

Helium leak testing



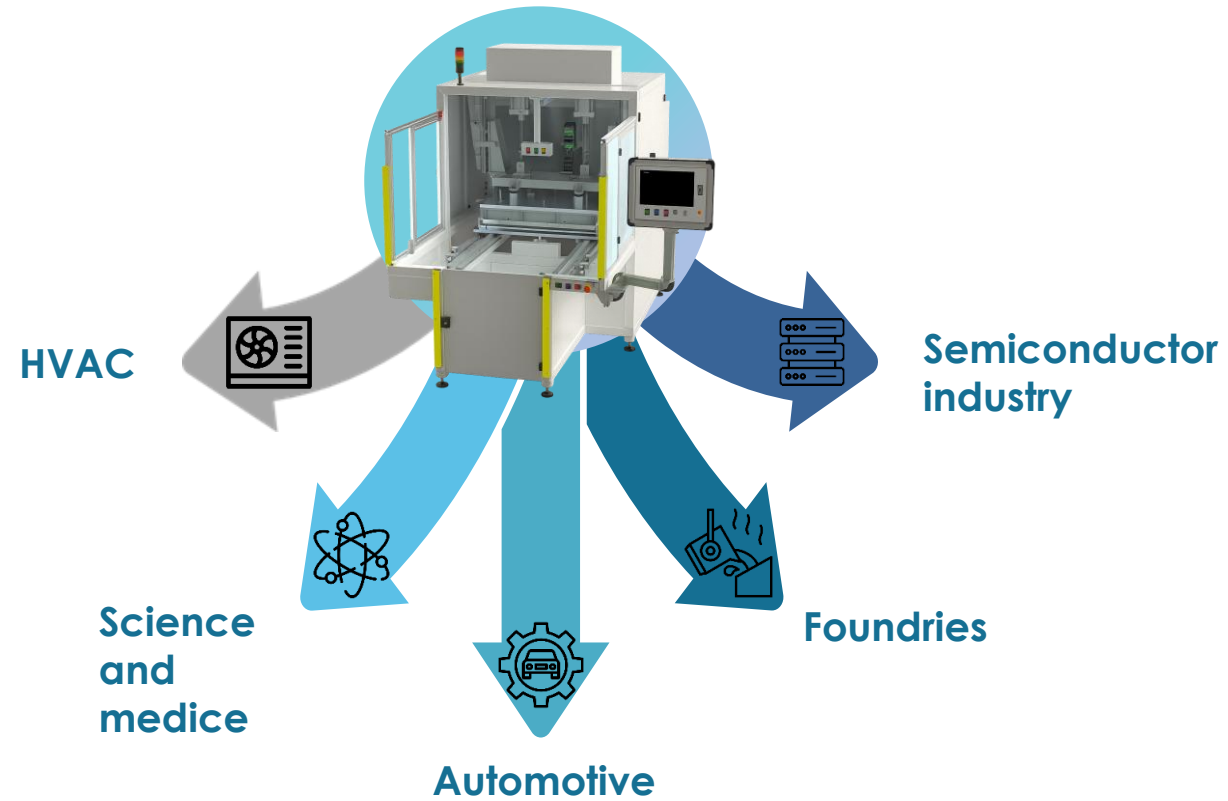
LABTECH



Short list of references



Key areas



Manufacturing facility

Engineering precision + research creativity
= solutions where others see dead end.

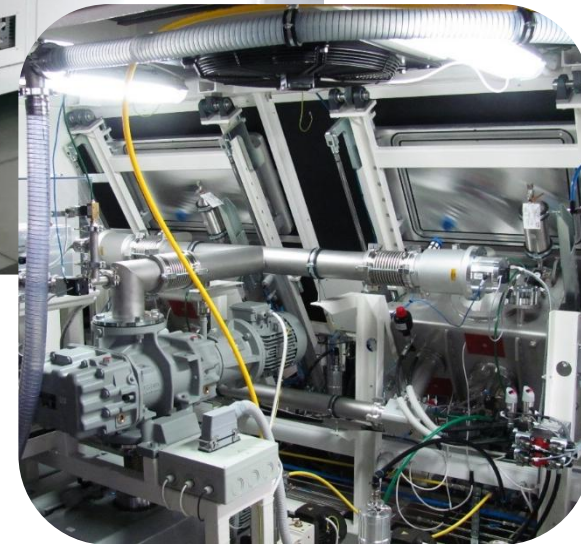


HVAC – A/C High-pressure evaporators

Leak limit	$1,7 \times 10^{-4}$ mbar.l/s 3g/year, R744
Pressure	200 bar
Cycle time	27 s

