

Bowl Saving: A Comprehensive Discussion in Two Parts.

by Lyn J. Mangiameli

As the title indicates, this article will be composed of two parts. One part will focus on a comparative discussion of the devices available to obtain multiple bowls from one roughed out blank. The other part of the article will focus on the techniques that help one most effectively use these devices. To offer the most complete and comprehensive discussion, Joe Fleming and I have teamed up for these articles. This offers the opportunity to offer perspectives formed by different levels of experience (Joe uses these devices more often than I do), different exposure to the devices (I have all of the devices, Joe is most familiar with the Kelton), and different lathes (Joe uses the Stubby lathe, while I use the Nova DVR).

Why Use a Bowl Coring Device?

So why bother to own a device that allows you to obtain more than one bowl from a single blank? Clearly, the biggest issue is that it saves wood, and even if you have a plentiful supply, there is some satisfaction knowing that you have been able to use fully the material available to you. When wood is unusually beautiful, expensive, or uncommon (at least for you), the desire to obtain the maximal yield from your supply is obvious. For some, the cost of wood includes chain and chain saw expenses, fuel costs (both for the chain saw and to transport both person and wood), sealers, and storage space, not to mention the time involved obtaining the wood—so there is a lot of potential savings from achieving maximal yield.

Most users find a coring device greatly speeds up the process of making even one bowl. I don't think this is always the case, as it takes time to mount, set up, then remove and stow most bowl saving systems, time that could just be used to employ a gouge to remove the interior. But for large bowls (say 16 inches or greater) or if considered over the multiple bowls that are possible (i.e., production time per bowl), there is almost always a significant time savings. Even for a recreational woodturner, the combination of a savings in time and savings in cost is apt to be meaningful.

There is also the issue of waste and its clean up. Obviously there will be fewer shavings, which if you have some difficulty in disposal, can be a big plus from using a bowl saver. Almost every turner soon learns what a staggering amount of wood shavings and chips can be produced in the making of a simple turning. There then becomes the problem of getting the shavings out of the way while turning, collecting them after the session is over, and then somehow packaging them for final disposal. Anything that reduces the amount of wood waste makes life a lot easier for the turner. A bowl saver won't eliminate waste, but it will dramatically

reduce the amount of waste created for the amount of wood initially mounted to the lathe.

And finally, apart from any monetary or material saving, some will find it very nice to be able to make matched bowl sets of increasing size. These nests of similar bowls have both aesthetic and financial appeal.

So the advantages of bowl savers are real, but does it still make sense for the average woodturner to have one? Not necessarily, particularly if one doesn't make all that many bowls. I know of one turner who has an expensive bowl saving system that he has used twice. He mostly makes baseball bats and lamps. I think his purchase was more due to an interest in the technology than a real need. Obviously that is OK, but it does offer a good illustration of how one can purchase a very good device, which in the end is not very useful given one's turning preferences. The same thing can apply to people who primarily make hollow forms, or for people who primarily make boxes, though for these latter groups, the core can sometimes be used for a non-bowl turning like a small hollow form.

There is also the issue of the size of the wood that is apt to be obtainable (and/or affordable) and the size of the wood you can mount to your lathe. You obviously don't need blades capable of removing a 18 or 20 inch bowl if you will never be able to mount wood over 16 inches on your lathe. Nor will you need it if you are unlikely to have access to wood over 18 inches in diameter (which by the time it is roughed down isn't going to come in at much over 16 inches). So in such instances, only a modest or perhaps no system at all is going to be quite sufficient for one's needs.

The point I'm trying to make is that it is good to carefully think through your present and future needs before purchasing a bowl saving device. They are not an essential woodturning tool, even for those who think of themselves as principally bowl turners, but if one does make a lot of bowls, and takes the time to master the device, most won't ever go back to the old methods. And for those who sell their bowls, or purchase expensive exotic woods, the cost of the system is apt to be recouped in a very short time.

How Do They Work?

