

Setup Oxy-Acetylene Equipment

References:

SOJAs: PF3-SOJ-005, WD1-SOJ-001

MNT-WELD-018 Oxygen-Acetylene Equipment Setup
F/S-710 Compressed Gas Cylinders

Assessor Guidelines:

(Assessor review the guidelines)

- Observe the craftsman conducting the task, checking the box to each Procedure step or line item.
- Make notes in the margins next to the appropriate line item about any deviations from the Procedure.
- If the craftsman requests a copy of the Procedure to follow, give one to him. Let him make that choice, do not prompt him to do so.
- If the discrepancies or deviations from Procedure are few and minor, follow-up the assessment with brief refresher training on the topic highlighting points or steps missed and their safety significance.
- If the discrepancies or deviations from Procedure are many and/or major, discuss the matter with the Requalifier and the Training Advisor about scheduling more in-depth refresher training followed by a re-assessment.
- Fill out the accompanying SOJA indicating the assessment results and comments on the Requalifiers performance, including any plans to close gaps, if any.

Quality:

(Assessor review the quality conditions)

The following conditions must be met to ensure the quality of this procedure:

- All oxygen and acetylene connections must be properly hooked up.
- Oxygen and acetylene regulator pressures must be properly adjusted to cut 1/4 inch steel plate.
- Selection of proper size tip needed to cut 1/4 inch steel plate.

Instructions: The craftsman will:

(Assessor read aloud the instructions)

- Gather all the necessary materials
- Pre-inspect the equipment
- Setup the Oxygen and Acetylene cylinders
- Pressure up the system for torch-cutting 1/4 inch steel plate
- Prepare the work area
- Light off the torch, to include neutral flame adjustment
- Shut off the torch
- Disassemble the equipment and clean up the work area

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(**Requalifier** conduct the SOJA narrating the steps and safety concerns as he goes along)

(**Assessor** check the boxes as the Requalifier completes the steps, interrupting only to prevent a safety hazard or to request further clarification on a step or safety issue. Take notes on any safety issues, discrepancies or variations in the procedure.)

Materials:

- PPE: Gloves, Safety glasses, etc.
- Bottle wrench or small adjustable wrench.
- Soapstone.
- Oxygen/Acetylene cylinders.
- Oxygen/Acetylene regulators.
- Oxygen/Acetylene hoses.
- Oxygen/Acetylene cutting torch with proper tip for the job.
- 1 - Set of burning goggles shade 5.0 filter lens.
- Friction lighter

Pre-inspection:

- Inspect the oxygen and acetylene cylinders, cylinder valves, regulators, and hoses prior to use.
- Oil or grease?
- PPE, eye protection, ear protection, welding gloves, burning goggles with shade 5.0 lens for oxygen acetylene cutting are required when operating this equipment.

Set-up Oxygen and Acetylene Cylinders:

- For the oxygen cylinder:
 - Crack open the valve to blow out any dirt that may be in the valve. Close the valve.
 - Connect the oxygen regulator to the oxygen cylinder valve. Tighten using bottle wrench.
 - Safety: Do not over tighten the oxygen and acetylene fittings. Over tightening may cause damage to the brass fittings, resulting in equipment damage or failure.
 - Verify that the pressure in the adjustment screw of the oxygen pressure regulator is released. If not, release the pressure by turning the oxygen

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pressure regulator adjustment screw counterclockwise until the tension is off the springs.

- Connect the oxygen hose to the oxygen regulator. The oxygen hose is **green**.
 - Crack open the cylinder valve again to blow out any dirt that may be in the regulator and the hose. Close the valve.
 - For the acetylene cylinder:
 - Crack open the valve to blow out any dirt that may be in the valve. Close the valve.
 - Connect the acetylene regulator to the acetylene cylinder valve. Tighten using bottle wrench.
- All acetylene connections have left-handed threads.
- Verify that the pressure in the adjustment screw of the acetylene pressure regulator is released. If not, release the pressure by turning the acetylene pressure regulator adjustment screw counterclockwise until the tension is off the springs.
 - Connect the acetylene hose to the acetylene regulator. The acetylene hose is **red**.
 - Crack open the cylinder valve again to blow out any dirt that may be in the regulator and the hose. Close the valve.

Pressure up the system:

□ **Safety:** Before pressuring up the system, make sure the torch valves are in the CLOSED position. Failure to CLOSE the torch valves may cause an explosion or fire due to leaking gas resulting in severe personal injury and property damage.

- Verify that the oxygen valve at the torch is closed. Connect the oxygen hose to the torch.
- Verify that the acetylene valve at the torch is closed. Connect the acetylene hose to the torch.
- Standing to the side of the regulator, open the acetylene cylinder valve slowly half of a turn.

