# Safe Work Instruction
## Oxy-Fuel Gas Welding

### Personal Protective Equipment
- Safety glasses must be worn at all times.
- Safety footwear must be worn.
- Close fitting / protective clothing must be worn.
- Oil free leather gloves and spats must be worn.
- Long or loose hair must be contained.
- Rings and jewellery must not be worn.

### Potential Risks
1. Burns.
2. Non-ionising radiation damage to eyes.
3. Flying sparks.
5. Fumes.
7. Flashbacks.
8. Oil and grease.

### Don’ts
- Do not use faulty equipment. Immediately report suspect equipment to your supervisor.
- Do not light the blowpipe with matches or lighters.
- Do not use oil, grease or other hydrocarbons.
- Do not use oxygen as a substitute for compressed air.

### Pre-Operational Safety Checks
- Locate and ensure you are familiar with all machine operations and controls.
- Check workspaces and walkways to ensure you have not created slip/trip hazards.
- Keep area clean and free of grease, oil and any flammable materials.
- Ensure gas hoses are in good condition and do not create a tripping hazard.
- Before lighting up, check all equipment for damage.
- Check that the area is well ventilated. Start the fume extraction unit before beginning to weld.
- Ensure the unit is fitted with working flashback arresters.
- Ensure work return earth cables make firm contact to provide a good electrical connection.

### Pressure Setting
- Check that the oxygen and acetylene regulator adjusting knobs are loose.
- Check that both blowpipe valves are closed.
- Slowly open the cylinder valves on each cylinder for half a turn only.
- Screw in the regulator adjusting knobs slowly until the delivery pressure gauges register 70kPa.
- Purge and check for constant oxygen gas flow:
  - Open the oxygen blowpipe valve for 2 seconds and check the delivery gauge.
  - If necessary re-adjust the oxygen regulator to achieve a 70kPa pressure.
  - Close the oxygen blowpipe valve.

### Pressure Setting Continued...
- Purge and check for constant acetylene gas flow:
  - Open the acetylene blowpipe valve for 2 seconds and check the delivery gauge.
  - If necessary re-adjust the acetylene regulator to achieve a 70kPa pressure.
  - Close the acetylene blowpipe valve.

### Lighting Up
- Open the acetylene blowpipe valve slightly and light the blowpipe with a flint lighter.
- Continue to slowly open the acetylene valve until the flame no longer produces soot.
- Slowly open the oxygen blowpipe valve until a neutral flame is produced.

### Shutting Off Blowpipe
- Close the acetylene blowpipe valve first.
- Then close the oxygen blowpipe valve.

### Ending Operations and Cleaning Up
- Close down both cylinder valves.
- Open oxygen blowpipe valve to allow the gas to drain out.
- When oxygen gauges read zero, unscrew regulator-adjusting knob.
- Close oxygen blowpipe valve.
- Turn off acetylene cylinder valve.
- Open acetylene blowpipe valve and release gas.
- When acetylene gauges read zero, release regulator adjusting knob.
- Close acetylene blowpipe valve.
- Hang up welding blowpipe and hoses.
- Switch off the fume extraction unit.
- Leave the work area in a safe, clean and tidy state.