

An Opinionated Survey of Hollowing Tools-Part II

Small Scale Hollowing Tools

I am going to give special attention to those tools that are designed for small scale hollow forms that are 5 inches or smaller in overall size. The following is an updated version of a separate article written previously.

Woodturning of small scale hollow forms (1 inch to 5 inches as I define it) has been gaining in popularity. This may in part have come about as a result of the many really fine small lathes that have appeared in recent years, but I believe it is clearly more than that. Part of reason may be that large blocks of exotic woods are becoming scarce, and when available are often astronomically priced (particularly when you consider that with a hollow form most of the block goes into shavings). It may be that many turners are finding small scale hollow forms to be a nice break from the stresses and strains that come from hollowing a 30 to 80 pound log. Whatever the reason, more small scale hollow forms are being made, by both recreational and professional woodturners. In the latter category, one finds the granddaddy of hollow form turning, David Ellsworth, making what he calls his Spirit Vessels (see them at <http://www.ellsworthstudios.com/david/spiritvessels.html>) which range from about 1/2 to 4 inches tall. Perhaps the small turning that has most amused me is an apple sized hollow form of box elder that was done by the late Ed Moulthrop, the well known creator of some of the largest turned objects around. So whatever the rationale and inspiration, small hollow forms are now a very legitimate and increasingly common expression of the style.

In contrast to the number of small forms that are being made, the hollowing tools to make them until recently have been rather limited and primitive. That may be because small scale forms have traditionally not had the "flash" of a 24 inch spalted beech vase, so the associated tools did not seem as macho or sexy. Certainly we have seen much greater attention paid to the development of large hollowing tools like thick, deep boring bars. Maybe this has been because the small scale turner has had a better chance of making his own tools from concrete nails, screwdrivers and Allen wrenches. Whatever the underlying reason, until recently, there have been few commercial offerings.

Small scale hollowing tools, unlike those for full sized turnings, are all scraping tools of one form or another. To my knowledge, no one has yet managed to reduce the size of a cutting head to the extent necessary for small scale hollow forms, with the limited exception of some small, unguarded ring tools. Thus, one doesn't find any tiny Proformes, Exocets, Big Brothers, etc. Fortunately, a scraping tool works pretty

well for most of these smaller objects, in part because of the lesser amount of wood that requires removal. Furthermore, one generally doesn't need to worry about having the cleanest of interior surfaces, as the mouth size on these forms is frequently too small to admit a finger.

Here is a brief description of most of the small hollowing tools currently available. As I describe them, I will also critically relate my experiences and impressions of each.

Chris Stotts Miniature Hollowing Set: [Available from Craft Supplies (unhandled) and The Cutting Edge (reportedly handled)] Produced by Henry Taylor, these were probably the first commercially available tools for small scale hollow forms. With approximately 4 inch exposed length, 1/4 inch diameter, high speed steel shafts with integral tips, they can be used for a range of small scale hollow forms. They are only available as a set of three: a straight shaft, a tightly bent shaft (about 85 degrees) and a very shallow "S-bent" shaft. I find them to be crude, overpriced and poorly designed tools. They are easier to use when placed in the Kelton small steel handle (discussed below), which by adding mass and length makes them (and most other small hollowing tools) more stable and controllable. With this handle one almost thinks the Stotts are worth using, until one is reminded the tips are too short with too little extension from the shaft, and there is inadequate (basically nonexistent) depth to the swan necked shaft. They are rather primitive scrapers and in my opinion could be produced almost as well and far more cheaply from screwdrivers.

Packard Small Hollowing Tools (appear similar to the Hamlet Square Hollowing Tools HCT133, 134, 135): [Available from Packard Woodworks] These are another set of three, all having a 10 inch wood handle from which protrudes an approximately 4 inch long, 1/4 inch square shaft. In this case there is a straight shaft, a shaft bent approximately 45 degrees and one which is bent approximately 80 degrees. Unlike the Stotts, where the tips are ground out of the round shaft (and thus thinner), these tools have more simple tips that use the top surface of the square shank as the cutting edge. The angled shafts are very reminiscent of the home made hollowing tools made by Bob Rosand (for a photo go to http://www.woodturningplus.com/robert_rosand.htm). The problem with such a style is that the tip of the angled tools is not on the central axis of the handle and shaft, resulting in rotational forces that sometimes can be difficult to control. Their square but narrow shafts do little to resist those rotational forces, while the square edges of the shafts mean they are not as easily rotated deliberately, and you are much more likely to have a

disaster from their square sides if you ever accidentally bump the side of a delicate narrow mouth. My recommendation is to take these to a vertical belt sander and at least round over the top edges of the shafts. I would chose these over the Stotts, if the intent is making more rounded figures, where the extension of the bent shafts is conducive to presenting the tip quite a ways off axis, while the miniscule projection of the bent Stott's might be best for quite narrow forms.

