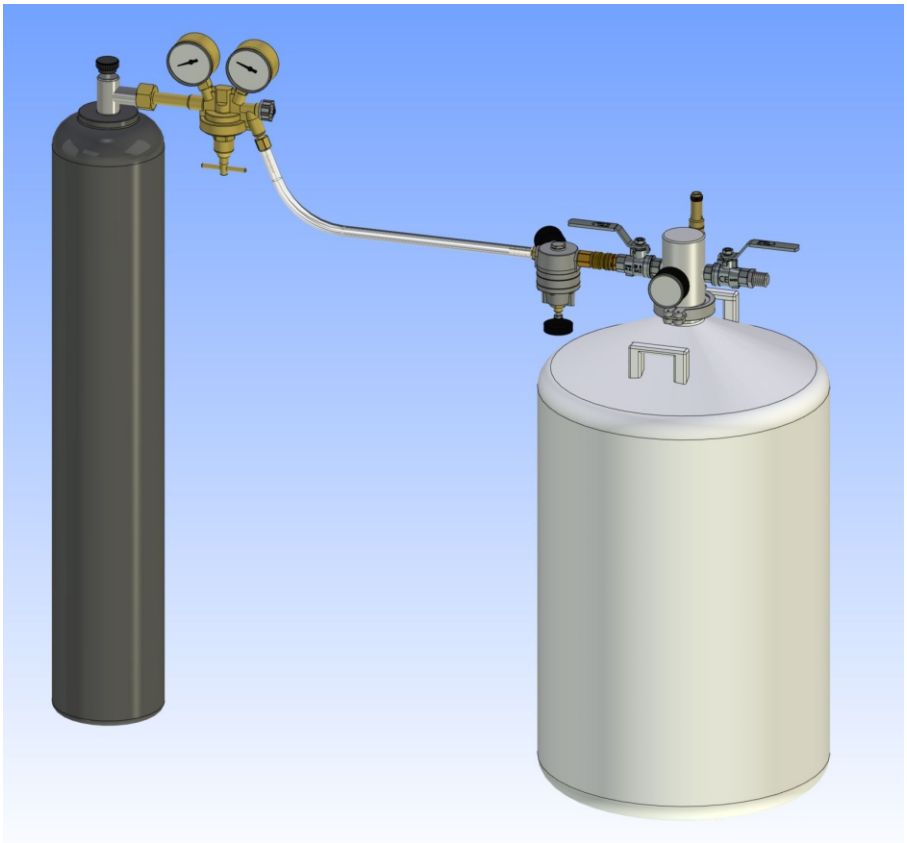
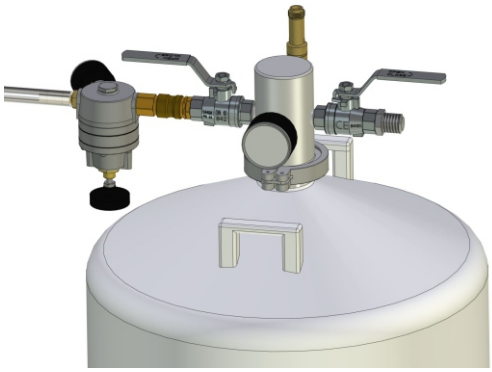
Pressure build-up for LN2 tank using N2 gas bottles or N2 central gas supply



