



## Safe Operating Procedure (SOP)

### OXYGEN/ACETYLENE/HIDROGEN WELDING AND CUTTING

Improper use of OXYGEN/ACETYLENE/HIDROGEN torches places employees at increased risk of serious injury.

#### Storage

- Keep cylinder caps in place when cylinders are not in use or are being transported
- Keep cylinders upright and chained to a FIXED support
- Store oxygen cylinders away from flammable gas cylinders (minimum 20 feet or separated by fire barrier at least 5 feet tall)
- Cylinders in outside storage must be locked or attended at all times
- While moving cylinders always use appropriate cart and screw on the protective cap to protect the valves.
- Do not store overnight with pressure on the regulator
- Remove leaking cylinders from inside storage immediately and notify the supplier
- Do not tamper with or attempt to repair cylinder valves – Always notify the supplier
- When a cylinder is empty, close the valve and mark it "EMPTY".

#### Prior to Use

- Complete a hot permit.
- Inspect equipment to ensure good working condition and oil-free.
- Blow out cylinder valves before attaching regulators.
- Always use the proper pressure regulator for each gas and pressure range.
- Never force connections that do not fit – dispose and replace connectors with faulty seats
- Check connections for leaks using soapy water or its equivalent. NEVER USE A FLAME.
- Replace or repair damaged equipment, including hoses.
- Release regulator adjusting screw BEFORE opening cylinder valves.
- Open cylinder valves SLOWLY and do not stand directly in front of the regulator. Do not use acetylene/hydrogen at pressures higher than 15 psi.
- Ensure that flashback arrestors are installed between the regulator and the hose if the torch does not have one built into its handle.
- Keep hoses, cables, and other equipment clear of passageways, stairs, ladders, etc



- Purge oxygen, acetylene or hydrogen lines before lighting the torch.
- When lighting torch, point away from persons and combustibles.
- Light torch only with friction lighter or stationary pilot flame.
- Light acetylene before opening oxygen valve on torch.
- Install appropriate Barrier to protect from heat or sparks.

### **Safety During Use**

- Keep a fully charged Class ABC Fire Extinguisher nearby with an INDEPENDENT FIRE WATCH<sup>1</sup> responsible for ensuring a fire does not start or spread.
- Remove combustibles at least 35 feet from hot work. If combustibles cannot be relocated 35 feet from hot work, complete a hot work permit.
- Take steps to prevent sparks from falling through floor cracks, etc. Remove or protect combustible material in "falling spark" zones.
- Provide adequate ventilation whenever welding or cutting, particularly around cadmium, zinc, lead, fluorine compounds, or other toxic materials.
- Keep flame and hot slag off concrete. Intense heat may cause flying particles of concrete.
- Before cutting or welding on an "empty" container, be sure it does not contain flammable vapors or any residues that might burn or give off flammable or toxic vapors.
- Keep sleeves and collars buttoned on clothing.
- Wear gloves and eye protection with the appropriate shade<sup>2</sup>:
  - Soldering 2
  - Torch Brazing 3 or 4
  - Light Cutting, up to 1 inch 3 or 4
  - Medium Cutting, 1 inch to 6 inches 4 or 5
  - Heavy Cutting, 6 inches and over 5 or 6
- A FIRE WATCH MUST BE STATIONED IN THE VICINITY OF THE WORK FOR AT LEAST HALF AN HOUR AFTER WELDING OR CUTTING OPERATIONS ARE COMPLETED.