CYLINDERS AND STORAGE OF COMPRESSED GASES

OSHA requires all portable cylinders for compressed gas to follow regulations by the US Department of Transportation. All employees who work around cylinders must know the hazards and operating procedures.

OPERATING PROCEDURES:

HANDLING: Cylinders are well made and safe if properly handled, but so is a gun or a stick of dynamite. Improperly handled compressed gas cylinders can cause fires, explosions, or deaths. Never drag a cylinder along the floor; any handling that scratches the surface of the cylinder may cause an accident later. Treat the cylinder gently. While they may seem solid and strong, damage to the outside of a cylinder may develop a weak spot that will allow gas to escape. Avoid unnecessary jolting and jarring. Do not use a cylinder for any other purpose than the storage of gas (never use a cylinder as rollers or to support something; do not use a cylinder to hold a door open). Assume that every cylinder is full. Sometimes you may think a cylinder is empty, but there may be enough pressure left in it to cause trouble.

LEAKS: If a cylinder leaks, get it outdoors immediately, away from any flames or sparks. It is best to leave the valve slightly open to allow the gas to escape gradually.

LABELING: Labels ensure proper use and storage of the cylinder. Distributors must clearly label all cylinders with the name of the chemical. The label should not be easily removable and must be on the shoulder of the cylinder where it does not come in contact with other surfaces. Don't use unmarked cylinders!

WELDING: During welding, all cylinders must be kept away from the welding area so no sparks or flame can reach the cylinders. If they cannot be removed, they must be protected by fire-resistant shields.

CLEANLINESS: Remove all oil and grease from cylinders, valves, regulators, hoses, etc., before use. Do not handle cylinders with oil or grease on gloves or hands. Ensure that no oily surface or greasy clothing is exposed to a jet of oxygen.

STORAGE AND SECURITY: Federal law requires all cylinders, whether empty or full, are stored in an upright position and secured from falling by a chain or other device specifically designed for securing as cylinders. Further, Landry's requires that all cylinders stored in unsecured areas, should be kept in locked cages or chained to prevent theft.

VENDORS: Landry's requires that every location maintains a current (annual) certificate of insurance for any vendor or distributor used to service, supply, or pick up cylinders, including any vendors who perform welding on your property.

COMPONENTS: Compressed gas cylinders have two critical components: The valve outlet and the regulator.

VALVE OUTLET: When the cylinder is not in use, valve protection caps must be in place and tightened. Caps are used to protect the valves from coming in contact with oil or grease. Never use the caps for lifting the cylinder as it may come off, possibly causing a sudden release of pressure. Valves must be kept closed. Caps also help buffer the fall if the cylinder falls.

REGULATORS: Before a regulator is attached to a cylinder, the valve must be opened slightly for an instant and then closed immediately. This clears away any dirt that can damage a regulator and cause a fire or explosion. Regulators must always be removed and valve protection caps placed properly before cylinders are moved. Cylinders that are not equipped with fixed hand wheels must have keys, handles, or non-adjustable wrenches on valve stems while they are being used. The regulator must always be attached to a compressed gas cylinder before it is used, except when connected to a manifold. The regulator being used must be in compliance with the gas in the cylinder and its service pressure. The regulator must be cleaned with a clean filter installed.

STORAGE: Cylinders must be stored away from radiators and other sources of heat, stairs, elevators, exit routes, or areas where they can be toppled or damaged by passing people or falling objects, or where they could otherwise be tampered with. If stored inside, the area must be thoroughly ventilated and kept dry. Cylinders must be stored at least 20 feet away from combustibles. Cylinders must not be kept in an area where they can become a part of an electric circuit.

FUEL GAS CYLINDERS: All fuel gas cylinders stored inside must be limited to a total gas capacity of 2,000 cubic feet (56 m3) or 300 pounds (135.9 kg) of liquefied petroleum gas. If greater, cylinders must be stored in a special building. These buildings must not have any heating or lighting and be kept ventilated at all times.

OXYGEN CYLINDERS: All oxygen cylinders must be stored at a minimum distance of 20 feet from highly combustible materials such as fuel gas cylinders, oil, grease, or other combustibles. Oxygen cylinders near generator houses are required to be separated from the generator with a fire resistive partition.

ACETYLENE:
The above guidelines are for all compressed gas cylinders, including but not limited to Acetylene. However, since Acetylene is extremely flammable and requires special care, the below additional guidelines are for those locations that also use Acetylene cylinders.

Employees must take special care when dealing with acetylene as it is extremely hazardous. Follow these special rules for all acetylene containers:

- Acetylene should never be stored except in approved cylinders. The decomposition of acetylene must be avoided by keeping it in a liquid solution and storing it in cylinders that have been specially designed for storing such gases.
- Acetylene cylinders are required to be stored with the valve end up. If they are on their side, acetone may leak out and cause a hazard.
- Acetylene should never be used at a pressure exceeding 15 pounds per square inch.
- Keep sparks and flames away from acetylene cylinders. Post “No Smoking!” and “No Flames” signs around the cylinders.

- Never use acetylene from cylinders through blowpipes or other devices equipped with shut off valves on the acetylene supply connections, without reducing the pressure through a suitable regulator attached to the cylinder valve.
- After removing valve cap, open valve for a moment to clear opening of dust or dirt particles. The valve of a cylinder should not be opened more than one-and-a-half turns of the spindle. This allows adequate flow of gas and permits the welder to close the valve quickly in an emergency.
- After attaching regulator and before cylinder valve is opened, see that adjusting screw of the regulator is released.
- Always keep the acetylene cylinder valve key or wrench on the cylinder while in use. This helps quickly close the regulator in case of an emergency.
- Before regulator is removed from a cylinder, close the cylinder valve and release all gas from regulator.
- Never, under any circumstances, attempt to refill an acetylene cylinder. Never attempt to transfer acetylene from one cylinder to another, nor to mix any other gas with it in the cylinder.
- When returning empty cylinders, see that valves are closed to prevent evaporation of acetone.
- Never test for acetylene leaks with an open flame. Use an approved leak detector or solution.
- Do not place acetylene cylinders near furnaces, boilers, or other sources of high temperature, or hot metal. Never attempt to drain an acetylene cylinder by placing it close to a stove or a furnace. Let cylinders warm slowly in cold weather to room temperature to permit full discharge of gas.
- Do not use a partly discharged acetylene cylinder to supply a large welding or heating tip for outdoor work in very cold weather. Use filled cylinders stored for several hours in warm rooms.
- Acetylene must be stored at least 20 feet from Oxygen storage or other combustibles. They can be stored near each other only if there is a non-combustible fire wall with a half-hour fire resistive rating at least 5 feet high separating them.
- Acetylene cylinders stored inside of buildings, except those in actual use or attached to lines ready for use, must be limited to a total gas capacity of 2000 cubic feet.