Wood Turning

Learning Objectives

- To be able to state the different safety precautions associated with the lathe.
- To be able to identify and state the function of the different parts of the lathe.
- To be able to identify and state the function of the different tools used on the lathe.
- To be able to explain how to mount pieces on the lathe
- To be able to explain how to turn identical pieces
- To be able to explain how to bore holes in the workpiece for leads etc.

Segmented Turning

Wood turning

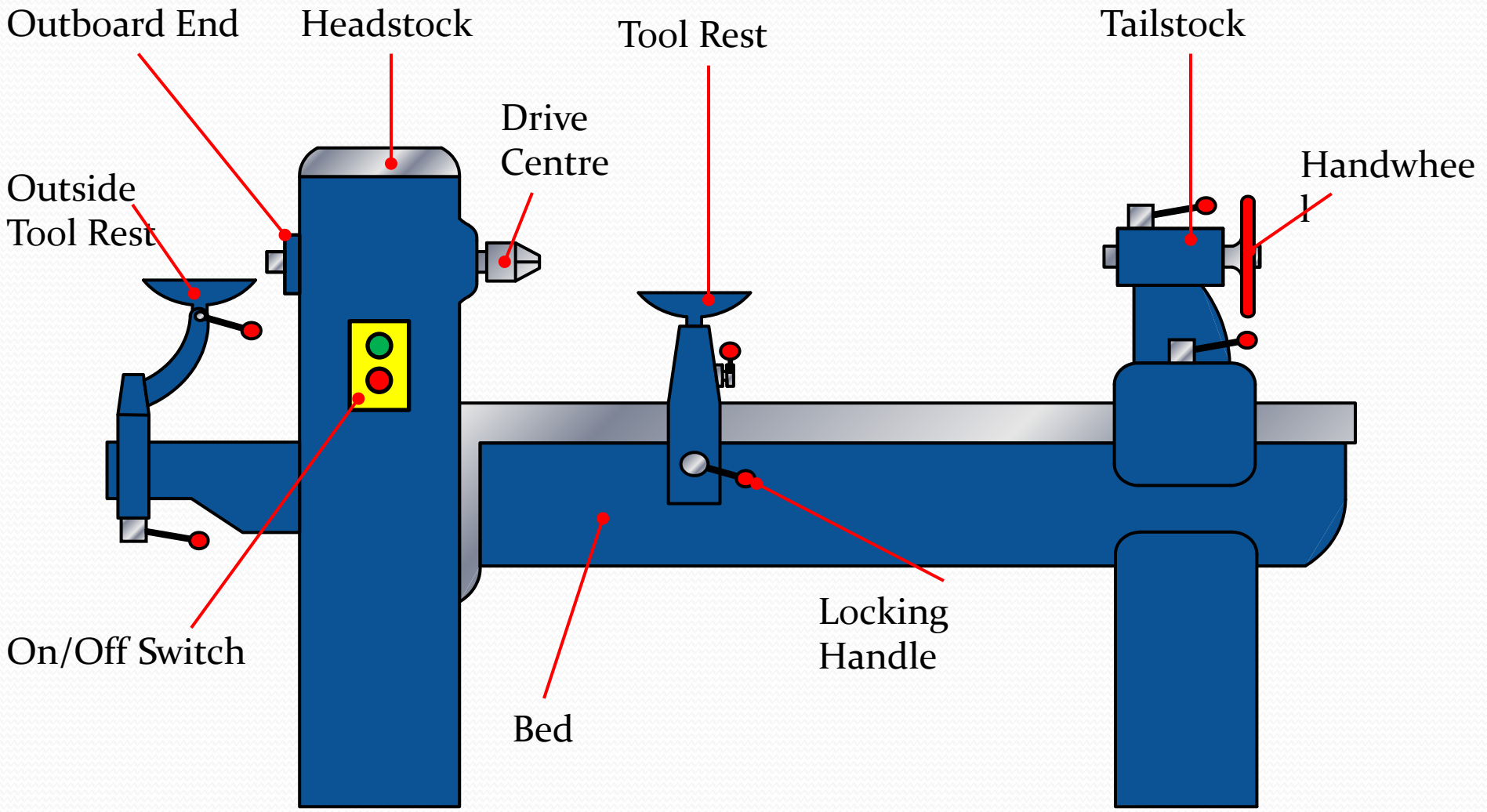
- The lathe is a machine used to turn square pieces of wood (called a blank or workpiece) into curved pieces of timber.
- Working on the lathe is called turning or wood turning

Safety

Below is a list of some of the safety precautions you should follow on the lathe:

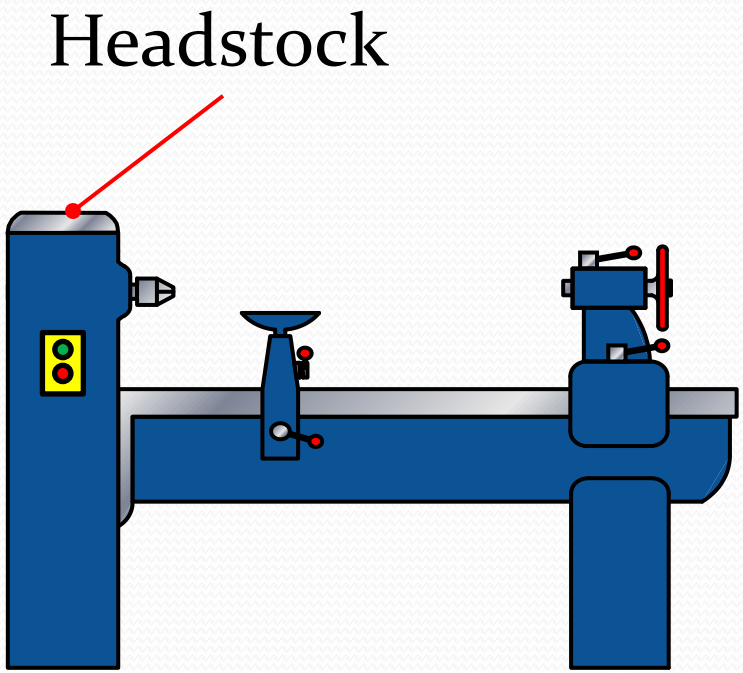
- Always make sure the workpiece is secure
- Always tie up long hair
- Always wear a full face shield
- Always remove ties and jewellery
- Make all adjustments to the lathe and workpiece before switching on the power