Key features

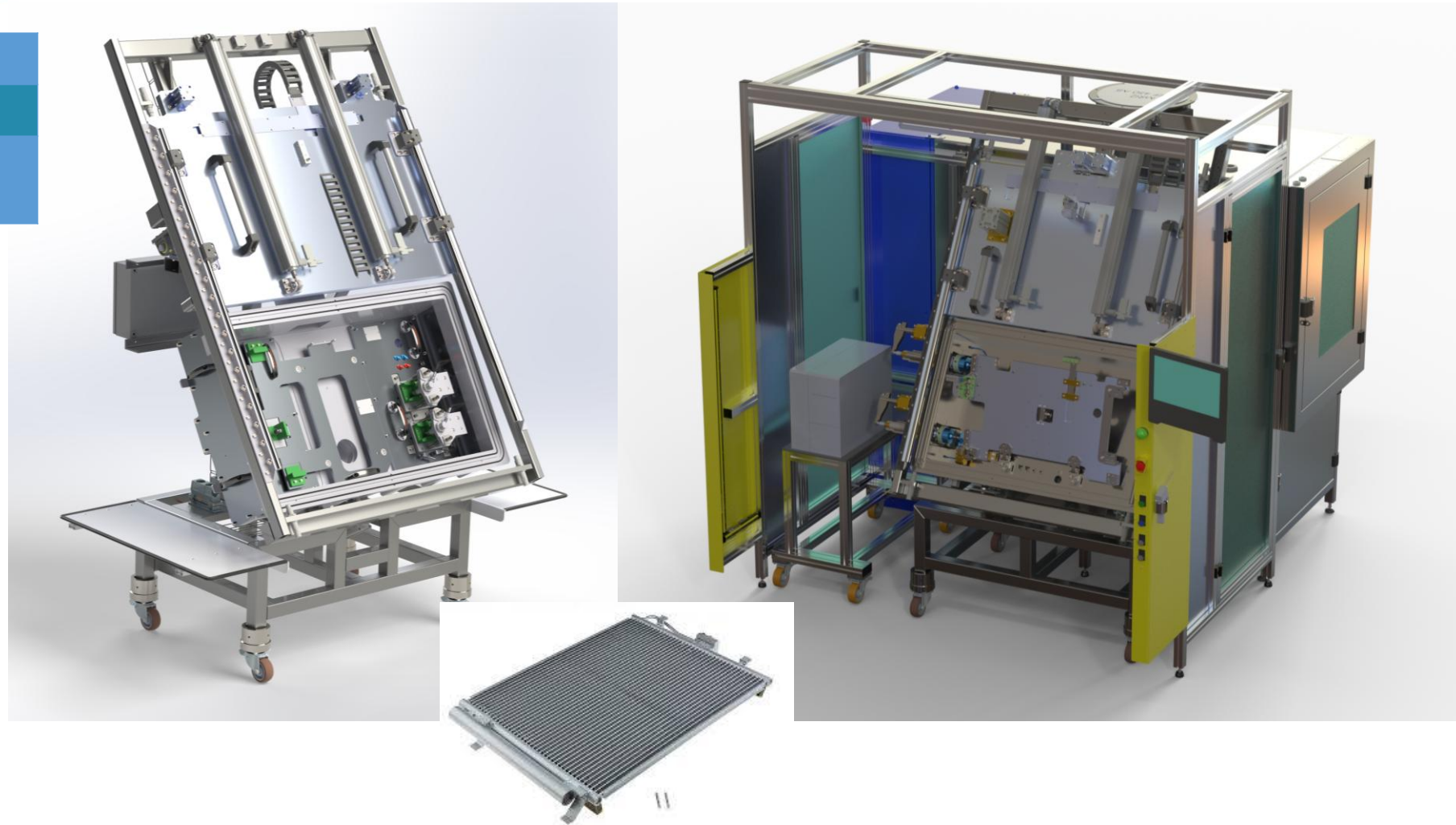
- High-pressure system
- Hydraulic adapters
- Easy to service
- Multiple chambre system



HVAC – A/C Condensers

Leak Limit	9,1x10 ⁻⁵ mbar.l/s @ 100% He
Pressure	Up to 40 bar
Cycle Time	35 seconds (excluding manipulation)

- ✓ Exchangeable vacuum chamber placed in robust frame with castors
- ✓ Easy and fast changeover in < 15 minutes
- ✓ Economical solution for other products