Specific techniques will be discussed in the second part, but here is a very brief, generalized overview of their use. A bowl blank is externally roughed out on the lathe and held in a chuck or with a faceplate. Depending on choice of technique and bowl saving system, the roughed out bowl blank may be held from either its base or the front face, and with most systems the tailstock can be brought up for support. Most bowl saving systems then require you to attach the device to the lathe bed

via a separate mounting plate or the banjo. The mount holds a platform or gate which then supports and guides a blade into the wood blank such that the blade separates an internal core from the outer body (and hence the reason why bowl savers are sometimes called "coring devices"). Often the blade (also referred to as a knife) is curved so that when it is advanced through the wood, the resulting core resembles a roughed out bowl (in some cases a straight blade can also be used which results in a conical or funnel shaped core). This core may serve as the blank for another smaller bowl. Oftentimes blades of different size and radius can be used, or the same blade can be repositioned, in such a way as to allow you to save multiple cores from a large blank.

Basically with all systems that use curved blades, you are making an arcing cut into the bowl blank. Because of this, the final core size and shape will be determined by four things: 1. the radius of the blade itself (defining the shape of the arc); 2. where on the face of the blank you begin your cut (determining the maximum diameter of the core); 3. the angle of entry (determining the depth of the arc, thus creating a shallower or deeper core); and 4. the shape and size of the original bowl blank (that restricts your freedom with respect to all of the preceding decisions). For those that use a straight knife, the determinants are really the same, except that the "radius" of the blade and resulting cut is straight.

The Bowl Savers

There have been many bowl saving procedures developed over the years, going back at least to pole lathe days using hooked tip tools. In more recent times a number of home grown tools and methods have come into being, including those described by the Lindquists, Ambrose and Leady. Presently, there are four commercial bowl saving systems: The Stewart Slicer; the Woodcut BowlSaver; the Kel McNaughton Centre-Saver System; and the Oneway Easycore. Note that though there are four commercial systems, there are many more packages. The Kelton has three; the standard, the large, and the mini. Oneway has added two "mini" packages of their own, as well as the array of posts and knives they offer as part of their full size system. The Woodcut Bowl Saver remains as a single package. The original commercial system developed by Dennis Stewart is composed of the Stewart Slicer and Armbrace, but is also available in a virtually identical version manufactured by Sorby under license from Stewart.

Though the tools all are capable of creating a core, I find there to be a lot of differences between them, both in capability, technique and overall ease of use. I

have sometimes used one bowl saver to core the small to medium range of bowls and another bowl saver system for the largest outer bowls, though working with just one blank.

The Stewart Slicer was the original commercial coring system (likely based loosely on the home made tool and techniques used by Melvin and Mark Lindquist). Just a heavy duty straight tool mounted in the Stewart armbrace, it offers an inexpensive way to core out bowls. The shaft is of 3/4 inch round rod, that is tapered on its horizontal sides down to a lightly fluted carbide tooth at the end. It is more wasteful of material as the shaft is much thicker than the other systems' blades and the straight shape limits the shape of the bowl removed to more of a funnel shape (which does happen to be a common and good aesthetic style for bowls). Thus it is easy to have a round outer bowl and one or more funnel shaped cores. If one already has an armbrace (be it Stewart, Sorby or Pencil), it is a very inexpensive means to achieve occasional cores, and it also works great as a heavy duty parting tool.

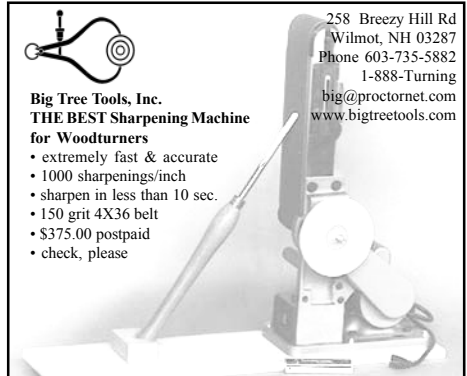
The Woodcut was one of the first single purpose dedicated coring systems and it still has a lot going for it. It is very easy to use, very hard to get in trouble with, and by using both a post and a tailstock mount, is fairly stable on medium duty machines like the small Jets, Deltas and Nova. The down side of this arrangement is that the tailstock cannot be used to stabilize the bowl blank during coring. The sizes that the Woodcut can core are well suited to the size bowls one can make on lathes of 10 though 14 inch swing. However, being restricted to two knives is obviously more limiting in the sizes and styles of bowls obtainable compared to those systems that offer a wider variety of blades. The Woodcut blades have Stellite tips that offer pretty good life and can be replaced by sending the blade back to the manufacturer. The package comes with a foam covered steel handle that will also make for a comfortable handle for 1/2 inch diameter turning tools. It takes a little longer to set up the Woodcut Bowl Saver than the Kelton or using a Slicer, but the burden is not great. A video to assist with its use is available, but I haven't viewed it.

