

Oxygen - Acetylene Welding

OAW - Equipment

Oxygen - Fuel Cutting

OFC - Equipment



- **OXYGEN - ACETYLENE CUTTING/WELDING DOES NOT REQUIRE ELECTRICITY**

IT IS TYPICALLY USED FOR MAINTENANCE AND IN THE REPAIR OF PARTS WHERE OTHER WELDING PROCESSES ARE TOO EXPENSIVE.

- **OXYGEN - ACETYLENE WELDING CAN BE USED TO JOIN METALS,**

OFTEN, DISSIMILAR METALS SUCH AS STEEL AND CAST IRON, BRASS AND STEEL, COPPER AND IRON, AND BRASS AND CAST IRON CAN BE JOINED WITH OAW.

- **OXYGEN - ACETYLENE CUTTING/WELDING EQUIPMENT CAN ALSO BE USED FOR PREHEATING, CUTTING OF METAL, CASE HARDENING, AND ANNEALING.**

Oxygen cylinders



- **Cylinders are made from seamless drawn steel and tested with water pressure of 3360 psi.**
- **They are equipped with a high-pressure valve.**
- **Cylinders are charged with oxygen at a pressure of 2200 psi. at a temperature of 70' F**

Acetylene cylinders

- ✓ **To ensure the safe storage of acetylene, the cylinder is packed with a porous material.**
- ✓ **This porous material is saturated with acetone.**
- ✓ **Cylinders are charged with acetylene at 500 psi**

**Safe
Or Not?**



- ✓ **Acetylene cylinders should never be laid down because acetone is corrosive and can erode the seals in the tanks**

•Acetylene for cutting / welding

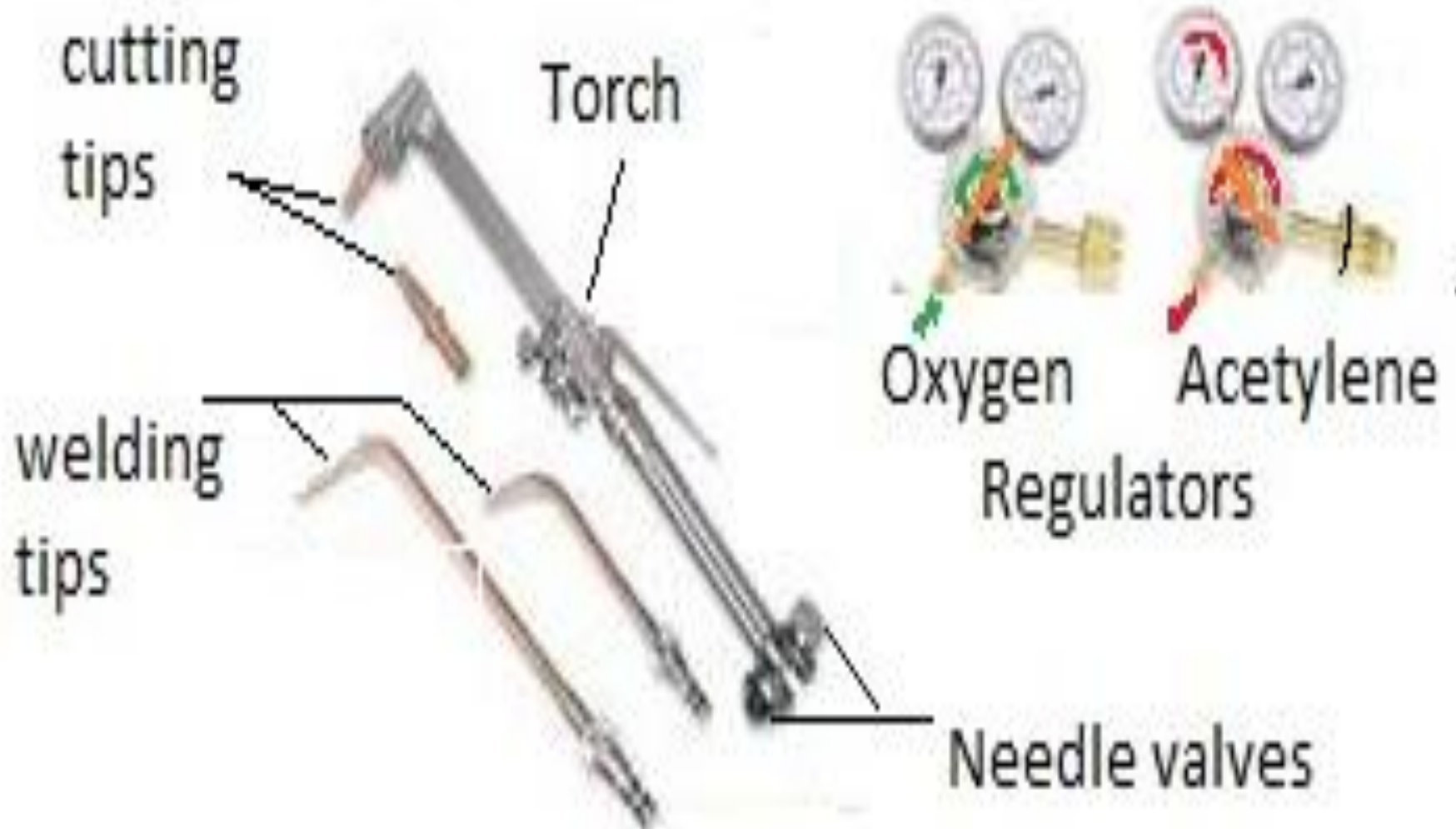
•Acetylene is a colorless gas with a very distinctive smell that is highly combustible when mixed with oxygen.

