

TECHNICAL DESCRIPTION **CRANEFRIGOR™ TC**

Date: 19/12/2019
QVO 0441
Rev. 02

Contact: e-mail: info@frigortec.de / phone: +49 7520 91482 - 0



Figure

CRANEFRIGOR™ TC

The CRANEFRIGOR™ TC cooling unit 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.

General description

Scope of delivery	Your benefits!
Refrigerant <ul style="list-style-type: none"> Ecological refrigerant Low greenhouse warming potential 	<ul style="list-style-type: none"> Long-term safe usage in accordance with legal regulations (EU) no. 517/2014 Sustainable operation
Compressor (made by Bizer) <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
Liquefier <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
Liquefier fan <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
Evaporator <ul style="list-style-type: none"> Cathodic dip coating Cleaning opening / Inspection opening 	<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 interval due to smooth surface. Soiling is easily recognised and simple to clean through the opening
Circulating air fan <ul style="list-style-type: none"> Speed-controlled EC radial fan, industrial construction 	<ul style="list-style-type: none"> Powerful Long runtimes Energy-efficient and quiet
Air filter <ul style="list-style-type: none"> Large-area frame filter Filter class COARSE 80% 	<ul style="list-style-type: none"> Effective filter with long service life Easy to replace and clean
Condensation water separation <ul style="list-style-type: none"> Drip tray made of stainless steel Hose connection for condensation Siphon in condensate line 	<ul style="list-style-type: none"> No corrosion of the tray Defined condensation drainage Avoids the drawing in of contaminated ambient air
Control and power cabinet <ul style="list-style-type: none"> Completely wired, according to VDE Temperature control by thermostat Operational and fault signal outputs Powder-coated RAL 7035 Optional stainless steel version 	<ul style="list-style-type: none"> The CRANFRIGOR™ is ready for connection; at the site, you only have to connect the power supply Colour scheme with high corrosion protection
Casing <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"> Long service life Attractive colour scheme with high corrosion protection
Quality assurance <ul style="list-style-type: none"> Leakage test Function test in our plant's test facility 	<ul style="list-style-type: none"> Operational reliability Easy commissioning on site

Options packages:

Material order no.	Scope of delivery	Your benefits!
807 468	Options packages "Comfort" Comfort controller FTC-K (installed in cabin) incl. regulation of cooling performance by hot-gas bypass	<ul style="list-style-type: none"> • Digital actual and setpoint display at the regulator • Mode selector switch On / Off / Ventilation • Air volume can be set in 3 stages • Minimal temperature fluctuations in the cabin
807 474	Comfort controller FTC-E (installed in electronics room)	<ul style="list-style-type: none"> • Digital actual and setpoint display at the regulator • Mode selector switch On / Off / Ventilation
807 480	Vibration dampers	<ul style="list-style-type: none"> • Reduction structure-borne noise
807 485	Option package "Heater" Air heater with temperature monitor	<ul style="list-style-type: none"> • Comfortable room temperature • Frost protection even at standstill or during maintenance work
807 489	Options packages "Operational reliability" High ambient temperature	<ul style="list-style-type: none"> • Operational reliability during brief increased ambient temperature
807 493	Low outside temperature	<ul style="list-style-type: none"> • Cooling during outside temperature <15 °C
807 500	Options packages "Corrosion protection" Corrosion protection package 1	<ul style="list-style-type: none"> • Multiple-coated pipes
807 505	Corrosion protection package 2	<ul style="list-style-type: none"> • Housing / Plate parts made of high-quality stainless steel 1.4571 / AISI 316Ti • Multiple-coated pipes
807 510	Option package "Custom" Customer-specific version	<p>Special requirements of a company can be realised, such as:</p> <ul style="list-style-type: none"> • Custom voltages / Network configurations • Heat exchanger version (fully copper, blade spacing and thickness) • Control cabinet heater, conductor identification • Special coatings • UL-/CSA-conforming unit version • Protection class
807 515	Options packages "Accessories" Assembly accessories according to specification	<ul style="list-style-type: none"> • Air duct, holding devices, refrigerating accessories
807 520	Spare parts according to specification	<ul style="list-style-type: none"> • Spare part package

Plant packages:

<i>Material order no.</i>	<i>Scope of delivery</i>	<i>Your benefits!</i>
8807 558	Plant packages “Overpressure / Fresh air” Fresh air supply on the device	<ul style="list-style-type: none"> • Filtered fresh air supply, air volume not adjustable • Filtered fresh air supply, adjustable air volume • Creation of overpressure in the room to be cooled; less dust comes in • 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
807 562	Filter/Overpressure unit FT15	
807 563	Self-cleaning filter/overpressure unit FS10	
807 565	Plant package “Condensation evaporator” Condensation evaporator KVW	<ul style="list-style-type: none"> • No damage due to dripping condensation • No additional power supply necessary • Overload protection
807 566	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

Technical specifications TC:

Performance data

Cooling performance is included customised in the offer
Heat output is included customised in the offer

Nominal cooling performance:

12.5 kW

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

Nominal cooling performance:

11.3 kW

- At 27 °C room temperature, 52 % rel. room air humidity
- 35 °C ambient temperature
- Refrigerant R450A

Air flow volume:

2,000 m³/h

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 +85 °C

With option package "low outside temperature"

-25 °C to +85 °C

- More extreme temperatures upon request

Heating mode

Temperature range

-25 °C to +30 °C

Sizes and weight

Weight

approx. 395 kg

Dimensions

type, see dimension sheet

Operating voltage

3 ph / 400 V / 50 Hz

Further operating voltages upon request

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	
	Standard	With option package „Low outside temperature“
R134a	17,2 m ³	43,6 m ³
R513A	13,5 m ³	33,9 m ³
R450A	11,6 m ³	29,3 m ³

ATEL: Exposure limit value for acute toxicity

ODL: Limit value for oxygen deficiency