The Kel McNaughton Centre-Saver System (Kelton) is unique in two things, one is its single tool gate mount via the banjo and the other is its very wide range of knives, including straight as well as curved styles, and both left and right handed blades that allow for the possibility of inboard and outboard use. All of the blades are accommodated by the same tool

[Continued on Next Page]

FOG FREE Safety Glasses and Goggles
made to fit over your glasses
Face Shields..... with replacement lense
Hearing Protection / plugs and cuffs
 Parkers perfect... the solution for fogging glasses and shields
www.dustbeegone.com

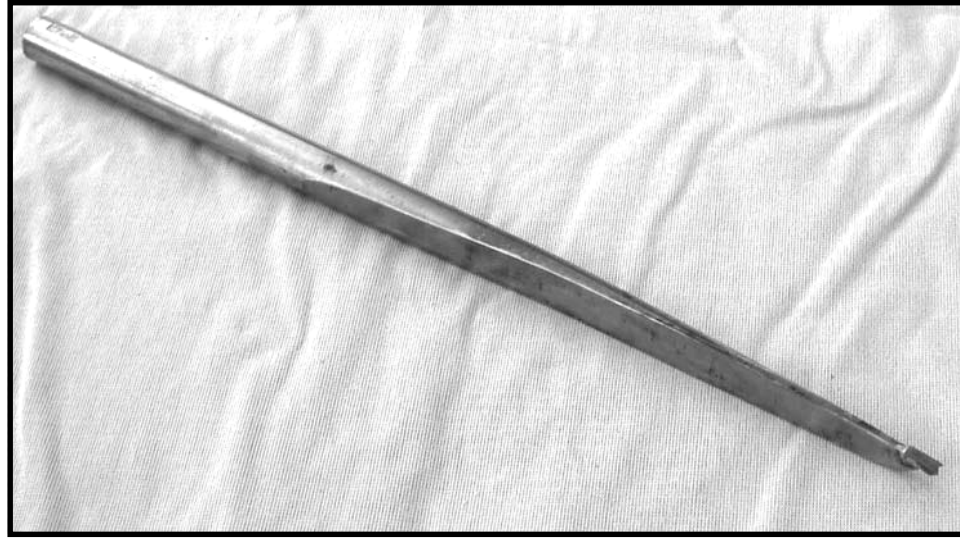

Rich Johnson's
Woodturning Center
 San Jose CA
 Home of the
 "Woodturners Bootcamp"
 Chainsaw to Polish
 Lessons - Classes - Supplies
 P & N Tools & Starbond CA Glu
 www.latheart.com (408) 254-848


 258 Breezy Hill Rd
 Wilmot, NH 03287
 Phone 603-735-5882
 1-888-Turning
 big@proctornet.com
 www.bigtreertools.com
Big Tree Tools, Inc.
THE BEST Sharpening Machine
for Woodturners
 • extremely fast & accurate
 • 1000 sharpenings/inch
 • sharpen in less than 10 sec.
 • 150 grit 4X36 belt
 • \$375.00 postpaid
 • check, please

