Introduction to Woodturning

The attraction of woodturning as a hobby is that results are almost instant. With a few basic tools and a lathe, simple items can be produced very quickly. A piece of wood can be shaped with a chisel in a matter of minutes on a lathe, whereas with other wood orientated crafts, such as carving, progress is much slower.

There are three distinct parts to woodturning;

- Sharpening
- Turning
- Finishing

To achieve good results all three have to be blended together, and appropriate amounts of time need to be devoted to each one. The fun part is making shavings and creating shapes, but without sharp tools you can't cut the wood cleanly to produce those shavings. And having created your shape, a well chosen and carefully applied finish will not only enhance your work, but will also protect it from the vagaries of climate and the atmosphere.

More than anything else, woodturning is one of the few manual occupations that can engage hand, head and heart at the same time - the combination of hands-on work with the need for a keen eye, and the sheer pleasure of creating a beautiful and useful object from a blank piece of wood is hard to beat.

The workshop

For many amateur woodturners, the garage doubles as a workshop, with the lathe mounted on a bench at one end and any other equipment having to share space with the car and all the paraphernalia normally associated with a garage. This does encourage you to clean up frequently and use the space wisely, but it is hardly ideal.

The following points should be considered, wherever you end up establishing your working space;

- If possible, the lathe should be situated near natural light - usually a window or skylight. An adjustable lamp can be placed near or on the lathe. Make sure that the rest of the workshop space is adequately lit.

- There should be plenty of space available to move around the lathe, and to swing tool handles without any obstruction. Because the correct stance when turning is essential (see ***Stance***, later**),** if you are cramped or cannot move freely, you should rethink your workshop space.

- You can never have too many electrical outlets for stationary and other power tools, but make sure that they are installed by a qualified electrician, and never be tempted to overload sockets or power circuits.

- If you have invested in quality tools, it would be foolish to leave them tying around where they can be damaged. Make tool storage a priority.

Choosing a Lathe

Before buying a lathe, test as many as possible: try out a friend's lathe, join a club and try all the lathes that they have, go on a course with a reputable instructor and ask advice and opinions of the different lathes available, or visit woodworking shows to check out what's available.

Once you have seen what there is, you have to decide just what kind of turning you want to do and how much space you have to work in - if you want to turn miniatures exclusively, you obviously won't need a huge floor-mounted lathe, and conversely, if you plan to make bowls and nothing else, a lathe that will only swing 6 in (150 cm) will not prove to be of any use at all.

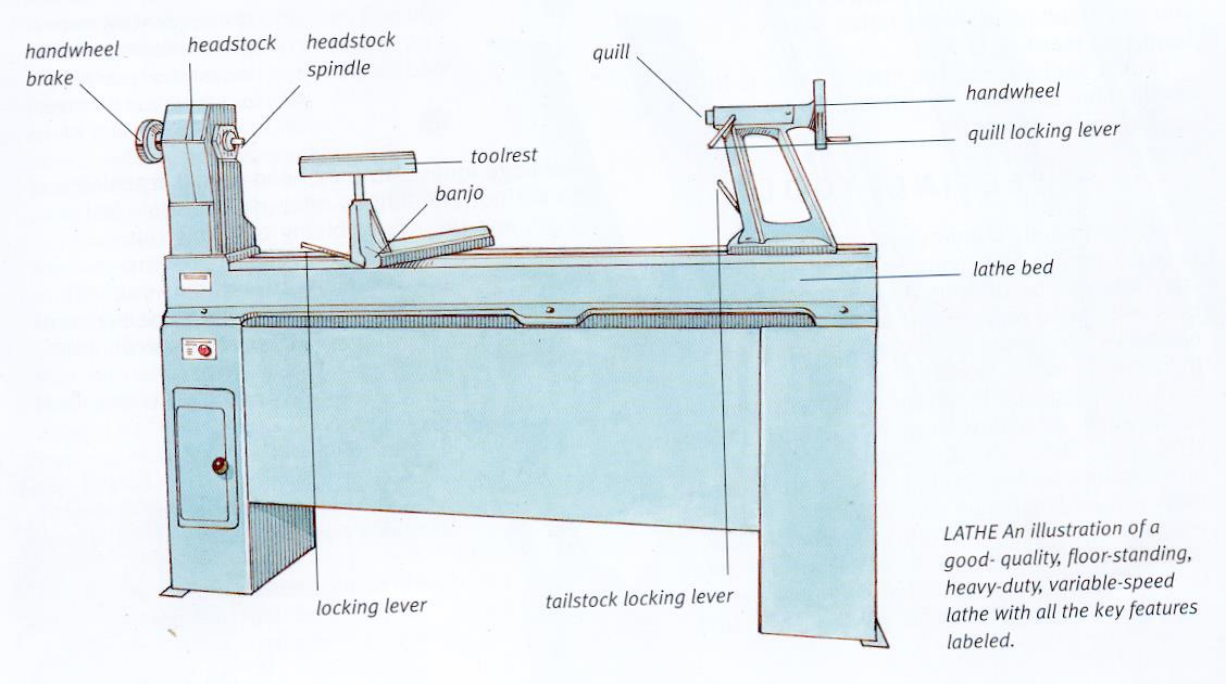
Most woodturners compromise and end up going for a swivel-head lathe that allows them to do both of these extremes and everything in between; if you decide to go this route, your lathe needs to have a good range of speeds that will cope equally with out-of-balance bowl blanks (which need a slow speed) and spindle work (which requires a high speed). A good range for this type of lathe is 300-3000 rpm. A lathe with an electronic speed control is preferred over a lathe that requires a belt to be manually changed to change the lathe speed.