Parts of the Lathe



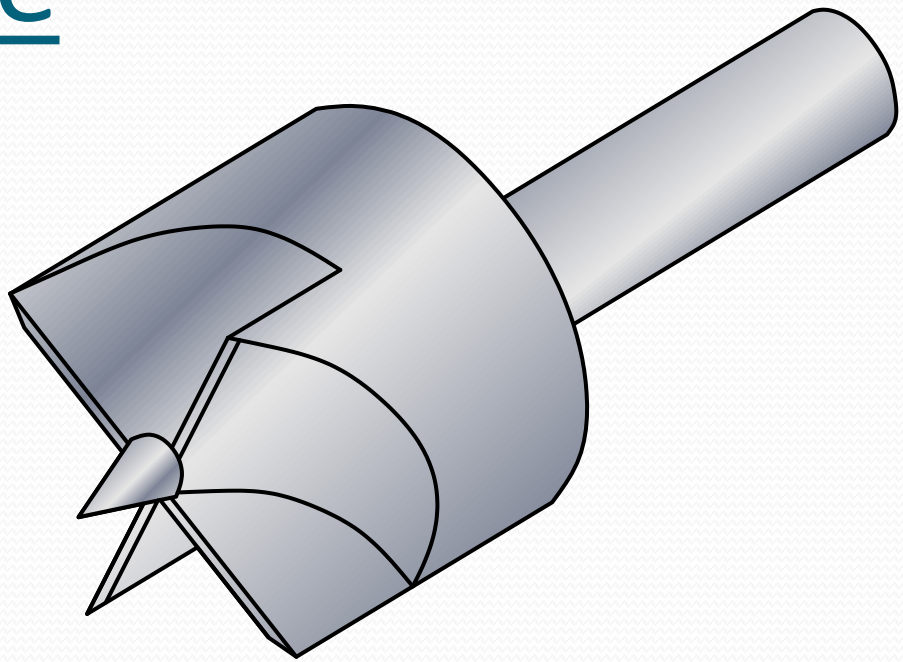
The Headstock

- The headstock turns the workpiece
- The headstock holds the motor which turns the drive centre or faceplate.



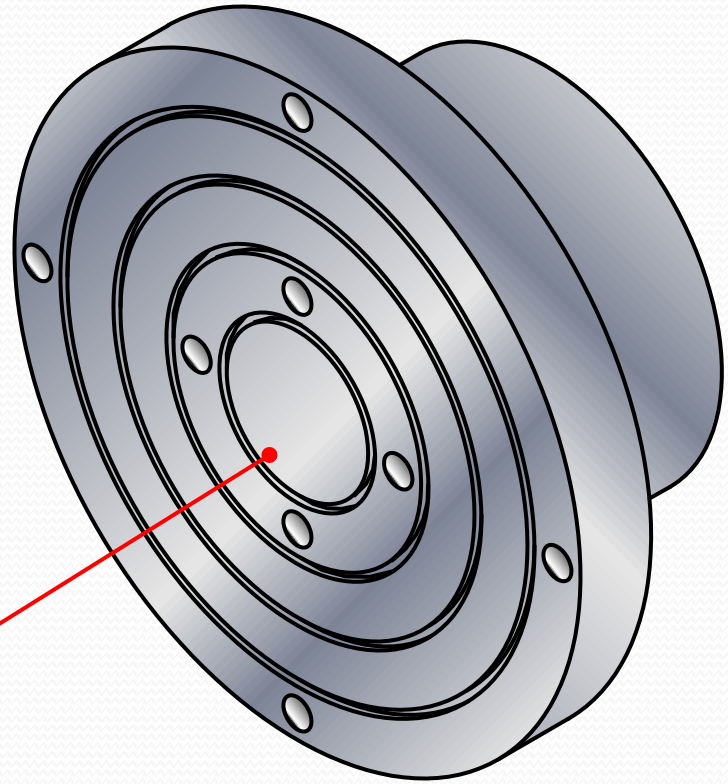
The Drive Centre

- The drive centre is held in the headstock
- The motor turns the drive centre, which turns the workpiece.



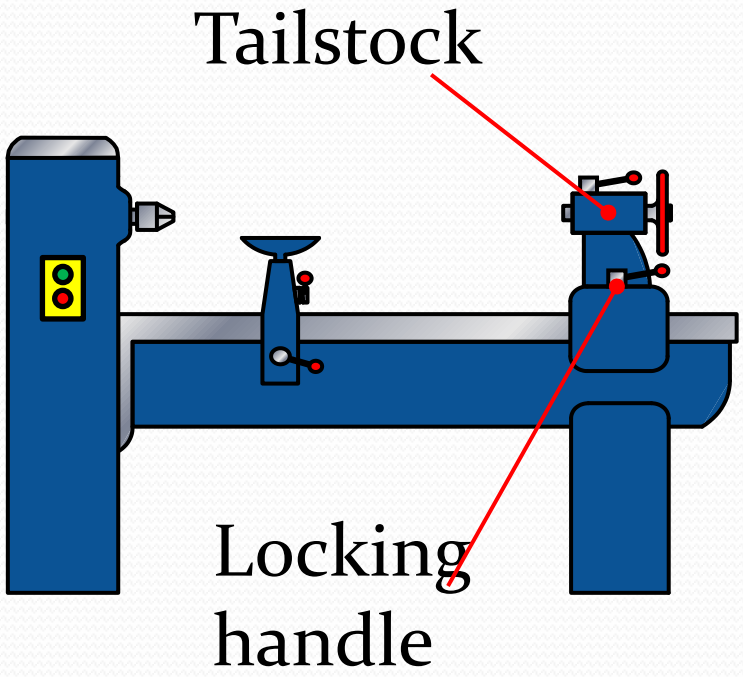
Faceplates

- Faceplates are used for turning bowl shaped objects (face turning)
- They screw onto the headstock



