

## SAFE WORK PRACTICE – WELDING (PORTABLE ARC)

### PURPOSE

To provide a grasp of the hazards involved in portable arc welding applications and to ensure that the work is done in a manner that minimizes risk of worker injury or damage to equipment and the environment.

### PREREQUISITES

- Only authorized personnel - adequately qualified, trained and with enough experience - shall be permitted to operate a portable arc welder.
- Portable arc welding equipment is to be used and maintained in compliance with manufacturer guidelines and meet CSA standards.

### POTENTIAL HAZARDS

- Burns to skin and eyes
- Electric shock
- Welding fumes
- Fire

### BEFORE USE:

- Perform a pre-operation inspection of equipment and tools.
- Know location of ON/OFF switch in case of emergency.
- Remove flammable materials from the work area.
- Make sure a fire extinguisher is readily accessible.
- Ensure that welding curtains are in place to protect other workers in the area from “flash” and welding splatter. Where this is not possible, ensure that all workers in the area are wearing tinted protective glasses or goggles and that they avoid looking at the arc.

### DIRECTIVES:

- Ensure materials to be welded are properly secured.
- When working above floor level, protect your self from a fall just in case of electric shock.
- The floor or ground should be dry in the welding area. If it is not, then stand on a wooden platform or a rubber mat. Avoid working in damp areas and keep hands and clothing dry to reduce the risk of electric shock.
- Insulate yourself from the work and ground using dry insulation. This is especially important when welding in damp locations, on metal floors, grating, or scaffolds, and particularly when in positions (such as sitting or lying) where large areas of the body can be in contact with a conductive surface.
- Keep work area as clean as possible. Do not leave used and new electrodes lying on floors, walkways, etc. to cause a tripping or slipping hazard.
- Keep cables out of the way, where they are not stepped on, tripped over, run over or exposed to water, grease and oil. Arrange in an orderly manner. Elevate when possible. Do not use wire (tie wraps, rope, plastic hangers are preferred) to hang cords/cables.

- The machine must be properly grounded. Leaking current can cause shock if ungrounded parts are touched.
- Ensure the arc welder is firmly attached to the transport device. Ensure all cables are wound securely for transport.
- Ensure wheels are chocked when welder is in use to prevent any unexpected movement.
- Cables must be in good condition and of adequate size for the amperage they are to carry. They must not have insulation breaks and connections shall be secure and protected to prevent arcing. Repair any breaks in the cable insulation or replace cables.
- Be sure the work cable is connected to the work as close to the welding area as practical.
- Keep all equipment, safety guards, covers, and devices in position and in good repair.
- Check all fluid levels (water, oil, gas) to ensure they are at acceptable operating levels. Ensure the radiator and gas caps are in proper working order and securely attached.
- Never wrap the electrode cable around any part of your body since it may be pulled in some manner and cause an injury.
- Never change polarity switch while the unit is under load to avoid arcing of the switch contacts.
- Do not weld on empty containers unless you know they have been cleaned and tested.
- Use spill pans or trays under welding machine to avoid unnecessary spills.
- Keep side covers closed to protect the machine from damage due to weather or external objects, and to protect the operator and others from danger due to moving machine parts.
- Shut machine off when not in use.
- Do not fuel the machine while it is running. Do not overfill the gas tank. Gasoline expands as the outside temperature rises, which could cause seepage and fire.
- Disconnect and lockout all power supplied to the welder before doing any work on the equipment.