

Technical Bulletin # 50

To: Coulometrics Support Personnel
From: Applications/Engineering Dept.
Date: February 10, 2004
Subject: Leak Check Procedure for CM5130 Acidification Module.

Before you begin have a couple of small unions and pinch clamps available. Turn off the power to the CM5130 and have an empty sample flask securely attached to the sample column.

Refer to the Overall Flow and Component Layout diagram (found in the CM5130 Operation Manual) to see where each step takes place.

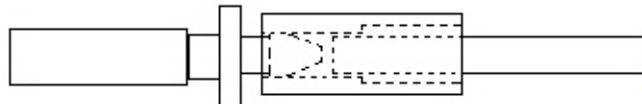
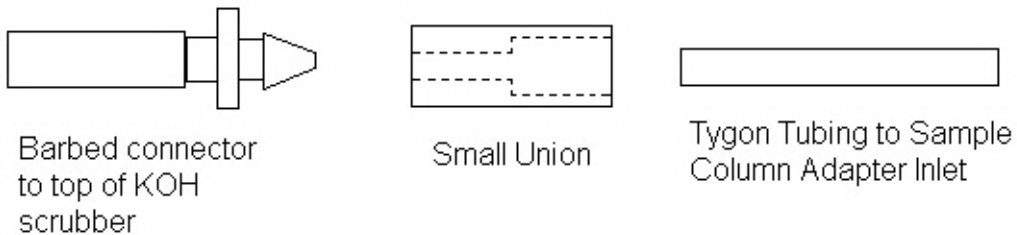
Procedure:

CAUTION: You will be pressurizing the system by following this procedure. Wear safety glasses and lab coat when performing this procedure. A sudden release of pressure may cause the KOH to spray out of the pre-scrubber. You may wish to empty the pre- and post-scrubbers before continuing. If using an external carrier gas be sure that the outlet pressure of the tank is set to 8-10psi.

Step 1 (optional): Bypass the KOH Scrubber

(Note: Bypassing the KOH scrubber will not allow you to check its integrity. It may be more desirable to empty the scrubber of KOH and leave it in its normal position inline)

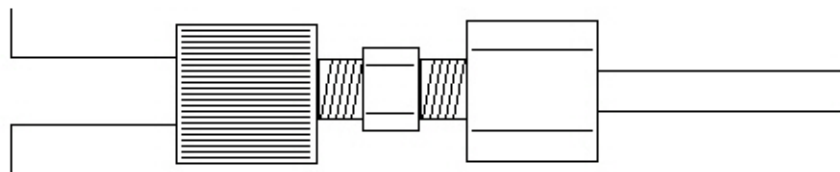
Remove the barbed connector from the small union at the top of the KOH scrubber. Disconnect the Tygon tubing from the outlet of the KOH scrubber. Using a small union, bypass the KOH scrubber by putting the barbed connector into the small hole at the end of the union and the end of the Tygon tubing into the end of the union with the larger hole. Make sure both connections are snug within the smaller diameter section of the union.



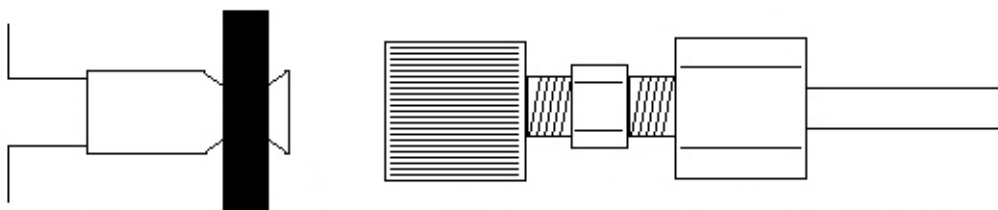
Both pieces within the small diameter section of the union

Step 2: Disconnect Acid Dispenser and Seal Fitting

Disconnect the acid dispenser fitting by loosening the nut that tightens the fitting to the glass arm on the sample column adapter and slide the entire fitting off. Place a small union over the now exposed glass arm and seal the union using a pinch clamp.



Acid Dispenser connection on Sample Column Adapter



Acid Dispenser connection sealed using a small union and a pinch clamp

Step 3: Plug Outlet to Coulometer Cell

Between the outlet from the post-scrubber (if used, if not the outlet from the sample column adapter) and the inlet of the coulometer may be a check valve. If so, disconnect the Tygon tubing from the outlet side of the check valve and seal the small union using a pinch clamp.

Step 4: Turn on CM5130 and Check Flow

With all of the above steps in place, turn on the CM5130 and note the ball in the flow meter on the front of the unit. If there are no leaks in the system the ball should slowly fall to the bottom of the flowmeter and stay there. This process can take a couple of minutes. If the ball does not fall to the bottom of the meter then there is a leak. If a leak is indicated you can use a product such as Snoop to check all of the fittings and watch for bubbles, or you could undo each connection and use a small union and a pinch clamp to stop the flow. Again observing the ball in the flow meter. Replace any suspect fittings and recheck for leaks.

If no leaks are found return the CM5130 to its original configuration.