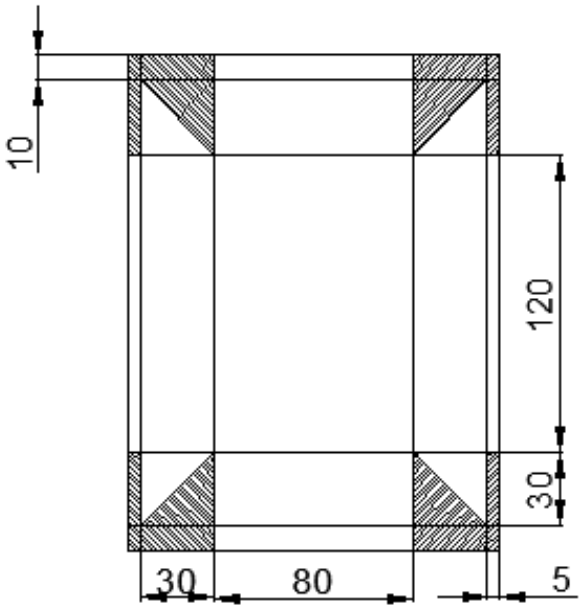
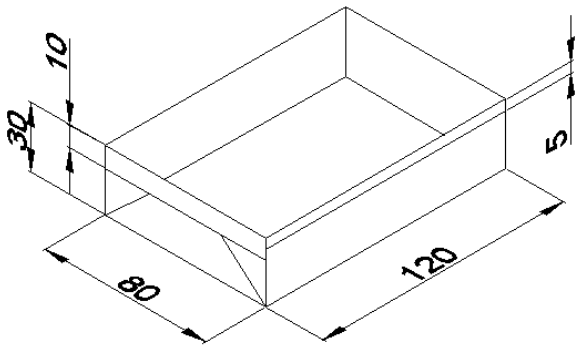
RECTANGULAR TRAY MAKING



LAYOUT OF RECTANGULAR TRAY
ALL DIMENSIONS ARE IN mm.

UNWANTED PORTION



FINISHED RECTANGULAR TRAY
ALL DIMENSIONS ARE IN mm.

Ex No :

DATE :

RECTANGULAR TRAY MAKING

Aim:

To make a rectangular tray of given size from a sheet metal piece.

Application:

Cabinets of stabilizer, computer, UPS and use it to store tools or other accessories.

Material Specification:

Material : Galvanized iron

Sheet of dimensions: 200mm x 150mm thickness 33 gauge.

Tools Required:

1) Steel rule 2) Scriber 3) Straight snip 4) Mallet 5) Stake
6) Anvil

Sequence of operation:

1) Checking 2) Layout Marking 3) Shearing
4) Folding 5) Locking and Finishing

Working Steps:

Checking:

Check whether the given sheet is having its dimension as 200mm x 150mm. If the dimension is excess trim off using hand shear. If It's less change the given sheet.

Layout Marking:

1. Keep 200mm horizontal position and start marking from bottom left side

2. Using steel rule and scriber draw five vertical lines at a distance of 10mm, 40mm, 160mm and 190mm from reference vertical edge.

3. Now in your work sheet you have four lines and five spaces.

4. The first and last 10mm provide for hemming (safety folding) .

5. Second and before last 30mm spaces provide for height and side of the job.

6. Third 120mm space provide for base of the job.

150 Side Marking:

1. Keep 150mm side horizontal position and start marking from bottom left side

2. Using steel rule and scriber draw five vertical lines at a distance of 5mm, 35mm, 115mm and 145mm from reference horizontal edge.

3. Now you have 5 spaces, first and last 5mm space providing for hemming second and before last 30mm space providing for height and side of the job third 80mm space provide for base of the job.

4. After completing both side (150mm and 200mm) marking in each corner one square in 30mm x 30mm with in the square draw diagonal line from the base corner now you have two triangles in the square , then identify and shade the unwanted portions as shown in the figure which is called as seam allowances.

Shearing:

1. Remove the unwanted portion shown in the layout.

2. While cutting, cut along the proper line and remove the unwanted portions.

Folding:

1. First fold 200mm side hem portion 5mm by keeping the pattern over the anvil edge for 180^{o} towards the marking, repeat this step for opposite edge.

2. Use rectangular stake, fold along base line 80mm x 120mm for 90^{o} opposite to the marking. Now you get base and four sides of the tray, repeat this step for other edges.

3. The incomplete tray is having four corners in align with the corner of stake. Using the mallet, fold the triangular shape projection 90^{o} towards the tray. Repeat this step for all other corners.

Looking and Finishing:

1. Fold the remaining portion 10mm 180^{o} outwards using stake and mallet to lock the triangular folds.

2. Use mallet makes it perfect shape

3. Check for the dimensions

Pre Lab Question:

1. How to cut the sheet metal?

2. List out the metals used in sheet metal work?

3. Why mallet is made of wood?

4. Define galvanising?

5. What is the use of tray?

Post Lab Question:

1. Why scriber used for marking?

2. Name the various sheet metal operations?

3. What is hamming?

4. Name the striking tools used in sheet metal work?

5. How do identify the thickness of the sheet metal?

Result:

Thus the required rectangular tray is made out of the given sheet metal piece as per the specification.