When deciding whether to go for a free-standing or bench lathe, the most important things to remember are that a free-standing lathe should be as stable and as heavy as possible (so it might well not be suitable for a wooden floor without reinforcement), and that bench-mounted lathes are only as good as the bench to which they are fixed. Here, the ideal solution is to build a sturdy bench to the correct height for you - the spindle centers should be at elbow height once the lathe has been bolted securely to the bench.

As with any woodworking purchase, it is always advisable to go for the best that you can afford; here, the quality is almost invariably reflected in the price. This is not to condemn all less-expensive lathes out of hand - some are surprisingly well made and are quite suitable for learning on - but you do tend to get what you pay for.

Local woodworking clubs often advertise secondhand lathes for sale and is an excellent way to look for a lathe with a good reputation that may no longer be made, but if you are interested, make out a checklist before viewing. This should include;

- General condition of the lathe. How smoothly does the rest slide along the lath bed. What condition is the electrical wiring in and in what state are is the belt?
- Always ask to see the lathe running, and don't be afraid to set the different speeds or test the chuck yourself.
- If it's a free-standing model, who is going to transport it to your workshop, and is this included in the price?



LATHE An illustration of a good- quality, floor-standing, heavy-duty, variable-speed lathe with all the key features labeled.

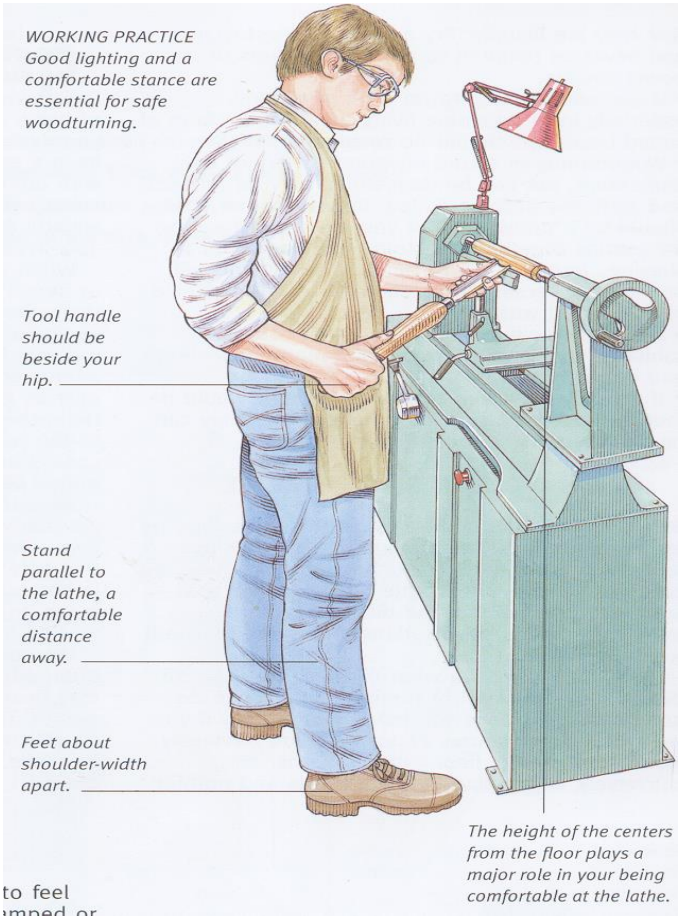
Stance

How you stand at the lathe is important. The wrong stance can cause tiredness and also lead to other problems with your back and neck. When turning between centers you should stand parallel to the lathe, a comfortable distance away, with your feet about shoulder-width apart, so that as you traverse the tool you can sway your body rather than moving your feet. This is not always possible, but the tool handle should be beside your hip, rather than in front of your body.

A big part of being comfortable at the lathe is its height. The height of the head stock spindle should be at elbow height when your forearm is held in a relaxed position If your lathe is bench-mounted it should be fixed as close to the front edge as *possible,* rather than towards the middle, so that you can stand at the lathe rather than having to reach to it.

Having said all this, the main priority is to feel comfortable and relaxed, rather than be cramped or have to reach too much.

Good lighting and a comfortable stance are essential for safe woodturning.



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Tools

