



Linde Kryotechnik AG

Linde

The new Standard for Helium Liquefiers and Refrigerators L Series

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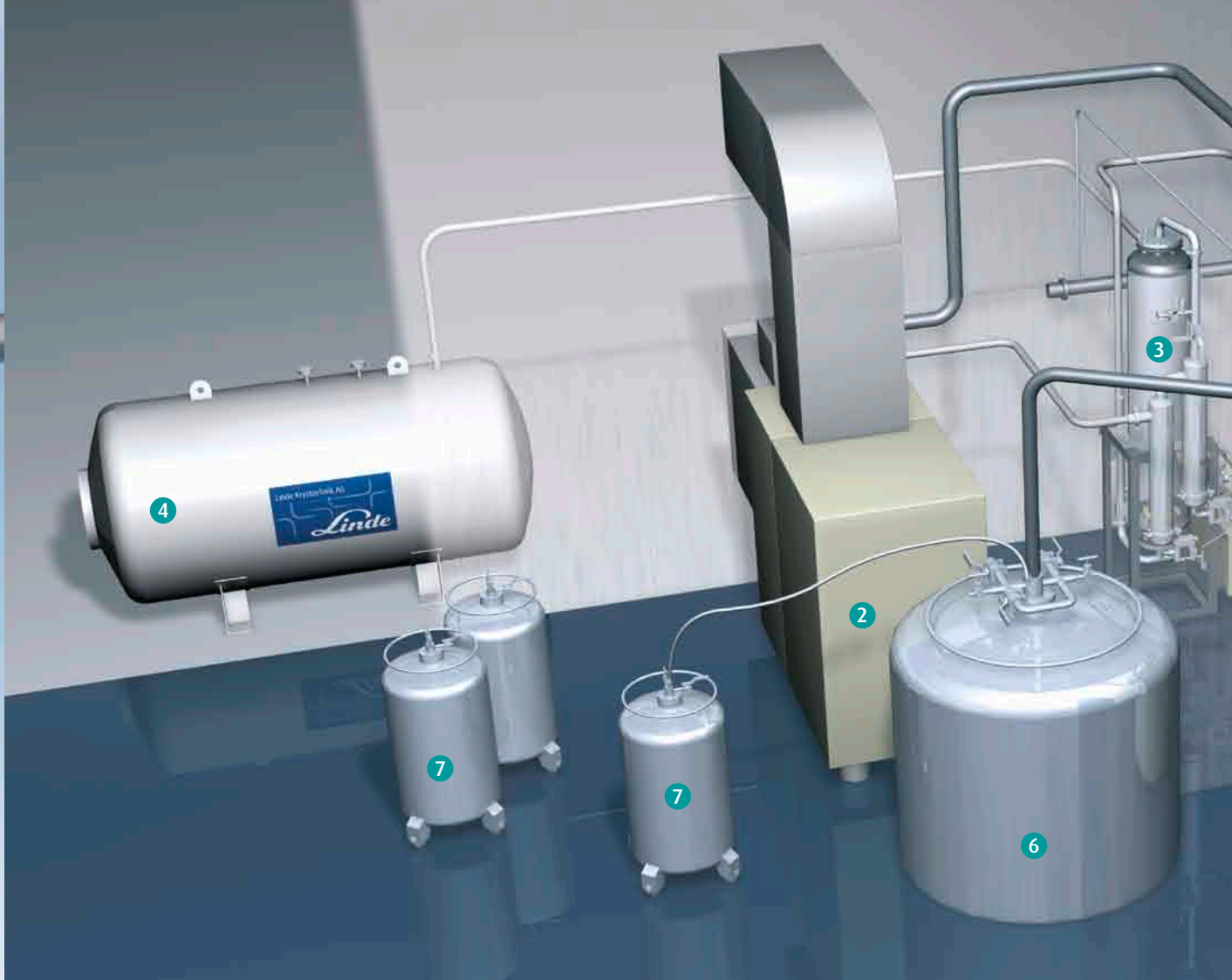
More capacity, less consumption.

When it comes to helium liquefaction and refrigeration, Linde Kryotechnik has decades of experience to draw on. World-renowned research laboratories, universities and gas suppliers rely on proven equipment from Linde Kryotechnik. The company's success is based above all on its extensive experience and the way it has put that experience to work in advancing and optimizing helium plant technology and systems.

