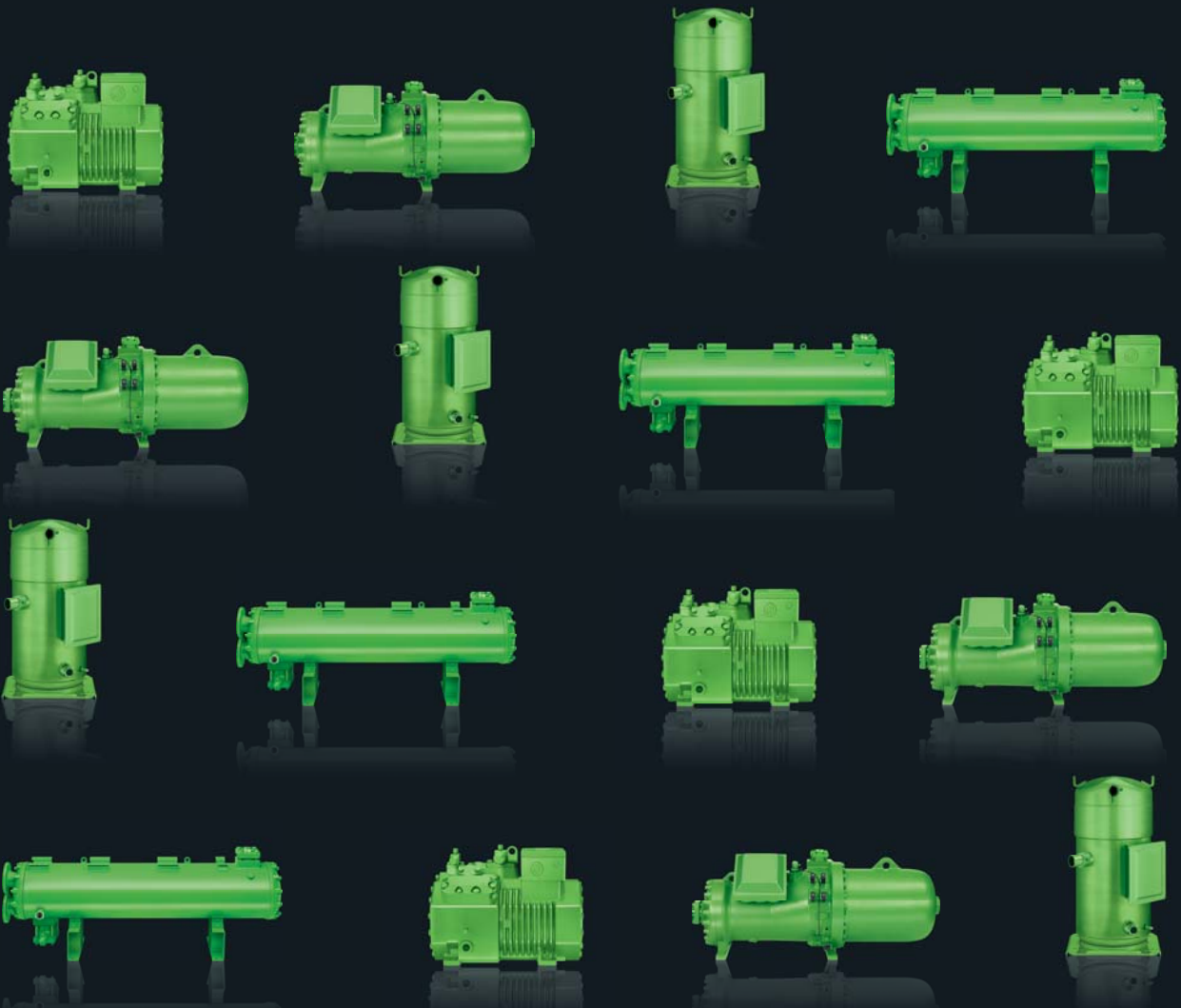




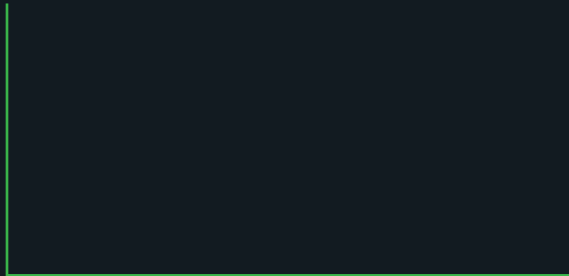
THE HEART OF FRESHNESS

# PRODUCT RANGE





THE HEART OF FRESHNESS



# PERFORMANCE

The compressor is the heart of every refrigeration and air conditioning system. It must beat reliably. Our company is founded on the principle that you can rely on your compressor performing to perfection, anywhere and at all times. The experience of our some 3,200 employees, the quality of our products, and our worldwide spectrum of services is your guarantee that with BITZER you have every refrigeration or air conditioning task securely in hand.

# PASSION

Our heart beats for refrigeration and air conditioning systems. For over 80 years, we have been developing and optimizing our technologies nonstop. As an innovation leader, BITZER pushes the entire industry forward, for example with intelligent compressors for more efficiency and system safety. And we give our all to continue writing success stories so that it's always safe to say: With BITZER compressors, you're setting a standard for quality, reliability, and efficiency in all of your equipment.

