

 **compact**
KÄLTETECHNIK



**COOLING SOLUTIONS
MADE WITH PASSION**



Customised & Series Production „Made in Germany“

We work hand in hand with our customers to develop **customised refrigeration solutions that are precisely tailored to their specific needs.**

Our extensive know-how, gained through industry experience since 1992, enables us to meet any challenge.

As good service also contributes to sustainability, all compact refrigeration systems are designed to **be particularly maintenance-friendly.** This simplifies inspections and repairs, saves valuable time and ensures efficient, cost-effective system operation and contributes to the durability and environmental friendliness of the system.

The compact Kältetechnik Quality Promise

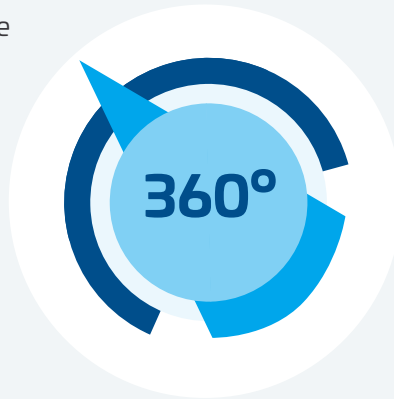
- Quality management system certified according to **ISO 9001** for all company processes
- Production of refrigeration machines on the basis of the **Pressure Equipment Directive DIN EN 378**
- Certificate for the maintenance of an approved quality assurance system according to DEKRA Modul H1
- Approved welding company according to **AD 2000 HPO**
- Certificate for the fulfilment of welding quality requirements according to **DIN EN ISO 3834-2**
- Specialist contractor Certificate of Competence and Expertise for the Inspection and Installation & Maintenance of Refrigeration Systems by **VDKF e.V.**

Refrigeration for professionals

Versatile cooling solutions – naturally efficient

Consulting & Conception

We work closely with you to define the specific requirements of your project and develop the best cooling solution, ensuring that every detail is taken into account.



Project Planning & Construction

The construction team will produce an efficient refrigeration solution for you, perfectly tailored to your requirements and the available space, with maximum system efficiency.

Production

After approval, we start manufacturing using state-of-the-art technology and high-quality materials to meet the highest standards. Certified according to ISO 9001:2015.

Service

On request, we can support you with commissioning on site. Should a malfunction occur, we and our service partners will be happy to assist you.



Product Series

Proven concepts with powerful performance

Food Refrigeration
Supermarket Refrigeration
Commercial Cooling
Industrial Cooling