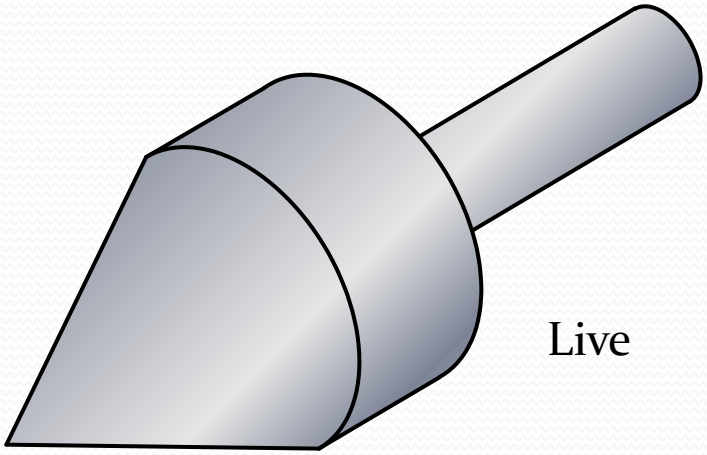
The Tailstock

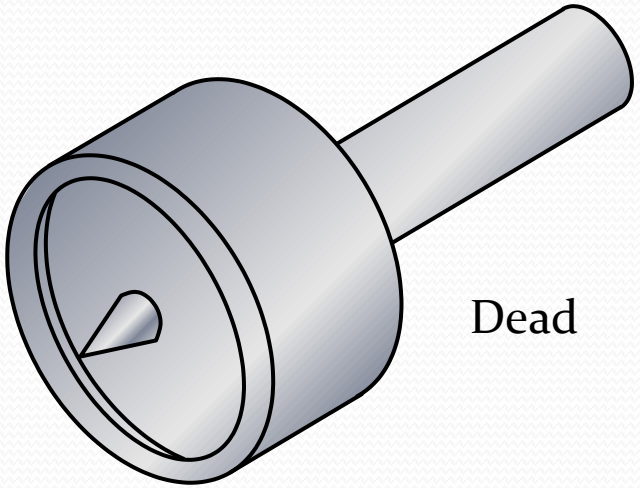
- The tailstock holds the end of the workpiece
- The tailstock holds a live or dead centre



Centres

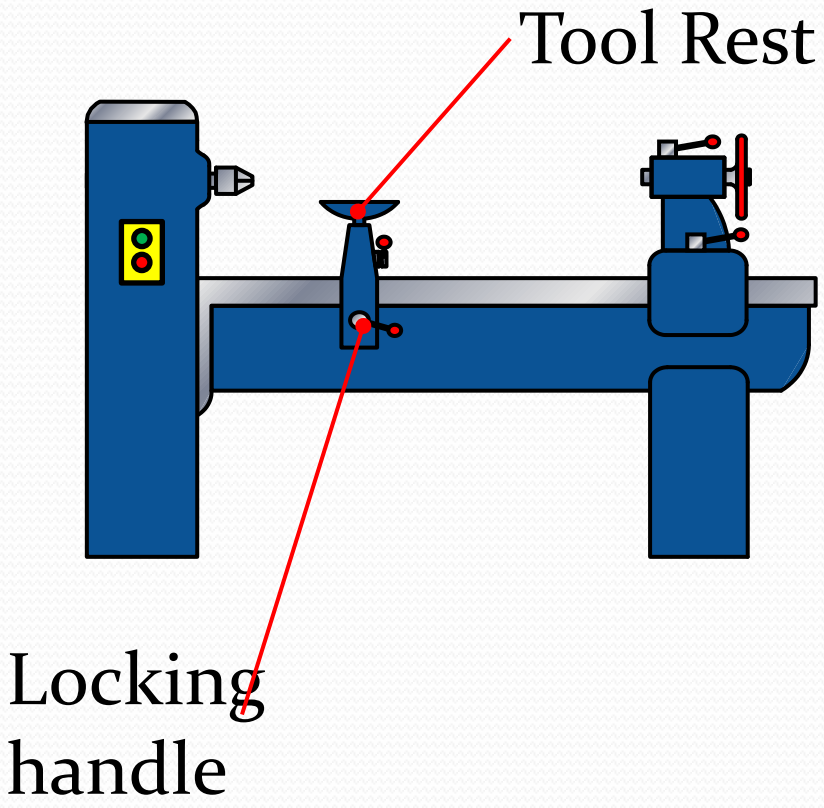
- The tailstock also holds centres
- These stop the wood from ejecting
- There are two types of centres used for spindle turning
- Live centre: This spins with the piece
- Dead centre: This does not move and needs to be waxed before every use





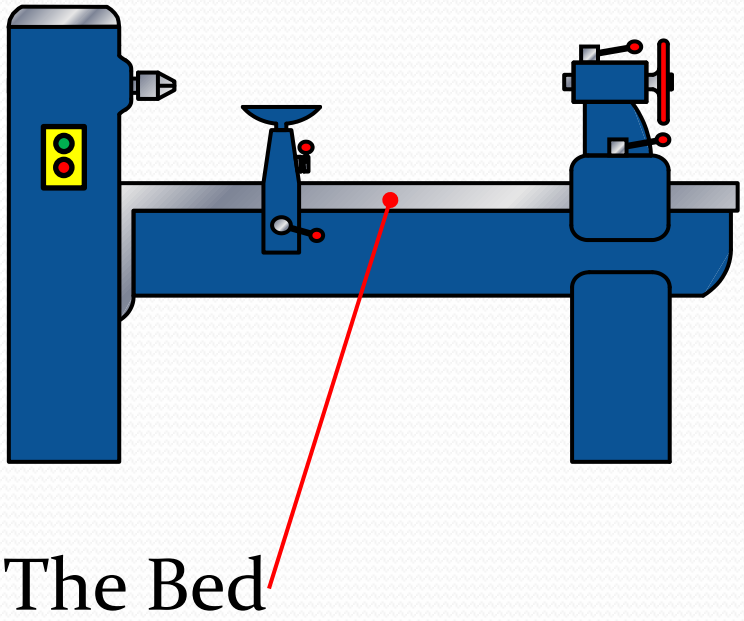
The Tool Rest

- You rest your turning tools on the tool rest



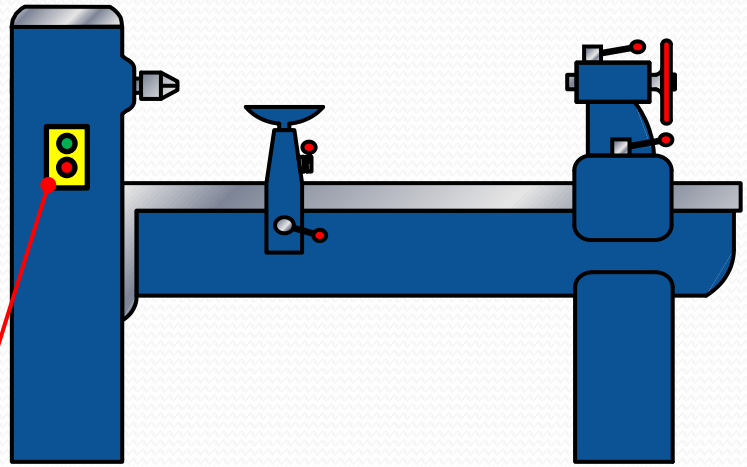
The Bed

- The bed holds the headstock, tailstock and tool rest.



