

Arizona Woodturners Association
Kundrat Learning Center
Safety Rules
(As of July 10, 2021 and Amended on August 3, 2021)

1. General.

- a. Keep shop safety foremost in mind. Improper use of any power tool can cause serious and even life-threatening injuries.
 - i. Be alert, be careful, and concentrate only on the machine or tool in use.
 - ii. Never distract anyone using a machine. Wait until they have completed the operation before approaching or initiating any conversation.
 - iii. Plan out what you are doing before you do it. When in doubt, ask for assistance from your instructor, mentor, or Learning Center Monitor.
 - iv. Most accidents can be prevented by adhering to proper safety protocols and following these rules.
- b. Individuals participating in a KLC training event (including Monitors), must:
 - i. sign the attendance register,
 - ii. read these Learning Center Safety Rules, and
 - iii. complete and sign an AWA Liability Release Form.
- c. Closed toed shoes must be worn.
- d. No loose jewelry, clothing, or gloves are allowed when operating power tools. Tie back long hair and avoid loose clothing that may catch on rotating parts or accessories.
- e. No smoking or open flame of any kind is allowed in the Learning Center.
- f. Alcohol and drugs, to include marijuana, are not allowed at the KLC or on the surrounding grounds. Never operate any machine under the influence of alcohol or mind-altering drugs.
- g. A clean shop is a safe shop. Attendees must clean their area and properly stow tools after each use of the Learning Center.
- h. Do not leave unfinished projects on benches, carts, or tool surfaces. Projects must be removed and taken home at the end of class.
- i. You must immediately report an accident to the KLC Monitor.

- j. KLC Monitors are the final authority concerning safety in the Learning Center. If they think an operation is dangerous, then it is. Please no arguments.
- k. Failure to comply with these rules, the direction of the KLC Monitor, or abuse of any machine or tool by any KLC-activity participant may result in loss of KLC privileges.

2. Shop & Tool Rules.

- a. Each attendee must be satisfactorily checked out on the proper and safe use of all shop equipment by the instructor or mentor.
- b. Safety equipment, such as ANSI ASTM Z87+ face/eye protection and hearing protection, must be worn for tools and machines in accordance with the “Equipment-Specific Safety Rules and Guidelines” below.
- c. Only non-toxic woods may be used for KLC turning projects. The KLC monitor will be the final authority concerning the toxicity of the wood and its use at the KLC.
- d. Logs may not be cut at the KLC. Logs may be used for turning if precut into a lathe-ready turning blank.
- e. All machines must be used for their intended purpose. Never overload machines by forcing the operation.
- f. You must use installed guard systems unless removal has been approved by the KLC Monitor. Be sure guards are properly adjusted.
- g. Always keep hands and fingers a safe distance from your work. Never leave running tools unattended. Always turn power off when finished or adjusting the tool or your work.
- h. Only the instructor, mentor, or KLC Monitor may change the configuration of a machine. If you are unsure of any special setups, ask a Learning Center Monitor to approve or assist in the operation.
- i. None of the *woodworking* machines shall be used for cutting ferrous metal.

- j. Report any damaged, broken, or unusable tools to a KLC monitor. Never use damaged or broken machines. Never use a machine that is producing an unusual sound.
- k. Only KLC Committee Members or KLC Monitors will perform maintenance on KLC machines.

3. Equipment-Specific Safety Rules. Power tools provide tremendous opportunities for the woodturner, but they must be used properly to avoid serious injury. Strict adherence to the following rules will help to ensure a safe and fun turning experience.

LATHE

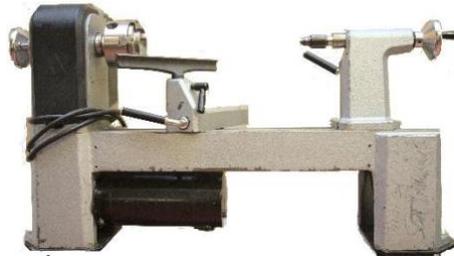


Figure 1 Delta Lathe

Lathes must be respected, but they need not be feared if you pay attention to all safety precautions.

- a. Use a full-face shield that meets ANSI ASTM Z87+ standards while turning. (**This requirement is mandatory**).
- b. Always check the speed of a lathe before turning it on.
 - i. Use slower speeds for larger diameters or rough pieces, and higher speeds for smaller diameters and pieces that are balanced.
 - ii. Always start a piece at a slower speed until the workpieces is balanced. If the lathe is shaking or vibrating, lower the speed.
 - iii. If the workpiece vibrates, always stop the machine to check the reason.