carbo-Box

CO₂ gas cooler set

LT: 9.0 kW – 21.8 kW

MT: 6.9 kW – 21.7 kW



carbo-Line

CO₂ Mini-Booster, modular & divisible

LT: 2.3 kW – 25.0 kW

MT: 7.0 kW – 38.0 kW



carbo-Rack

CO₂ Booster, strong & flexible

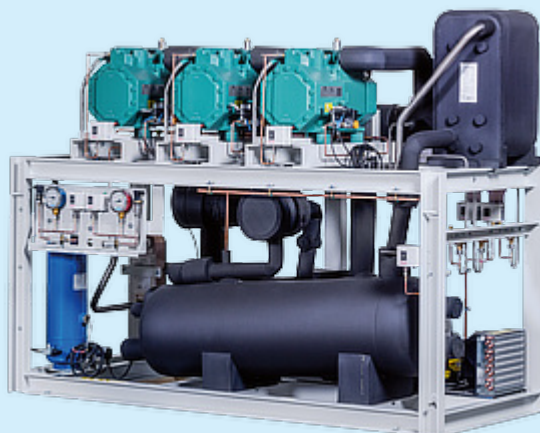
LT: 4.0 kW – 60.0 kW

MT: 30.0 kW – 140.0 kW

carbo-Freeze

CO₂ cascade unit

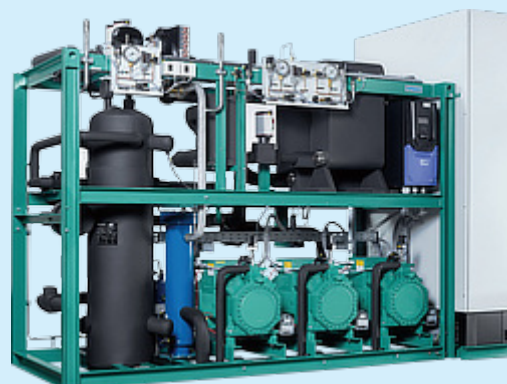
LT: 5.0 kW – 416.0 kW



carbo-Chill

CO₂ cold water set

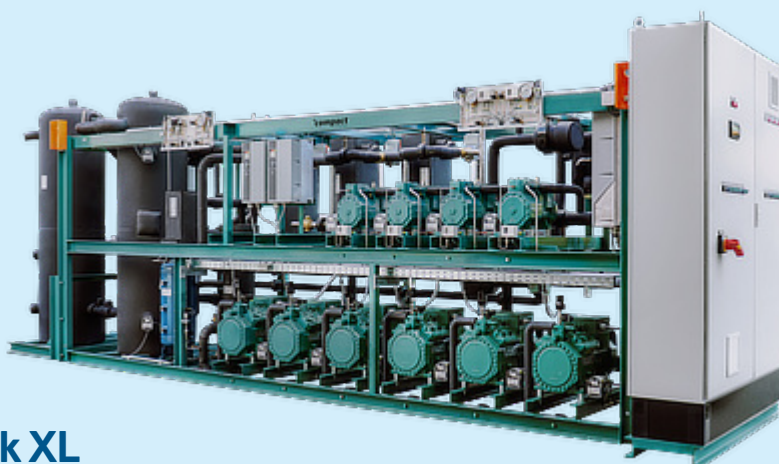
Cold water/-brine:
100.0 kW – 400.0 kW
at 36°C
outdoor temperature



carbo-Rack XL

CO₂ Booster, customised

LT: 10.0 kW – 150.0 kW
MT: 80.0 kW – 800.0 kW





Advantages:

- simplified installation
- does not require pipework in sections with 120 bar

Immediately ready for use:

- Plug and Play
- Wide range of performance variants
- Outdoor installation
- Power control using a frequency converter

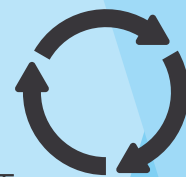


Technical data:

LT:

9.0 kW – 21.8 kW

at to/tc= -30/+35°C



MT:

6.9 kW – 21.7 kW

at to/tg= -5/+35°C

Receiver volume:

32 – 49 Litre

as a function
of total output



carbo-Box

CO₂ gas cooler set – not only for small food retailers



Simple „plug & cool“:

Cooling update for a range of application

The *carbo-Box is a compact and environmentally friendly CO₂ refrigeration system that impresses with its high efficiency and easy installation.

Perfect for applications in small food markets, 24/7 shops, bakeries, butcher`s, or for expansion of existing systems. *carbo-Box is available in different power levels.



Scan here to get
online information

carbo-Line

Plug & Play CO₂- complete system with energy management



frame
divisible

Application:

- Organic shops
- Fruit and vegetable shops
- Bakeries
- Butcher`s
- Canteens and large kitchens

Modular und efficient – a perfect fit:

Discounter & food markets from 300 to 1,200 m² sales area

Our *carbo-Line series is perfectly tailored to the requirements of small to medium capacities and is ideally suited for low partial loads thanks to Bitzer CR2 capacity control. Its modular designs allows for customisation according to different cooling requirements.

With individual configuration of the compressor slots with up to 2x low temperature and up to 3x medium temperature, the *carbo-Line can be used not only as a booster, but also as a pure low temperature booster or medium temperature machine.



