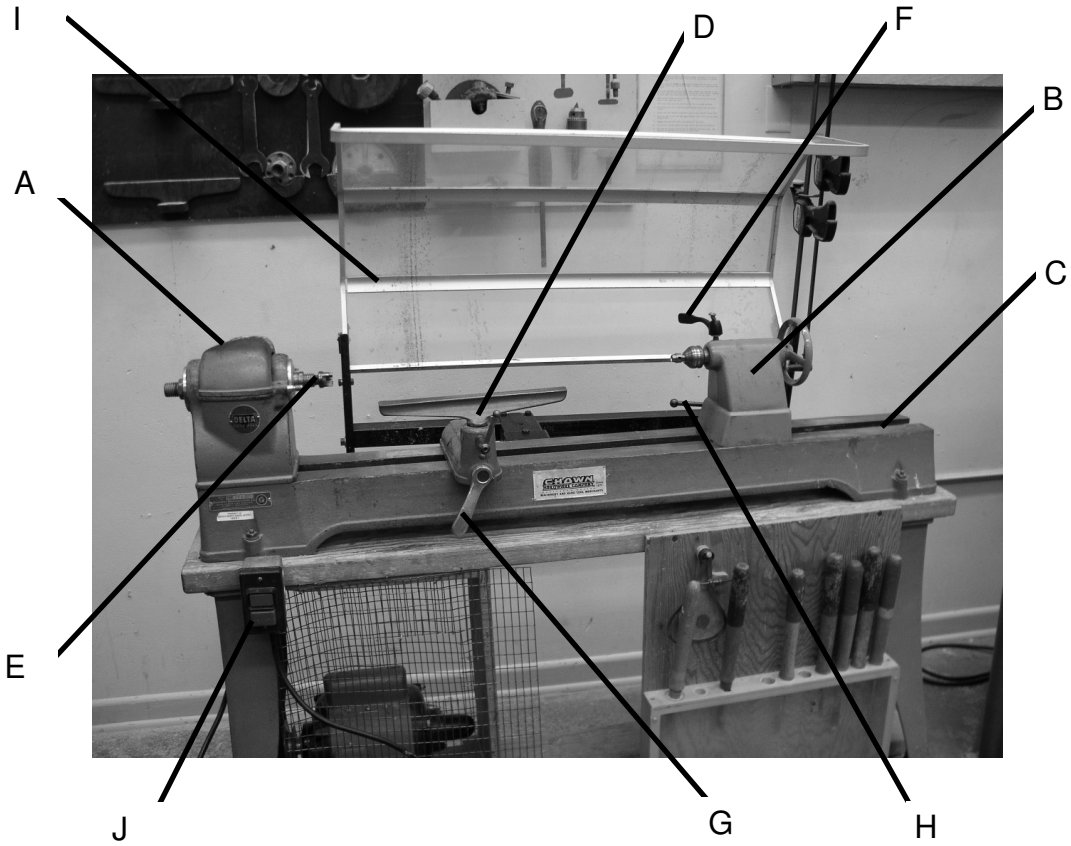


Wood Lathe Operation and Safety

Basic Parts:



A. Headstock

B. Tailstock

C. Bed

D. Tool Rest

E. Headstock Spindle

F. Tailstock Spindle Lock Lever

G. Tool Rest Lock Lever

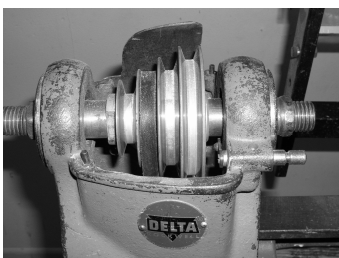
H. Tailstock Lock Lever

I. Guard

J. On-Off Switch

K. Cone Pulley Speed Control

L. Variable Speed Control for Variable speed lathe



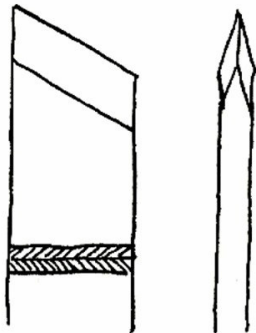
K



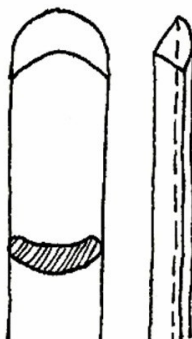
L

Basic Parts:

Lathe Tools



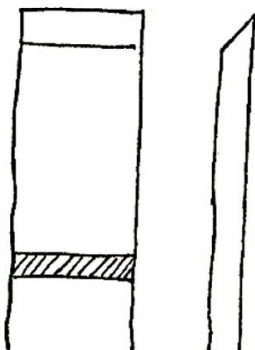
Skew



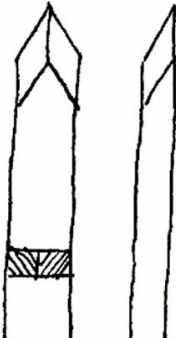
Gouge



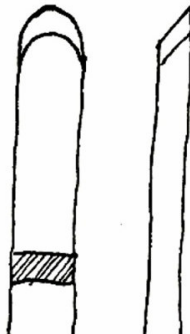
Parting Tool



Square Nose



Diamond or
Spear Point



Round Nose

Operation Procedure

Spindle Turning: Turning stock that needs to be supported at both ends by the spur center and cup center. Typically you would use spindle turning when you are making a project that is long like a bat or chair leg.

