SAFE WORK PRACTICE – COMPRESSED GAS CYLINDER USE

PURPOSE

To provide an understanding of the hazards associated with compressed gas cylinder use and to ensure that, when compressed gas cylinders are used, moved, or stored, it is done in a manner that minimizes the risk of worker injury or damage to equipment and environment.

PREREQUISITES

Only authorized personnel - adequately qualified, trained and with sufficient experience - shall be permitted to handle designated compressed gas cylinders.

POTENTIAL HAZARD	PRECAUTION
Creating a hazardous environment if the gas leaks	Check that valves are completely closed; ensure fittings are correct and tight; delivery systems (hoses, pipes, tools, torches) are in good condition and have no leak points. Daily inspections should ensure all fittings are tight.
The cylinder becoming a projectile	Cover valves with a steel cap when there are no regulators attached; always secure the cylinders, especially when regulators are in place so the stem or regulators cannot be broken due to a fall.
The cylinder exploding	Do not allow the cylinder to be overheated; do not drop the cylinder; do not press a cylinder with other materials/machinery; do not use a cylinder as a roller; do not lift a cylinder with a sling such that it could be dropped from a height.
Burning or damaging skin; damaging parts, machinery, tools due to the leakage of the gas (i.e. liquid nitrogen, chlorine)	Control the release of the gas; vent any releases away from people or equipment/tools; contain the gas within a suitable container.
Exploding or burning greases or oils at fittings	Make sure oils or greases cannot be transferred to fittings from our hands, gloves, or any other means.
Hose breaking because of cutting slag dropping on it or being struck by or chafing on rough or sharp edges	Place the hoses so they will not be under the cutting area, where material will not fall on them, and in such a way that they are suspended above edges or surfaces that can chafe the hoses, or place softeners or other protective material around the hose.
A fire expanding because oxygen cylinders were stored close to flammable gases	Have a separation of 3 metres (10 ft) between storage racks of oxygen cylinders and flammable gas cylinders in an outside storage area; or 6 metres for inside storage. This does not apply to single bottles “in use” such as on an oxy-acetylene cart.

HANDLING AND STORAGE:

- Ensure the cylinder has a valve cap in place whenever regulators are not attached, especially before moving it.
- Store cylinders vertically* in racks that have mechanisms to secure them so no cylinders may fall over. Store incompatible substances away from each other. For instance, oxygen and flammable gases are kept 3m (10') apart for outside storage or 6m (20') inside storage; so that if there was a fire, the oxygen would not enhance the burning of the flammable gases
- Move tanks with a dolly or other transport device; do not roll them. For short moves, such as out of a rack, they may be tilted slightly and rolled on their base rim only.
- After movement, allow tanks to sit for an appropriate time so they may stabilize. For example, acetylene must stand to allow the liquid acetone to settle and create a head of acetylene gas.
- Do not take for granted what is in a tank based only on indicators such as colour. Check the labels.
- Attach only a flow control regulator matched to the gas. Do not force a connection or alter any part of the assembly.
- When a unit is not in use, remove the regulator and place the safety cover over the stem.
- If cylinders are transported or stored, they must be adequately vented to prevent the build-up of gases.
- Mark empty cylinders on the shoulder with a removable marker as "Empty or MT".
- Ensure all cylinders are secured so they cannot fall over as a single or a group.
- Do not store cylinders within 15m (50') of an occupied structure.
- Post signs indicating "NO SMOKING AREA", "FLAMMABLE GAS" at all storage locations.
- Fire extinguishers must be located no closer than 7.6m (25') and not further than 22.8m (75') from storage area.
- Cylinders shall not be hoisted by wrapping slings or chokers around them, they must be secured in an engineered approved lifting rack/cage.
- Cylinders are not to be stored or used in confined spaces or un-vented enclosures.
- Hoses from compressed gas cylinders shall be removed from confined spaces when not in use and during all breaks.
- Flashback arrestors are required on both the oxygen and fuel hose at either the gauge or the torch end along with back flow prevention devices.

* Exception: A Newtz welding rig will be permitted to carry oxygen cylinders horizontally when well secured and in compliance with TDG and all other SWP stipulations. This exception is applicable ONLY to oxygen, and ONLY on a welding rig.