



DAS HERZ DER FRISCHE

ACP

AMMONIA COMPRESSOR PACKS

SP-600-3 EN



ACP SERIES

FOR INDUSTRIAL
APPLICATIONS



INDUSTRIAL
REFRIGERATION



INTELLIGENT
PRODUCTS



NH₃

BITZER EXPERTISE AND INNOVATION



AIR CONDITIONING



HEAT PUMPS



REFRIGERATION



PROCESS COOLING



TRANSPORT



We are always striving for the highest possible energy efficiency and quality at BITZER. As an independent global leader in refrigeration, air conditioning and heat pump technology for comfort air conditioning, process technology and mobile applications, we use our extensive experience to provide innovative products and intelligent solutions which create additional value for our partners and the environment all over the world. Learn more at bitzer.de



INNOVATION
DRIVER SINCE
1934

EMPLOYEES
4,500

SITES
74

COUNTRIES
40

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Reliable refrigeration is a top priority in many industries. The flexible combination of compressor units in our ACP supports redundant system concepts – for a reliable cooling supply and a significant reduction in downtime.



ACP

THE NATURAL CHOICE

ACP.85 // ACP.95

Whether for medium or low temperature applications, air conditioning or booster applications, BITZER Ammonia Compressor Packs (ACP) are just as flexible as the requirements in industrial refrigeration are different. Always onboard: the natural refrigerant ammonia (R717).

AHEAD OF MARKET DEMANDS

We designed the ACP specifically to meet the demanding requirements of industrial refrigeration applications in terms of redundancy and operational reliability. In particular, the modular use of several single or multiple compressor units enables a fail-safe system architecture. Thanks to the flexible combination of compressor units, redundant system concepts can be realised that guarantee a reliable refrigeration capacity even in the event of failure, effectively reducing downtime.

The new ACP single-compressor design offers versatile application possibilities. For example, it can be operated as a swing machine to support a variety of compound systems and be used to expand the capacity of existing systems, thus providing end users with a cost-effective, future-proof solution for a whole host of application ranges.

AMMONIA FOR ANY APPLICATION

Ammonia's high energy efficiency and outstanding thermodynamic properties make it ideal for industrial refrigeration systems in areas such as food production, warehouses and ice rinks. As it has neither greenhouse nor ozone depletion potential (GWP and ODP 0), ammonia is the first choice as a refrigerant for responsible companies while being absolutely future-proof.

OVER 40 YEARS OF EXPERIENCE IN ONE UNIT

At BITZER, we have more than 40 years of experience with screw compressors using ammonia as a refrigerant. We have continuously developed and optimised our portfolio – and with our ACP, we have now made it especially easy, quick and cost-effective for our customers and partners to benefit from our decades of ammonia proficiency.



FOOD AND BEVERAGE

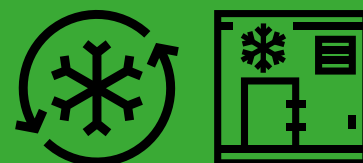
In the food and beverage industry, BITZER ACP provide reliable and efficient cooling solutions for production and storage. They ensure optimal temperatures are maintained, preserving the quality and ensuring the safety of food products.



ENERGY

Our ACP excel in energy applications, including heat pumps, offering robust performance to achieve efficient energy transfer. They are designed to handle the demanding requirements of heating and cooling processes, ensuring optimal energy utilisation and sustainability.

SCALABLE PERFORMANCE ACCORDING TO YOUR NEEDS



PROCESS COOLING

When it comes to exceptional process cooling and solutions, our ACP are the go-to choice: they deliver consistent and efficient cooling, crucial for maintaining the stability of sensitive processes. Their efficiency and reliability make them a top choice for industries requiring precise temperature control and energy management.



LEISURE APPLICATIONS

BITZER ACP work perfectly for leisure applications such as ice rinks and snow machines, where maintaining low temperatures is critical. These systems offer high performance and reliability, ensuring a consistent and enjoyable experience for users.

NATURAL COOLING FOR INDUSTRIAL REFRIGERATION



MODULAR DESIGN

A total of 54 different ACP models ensures that customers can precisely tailor their compressor pack to the individual application.



