

## Cryogenic Installation

### MAIN REASONS FOR A CRYOGENIC INSTALLATION / BIOBANK FACILITY

- High Safety for samples and staff
- Low LiN consumption
- Low and controlled gas levels in the facility
- Automation (minimize manual labour)
- No logistics with LN2 (safety issue)
- Alarm and Monitoring of equipment and samples

### HOW IS YOUR NITROGEN SUPPLY ORGANISED?

- Nitrogen supply from bulk tank (direct or via filling station)
- Nitrogen supply from (movable) pressure tank(s) (direct or via switchover device)
- Nitrogen supply via a Fill-box and CryoLogistics (remote filling of (movable) pressure tank(s))



Filling station CryoMatic



1000L mini bulk



Remote filling box



VIP - Cryo Bank CryoMatic



Fill cabinet CryoSafe

### 1) DIRECT to a biobank via VIP (vacuum insulated pipe) line controlled by a CryoMatic central switchboard panel and TXT colour touchscreen

- CryoMatic for Degas and simultaneous filling.
- CryoSafe for filling of dewars and pressure tanks.
- CryoMatic for switch over device.
- CryoMatic for filling station Safe- Autofill.

### 2) INDIRECT via filling station, pressure tank(s) or remote fill box

- One can work with a filling station for filling movable pressure tanks, either external or internal.
- Or one can work with remote filling of pressure tanks in a fixed position, on elevated floor or even the roof.
- Or one places his pressure tanks outside the building directly adjacent to the cryogenic installation/ biobank and feeds LiN through the wall. From this supply chain you can work with a switch over device Cryo Matic for filling the installation with liquid Nitrogen.



CryoMatic



CryoFill



CryoSafe



O2 sensor

## CRYOGENIC INSTALLATION COMPONENTS CONTROLLED BY PLC CABINET CRYO MATIC

### Degas and simultaneous/ Cascade filling of equipment

- Automatic filling, secure and safe without manual labour or Logistics
- Controlled filling by timing the moment
- Low Nitrogen consumption
- Low gas levels in the cryogenic working area
- Secure filling secured by O2 depletion control and emergency stop circuits

### Switch over device for (movable) pressure tanks

- Combines several smaller pressure tanks to one "bulk" supply chain
- Ensures a continuous flow and availability of liquid Nitrogen
- LiN available during filling of a pressure tank
- Lowering logistical issues because of the larger combined supply
- LiN supply over the weekend or holidays

### Safety measurements

- O2 depletion detection and alarm
- Emergency stop circuit
- Main shutdown valve
- Air conditioning / refreshment connection

### CryoSafe - manual withdrawal of LiN

- Pressure tank for low pressure withdrawal (1.5 bar)
- No direct open connection to bulk tank

- Lower gas levels
- "deadmans" safety feature for manual withdrawal
- Filling cabinet with drip tray
- Controlled filling of controlled rate freezer CRF / E-microscope
- Emergency back-up for biobank

### Semi or fully automatic filling

- Filling of larger batches of small tanks (Aluminium/dryshippers)
- Specials

### Cryo XiltriX

- The alarm monitoring system for real time remote read out of relevant data.



**We can either supply these systems or support you in the engineering and project management of these kind of projects. Technical and safety surveys are also services we can provide as well as technical and safety training either at our facility or at your plant.**