

CHANGING SO₂ CYLINDERS SAFELY

Read completely before you begin!

SAFETY FIRST: Wear safety glasses or full face shield (preferred). Air pack or gas mask should be available. Keep the cylinder wrench on the valve for fast shutoff. Have plastic squeeze bottle of ammonia for testing leaks.

SO₂ SUPPLIER _____ PHONE _____

1. Turn SO₂ cylinder valve closed (clockwise). **BE SURE SO₂ CYLINDER VALVE IS CLOSED AND NOT STUCK IN AN OPEN POSITION.**
2. The SO₂ feed rate valve should be fully open (about 3 turns).
3. Turn on ejector water to produce vacuum. Ball in meter tube should drop to bottom and vacuum regulator out of gas indicator should show red if cylinder valve is closed tight.
4. Turn off ejector water supply and wait 5 minutes. The red indicator flag must continue to drop to show red when trying to reset it. If flag does not drop to show red, you may not have a vacuum tight system or your cylinder valve is not closed properly.
5. Be **POSITIVE** the SO₂ cylinder valve is closed before you remove the vacuum regulator. **Slowly turn the yoke screw loose to carefully remove the vacuum regulator from the cylinder valve.** Place valve cap and hood on empty cylinder.
6. Secure new full cylinder with chain. Remove hood and slowly remove valve cap to be sure new cylinder was closed properly.
7. **Remove packing materials from vacuum regulator inlet (new unit only). Be careful not to let filter material drop out of inlet assembly. Change the filter material if it looks dirty.**
8. **Remove old lead gasket and install NEW lead gasket on vacuum regulator inlet.** NOTE: Reusing lead gaskets will cause leaks and never use more than one lead gasket.
9. With new lead gasket in place, put vacuum regulator on cylinder and **tighten yoke screw with appropriate twisted cylinder wrench. (Do not use excessive force.)**
10. **OPEN SO₂ CYLINDER VALVE ¼ TURN AND CLOSE IMMEDIATELY.** Check for leaks with ammonia using plastic squeeze bottle to direct ammonia fumes around lead gasket, cylinder valve and two fittings on vacuum regulator. The ammonia will appear as a white smoke if you have a SO₂ leak. If you have a leak, connect tubing from ejector to the vacuum regulator vacuum fitting and **turn on ejector so SO₂ can be pulled through ejector to process water.**

******* CORRECT LEAKS BEFORE PROCEEDING *******

(A) Hook up vacuum tubing from ejector to the vacuum regulator vacuum fitting.

(B) Hook up vacuum tubing from the vacuum regulator vent fitting to vent to safe outside location. **(Not near walkways or ventilation intakes.)**

11. **If no leaks were detected, turn on SO₂ cylinder valve ¼ turn and recheck for leaks. (Keep the wrench on the cylinder valve.)**
12. Turn on water supply to ejector. The gas flow meter should indicate SO₂ flow. It may be necessary to break vacuum by removing poly tubing from the vacuum regulator vacuum fitting and reconnecting.
13. Adjust feed rate with rate valve to desired feed rate.
14. **Be sure you understand this information before you begin. Before you ever turn on an SO₂ cylinder valve, be sure your ejector has vacuum or suction so you can feed SO₂ process water.**