There are literally hundreds of turning tools available today, and trying to select which ones to start with can be difficult. An all-round set for beginners need only consist of five tools and may be used to complete many projects

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There is also the choice of whether to buy carbon-steel or slightly more expensive high-speed steel (HSS) tools, although some manufacturers only produce turning tools in HSS. Carbon-steel tools can be sharpened to a much finer edge, but will lose that edge fairly quickly, whereas HSS doesn't take quite as fine an edge but is claimed to hold the edge up to six times longer. The benefits of buying HSS tools are that they hold their edge longer, so they need less sharpening; you are not grinding as often, so the tools last longer, and the risk of bluing or taking the hardness out of the toot is reduced.

As you progress and become more adventurous you will probably decide that you need a bigger selection of tools, most of which are designed for specific jobs.

Starter Kit

1 Bowl gouge

These gouges are ground out of solid round bars, and have a deep flue and a long, strong shank. They are available in sizes of 6 mm to 19mm.

2 Roughing gouge
This gouge is usually the first tool used in any spindle-turning application. It should only be used on spindles, never on faceplate work. Roughing gouges are commonly available in widths 19mm, 32mm and 38mm.

3 Spindle gouge
The spindle gouge is ground from a solid round bar and is commonly available in widths from 3 mm to 19mm in 3 mm increments. A good starter is a 12 mm gouge.

4 Skew chisel
This can be a difficult tool to master, but with practice is also a most versatile tool. The surface produced by a sharp skew needs little or no sanding, and can be likened to that from a hand plane.

Skews come in sizes of 12 mm, 19mm, 25 mm and 32 mm, and are ground to an angle of 30^0.

5 Parting tool
A 3 mm parting tool is the next most useful item in your kit. It can be used to create spigots for lids or chucks and, as its name suggests, part finished pieces.

Scraper
Another tool not shown above is the scraper. There are too many shapes and styles of scraper to be taken up here, but for someone just starting out one or two scrapers may also be a valuable addition to your took kit.

Other Useful Tools

Bandsaw
This makes it possible to convert boards into bowl blanks and rip boards into the required sections for spindle turning.

Bench grinder
The standard gray wheels supplied with these grinders should be replaced with softer white wheels, to reduce heat build-up.

Scroll chuck This type of chuck is derived from engineers' four-jaw self- centering chucks, and is operated by a single key.