The On/Off Switch

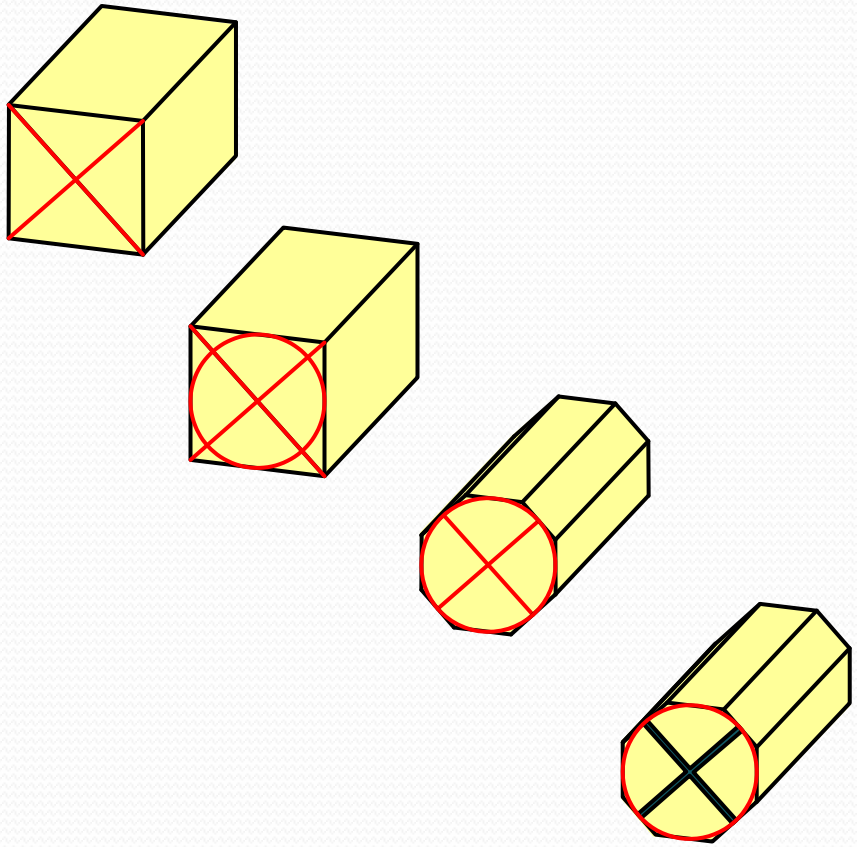
- Turn the lathe on and off.
- Make sure the lathe is unplugged before making any adjustments



On/Off switch

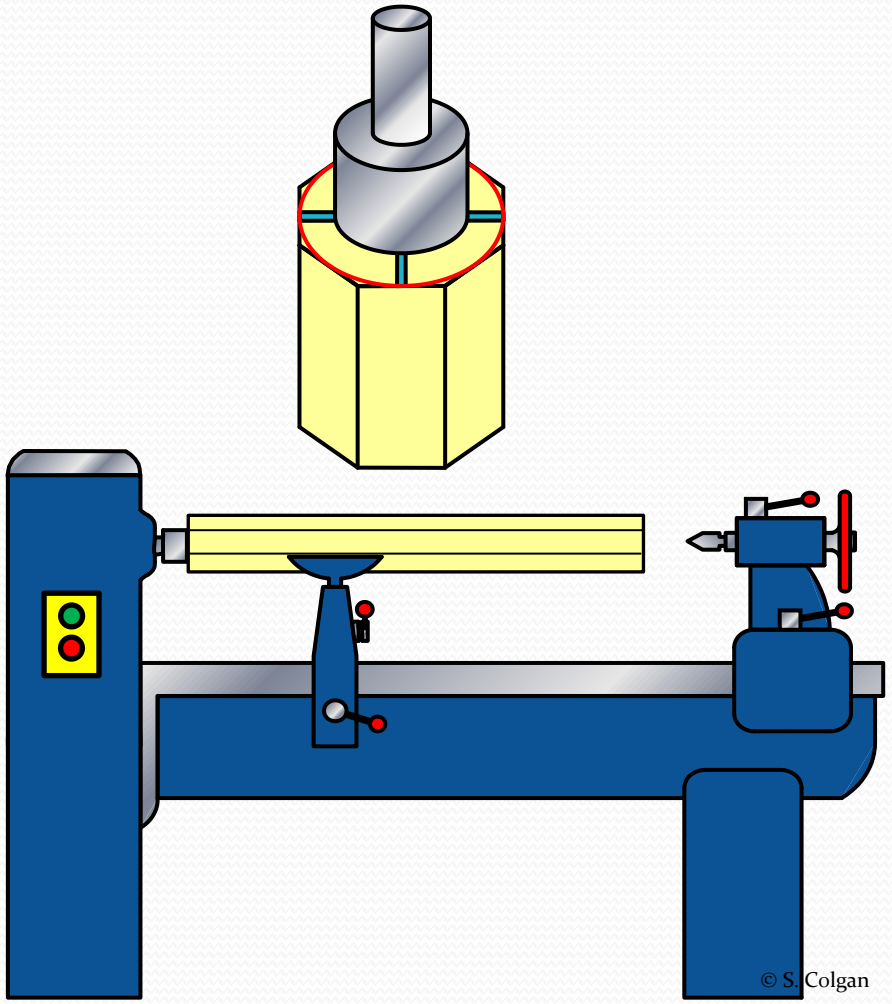
Mounting a workpiece on the lathe: Spindle Turning

1. Join the diagonals of the workpiece to find the centre
2. Draw the circle
3. Plane off waste wood
4. Cut small kerfs into the lines joining the diagonals