LOW LIFE-CYCLE COSTS

The ACP models' technical design ensures minimum downtime and maintenance costs.



EASY START-UP AND MAINTENANCE

Every BITZER ACP comes completely assembled and is ready for operation in no time. All components are easily accessible.



INFINITELY VARIABLE CAPACITY CONTROL

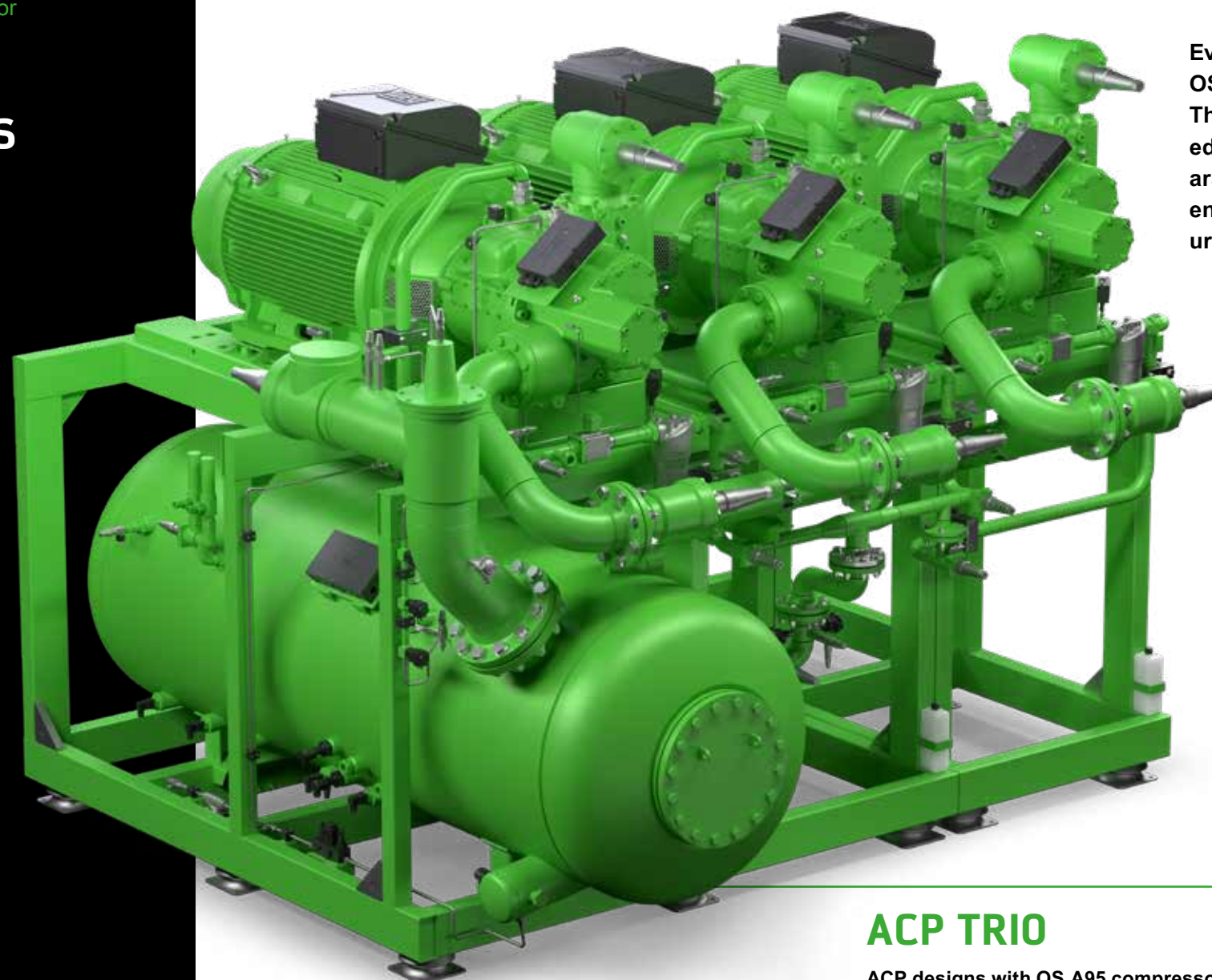
Capacity control can be achieved mechanically and/or via variable frequency drives like BITZER VARIPACK. The latter provide a large range of capacity control between 25 and 70 Hz.



