CO2 Switch-Over Manifold for TC Incubators

1. Purpose

To provide step by step instructions for the proper use and maintenance of CO2 switch over manifold that supplies gas to incubators.

2. Scope

Applies to all users.

3. Prerequisites

WHIMIS, EHS113 Compressed Gases Safety Training.

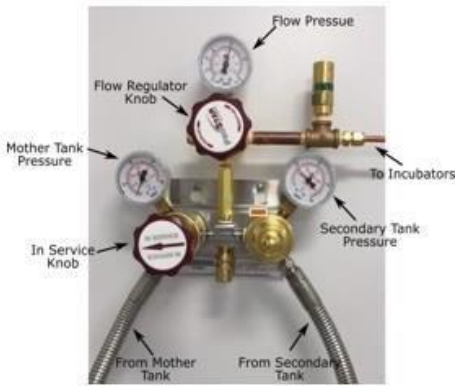
4. Responsibilities

Principal investigators are responsible to enforce this SOP and lab-personnel are responsible to comply P.

5. Personal Protection Equipment (PPE):



6. Procedure



1) The protocol station should always be hooked up to two CO2 tanks: the left hose to the “Mother” tank, and the right hose to the “Secondary” tank.

2) The protocol station has three pressure indicator dials:
    a. Lower Left (“Mother Tank Pressure”): indicates tank pressure of the “Mother” tank.
    b. Lower Right (“Secondary Tank Pressure”): indicates tank pressure of “Secondary” tank.
    c. Top Middle (“Flow Pressure”): Indicates flow pressure feeding the incubators. Should be between 12 and 15 pSi. 3) There are two knobs on the protocol station:
        - Lower Left (“In Service Knob”): Indicates the tank that is service: should be turned to point left if the “Mother” tank is feeding the incubators. When the “Mother” tank empties, as indicated by the “Mother Tank Pressure” indicator dial reading 0, turn this dial to point to the right, towards the “Secondary” tank, to indicate the flow is coming from the Secondary” tank. If this occurs, switch the “Mother” tank as outlined below (Point 4).
        - Upper Middle (“Flow Regulator Knob”): Regulates flow pressure to incubators. Leave at current setting. If the flow pressure drops noticeable, inform the facility manager.
3) If the “Mother” tank has gone empty and the protocol station is drawing from the “Secondary” tank, change “Mother” tank immediately.

To change the empty “Mother” tank to the full backup tank:

a. Using an adjustable wrench, loosen and remove the hose from the empty “Mother” tank.
b. Remove the “In Use” tab from the tag on the empty “Mother” tank. This tag should now only say “Empty”.
c. Screw lid back onto the empty tank, ensuring the tag is tucked into the lid. Using chalk, write “Empty” on the tank.
d. Unscrew the lid from the “Backup Mother” tank that is present on location in the tank holder. Remove the “Full” tab from the tag.
e. Screw the Manifold’s flexible hose removed from the empty “Mother” tank onto the “Backup Mother” tank. Using the adjustable wrench, tighten the hose well.
f. Turn the Lower Left Knob to point to the left, away from the “Secondary” tank. The protocol station is now drawing from the “Backup Mother” tank, which has now become the “Mother” tank. Turning the Lower Left Knob to the left now indicates this.
g. Print off a new “Mother” tank tracking log sheet and replace the “Mother” tank tracking log sheet from the old/empty “Mother” tank. Write down the date the tank was changed and the starting pressure of the new “Mother” tank.

h. Using the cylinder cart located in DB440, remove the empty “Mother” tank and bring it to the loading dock. Note: Ensure the chains on the cart are snug to hold the tank on.
i. Load a full tank onto the cart and bring it back to DB440 and place it in empty cradle spot where “Mother” tank was removed. Secure with chains. This new tank is now the “Backup Mother” tank.
j. Inform chem.safety@utoronto.ca that there is an empty CO2 tank from DB440, so the loading dock stock can be replaced.
k. Submit a copy or screenshot of the old “Mother” tank tracking log to chem.safety@utoronto.ca.