



PHOTOGRAPHS BY KURT HERTZOG

# What you need to know about other uses for the lathe

Kurt Hertzog looks at just a few of the ways you can use your lathe to multitask

When we go shopping for a lathe, we usually are concerned with the features of the machine as it pertains to woodturning. There are the important considerations such as swing, distance between centres, horsepower, speed control systems, weight and more. While all of those specifications are key to your lathe's turning life, there is another side of your lathe that often isn't thought about. Your lathe can perform many other functions in your woodturning shop. Perhaps these weren't in your original intentions but they can certainly add value to it as a multitasking piece of equipment.

Whether you have a freestanding piece of equipment that does that same function or not, your lathe can sometimes do a better and more precise job of the task. Listed below are just a few of the functions that a lathe can do: an indexing assembly fixture, a layout and marking jig, a gluing clamp, a rotating spray fixture, a drying fixture, an assembly press, a carver's clamp, a power sander, a drilling device, a power carver, an inspection/measuring device and a tool sharpening system. In this article, we'll explore just some of the many ways your lathe excels at other valuable tasks besides just turning wood.

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## SAFETY FIRST

While I'll suggest a variety of functions that your lathe can perform, don't construe any of this information as contrary to safety. Some suggestions are ways to use your lathe to drive the cutting agent while you present the workpiece. It is no different than you controlling the workpiece as you present it to your router table cutter, tablesaw or bandsaw blade or disc sander face. Use the same level of personal protective equipment and precautions that you would if you were using the equivalent stand-alone equipment. Do not do anything that you don't fully understand or have any reservations about. Safety is not a subject to be trifled with.

## DISC SANDER

There are several ways to use your lathe as a disc sander. The easiest is to simply install a sanding disc backing plate into your headstock and present your work to the sander. These are available in many sizes and with flexible or stiff backs. Abrasives can be any type, size, media or mounting method depending on your implementation. Another easy method that can be used is to make your backing plates from flat material, such as plywood or MDF. Mounted to a faceplate or by a recess cut for chuck mounting, you can have a large selection of grits ready to use at will for relatively low cost. You can create a platform to provide for exactly 90° presentation of your work to the abrasive media. Make a box that will sit on the ways so the top is at the centreline of the abrasive disc. There are many advantages of this system over the freestanding disc sander. Not the least are the elimination of the cost of the disc sander and the floor space that it would take. I assume you can see how this can be used to sharpen your tools. While it would provide a flat grind as opposed to a hollow grind, sharpening can be implemented with a simple set of fixturing or skills to freehand. Sharpening on the lathe, using chuck gripped MDF platens with abrasive applied provides the traveling turner a sharpening system at minimal cost or transport burden.

## LATHE DISC SANDER ADVANTAGES

- Variable speed sanding
- Variable diameter platens limited only by swing
- Easy grit change without removing/damaging abrasive disc
- Increased horsepower available
- Saved floorspace
- Huge selection of abrasive grits and media available
- Cost savings over stand-alone

## MULTITASKING

For many of us, having the space and funds to own all of the niceties for a workshop might be far down the road. Drill press, spindle sander, a rack of sturdy woodworking clamps, disc sander, belt sander, hand grinder, micromotor or flex shaft tool and many more pieces of equipment could be on this list. You might already have some

of these and not sufficient need of others to add them to your workshop arsenal. Regardless of the reason for their absence, let's look at the best multitasker you have in your workshop – your lathe. Regardless of the size, your lathe can perform the tasks of nearly all of the equipment I've listed. Let's see how.