•Although it is very stable at low pressures, it becomes very unstable if compressed to more than 15 psi.



15psi *MAXIMUM safe working pressure*







The Fittings on the acetylene connection has a notch that runs around the center, along with left hand threads to distinguish acetylene from the oxygen.

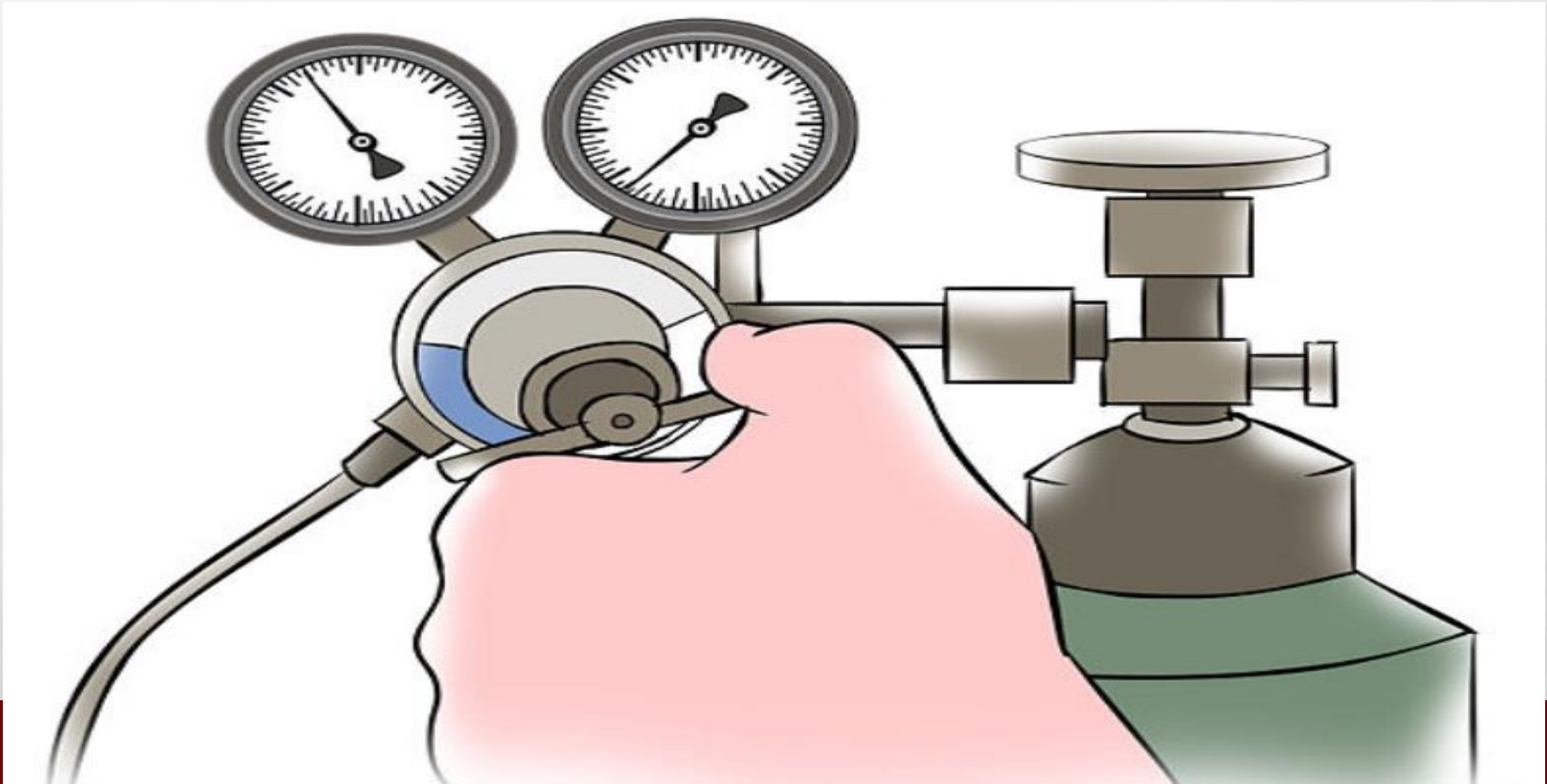
The Pressure Procedure

FIVE STEPS TURN IT ON

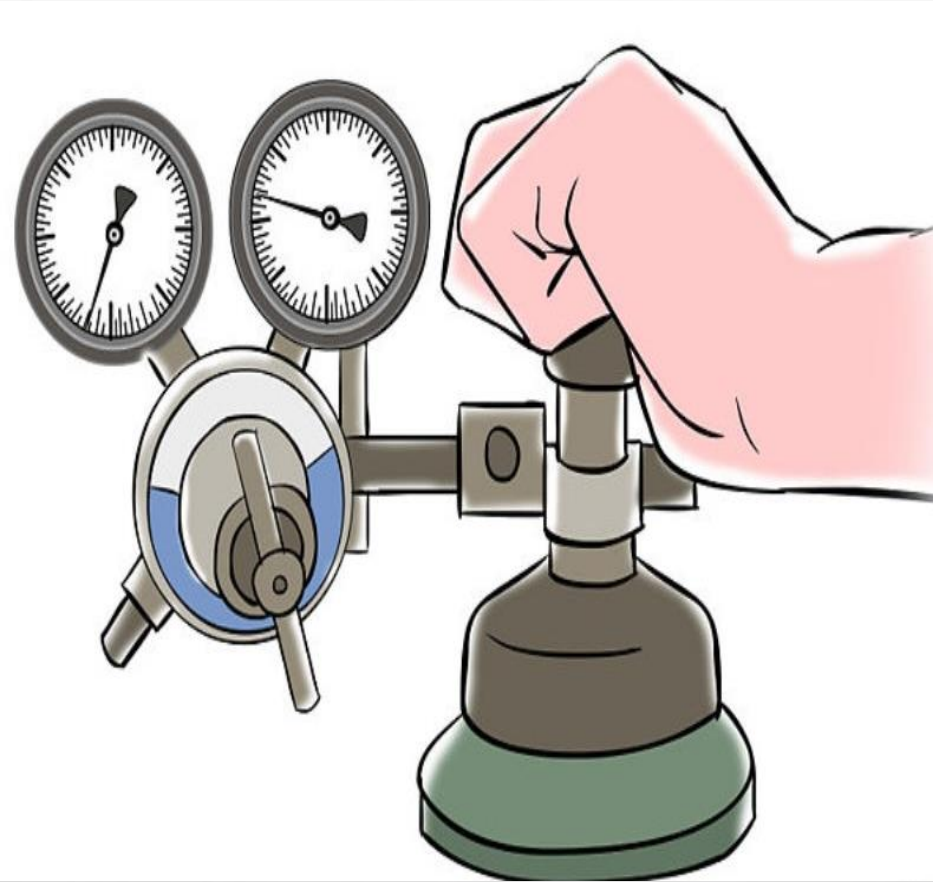


Step 1

**Check tee handles on Regulators
and make sure bottles are in the off position**