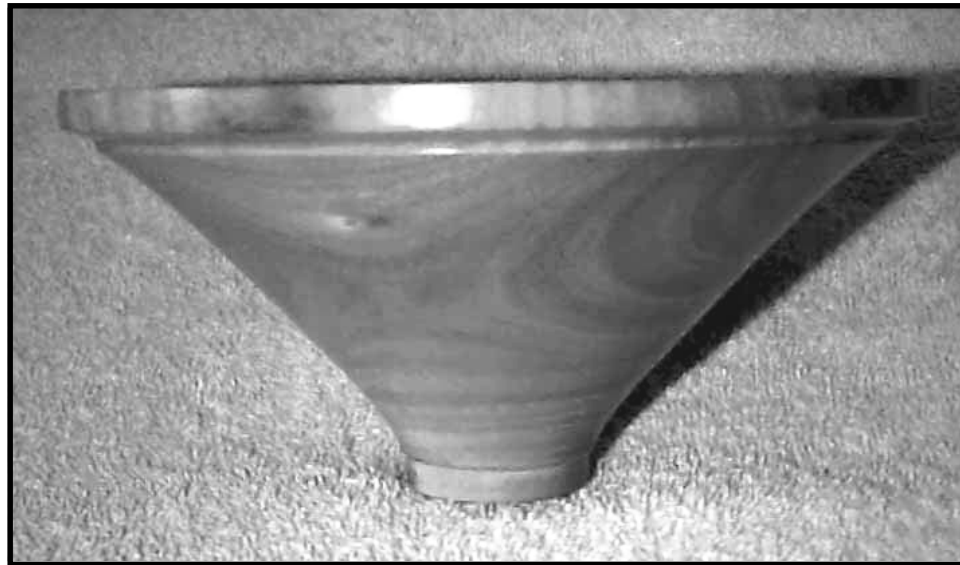
gate (though at present the mini blades require a spacer), which serves to stabilize the tool against twist and to set the cutting edge at the proper height. The main disadvantage of this arrangement, on light to medium duty lathes is that their banjo may be too prone to shifting position under the heavy horizontal loading passed along through the gate. This can have disastrous results when using the Kelton center saver; results which can include both bent knives and dismantled bowls. This can be overcome by making up spacers to fit between the headstock and the banjo. The spacers can be used to make for easy set up for the proper depth of cut, and in the process deal with the shifting of the banjo, but add to the bulk of any system (the idea comes from Oneway and can be applied to the Kelton and Woodcut systems as well). The up side of the banjo mounted gate, is that it is very easy and quick to set up, or move from one lathe to another (as long as they both use the same size tool post).

The Kelton is unmatched in the range of shapes and sizes of bowls that can be made. It has more knives available and the knives can be easily purchased individually from many sources. Thus you don't need to buy the complete large set to obtain just the smallest of the large set knives. Kelton alone has come out with a miniature set that allows for very small cores to be removed. If one does small scale work and/or has access to rare or expensive woods, this can be very appealing (it certainly is to me). Many aren't aware of the small set, and Kelton has just added a new even smaller knife. This small set presently requires a gate spacer (provided by Kelton) to handle the smaller thinner knives, but Kelton is considering modifying the standard gate in the near future to take any of the sets (it will likely involve adding a new vertical groove to the main post of the gate). The packages usually include a Kelton steel handle that can be used with your other turning tools. I like the Kelton versatility, but not its relatively demanding requirement of precise technique. There are a lot of written descriptions on its use (which don't always agree on technique), but there is no good video to describe its use. Technique is especially important in the larger sizes, where there is a lot of overhang with no support. With good technique, all goes well, but with poor technique it can be a miserable if not frightening experience.

