

OSHA Training Toolbox Talk: Cutting, Welding, & Compressed Gas Safety - Torch Regulator Safety

[Reference: 1910.253 / 1926.350]

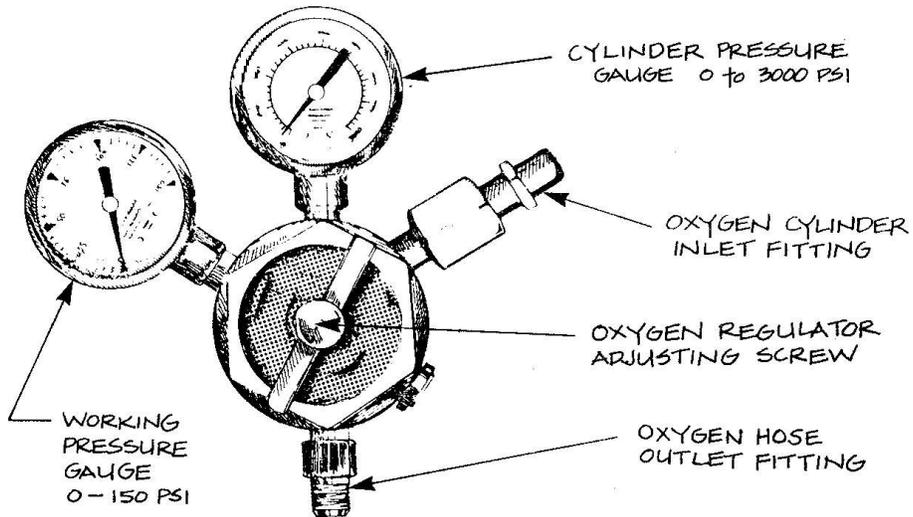
Oxy-fuel torches are often taken for granted; just hook up the equipment, open the valves on the cylinders, light the torch, and go to work. But there are important pieces of equipment called regulators that reduce high-pressure gasses from the cylinders to lower pressures that allow us to carefully control the flame. This affects not only the quality of our work, but also our personal safety during torch use. So, here are some safety tips associated with the use and care of regulators:

- Make certain your hands or gloves are free from oil, grease, or other hydrocarbons when handling regulators. And never use oil, grease, or similar materials to lubricate gauges, threads or fittings on compressed gas regulators. That is because oil, grease, and other hydrocarbons exposed to high pressure can rapidly heat up, and cause a regulator to explode.
- Make sure you are using the proper regulators for the types of gasses you are going to use. For example, a regulator intended for use with acetylene gas will not be the same as one used for a different fuel gas such as propane or natural gas.
- Thoroughly inspect regulators for damage before use. Deep scratches or nicks in the face of inlet fittings that connect to the gas cylinders will allow leaks to occur, as can damaged threads on cylinder or hose connectors. Broken or missing parts on pressure gauges, including the indicator needle or the gauge cover, can cause erroneous pressure readings. Also, ensure the pressure adjusting screws on regulators are not bent or otherwise damaged, as that could prevent proper adjustment of pressures to safe levels while using the torch. Never use a damaged regulator.
- Before connecting a regulator to a compressed gas cylinder valve, make sure the cylinder valve is free of foreign matter by opening it slightly and then closing it immediately. Cylinder valves should only be opened while standing to one side of the outlets; never in front of them.
- Attach the regulators to the cylinders, and then tighten with a non-adjustable wrench or spanner that is 10 to 12 inches long. However, take care not to overtighten the inlet connectors, as damage to the fittings could occur. Remember that acetylene and other fuel-gas regulators are equipped with reverse-thread fittings to prevent accidental attachment to an oxygen cylinder.
- Turn the adjusting screws on each regulator counter-clockwise until it begins to feel loose (see attached schematic of regulators). This prevents gas from flowing through the regulators when the cylinders are initially turned on.
- Attach the oxygen and fuel-gas hoses to the outlet fittings on the respective regulators, and tighten with a wrench. Remember that the hose connection fittings on the fuel-gas hose and regulator are reversed thread. Also, check with your supervisor to determine if a flashback arrestor and a backflow prevention valve needs to be attached to the regulators at the hose outlets, if they are to be attached at the torch, or if they are built into the torch you are using.

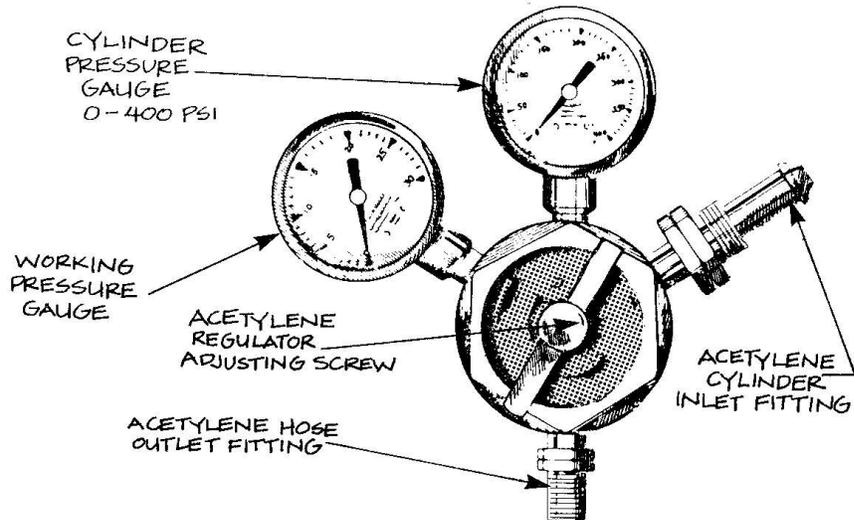
Workers with no previous experience installing regulators must do so under the direct supervision of a qualified person until they are deemed competent to perform this task. Does anyone have a question about today's toolbox talk on the care and use of oxy-fuel gas torch regulators? Please sign the training certification form to ensure you get credit for attending today's training session.

TORCH REGULATORS

OXYGEN REGULATOR



ACETYLENE REGULATOR



Source: California Vocational Agriculture --Curriculum Transparencies (Prepared by Shannon Kulikov)