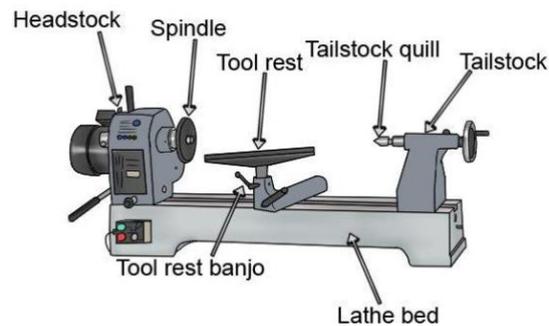


Figure 2 Lathe Components

- c. Check that all locking devices on the tailstock and tool rest assembly (rest and base) are tight before operating the lathe.
- d. Rotate your workpiece by hand to make sure it clears the tool rest and bed before turning the lathe on.
 - i. Be certain that the workpiece turns freely and is firmly mounted.
 - ii. Periodically check to be sure locking devices, and the work piece are tight.

- iii. The handwheel on the outboard side of the headstock simplifies this process of spinning the lathe by hand before turning on the switch.
- e. Position the tool rest close to work, almost touching the wood.
 - i. Turn the lathe “off” before adjusting the tool rest or tool rest base (banjo).
 - ii. Check tool rest position often, as wood is removed through turning.
 - iii. Remove the tool rest before sanding or polishing operations.
- f. Be aware of what turners call the “red zone” or “firing zone.” This is the area directly behind and in front of the workpiece -- the area most likely for a piece to travel if it comes off the lathe.
 - i. A good safety habit is to step out of this zone when switching the lathe to the “on” position.
 - ii. When observing others turning stay out of this area.
- g. Hold turning tools securely on the tool rest, holding the tool in a controlled and comfortable manner. Always contact the tool rest with the tool before contacting the wood.
- h. Turn the power off and wait for it to come to a complete stop, before you leave the lathe. Never leave a lathe running unattended.
- i. Periodically clean the lathe and the floor to ensure you have a firm footing. Shavings and saw dust can make the floor quite slippery.
- j. Always use sharp tools. If you have to force the tool through the wood, it needs to be sharpened.
- k. KLC-provided turning tools must be resharpened to their original grind, at the completion of the turning session.

BENCH GRINDER

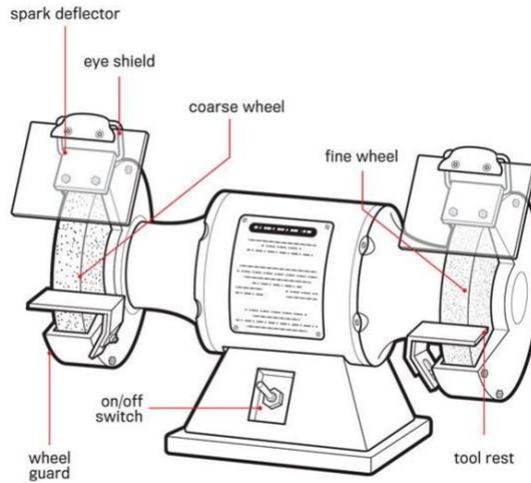


Figure 9 Grinder Components

A slow-speed or adjustable-speed grinder, with a sharpening system, is an essential tool in the turner's shop.

You must first understand the basics of a grinder and the associated safety protocols, before you venture into the use of the Wolverine System.

- a. Ensure that the grinder is securely anchored to a work surface before use.
- b. ANSI ASTM Z87+ Safety glasses with side shields, goggles, or an ANSI ASTM Z87+ face shield must be worn.
- c. If using an adjustable speed grinder, check to ensure the grinder is set to the appropriate speed for the tool's metal type, .
- d. Check to ensure that the appropriate spacing between the tool rest or the Wolverine jig and the wheel is set, before you turn on the machine. For safety's sake, this is particularly critical when using the Wolverine Platform Assembly.
- e. Don't start the machine until the wheel guard is properly and securely in place. (see figure 11)
- f. Don't stand directly in front of a grinding wheel whenever a grinder is started.
- g. Don't jam work into the wheel.

When selecting the perfect wheel for your project, it is important to know what the pictograms mean on the front blotter.

