

THE LINDE GROUP

*Linde*

# Backup Vaporizers for Olefin Plants



Most olefin plants require a backup system in order to ensure a continuous operation.

The Linde water bath vaporizer stands for short response time and high reliability for your olefin process.

#### Characteristics of the steam-heated water-bath vaporizers

- The unit consists of a water vessel in which a coiled tube bundle is installed
- The water is heated up by direct steam injection through one or more steam lances
- The steam flow is controlled by the water temperature
- During stand-by conditions the water temperature is kept through a small lance at 60°C

#### Benefits

- Excellent solution for stand-by or discontinuous operation
- Availability of full capacity within seconds
- Reliable operation from 0 to 100 % of nominal capacity
- Two or three streams of different liquefied gases can be treated in one unit
- Load range from approximately 500 Nm<sup>3</sup>/h up to 150,000 Nm<sup>3</sup>/h
- Multiple heating sources installed in one apparatus (e.g. steam and warm water)

Our water bath vaporizers can also be designed for alternative heat sources (cooling water, electrical power) in pressurised or pressure less water systems with short response times and load following operation.



#### Selected references

Service	Duty [Nm <sup>3</sup> /h]	Design pressure [bar]	Diameter [mm]	Length [mm]	weight [t]	Country
C2H4	33.960	23,0	2.350	6.700	17,00	Russia
C3H6	20.195	12,0				
C2H6	1.390	28,0				
C3H8	26.340	12,0	2.550	7.230	17,10	Venezuela
C2H4	43.950	40,0	1.600	6.600	7,20	Turkey
C2H4	56.157	25,0	1.750	11.880	19,20	Germany
C2H4	3.774	27,0				
C2H4	36.000	27,0	2.140	5.900	11,50	Finnland
C2H4	68.000	25,0	2.345	7.580	15,20	Norway
C2H6	82.000	15,2	3.000	11.710	45,00	U.A.E.
C2H4	59.000	45,0	1.700	7.300	11,00	
C2H4	26.000	25,0	1.475	5.950	5,95	South Africa
C2H4	31.000	36,0	1.700	7.235	10,00	Sweden

Our Linde plant in Schalchen, Germany, designs and fabricates backup vaporization systems with reliable coil-wound heat exchangers buffered in a steam heated water bath.

**The scope of activities comprises:**

**Detail engineering of vaporizers**

- Project management
- Thermal and hydraulic design acc. process data sheets
- Mechanical, quality, welding and shipping engineering acc. to client specifications and relevant codes and standards
- Design of site auxiliaries (e.g. templates for anchor bolting)
- Procurement and tracking of all materials and parts
- Kick-off- and Pre-inspection meetings as required
- Final documentation
- Manual for operation, installation and maintenance

**Fabrication of vaporizers**

- Fabrication of the tube bundles
- NDE of the tube bundle weld seams acc. to the required codes
- Fabrication of the steam injectors
- Fabrication of the vaporizer shells
- Pressure testing of the tube bundles
- Leak testing of the tube bundles
- Inspection and approval of the tube bundles
- Testing of the vaporizer shells
- Surface preparation and painting of the shell
- Final assembly of tube bundles and shells
- Preparation for transportation (e.g. N<sub>2</sub> filling, etc.)
- Deliveries as required EXW Linde Schalchen, FOB Northseaport or DDU jobsite

**Complete backup systems including**

- Basic engineering for the backup-system
- Additional parts (insulation, pumps, piping, instrumentation, platforms and ladders, lighting, foundation templates, anchor bolts and nuts, grouting material etc.)
- Skids with a high grade of pre-fabrication to minimise site work
- On-site supervising for off-loading, installation, commissioning and start-up



# Designing processes – constructing plants.

Linde's Engineering Division continuously develops extensive process engineering know-how in the planning, project management and construction of turnkey industrial plants.

## The range of products comprises:

- Petrochemical plants
- LNG and natural gas processing plants
- Synthesis gas plants
- Hydrogen plants
- Gas processing plants
- Adsorption plants
- Air separation plants
- Cryogenic plants
- Biotechnological plants
- Furnaces for petrochemical plants and refineries

More than 3,800 plants worldwide document the leading position of the Engineering Division in international plant construction.

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## Production facilities.

We at the Linde Schalchen Plant are located 100 km east of Munich, Germany and cover a total site area of approx. 200,000 m<sup>2</sup>. Our 700 engineers and skilled workers design and manufacture components and complete modules for the application in process plants.

Backed up by more than 100 years of production know-how, highly developed plant modules are manufactured. Our innovative technologies and our competitiveness open the door to participation in prestigious plant projects world-wide.

We provide complete services on field installation and operation. A specialized service crew is available for immediate and professional site services.

For further information please contact:

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## Product range.

- Aluminium plate-fin heat exchangers as single units or as manifolded assemblies
- Cold boxes with aluminium plate-fin heat exchangers, columns and vessels
- Coil-wound heat exchangers and isothermal reactors for chemical and petrochemical plants
- Columns and pressure vessels in aluminium for cryogenic plants
- Spiral-welded pipes in aluminium
- Storage tanks for liquefied gases
- Steam-heated waterbath vaporizers as well as air-heated vaporizers for liquefied gases