1. Locate the center on each end of the piece of wood by drawing diagonals across the corners.
2. Make 1/8" deep cuts on the diagonal lines of one end of the project. This will be the end that the spur center will be attached to.
3. Drive a spur center into the cuts with the center pin in the center of the project with a wooden mallet.
4. Snap the cup center into the tail stock to lock it into place.
5. Snap the spur center and project into the head stock.
6. Move the tail stock to within 1 inch of the project and lock it to the lathe bed.
7. Move the cup center into the center of the project using the tail stock hand wheel. Tighten down the tail stock spindle with the spindle lock lever.
8. Install and adjust the tool rest 1/8" away from the edge of the project and 1/2" below the center of the project. Tighten down the tool rest.
9. Turn the project by hand to check for proper clearance.
10. Adjust the lathe to its slowest speed.
 - For the cone pulley this would be the largest pulley on the headstock and the smallest pulley on the motor.
 - For the variable speed lathe, make sure the motor is turned on before you adjust the speed handle.
11. Always wear eye protection when operating the lathe.
12. Use a gouge chisel for rough turning and scraper or skew for finish turning.
13. Place chisels on the tool rest with one hand on the butt of the chisel and one on the blade. Firmly hold the chisel down and against the tool rest. The point of the chisel should be even with the center of the project.
14. Once you have rounded the project and are ready to shape it, increase the spindle speed to medium.
15. After you are done turning and are ready to sand the project, remove the tool rest. This is an important safety practice and will help prevent things from getting caught between the work and the tool rest.
16. Sanding will go faster if you increase the spindle speed to high.
17. When you have finished, loosen the tailstock locking lever and the hand wheel to remove your project from the lathe.
18. If you need to remove the spur center from the head stock, insert the knock out bar into the hollow headstock spindle and tap the end back end of the spur center until it loosens up and can be removed.

Spur Center



Knock Out Bar



Cup Center



Operation Procedure

Faceplate Turning: Turning stock that has been mounted to a faceplate and screwed onto the headstock. Faceplate turning most commonly used when the face of a project needs to be turned like a plate or bowl.

1. If you have glued pieces of wood together to make your project, make sure the joints are tight and the glue has dried for at least 2 hours.
2. Mount the faceplate to your project with woodscrews. You may consider gluing a scrap piece of wood to your project to attach the face plate to so you don't have screw holes in your project.
3. Cut out the rough diameter of your project with the band saw.
4. Screw the faceplate onto the headstock spindle and tighten with wrenches.
5. Adjust the tool rest height 1/2" below the center of your project and 1/8" away from the edge.
6. Turn the project by hand to check for clearance. Make sure that the project turns freely and does not hit the tool rest.
7. Adjust the lathe to its slowest speed.
 - For the cone pulley lathe, this would be the largest pulley on the headstock and the smallest pulley on the motor.
 - For the variable speed lathe, make sure the lathe is turned on before you adjust the speed .
8. Always stand to the far left of the lathe when you first turn it on so you are out of the way if the project comes off.
9. Always wear safety glasses.
10. Use a scraper chisel to round the outside of the project first to get the project perfectly balanced. After the outside is rounded, turn the face or inside of the project
11. Use a square or round nose chisel when shaping the project.
12. Place chisels on the tool rest with one hand on the butt of the chisel and one on the blade. Hold the chisel firmly on top of and against the tool rest. The point of the chisel should be even with the center of the project.