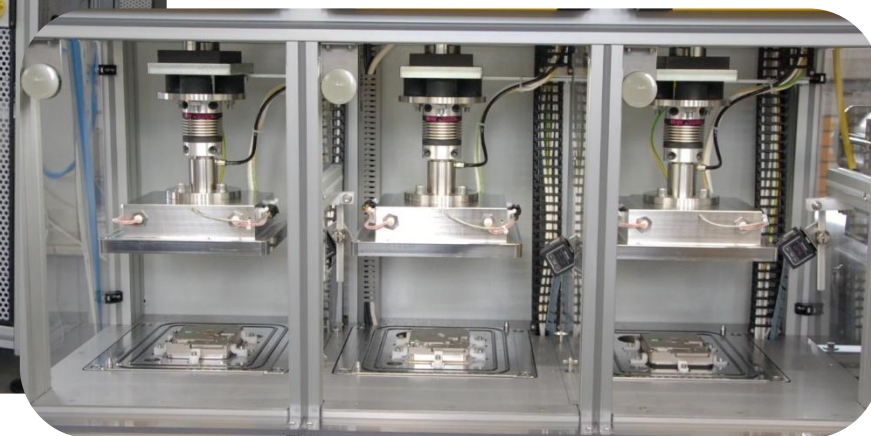


Harddiscs

Leak limit	3×10^{-9} mbar.l/s
Pressure	1.0 bar abs
Cycle time	20 s

Key features

- Very low leak limit
- Turbomolecular pumps
- Triple-chambre system

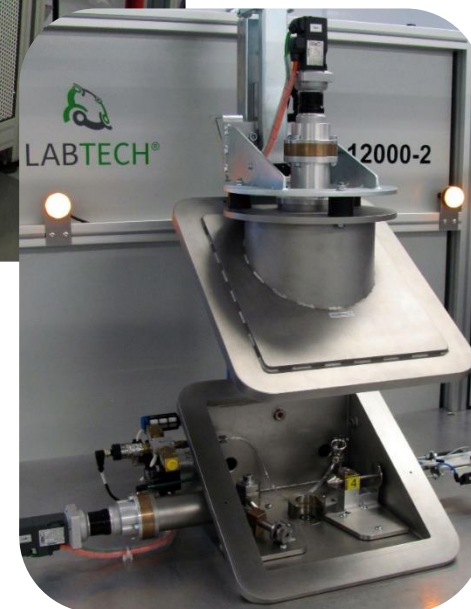
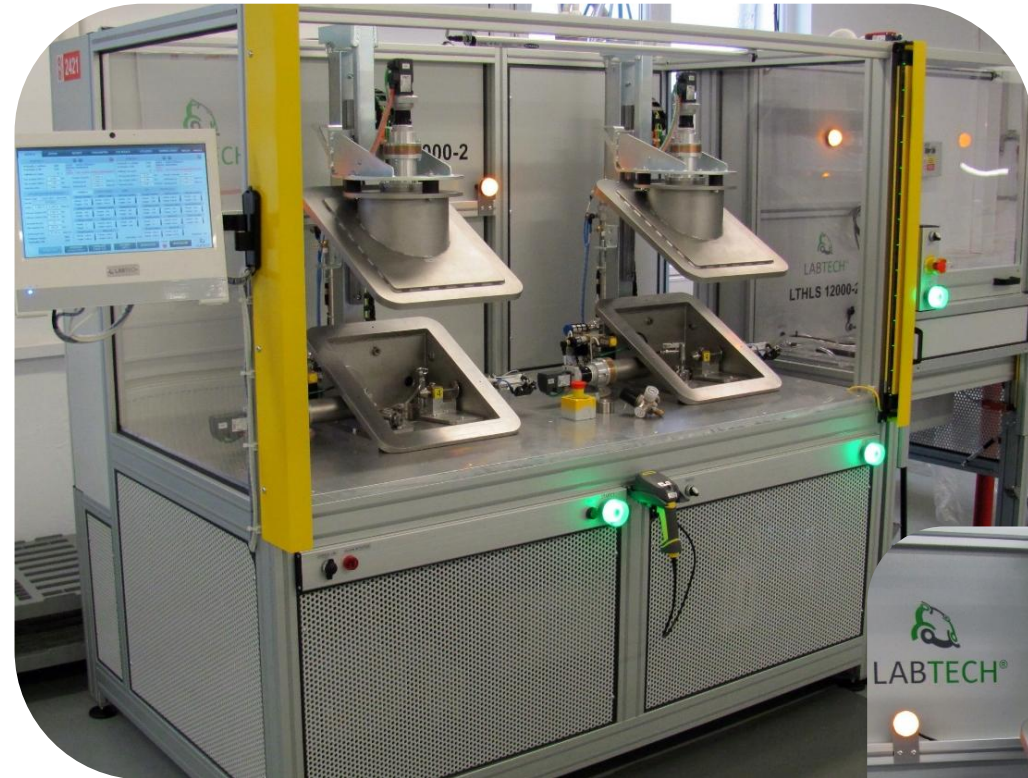


Medical combi valves

Leak limit	$1,7 \times 10^{-3}$ mbar.l/s
Pressure	360 bar
Leak limit	45 s

Key features

- Economic design/easy manipulation
- Flexibility of leak testing using servo actuators
- Dual-chamber system