This guide will help you decipher they mean:



Figure 10 How to Read a Grinding Wheel

- h. Don't grind material for which the wheel is not designed.
- i. Don't ever exceed the maximum operating speed established for the wheel.
- j. Don't use a wheel that has been dropped or appears to have been abused. Notify the KLC Monitor if you have any concerns about the safety or integrity of a grinding wheel.
- k. Make sure the grinder has come to a complete stop, before making any adjustment.
- l. Never leave the running grinder unattended.

WOLVERINE SHARPENING SYSTEM



Figure 11 Bench Grinder with Wolverine Sharpening System

The KLC uses the Oneway-brand Wolverine Sharpening System. The system is capable of sharpening:

- a. gouges
- b. chisels
- c. scrapers
- d. parting tools
- e. skews

Make sure you master this system and the appropriate safety procedures, to maximize your turning experience. Please ask for help from either your instructor or the KLC Monitor before you use the system for the first time.

As with basic grinder operations, safety is paramount.

- a. Wear ANSI ASTM Z87+ Safety glasses with side shields, goggles, or an ANSI ASTM Z87+ face shield must be worn.
- b. Check the grinding wheel to ensure it is true before you begin your sharpening operation. Ask the KLC monitor to true the wheel, if needed.
- c. Make sure to use the correct jig for the tool you intend to sharpen.
- d. Do not turn the grinder on until all adjustments have been made to both the grinder and the Wolverine system.
- e. Make sure the grinder has come to a complete stop before adjusting the jig(s).

BANDSAW



Figure 3 Jet Bandsaw

The most frequent type of accident associated with the band saw is finger cuts. Adhere to the following rules and you will not only remain safe, but you will get the best possible results from your work.

1. Wear ANSI ASTM Z87+ eye protection—safety glasses, goggles, or face shield.

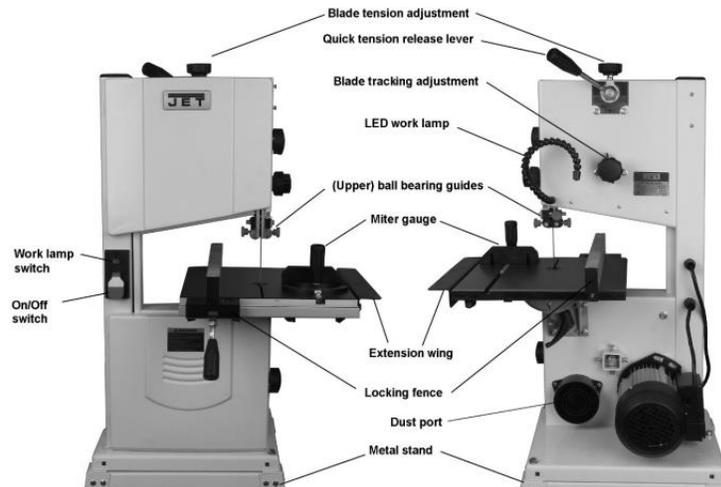


Figure 4 Jet 10" Bandsaw Components

2. The upper guide of a band saw should be set at a height just above the workpiece. The guide should be no more than a 1/4 inch above the stock.
3. Keep your hands out of the path of the blade. Never allow your fingers to come closer than 2 inches to the blade.

4. GO SLOW! Do not force the material through the blade.
5. Make short cuts before long ones to avoid unnecessary backing out.
6. When it is necessary to back out stock from a long cut you should stop the machine, wait for the blade to come to a complete stop and then back out the workpiece.
7. Remove jammed pieces of stock only when the machine is stopped.
8. Periodically examine the bandsaw blade for cracks and broken teeth.
 - i. Contact a Learning Center Monitor if there are any questions concerning the blade.
 - ii. If the band saw blade breaks or comes off, you should step away immediately, shut off power, and call a Learning Center Monitor.
9. Clean the machine and the floor when finished.

DRILL PRESS



Figure 7 Drill Press

The following operational safety rules must be observed by everyone working on the drill press.

- a. A two-foot perimeter around the drill press should be kept clear of people, debris and sawdust that impair traction or footing to avoid slips and falls.
- b. ANSI ASTM Z87+ Safety glasses with side shields, goggles, or an ANSI ASTM Z87+ face shield must be worn.
- c. Never start the machine without the table clear of everything except the stock you are drilling.
- d. Keep hands and fingers at least 3 inches from rotating drill bits.
- e. Do not wear gloves or anything that would allow a hand, fingers, or clothing to be wrapped around the revolving bit.
- f. Make all drill press adjustments with the power shut off.
- g. Keep all guards and covers on the machine when it is on and running.
- h. Make sure the size of the bit is equal to or less than the capacity of the drill press.

