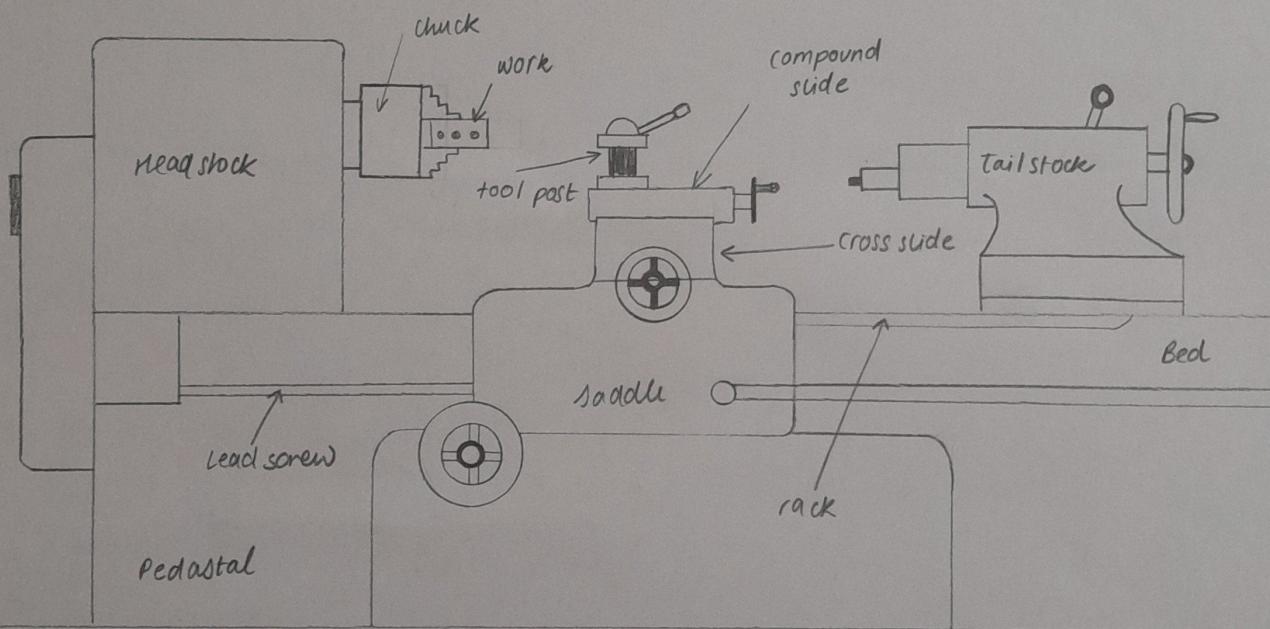


# Machine Shop

## Lathe Machine

P1-2  
Ketaki Mahajan  
16014022050

1. Draw the neat sketch of lathe machine and name its parts.



Q. Give brief information on lathe operations.

→ With suitable attachments and modifications a lathe can be made to perform any machining operation done on a number of general purpose machines. Operations commonly performed on lathe include turning, facing, form turning, grooving, drilling, boring, knurling, taper turning and thread cutting.

Few of the operations in detail are :

- Turning - operation in which a cylindrical surface is produced. The work piece is supported between centres or in any other work holding device, and rotated at the desired speed. The tool is first given a depth of cut by using the cross slide motion of the carriage and then given an axial feed by hand or power.
- Facing - operation used to produce a flat surface at right angles to the rotational axis of the job. In this case tool is fed at right angles to the job while the depth of cut is provided by the axial motion of the carriage. The job may be held in a chuck or between centres. In this centre, about half of the front cone is removed to give access to the tool.
- Drilling - work piece is held in a chuck or on a face plate and the drill is held in the tail stock quill or in a drill chuck held in the quill. The taper in the quill ensures that the axis of the drill is concentric with the rotational axis of the spindle. Feeding is done by the movement of the tail stock quill.
- Boring - process of enlarging a hole produced by drilling, casting, punching or forging with the help of a single point tool. Boring cannot originate a hole. In boring the job is held in a chuck or face plate and a boring tool is held on the tool post and feed into it.

- (v). Taper turning - taper turning is the process of producing external and internal conical surfaces by combining the rotation of the job and the relative angular feed of the tool. Tapers are used on many tools and machine components for alignment and for easy holding such as twist drill, end mills and reamers.
3. Write down safety precautions while working in a machine shop.
- Few of the safety precautions include,
- safety glasses with side shields must be worn at all times.
  - do not wear loose clothing or jewellery while operating machinery.
  - do not work alone, that is, work only when you have someone to guide you.
  - tie long hair tightly.
  - do not wear fashionable footwear.
  - apron should be tied in a quick release manner.
  - keep your limbs away from machine until required.
  - use hand tools for their designed purpose.
  - do not stop the machine with your body.
  - do check the tools before-hand and then only use them.
  - never ever use broken tools or play with them.
  - in case of power failure, switch off the machine and retire tool from the work piece.