Linde Kryotechnik developed the L Series specially to meet the needs of universities, research institutes and gas suppliers. The L Series is a homogeneous range of products with liquefaction capacities between 20 and 290 liters per hour (equivalent available refrigerating capacities from 100 to 900 W at 4.4 K).

What is more, the liquefaction and refrigerating capacities can be tailored to requirements identified by the customer. Helium is cooled in gas-bearing turbo expanders. Not only do these machines offer very high efficiency; they are also tremendously robust. This means that the purchaser achieves efficient use of resources plus high availability of the system as a whole.

The L Series thus establishes a new benchmark for helium liquefaction and refrigeration equipment the world over.



A further plus for the efficient L Series is the extremely short cooling time before the system is ready for production. This quality can be seen in the very low power draw and the low consumption of liquid nitrogen. The compact, modular “cold box” design with integrated freezeout purifier (which reliably removes all impurities) helps control the cost of installation. The standalone peripherals of the control hardware allow flexible “plug & run” installation.

Regardless of whether your helium liquefier is an L70, L140 or L280, the cold box goes through a factory inspection before shipment. Comprehensive training of operating personnel, both at the factory and at the customer’s site, accompanies with every installation and commissioning.

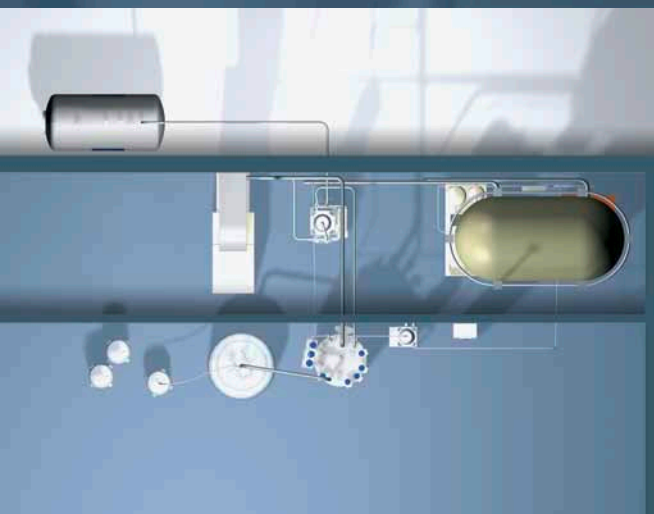
Our superbly trained staff will be glad to provide you with prompt and reliable after-sales service anywhere in the world.

Sophisticated design – compact, flexible installation





- | | | | |
|---|------------------------|----|---------------------------|
| 1 | Liquefier | 7 | Mobile Dewar |
| 2 | Compressor | 8 | Line Drier |
| 3 | Oil Removal System | 9 | Stand-alone Control Panel |
| 4 | Buffer Tank | 10 | H.P. Recovery Compressor |
| 5 | Pressure Control Panel | 11 | Cylinder Bundle |
| 6 | Dewar | 12 | Gas Bag |



Outstanding features of the L Series

- Excellent plant efficiency
- Optimal cost/performance ratio
- High reliability, low maintenance costs
- Compact design, great flexibility in layout
- Full automation, easy operation

Reliable turbine technology –
excellent efficiency



User-friendly – fully automated



Low maintenance costs –
optimal protection for your investment





A model of performance and efficiency.

Capacities of L70/LR70, L140/LR140, L280/LR280

The L Series will dazzle you with its excellent performance (13 bar at 4.4 K).

| | Without LN ₂ precooling | With LN ₂ precooling |
|--------------|------------------------------------|---------------------------------|
| L70 | 20 – 35 l/h | 40 – 70 l/h |
| L140 | 45 – 70 l/h | 90 – 140 l/h |
| L280 | 100 – 145 l/h | 200 – 290 l/h |
| LR70 | please inquire | 130 – 190 Watt |
| LR140 | 210 – 290 Watt | 255 – 400 Watt |
| LR280 | 445 – 640 Watt | 560 – 900 Watt |

Linde Kryotechnik reserves the right to make changes without prior notice, in particular when design and engineering changes are made to improve functionality and when errors have occurred in descriptions and images.

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