Creating a disc sander is as easy as adding a stiff sanding pad. You can go as large as your swing will allow



With plenty of manoeuvring room, you'll find this disc sander more user friendly



With PSA abrasive sheets you can easily change grits quickly without ruining the sheet

## SPINDLE SANDER



Easy to put in a drum sander of any size. Plenty of room to work and easy to clean. If you prefer, use the tailstock to support the mandrel



For safety's sake, drill chucks in the headstock are not appropriate. Use a threaded-on fastening system like a chuck or collet



For those unfamiliar with a collet and drawbar, the drawbar pulls the collet in to close it and holds it there clamped

### ◀ MAKING A SPINDLE SANDER

While my lathe may not oscillate as my oscillating spindle sander does, it can be made to effectively perform the same function. There is a wide range of sanding drums available for your drill press, hand drill, thickness sander and powered flex shaft equipment. All of these can be easily clamped or threaded into your headstock to bring them to bear on work presented to them. However, you can easily make your own sanding drums, whether straight, tapered or any other shape you wish. Because you can easily turn your own diameter, you can have a large array of them available that wouldn't be in the usual spindle sander range. With these easily made, low-cost spindles, you can have different grits ready to use with minimal cost and quick changeover. The same table used for supporting your stock for presentation to the disc sander can be used for the spindle sander with a simple modification.



Home-made drum sanders can be any shape needed. Here a tapered block with PSA sandpaper rounds Urchin holes

### LATHE SPINDLE SANDER ADVANTAGES

- Variable speed sanding available
- Variable diameter shafts possible
- Easy grit change with multiple low-cost shafts
- Increased horsepower available
- Saved floorspace
- Huge selection of abrasive grits and media available
- Cost savings in implementation

### DRILL PRESS

The drill press or pillar drill is a weak spot in nearly everyone's workshop. If it is big enough to do the large jobs, it takes too much space on the floor and has a high cost, but if it isn't big enough how do you do the large jobs? For the most part, the two problems are quill travel and maximum table clearance. The quill travel on the common drill press is 50 to 75mm. Anything in excess of 75mm is rare and usually costly. When drilling deeper holes than the quill will travel, there are the acrobatics of drilling, retracting, shimmying up the stock staying parallel, continued drilling, etc. This is cumbersome and sometimes introduces less than safe conditions. These

problems are eliminated or at least minimised with lathe drilling. The quill in the tailstock does have a travel limitation but that is easily overcome by technique. Your new quill travel in close to the distance between centres of the lathe. With the stock fastened in the headstock, the tailstock is slid forward to engage the drill. The drill chuck in the tailstock needs to be held to prevent it loosening on retraction but your entire drill length can be accommodated by this sliding

A drill chuck in a drill press rarely gets changed. In a lathe, you can easily use the correct size as needed

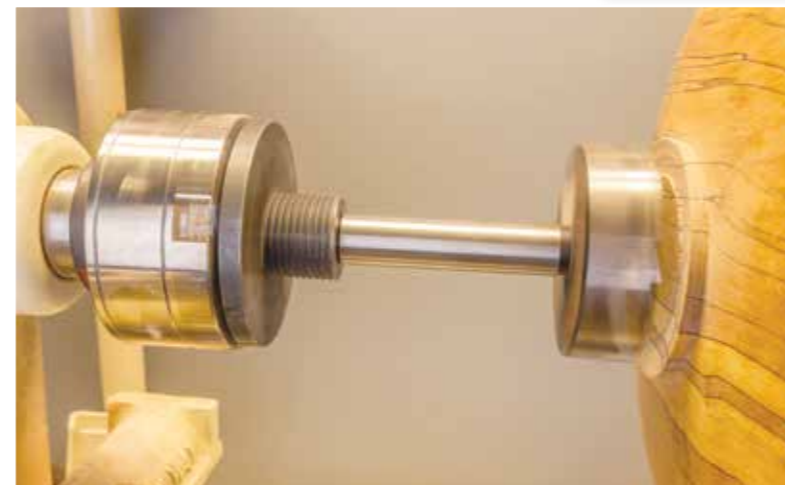


### DRILL PRESS

in and out using the tailstock. You also have use of the tailstock quill travel if you wish. Don't lose sight that the drill can be placed in the headstock and the stock mounted or supported by the tailstock. The other problem of maximum table clearance is also relieved somewhat by a lathe drilling. The new table clearance is the tip of the drill in the tailstock to the face of your workholding method in the headstock. In a full-size lathe, 915mm, 1,066mm or 1,220mm is common. Even the larger floor-standing, full-sized drill presses don't offer much more. The bench-mounted drill presses are lucky to have 305mm to 510mm which most mini-lathes can provide.