ACP SINGLE



ACP TANDEM



ACP TRIO

ACP designs with OS.A95 compressors feature an integrated double slider for mechanical capacity control and automatic Vi adjustment.

Every BITZER ACP consists of either two or three OS.A85 or one, two or three OS.A95 screw compressors. These are paired with suitably sized motors and mounted alongside our three-stage OAHC horizontal oil separator and a matching oil cooler in a robust frame. The entire unit is delivered electrically pre-wired and configured to suit your application.

EFFICIENT

With the help of BITZER ACP, customers can effortlessly meet the growing demand for highly efficient industrial refrigeration solutions that use natural refrigerants. The parallel connection of several BITZER screw compressors and their intelligent capacity control ensure high efficiency in all operating conditions.

FUTURE-PROOF

Ammonia (R717) has proven its worth in large industrial systems over the decades. Its outstanding thermodynamic properties and low environmental impact (GWP and ODP = 0) make the refrigerant a future-proof option, particularly in view of current environmental regulations such as the EU F-Gas Regulation 573/2024.

RELIABLE

System safety is the easiest exercise for these power packs: BITZER ACP offer maximum reliability thanks to up to three built-in compressors, sensors and other essential components within a single system.



RELIABLE AND POWERFUL WITH CLEVER FEATURES

COMPREHENSIVE STANDARD EQUIPMENT

- // Up to three BITZER OS.A85 or OS.A95 open screw compressors
- // High-efficiency motors
- // All pipework mounted and tested
- // All control wires pre-wired and tested
- // Fully assembled

IQ MODULE CM-SW

- // Monitors temperatures and pressures and protects compressors
- // Integrates the complete electronic compressor periphery
- // Controls compressor capacity



INTELLIGENT
PRODUCTS

OAHC OIL SEPARATOR

- // BITZER PED horizontal coalescence oil separator
- // State-of-the-art 3-stage oil separation:
 - 1st stage: centrifugal and gravity separation
 - 2nd stage: demister separation
 - 3rd stage: coalescence separation
- // Oil carry over rate 2..7 ppm when using PAO oil
- // Three different sizes available