Technical data:

LT:

2.3 kW – 25.0 kW
 at to/tc= -30/-8°C



MT:

7.0 kW – 38.0 kW
 at to/tg= -8/+38°C



Receiver volume:



63 Litre

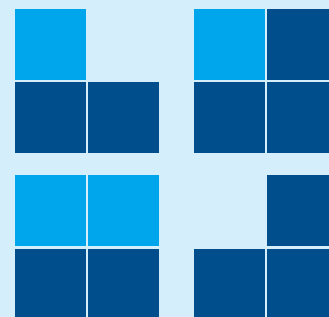
Upgrade options:

- Frequency converter
- Weather- /soundproof housing
- Gas cooler
- Heat recovery
- Horizontally divisible frame

Possible variations:

The following configurations are possible due to the individual allocation of the compressor positions:

 Low Temp.
 Medium Temp.



*carbo-Rack

The CO₂ complete system
with maximum flexibility

Custom-
ised



Application:

- Commercial cooling
- Supermarket cooling
- Hypermarkets
- Discounter

Freely combinable compound system for LT and MT:

For food retailers up to approx. 2,000 m² sales area

The *carbo-Rack series is perfectly tailored to the requirements of the food retail sector. By using the environmentally friendly refrigerant CO₂ with a GWP of 1, all refrigeration tasks can be performed safely, efficiently, and in compliance with all applicable standards and laws.

*carbo-Rack is a booster with flash gas bypass. The system works with up to 4 compressors for LT and up to 4 compressors for MT stage. Thanks to Bitzer CR2 capacity control, it is ideally suited for low partial loads. This increases the operational safety and provides a fine adjustment of the cooling capacity for LT and MT.



Technical data:

LT:

4.0 kW – 60.0 kW

at $t_o/t_c = -30/-8^\circ\text{C}$



MT:

30.0 kW – 140.0 kW

at $t_o/t_g = -8/+38^\circ\text{C}$



Receiver volume:

100 – 250 Litre

as a function
of total output

Upgrade options:

- For increased efficiency, parallel compressors and compact ejectors can be used

Advantages:

- More efficient power grading can be realised
- Parallel compressor for discharging flash gas
- Optimised plant operation throughout the year
- Slim design for easier installation
- Quickly available, high readiness to deliver

smartR-tool



Configure online
24/7

*carbo-Rack XL

The individual adaptation as an addition to *carbo-Rack

Application:

- Commercial cooling
- Industrial cooling
- storage und Logistic
- For expansion of existing systems



Individually planned, individually manufactured:

For Super- and Hypermarkets up to 7,000 m² sales area

A *carbo-Rack XL is individually designed, planned and manufactured to customer specifications. Because markets of this size have a personal character that needs to be continued in the machine room. With the help of standardised assemblies, we manufacture these individual machines with the necessary degree of flexibility.

carbo-Rack XL starts where carbo-Rack leaves off. With a total of up to 14 compressors for deep-freezing, normal refrigeration and parallel compression on a single rack, carbo-Rack XL offers reliable refrigeration performance even for extreme requirements.



Technical data:

LT:

10.0 kW – 150.0 kW

at $t_o/t_c = -32/-8^\circ\text{C}$



MT:

80.0 kW – 800.0 kW

at $t_o/t_g = -8/+38^\circ\text{C}$



Receiver volume:

350 – 750 Litres

as a function
of total output

Upgrade options:

- parallel compression, Ejectors
- Gas cooler loose or mounted
- Standstill cooling for receiver
- Weather-/soundproof housing
- Container

Advantages:

- More efficient capacity staging
- Parallel compressor for flash gas removal
- Selection of gas and liquid ejectors for even more energy-efficient operation
- Optimised plant operation throughout the year



Learn more online



Upgrade options:

- Frequency converter
- Weather-/soundproof housing
- Container
- MT stage unit
- Standstill cooling for receiver
- Compressors for higher pressure levels

Subcritical operation mode:

*carbo-Freeze works subcritically and is operated below the critical point of CO₂. In contrast to transcritical systems, which require more complex control mechanisms, the subcritical operating method remains simple and reliable.