The drill depth is limited only by the drill length when using a lathe. It is important to hold the drill chuck on retraction



For serious drilling, use a thread-mounted device of sufficient size appropriate for the work to be done



In this drilling, the bit rotates but the work advances. You have the resolution of the tailstock quill and the force of the handwheel gearing

### LATHE DRILL PRESS ADVANTAGES

- Variable speed drilling more easily accomplished
- Increased horsepower available
- Much larger quill travel possible
- Much larger platen clearance often available
- Easily changed drill chucks
- Fine drill advance/retract ability using tailstock quill
- Increased force when using tailstock quill and wheel
- Saved floorspace
- Cost savings in implementation

### POWER CARVER/POWER SANDER/POWER BUFFER

It should be obvious by now that most of our implementations except the drill press involve the headstock clamping the cutting agent and providing the relative motion.

The power carver and power sander are no different. You can take the various Foredom, Dremel and other manufacturers' cutting and sanding tools and clamp them into the

headstock. Once done, you have a variable speed, fixed position cutter or sander that you can present your work to. You can turn various mandrels to any shape you wish and





The Beall buffing system includes three buffs for different compounds and has inside buff sets of different sizes



Don't get stuck on what's in the store. You can use wheels of your choice with your own selection of compounds

## POWER CARVER/POWER SANDER/POWER BUFFER

apply abrasives as needed to create your own specific sanding head. Fastening shafted cutters or sanders into the headstock can use collets or chucks. If the mounting method is taper mounted as a drill chuck usually is, it should be secured by a drawbar to provide a mounting that won't loosen up. A drill chuck pulled free of its mount can present unsafe conditions so the retaining drawbar is highly recommended. I favour a threaded-on chuck whether full size or miniature to hold shafted tools. That eliminates the

problem of the taper mount loosening. Drawbar secured or threaded-on collet systems are also available. Buffing wheels already exist for the lathe. The Beall Buffing System in its various configurations will do outside or inside buffing. Barring that, you are free to grab anyone's buff and anyone's compound to create your own buffing system. The diameter of the buff is limited only by the distance over centre of your lathe. The compound can vary from Tripoli to jeweller's rouge.

## INDEXED ASSEMBLY/GLUING CLAMP

From the last issue topic – see *Woodturning* issue 267 – on indexing, you can see how to use the indexing and rotary motion to do marking as needed. You can also see the methods that the open space segmented turners use to glue up their turning blanks. That indexed assembly concept will work for nearly any rotary or linear indexed assembly need you might have. What also falls right into place is the gluing clamp aspects of the lathe. For the standard segmented turner, each of the glued up rings

can be centred, rotary aligned and then clamped in place to allow time to cure. The face of each ring is trued starting at the very bottom so that the build of the blank is on axis and without layer thickness errors. You can use your lathe for a gluing clamp regardless of what items you turn. When making two-piece ornaments that you want to glue together, why not use the lathe? When you want to stack various species of woods for cutting boards, pen blanks, ring accents or any other gluing that you need to clamp, you can

## LATHE CARVER/SANDER/BUFFER ADVANTAGES

- Large force available with fine resolution
- Custom yet low-cost press faces
- Very large press throat opening
- Saved floorspace
- Cost savings in implementation

also use the lathe. You might need to make some platens to distribute the force across the surface appropriately but that is quick work. Often just placing your stock across the jaws of a chuck and a board on the face of the tailcentre shaft will be sufficient. You'll have a clamp that you can exert large clamp load with that has an open throat nearly as large as your centre to centre distance. You can also add outrigger clamps of the standard kind if you have the need to add clamp load on the perimeter.



