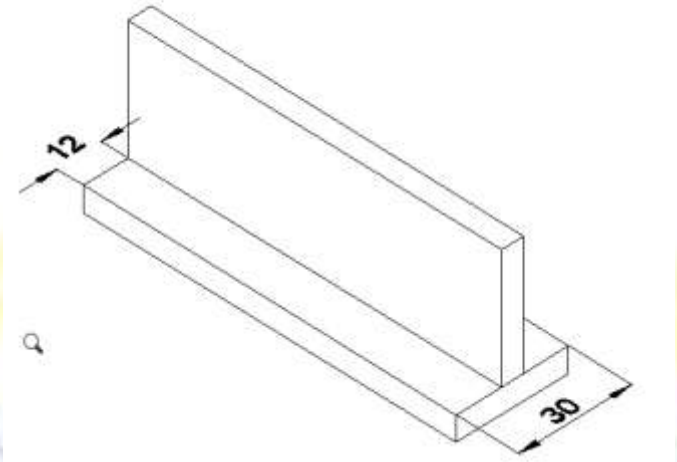
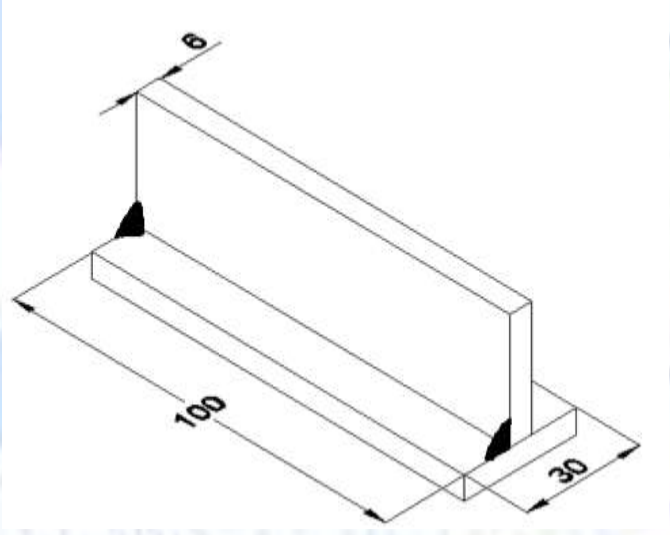
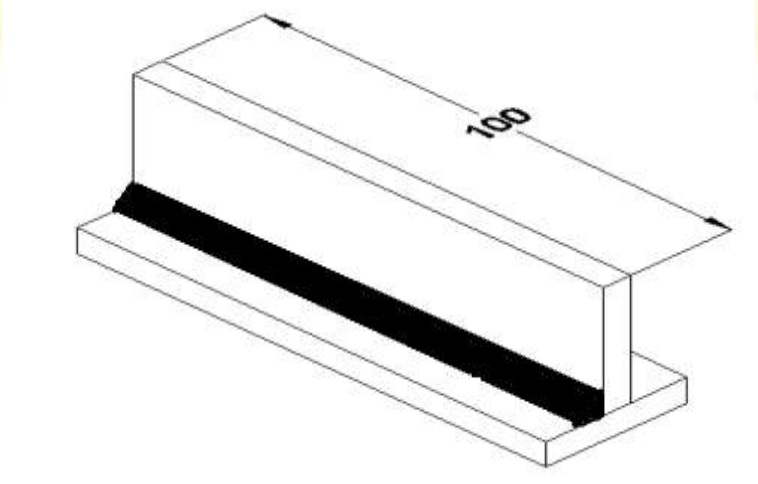
MIG (GMAW) WELDING
'T' JOINT



PREPARATION



TACK WELD



FINAL WELD

All Dimension are in mm (100 X 30 X 6)

MIG WELDING (GMAW)

T- JOINT

Ex no :

Date :

Aim:

To make a T joint of given mild steel plate of size 100 x 30 x 6 mm using Gas Metal Arc welding machine.

Application:

Tee joint is used in very heavy structures, constructions, and steel furniture using MIG (Metal inert gas) welding.

Material Specification:

Mild steel metal plates of dimension 100mm x 30mm x 6mm – Two pieces

Tools Required:

1) Bench vice 2) Try square 3) Steel rule 4) Flat File
5) Chipping hammer 6) Wire brush 7) Tongs 8) Welding shield

Equipment Required:

1) MIG welding machine 2) MIG welding torch 3) CO_2 shielding Gas cylinder
4) E70S - 2 consumable wire (coil 1.0 mm dia) 5) Ground clamps

Safety Equipment:

1) Leather apron 2) Hand gloves 3) Goggle etc.

Sequence of operation:

1) Stage I 2) Stage II 3) Stage III

Working Steps:

1) Stage- I

a) Clean the edges of the work piece using wire brush to remove dust and rust.
b) Check the dimensions using steel rule and also check the straightness of the edges to be joined using try square.
c) File those edges using flat file and make them straight, once again check with try square.

2. Stage- II:

a) With cylinder key open the CO2 gas cylinder and adjust the CO2 gas regulator so that the gas output pressure is maintained at 0.25kg/cm2
b) Switch on the power source by the ON/OFF switch on the 'MIGMATIC 250" welding machine in the panel.
c) Press down the GAS CHECK switch and ensure the CO_2 gas supply in the gas line and release the switch.
d) Select the welding voltage by tuning the voltage selector switch. Confirm the set voltage by pressing the "OCV Check" switch. This will show the reading on the voltmeter.
e) Select the welding current by adjusting the "wire feed speed control potentiometer" on the wire feeder unit. The Ammeter will show the welding current during actual welding. For 1.0 mm dia. CCMS welding wire, the current is set at 80amp.

3. Stage – III:

a) The MIG welding torch should be positioned on a rough metal piece and the torch switch is pressed for checking the spark.
b) Then the torch is positioned over the joint to be welded on one end. Torch switch is pressed and a tack welded. Similarly weld other end.
c) Do the run welding on the strip joint by steadily maintaining the movement of the torch over the joint for uniform welding. Similarly do the welding on the other side of the joint.

Pre Lab Question:

1. How does MIG welding differ from TIG welding?

2. Which metals can be welded by MIG welding?

3. Describe MIG welding process?

4. State the application of MIG welding?

5. Mention two advantages of MIG welding?

Post Lab Question:

1. What is stickout?

2. How protection of weld zone is obtained in MIG welding?

3. List out the gases commonly used in MIG welding?

4. Which type of power supply can be used in MIG welding?

5. Mention the demerits of MIG welding?

Result:

MIG Welding is done on given mild steel plate and the required “T” joint is obtained.