IARE

INSTITUTE OF AERONAUTICAL ENGINEERING

(An Autonomous Institute affiliated to JNTUH, Hyderabad)
Dundigal, Hyderabad - 500 043

## LABORATORY WORK SHEET

Name of the Student: MADKI SAICHARAN

Class: CSM-C Semester: IST

| Roll Number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 3 | 9 | 5 | 1 | A | 6 | 6 | F | 2 |

Course Code: AME002 Course Name: Manufacturing Practice

Name of the Course Faculty: Mr. V. Mahidhar reddy Faculty ID: IARE 10333

Exercise Number: 07 Week Number: 07 Date: 17 November 2023

**DAY TO DAY EVALUATION:**

| Marks | Aim / Preparation | Algorithm / Procedure / Performance in the Lab | Source Code / Calculations and Graphs | Program Execution / Results and Error Analysis | Viva - Voce | Total |
|---|---|---|---|---|---|---|
| Max. Marks | 4 | 4 | 4 | 4 | 4 | 20 |
| Obtained | 4 | 4 | 4 | 4 | 4 | 20 |

Signature of Faculty

**START WRITING FROM HERE:** LATHE MACHINE

A lathe machine is a tool that rotates a workpiece about an axis of rotation to perform various operations such as cutting, sanding, drilling, Knurling, deformation, facing and turning with tools that are applied to the workpiece to create Object with symmetry.

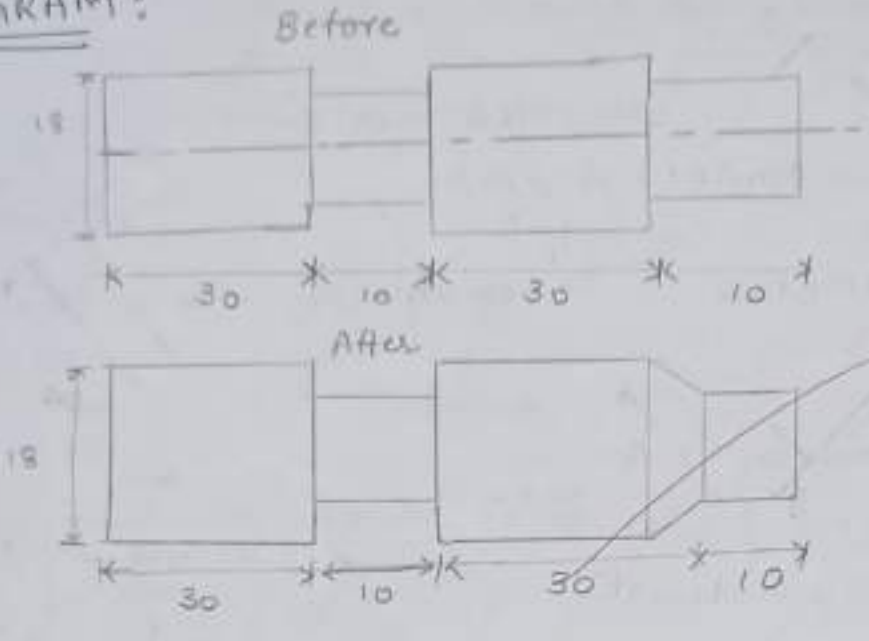
AIM : To perform Step turning and taper turning operations on the given work piece.