Face Plate



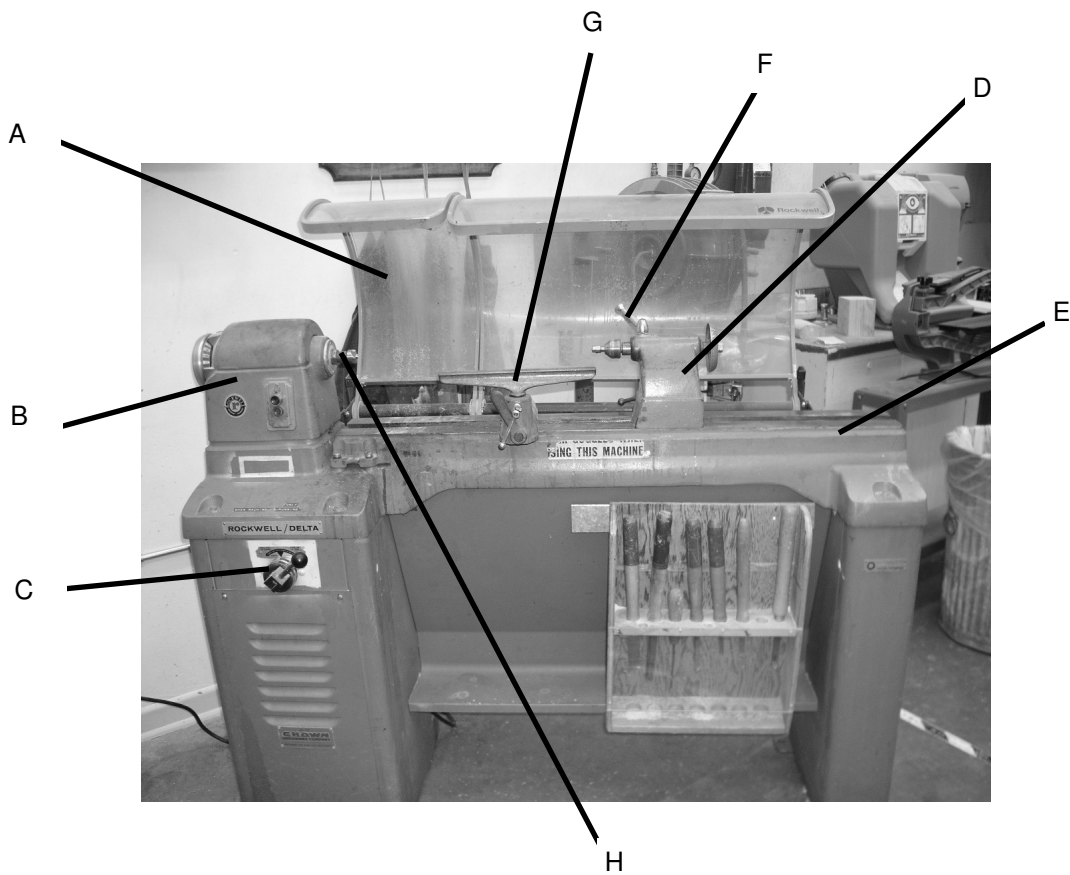
Safety Rules and Practices

1. After the project has been centered and clamped in the lathe, always turn the project by hand before turning on the lathe to check that the tool rest clears the corners of the work.
2. The project is unbalanced until it has been rounded. The lathe speed should be set for its slowest speed until the project has been rounded into a cylinder.
3. After the lathe has run for a short time, retighten project with the tailstock spindle because the project may have loosened up.
4. Becoming entangled in the moving spindle or project is a serious safety hazard. Make sure to remove loose clothing and jewelry, roll up long sleeves, and tie back long hair before using the lathe.
5. Make sure to use sharp tools and hold them firmly against the tool rest and level with the project.
6. Only increase the speed of the lathe after the project has been rounded and you have checked that the project is well secured to the lathe.
7. The lathe throws off a lot of chips. Make sure you wear eye protection when you use the lathe.
8. As the project becomes smaller as you turn it, keep moving the tool rest closer to your project. Keep the distance from the tool rest to the work at 1/8" to 1/4" .
9. Always stop the lathe before adjusting the tool rest.
10. Be sure all locking handles are tight before starting the lathe.
11. All wood that is going to be turned must be free from gaps, knots, and splits.
12. All glued work must have set for at least 2 hours before being turned.
13. Remove the tool rest before sanding on the lathe.
14. Use a scraping tool such as a round nose, square nose or diamond point when you are faceplate turning.
15. To avoid being injured if the project should come off of the lathe, stand to the side of the project next to the on off switch when you first turn the lathe on.

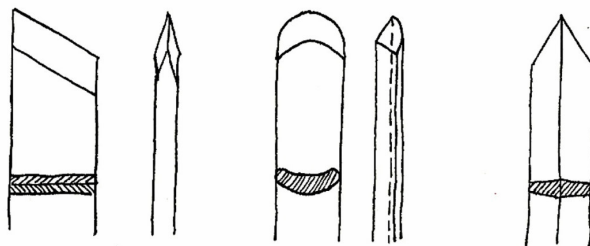
Review Quiz

1. Parts Identification

- | | |
|----------------|----------------------------------|
| ___ Headstock | ___ Variable Speed Control |
| ___ Tail Stock | ___ Guard |
| ___ Bed | ___ Tailstock Spindle Lock Lever |
| ___ Tool Rest | ___ Headstock Spindle |



Lathe Tool Identification



Review Quiz

2. What is the purpose of the cone pulley and v-belt on the head stock of the lathe?

3. How do you locate the center on the end of a wooden block you are going to turn?

4. When you first begin to turn a square block in the lathe, what speed should the lathe be set at?

5. Why is it necessary to turn the project by hand before you turn on the lathe motor?

6. Where should you stand when you first turn on the lathe?

7. The tool rest should always be positioned close to the project. How close to the project should the tool rest be adjusted to the project?

8. Name the tool used to turn a rough block to a cylinder when you are spindle turning?

9. (T or F) When adjusting the tool rest or tightening the spindle make sure the lathe is turned off.
10. (T or F) Always wear eye protection when operating the lathe.
11. (T or F) Always roll up long sleeves and remove loose jewelry and clothing when using the lathe.
12. When you are sanding, what part of the lathe should you remove?

13. How is the spur center removed from the head stock?

14. When you adjust the speed on a variable speed lathe should the motor be on or off?