

Woodturning Safety 101



Woodturning is a fun and exciting hobby for people of all ages and skill levels. The number of things you can create on your lathe with a minimal amount of time and money is limited only to your imagination. When woodturning, there are a number of safety considerations that must be kept in mind so that you can have a great time turning while being safe. Woodturning Safety 101 is intended to create safety awareness so as to prevent

personal injury. We hope you will find this information helpful and that you will review it from time to time. Feel free to share this information with other woodturners you know.

Personal Safety...

1. Educate yourself on proper turning techniques, chuck operation, tool use and lathe operation.
2. Always wear a full-face shield at all times. Safety glasses are not sufficient protection against flying debris.
3. Always use a dust mask or air filtration system.
4. Wear adequate hearing protection.
5. Don't wear loose clothing, gloves or jewelry as they may become tangled with the lathe.
6. Never start the lathe before checking to make sure the spindle speed is correct for the size of work being turned. Also, make sure the work clears the tool rest by rotating the hand wheel before starting the lathe.
7. Be sure the work piece is securely mounted and is free of imperfections or poor glue joints.
8. Make sure all belt guards and covers are in place before starting the lathe.
9. Make sure the tool is on the tool rest before making a cut.
10. Always know your capabilities and work within your limits.
11. Utilize the tailstock whenever possible.
12. Always remove the tool rest support before sanding and finishing. This will help prevent injuries to your hands and fingers.
13. Do Not Overreach! Although many of today's tools have long blades, this does not mean they are designed to reach long distances over the tool rest. Refer to "Tool Safety" information on this page.
14. Keep your tools sharp and properly ground. Dull tools are dangerous, as they require excessive pressure to make them cut.
15. Do not use tools for purposes they are not intended for.
16. Properly dispose of rags and do not leave finish containers open.
17. Never leave the lathe running unattended.
18. Stay alert, take frequent breaks and never operate the lathe while under the influence of drugs or alcohol.
19. Use common sense at all times. If unsure at any time, seek the advice of a woodturning expert or call us at 1-800-551-8876. We are here to help you at all times.

Safety precautions are not limited to the list above. If you have questions regarding proper lathe operation, tool use or safety guidelines, please consult an expert.

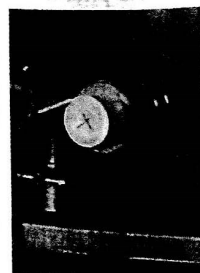


Safe lathe speeds...

Choosing a safe speed when turning can be done using a simple formula. Whether you're a beginner or expert, we highly recommend using this formula.

Formula: Diameter x RPM = 6,000 - 9,000

Example- A bowl blank is 8 inches in diameter.
 $8" \times 750 \text{ RPM} = 6,000$
 $8" \times 1125 \text{ RPM} = 9,000$



Therefore slowest recommended spindle speed is 750 rpm, with the highest recommended speed being 1125 rpm. 6,000 - 9,000 is NOT RPM's, it's only a range of numbers used to determine safe operating speeds. Also, if the work piece is out of round, use a slower speed while turning the blank round. Once the work piece is round, increase the lathe speed.

Tool Safety...

Although most gouges have long blades, this does not mean that they are designed to reach long distances over the tool rest. The tables below offer recommended maximum reach distances for each type and size of gouge. Do Not exceed these recommended distances as it may result in a broken tool and serious injury.



Bowl Gouges:

Gouge	Shaft Dia.	Max. Reach
1/4"	3/8"	1 1/2"
3/8"	1/2"	2 1/2"
1/2"	5/8"	3 1/2"
5/8"	3/4"	4"

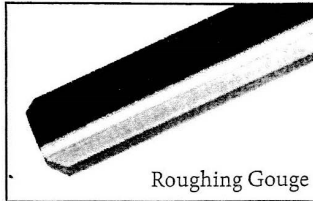
Spindle Gouges:

Gouge	Shaft Dia.	Max. Reach
1/4"	1/4"	3/4"
3/8"	3/8"	1"
1/2"	1/2"	1 3/4"
9/16"	9/16"	1 3/4"

Roughing Gouges:

Gouge	Max. Reach
3/4"	1 3/4"
1 1/4"+	1 3/4"

NEVER use roughing gouges for bowl turning as the tool may break causing serious injury.



Roughing Gouge

Proper handle size...

The length of a tool handle should be at least five times the maximum distance you intend to reach beyond the tool rest. This will make sure you have the needed leverage for proper tool control. Example: For a maximum reach of 3" over the tool rest, your handle should be at least 15" in length.



Woodturning Education...

Safe turning practices are not limited to the recommendations listed above. It is your responsibility to become properly trained and educated prior to attempting woodturning. If you would like to learn woodturning in a world-class facility with the very best instructors, see pages 1-3 for information on woodturning workshops.

TOOL SELECTION GUIDE

What tools do I need?

Prior to purchasing tools it is important to determine what types of turning you want to be able to do. If turning bowls is your primary interest, you will want to only choose tools necessary for turning bowls and similar projects. Likewise, if you want a set of tools that will cover both spindle and bowl turning it will require more tools and a slightly larger budget. In order to make it easier to choose the correct tools for the job, we have listed the types of available tools below and a description of how they are used. This does not mean you must have each of the tools listed; it is simply a description of the tool and its use.

Choosing a set of tools-

Often times we are asked which tools we recommend woodturners have in their tool set. Listed below are three sets of tools we recommend. These sets are based on the woodturners experience combined with the type of work most common to that skill level. Normally, beginner woodturners need only a few basic tools whereas intermediate or advanced woodturners require more tools as their ability and interests progress.

