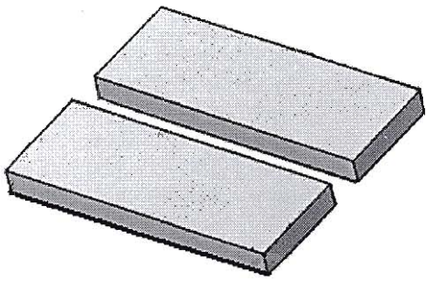
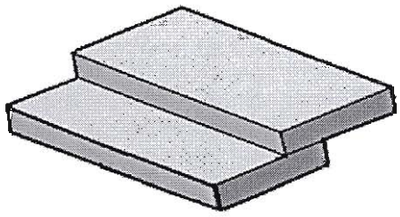
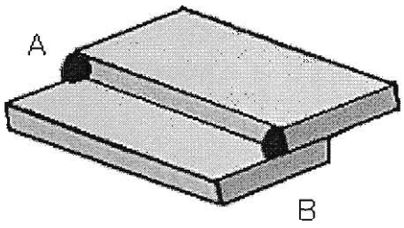
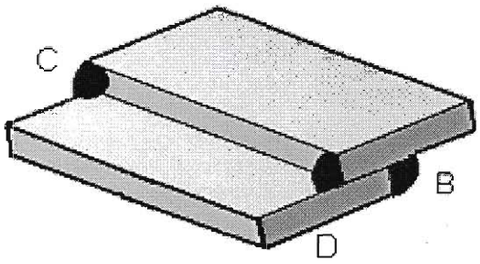




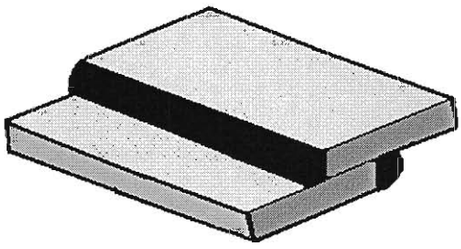
Work pieces in position



Work piece with Tack weld on one side



Work pieces with Tack weld on both sides



Work pieces with final weld

All dimensions are in mm

Exercise No:	LAP JOINT
Date:	

AIM

To join two edges of metal plates overlapping each other using arc welding method.

APPLICATION

Welding is a permanent joining process. Lap joint is used in heavy constructions, Automobile chasis, steel furniture and constructions..

SUPPLIED MATERIAL SPECIFICATION

Mild steel flats of dimension 100mm X 30mm X 6mm – Two pieces

TOOLS REQUIRED

1 Steel rule	2. Try square	3. Flat file	4. Welding machine
5. Consumable electrode	6. Tongs	7. Chipping hammer	8. Wire brush

SEQUENCE OF OPERATIONS

I. Preparing II. Tack welding III. Final welding IV Chipping and Cleaning

WORKING STEPS

I. Preparing

1. Clean the edges of the work pieces using wire brush to remove dust and rust.
2. Check the dimensions using steel rule and also check the straightness of the edges to be joined using try square.
3. File those edges using flat file and make them straight. Once again check with try square.

II. Tack welding

1. Keep one work piece over welding table, and place another piece over the first one so that the filed edges make overlap of 15mm as shown. With the help of tongs hold the work pieces in position.
2. Check the welding machine, cables, electrode and earth clamp for proper connection.
3. Select correct electrode (3.15) and fix it in electrode holder. Use gloves while fixing the electrode.
4. Switch on the welding machine. Adjust the current to 100 ampheres. Keep the shield closer to eyes and move the electrode nearer to one end (A) of the work piece pair. Electrode should not touch the work piece. A critical distance should be maintained to produce spark. Make a spot over the work piece.
5. In the same way make another spot at next end (B) of the work piece pair. This is to keep the pieces in place during welding.
6. Turn the work pieces upside down and make tack weld at required places (C and D).

III. Final welding

1. Move the electrode to first tack (A) and make a spark.
2. Gradually move the electrode towards the second tack (B) without shaking the electrode . (Back hand welding is preferred for thick plates). This is called as first run
3. For the second run start from A and move towards B with uniform oscillation motion. This keeps the metal molten a little longer and allows the gas to escape, bringing the slag to the surface.
4. Turn the work pieces upside down and make final weld between C and D explained above.

IV. Chipping and Cleaning

1. Allow the work piece to cool or dip it in water using tongs..
2. With the help of chipping hammer gently tap the weld bead so that the slag coating is broken in to pieces.
3. Clean the work piece with wire brush thoroughly.
4. Check for the dimensions.

RESULT

Thus the given two flats are joined by Lap joint using arc welding method