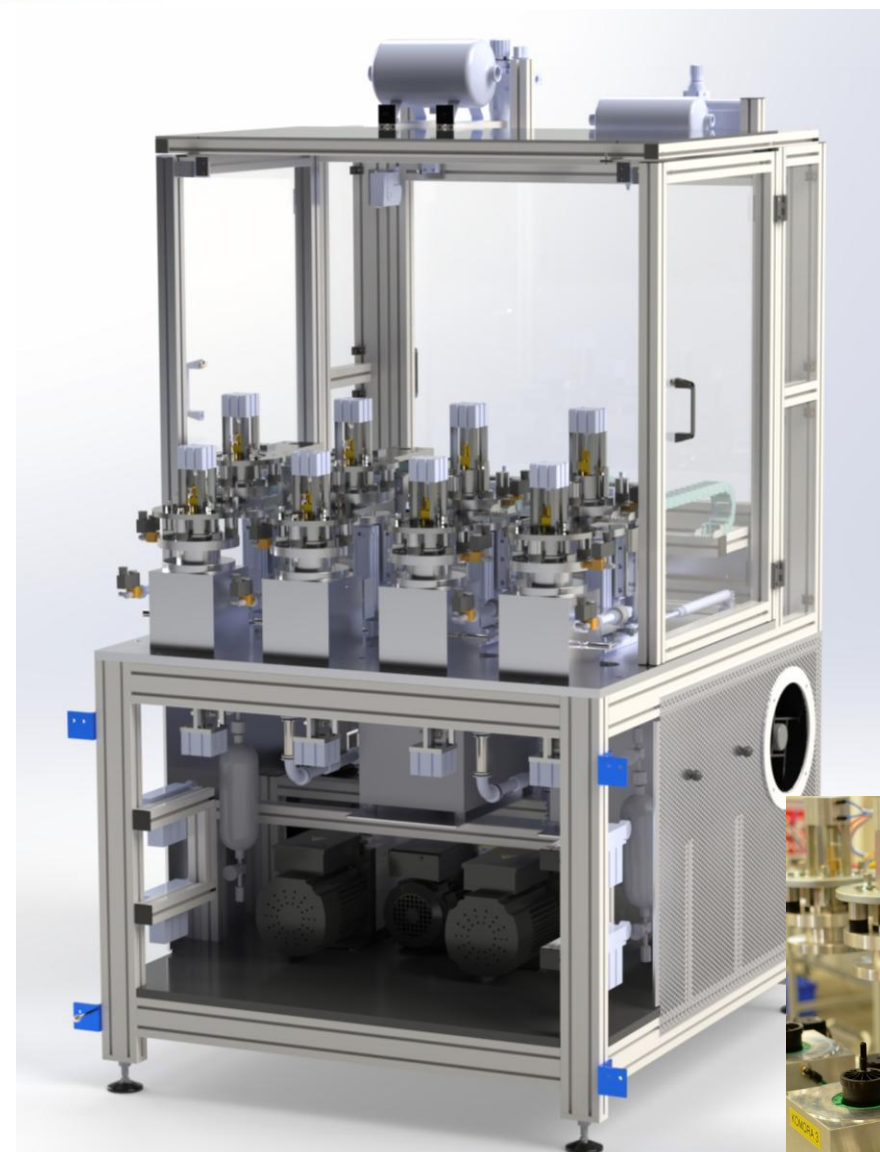


Fuel filters

Leak limit	$1,6 \times 10^{-3}$ mbar.l/s
Pressure	7 bar abs
Cycle time	10 s

Key features

- Automatic manipulator
- Cycle time optimization
- Quad-chambre system



Shock Absorbers

Leak Limit	1,5x10 ⁻⁵ mbar.l/s @ 15% He
Pressure	14 bar
Cycle Time	13 seconds (excluding manipulation)



Project for shock absorbers leak testing

Double chamber system with vacuum integral test

Key features / benefits

- Ergonomic design
- Pneumatically controlled adapters
- The machine concept allows to accept future tooling for parts 120 - 600mm in length and diameter of 30 - 65mm