Glaser Detail Skew: [Available from The Cutting Edge] Though this is technically a modified tool, the modification of grinding a rounded tip with a flat top is so simple that I do not think it too badly violates the spirit of this review. This is an a very well balanced 9 inch tool made up of a tough A11 steel shaft fitted into an aluminum handle. The round shaft is 1/4 inches in diameter, with 4 inches of exposure. This can be a great tool for initially opening up a small scale hollow form.

Stewart Mini Hollowing Tools: [Available from Craft Supplies and Packard Woodworks] These are two unhandled tools that are sold individually. They are identical except that one has a straight shank while the other is of a swan neck style. Their shafts are of 3/8 inch diameter rod and are approximately 6 inches long. Either a 1/8 inch square cutter, or a mini teardrop scraper tip can be bolted to the end, and each tool comes with both cutters. Stewart recommends they be used with either the Stewart Omni Pistol or the Stewart Straight handle, but they can be used successfully with any handle that has a 3/8 inch bore (such as the Kelton). For the larger sizes of small scale forms, these can be very good tools, particularly the swan necked tool when fitted with its asymmetrical teardrop tip which allows for both traditional and shear scraping. Unfortunately, the Stewarts are expensive and their 3/8 inch shafts, like with the one Sorby shaft discussed below, are good for only the larger and more open mouthed of the small scale forms.

Sorby "Micro Shear Scraper": [Available from many woodturning suppliers, including Packard] Sorby has a very large range of small scale tools, including this 10 inch long, straight shaft scraper (868 H) with its own replaceable asymmetrical teardrop tip. It is available alone, or in a set, from most dealers who stock Sorby products. Like the Stewart, this scraper can be used for shear scraping, but oriented for more conventional scraping as well. The tool is reminiscent of its larger brother the Sorby Multitool (RS200KT), but uses a shaft that is entirely round. Not meant for the smallest of pieces because of the larger scraper head (about 3/4 by

1 inch) and thicker shaft, it remains a very handy tool that can give a good surface to the inside of the larger, or at least more open mouthed, of the small scale hollow forms. However, its smaller and lighter Sorby styled wooden handle, does not handle hollowing forces as well as the Stewart tools with their rubber covered steel handles.

Sorby Small (sometimes called Micro) Hollowing Set: [Available from most woodturning suppliers including Woodcraft] A set of three tools, though only two of which are actually hollowing scrapers. The third tool is a spear point scraping drill which has a 1 inch diameter depth stop that can be positioned anywhere along the tool's approximately 5-1/2 inch shaft. The idea is that you begin by using the self centering spear point scraper to drill an opening to your desired depth, then follow with the other tools. However, using this set alone, one is limited to a minimum mouth size that coincides with the 5/8 inch width of the spear. One of the two hollowing scrapers has a 3/8 inch wide, swan necked shaft that has a moveable and replaceable oval shaped cutting tip, again with about 5.5 inches of exposed length. The remaining scraper has a 1/4 inch diameter shaft of similar length that ends in a smaller swan neck with an integral tip. All tools are a little over 14 inches in overall length. Included in the set is a novel thickness gauge which attaches to the ferrules of the two hollowing scrapers. I have never found the thickness gauge to be of any use when the lathe is turning, at which time it gets in the way and could cause problems. Some might find it more useful when used as static calipers. This set is mildly outdated in my opinion and not the best buy since you really only get two hollowing tools and one depth drill. The replaceable tip tool is too large with a 3/8 inch shaft for small mouthed small scale hollow forms, and the wooden handles are too small and light for working on the larger sizes of small scale turnings.

Sorby Mini Hollowers (Mini in this case being confusing as it refers to a set smaller than Sorby's "Micro" set discussed above). [Originally only available from Woodcraft in the US, but beginning to become available from other Sorby dealers] They use a slightly over 3/16 inch shaft mated to small versions of the classic Sorby turning handles, and at 10 inches overall length are about 4 inches shorter than their bigger brothers. Another set of three tools, they have a straight shaft, a deep swan neck and a tightly bent (about 85 degree) shaft, each with an integral tip. One drawback to an integral fixed tip on a swan neck such as the latter is that after many sharpenings the geometry of the swan neck is no longer maintained, with the sharpened tip no longer aligned with the

[Continued on Next Page.]