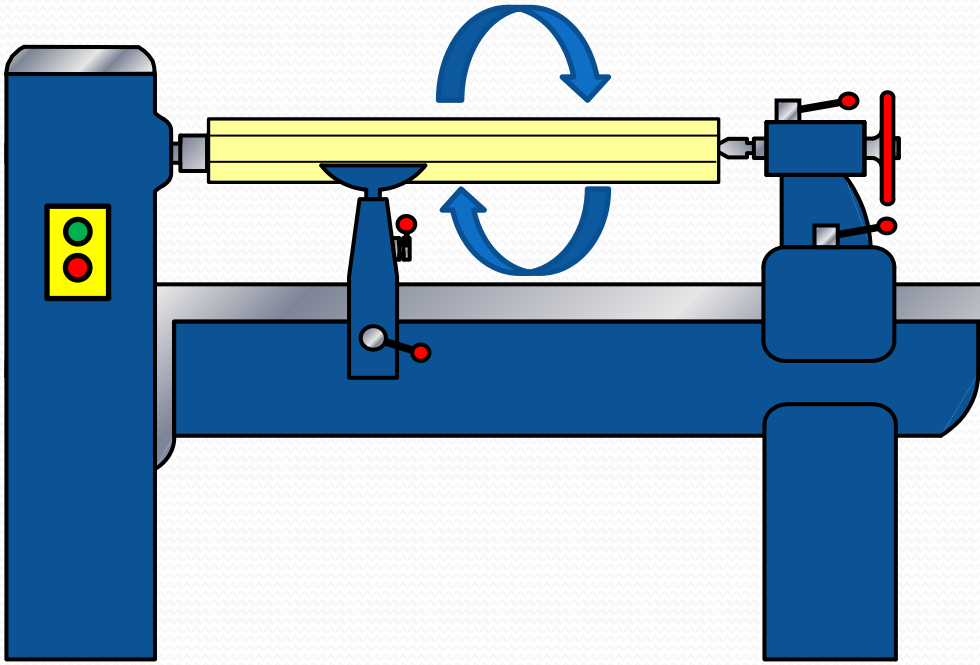
Mounting a workpiece on the lathe: Spindle Turning

5. Using a mallet or hammer insert the drive centre into the piece
   - Make sure the drive centre is centred on the workpiece
6. Unplug/isolate the lathe
7. Slide the drive centre into the headstock
8. Move the tailstock up to meet the workpiece



Mounting a workpiece on the lathe: Spindle Turning

9. Tighten using the hand wheel
10. Adjust the tool rest
11. Spin the work piece by hand, making sure it is secure and does not hit off the tool rest

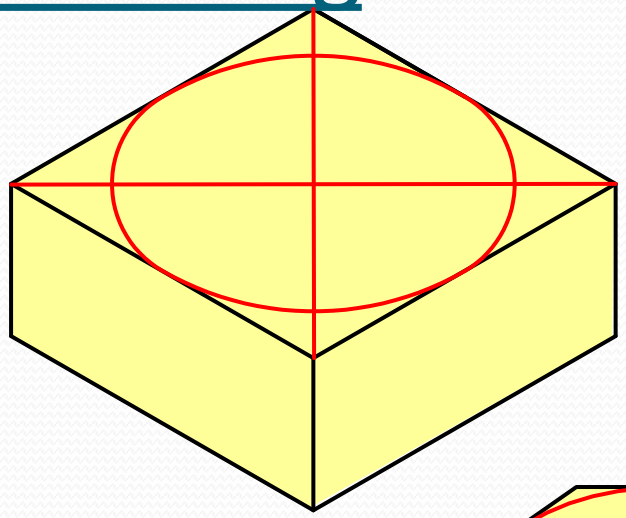


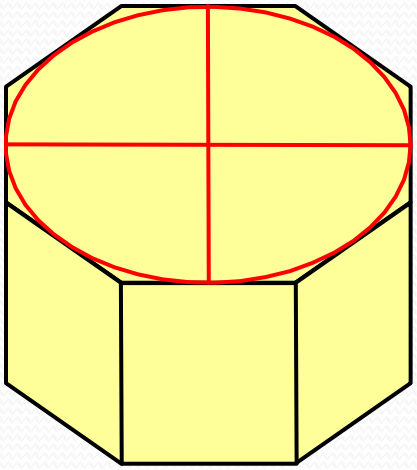
Mounting a workpiece on the lathe: Faceplate Turning

