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| Oxy-Fuel Torch CUT | 6 |
| Metals |

Equipment

## regulators

## handle

## cutting attachment

## tip

## hose

## check valves

## flashback arrestors

## oxygen

acetylene

## and flint lighter

Objectives

* To make a hand-held cut using the oxyfuel cutting process.
* Operate a Oxy-Fuel Cutting Torch
* Display all safe working procedures
  + Including set up and shut down

**MATERIAL:** Mild steel plate 3/8” thick (enough to cut a 5” x 5” square)

**GENERAL INFORMATION:**

**INSTRUCTIONS:** Make a cut of steel material.

1. Clean base material if necessary.
2. Purge the cylinder valves by slightly cracking open the valve to remove debris from the valves.
3. Inspect all equipment before setting up making sure things are in good working condition.
4. Attach regulators accordingly. Oxygen, CGA 540, to the oxygen cylinder and acetylene, CGA 510 or CGA 300, to the acetylene cylinder.
5. Attach the hoses to the regulators and to the back of the welding torch handle making sure to use “R” grade hose and to attach the red hose to the acetylene and the green hose to the oxygen. (Reminder: Oxygen is right hand thread while acetylene is left hand thread.)
6. Before pressuring the system by opening the cylinders, make sure the adjusting screws on the regulators are fully loosened and all torch valves are shut.
7. Open the cylinders slightly and then to operating position. If any leaks are present, close cylinders and repair immediately. (Reminder: Oxygen valves should be fully open while acetylene valves should only be 1/4 to 1/2 turn.)
8. Set the adjusting screw to the desired outlet pressure for the cut to be made and for the properly sized cutting tip. If any leaks are present, close cylinders and repair immediately.
9. Purge the cutting system by opening up the torch valves to verify procedure settings for any pressure drop. If outlet pressure drops, turn adjusting screw to desired cutting outlet pressure. (Reminder: Purge the oxygen side first and then the acetylene side next to prevent backflow of acetylene into oxygen side of torch.)
10. Ignite torch by first lighting the fuel gas with a flint lighter and then adding the oxygen to adjust for a neutral flame.
11. Test proper flame setting by engaging the cutting oxygen lever. Adjust as necessary.
12. Position the inner cones of the flame at a 90° angle to the plane of the plate.
13. When the top of the plate begins to glow red, engage the cutting oxygen. If cut does not begin, preheat a little longer and re-engage cutting oxygen. (Reminder: Steel must reach kindling temperature to be cut.)
14. Proceed across the plate in an even matter concentrating on keeping the cut straight.
15. When finished with the cut, turn off the oxygen torch valve then the fuel torch valve. Back out adjusting screws on the regulators and close the cylinder valves. Lastly, purge remaining gas in hose lines by opening both torch valves.