Indexed assembly, drilling, marking, slotting or whatever is easily done on the lathe. Shop-bought or home-made indexing works well



A nicer gluing clamp is hard to find. A pierced and painted goose egg has the finial glued in place and clamped until cured

## LATHE INDEXED ASSEMBLY/GLUING CLAMP ADVANTAGES

- Large applied force possible
- Large throat opening possible
- Custom platens can be easily and inexpensively made
- Progressive yet fine resolution clamping possible

## LATHE INSPECTION/MEASURING ADVANTAGES

- Simple measurement techniques
- Application of templates to part
- Visual overview to full-scale drawing
- Roundness indicator with the addition of pencil markings
- Dial indicator measurements easily made if needed

## PAINTING/DRYING/WORKHOLDING FIXTURE

This is the most straightforward of all of the non-turning applications. Once you've got something mounted, why take it off? If you need to paint or spray a finish, you can use your lathe as your rotary worktable. Be safe with ventilation, fume extraction and proper respirator filtering. A variable speed lathe slowed right down works wonderfully for spraying paint or finish. You can control the rotational speed for application but also let it rotate to minimise runs as it dries. Since it is already mounted, why not let it cure there? Even before you get to your finishing, what about after turning enhancements? You can



For most turnings, a pencil and a toolrest can tell you all you need to know. The pencil will mark the high spots and not the low

## INSPECTION AND MEASURING DEVICE

The lathe lends itself to easy measuring and inspection. You may have templates that can be laid up against your turning. You may have dimensions that can be set to callipers and checked at various points along the height. It is also very easy to measure for roundness. There are gauges that can be used but it is quite easy to use a simple pencil. Most of us aren't making rocket parts so we only are

interested in if our turning has warped with wood movement or how 'out of round' it really is. Numbers are rarely important. If you can determine whether there is sufficient material available to bring the turning into round, that is all you usually need to know. That information along with what areas are out of round let you focus there. The simple pencil hand gripped to the toolrest is enough.

leave your work mounted, rotate it to the best working position, lock the headstock and work on your piece. That can be painting, piercing, pyrography, carving or any other alteration. Reposition as needed. Of course, you can mount a carver's screw to a fixture. You can even mount your carving vice to your lathe bed as shown in the workholding series. How better to hold things than with your lathe? It is at the correct height, sturdily mounted and has a secure base. You have it there already. Other than tying the lathe up when it might be needed for turning, it is the greatest multitasking piece of equipment you own.



Capable of an incredibly light touch, here a pierced chicken egg is painted and rotated using the handwheel

## LATHE PAINTING/DRYING/WORKHOLDING ADVANTAGES

- Accurate and secure positioning possible
- Indexable reorientation available
- Slow rotation available for spraying, drying and curing
- Secure mounting possible
- Heavy, immovable support possible

## CONCLUSIONS

With all of the non-woodturning functions your lathe can perform in the workshop, you might think seriously before you buy those other pieces of equipment if you currently don't own them. If you already have them, perhaps getting rid of a few will open up more space. The lathe itself does a wonderful job at what it was designed to do. Having done that, it



The lathe is a true multitasking piece of equipment with far-reaching capabilities. You can usually figure a way to get it done

can also do so many other things well that it quite possibly might be the only piece of equipment in your shop. Perhaps unlikely but possible. While we won't try to go that far, I do believe that with your lathe you have a lathe, carver, sander, buffer, assembly press, indexed assembly, gluing press, painting, drying and workholding device. And you thought you only bought a lathe? Will it outdo all of the

other single-purpose devices? Perhaps not. Will it work to overcome your lack of some of them? Certainly. And I really believe it does a better job at some of them than the purpose-built piece of equipment. The column this month was a thought starter. Not all of the possibilities but quite a few. Run with them. A very successful man had a very simple company mantra: think. ●