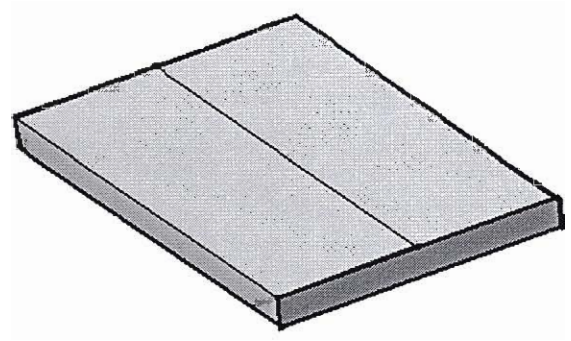
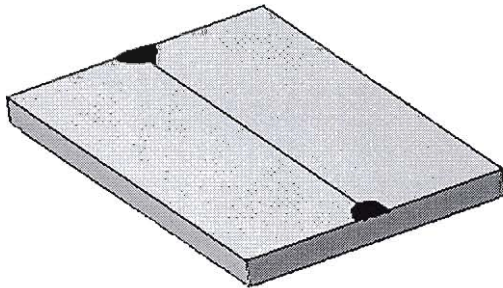


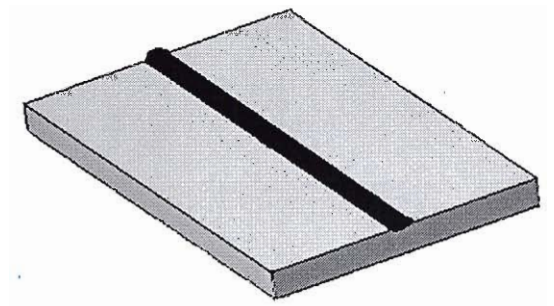
Given Work pieces



Work pieces with edges filed



Work pieces with Tack weld



Work pieces with final weld

All dimensions are in mm

Exercise No:

BUTT JOINT

Date:

### AIM

To join two edges of metal plates placed on the same plane using arc welding method.

### APPLICATION

Butt joint is used in heavy constructions, Automobile chassis, 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. Consumable electrode |
| 5. Tongs      | 6. Chipping hammer | 7. 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.

#### II. Tack welding

1. Place the work pieces as close as possible butting against each other over welding table.
2. Check the welding machine, cables, electrode and earth clamp for proper connection.
3. Select correct electrode ( 3.15mm) and fix it in electrode holder. Use gloves while fixing the electrode.
4. Switch on the welding machine. Adjust the current to 100 amperes. Keep the shield closer to eyes and move the electrode nearer to one end of the workpiece 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 the next end of the work piece pair. This is to keep the pieces in place during welding.

#### III. Final welding

1. Move the electrode to first tack and make a spark.
2. Gradually move the electrode towards the second tack without shaking the electrode and maintain the gap between electrode tip and work piece. ( Back hand welding is preferred for thick plates). This is called as first run
3. For the second run start from first tack and move towards second tack with uniform oscillation motion. This keeps the metal molten a little longer and allows the gas to escape, bringing the slag to the surface.

#### 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 Butt joint using arc welding method.