axis of the tool. This is a problem with any fixed tip swan necked tool, but those tools with pronounce swan necks (like found on the smaller sizes of both Sorby hollowing tool sets) are generally more vulnerable due to the more perpendicular orientation of the last curve of the shaft. Nonetheless, I find these Sorby Mini Hollowers very desirable for the smallest of hollow forms. Their thin 3/16 inch shaft diameter, integral tip design (and a nice deep swan neck on the one shaft) make for a well balanced total package which allows them to deal effectively with the tiniest forms. I recently used the small Sorbys to make a 2.75 inch diameter by 1.5 inch tall hollow form with a 1/4 inch mouth. It was something I would not have been able to do with any of the other commercial sets. These little Sorby's are great to pair with the 5/16 inch Keltons, and together they do a nice job covering the entire range of small scale hollow forms, going all the way from 1 inch forms up to 5 inches, maybe more.

Kelton Hollowers: [Available from a wide range of suppliers, including Lee Valley, Craft Supplies, The Cutting Edge, The Woodtradesman, and Woodcraft] They come in a set of three different shapes in a range of four different sizes as discussed in the section on full size hollowing tools. The 5/16 inch diameter, 8.5 inch long shafts are the only ones appropriate for small scale turnings. They are meant to be fitted to a Kelton 12 inch long, 1 inch diameter plastic covered steel handle that is matched specifically to this set. The handle is very well balanced and adds just the proper weight to handle the forces of hollowing generated by these tools. The handle has an approximately 5/16 inch bore on one end and a 10 mm (~3/8 inch) one on the other. The set has an asymmetrical straight shaft and two shafts which are swan necked to differing degrees. They all have essentially the same somewhat complex tip shape, a shape that is very versatile. They leave a good surface, can be used lightly or aggressively, are fairly forgiving in use, and like there larger brothers, are sized just about perfectly to go from opening up a form to final cutting under a rim. They sharpen easily with a slip stone and their cobalt steel alloy holds an edge longer than any of the other tools discussed here (with the exception of the Glaser). Their handle perfectly compliments them and allows one to vary shaft extension, something that is not possible for the tools with fixed handles, or handles with a shallow socket (such as the Stewart). For all but the very smallest stuff, the 5/16 inch Keltons are a great way to go. (There have been rumors we may eventually see a set of 3/16 inch Kelton Hollowers, but as of this writing, they have yet to be realized).

Don Pencil Stingers: [Available from the Pencil website and Lee Valley] These are the largest of the small scale hollowing tools, having square shafts that while 5/16 on a side, result in a 7/16 inch overall (diagonal) diameter. They are also a little longer than most other small scale shafts, ranging from 9 to 10.25 inches for the bare shafts. Unlike most other small

scale tools, these three shafts all have replaceable tips of 3/16 inch drill steel. I find the Pencil tool tips a bit primitive compared to the Keltons, not being suitable for a shearing cut. Two of the shafts are straight, with one end mounting the tip in line with the shaft, the other having the tip extending from the side of the shaft at an angle. The third shaft has a swan neck, and allows the side mounted tip to be aligned with the linear axis of the tool shaft. The shafts can be fitted into the wooden handle of your choice, or used via an optional adaptor directly in the Pencil Armbrace (or Pistol Grip) described earlier. The latter arrangement allows for a lot of control, and together with their relatively large shaft size, makes these some of the preferred tools for those forms pushing the upper limits of what can be considered small scale work. For persons faced with requirements for extreme precision and control, the square shafts may be appreciated as they can be mated to a gated tool rest similar to that offered by Donald Derry. I would prefer that these tools had round shafts for the same reasons I present in my comments on the Packard Small Hollowing tools (I have gotten my wish and currently have a set of prototype Stingers with longer 7/16 inch diameter round shafts-I do not know as of this writing if they will be produced). Like with the Packard tools, I recommend rounding off at least the two upper corners of the square shaft with a belt sander or file, unless your are going to try to use them with a restrained gate. These tools have a lot going for them, including a modest price, and prove valuable for those larger small scale turnings.

What I Use:

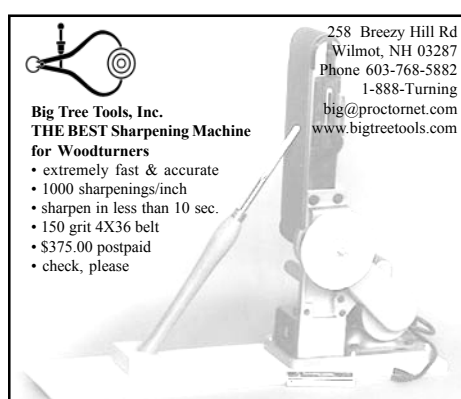
As I did with the full sized hand held tools, I will close out this section with the list of those tools I most regularly choose when creating small scale hollow forms.

