

CENTRAL WORKSHOP

ASSIGNMENT

Subject → Workshop practice

Roll no → 200104080

Branch → computer science and engineering

Date: 21st August-2021

subject code: EWS-152

student signature →
@lhorus

Q1 → Explain various parts of Lathe Machine with diagram?

Ans1 → * Bed → It is strong, rigid, heavy and has rectangular cross section. It works as the base of machine and all other parts are fitted over bed. It is made up of good quality cast iron.

* Lead screw → It has high wear resistance, used for converting rotational movement into linear movement. It is made up of brass mostly. Square thread is used because it gives highest efficiency of power transmission.

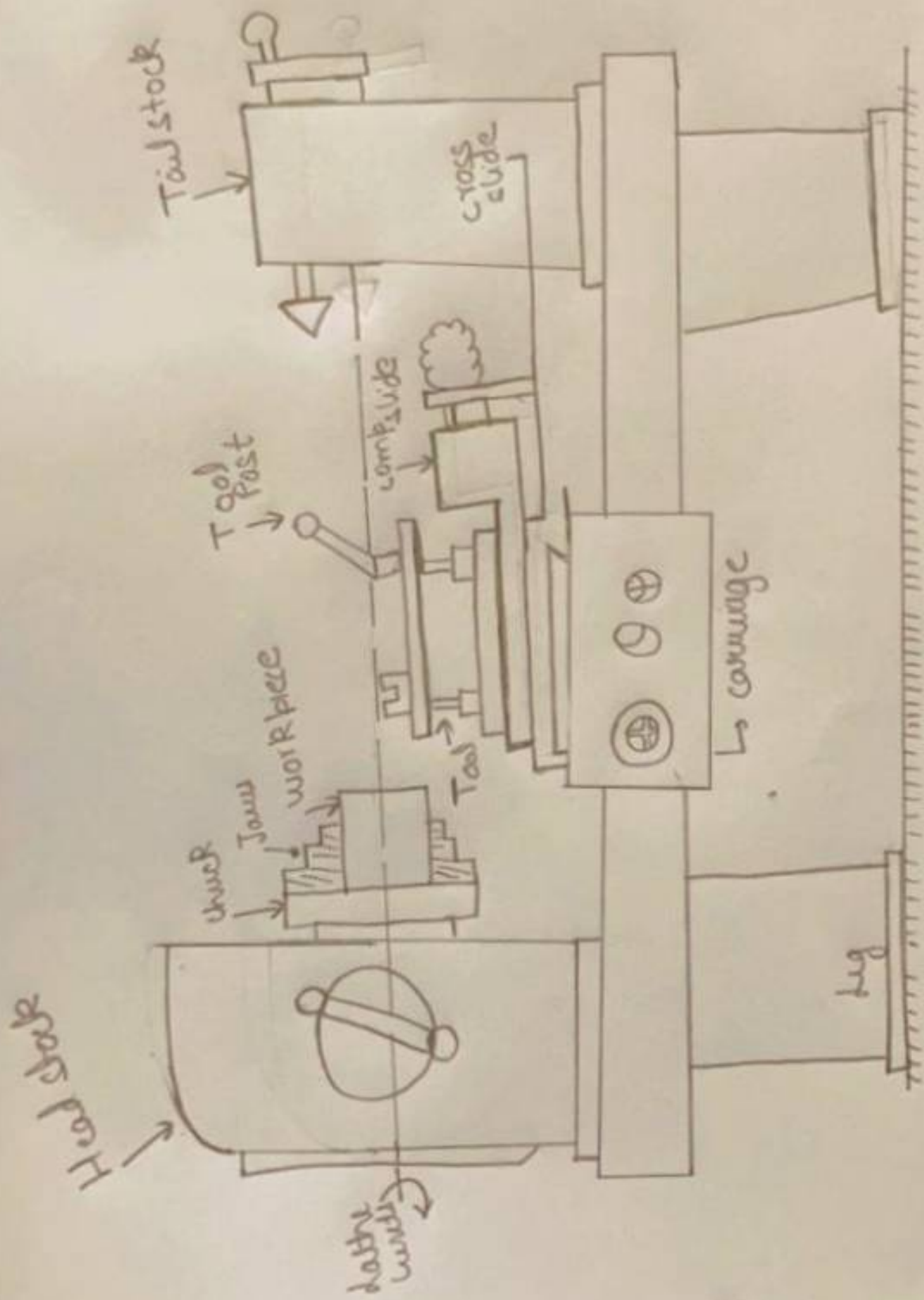
* Prime Mover → Motors are used as prime movers in machine tools as they provide energy. When power is supplied it starts rotating at one particular rpm.

* Guideways → They guide moving part in machine tool. They act as mediator for transmitting force to bed of machine tool. They should have high wear resistance, high damping qualities & low ductility.

* Transmission system → It is required to use mechanical transmission system between prime mover and spindle. Most commonly used is belt drive with stepped pulley.