OS.A95



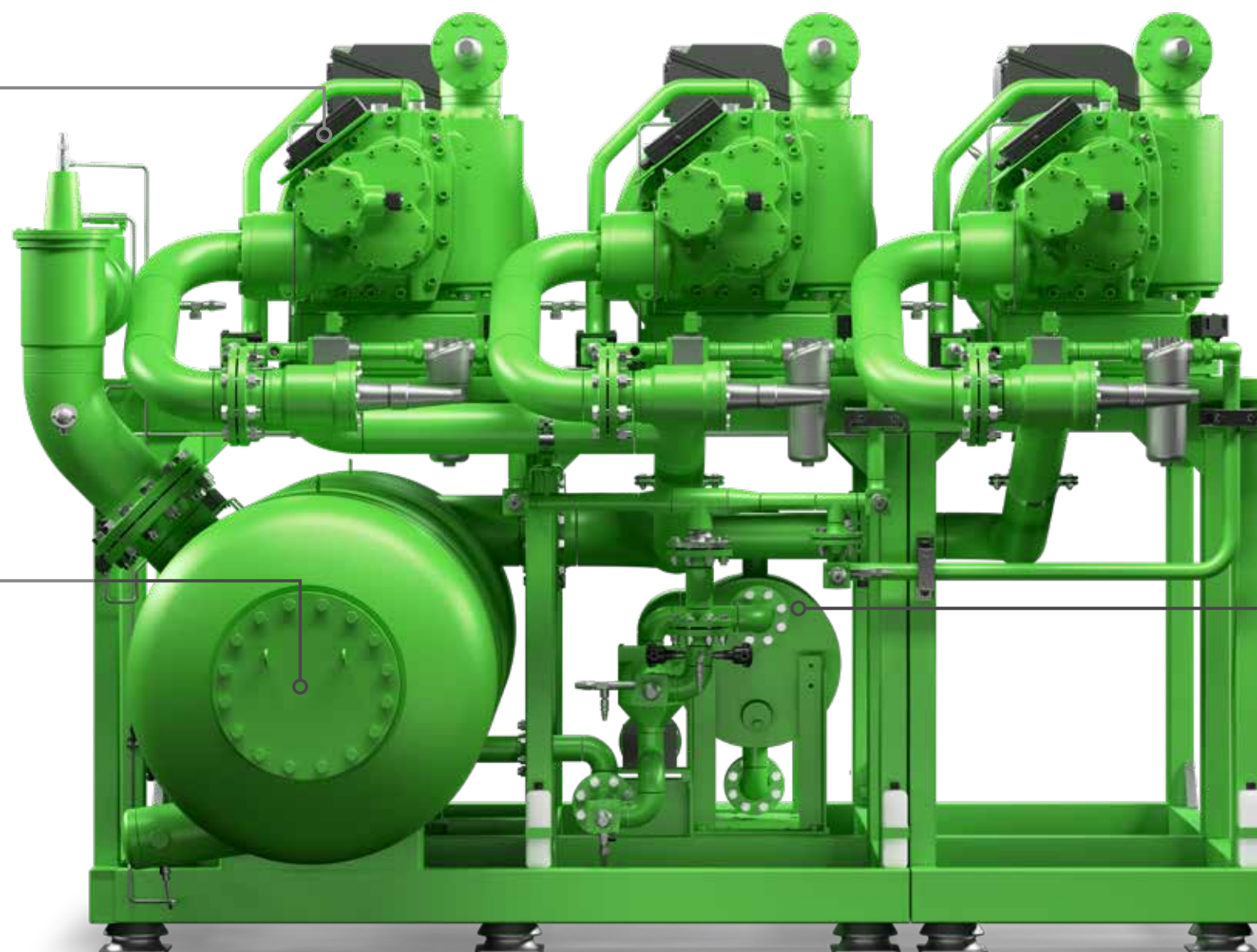
OS.A85

OS.A SCREW COMPRESSORS

- // VFD operation 25..70 Hz at 1500..4200 rpm
- // Slider regulation stepped 50/75/100% (OS.A85) or stepless 25..100% (OS.A95)
- // Compressor oil filter integrated (OS.A85) or external (OS.A95)
- // Self-aligning coupling housing and direct-drive coupling
- // Automatic Vi adjustment (OS.A95 only)

OIL COOLER

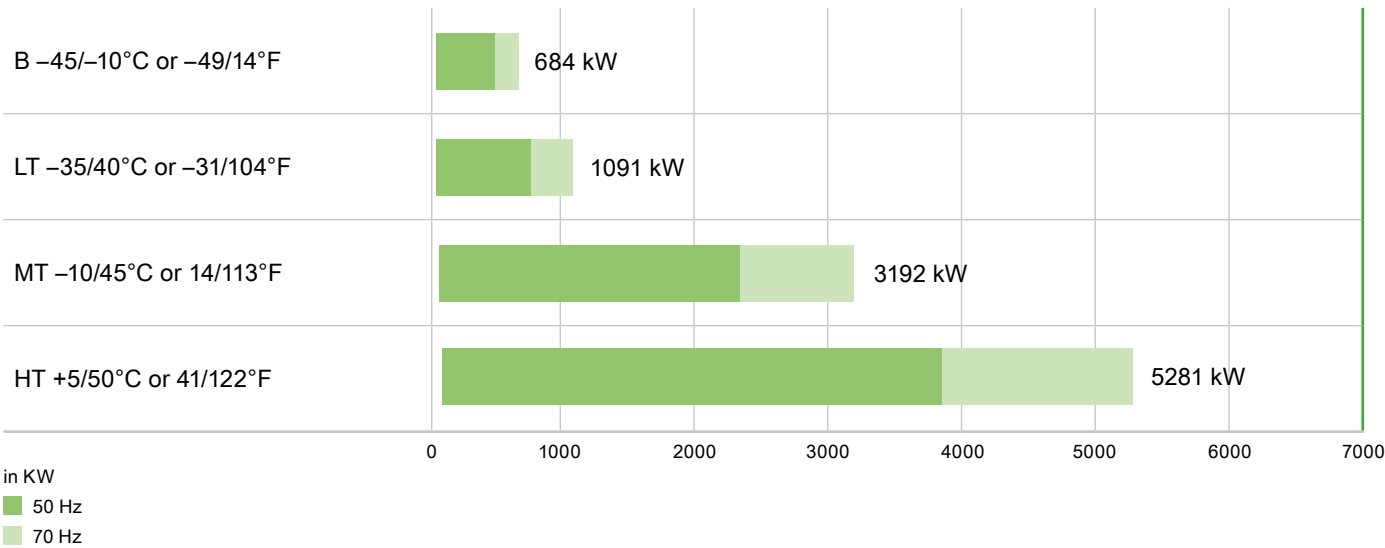
- // Shell and plate or shell and tube oil cooler
- // Design and efficiency optimised for ACP operation
- // Same design for both thermosyphon and brine cooling media