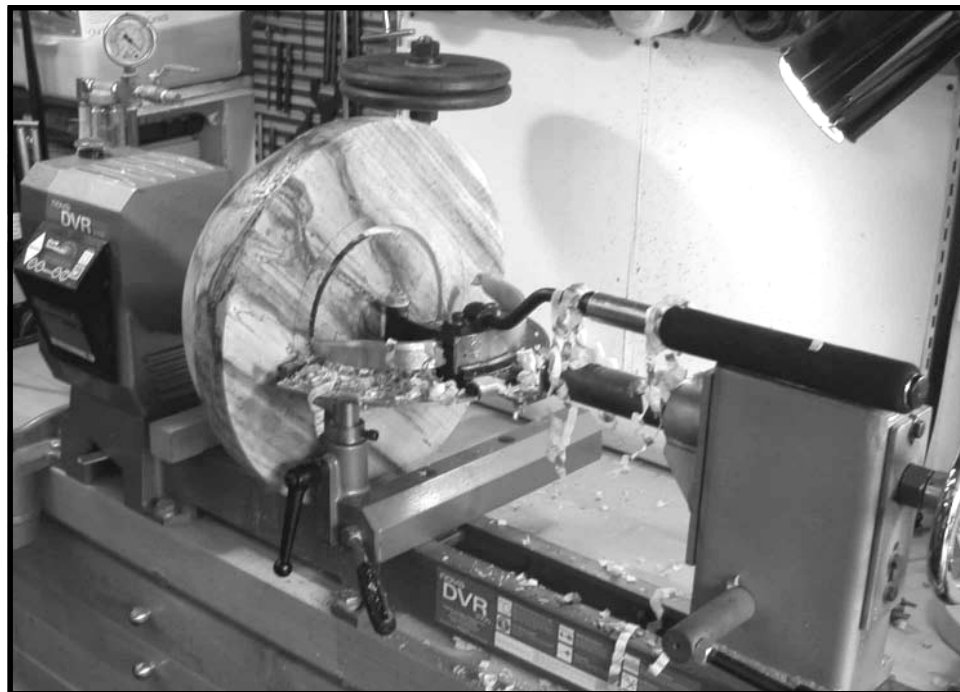
The Oneway Easycore is an exceptionally complete, very rugged system that is well mannered in use. The system is modular, to the extent that you choose the bed locking plate, the mounting post height and the specific blades that best match your lathe's capabilities. Typical of Oneway, it comes with all the wrenches needed for adjustment; it even comes with a push tack to use to clear the Allen head bolts of any buildup of wood debris. Like with the other systems, the package includes one of their Hosaluk style steel handles. It also comes with a good (not excellent, but quite good) video describing its set up and operation. The most recent version of the video features Dave Lancaster making the demonstration, and is sufficiently detailed and helpful to be worth watching more than once. The system is also much more expensive than the



The Stewart Slicer Tool.



A bowl made from a core removed using the Stewart Slicer Tool.



The Woodcut Bowl Saver mounted on the Author's Nova DVR 3000 set up to remove the smallest bowl first.

others, is much bulkier to store and takes the longest time to set up (but only a little longer).

The mounting system limits its use to lathes of 16 inch swing or larger and is offered in separate versions for 16, 20, 24 and 26 inch swing lathes. [Two smaller, more limited versions with only a single blade, are available, for 10 inch and 12 inch swing lathes.] The mounting system (what Oneway calls a "base unit") is exceptionally solid. The base is composed of two 1.75 inch OD posts, one almost 5/8 inch thick flat mounting plate, a bed locking plate (Oneway calls it a "clamp block") and a large locking bolt. The two posts are bolted to the flat plate and it is the height of these posts that determines which of the different models will match the swing of your lathe. Should one ever change to a lathe of different swing, I see no reason why one shouldn't be able to just purchase new posts of the correct height, for mounting to your existing plate.

Oneway offers a nice selection of four curved blades and matching curved toolrests (they call them support fingers) for its original full sized system. Used together, the blades allow conventionally shaped bowl cores to be removed in sizes from approximately 10 inches to 18 inches in diameter. Some have reported being able to remove cores as small as 5 inches with the smallest blade in this system, but you won't have a hemispherical shape. Of

course whether you can use the larger blade sizes will be dependent on the swing of your lathe, but since the blades are purchased individually, you can obtain only those applicable to your needs. Most will want the first three sizes which is going to bring the cost of the system up to almost \$600 (and nearly \$750 dollars with all four blades).

