

Exercise No:

**GAS WELDING
(BUTT JOINT)**

Date:

AIM

To make a butt joint using the two given metal strips of size 100mm x 30mm x 3mm using oxygen – Acetylene Gas.

APPLICATION

Gas welding is used in steel furniture and pipes and constructions.

SUPPLIED MATERIAL SPECIFICATION

1. Mild Steel Metal Strips of size 100mm x 30mm x 3mm two pieces.
2. C.C.M.S (Copper Coated Mild Steel) filler rod 1.5mm dia.

TOOLS REQUIRED

1. Bench Vice
2. Flat File
3. Try Square
4. Tongs
5. Wire Brush
6. Cylinder Opener Key
7. Spark Lighter.

SEQUENCE OF OPERATION

1. Preparing
2. Tack weld
3. Final Weld
4. Cleaning

PROCEDURE

STAGE I

1. File the edge of the 2 metal strips and finish to 90 degree.
2. Clean and dust, rust, oil or grease on the joint surfaces (to be welded) (for satisfactory weld).
3. Place the 2 strips on level surface on the gas welding table fire bricks.

STAGE II

4. Open the Oxygen gas cylinder and acetylene gas cylinder, using the cylinder key.
5. Open the Acetylene gas regulator valve and oxygen gas regulator valve slightly so that the output gas pressure is set at 0.25 kg/cm².
6. Open the Gas Torch Acetylene valve slightly on the gas torch and ignite the acetylene gas coming out of tip of the torch nozzle.
Then open Gas Torch oxygen valve gradually, until the flame separates out from the tip and then close the valve gradually just enough for the flame to join the tip.
Further adjust the two valve of the gas torch until the immediate feather on the flame is drawn back into the inner core of the flame.

(The instant that the feather disappears into the cone shows the oxy acetylene gas produces the required Neutral Flame for Gas Welding Purpose. This flame make a hissing sound)

STAGE III

7. Hold the gas torch nozzle by the right hand at an angle 60 degree over the joint of the 2 strips (to be gas welded) and hold the filler welding rod by the left hand at an angle of 30 degree.

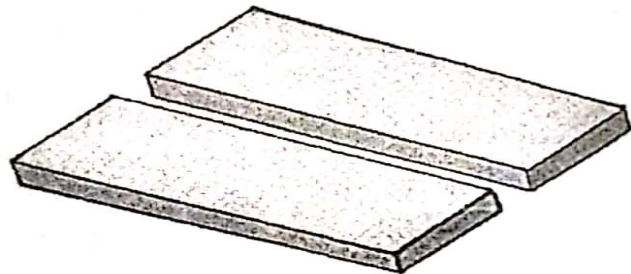
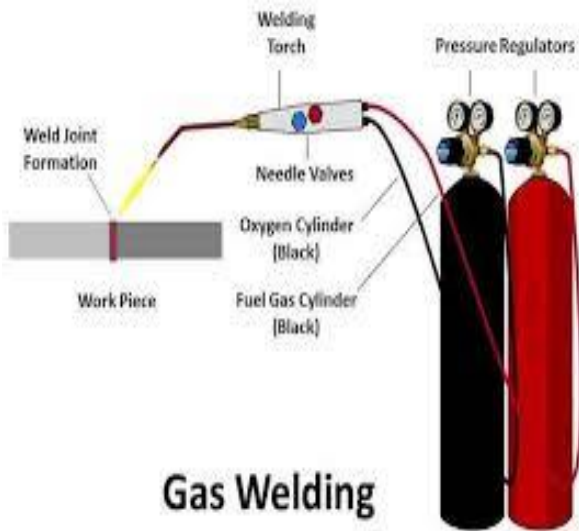
First, heat the joint of the two base metal by the neutral gas flame, to red heat. Bring in the filler rod and heat its end also. Then heat further till fusion takes place and a tack weld is made at one end of the joint.

8. Similarly make a tack weld at the other end also.

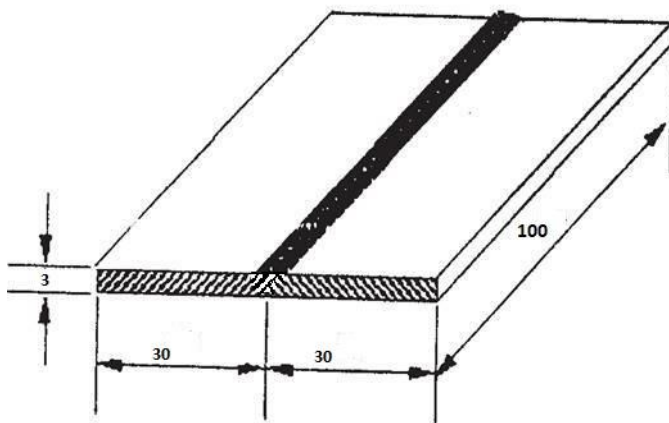
9. Then do the run welding by steadily moving the gas flame over the joint from right to left and using the filler rod.

REPORT

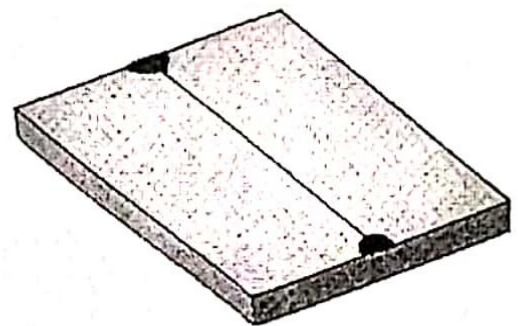
Gas welding is done on the two given metal strips and the required butt joint is obtained.



Given Work pieces



Butt Joint



Work pieces with Tack weld