ACP TRIO

MAXIMUM EFFICIENCY IN INDUSTRIAL REFRIGERATION

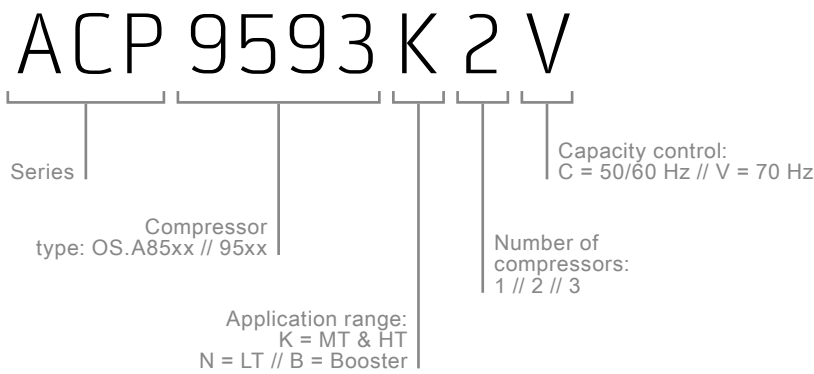
COOLING CAPACITY



TYPES AND VARIANTS

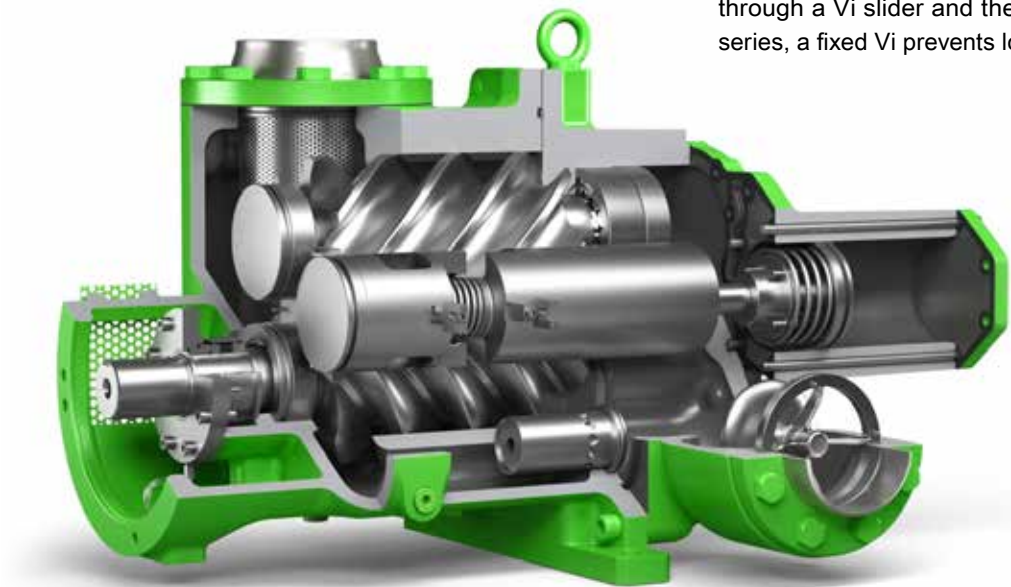
ACP				
ACP.85		ACP.95		
2 compressor	3 compressors	1 compressor	2 compressors	3 compressors

