

Loss Control Bulletin #11

If the top of a pressurized cylinder should accidentally break off, the energy released could be sufficient to propel the cylinder to over three-quarters of a mile in height. The venting from a broken connection to a standard 250 cubic foot cylinder pressurized to 2,500 PSIG can transform the cylinder into a rocket attaining a speed of 34 miles per hour within one-tenth of a second after the break occurs.

When dealing with pressurized cylinders:

- Protect the cylinder itself
- Protect the property surrounding the cylinders
- Protect the people handling the cylinders. Know the rules for safe use, storage, and movement of pressurized cylinders and know why cylinders must be protected.

The following practices should be followed when storing, moving and using cylinders.

Storing Cylinders

1. Secure empty and full cylinders to a wall or vertical support in an upright position by use of chains, rack, etc.
2. Keep valve protective caps in place when the cylinder is not in use.
3. Mark empty cylinders "EMPTY" or "MT"
4. Keep cylinder valves closed when not in use or empty.
5. Keep empty and full cylinders segregated.
6. Keep oxygen cylinders a minimum distance of 20 feet from flammable gas cylinders or combustible materials. If this cannot be done, separate by a non-combustible barrier at least five (5) feet high having a fire rating of at least one-half hour.

7. Leaking cylinders should be taken outdoors away from sources of ignition. The cylinders should be plainly tagged, and the supplier should be promptly notified.
8. Cylinders must be kept away from electrical wiring where they may become part of the electrical circuit.
9. Storage areas must be well ventilated.

Moving Cylinders

1. Use a cylinder cart with the chain restraint in place. Don't use slings or electric magnets
2. Never use cylinders as rollers for moving material or equipment
3. Don't drop cylinders, or permit them to strike each other.
4. Employees should wear foot protection when moving or transporting cylinders.
5. Unless cylinders are secured on a special truck, regulators shall be removed, valves closed, and valve protective covers in place before cylinders are moved.

Cylinders in Use

1. Return leaking cylinders or cylinders that cannot be opened by hand to suppliers or other authorized personnel.
2. Be sure all connections are tight. Use soapy water to locate leaks. Never use a flame.
3. Keep cylinders away from open flames or sources of heat.
4. Keep cylinder valves, regulators, couplings, hose, and apparatus clean and free of oil and grease.
5. Safety devices and valves must not be tampered with, nor repairs attempted.

6. Close valves prior to moving cylinders, when work is completed, and when cylinders are empty.
7. Always store cylinders in an upright position.
8. Don't attempt to mix gases in a cylinder.
9. No one, except the owner of the cylinder or persons authorized by the owner should refill a cylinder.
10. The cylinder valve should always be opened slowly.
11. Fire extinguishing equipment should be readily available when combustible materials are exposed to welding or cutting operations using compressed cylinder gases.
12. Proper personal protective clothing and equipment should be provided and used.

The guidelines provided in this bulletin are only intended to provide an overview of some of the more important steps that can be taken by management to establish a safe workplace. The guidelines are not considered exhaustive of all measures and controls that can be implemented by management to address all potential loss or injury producing causes. Ultimately it is the responsibility of management to take the necessary steps to provide for employee and customer safety.