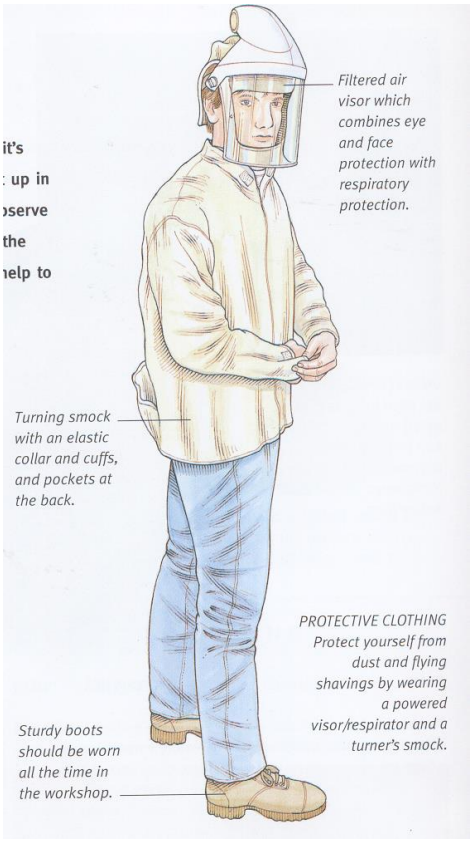
Jacobs chuck
Mounted on a Morse taper to suit your lathe, these can be used in either the headstock or tailstock for drilling or for holding very small pieces.

Measuring calipers
These are essential for setting diameters on spindle work.

Dividers
These are used to scribe lines from the centers of faceplate work, such as chuck recess sizes, and can also be used for marking out bowl blanks to be cut on the bandsaw.

Safety

Most safety procedures are a matter of common Sense, Yet it's surprising how easily accidents can happen is you fail to observe the basic safety practices. Accidents can happen, whatever the precautions taken, but adhering to a few simple rules will help to prevent the most obvious ones.



Don't wear loose clothing (unbuttoned shirt sleeves) or neckties that could get caught in the revolving workpiece.

Wear eye and face protection, such as safety glasses, goggles or a visor - or a filtered air visor which combines eye and face protection with respiratory protection, which draw air through a prefilter via a small fan into the main fitter, and then blow clean air down the inside of the visor, which is great for glasses wearers because their glasses don't mist up.

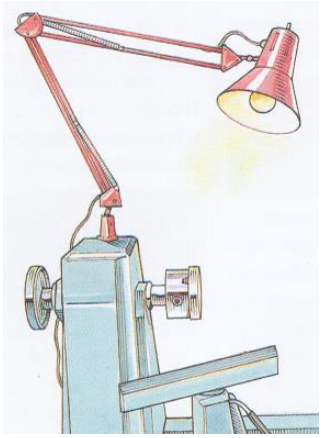
Before starting up the lathe, check that the spinning workpiece is not going to hit the tool rest or anything else, and make -sure that the workpiece is secured and free from defects or splits that could fly off when the lathe is started.

Switch off the lathe before making any adjustments to the toot rest, and remove the tool rest when sanding.

It is a good idea to wear a pair of sturdy shoes or boots in the workshop at all times;
when tools fall off the lathe or bench they invariably fall edge first, and even if they don't they can still hurt.

Filtered air visor which combines eye and face protection with respiratory protection.
Turning smock . with an elastic collar and cuffs, and pockets at the back.

Electrical safety is very important. Avoid long extension cables underfoot. Regularly check all connections and electrical cords attached to your machines for signs of wear, and get them replaced, by an electrician if necessary.



Good lighting at the lathe is essential. An adjustable lamp attached to the headstock is best; it's out of the way, but can be positioned over the work without obscuring your vision, and if you have a swivel-head lathe the lamp moves with the headstock.

It's a good idea to invest in a smock with elastic collar and cuffs, to protect your clothes and prevent shavings' getting down your shirt front; they usually have pockets at the back so they don't **fill** up with shavings.

Ensure that you have enough room to move around the lathe and swing tool handles. Clean away shavings at the end of each day so that they don't provide a fire risk.

These notes are extracted from Woodturning, Two-in-One Manuals by Phil Irons, Published by Apple Press.

The book contains many woodturning projects for the novice turner. Excellent images and beautifully produced. I highly recommend it new woodturners. John Di Stefano