Step 2 open the high pressure valves



✓ **Oxygen
bottle all
the way**

✓ **Acetylene bottle
1 full turn
to 1 and ½ turn max!**

3rd

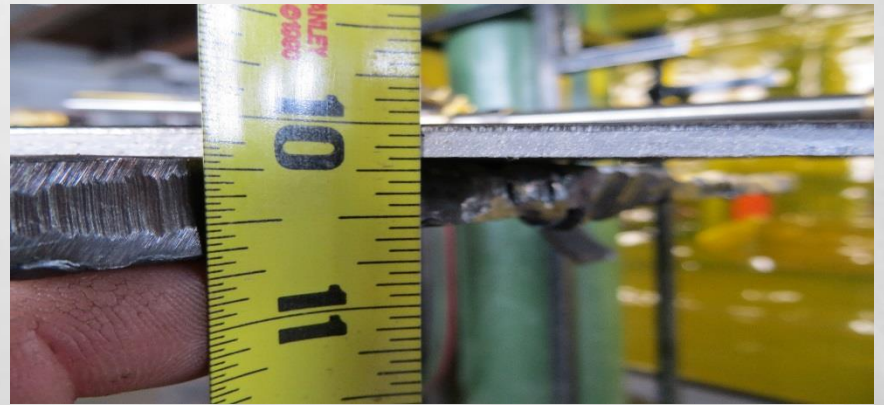
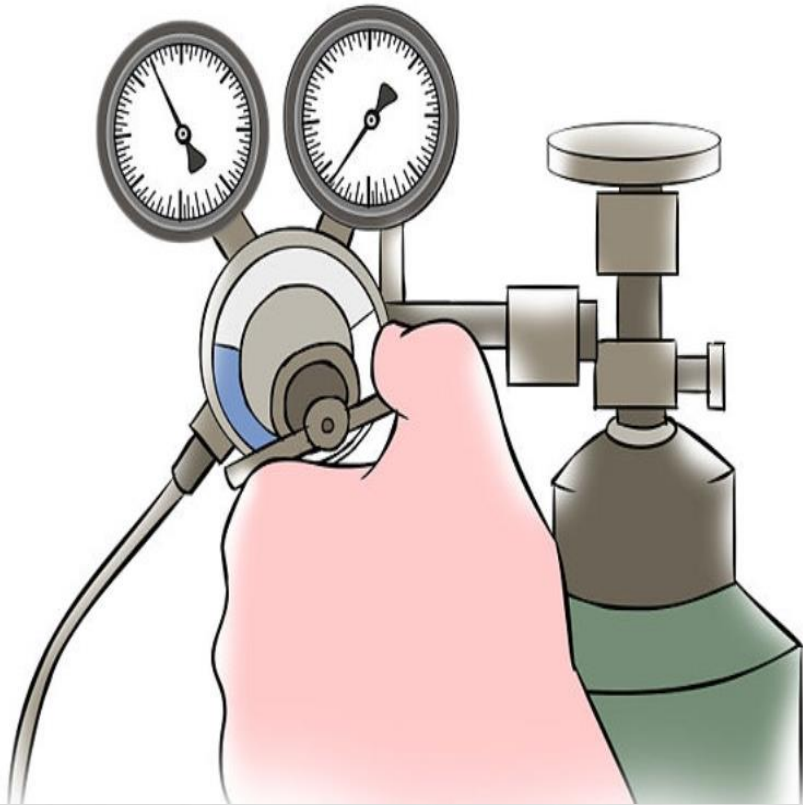
Crack the needle valve $\frac{1}{4}$ turn

