Problems with traditional “Sample Cylinders”

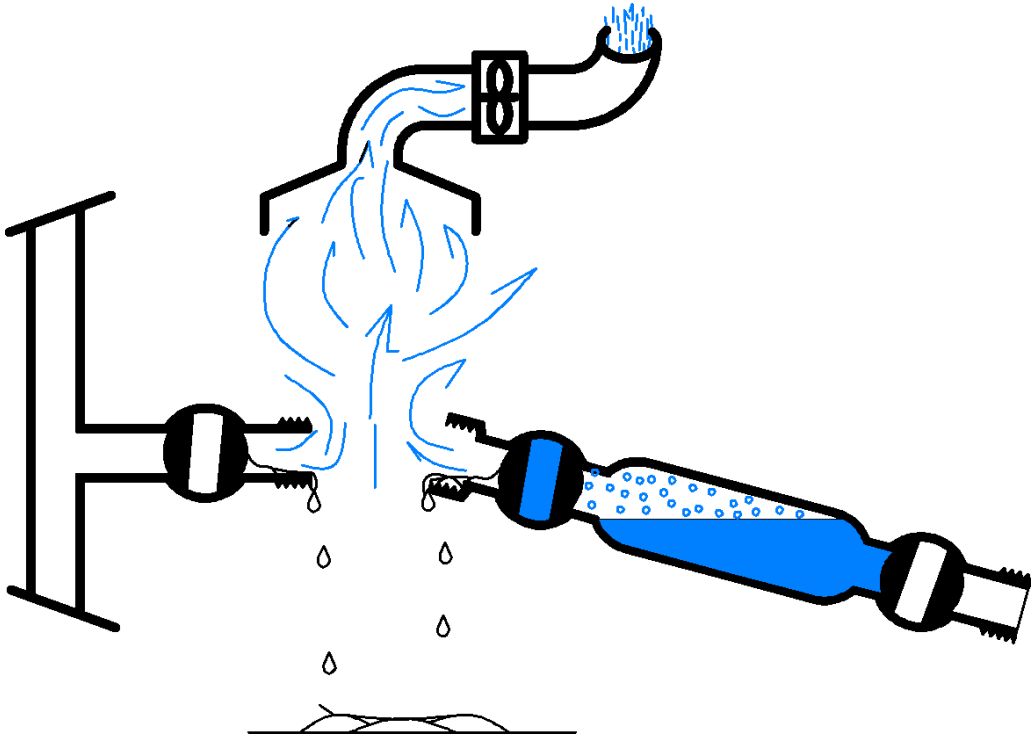
Traditional connectors have what’s known as “**Spillage**” or “**Inclusion volume**”. According to a well known connectors’ manufacturer:

> “*Spillage is the amount of system fluid that escapes when a quick-connect is uncoupled*”

In practical terms, this is “**Dead Space**” trapped between the valve on the Sample Cylinder and the valve on the Sample Panel / Closed Loop System.

When disconnecting a Cylinder after sampling, **trapped liquid or gas** is released into the atmosphere, often creating a **puff**.

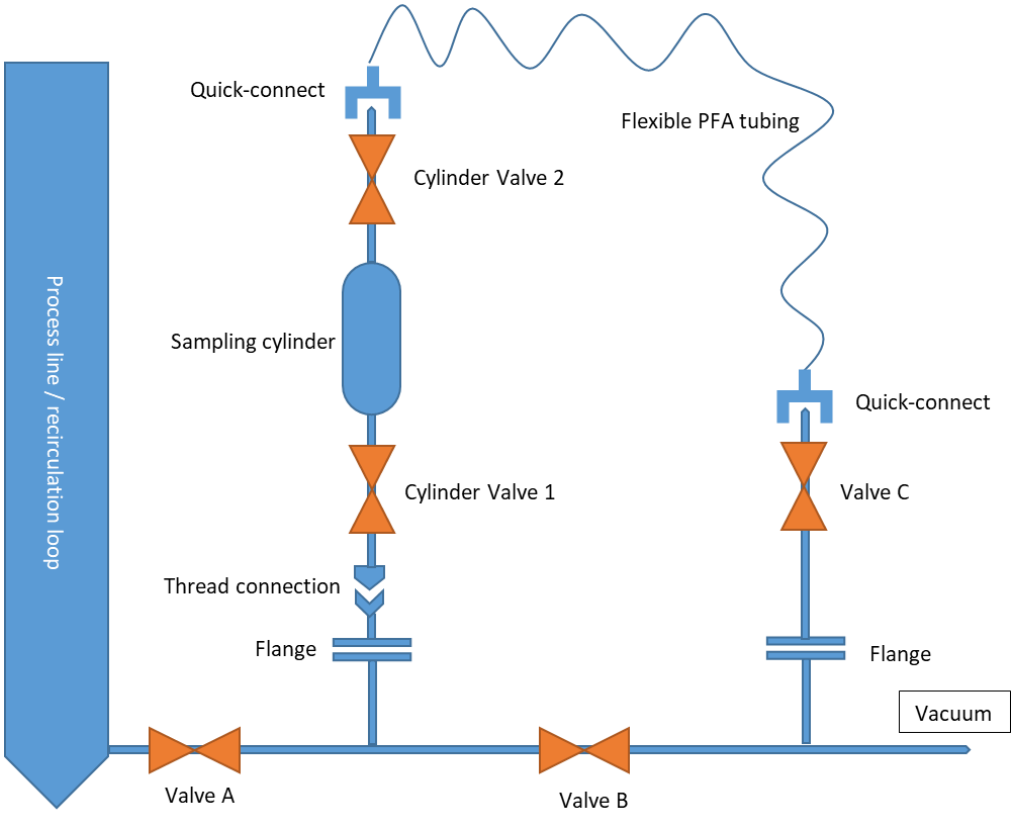
This release may expose the Operator to **toxic fumes** and create **industrial hygiene hazards**.



Solving Traditional “Sample Cylinders” problem

A safe and common way to minimize exposure to toxic fumes and industrial hygiene hazards is using a **Sample Panel** AKA a **Closed Loop Sampling System**.

Having been manufactured and customized over the years, these advanced systems have originally been designed to:



1. Grab a sample of Gas or Liquefied Gas in a traditional “Sample Cylinder” aka Sample Bomb
2. Eliminate trapped chemicals and reduce disconnecting puffs
3. Improve operator’s safety and industrial hygiene

Pros & Cons of traditional sample methods

Advantages

- Grab a sample of Gas or Liquefied Gas in a traditional "Sample Cylinder"
- Eliminate trapped chemicals and reduce disconnecting puffs
- Improve operator's safety and industrial hygiene

Inconvenient

Complicated:

- Numerous steps require the operator to handle multiple valves in a precise sequence

Additional risks:

- Increased potential leak points
- The nature of some fittings (i.e. Quick-connect flexible tubing) present potential exposure risks
- A robust design is difficultly achieved due to small tubing and numerous equipment involved

Industrial Hygiene concerns:

- Residue likely to remain in the system
- Possible additional waste / recycling necessary