□ **Safety:** Never open the acetylene cylinder valve more than half of a turn. This is done so that in case of a fire, the cylinder valve can be quickly closed.

- Open the oxygen cylinder valve slowly, until it is fully open.
- Purge the oxygen regulator and hose:
- Open the oxygen valve at the torch.

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- Adjust the oxygen regulator screw by turning it clockwise until the recommended pressure is achieved. Refer to the Victor Acetylene Cutting Tip Chart in Appendix A or Welding Nozzle Flow Data in Appendix B for the recommended pressures.
- Close the oxygen valve at the torch.
- Purge the acetylene regulator and hose:
 - Open the acetylene valve at the torch.
 - Adjust the acetylene regulator screw by turning it clockwise until the recommended pressure is achieved. Refer to the Victor Acetylene Cutting Tip Chart in Appendix A or Welding Nozzle Flow Data in Appendix B for the recommended pressures.
 - Close the acetylene valve at the torch.
 - Safety: Never adjust acetylene regulator pressure above 15 psi. Adjusting to a pressure above 15 psi may cause the acetylene fuel to become unstable and explode easily.
- Carefully inspect for leaks. Locate and repair leaks.

Prepare the work area:

- Prepare the work area by clearing it of all flammable materials such as rags, paper, wood, and any hydrocarbons that may have been spilled on the floor.
- Cover all sewers and drains with sandbags if welding/brazing/cutting is to be performed in a processing unit.
- Safety: Place a fire extinguisher and water hose at the job site.

Lighting off the Torch:

- Open the acetylene valve $\frac{1}{8}$ turn and ignite the gas. Continue to open the acetylene valve until the flame stops smoking.
- Open the oxygen valve until a bright neutral flame is established.

Shutting off the Torch:

- Shut off the torch oxygen valve.
- Shut off the torch acetylene valve.
- Close oxygen and acetylene cylinder valves.
- Open the torch oxygen valve to release the pressure from the system and close the valve.
- Turn the oxygen pressure regulator counterclockwise to release the spring pressure.

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- Open the torch acetylene valve to release the pressure from the system and close the valve.
- Turn the acetylene pressure regulator counterclockwise to release the spring pressure.
- Check the gauges to ensure there is no pressure remaining in the system.

Post job Cleanup:

- Take down and properly store all of the oxygen/acetylene equipment.
- Pick up and properly store all unused material.
- Pick up and properly store all hand tools.
- Leave the work area clean and free of all trip and fall hazards.

Safety Instructions:

(Assessor check the box for every safety item below that was mentioned while the Requalifier conducted the SOJA.
For those not mentioned, question the Requalifier to confirm they are knowledgeably aware of the safety item. Note any gaps discovered.)

- Never use oxygen to ventilate area or to clean clothing.
- Failure to release the pressure in the oxygen/acetylene regulators before pressuring up the system may cause the adjustment screws to blow out resulting in severe personal injury and property damage.
- Acetylene cylinders contain acetone solvent that may cause irritation upon contact with skin and eyes. In case of skin contact, wash with soap and water. For eye contact, flush eyes with water for 15 or 20 minutes. Seek medical help.
- Never use oil or grease on oxygen/acetylene fittings. Oil or grease mixed with oxygen/acetylene may cause an explosion and result in severe personal injury and property damage.
- Never stand directly in front of or behind a regulator when opening a cylinder valve. To avoid personal injury, always stand so that the cylinder valve is between you and the regulator.
- Never use oxygen/acetylene equipment to cut or burn material that is lying on concrete. Cutting or burning on concrete will cause the concrete to break up and spatter and result in serious personal injury.
- Failure to clean the work area of all flammable materials may cause a fire, resulting in severe personal injury and property damage.
- Do not over tighten the oxygen and acetylene fittings. Over tightening may cause damage to the brass fittings, resulting in equipment damage or failure.

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- Before pressuring up the system, make sure the torch valves are in the CLOSED position. Failure to CLOSE the torch valves may cause an explosion or fire due to leaking gas resulting in severe personal injury and property damage.
- Never adjust acetylene regulator pressure above 15 psi. Adjusting to a pressure above 15 psi may cause the acetylene fuel to become unstable and explode easily.
- Always purge the oxygen and acetylene systems after every shutoff.
- Never allow a cylinder to be dropped or knocked over.
- When moving cylinders, always make sure that the safety cap is in place.
- Place the oxygen and acetylene cylinders a minimum of 10 feet away from the work area and secure the cylinders.