



Safety Alert

From the International Association of Drilling Contractors

ALERT 09 – 05

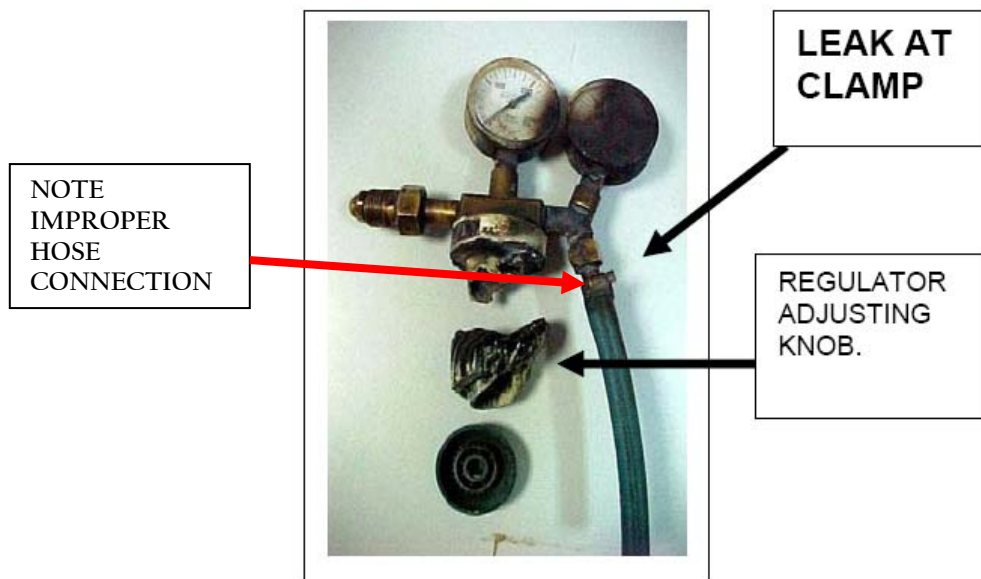
OXYGEN TORCH ASSEMBLY IGNITES EXPLOSIVELY RESULTING IN BURNED HAND

WHAT HAPPENED:

An oxygen hose leaked and the oxygen came in contact with oil / grease (hydrocarbons) resulting in an explosion causing damage to the gauges, regulator and burns to an employee's hand.

WHAT CAUSED IT:

Oxygen under pressure and hydrocarbons (oil and grease) can react violently, resulting in explosions, fire, and injury to personnel and damage to property. Never allow oil or grease to come in contact with oxygen under pressure. Even a small amount of hydrocarbons can be hazardous in the presence of oxygen. In fact, any organic matter in contact with oxygen under pressure could have a violent reaction.



CORRECTIVE ACTIONS: To address this incident, this company provided the following guidelines regarding oxygen regulators:

Personnel who work with oxygen systems must be aware that gauges can fail during operation and the energy contained in the compressed gases can produce violent reactions should the pressure element assembly rupture.

PRECAUTIONS:

- **DO** – Maintain the pressure element assembly and connection free from dirt and any grease or grime.
- **DO** – Follow the manufacturer's instruction manual for the correct pressure ranges to be used and for proper care and storage.
- **DO** – Use the proper size wrench to secure the gauge to the regulator.
- **DO** – Use only the thread sealant recommended by the manufacturer.
- **DO** – Leak test the gas outlet connections using soap solution prior to use.

The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.

This material is presented for information purposes only. Managers & Supervisors should evaluate this information to determine if it can be applied to their own situations and practices

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- **DO** – Always apply cylinder pressure slowly. The gas may heat up due to compression resulting in ignition.
- **DO** – Stand with the cylinder between you and the regulator when turning on the gas cylinder. This will reduce the possibility of injury from flying parts should the pressure gauge / regulator assembly rupture.
- **DO** – Use good judgment and common sense. Know the hazards of the materials you work with.

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- **DO NOT** – Touch oxygen regulators or cylinder heads with hands or gloves that are contaminated with oil grease, grime or any hydrocarbon material. An explosion could result.
 - **DO NOT** – Use clamps or substitute materials that are not approved by the regulator manufacturer.
 - **DO NOT** – Install a low-pressure gauge into the high-pressure port on a regulator. Always double check.
 - **DO NOT** – Use gauges designed for a specific gas for a different gas. **E.g., never use an oxygen gauge for acetylene.**
 - **DO NOT** – Exchange gauges from one regulator to another.
 - **DO NOT** – Remove the restrictor installed in the gauge connection. The restrictor limits gas flow and aids in limiting temperature rise due to compression.
 - **DO NOT** – Use or handle gas regulators unless you are authorized and qualified to do so.

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