- i. Do not exceed the recommended speeds for the type and size of the drill bit being used or the composition of the stock being drilled.

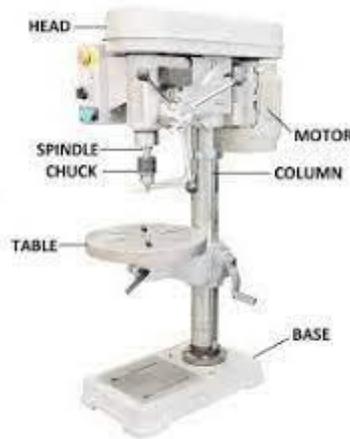


Figure 8 Drill Press Components

- k. Insert the bit into the drill chuck and tighten with the chuck key. Remove the chuck key from the drill chuck before starting the drill press.
- l. Use a clamp or vise to securely fasten the stock to the drill press table if the stock is short. Never attempt to handhold short stock while drilling.
- m. Drill into cylindrical stock using a "V" block.
- n. Long stock should be drilled with the excess to the left of the operator. If the stock rotates it will hit the post, not the operator.
- o. Support the underside of the stock to be drilled with a backer board secured to the drill press table.
- p. When drilling deep holes, frequently raise the drill bit from the hole to remove sawdust and cool the bit.
- q. When you begin to break through the underneath side of the stock, ease up on the feed as to not tear the wood from the underneath side.
- r. If a drill bit binds, turn off the drill press and carefully turn the drill chuck backwards by hand to free the drill bit.

- s. Never reach around or under a rotating drill bit or grab the chuck to stop a drill press. This can result in hand puncture or other serious injuries.
- t. Turn the drill press off before looking up or walking away from the machine.
- u. Never stop the rotation of the drill chuck, spindle, or stock rotating on a bit with your hands or fingers.
- v. Don't touch the drill bit immediately after drilling, as it could be hot.
- w. Ferrous metals may not be drilled on the KLC drill press. Non-Ferrous metals may be drilled only if your instructor, mentor, or KLC Monitor gives you permission.
- x. Do not use your hands or blow non-ferrous metal drill shavings off the drill press, use a bench brush.
- y. Always clean the drill press table and work area upon completion of the drilling task and return all drill bits to their proper storage location.

DISK SANDER



Figure 5 Disk Sander

A properly adjusted disk sander, with the appropriate grit sanding disk, can be both a safe and effective way to prepare or finish your project.

- a. ANSI ASTM Z87+ eye protection—safety glasses, goggles, or a face shield must be worn.
- b. Keep your hands away from the sanding disk and do not wear gloves.
- c. Wear of a dust mask is strongly recommended.
- d. Inspect abrasive discs before using them. Contact a Learning Center Monitor if you find a disc with a tear, fray, or any excessive wear.
- e. Be sure to always keep a firm grip on the workpiece and use a light touch in sanding.
 - i. Small or irregular shaped workpieces should not be held in your hand while sanding. They should be held by a jig or other holding device.
 - ii. Ask your instructor the KLC Monitor for suggestions for properly securing your workpiece.

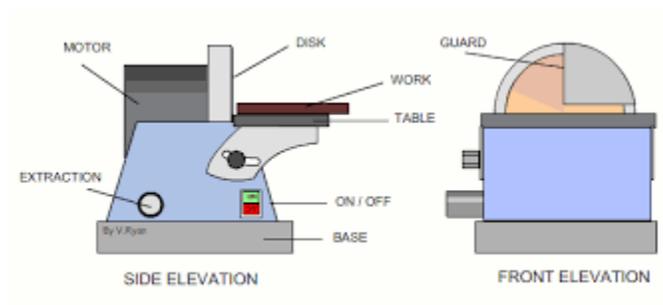


Figure 6 Disk Sander Components

- f. Do not remove the guard from the sander.
- g. Do not leave the sander running, if you must step away from the machine.
- h. Stop the machine when adjusting the worktable or guard and whenever necessary to remove a jammed piece of stock.
- i. No metals are to be sanded, without prior approval from a Learning Center Monitor. Sanding of ferrous metal is expressly forbidden in the Kundrat Learning Center.
- j. Clean the machine and the floor when finished.