EXPLANATION OF TYPE DESIGNATION



AUTOMATIC OR FIXED VOLUMETRIC INDEX

With larger compressors, it can be beneficial to have a variable Vi control that adjusts the internal volumes to match the pressure ratio of the system. A better matched Vi is able to increase the isentropic efficiency of the compressor process and reduce power consumption. BITZER accomplishes this on the OS.A95 compressor series through a Vi slider and the IQ-CM technology. On the OS.A85 series, a fixed Vi prevents losses in the compression process.



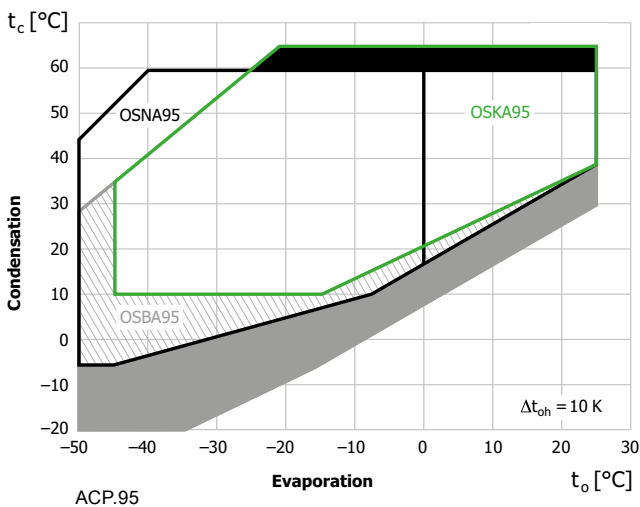
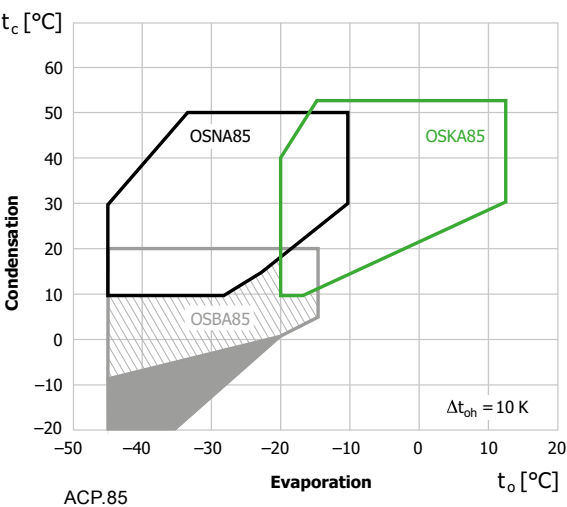
LATEST SCREW TECHNOLOGY

- // High-efficiency profile twin screws using advanced geometry and high rigidity
- // Automatic start unloading
- // Wide speed range with optional VFD: 1500..4200 rpm
- // Slide valve with infinite capacity control for OS.A95
- // Stepped capacity control for OS.A85 (50/75/100%)
- // Vi control and automatic Vi adjustment (OS.A95 only)
- // Economiser operation (optional)
- // High-quality shaft seal
- // Internal pressure relief valve
- // Compressor-integrated discharge check valve

DECISIVE TECHNICAL FEATURES

- // Based on OS.A85 and OS.A95 compressor series
- // Heavy-duty industrial construction
- // Wide variety of options and accessories
- // Compact design
- // Easy access and easy to service
- // Modular design
- // High efficiency, especially in part load
- // Redundancy
- // IEC premium efficiency C-face motors and machined steel housing, ensuring perfect motor/compressor shaft alignment
- // Long-lasting coupling increases shaft to motor reliability
- // Inverter rated duty with 70 Hz option for zero loss of torque above 50 Hz
- // Standard: IP55 (electric motor)
- // Option: different frequencies and voltages (electric motor)