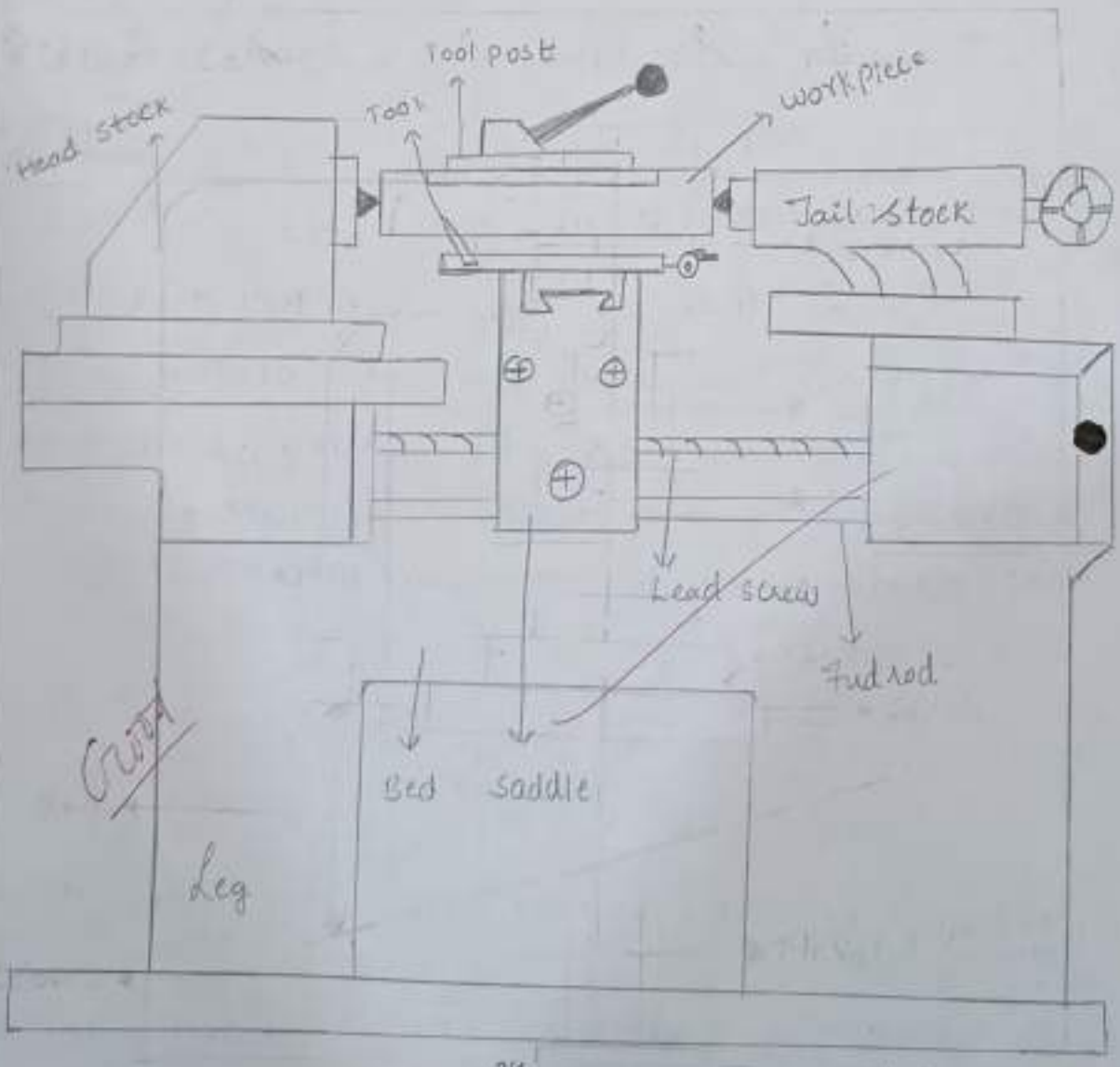
MATERIALS REQUIRED: Mild Steel, rod of 20 mm diameter, and 100 mm long.

Tools REQUIRED: VERNIER CALLIPER, steel ruler, Spanner, Check spanner, HSS

ROLL NUMBER: 2395IAGGF2

DIAGRAM:



## Sequence of operations

→ Facing
→ Drilling
→ Plain turning
→ Grooving
→ Knurling
→ Threading
→ Taper turning.

Procedure:

① The work piece and HSS single point cutting tool are securly held in chuck & tool post respectively.
② operations such as facing are performed.
③ Replace the single point cutting tool with drilling tool and drilling operations is performed.
④ The plain turning is performed.
⑤ Then the compound rest is swivled by calculated half taper angle & taper is generated on the working piece
⑥ V-cutting tool is replaced by HSS single point tool & grooving operations is performed as per the given dimensions.
⑦ Knurling tool is replaced by HSS & Knuling operation is done at lowest speed of spindle.

8) Finally, by using single point cutting tool threading operation is done by moving the carriage forward and backward.

9) Taper angle = $\tan^{-1}\left[\frac{D-d}{2l}\right]$.

Pre Cautions:

1. Make sure to wear Apron and shoes.
2. Wear Gloves while handling sharp objects.
3. Be careful while handling the tools.
4. Do not touch the machine while running.

Result:

Step turning and tap turning operations are done on the given work piece.