(ME110)

MECHANICAL ENGG.

WORKSHOP

A Report on:

Sheet Metal Working and Soldering

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Objective :

To prepare a Rectangular Box (open on both sides)
[Dimensions : 100mm x 50mm x 50mm]

Two caps [with dimensions 50mm x 50mm x 20mm]

Tools Required :

Marking Tools / Measuring Tools :

Steel rulers, try square, punches, bevel protractor, scriber, divider, trammel points

Cutting Tools :

Snips, Chisels. Shearing Machines etc.
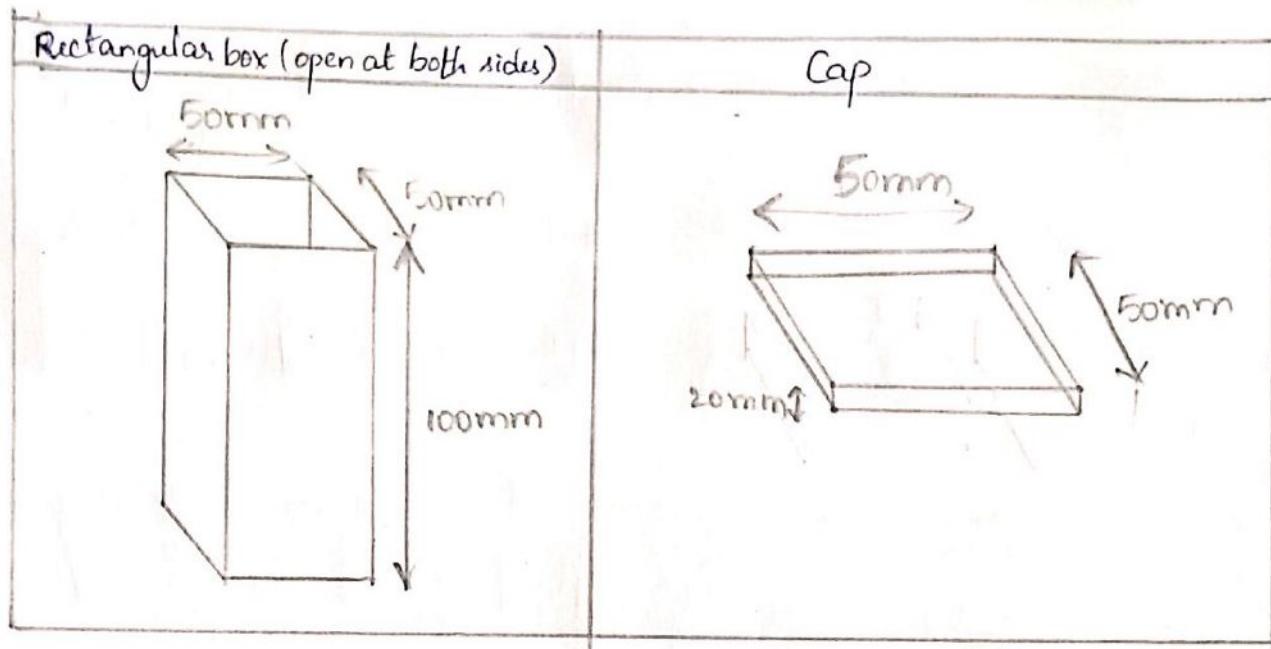
Striking Tools :

Hammer, mallet etc.

Soldering Tools :

Soldering torch, Soldering wire, Soldering flux

Holding Tools :

Anvil, Pliers etc.

DIAGRAM:-

Rectangular box (open at both sides)	Cap
50mm 50mm 100mm	50mm 50mm 20mm

PROCESSES INVOLVED:

① Marking — In this process, scribber is used to mark the boundaries of the piece of sheet to be cut and to mark its edges

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② Shearing - In this process, cutter is used to cut the piece of sheet required to make the boxes.

③ Bending - For this, tools like mallet are used to bend the marked edges of the sheet

④ Soldering/Joining - In this process, different parts of the bent sheet are joined using soldering torch and soldering wire.

PROCEDURE :

(A) Rectangular Box:

① Using scribber, mark a rectangle of dimensions 21.5cm × 10.5cm on the metal sheet.

② Cut the rectangle using a cutter.

③ With a spacing of 5cm, mark edges of each face of rectangular box, and bend them using a mallet; by repeated hitting for 4 times

④ Follow above steps 1 for making 2 caps. cut a rectangle of dimensions 18cm × 9cm.

⑤ Later, divide it into 2 sheets of dimensions 90cm×9cm

⑥ Mark edges on the sheets so that we get caps of size dimensions 50mm × 50mm × 20cm

⑦ After making caps, solder them box the so that its faces are tightly held. For soldering used soldering torch, soldering wire, flux.

⑧ Let it cool for few minutes.

PRECAUTIONS—

① Always wear gloves while working.

② Never run hands on cut edge.

③ Never touch the soldering torch while it is on.

④ Always place the torch in its stand when not in use.

⑤ Take care that the wire of the torch doesn't touch the flame while in use.