jamming. For this reason, we recommend these bits be used with a 3/8″ (or larger) freehand power drill rather than a drill press.

The speed of rotation (rpm) that should be used with these bits varies considerably, depending upon the wood species, moisture content, bit diameter and pressure applied. The bits will cut through the softest woods the fastest and tend to create rough holes if they are spinning too quickly. Also, unlike most twist drills, a greenwood bit used to drill green wood will simply ride on the surface if the drill is spinning too quickly. By reducing the drilling speed or increasing the pressure, you give the bit a chance to begin cutting. Accordingly, the greener the wood, the lower the speed required.

If the bit jams because of chips packed behind the cutter head, reverse the drill and cut out the packed chips.

> ⚠ ***Caution:*** *Avoid touching the bit after release from a jam, as it will likely be very hot from all the friction generated in the effort to release it.*

Chair making or rustic furniture projects often require a hole drilled at an angle. The long center brad on these bits makes this task easy. Simply place the brad on the center of the hole. With the drill running, tilt the bit to the angle desired, and then proceed to drill the hole as noted earlier. This technique can also be used to create slightly curved holes that can be used for forced fits in rustic furniture.

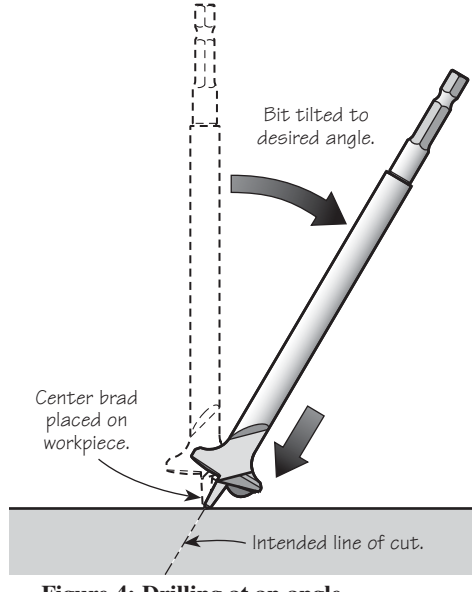

Figure 4: Drilling at an angle.

Sharpening

These bits are readily sharpened with a fine file. As shown in **Figure 5**, only the leading edge of the chipper and the leading edge of the outlining spur need to be sharpened. No more than a few file strokes are required.

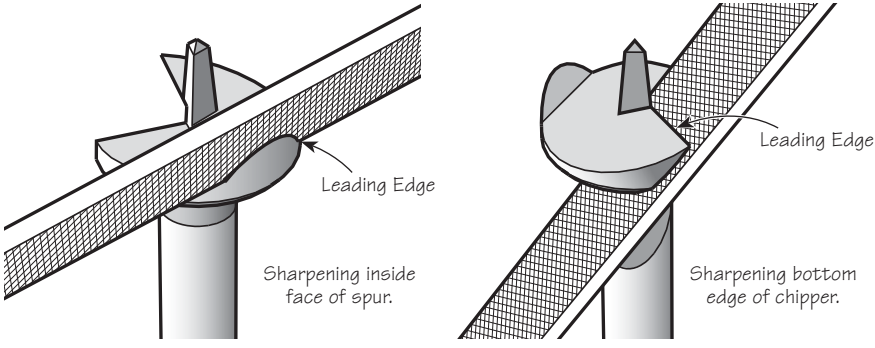

Figure 5: Sharpening.