Battery Coolers

Leak Limit $7,5 \times 10^{-3}$ mbar.l/s @ 10% He

Pressure 3 to 6 bar

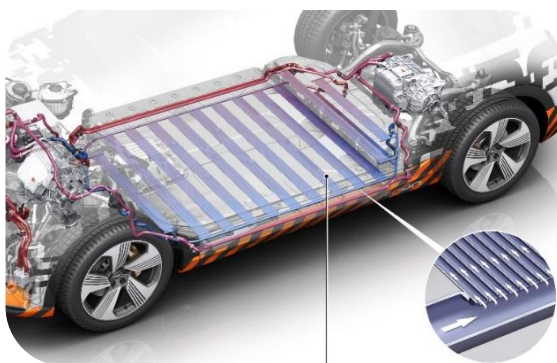
Cycle Time 23 seconds

Project for battery coolers leak testing

Double chamber helium station for robotized line

Key features / benefits

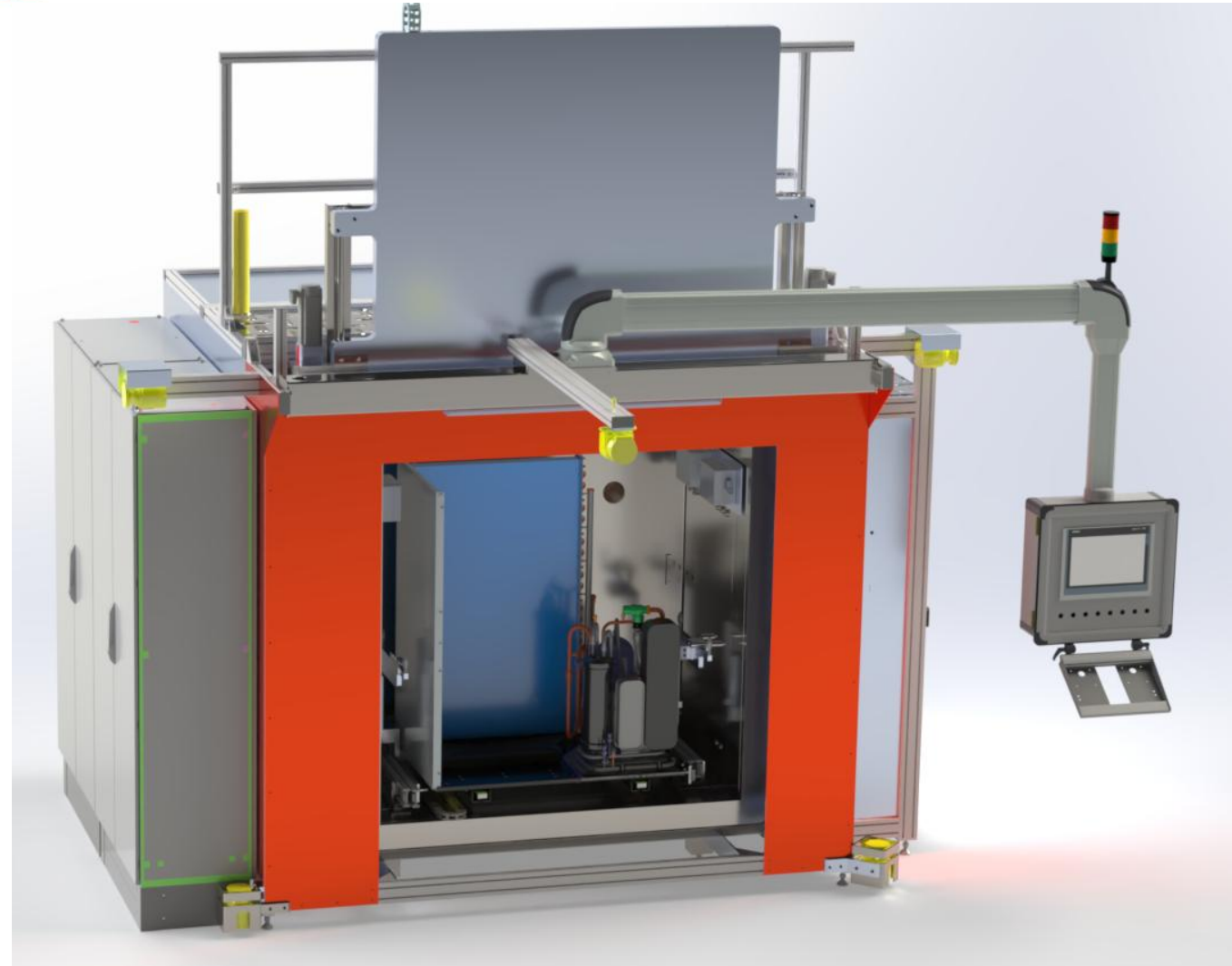
- Innovative pumping system without roots pumps
- Initial & Operational cost savings



Heat Pumps

Station with Helium Vacuum Integral Test

Cycle time	5 + 3 minutes including manipulation
Leak rate limit	$1,72 \times 10^{-5}$ mbar.l/s @ 10 bar, 100% He, corresponding to 5g/y of R410a
Testing pressures	10 bar rel
Vacuum chamber	2,3 m ³



Fuel filters

Leak limit	$8,4 \times 10^{-4}$ mbar.l/s
Pressure	0,5 bar abs & 6 bar abs
Cycle time	22 s

