

Lesson 2: Welding With Oxyacetylene

Welding a Butt Joint in Flat Position Using Welding Rod

Objective: Students will observe how to weld a butt joint in flat position using the oxyacetylene outfit and welding rod.

Directions: Use an oxyacetylene outfit to weld a butt joint in flat position.

Materials and Equipment:

Oxyacetylene outfit and accessories
Welding goggles with appropriate shaded lens*
Safety glasses or goggles
Leather gloves and any other protective clothing recommended by instructor
Spark lighter

Pliers
Wire brush
Steel plates, selected by instructor
Welding rods, selected by instructor. Use the pliers to bend the back end of the rod into a hook to distinguish it from the end that could be hot.

* Everyone participating in or observing the demonstration should wear appropriate protective eyewear.

Procedure:

1. Wear appropriate face protection and protective clothing.
2. Inspect equipment, materials, and work area to ensure safe and correct operation.
3. Prepare the metal to be welded.
4. Position the plates on the worktable.
5. Set up the welding outfit.
6. Light the torch using the spark lighter.
7. Adjust the flame to a neutral flame.
8. Use the torch and welding rod to tack weld the pieces together.
9. Start welding at one end, with the torch at a 45-degree angle and the inner flame cone approximately 1/8 in. from the work.
10. Hold this position until a weld pool forms. It should form equally over both pieces of metal.
11. At the same time, use the other hand to bring the welding rod close to the flame for preheating. The end of the rod should be approximately 3/8 in. from the flame and 1/16 to 1/8 in. from the pool surface. The rod is held at an angle to the work, usually about 45 degrees.

12. When the weld pool needs additional material, dip the end of the rod in the front edge of the weld pool. When enough filler is added to make the desired bead, move forward.
13. Carry the bead forward by moving the torch and adding filler with a smooth, uniform motion.
14. Continue moving forward until the weld is complete.
15. Shut off the outfit.
16. If work is to be suspended, shut down the outfit.
17. Assign the student version of AS 2 to be performed by students.