Kelton "Mini" Handle (used to hold almost all unhandled small tools)

Kelton 5/16 Hollower Set

Sorby Mini Hollow Form Set (i.e. those with 3/16 inch shafts)

The 5/16 Keltons, make the best cuts, both in aggressiveness and in smoothness of the final surface, they have the most versatile tips, a range of shaft shapes that nicely transition from one to another, and the total package makes for a very controllable and stable system when used with the Kelton handle. When coupled with the Sorby Mini Hollow Form set, one can hollow almost any small scale form of one's choosing, from as small as one inch, all the way up to 5 inches.



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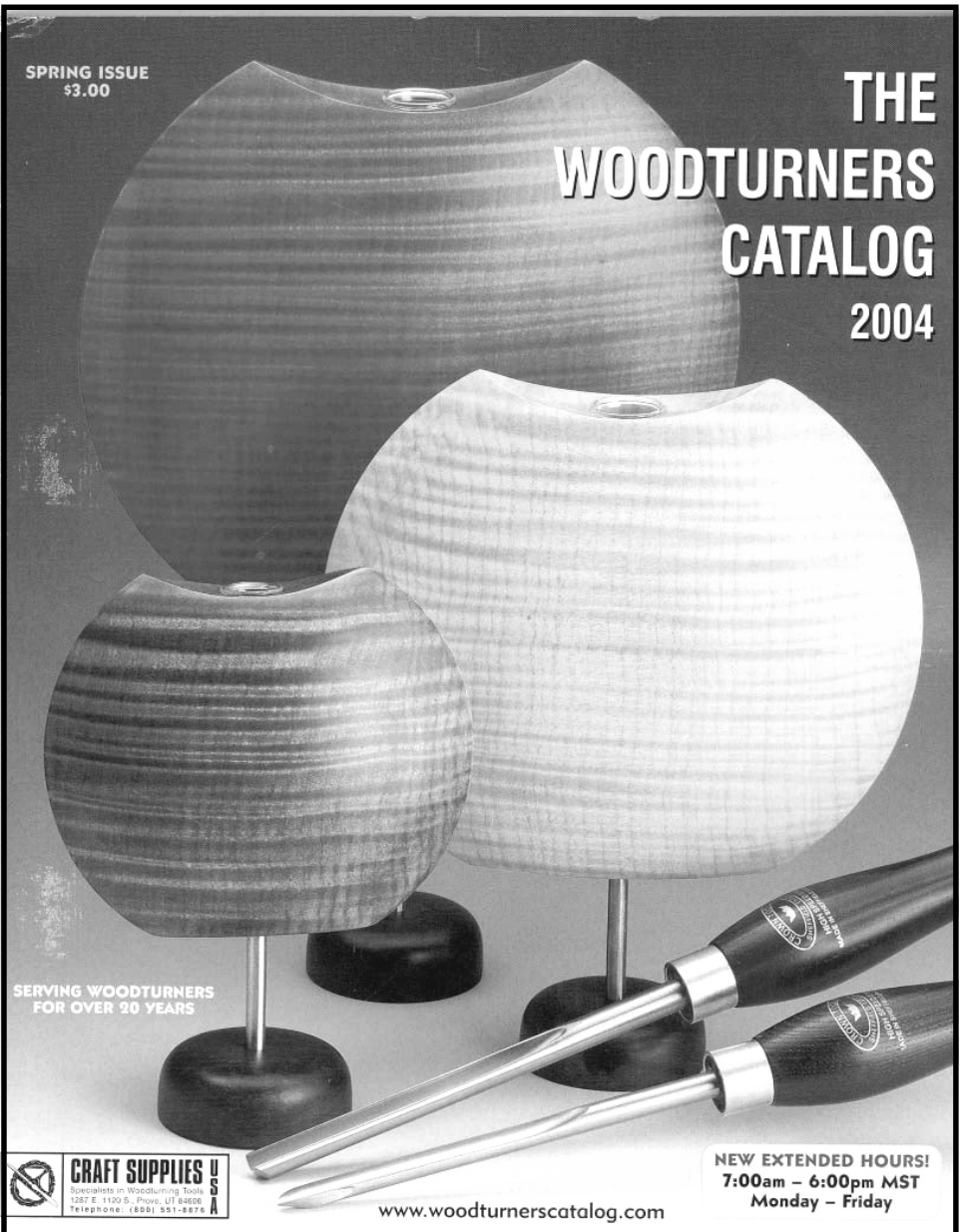
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