

# Kelton Hollowers

## Guide for Use

**Fig 1. The Three Hollower Shapes.**



### **Advantages of the Hollowers.**

**Kelton Hollowers** are regarded as simple, but effective, user-friendly tools. They have the advantage in having cutting tips that are integral to the shaft and hence will not break or clog up. They can be used for both rapid removal of wood and fine finishing. The three available shaft shapes give turners more options for producing alternative forms.

**The Shaft** of these tools enables both deep and low flat hollowing through narrow openings.

**The Cutting Tip** is designed for both rapid removal of waste wood and fine finish cuts resulting in a sanded-like surface. While maintaining their extremely effective cutting edges, these tips, unlike high speed steel tools, will not back temper or lose hardness with sharpening induced heat. The precision shaped cutting tips of the Hollowers will easily outlast those of high speed steel tools.

**Kelton KH and ER handles** (sold separately) allow the shaft length to be varied to obtain optimum control and counter leverage for different turning requirements. The weight of the handles, which can be increased through the addition of lead shot or steel rod inserts, serves to reduce bounce and makes for a high degree of fine control.

### **How the Tool Works:**

**The tool works as a scraper with a shear cutting action.** The cutting tip has three aspects to its edging. (Refer to Fig 2. below) Each of these is naturally positioned to make correct contact with the form being hollowed. As the tool is pushed into the neck of a vessel, along the underside of the top, around the widest area and across the bottom, the cutting tip is always presenting that aspect of itself designed for that area.



**Fig 2. Three Aspects of the Cutter.**

- 1.) Underside top - removal of waste wood and finishing
- 2.) Belly area - waste wood removal and bottom
- 3.) Removes bulk waste wood with 5 to 20mm cuts

**IMPORTANT: When sharpening the tool keep the Rounded-Over Section in its original shape to avoid overloading and 'dig-ins'. Never grind top surface of the tool.**

### Steps in Producing a Hollow Form.

1. **Securely fasten the blank** to a faceplate or chuck. (Check lathe speed in Safety section.)
  2. **Shape exterior of final form** leaving extra thickness around the opening for strength during the hollowing process. This extra wood can be removed once the bulk of the waste wood has been turned out and before the final finishing cuts.
  3. **Drilling the core out** with a spade bit of at least 3/4" width, 3/4 of the way to the bottom of the pot is helpful but not essential.
  4. **Set the tool rest** to a height so as to make the length of the tool present itself horizontally when the tool tip is in the centre of the pot. With some woods it may be necessary to raise the tool rest to minimize any tendency to bounce across the bottom during fine finishing.
  5. **Set the shaft** to the minimal length needed to start the work. (Extend shaft as counterweight leverage becomes necessary for control over handle lift).
  6. **Cuts are made** by pushing the tool into the pilot hole and cranking it around. The tool tip should be horizontal or slightly rolled counterclockwise so that the tip is angled sideways and the leading edge is lower than the trailing edge. This means that the tool is working as a shear cutter/scrapper and 'dig-ins' can be avoided. Repeat these sweeping cuts until shavings build up. Stop the lathe and remove the shavings.
- IMPORTANT!** Shavings must not be allowed to build up and compact inside as the tool can lodge in them and present a safety hazard similar to a 'dig-in'.
7. **Check wall thickness** often once you have hollowed to the depth of the pilot hole. Try to keep wall thickness consistent. (Refrain from trying for very thin walls until you are well practiced). The cone or "nub" in the bottom is easily removed with the hollower by pushing the cutting tip into the centre of the nub and rolling the tool to a 10-15 degree angle in the direction of the cut to be made. With repeated light sweeps, this will remove the nub until the bottom is the required shape.
  8. **Keep working the inside** until the required thickness is obtained. At this stage very fine cuts should be taken. With practice, this will give a sanded-like finish to most woods.

**9. Once finished** sand the outside and turn the bottom off between centres with the aid of a pressure plug inserted into the opening and held with the tail stock. (To avoid any damage from the plug to the neck of the vessel, cover it with foam rubber or similar material). Alternatively, the base can be finished using the Kelton Mandrel and Mandrel Faceplate, a vacuum chuck or any other method of your choosing.

**Tool Sharpening.** Carefully observe the original shape of the cutting tip. Sharpening should seek to maintain these proportions and angles. The tool cuts by way of a raised burr on the tips edge. A few upward swipes with a honing stick or common slip stone will maintain a fine edge. Avoid grinding until re-sharpening becomes necessary.

**Caution! Never grind the top surface of the hollowers.** Grinding away this layer of special steel will greatly impact the cutting and edge-holding characteristics of the tool.

Remember to keep the rounded off area on the cutting tip maintained as such when regrinding as this serves to minimize 'dig-ins'. (Refer to Fig 2. above)

**Trouble Shooting.** 'Bounce' occurs when the tool is biting too deep for the speed the tip is moving across the wood. Reduce the rate of travel and/or extend the shaft from the handle for more counter leverage.

Vibration or chatter can be caused by either trying to cut deeper than the cutter is sharpened or by using a tool that is too small and short for the depth of the vessel. In the first case, take shallower cuts. In the second case, use a larger hollower. For maximum control of your Kelton Hollowers use the Kelton ER25 or ER32 Handle with the Torque Arresting Handle in place, the Kelton Hollowing Rig or a Kelton Hollowing Gate. In addition, the 1/2" (Small) or 5/16" (Mini) Hollowers may be used in the McNaughton M8 System hollowing gate.

**Safety.** Woodturning is inherently dangerous. Wear appropriate safety gear at all times. Frequently check mounting and holding devices. A safe lathe speed should be maintained for the item being turned. Always start the lathe at a low speed and bring it up to a speed appropriate for the project. Do not use cracked, rotten or otherwise unstable wood. Be circumspect.