

CG-4400 McLeod Vacuum Gauge Instruction Sheet

Filling Gauge with Mercury: Attach the scale with the supplied mirror clips, washers and screws so that the zero line coincides with the top of the closed capillary tubing on the left side of the gauge. Fill the gauge using instrument grade mercury with the following listed amounts:

CG-4400-01 (Size "A") = Approx 11mL

CG-4400-02 (Size "C") = Approx 10mL

There should be enough mercury in the right hand reservoir to overflow into the center bulb after the gauge has been evacuated and turned to the upright position.

PLEASE NOTE: MAKE SURE THAT THE MERCURY IS CLEAN. THE SLIGHTEST AMOUNT OF CONTAMINATION OF THE MERCURY WILL CAUSE THE GAUGE TO GIVE INACCURATE READINGS.

Assembly: Lubricate the ground joint and insert it through the tapered hole in the metal stand. Place the washer and then the spring over the hose connection, followed by the black Delrin® alignment retainer.

PLEASE NOTE: DO NOT TIGHTEN THE RETAINER SET SCREW.

Rotate the gauge clockwise so that the gauge is slightly beyond the horizontal position. This will be the evacuating position. Evacuate the gauge for a minimum of three (3) minutes and then rotate the gauge back to the horizontal position. This will be the reading position. The mercury should rise in the closed capillary within the range of the scale. If the mercury in the open capillary is below the zero marking on the scale, mercury should be added. If the mercury level is above that of the zero marking, the excess mercury must be removed from the gauge. This is accomplished by rotating the gauge counter-clockwise until a portion of the mercury from the reservoir spills back into the center trap. Repeat the evacuation process making sure that the trapped mercury does not return to the reservoir. Return the gauge to the reading position and check the mercury level within the capillaries. If necessary, repeat this process until the gauge reads properly. The excess mercury caught in the trap after adjustment can be removed by means of a long tip pipette, preferably plastic. To remove the mercury, place the gauge face down on a cushioned surface and insert the pipette through the hose connector in the rear of the gauge.

Now with the gauge in the reading position, slide the black Delrin® alignment retainer forward. Looking from the front of the gauge, rotate the retainer only counter-clockwise until it is stopped by the support stand and partially tighten the set screw. Rotate the gauge clockwise then counter-clockwise to the stop on the alignment retainer. Make sure that the capillaries are in a vertical position. Adjust the black Delrin® alignment retainer if necessary. If the tension on the spring is correct, tighten the set screw.

PLEASE NOTE: DO NOT OVER TIGHTEN THE SET SCREW.

Cleaning: To avoid the difficult and time consuming cleaning of the McLeod gauge, every effort should be made to prevent contamination of the mercury. Vapor and dust traps should be used between the system and the gauge to prevent contamination. To clean the gauge remove the gauge from the stand and place face down on a cushioned surface. Insert a suction line into the center trap and remove all mercury. Fill the gauge with a good cleaning solution and allow it to sit for a minimum of 45 minutes. Remove the cleaning solution in the same way as the mercury and repeat the solution washing process. After the gauge has been washed twice with the solution it should be rinsed several times with distilled water and dried with acetone. The gauge can be oven dried at a temperature of 150°C for one (1) hour.

PLEASE NOTE: WHEN OVEN DRYING THE GAUGE, TEMPERATURE IN THE OVEN SHOULD BE INCREASED AND DECREASED SLOWLY TO PREVENT THE POSSIBILITY OF THERMAL SHOCK INDUCED BREAKAGE.

