

Liquid Nitrogen Plants - LINIT

Linde CryoPlants Ltd.



Introduction

Linde CryoPlants Ltd. is a subsidiary of The Linde Group based in UK.

The Linde Group is a world leading gases and engineering company with around 50,500 employees in more than 100 countries worldwide. Linde have supplied more than 3,000 air separation plants and maintain the highest standards of service.

Linde CryoPlants Ltd. located in the UK design, manufacture, install and maintain a range of cryogenic air separation plants that provide high purity nitrogen.

Comprehensive services that ensure a high level of client and customer care include:

- A world-wide network of Linde offices or agencies
- Teams of plant designers and consultants
- World-wide aftersales services
- Erection and start-up services
- Full product training
- Plant maintenance contracts

Concept

The LINIT liquid nitrogen plants are factory tested modular units that are simple to install worldwide. Plants operate unattended, switching on and off automatically to supply high purity liquid nitrogen into a tank in response to liquid level sensors in the tank.

The liquefaction technology used is turbine technology similar to that used for all Linde air separation plants. The miniature turbine used in LINIT is gas lubricated and consequently maintenance free permitting a simple non-specialised maintenance program for all LINIT plants.

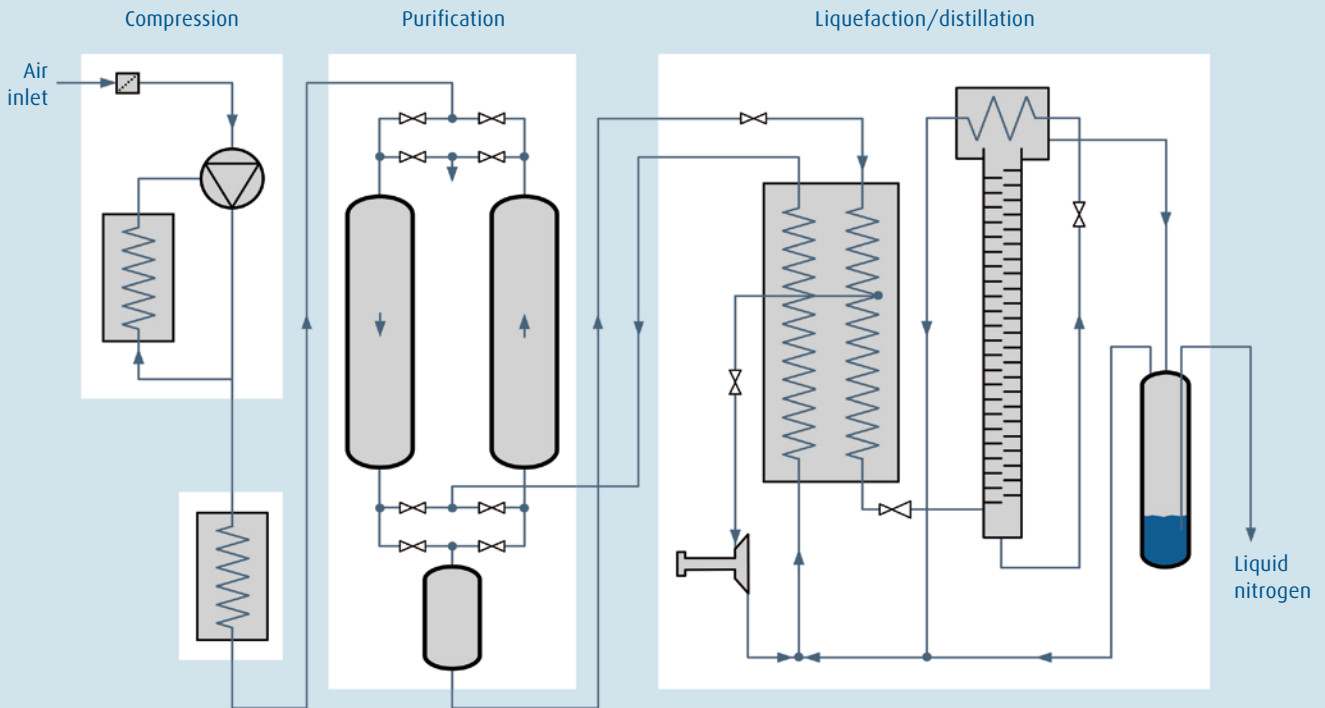
The LINIT design concept has been used for over 25 years. Several hundred plants have been supplied in locations ranging from the high Andes of South America, the semi-humid conditions of Africa and India and the remote isolated scientific research station at the geographic South Pole.

