

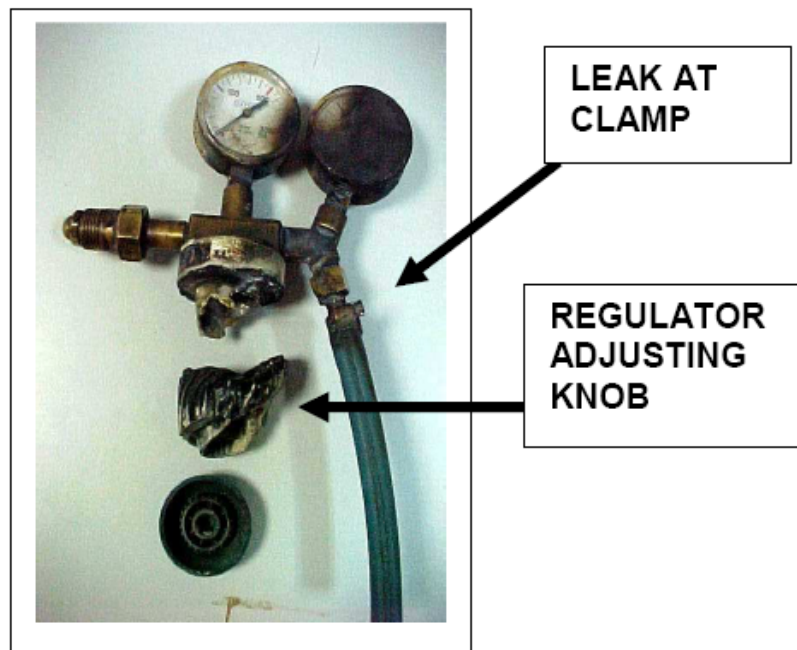
## Marine Safety Forum – Safety Flash 09/02

Issued: 5<sup>th</sup> February 2009

Subject: Compressed Gas Safety

The following incident involved a welder who was adjusting the pressure on an oxygen regulator.

The welder had oil on his hand and there was an oxygen leak from the hose clamp.



## General Precautions

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 into contact with oxygen under pressure.

Even a small amount of hydrocarbon can be hazardous in the presence of high oxygen concentrations. In fact, any organic matter in contact with oxygen under pressure could have a violent reaction.

## Installation 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 connection using soap solution prior to use.
- DO NOT** Touch oxygen regulators or cylinder heads with hands or gloves that are contaminated with oil, grease, grime or any organic material. An explosion could result.
- 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 adiabatic compression.
- DO NOT** Use or handle gas regulators unless you are authorised and qualified to do so.

## Operating Precautions

Gauges can fail during operation and the energy contained in the compressed gases can produce violent effects should the pressure element assembly rupture.

- DO** Always apply cylinder pressure slowly. The gas may heat up due to compression and ignite. This is called adiabatic compression.
- 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 element assembly rupture.
- DO** Use good judgement and common sense. Know the hazards of the materials you work with.
- DO NOT** Use clamps or substitute materials that are not approved by the regulator manufacturer.