Pressure build-up with N2 gas cylinder



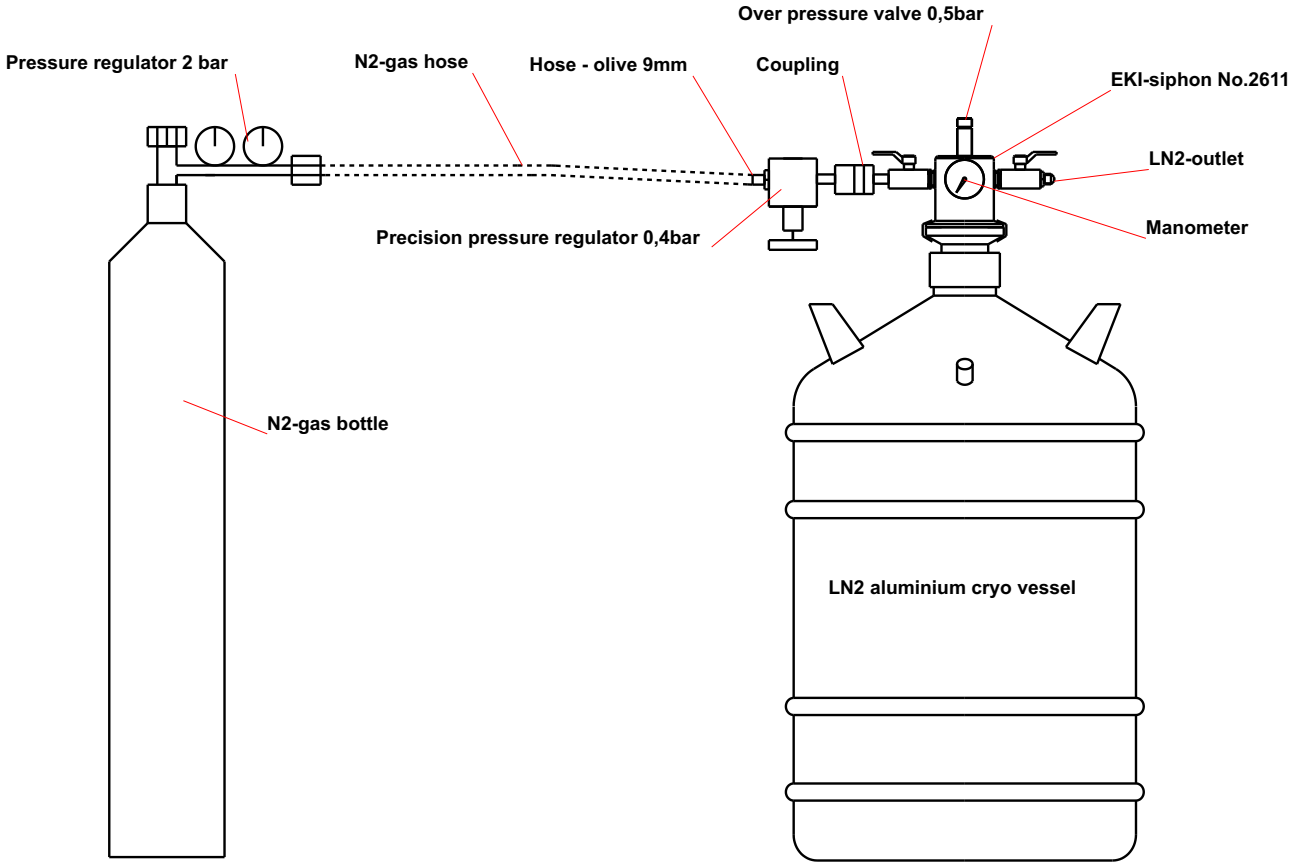
LN2 siphon with precision pressure regulator

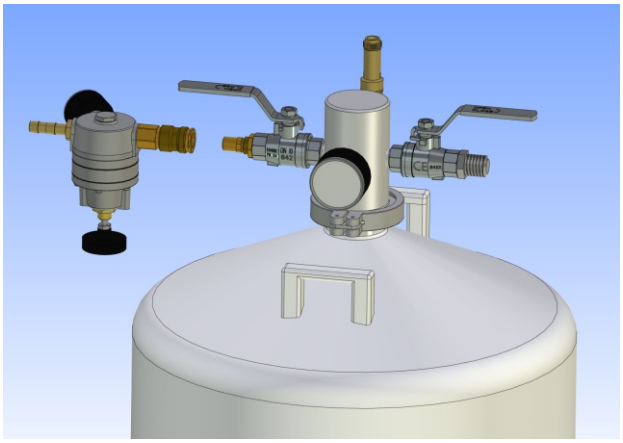
Many LN2 storage containers made of aluminium or stainless steel do not have internal pressure attachment. This means that, especially after filling an aluminium LN2 container for the first time, the user has to wait for several hours before sufficient pressure for transferring the liquid is obtained. Additionally, extraction volumes are limited for these LN2 containers without internal pressure attachment, as only a limited gas volume is available for excess pressure in completely filled containers. In order to be able to transfer LN2 continuously or, in larger quantities, from the LN2 containers, an external pressuriser can be connected to the transfer siphon of the LN2 container.

As aluminium LN2 containers may generally only be used up to a pressure of 0.5 bar, a precision pressure regulator is to attach to the LN2 transfer siphon of the LN2 container. This precision pressure regulator is set to a pressure of between 0.3 and 0.4 bar. The precision pressure regulator is supplied with an admission pressure of 2 bar, using either a N2 gas cylinder or a N2 gas supply line. In order to maintain the admission pressure of 2 bar, the gas cylinder or the gas supply line should be equipped with a standard pressure regulator.

Should the operating pressure in the aluminium LN2 container drop below 0.3 bar, the precision pressure regulator opens and feeds in N2 gas from the gas cylinder or the gas supply line so that the set minimum pressure of 0.3 bar on the precision pressure regulator of the LN2 container is always available. This pressurisation can also be applied by the user to almost any siphon on an LN2 container at a later time.

Pressure buildup via a gas bottle





Setup and process

1) Mount (glue) the coupling nipple into the gas outlet valve of your LN2 transfer siphon. Align the coupling nipple so that the precision pressure regulator with the adjusting wheel points downwards.

2) Connect your N2 gas cylinder with olive of precision pressure regulator.

3) Close the gas outlet valve on your LN2 transfer siphon.

4) Connect the precision pressure regulator to the siphon.

5) Open the N2 gas cylinder and, if necessary, set the precision pressure regulator on the setting knob / setting spindle to between 0.3 and 0.4 bar. The set pressure can be read from the manometer on the precision pressure regulator.

6) Now, open the pressure reduction valve on the LN2 transfer siphon, and the LN2 container will immediately have the necessary operating pressure to transfer liquid nitrogen.

Technical data of the N2-pressure build-up

1) N2 gas connection = 9mm olive
2) Coupling nipple = 3/8" male thread
3) Precision pressure regulator = inlet pressure max. 2 bar
   = outlet pressure 0,05 to 0,5bar

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