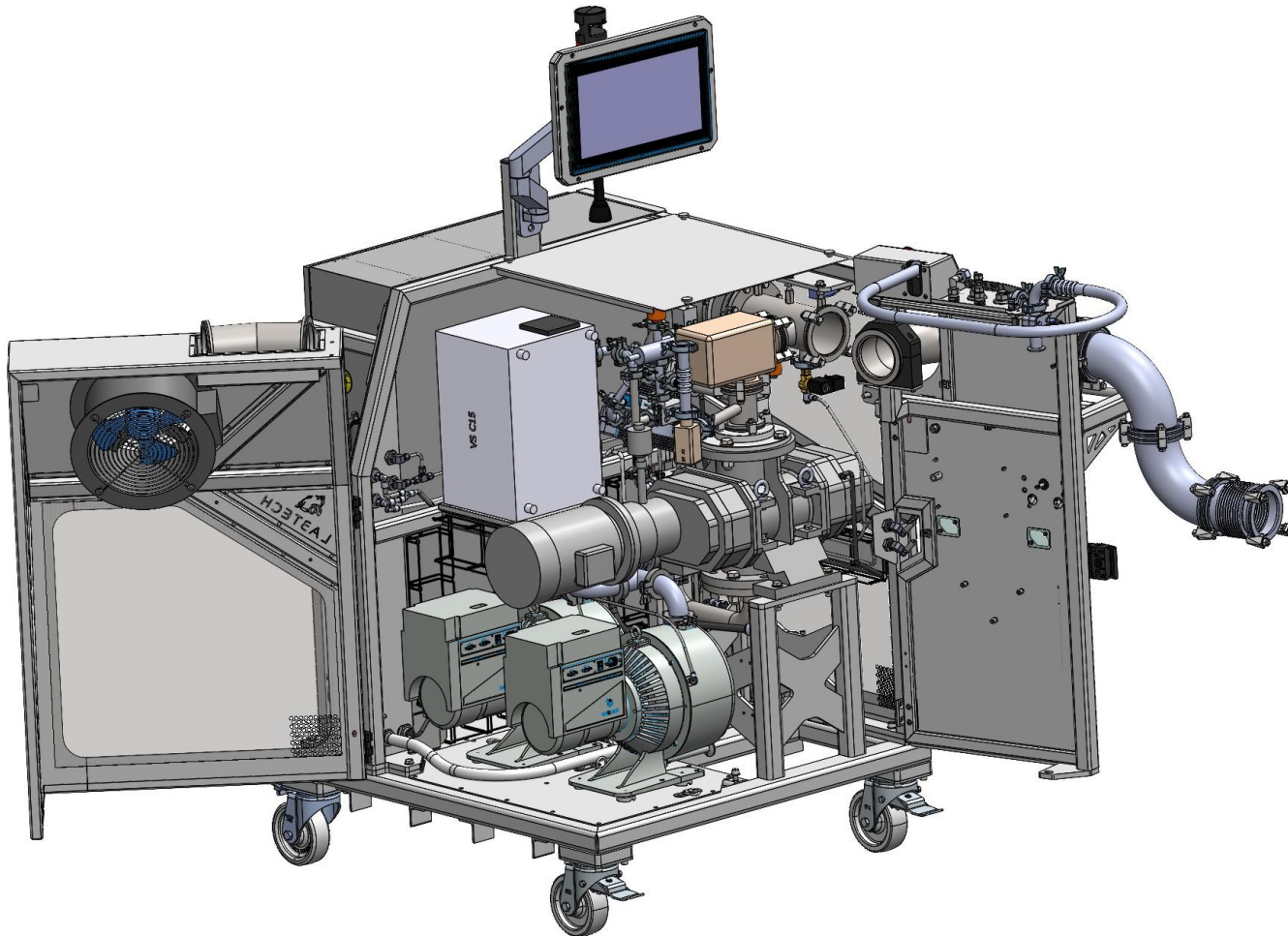
Key features

- Robotic loading system
- Cycle time optimization
- Triple-chambre system



Leak testing of superconducting magnets

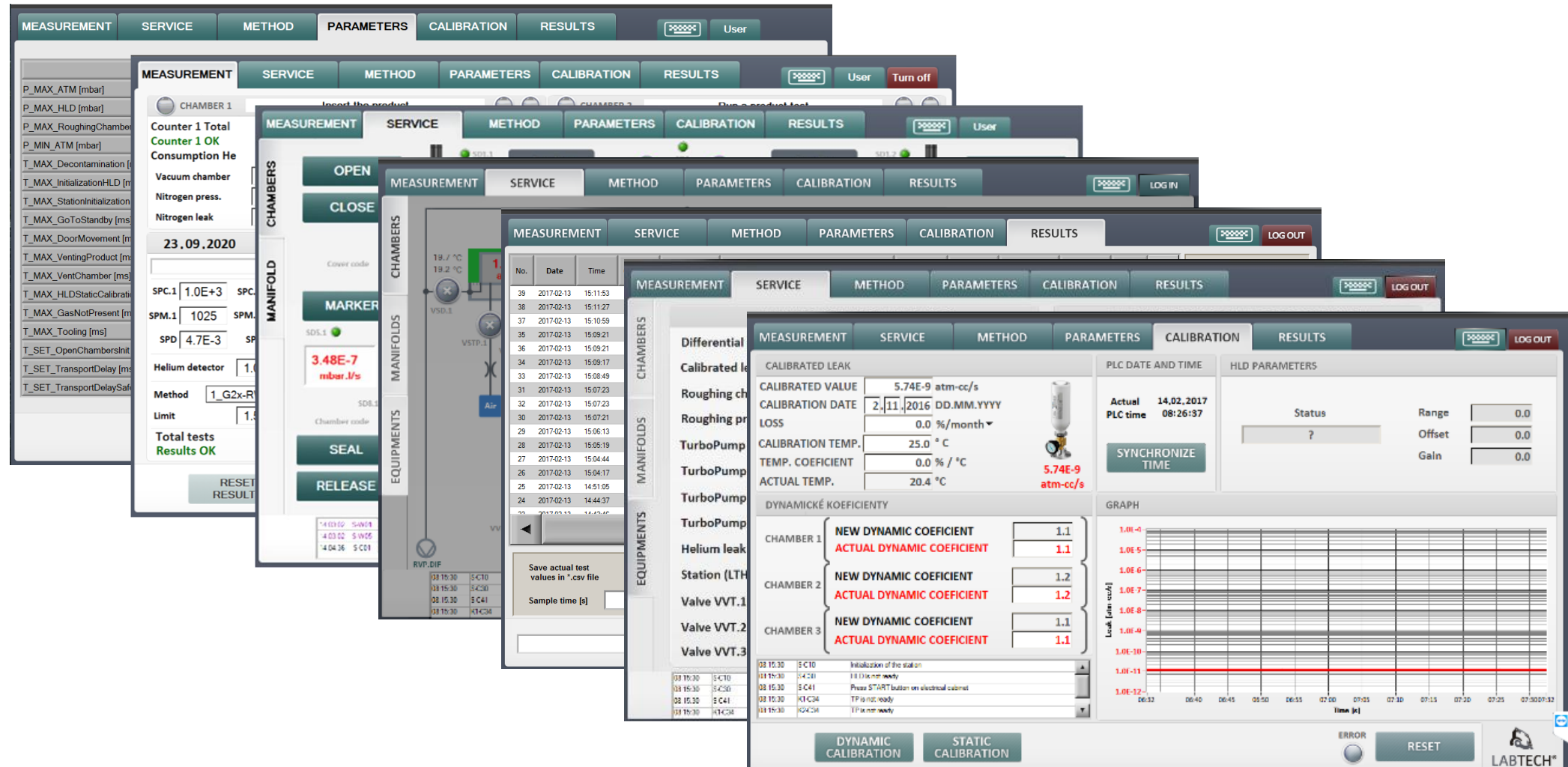
Evacuation and helium leak detection system > 50 units