- a. To purge lines to free any dust or debris
- b. To set proper pressure



Step 4

Turn the tee handle to proper pressures according to tip size/metal thickness





Step 5 close needle valve





**ACETYLENE BURNING
IN ATMOSPHERE**



EXCESS ACETYLENE



NEUTRAL FLAME



NEUTRAL FLAME



OXIDIZING FLAME



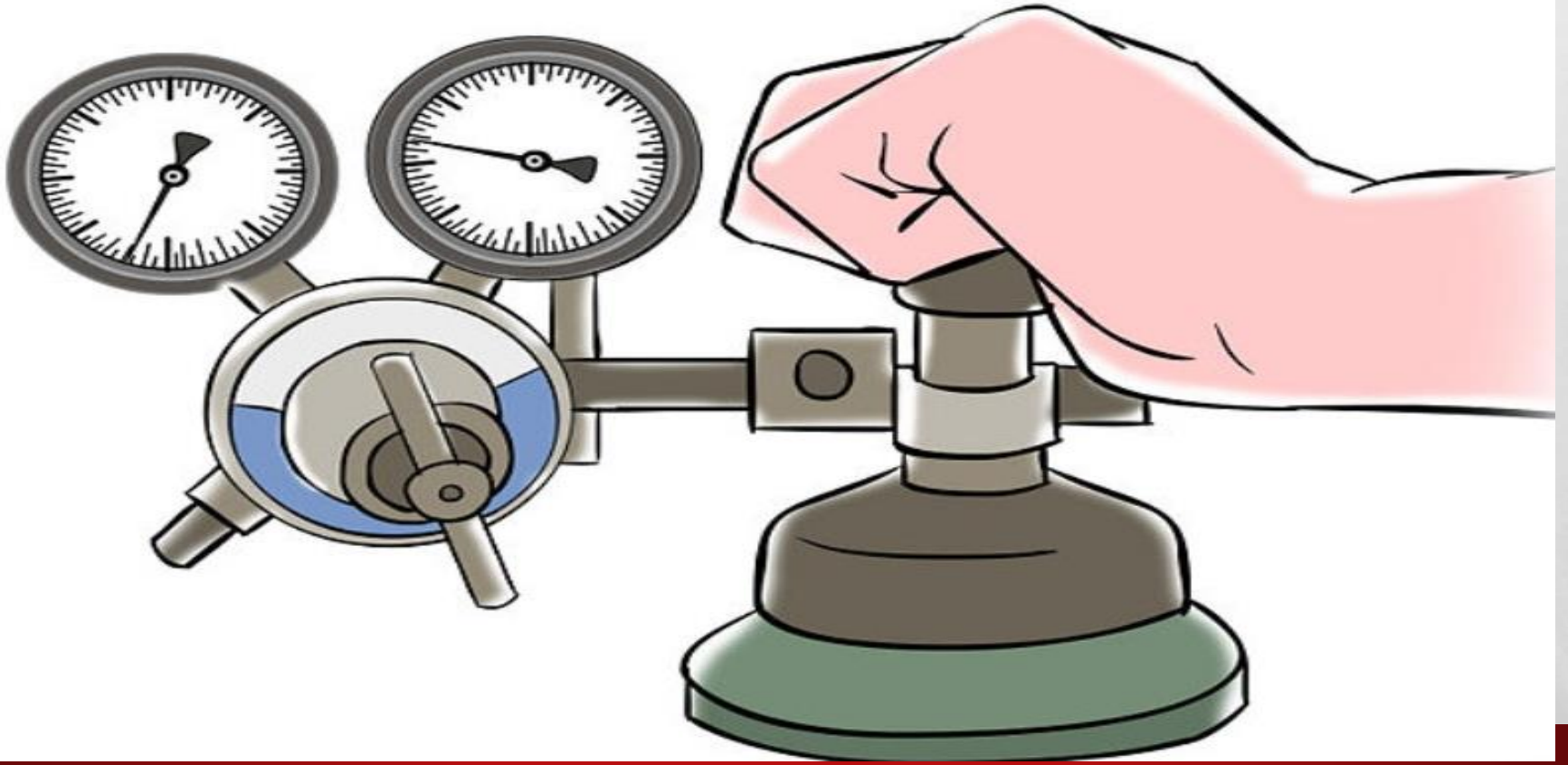
REDUCING OR CARBURIZING FLAME

The Release to the Pressure Procedure

THREE STEPS TURN IT OFF



Step 1 Close High pressure Valve

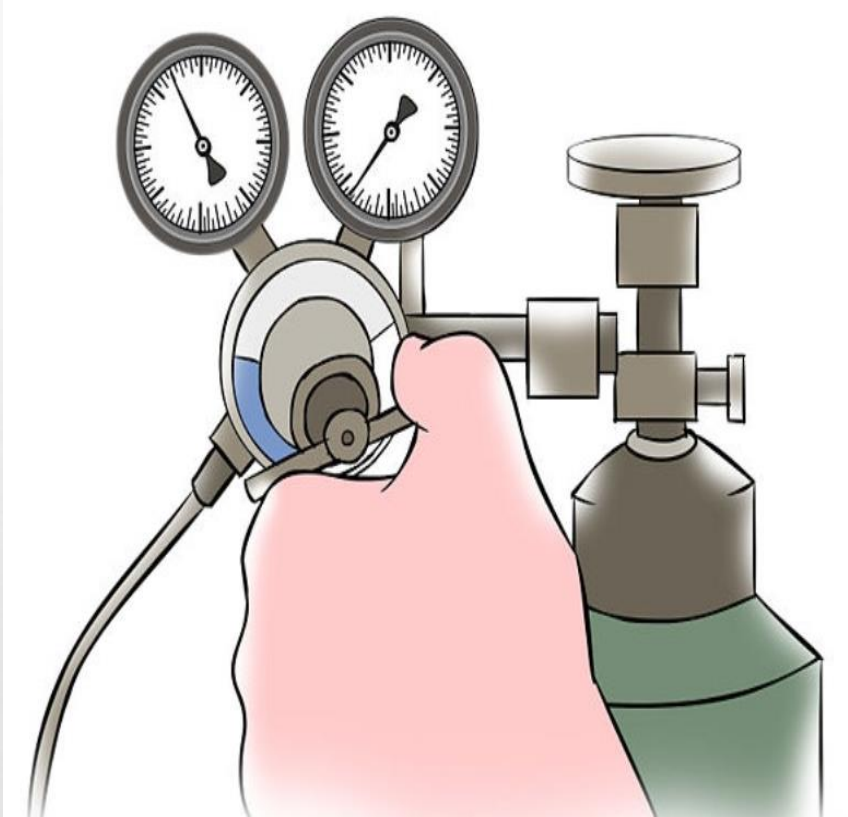


Step 2



Release the pressure at the needle valves on the torch

Step 3



**Loosen
the
Tee
Handles**