

# Torch-use Education and Orientation

for an automotive recycling facility



The Automotive Recyclers Association (ARA) Certified Auto Recycler (CAR) program suggests that the gas cutting torch is a tool that should have limited use and that any use should be monitored and restricted to employees that have been properly trained. All safety protocols must be in place prior to the use of any gas cutting torch.

Facility management and every employee that uses the gas cutting torch should review this document. Further training may be required or advisable based upon your jurisdiction or your property and casualty insurance carrier requirements or suggestions.

A cutting torch is a tool that if not properly used, can lead to explosion, fire, flash burns, skin burns, eye injury and even loss of life. Some insurance companies have changed their insurance policies so that property damage and loss caused by the use of a cutting torch would lead to steeply increased deductibles in the event of a claim. Retain a signed and dated copy of this and any other training programs in the employee files prior to use of a gas cutting torch.

## Here are some facts you need to know:

- Flame temperature can be in excess of 6000 degrees Fahrenheit.
- A misdirected flame, excess heat, or sparks that come near combustible material may cause instant fire, explosion or a delayed, unattended fire or explosion.
- Equipment must be inspected for proper operation. Damaged tips, valves, tanks, regulators, hoses or torch bodies could lead to injuries or devastation related to fire or explosion.
- Pressures must be properly regulated, due to the possibility of an explosion or serious injury.
- Fire and explosion resulting in property damage or injury can occur when the torch comes in contact with hidden dangers such as compressed gas in shock absorbers, exotic materials, hidden fuel lines, hidden insulation or sound deadeners, batteries, and other flammables.

## Best Management Practices (BMP's) for Safe Use:

- The best practice is to eliminate the use of the torches completely. The next best option is to severely limit their use. With modern air tools and rechargeable electric tools, torch use can be virtually eliminated. Many facilities around the country have eliminated their use.
- Limit access to torch equipment by locking it up, allowing access only by approval of a supervisor, and only allow use to a properly orientated employee.
- If the torch must be used, move the vehicle or part to be cut into a "clear zone" that is away from combustibles and safety hazards.
- If the torch must be used, all vehicles located in the work area must have the gas tank removed and placed away from the work area. Any fuel spills must be properly cleaned. Confirm floor or soil is dry and free of debris and flammable materials. Many fires are the result of the fuel igniting after the tank has been removed from the vehicle, but not cleared from the "clear zone". Confirm all flammables are removed from the cutting path or near it. Do not take any chances. Sparks from cutting activities can fly up to 35 feet; confirm your zone is clear to that size. **REMOVE ALL FLAMABLE INTERIOR AND INSULATION COMPONENTS.**
- OSHA eye and face protection standard, 29 CFR 1910.133, requires the use of eye and face protection whenever workers may be exposed to hazards such as flying objects, molten metal, liquid chemicals, acids, or caustic liquids, chemical gases or vapors, or potentially injurious light radiation. Eye protection must conform to the American National Standards Institute (ANSI) Standard Z87.1 - 1989.
- Wear non-flammable gloves and make sure that clothing is worn in such a manner that sparks or slag cannot enter shirts, ignite flammable clothing, burn skin, or get trapped in loose or baggy clothing.
- A second employee should observe and be on "FIRE WATCH" during all cutting activities. Fire watch must be continued for at least 30 minutes after the cutting has been completed. **Do not do any cutting at the end of the day, when no employees will be around to observe the area.** After hours fires are usually the result of a smoldering area that ignites into a fire when no one is there to contain it.
- Know and understand the type and use of each fire extinguisher. Have the proper class of fire extinguisher on hand in the instance a flame or spark comes in contact with flammable materials while using the gas cutting torch. Have the proper fire extinguishers at your immediate access during all cutting operations. A further safeguard is the use of rechargeable water extinguishers or garden sprayers that can be used to wet the grounds around the cut area. Water provides an affordable solution for fighting the small fires that can occur with paper and grass that may become ignited.

- The cutting torch is not a hammer. The tip should be free of restriction and properly formed. A damaged tip can lead to improper temperatures and flow that will result in dangerous results and “spitting” of hot molten metal. If your tip is not in good condition, do not use the torch until it is cleaned or replaced.
- Ensure the area is properly ventilated. Ideally, cutting and welding should be conducted outside. Improper ventilation can lead to an oxygen depleted atmosphere, which can lead to suffocation, while an oxygen rich environment is a severe risk for accelerated fire or explosion.
- **Do not use acetylene at operating pressures above 15 psig (103kPa).** This is the maximum working pressure currently permitted by federal regulations.
- **Do not handle oxygen regulators, oxygen cylinders, valves or any other equipment with oily or greasy hands or gloves.** Oxygen reacts with oil and grease in a manner that could easily result in a fire or explosion.
- **Do not use the oxygen to blow dirt off clothing.** The fabric can become saturated with oxygen and ignited by spark, flames, or cigarettes.
- **Do not empty an oxygen cylinder below 25 psig-50 psig (172 kPa-345 kPa).** When pressure is below this level, the cylinder will lose its positive pressure allowing dangerous contamination to occur.
- **Do not smoke when oxygen or fuel gases are present.**
- Perform inspections before every use. Look for cracked or damaged hoses and damaged regulators, valves or tips. Look for any contamination with oil or grease. If any damage is reported, do not use the equipment until it is in proper working order.
- Back off the pressure adjusting screw of the regulator to release spring force before opening the cylinder valve.
- Open the cylinder valves very slowly. Opening oxygen valves quickly could result in a violent reaction if contaminants are present.
- You must purge hose lines individually before lighting the torch with the proper flint type device. **(Do not use a lighter or matches!)** This purge will assure that no oxy-fuel gas mixture is present in the hoses, which could cause an explosion or fire when the torch is ignited.

**Both the Occupations Safety and Health Administration (OSHA - 29CFR 1910.252(a) Fire Prevention and Protection Basic Precautions) and the National Fire Protection Association (NFPA - 51B Standard for Fire Prevention During Welding, Cutting, and Other Hot Work) have established specific requirements for conducting cutting operations (or other “hot” work). Both standards hold management and supervisors responsible for conducting overall safe cutting operations, providing fire protection equipment, and authorizing hot work.**

The goal of this document and training is to make the cutting tool the tool of last resort. If the torch is used, follow proper guidelines. **If proper guidelines are not followed, death, serious injury or devastating property damage could result.**

### Supervisor, Owner or Manager

I have explained this document and ensured the employee has taken the time to read it.

Print Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Employee

I have taken adequate time to read this document. I have been provided proper hands-on training by supervisors, owners or managers and have had the opportunity to ask questions. I feel confident in my abilities to properly execute safe cutting operations.

Print Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

*A copy of this documentation should be retained in the employee's personnel file, and one copy should be given to the employee for his records.*