1. Join the diagonals of the workpiece to find the centre
2. Draw the a circle
3. Cut off waste wood using a Tenon saw

or

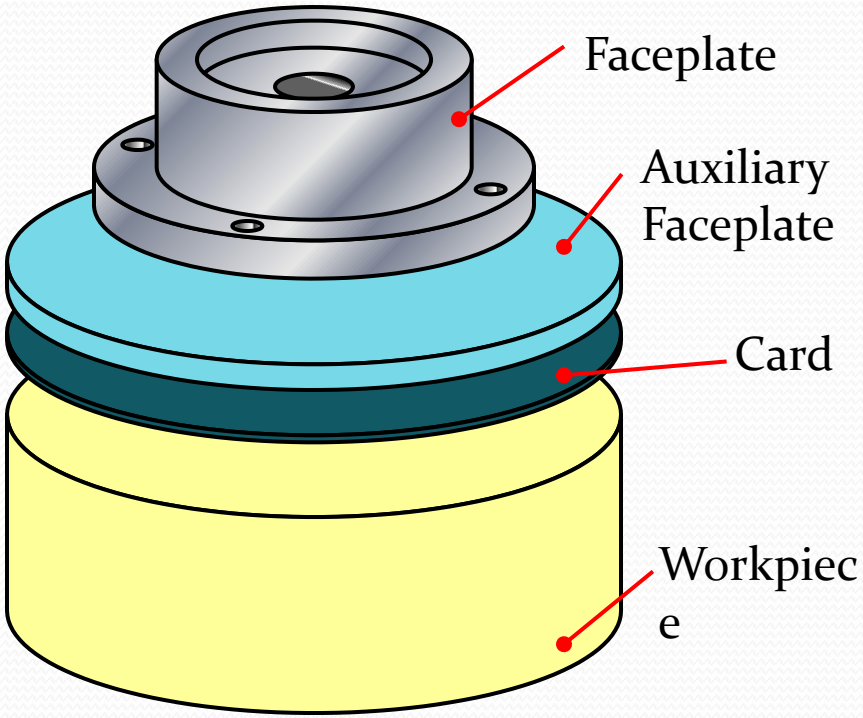
3. Cut the circle using the Bandsaw





Mounting a workpiece on the lathe: Faceplate Turning

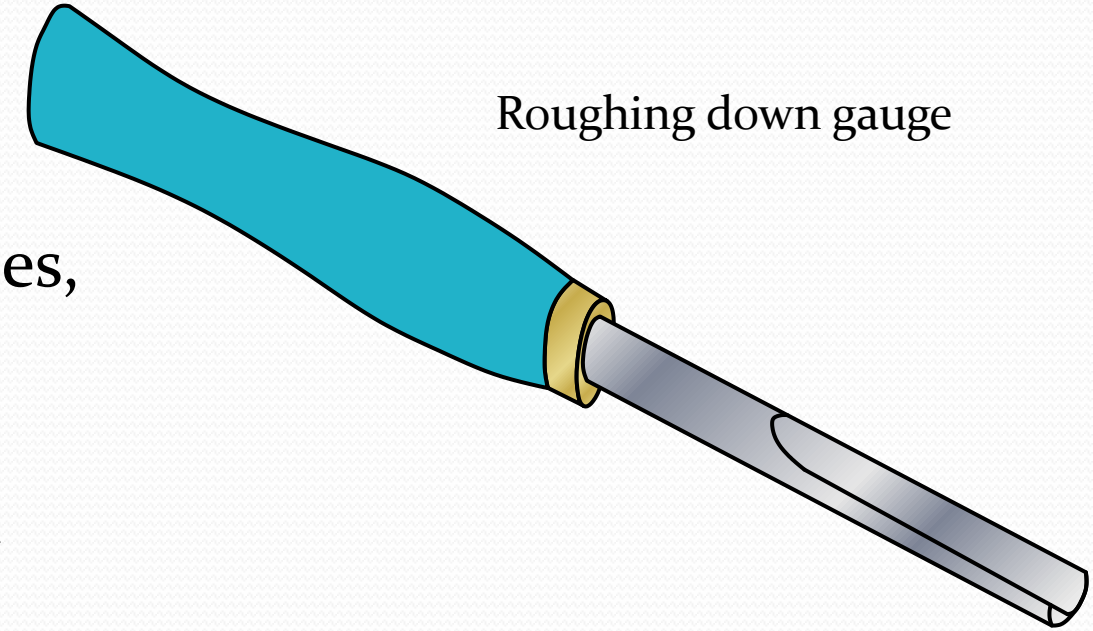
4. Screw the Faceplate onto an auxiliary faceplate (a waste piece of MDF), some waste card and the workpiece
- The card stops the workpiece sticking to the Auxiliary faceplate
- The Auxiliary faceplate stops the faceplate getting damaged

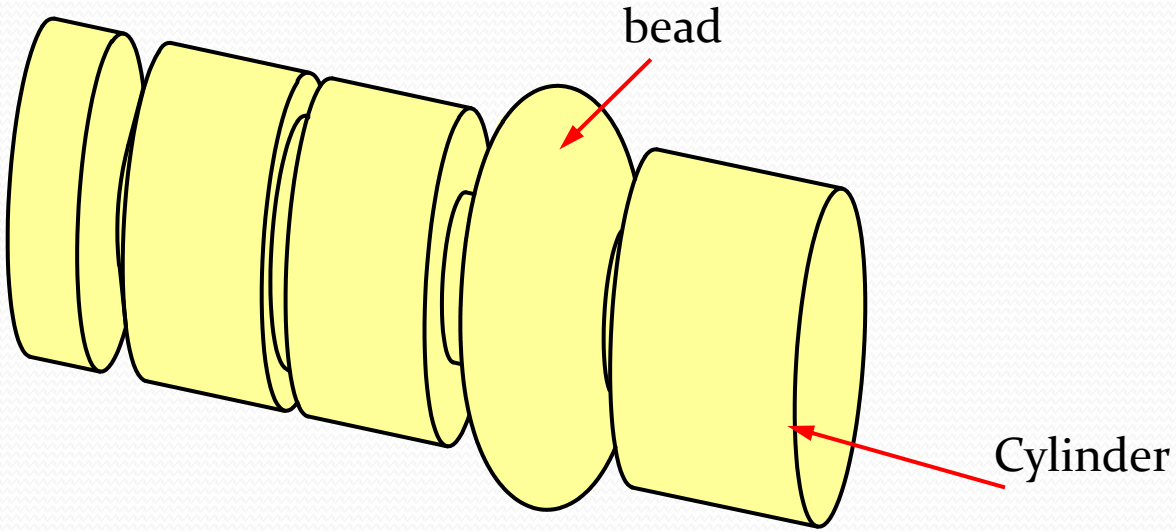


Turning tools

Gouges

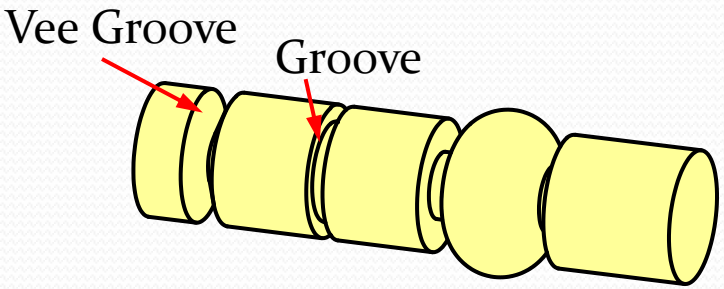
- The lathe requires special turning tools, such as gouges, scrapes, etc.

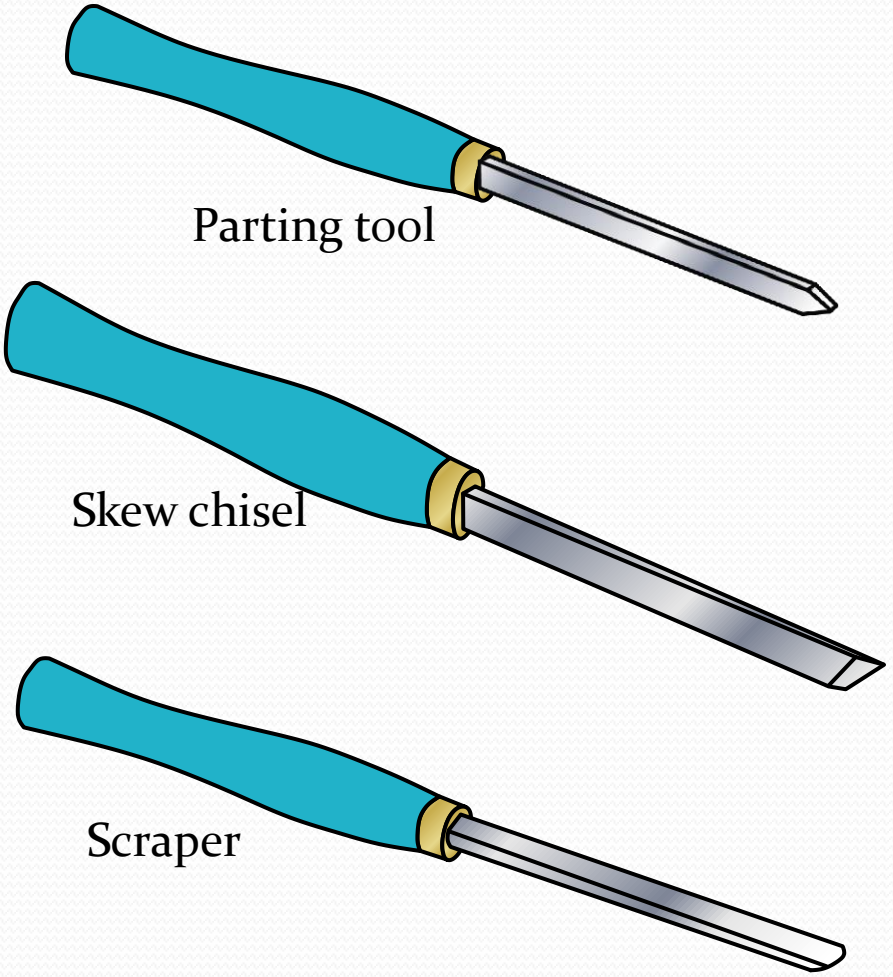




Other turning tools

- The parting tool is used for forming grooves
- The skew chisel is used to give a smooth finish and to cut vee groves
- The scraper is used to smooth the inside of bowls