Our supply

We supply LINIT plants both directly and via international consultants into educational and agricultural projects funded by the world's major aid organisations and to many industrial sectors, including:

- Cylinder filling
- Automotive industry
- Electronics industry
- Vaccine storage centres
- Animal breeding centres
- Astronomical observatories
- Scientific research centres
- Beverages industry





Flow diagram of LINIT

LINIT plant features

- Modular design for easy installation on simple foundations
- Factory cold-test before despatch to demonstrate production rate
- Automatic unattended operation
- Auto re-start after a power outage
- Start up by means of a simple touch screen at the central control panel
- Control system based upon plc controller
- Annunciation of safety device in event that plant operation is stopped
- Suited to continuous or intermittent operation
- Purifier eliminates any need for defrosting
- Operates under all climatic conditions
- Fully air cooled as standard
- Requires only an electrical supply
- Atmospheric air provides the cold box refrigerant. no requirement for helium gas
- Purity ranging from 99.5 % to 99.995 %
- Product pressure ranging up to 5 barg
- Maintenance-free cryogenic turbine permits simple plant maintenance

LINIT models

Plant models	Liquid production rate (up to)
LINIT 25	35 litres per hour
LINIT 50	65 litres per hour
LINIT 100	130 litres per hour

LINIT process

Atmospheric air is filtered and compressed before carbon dioxide water and residual hydrocarbons are removed in an air purification unit. The air then passes into the cold box where it is cooled and liquefied by a maintenance-free gas lubricated turbine. The liquid air is distilled in a distillation column to yield pure nitrogen gas which is condensed in a condenser to yield pure liquid nitrogen at pressures up to 5 barg and with a purity ranging from a standard 99.5 % to 99.995 %. The liquid nitrogen transfers automatically into a storage tank.

About Us.

Linde CryoPlants Ltd., a subsidiary of The Linde Group based in UK, specialises in the manufacture of compact air separation plants. Such plants are designed to meet the needs of our customers in a variety of different industries.

The core product of the portfolio centres on a range of nitrogen generation plants. Linde CryoPlants standard designs are containerised which help reduce installation time and cost at site.

Thermal losses in the production process are overcome by the use of an in house designed and manufactured expansion air brake turbine or liquid injection, depending on the plant type selected. Such plants are economical and enjoy an excellent reputation for reliability and quality. Linde CryoPlants also manufacture a range of dedicated liquid oxygen producing plants that are designed with the needs of a hospital installation or alternatively those of a dedicated cylinder filling station in mind. Once again these plants are containerised and use the same in house design of expansion brake turbine. In addition, Linde CryoPlants Ltd. manufactures a range of dedicated liquid oxygen plants that are designed with the needs of both research and industrial users in mind, these plants also use the same in house design of expansion brake turbine.

Linde CryoPlants have enjoyed considerable success in the sales of their product range worldwide and welcome discussion on your application to see how we can become your preferred partner of choice for your air separation needs.

ENQUIRIES:

Should you wish to enquire about Linde plants, please visit our website or contact us at the following address:

Linde CryoPlants Ltd.

1 Blackwater Park
Holder Road, Aldershot
Hampshire, GU12 4PQ,
United Kingdom

Phone: +44.1252.3313-51
Fax: +44.1252.3430-62

Email: lindecryoplants@linde-le.com
www.lindecryoplants.com

Engineering Division

Schalchen Plant
Tacherting, Germany
Phone +49.8621.85-0
Fax +49.8621.85-6620
plantcomponents@linde-le.com

Linde Engineering Dresden GmbH

Dresden, Germany
Phone +49.351.250-30
Fax +49.351.250-4800
ledd.dresden@linde-le.com

SELAS-LINDE GmbH

Pullach, Germany
Phone +49.89.7447-470
Fax +49.89.7447-4717
selas-linde@linde-le.com

Cryostar SAS

Hésingue, France
Phone +33.389.70-2727
Fax +33.389.70-2777
info@cryostar.com

Linde CryoPlants Ltd.

