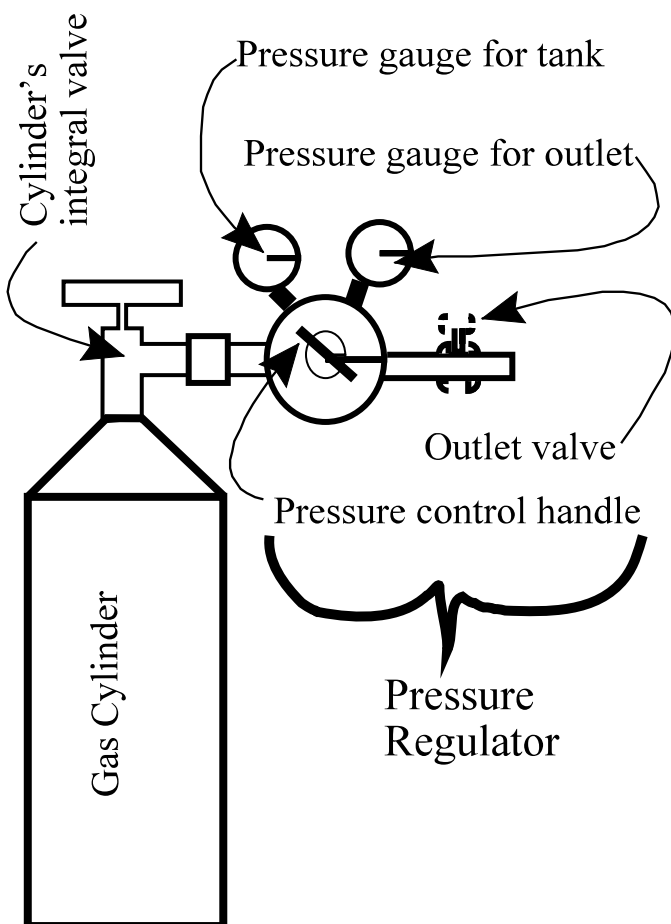


# High Pressure Gas Cylinders and Pressure Regulators



High pressure gas cylinders may be pressurized to 3000 psi.

If a high pressure cylinder is knocked over and its integral valve broken, the escaping gas can launch the cylinder like a rocket. This can be lethal.

If the regulator is attached or even if the transportation cap is removed, the gas cylinder **MUST** be secured (tied up, in special cart, or . . .)

Each gas cylinder has a built-in integral valve. When the tank is not in use this valve should be closed.

For the experiments in Advanced Lab, the pressure at the outlet should **never exceed 10 psi**.

**Operation:** Ask a TA for a demonstration.

- ▶ This assumes that the regulator is installed and the system was properly shutdown
  - Check that the outlet valve is closed.
  - Check that the regulator pressure control handle is turned out ( counterclockwise) to where the outlet pressure would be zero ( turning may becomes easier).
- ▶ Open the cylinder's integral valve and check tank pressure.
- ▶ Open the outlet valve
- ▶ Turn in the regulators pressure control handle (clockwise) until the desired pressure is reached (**LESS THAN 10 PSI**) ( Note if the outlet valve is closed and pressure exceeds the desired value, turning out the pressure control handle will not reduce the pressure. The outlet valve must be open.)
- ▶ Fine control of the outlet flow can be obtained using a combination of the outlet pressure and the degree to which the outlet valve is opened.

**Shutdown:**

- ▶ If tank pressure is below 200 PSI, inform the lab manager
- ▶ Close the cylinder's integral valve. (firmly, but not deathly tight)
- ▶ Open the outlet valve and allow the pressure in the regulator to equalize with air pressure.
- ▶ Turn the regulator pressure control handle is turned out( counterclockwise) to the zero pressure setting ( turning may becomes easier).