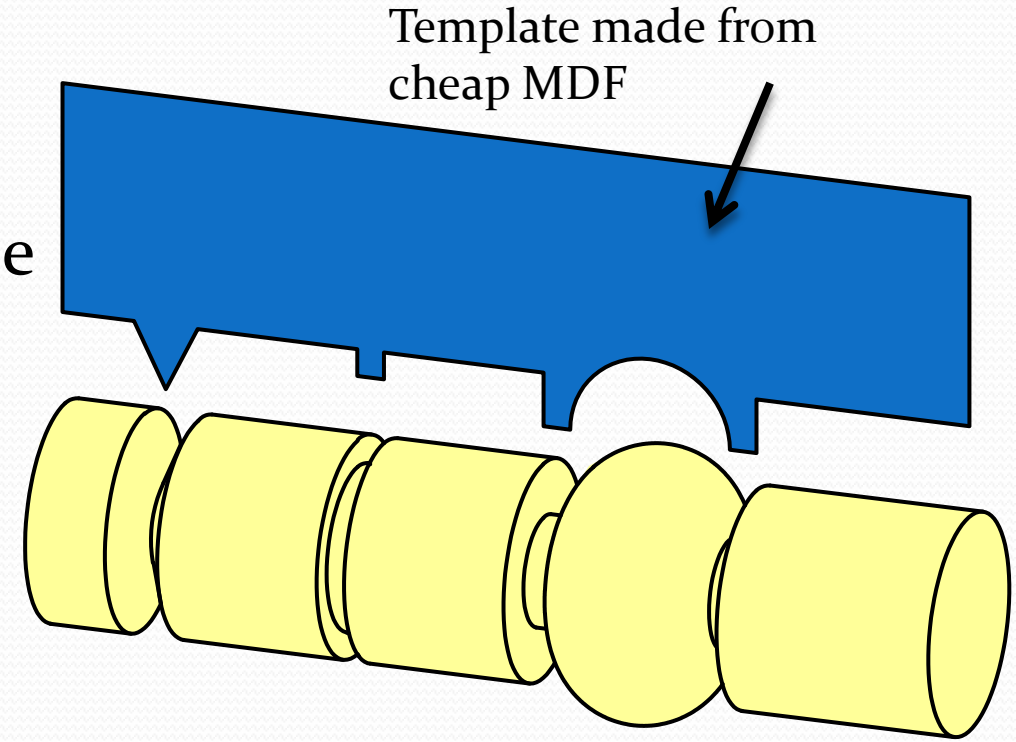




Making identical pieces

Templates

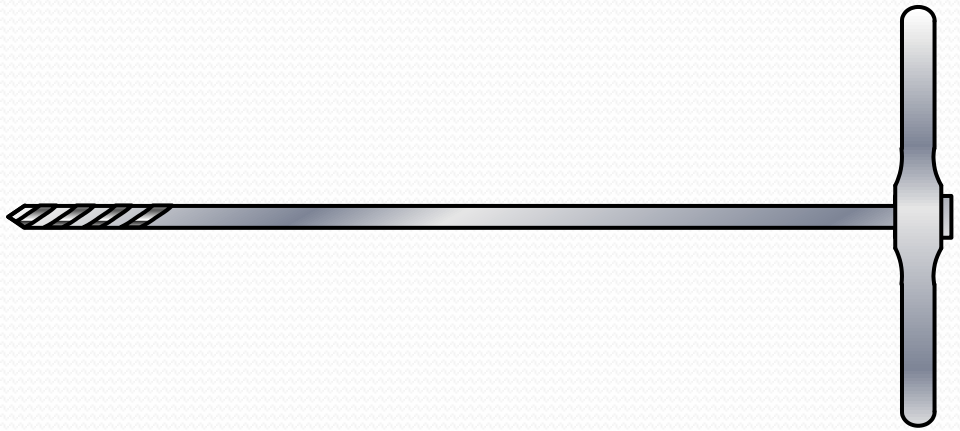
- To make sure the workpiece is being turned to the correct size templates are used as shown
- Used to make identical pieces like 4 legs of a table