Beginner Set

- 1/2" Bowl Gouge
- 3/4" Radius/Round Point Scraper
- Diamond Parting Tool
- 3/8" Spindle Gouge
- 1/2" Skew

Intermediate

- 1/2" Bowl Gouge
- 3/4" Radius/Round Point Scraper
- Diamond Parting Tool
- 3/8" Spindle Gouge
- 1/2" Spindle Gouge
- 1 1/2" Radius/Round Point Scraper
- 1/2" Skew

Advanced Set

- 1/2" Bowl Gouge
- 1/4" Bowl Gouge
- 3/4" Radius/Round Point Scraper
- Diamond Parting Tool
- 1/4" Spindle Gouge
- 3/8" Spindle Gouge
- 1/2" Spindle Gouge
- 1 1/2" Radius/Round Point Scraper
- 1/2" Skew

What steels are tools made from?

Today's woodturning tools are produced primarily from two types of steel: M2 high-speed steel, available in both heat-treated (standard) and cryogenically treated (Kryo) versions and Powdered Metallurgy (ASP and PM series). Heat-treated M2 high-speed steel is the industry standard and is known for its ability to be honed to a very fine edge due to its fine grain structure. Cryogenically treated M2 high-speed steel (Kryo) tools are made of M2 high-speed steel that is hardened using a complex cryogenic treatment process that results in the tool's ability to hold an edge 3-6 times longer than heat-treated M2 high-speed steel tools. Not only do Kryo tools hold an edge similar to powdered metallurgy tools, they are also able to be honed to a finer edge.

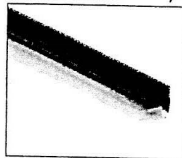
If you're an occasional woodturner or desire to keep costs to a minimum, we recommend standard M2 high-speed steel tools. For woodturners who want to minimize time spent sharpening and require optimum performance we suggest Kryo and Powdered Metallurgy (Pro-PM) tools.

How are gouges measured?

Spindle Gouges- are measured by the diameter of the round stock.

Bowl Gouges- are measured by the width of the flute. Add 1/8" diameter to the flute size and you will have the diameter of the round stock.

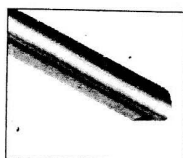
Exceptions- Oneway Mastercut tools are measured by the diameter of the round stock.



Bowl Gouges

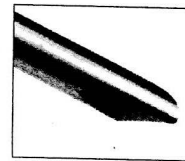
Deep fluted bowl gouges are easier to control and will remove wood faster than shallow, spindle type gouges when turning

bowls. We recommend a 1/2" Bowl Gouge as the first choice when getting started turning bowls. Use the same gouge for rough turning the bowl as well as finish turning. We highly recommend a good scraper to "clean up" the interior surface after you're finished with the gouge. You can add other sizes of bowl gouges to your collection as needed.



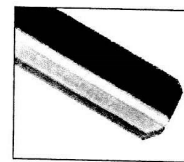
Spindle Gouges

Although shallow fluted gouges are generally referred to as "spindle" gouges, they are also used for general purpose turning including twig pots, shallow bowls or boxes, detail work, pens, and other small work. We recommend a 1/2" Spindle Gouge as the first choice with the 3/8" next. You can add other sizes and variations of spindle gouges depending on your needs.



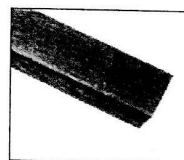
Detail Gouges

A very popular tool today, the detail gouge features a long, fingernail point with a shallow flute and heavy cross section that allows turners to reach well beyond the tool rest without the associated vibration caused by thinner tools. It is used for cutting fine detail on beads, decorative grooves and other detail work on bowls and spindles. A 3/8" or 7/16" size is preferred by most turners.



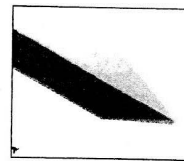
Roughing Gouges

Designed primarily for taking square spindle stock down to round. The deep, wide flute of the tool allows rapid removal of stock and allows heavy cuts. Recommended primarily for spindle turning. In most cases, a 3/4" roughing gouge is the recommended first choice. **Not for use on bowls.**



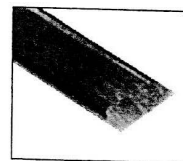
Scrapers

At times scrapers are essential, particularly for interior cleanup work after the gouge work has been completed. Most bowls, boxes, goblets and scoops benefit from light scraping cuts to complete the final shaping and improve the surface. Scrapers vary widely in shape and size. Many are ground to unusual shapes to aid in specific types of work such as reaching inside the narrow opening of a hollow form. Shear scraping can provide a smoother than normal surface by tilting the scraper on its edge to create a "shearing" cut. For a first scraper we recommend a thick scraper (preferably 1" wide by 3/8" thick) with a "french curve" or radius shape on the end.



Parting Tools

A parting tool is a must for most woodturners. It is used to part off the waste, establish diameter or cut small flat areas. We recommend the Diamond Parting Tool, as the side clearance permits deep cuts with a minimal amount of drag on the tool. A thin kerf parting tool is recommended for box turning.



Skew Chisels

The skew is essential for cutting beads and round areas on spindle work. When properly used, the skew will produce smooth surfaces on boxes, goblets, scoops, etc. Skews with a rounded top and bottom edge are recommended. We recommend a 1/2" or 3/4" skew chisel for your first skew.



SAVE 10% when you purchase 2 or more tools found on pages 6-19.