* Head stock → It is fitted on the left side over the belt. It consists of spindle, chuck, live centre, quick change, gear box, etc. The spindle receives power with help of motor. Chuck can be rotated in anticlockwise/clockwise direction at uniform speed. Gear box is used for transmitting power at different speeds.

* Thread chasing Dial (TCD) → It is used in thread cutting operation for reducing multiple start of thread with multiple cut.



Lathe Machine

Q2 → Carpentry shop → Describe measuring and marking tools with diagrams?

Ans 2 → Carpenter's folding Rule → A wooden scale consisting of 4 pieces, each 150 mm long, joined at hinges. Used for measuring and marking out dimensions.

* Try square → It consists of a steel blade fitted into metallic stock at right angle. It is used for measuring and testing plane surfaces, drawing lines at right angle and mutually perpendicular lines over a plane surface and to test squareness of 2 adjacent surfaces.

* scribers → A steel rod having sharp point one end; used for locating and marking points and scribing lines.

* Marking gauge → Consists of wooden stem stock of rectangular/square cross-section and a scribing pin. It is used for scribing lines parallel to finished face/edge.

* Mortise gauge → It is improved form of the marking gauge with 2 scribing pins. One pin is moveable & other is fixed.

* Split-nut → It is used for converting rotational movement into linear.

* Carriage → Fitted in between head stock and tailstock. It can slide on bed (automatically or manually). It has five parts →

• cross-slide • Tool post • Apron • Compound slide • Saddle

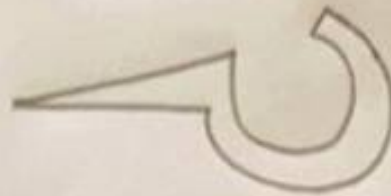
* Tailstock → Fitted on top right hand side, over the bed. It can be moved and fixed at required position by nut and bolt arrangement.

* Quill → For localized movement of Rear centre, Quill will be used.

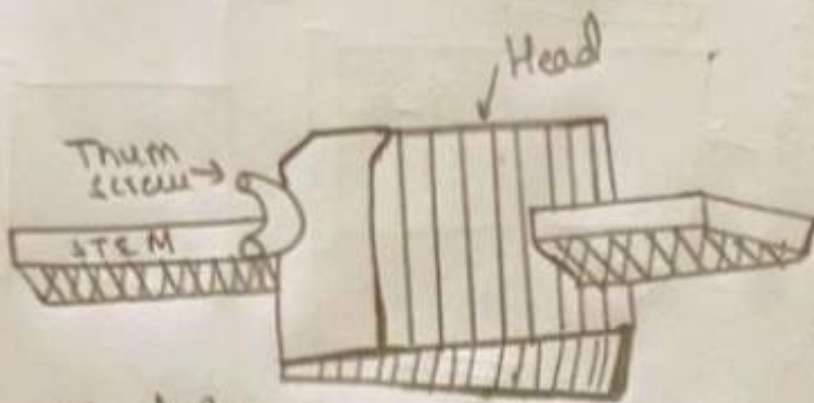
Measuring and Marking Tools CARPENTRY SHOP



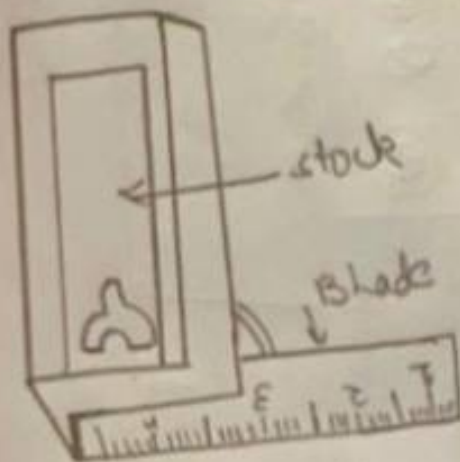
Folding rule



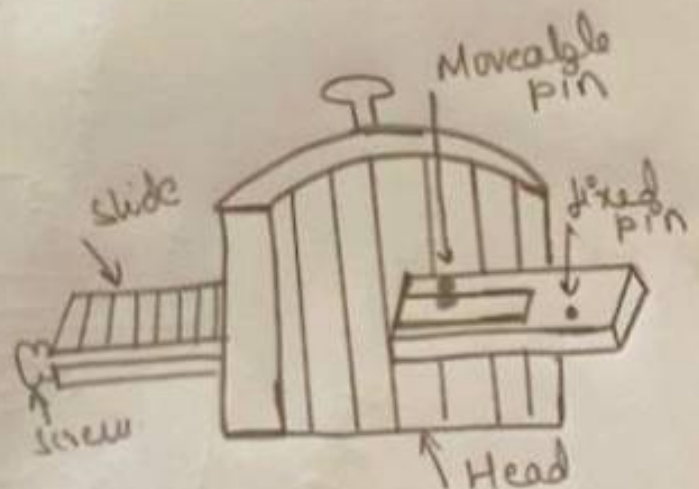
scriber



Marking gauge



Try square



Mortise gauge