GLOVEBOX PRESSURE TEST

To check the Pressure leak Rate of a system:

**Leak rate < 0.05Vol%/h (Class 1 according ISO 10648-2)**

1. Shut off circulation for approximately 30 minutes to allow the box temperature to stabilize.  Do not use the Glove Box in any way during this test. Do no touch the gloves. Insure both Antechambers are under static evacuation.
2. Change the upper working pressure to Upper +14.5 mbar and the lower working pressure to Lower +10 mbar.
3. Using the right foot pedal, increase the pressure inside the box to approx. 14.0 mbar. Be sure not to hit 14.5 as the vacuum pump will pull the pressure down.
4. Give the box 10 minutes to stabilize, being careful not to touch the gloves throughout the pressure test.
5. Note down the pressure value at the end of 10 minutes. Note: if the pressure value drops below 10 mbar in the first ten minutes stop the test you have a major leak.
6. Now start another 10 minute count down. In the second ten minute test, the pressure value that was recorded cannot deviate by greater than .2 mbar.
7. If the box passes the positive pressure test, set the working pressures to Lower -14.5 mbar and Upper to – 10 mbar. Use the left foot pedal to decrease the pressure to -13.5 mbar. Be sure not to hit -14.5 as the box will try to refill.
8. Once the gloves have been sucked into the box, Make sure that all fingers are extended. Give the box 30 minutes to stabilize.  It takes a little longer for the pressure to stabilize in the negative. Note: if the box pressure rises above -10 mbar in the first ten minutes, stop the test you have a major leak.
9. Write down the box pressure at the end of thirty minutes. Now start another 10 minute countdown. In the second ten minutes test the pressure value that was recorded should not deviate by greater than .3 mbar.

Regeneration:

Once the integrity of the box has been verified as good (NO leak rate) by these pressure tests, purge the box down until the levels are below 50 ppm. Typically, we don’t see O2 levels greater than 10 ppm when starting regeneration. There are several steps during the regen that refill the filter column with box gas, hence the need for a decent atmosphere inside the box before starting the regeneration.

Make note of how much gas is used during the regen (700 -1100 normal) and how much water is collected from the regen exhaust (50 - 100 ml normal).  Of course, please remember to change the vacuum pump oil the day after the regen.