Aldershot, United Kingdom
Phone +44.1252.3313-51
Fax +44.1252.3430-62
lindecryoplants@linde-le.com

Linde Impianti Italia S.p.A.

Rome, Italy
Phone +39.066.5613-1
Fax +39.066.5613-200
m.margheri@lindeimpianti.it

Linde Kryotechnik AG

Pfungen, Switzerland
Phone +41.52.3040-555
Fax +41.52.3040-550
info@linde-kryotechnik.ch

Bertrams Heatec AG

Pratteln, Switzerland
Phone +41.61.467-7525
Fax +41.61.467-7500
hubertus.winkler@linde-le.com

CRYO AB

Gothenburg, Sweden
Phone +46.3164-6800
Fax +46.3164-2220
lars.persson@cryo.aga.com

Linde Process Plants, Inc.

Tulsa, OK, U.S.A.
Phone +1.918.4771-200
Fax +1.918.4771-100
sales@lppusa.com

Selas Fluid Processing Corp.

Blue Bell, PA, U.S.A.
Phone +1.610.834-0300
Fax +1.610.834-0473
sales@selasfluid.com

Hydro-Chem

Holly Springs, GA, U.S.A.
Phone +1.770.345-2222
Fax +1.770.345-2778
sales@hydro-chem.com

Linde Engenharia do Brasil Ltda.

São Paulo, Brazil
Phone +55.21.3545-2255
Fax +55.21.3545-2257
jaimе.basurto@linde.com

Linde Process Plants (Pty.) Ltd.

Johannesburg, South Africa
Phone +27.11.490-0513
Fax +27.11.490-0412
linde.za@linde-le.com

Linde Engineering Dresden GmbH

Moscow Office, Russia
Phone +7.495.6426242
Fax +7.495.6426243
ledd.moscow@linde-le.com

Linde Engineering RUS,000

Samara, Russia
Phone +7.846.331-3377
le.rus@linde-le.com

Linde Arabian Contracting Co. Ltd.

Riyadh, Kingdom of Saudi Arabia
Phone +966.1.419-1193
Fax +966.1.419-1384
jochen.nippel@linde-le.com

Linde Arabian Contracting Co. Ltd.

Al-Khobar, Kingdom of Saudi Arabia
Phone +966.3.887-1191
Fax +966.3.887-0133
klaus.libal@linde-le.com

Linde Engineering Middle East LLC

Abu Dhabi, United Arab Emirates
Phone +971.2.6981-400
Fax +971.2.6981-499
leme@linde.com

Linde Engineering India Pvt. Ltd.

Vadodara, Gujarat, India
Phone +91.265.3056-789
Fax +91.265.2461-757
sales@linde-le.com

Linde Engineering Far East, Ltd.

Seoul, South Korea
Phone +82.2789-6697
Fax +82.2789-6698
hanyong.lee@linde.com

Linde Engineering Division

Bangkok, Thailand
Phone +66.2751-9200
Fax +66.2751-9201
anuwat.krongkrachang@linde.com

Linde Engineering Co. Ltd.

Dalian, P.R. of China
Phone +86.411.3953-8819
Fax +86.411.3953-8899
info@lindeLED.com

Linde Engineering Co. Ltd.

Hangzhou, P.R. of China
Phone +86.571.8501-9222
Fax +86.571.8501-9200
info@lindeLEH.com

Linde Engineering Division

Beijing Representative Office
Beijing, P.R. of China
Phone +86.10.6437-7014
Fax +86.10.6437-6718
info@linde-lecn.com

Linde Engineering Taiwan Ltd.

Taipei, Taiwan
Phone +886.2.2786-3131
Fax +886.2.2652-5871
tso.ming.hsieh@linde-le.com

Linde AG

Engineering Division, Head office, Dr.-Carl-von-Linde-Strasse 6-14, 82049 Pullach, Germany
Phone +49.89.7445-0, Fax +49.89.7445-4908, E-Mail: info@linde-le.com, www.linde-engineering.com