

# Lab Scale Helium Recovery & Liquefaction

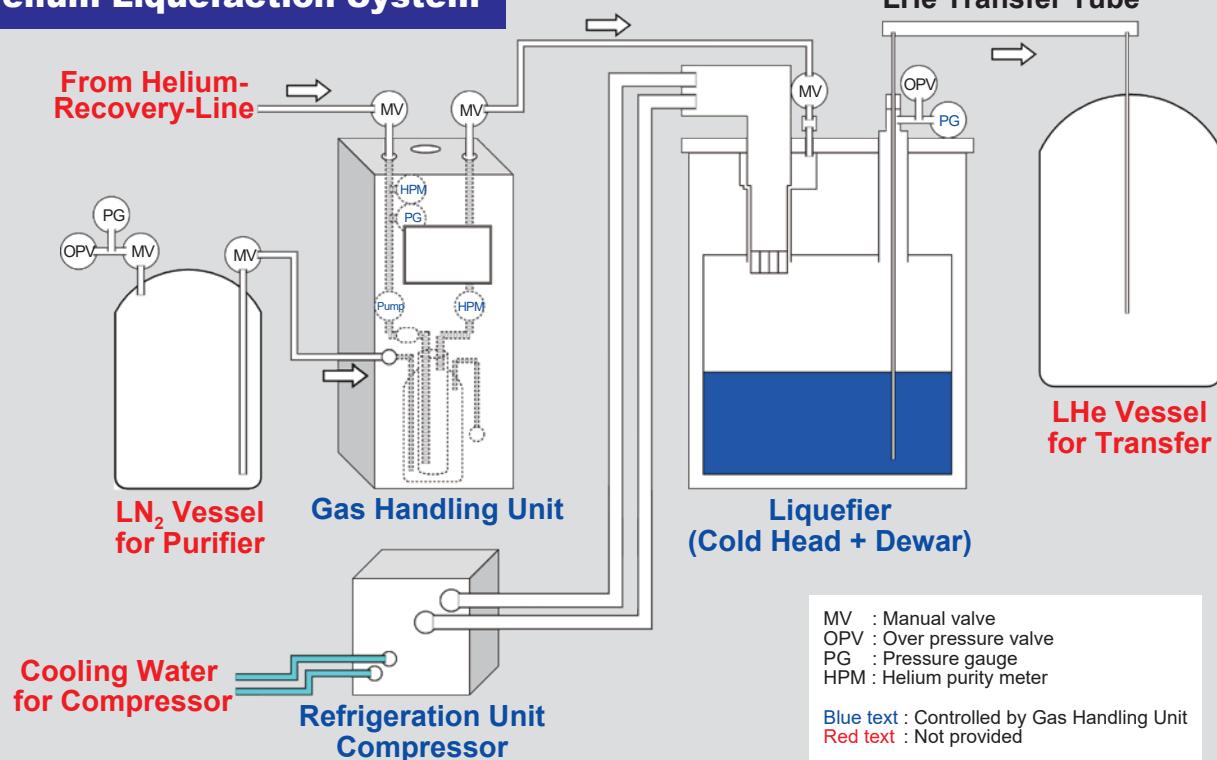
A compact helium reliquefaction system designed for laboratory use—ideal for researchers seeking an easy-to-operate, self-managed solution.

## Features

1. Liquefaction rate: Over 22 L/day
2. Liquid storage capacity: 100–250 L (customizable)
3. Automated liquefaction process to reduce operator workload, enabled by:
  - Optimized gas flow rate and pressure control
  - High-precision helium purity monitor for impurity detection
  - Integrated helium purifier
  - Automatic liquid nitrogen supply
  - Automatic purifier cleaning function
4. Designed for low-pressure applications up to +200 kPa (gauge)



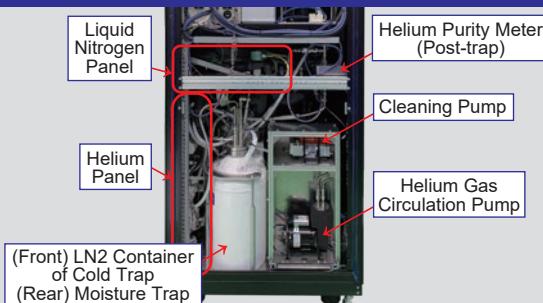
### Helium Liquefaction System



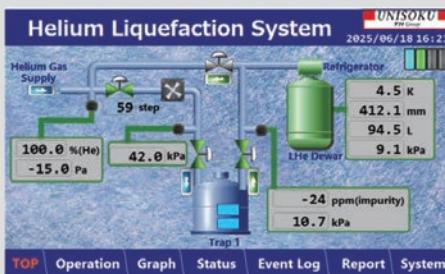
# How It Works: Smart Helium Handling

- Helium gas is ingested from the user's recovery line into the system.
- Impurities are removed by a liquid nitrogen trap (purifier).
- Helium gas purity is monitored at ppm levels downstream of the purifier.
- Upon detecting purifier contamination, the system automatically supplies helium to the liquefier from a clean second purifier.
- The contaminated first purifier is heated and cleaned.

## Built-in Automatic Purifier Cleaning



## Intuitive Touch Panel Operation

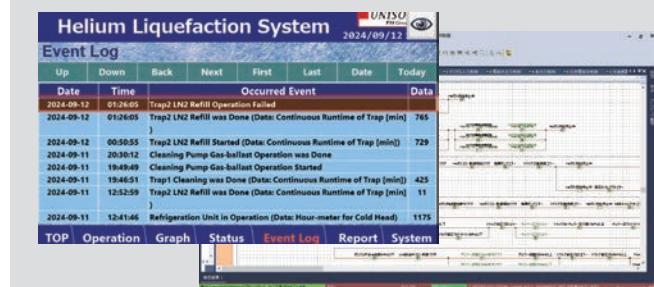


## Equipped with a Highly Reliable SHI GM Cryocooler



Easy Cold Head Replacement for Regular Maintenance

## Remote Operating Condition Diagnostics Service Available



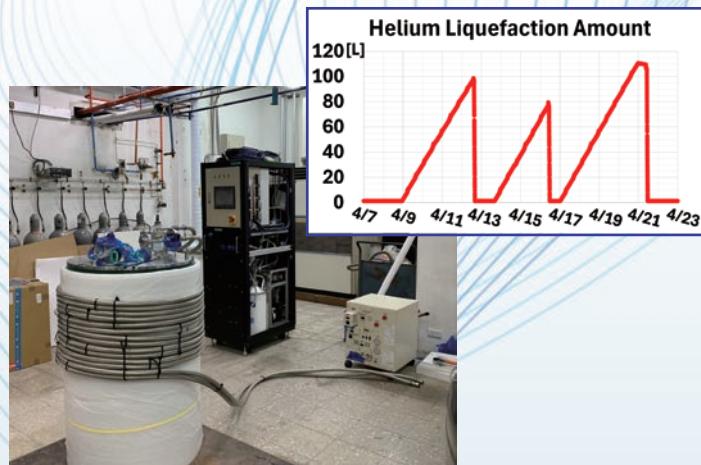
## Example Installation

### ■ UNISOKU's Cryogenic STM Test Lab



- High-Performance Operation: 50 L/day Liquefaction Over 4+ Months
- Supporting Final Testing of 4 ULT-High magnetic field STMs
- System: 1 GHS + 2 Liquefiers
- 8,000 L of Liquid Helium Regenerated Annually (2024)

### ■ National Tsing Hua University



Full-scale operation to begin in summer 2024  
Liquefaction rate of 27 L/day to be achieved

**UNISOKU Co., Ltd.**

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