APPLICATION LIMITS



t_o Evaporation temperature (°C)
 t_c Condensing temperature (°C)
 Δt_{oh} Suction gas superheat (K)

Data upon request
 Booster operation without external oil pump
 External oil pump necessary

IQ MODULE CM-SW

Thanks to its intelligent functions, the IQ MODULE offers added value for the efficient and reliable operation of the ACP: for example, it monitors the compressor's key operating parameters such as application limits to ensure high availability at all times. Furthermore, it simplifies operation of the CR slider, enabling adjustment of cooling capacity in line with actual requirements and ensuring maximum efficiency in full and part load. The IQ MODULE also makes it even easier to connect helpful digital applications. In combination with the BEST SOFTWARE or the BEST APP, it allows users to view operating data and access them for service and maintenance activities at any time via Bluetooth.



- // Quick-start guides
- // Tutorials
- // Answers to frequently asked questions
- // Technical documentation and operating instructions
- // Information on the BEST SOFTWARE and BEST APP

OPTIONALLY AVAILABLE



ACP CONTROLLER

The ACP Controller is the device responsible for the regulation of the ACP while protecting the compressor pack by permanent active application envelope surveillance.

- // Compressor capacity control functions
- // Compressor and motor protection
- // Economiser control
- // VFD control and communication via Modbus
- // Digital input and output available for system communication
- // Highly serviceable input and output menu and panel

FURTHER OPTIONAL EQUIPMENT

- // Economiser valve station
- // BITZER VARIPACK frequency inverters
- // Split suction
- // Heat recovery
- // Future compressor extension
- // First oil charge
- // Start-up assistance and training
- // Anti-vibration mounts
- // Five-year spare parts kit



Further details can be found in the BITZER SOFTWARE.



GREEN COMPETENCE

BITZER expertise goes beyond just the products: we focus on our customers and their challenges. We aim to pass on our knowledge and provide guidance and instruction – to secure investments and equip our customers and partners in industry for the future. In addition to various digital solutions, we also offer in-person consultations and training.

LOCAL ROOTS – GLOBAL PRESENCE



Find your nearest BITZER location and get in touch.

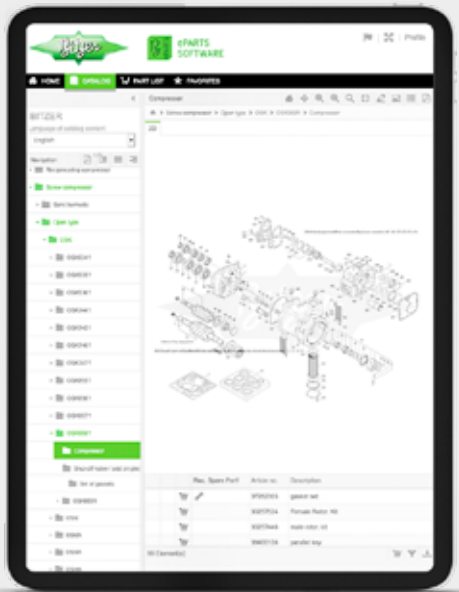
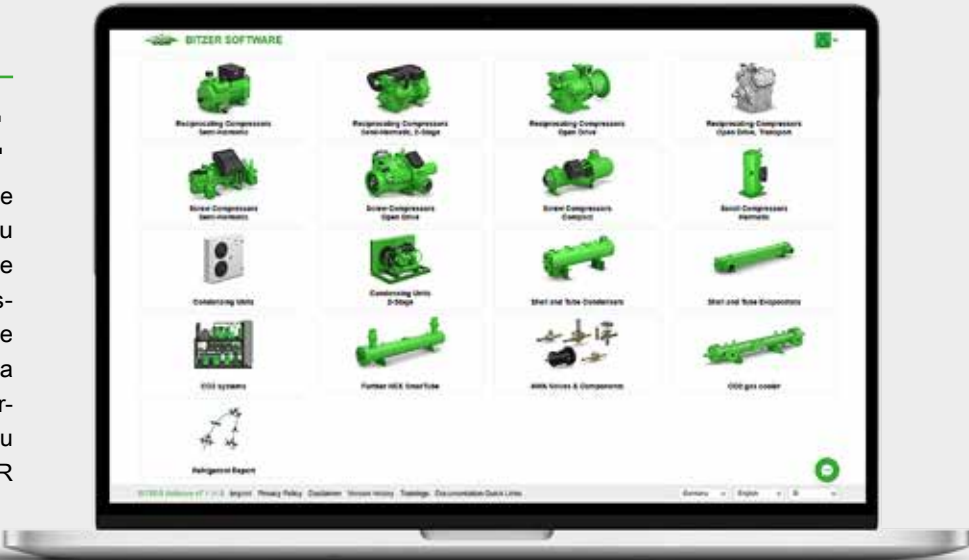