The blades are made from what looks to be a stainless steel that has a perpendicularly welded on post that fits in the base posts. The blade pivots about this post. The blade on the Oneway system differs from all the other coring systems in that it has an easily removable and replaceable tip. Some of the many advantages to this system is greater ease of sharpening, inexpensive replacement of worn tips, and the ability to have extra tips of different cutting geometries. You can also interchange tips between the various knives, which allows wear to be spread across all of them (for the same number of bowls, the largest blade will always have the most wear because it has the most material to remove). The tip is made from CPM M-4, which is the same alloy steel used in the Oneway (and some Glaser) gouges, and has fairly good, though not outstanding edge retention. It cuts a path that is approximately 3/8 inch wide, which allows clearance for the 1/4 inch wide blades. Oneway provides very complete directions for sharpening the tips both in print (a copy comes with each blade and is also available on their web site) and as a demonstration that is on the video that comes with the system. Oneway describes use of a grinder, but I personally find them much easier to sharpen using a vertical belt sander with a 120 or 150 grit belt. I mount them to a small piece of square aluminum "rod" to make the tip easier to hold (if for no other reason than heat).

To put the system to use, you must mount the base plate (with the support posts already attached). Several methods can be used determine the proper position, but I will leave that to the instructional video and the second part of this article. Insert the blade you wish to use in the blade support post (the midline post), and move the blade and base to the position appropriate for the size core you wish to take. Clamp the base plate to the

[Continued on Page 12.]

DO YA THUYA?
www.thuyawood.com
(631) 262-8825

PT INDO PACIFIC NET
Indonesian Hardwood Supplier
 Commercial varieties, Sustainable timbers, Palmwoods etc.
 As rough/finished lumber or components - accessories woodcrafters
 (Lg. Bowl Blanks, Pen Blanks, Cane Blanks, Slabs etc.,)
 Export Direct, Wholesale Only
Box 1076 Tuban Badung,
Kuta, Bali 80361
Indonesia
E-mail : swartley@indosat.net.id

Bowl Savers Continued from Page 11

bed firmly, now insert the tool rest in its support post and make sure the blade will be just barely supported by the toolrest. Fine height adjustments can be made by adjusting a bolt that is fitted in the bottom of the blade and tool rest posts. In the process of coring, you will swing the blade through an arc into the bowl blank, pausing occasionally to clear chips and advance the curved tool rest farther inwards to maintain support for the blade. It is this continuous support, even when the blade is well advanced, that makes the Easycore live up to its name.

So, if you've read this far, you probably won't be surprised that I don't find any individual system to the undisputed choice for all turners.

The Woodcut is likely the best choice for most with small and fairly light duty lathes of 12-14 inch swing. The dual banjo and tailstock mounting system provides an extra measure of stability for those lathes with lighter duty banjos. The blades are well controlled and the system easy to learn and operate, a big plus for those relatively new to turning. The fact that the Woodcut offers two blade sizes and can be used on a wide variety of lathe sizes (thus being transferable to a future lathe upgrade) likely gives it an advantage over the unreviewed Oneway 10 and 12 inch Easy Core systems. However, I can't recommend the Woodcut to those who already have larger lathes of 16 inch and up swing. Being restricted to two blades is too limiting, and in the larger bowl sizes I want my tailstock to be stabilizing the bowl blanks, not the bowl saver. Still, if you make only a few bowls, want to turn them out in traditional sizes, and want pure ease of use in an inexpensive package, the Woodcut is actually a very appealing system.

The Kelton system is a classic, and has a long history of rave reviews. If you want a lot of flexibility in shape and size (as small as 2 inch with the mini blades), minimum bulk for storage off the lathe, the ability to choose just the knives you want and need, have a stable banjo (or are willing to help stabilize it with a spacer), are willing to be attentive to developing and maintaining technique, and prize quick set up and removal, the Kelton offers a great package at a price that is moderate. However, the mount puts a lot of load on the lathe's banjo and for lathes like the Nova 3000 and DVR, the banjo locking mechanism is only marginally stable enough for the task (of course this problem will relate to the size of bowl being cored, being of no problem for small cores). Even with a solid banjo, I just don't believe the Kelton has the best design for coring 16 inch or larger bowls, there is just too much unsupported blade overhang. In the end, though, for most turners the Kelton will offer the best balance between price, capability and incremental expansion/upgradability.