Helium recovery units – save operational costs



Software LeakView



The screenshot displays the LABTECH Software LeakView interface, showing multiple overlapping windows for measurement, service, and results. The main window is titled "MEASUREMENT" and features a navigation bar with tabs: MEASUREMENT, SERVICE, METHOD, PARAMETERS, CALIBRATION, and RESULTS. The "MEASUREMENT" tab is active, showing a list of parameters on the left and a central display area. The parameters list includes:

- P_MAX_ATM [mbar]
- P_MAX_HLD [mbar]
- P_MAX_RoughingChamber [mbar]
- P_MIN_ATM [mbar]
- T_MAX_Decontamination [mbar]
- T_MAX_InitializationHLD [mbar]
- T_MAX_StationInitialization [mbar]
- T_MAX_GoToStandby [mbar]
- T_MAX_DoorMovement [mbar]
- T_MAX_VentingProduct [mbar]
- T_MAX_VentChamber [mbar]
- T_MAX_GasNotPresent [mbar]
- T_SET_OpenChambersInit [mbar]
- T_SET_TransportDelay [mbar]
- T_SET_TransportDelaySafe [mbar]

The central display area shows a "Counter 1 Total" value of 1.0E+3, a "Counter 1 OK" status, and a "Consumption He" value of 3.48E-7 mbar.l/s. The "RESULTS" tab is also visible, showing a table of test results with columns for No., Date, and Time. The table contains data for various tests performed on 2017-02-13.

The "CALIBRATION" tab is also visible, showing a "CALIBRATED LEAK" section with a "CALIBRATED VALUE" of 5.74E-9 atm-cc/s, a "CALIBRATION DATE" of 2.11.2016, and a "CALIBRATION TEMP." of 25.0 °C. The "RESULTS" tab shows a "GRAPH" of the leak rate over time, with a y-axis labeled "Leak [atm-cc/s]" and an x-axis labeled "Time [s]". The graph shows a red line representing the leak rate, which is relatively constant over time.

MEASUREMENT

SERVICE

METHOD

PARAMETERS

CALIBRATION

RESULTS



User

CHAMBERS

MANIFOLD

OPEN

CLOSE

Cover code 1

MARKER

SD5.1

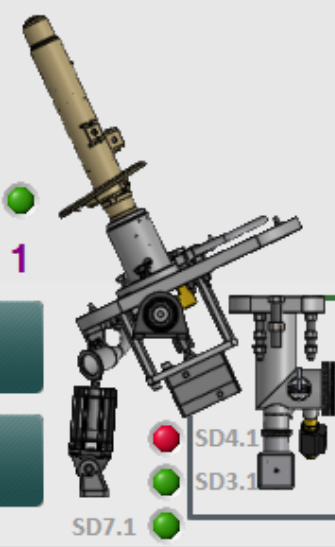
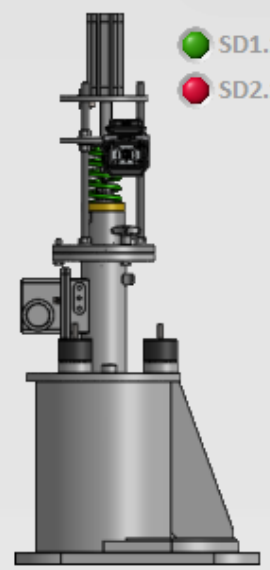
3.48E-7
mbar.l/s

