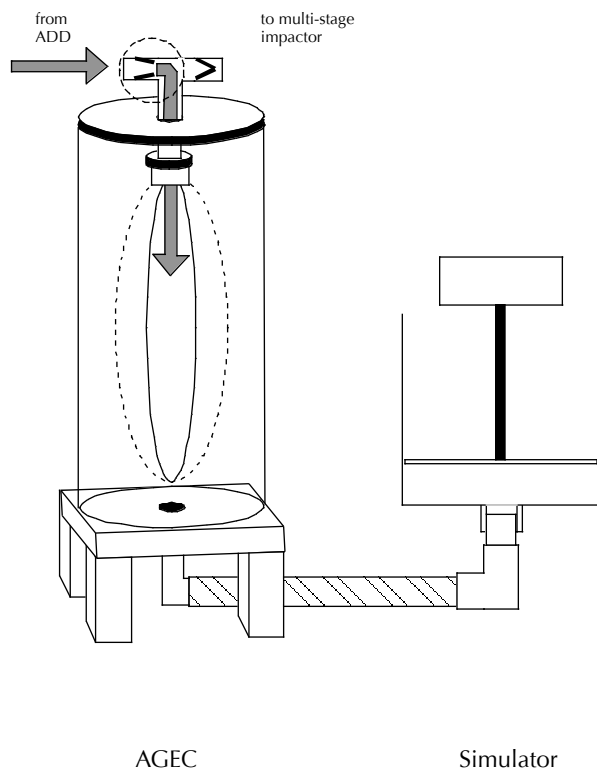


**PLEASE NOTE: This document is intended for end users familiar with the ASL 5000 Breathing Simulator and its basic applications**

**Application described here**

**Use of ASL 5000 in particle size distribution experiments in setups with multi-stage impactors**

The ASL 5000 can beneficially be used in aerosol delivery testing experimental setups where a single breath applications is used to obtain a sample from a drug delivery device which is then to be analyzed in a multi-stage impactor or other device that determines particle size distribution.



For this purpose, use the Auxiliary Gas Exchange Cylinder (AGEC) accessory (part no. 31 00 600) together with two one-way valves configured as a T-piece. The AGEC acts as a bag-in-bottle device where the simulator is removed from the delivered drug and possible contamination. An inspiration (parameter segment assigned a single breath in the ASL 5000 Script Editor) that can be a model (with R,C, and a muscle pressure profile) or a flow pattern (pump-mode) may be used.

During the inspiration, flow will reach the bag in the AGEC from the drug delivery device based on the inspiratory movement of the simulator piston. The area around the bag inside the AGEC. (see Fig.1 ) will start to be evacuated, thus inflating the bag.. The inspiration should be shaped to reflect actual patient behavior when using the drug delivery device.