The BITZER Group is represented across the globe with distribution companies and production facilities at 74 locations in 40 countries. Find your dedicated contact partner and nearest BITZER location by clicking on the map or using the search feature on our website. You can reach out to your contact partner at any time.

BITZER TOOLS

BITZER SOFTWARE

Wherever you are and no matter what device you use, BITZER SOFTWARE helps you make the right selection from our extensive and flexible range of products and accessories. You can also find technical data here and quickly calculate the performance data for compressors and components. Furthermore, the AI agent HERMANN supports you with all questions about the BITZER portfolio.



ePARTS SOFTWARE

Our free tool makes finding the appropriate spare parts for our products fast and easy. They are listed by series and displayed as simple, enlargeable exploded drawings.

BEST APP AND BEST SOFTWARE

BEST provides complete access to all operating data and parameters. Its intuitive user interface shows a complete overview of the operating status, including a data log for easy commissioning and maintenance.



FIND ADDED VALUE:



DIGITAL TOOLS IN ONE PLACE



The central customer platform for product and technical information

- // Access to all BITZER software tools via single sign-on (SSO)
- // Delivery times and spare parts data at a glance
- // Advanced system management and real-time monitoring
- // Secure and flexible user management



Easy access to valuable digital services

- // Complete product information
- // Maintenance tracking
- // Operation report
- // Real-time data
- // Notifications
- // Flexible access rights

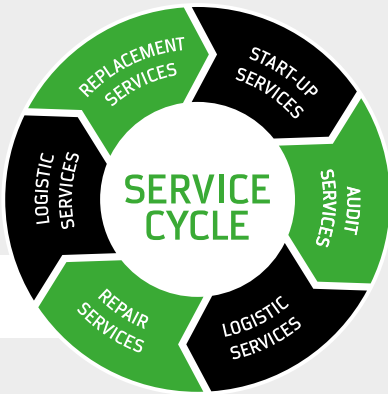


BITZER GLOBAL SERVICE NETWORK

Local support to global standards: GREEN POINT offers services at 54 locations, covering the entire life cycle of our components.

In addition, 40 AUTHORISED SERVICE CENTRES ensure that you receive qualified support worldwide.

With eight sites, the MARINE SERVICE NETWORK guarantees fast and reliable support near major ports, whilst authorised spare parts and oil dealers supply you with original spare parts and oils quickly all over the world.



ORIGINAL IS KEY



BITZER ORIGINAL SPARE PARTS

- // Ensure that the compressor remains operational and, above all, runs as intended – stably, reliably, efficiently and with minimal wear
- // Guarantee precise fits, high-quality materials and correct tolerances
- // Maintain energy efficiency
- // Prevent premature wear and consequential damage

BITZER ORIGINAL OILS

- // Are precisely tailored to the compressor, refrigerant and operating conditions
- // Contain specially developed additives for optimum lubrication
- // Provide reliable protection against wear – even under varying loads
- // Ensure long-term performance with minimal energy consumption



What matters most in cold stores, is temperature. Ammonia as a refrigerant offers high cooling capacity at affordable costs, effectively preserving the freshness of goods, preventing spoilage and enhancing flavor – be it for fruits, dairy or meat.

**CLOSER TO YOU.
BITZER WORLDWIDE.**



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