Future-proof cooling solution using natural refrigerant CO₂.

Technical data:

LT:

5.0 kW – 416.0 kW

at to/tc= -30/-5°C



By the way:

Economical and low-maintenance through the simple control mechanismus



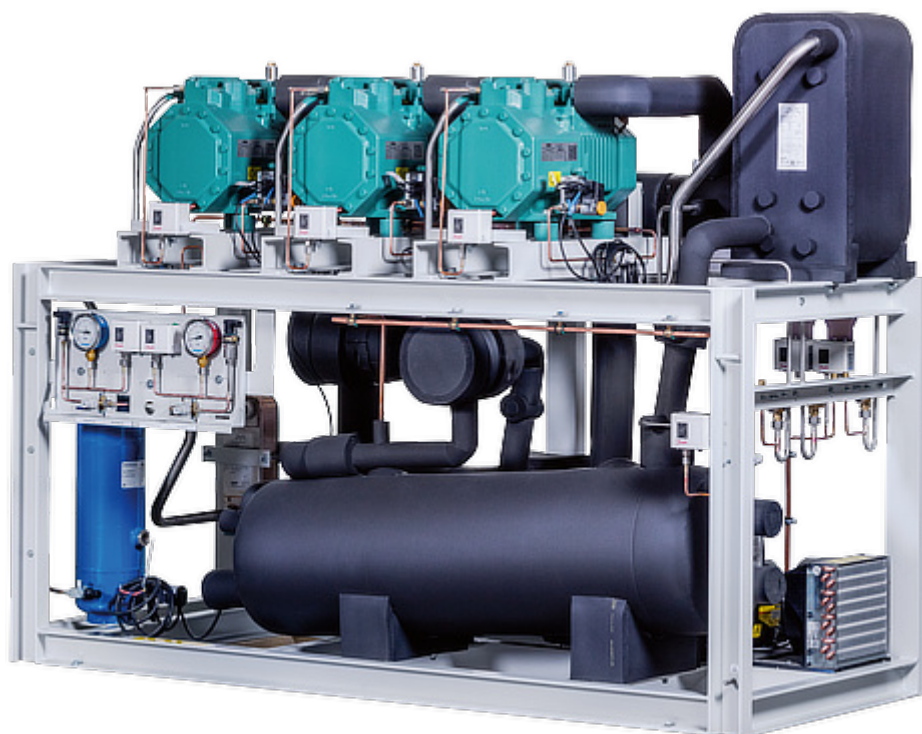
*carbo-Freeze

Deep-freeze cascade stage for extreme cooling sectors

Application:

- Deep-freeze warehouses
- Freezer
- Industry
- Commercial

Subcritical
operation
mode



Strong performance, individually customisable:

Deep-freeze warehouses, industrial applications

The *carbo-Freeze works with two to four compressors on a solid frame construction and has very good coefficients of performance due to its subcritical operating mode. An integrated cascade heat exchanger enables the condensation heat to be dissipated.

With a capacity of 5 kW to 416 kW, it is versatile and can be easily combined with existing cold water systems. Optional accessories include frequency converters, weatherproof housing and container solutions. Maximum operating pressures of 45 bar partly allow the use of conventional components and piping.



Scan here to get
online information

carbo-Chill

CO₂ Cold water set – customised cooling capacity



Application:

- Industrial cooling
- Air conditioning
- Server or process cooling

Water
allrounder

Precise temperature control for a wide range of processes:

Enables cold water temperatures from -8°C to +8°C

*carbo-Chill refrigerators are used to provide cold water or brine and works with up to four transcritical compressors. Larger capacity stages receive up to additional parallel compressors to increase efficiency.

