Exp:04

STEP MAKING

AIM:

To make step making using fitting process.

SUPPLIED MATERIAL SPECIFICATION:

Mild steel plates of specification (50×50×60)mm.

APPARATUS REQUIRED:

- Hack saw frame with blade
- Try square.
- Steel rule.
- Caliper.
- Files.
- Ball pen.
- hammer.
- center punch.
- Dot punch.

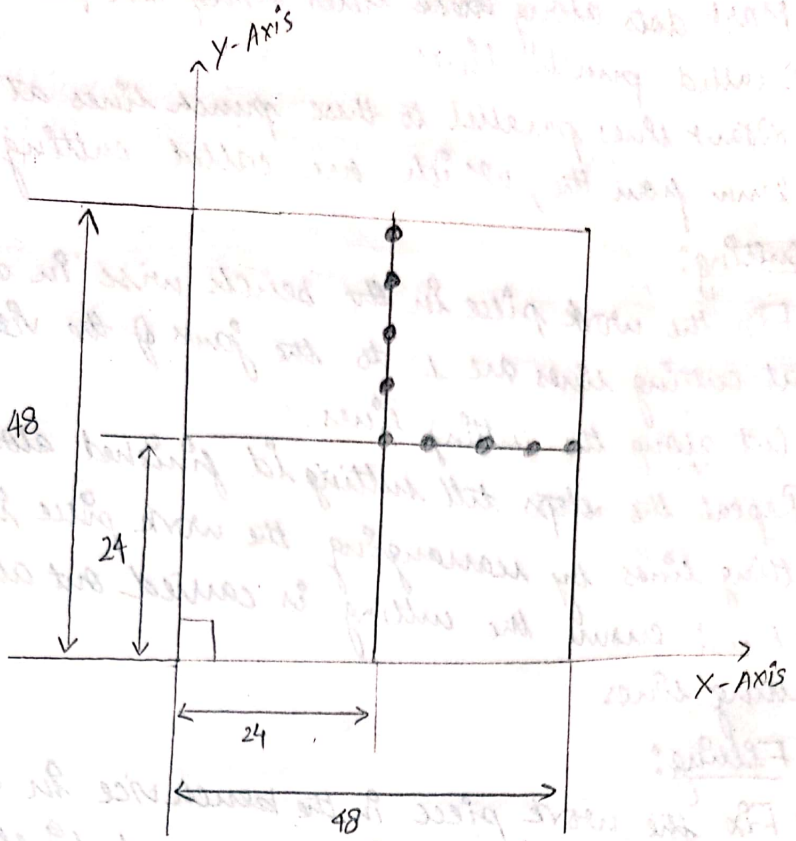
SEQUENCE OF OPERATION:

- preparation.
- Marking.
- cutting.
- Filing.
- Finishing.
- Fitting.

WORKING STEPS:

1) **PREPARATION:**
   - Check the initial dimension using steel rule.
   - Fix the job on a bench vice & file the two adjacent sides using a flat file to form right angle.
   - Check for the perpendicularity. (with try square)

2) **MARKING:**
   - Apply chalk on the work surface.
   - Measure the dimension.
   - Transfer the measured dimension to the work piece.
   - Mark the dimensions on the work piece with one of the filled sides as reference edge.
   - Repeat the above steps on other sides.
   - Scribe lines along the marked dimensions.



All dimensions are in mm

• Mark dots along these lines using dot punch which are called punch lines.
• Draw lines parallel to these punch lines at distance of 2mm from the, which are called cutting lines.

3) Cutting:
• Fix the work piece in the bench wise in such a way that cutting lines are ⊥ to the jaws of the vice.
• Cut along the cutting lines.
• Repeat the steps till cutting id finished along all the cutting lines by rearranging the work piece in the vice.
• Must ensure the cutting is carried out along the cutting lines.

4) Filing:
• Fix the work piece in the bench vice in a such way that the cutting line edge (punch lines) are ⊥ to the jaws.
• File the cut edges using flat rough file to a distance of 2mm, so that the punch lines are exposed.
• Remove and refill the work piece in the bench vice to make the next set of cut edges parallel to the jaws.
• File the cut edges using flat rough file to a distance of 2mm.
• Must ensure that filing is carried out along all the cutting edge punch lines.

5) Finishing:
• using a flat smooth file to produce a smooth surface finish in all the filed edges.

6) Fitting:
• check for true form with a mating gage and for symmetry about the axis with a vernier caliper.
• the fitting accuracy is considered if both contours mate without misalignment and clearances.

RESULT:
Thus a step fitting is obtained out of the given work piece with sp. dimension, shape, finish & accuracy of fitting.