The Oneway Easycore is an outstanding system, but at a price that will make it unrealistic for some recreational woodturners. The Oneway offers the greatest stability in its mount and provides unmatched support during the largest and deepest of cuts, which makes it much safer, less frustrating and less anxiety provoking to use. This comes at the price of

Table I. Comparative Table:

Bowl Saver	Blades Included	Measured Blade Thickness	Measured Tip Thickness	Replaceable Tip?
Kelton Mini	One straight, two curved	.20	.34	No
Kelton Regular	One straight, three curved	.23	.35	No
Kelton Large	One straight, two curved	.24	.38	No
Oneway	Four curved	.25	.35	User replaceable
Woodcut	Two Curved	.23	.33	Factory Replaceable
Stewart	One straight	.15 up to .75	.17	No



The McNaughton Selection of Blades for their Center Saver Systems.



The Oneway Easycore System Components.

some limitation in the shapes that can be achieved (there are no very small knives and no straight blade), considerable expense, and a lot of bulk. It will not create the very small bowls that the Kelton can (with the appropriate knives), and does not offer the straight knives that can be used for funnel shapes and as a heavy duty parting tool.

Finally, don't count out the Stewart Slicer if you already have a Stewart, Sorby, or Pencil armbrace. It can be a bit scary to use, but if you only rarely intend to core, don't need to achieve maximal yield, have a use for a heavy duty parting tool (and most of us do), and already have an armbrace, the Slicer will offer a lot of capability for only \$50.

In my opinion, if price were no object (which might be the case for the professional turner as well as for the well heeled amateur), the best of all possible worlds for the serious bowl turner would be to have BOTH the Oneway Easycore with #2, #3 and #4 inch blades, AND the Kelton regular and mini packages. If one were to forego the #2 Oneway blade as well, one can pretty much purchase the complete

Kelton regular and miniature packages for the cost of the #1 and #2 Oneway blades. The Kelton shines at the smaller sizes, and indeed is the only system to handle the smallest of sizes. It is also the only system, with its straight blades, to offer maximal yield if your outer bowl is more conical than hemispherical in shape. On the other hand, the Oneway excels in removal of large cores in excess of 13 inches, being both stable and easy to operate.

Because I turn items in a wide range of sizes, it is this hybrid combination that I find myself regularly using. If I am working with fairly small bowl blanks, I grab the Kelton because it is so quick to set up and functions without incident for making smaller cores. However, if I am work-

ing with (what is for me) a large bowl blank that will involve a core in the range of 13 to 15 inches (or more if I had a larger lathe), I am happy to take the extra time to set up the Oneway to achieve the relaxed uneventful core removal that follows. Even if you have one or another complete system, I urge frequent bowl turners to give thought to picking up a portion of one of the others.

Some Final Thoughts on Power:

One thing I chose not to touch on in the main review is the issue of motor power. That is because I see motor power being an issue for all of the coring devices. Based on my experience, motor power, as long as it exceeds one horsepower, while definitely an issue, does not preclude use of any of the systems if one is willing to be patient. Power needs are dependent on four things: the rate of entry of the knife (i.e., aggressiveness); friction secondary to shavings build up and side clearance (width of cut); diameter of the core being made, and density of the wood. So, with lower horsepower lathes, you need to introduce the knives slowly and gently, clear shavings often, make multiple cuts to increase side clearance, limit your coring to smaller sizes (generally limited by the swing of your lathe anyway) and stay away from dense dry exotic woods. Doing those things, you can get by with a one horse power motor (using your lowest speed pulley) and be fairly happy with a 1.5hp motor. Ignoring those things, you can (and will) stall a 3 hp motor. Using my DVR as an example, I have found it to have sufficient power to make cores of all sizes, in all woods, with all systems, without undue stalling and fussiness.

The next part of the article will be by Joe Fleming and discuss both basic and fine points in putting these systems to use.

Send Questions to:
More Woodturning
 P. O. Box 2168
 Snohomish, WA 98291-2168
 TEL: 360-668-0976
 E-Mail: woodturner@fholder.com

Manufacturer's of the Worlds Largest Range of Fine Woodworking Handtools



CROWN HAND TOOLS LTD.

Excelsior Work, Burnt Tree Lan, Hoyle Street
 Sheffield, S3 7EX England



TEL: England 114 272 3366 FAX: 114 272 5252

E-Mail: info@crowntools.com Web Site: www.crownhandtools.ltd.uk