

**MBRAUN Technical Note:
WHY A CONTINUOUS FLOW (CIRCULATION) IS NECESSARY - ALSO IN ECO MODE**

The gas purification system works by the **principle of gas circulation**. The blower (circulation unit) supplies the gas flow (circulation) from the glove box through the gas purification. This process guarantees stable values of gas purity and cost-efficient processing. See Figure 1.

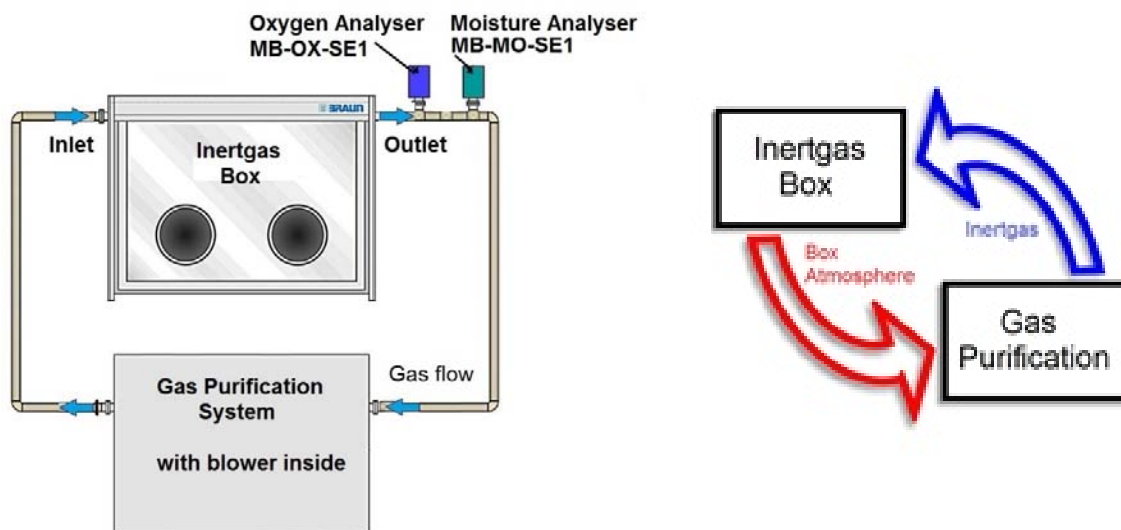


Figure 1: Blower position in gas purification system and working principle

Water vapor and particularly oxygen permeates through the gloves into the glove box continuously.

When the circulation of the gas purification system is switched off (blower is off) the oxygen concentration increases. The main source of contamination is permeation through gloves and outgassing of material.

All sources release contamination locally leading to uncontrolled atmosphere (spots). Without circulation, there is no mixture, dilution and transport of the contamination within the glove box. However, the circulation is necessary to get a representative gas sample for the measurement.

Normally analysers are mounted in the circulation piping. Like most analysers the **MBRAUN** Oxygen Analyser MB-OX-SE-1 and Moisture Analyser MB MO-SE-1 need a certain flow to work properly. The analysers are located at the glove box outlet. Here is the position of the possible strongest contamination (all collected gasses from the box).

Why a continuous circulation necessary – also in ECO Mode



As stated before it is necessary to have a continuous, uninterrupted flow inside the glove box to guarantee a stable pure atmosphere and a precise working measurement of oxygen and moisture.

In **MBRAUN**, the ECO Mode the blower flow rate is reduced in order to save energy. However, the pure atmosphere of the glove box is still guaranteed and the process is safe!