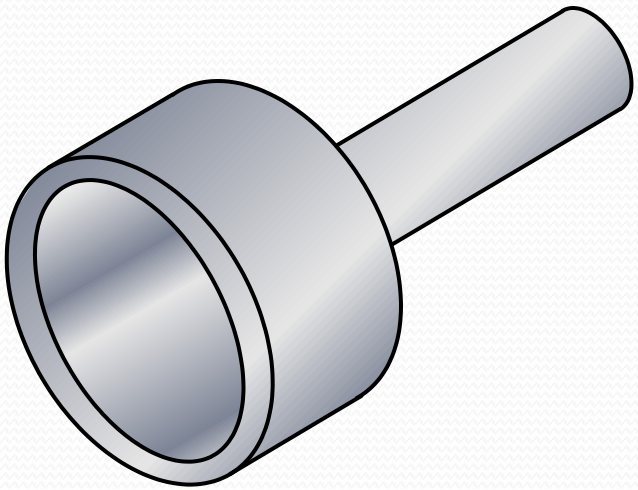


Boring holes in workpiece

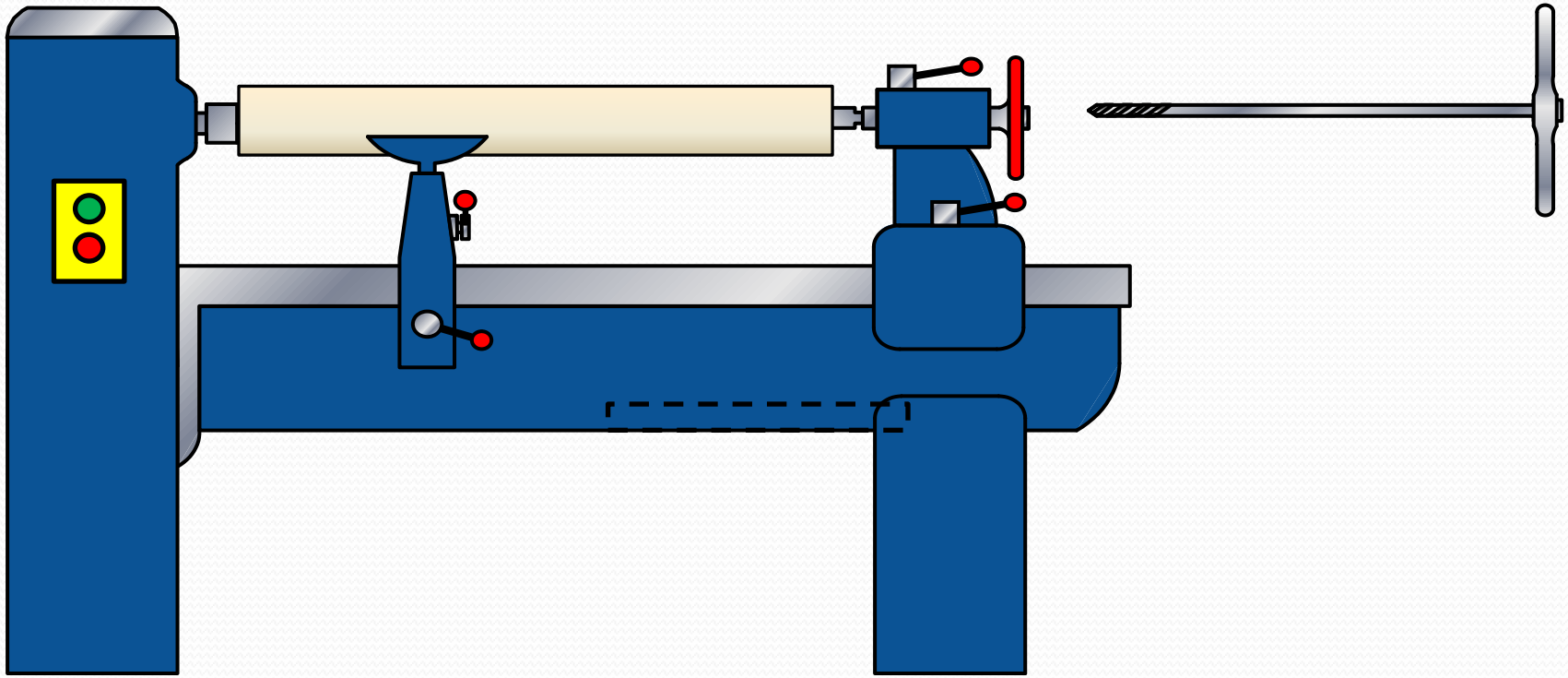
Boring holes in spindle work

- To hollow out the centre of a spindle piece (e.g. To make room for wires in a lamp) a long hole boring bar is used
- This bar is a very long drill bit that slots through the tail stock
- It fits through a special centre called a hollow cup centre





Boring holes in spindle work



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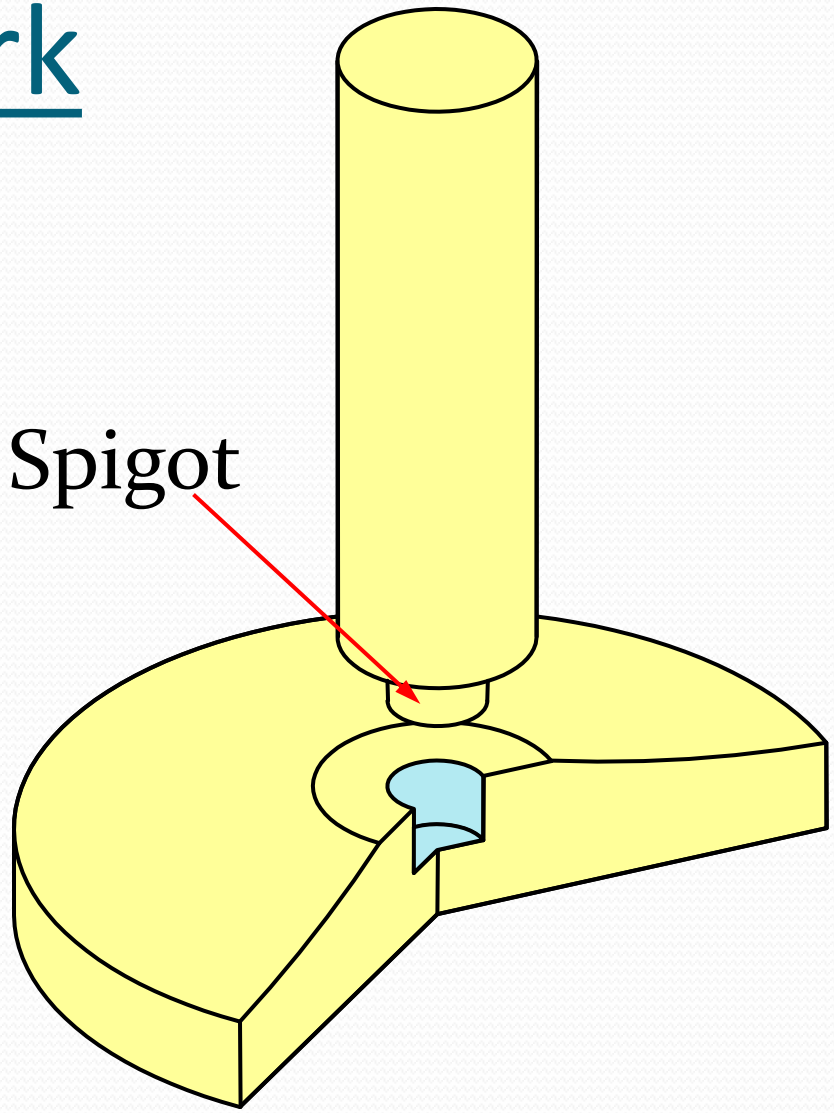
Joining lathe work

- When joining lathe work together, turn a spigot onto the end of one piece
- Drill a hole with the same diameter as the spigot into the other piece
- Glue the pieces together



Suitable Wood for turning

- Oak, Ash, Lime, Scyamore,Walnut

Reason

- Closed grained for smoother finish.
- Straight grained
- Few knots or splits