The Machine is equipped with a control system adapted to CO₂ chillers, which optimally regulates the water temperatures. *carbo-Chill can be individually equipped with heat recovery to increase overall efficiency. Good thermodynamic properties of CO₂ also improve the recovery of heat energy.

Technical Data:

Cold water/-brine

100.0 kW – 400.0 kW

at 36°C

outdoor temperature



Receiver volume:

100 – 350 Litres

as a function
of total output



Upgrade options:

- Heat recovery
- Primary & secondary pump stations
- Air or water-cooled gas cooler
- Weather-/soundproof housing
- Container
- Standstill cooling for receiver
- LSPM-Motors

Advantages:

- Parallel compressor for flash gas removal
- Fully enclosed outdoor housing or indoor installation
- Optimal water temperature through specific control for CO₂ chillers



Scan here to get
online information

Solutions are our mission

From production-ready energy solutions to custom major projects

Use Case: Flexible plant construction for CERN

Challenge:

CERN had special requirements for a prototype that was to be implemented as part of a tender. However, due to the unique nature of the project, the requirements and technical specifications changed during the process. The design of the prototype had to be adapted to the challenges at short notice.

Solution:

Thanks to our expertise as a partner for custom engineering with flexible manufacturing, we were able to react immediately to the changed requirements. The prototype for CERN was extensively adapted and configured directly on the construction site – by using prefabricated modules and mobile container solutions on site.

Result:

The CERN project was successfully completed despite the last-minute changes and fulfilled the new technical requirements. Even in this challenging situation, we have proven ourselves to be a reliable partner for complex refrigeration solutions to the complete satisfaction of our customer.

Contact us – we will realise your project!

EJCO2 – the compact Ejektor

- Efficiency increases of 15-30% possible
- (comparison of booster system with flash gas bypass)
- Lower compressor capacity required (smaller or fewer compressors)
- Extension of parallel compressor running time even at low ambient temperatures



Increased efficiency for CO₂ systems



Information about EJCO2

Working together for the optimum result



compact Kältetechnik is synonymous with the use of environmentally friendly refrigerants such as CO₂, ammonia and propane, which minimise the ecological footprint.

Customised consultations are used to identify energy-saving potential for compact refrigeration systems and integrate it into the construction process.

The result is demand-oriented refrigeration solutions that are perfectly tailored to specific customer requirements.

compact energy concepts – series or individual

- ✦ **compact team of experts** for specific advice
- ✦ **Expert knowledge** from planning to production – Made in Germany
- ✦ **Full-year view** of energy consumption
- ✦ **Focus on** investment and energy efficiency
- ✦ **Research & development** of new components
- ✦ **Cooperation** with component manufacturers in the development of control concepts

Our company locations

DRESDEN

DEVELOPMENT AND PRODUCTION

Dieselstraße 3

01257 Dresden | Germany

SCHARFENSTEIN

DEVELOPMENT AND PRODUCTION

August-Bebel-Straße 24 E

09430 Drebach / OT Scharfenstein | Germany

KATOWICE

SALES EASTERN EUROPE

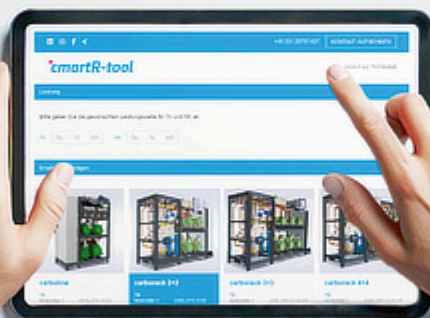
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smartR-tool

The compact online configurator

- plan 24/7 cooling solutions
- price information*, flow chart, technical data
- for all compact CO₂ standard products
- quick & flexible product offer*

www.compact-kaeltetechnik.de/en/csmartR-tool



* Registration is required.
Activation can take up to 48 hours,
after which time it can be used.