SD8.1

Chamber code 1

SEAL

RELEASE

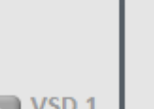


SD1.1
SD2.1

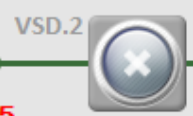
Aeration



RVP.R



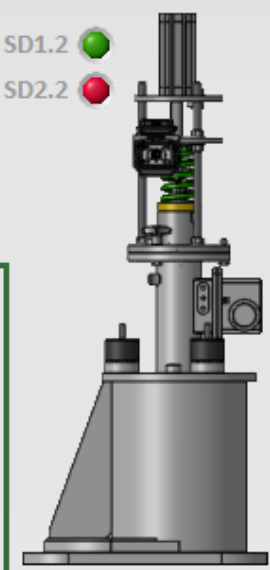
SPA



Aeration



SD1.2
SD2.2



OPEN

CLOSE

1 Cover code

MARKER

SD5.2

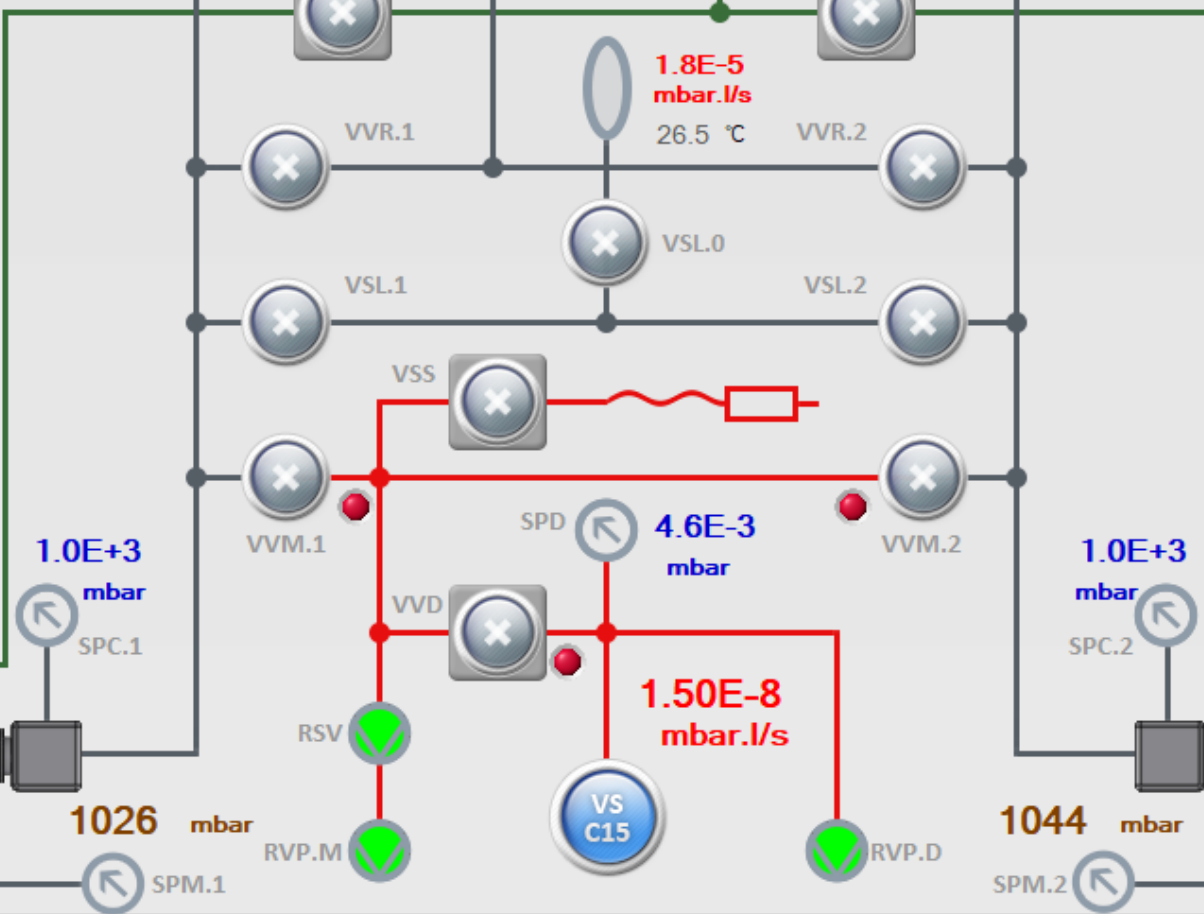
3.38E-7
mbar.l/s

SD8.2

1 Chamber code

SEAL

RELEASE



14:03:02	S-W01	Safety curtain interrupted
14:03:02	S-W05	Service switch
14:04:36	S-C01	Service (manual) mode

AUTO

ERROR

RESET





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www.helium-leak.eu