

TECHNICAL DESCRIPTION **CRANEFRIGOR™ VH**

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Figure

CRANEFRIGOR™ VH

The CRANEFRIGOR™ VH liquefier was developed for reliable and long-term operation under extreme ambient conditions as in steel works, paper factories and foundries. Thanks to its robust structure, a reliable operation is ensured even with heavy shocks.

The CRANEFRIGOR™ series of crane air conditioning units ensure a reliable and efficient production process.

The condensing unit CRANEFRIGOR™ VH is only approved for evaporating temperatures $> -10^{\circ}\text{C}$ and is therefore not covered by Ecodesign Directive 2009/125/EC.

General description

Scope of delivery	Your benefits!
<p>Compressor (made by Bizer)</p> <ul style="list-style-type: none"> • Semi-hermetically sealed construction • Suction-gas-cooled motor • Self-regulating oil sump heater 	<ul style="list-style-type: none"> • Low maintenance • No risk of overheating • Ensures lubrication during the start • Very good availability of spare parts worldwide
<p>Liquefier</p> <ul style="list-style-type: none"> • Cathodic dip coating 	<ul style="list-style-type: none"> • High corrosion resistance • Shorter maintenance intervals due to special adapted spacing between blades even with extreme dust load • Shorter maintenance intervals due to smooth surface
<p>Liquefier fan</p> <ul style="list-style-type: none"> • Norm motors in industrial construction with coupled fan wheel 	<ul style="list-style-type: none"> • Powerful • Long runtimes • Very good availability of spare parts worldwide
<p>Casing</p> <ul style="list-style-type: none"> • Robust, welded construction • Primed and powder-coated in RAL 3004 • Other colours or stainless steel version optional 	<ul style="list-style-type: none"> • Robust, welded construction • Primed and powder-coated in RAL 3004 • Other colours or stainless steel version optional
<p>Terminal box</p> <ul style="list-style-type: none"> • Completely wired according to VDE • Powder-coated RAL 7035 • Optional stainless steel version 	<ul style="list-style-type: none"> • The CRANEFRIGOR™ is wired connection-ready on a terminal strip. • Colour scheme with high corrosion protection
<p>Quality assurance</p> <ul style="list-style-type: none"> • Leakage test • Presetting of the safety devices 	<ul style="list-style-type: none"> • Operational reliability • Easy commissioning on site

Options packages:

Material order no.	Scope of delivery	Your benefits!
807 528 807 533 807 537	<p>Options packages “Operational reliability” High ambient temperature</p> <p>Low outside temperature</p> <p>Output control</p>	<ul style="list-style-type: none"> Operational reliability during brief increased ambient temperature Cooling during outside temperature <15 °C Increased service life during fluctuating thermal loads
807 543 807 549	<p>Options packages “Corrosion protection” Corrosion protection package 1</p> <p>Corrosion protection package 2</p>	<ul style="list-style-type: none"> Multiple-coated pipes Housing / Plate parts made of high-quality stainless steel 1.4571 / AISI 316Ti Multiple-coated pipes
807 556	<p>Option package “Custom” Customer-specific version</p>	<p>Special requirements of a company can be realised, such as:</p> <ul style="list-style-type: none"> Custom voltages / Network configurations Liquefier version (fully copper, blade spacing and thickness) Conductor identification Special coatings Protection class

Plant packages:

<i>Material order no.</i>	<i>Scope of delivery</i>	<i>Your benefits!</i>
807 571	Plant packages “Electrical control” Constructed as switchboard or control cabinet <ul style="list-style-type: none"> • Completely wired, according to VDE • Operational and fault signal outputs • Powder-coated RAL 7035 (control cabinet) 	<ul style="list-style-type: none"> • Adjustable to individual specifications
807 572	Optional stainless steel version (Control cabinet)	<ul style="list-style-type: none"> • Increased corrosion protection
807 565	Plant package “SMART Control” Superordinate controller FrigorTec Smart Control FSC	<ul style="list-style-type: none"> • Cyclic switching over for redundant systems • Digital display of pressures and temperatures • Optional regulation of the room pressure by filter/overpressure unit • Optional display of the relative room humidity
807 573	Plant packages “Internal unit (Evaporator)” Wall or ceiling version <ul style="list-style-type: none"> • Operation of several internal units on one liquefier possible • Epoxy-coated blades • Housing primed and powder-coated 	<ul style="list-style-type: none"> • Adjustment options as required for the project • Colour scheme with high corrosion protection
805 573	Optional housing in stainless steel version	<ul style="list-style-type: none"> • Increased corrosion protection
807 562	Plant packages: “Overpressure / Fresh air” Filter/Overpressure unit FT15	<ul style="list-style-type: none"> • Filtered fresh air supply, adjustable air volume • Creation of overpressure in the room to be cooled; less dust comes in
807 563	Self-cleaning filter/overpressure unit FS10	<ul style="list-style-type: none"> • Long filter service life due to fully automatic shaking function • Filtered fresh air supply, adjustable air volume • Creation of overpressure in the room to be cooled; less dust comes in
807 579	Plant package “Condensation evaporator” Condensation evaporator KV1	<ul style="list-style-type: none"> • No damage due to dripping condensation • Overload protection
807 575	Plant package “Assembly material” <ul style="list-style-type: none"> • Refrigerant lines made of copper • Solenoid valves, expansion valves, filter drier, sight glasses • Thermostats • Insulation for suction line • Refrigerant • Plumb-line 	<ul style="list-style-type: none"> • Adjustments and planning as required for the project must be made in advance.

Technical specifications VH:

Performance data

Cooling performance is included customised in the offer

Nominal cooling performance:

55.5 kW

- At 27 °C room temperature, 52 % rel. room air humidity
- 35 °C ambient temperature
- Refrigerant R134a / R513A

Cooling mode

- Depending on compressor size
- Depends on the option packages and version of heat exchanger

Temperature range R134a	+15 °C to +70 °C
With option package "low outside temperature"	-25 °C to +70 °C
Temperature range R513A	+15 °C to +70 °C
With option package "low outside temperature"	-25 °C to +70 °C
Temperature range R450A	+15 °C to +70 °C
With option package "low outside temperature"	-25 °C to +85 °C

- More extreme temperatures upon request

Sizes and weight

Weight	approx. 950 kg
Dimensions	type, see dimension sheet

Operating voltage

Further operating voltages upon request	3 ph / 400 V / 50 Hz
	3 ph / 460 V / 60 Hz

Protection category

IP54

Network type

TN-S

Refrigerant

R134a / R513A / R450A

GWP (global warming potential) 1430 / 631 / 605

Filling quantity / CO2 equivalent depends on the unit version

The performance description is a quality in the sense of sections 434 and/or 633 BGB (German Civil Code).
Subject to technical change.

According to (EN) 378-3 „Refrigeration units and Heat pumps – safety and environment regulations – Location and protection for persons” detectors needs to installed if concentration exceeds the practical limits (ATEL/ODL- EN 378-1, Appendix C) in a working and staying area.

The table is showing the minimum space dependent from the used Freon, air-conditioner and options.

Detectors are required if the conditioned space is smaller as mentioned in the table below.

Local restrictions and regulations need to be considered first.

Refrigerant	Minimum conditioned space before detector is required	
	Volume collector 32L	Volume collector 56L
R134a	180 m ³	266,0 m ³
R513A	139,6 m ³	206,6 m ³
R450A	120,0 m ³	178,6 m ³

ATEL: Exposure limit value for acute toxicity

ODL: Limit value for oxygen deficiency