PMA COMPANIES

Welding and Cutting Hazards

Regardless of the size of your body shop, welding and cutting activities are necessary when repairing the frames and bodies of vehicles. In addition, commercial truck dealers will occasionally repair the metal skins of trailers and tankers.

Whether employees are soldering, arc welding, torch welding, tig/mig welding, etc., there are basic safety precautions that should be taken whenever this activity is conducted.

FIRE HAZARDS

To reduce the risk of fire from welding/cutting operations, utilize the following safety precautions:

- Remove all containers labeled “flammable” or “combustible” within 50 ft. of the welding/cutting activity
- Sweep the floor to remove all loose dust
- Remove all trash or other combustible materials, such as paper, rags, trash, etc. If these materials cannot be removed, cover them with fire retardant materials (i.e. fire blankets, etc.)
- If your building contains wood floors or wood structural beams, cover them with fire retardant materials
- A “Fire Watch” must be designated to monitor the work area for possible smoldering for at least 1 hour after the last job is completed
- Secure all cylinders with chains, in the upright position, with valve caps attached when not in use
- Excess Acetylene and oxygen cylinders should be stored in separate areas, at least 20 ft. apart
- Use appropriate hoses designed for Oxygen and fuel dispersement. **DO NOT** interchange the hoses or valves
- Prior to lighting the torch, test the fittings on the regulator for leaks by applying a liquid soap Solution. If the soap bubbles, do not use the torch
- Ignite torches with friction lighters only. **DO NOT** use a cigarette lighter
- Keep a fire extinguisher available at all times
- **DO NOT** use oil, grease, and other lubricants on oxygen fittings, hoses, regulators, etc.
- **DO NOT** operate torch directly over oxygen hoses.
- **DO NOT** crimp hose to shut off the torch
- Bleed oxygen and fuel lines at the end of each work shift
- **DO NOT** attempt to cut or solder fuel tanks. Fuel vapors can never be completely removed. Instead, contact a metal recycler or a Hazardous Material handler (i.e. Safety Kleen, etc.) for removal
- Fuel tankers should be repaired by only specialty contractors. It is not recommended that tankers be cleaned or repaired by the dealership unless they are qualified by the manufacturer

FUMES

Welding produces toxic fumes, and it is important that adequate ventilation is available. Utilize the following safeguards to reduce the risk of injury from inhaling toxic fumes:

- Ensure welders understand the hazards of the materials they are working with.
- Open doors, windows, and turn on local exhaust fans to reduce contaminants when welding indoors; OR weld outside. Ensure welders stay upwind when welding in open or outdoor environments.
- Point of Operation (POS) exhaust systems are a preferred method of ventilation for welding/cutting operations. Keep fume hoods, fume extractor guns and vacuum nozzles close to the plume source to remove the maximum amount of fume and gasses.
- Clean welding surfaces of any coating that could potentially create toxic exposure, such as solvent residue and paint.
- The immediate workspace where welding/cutting is conducted should be tested to confirm adequate ventilation and removal of metal contaminants. Inadequate ventilation may require additional respiratory protection.
- When cutting lead, lead alloys, painted iron or steel, lead-coated iron or steel, or cadmium plated metals, stainless steel, metal fume respirators or supplied-air respirators should be used.
- Do not weld in confined spaces without ventilation.
- Respiratory protection may be required if work practices and ventilation do not reduce exposures to safe levels.
- More tips on controlling hazardous fume and gasses during welding can be found at https://www.osha.gov/Publications/OSHA_FS-3647_Welding.pdf

PROTECTING YOUR EYES/FACE/SKIN

Welding/cutting processes produce UV radiation that can burn the face and skin. Flash burns to the eyes are extremely painful and can cause permanent vision loss. Utilize the following precautions to reduce exposure to these injuries:

- Protect nearby workers and passersby from exposure to UV radiation by placing flame-resistant welding curtains around the welding operation
- Welding hoods/face shields and welding goggles with UV filters must be used by employees working in direct contact with the welding operation
- Welding aprons, welding gloves and other protective barriers (as needed) should be worn by the welder to protect the exposed skin