Toolbox Talks

Compressed Gas Cylinders

Compressed gases are widely used in municipal operations. Most found are Oxygen and Acetylene (or MAPP gas), Liquid Propane, Carbon Dioxide and Chlorine. Other gases may be used in laboratories or for special operations.

Handling of compressed gases may be considered MORE hazardous than the handling of liquid and solid materials because of the following properties: high pressure, ease of diffusion, low boiling points, low ignition points for flammable gases, and in some cases, lack of visual or odor detection of leaking hazardous gases. A falling cylinder may shear off its valve causing release of high-pressure gas and resulting in an explosion or the rapid projection of the cylinder. In short, when cylinders are damaged or mishandled, they may explode, release their hazardous contents, or become dangerous projectiles.

Following some basic rules will control the hazards of storing and handling compressed gas cylinders.

NEVER!

- Never carry or lift a cylinder by the valve.
- Never roll a cylinder to move it or use any cylinder (empty or full) as a roller.
- Never leave a cylinder unsecured.
- Never force improper attachments on to the wrong cylinder.
- Never use oil or grease as a lubricant on valves or attachments of Oxygen cylinders.
- Never fasten cylinders to a worktable or structures where they could become part of an electrical circuit. Do not use a cylinder as an electrical ground connection.
- Never strike an arc on a cylinder.
- Never use a flame or boiling water to thaw a frozen valve.
- Never stand directly in front of the valve outlet or regulators when opening or adjusting.
- Never transport compressed gases in closed vehicles. Cylinders must be secured in place during transporting in an open or well-ventilated vehicle. Do not transport a cylinder with a regulator installed the valve cap must be in-place.
- Never “crack” a valve or purge hose lines on a fuel gas cylinder near an ignition source. Never “crack” Hydrogen cylinders since the release of compressed Hydrogen may ignite by itself.

ALWAYS!

- Store cylinders in level, dry, fire-resistant areas that are well ventilated. Protect cylinders from contact with the ground, ice, snow, water, salt, corrosion and high temperatures.
- Secure stored gas cylinders in the upright position with the protective cap in place. Keep cylinders away from areas where moving objects can strike or fall on them.
- Stored Oxygen cylinders must be separated from flammable gas cylinders (such as Acetylene) by at least 20 ft. or by a non-combustible barrier at least 5 feet high having a fire resistance rating of at least 30 minutes.
- Move cylinders using a lifting cradle or cylinder dolly. Do not drag or slide a cylinder. They can be moved for short distances by rolling them on their bottom edge.
- Store cylinders away from sources of ignition or excessive heat. Cylinders must be kept far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them. When this is impractical, fire-resistant shields should be used.
- Before making connection to a cylinder valve outlet, open (“crack”) the valve slightly and close immediately (This is intended to clear the valve of dust or dirt that might otherwise enter the regulator). Stand to one side, not in front of it.
- Mark empty cylinders “Empty” or “MT” and store away from full cylinders. Store with the valve closed and the protective cap in place. Handle and store **all** cylinders as if they were full.