# CERTAINTY

Whether it is reciprocating, screw, or scroll compressors, whether hermetic, semi-hermetic, or open, BITZER has the widest spectrum of products and services in the industry worldwide. And as a result, the right solution for each of your individual needs. You can count on outstanding quality every step of the way due to a foundation of strict testing: we check every single compressor with extreme care and on the basis of up to 70 parameters. And you can be sure that with BITZER, every system is reliable in the long term.

## OUR TECHNOLOGY IS EXCELLENT. OUR SERVICE EXEMPLARY.

BITZER is a leading supplier of compressors for refrigeration and air conditioning technology. Our compressors are energy efficient, reliable, and offer you the ideal solutions for both stationary and mobile applications. Just like our products, the aim of our service is to make your work as easy and stress-free as possible. We are here for you: thanks to representatives in over 90 countries, experienced BITZER experts are always close by. In addition, we offer product-specific seminars, workshops, and presentations, whether in our training centers or at your company offices. At BITZER you can also benefit from a range of detailed technical documentation. Our software tools will support you in designing the compressor layout for your individual applications and in finding spare parts. You can find all information and tools online at [www.bitzer.de](http://www.bitzer.de)

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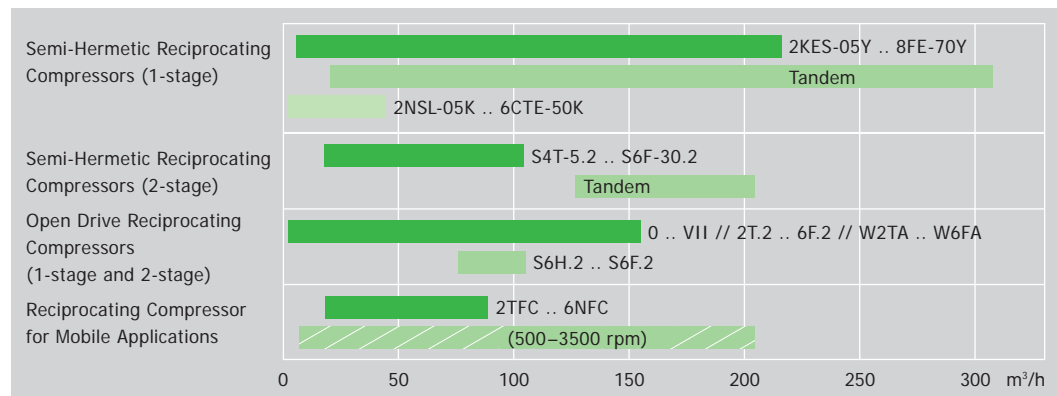


# THE WIDE RANGE OF BITZER PRODUCTS. WE ALWAYS HAVE THE RIGHT SOLUTION FOR YOU.

BITZER is the only manufacturer that produces the three main compressor technologies: reciprocating, screw, and scroll. We aim for excellence in each of these in order to provide you with the best solutions possible for every application – from refrigeration and cooling to air conditioning, and even in heat pumps. We are able to implement these solutions with our wide range of products. Should your system be able to provide cooling for a single gas station, bakery, or entire supermarket? Then you're in the right place. For commercial or industrial refrigeration or mobile applications like in buses, rail vehicles, or containers, you can count on BITZER! With us, you will find the perfect compressor to meet your needs – as a single, tandem, or trio compressor, or as a complete condensing unit. To ensure trouble-free and energy-efficient operation of your system.

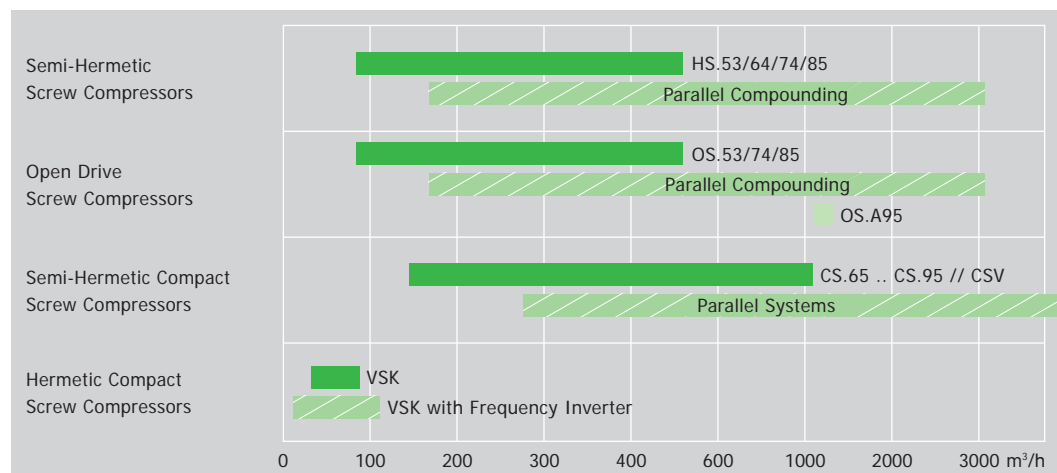
## RECIPROCATING COMPRESSORS

Theoretical Displacement (Standard Series) at 50 Hz/1450 rpm



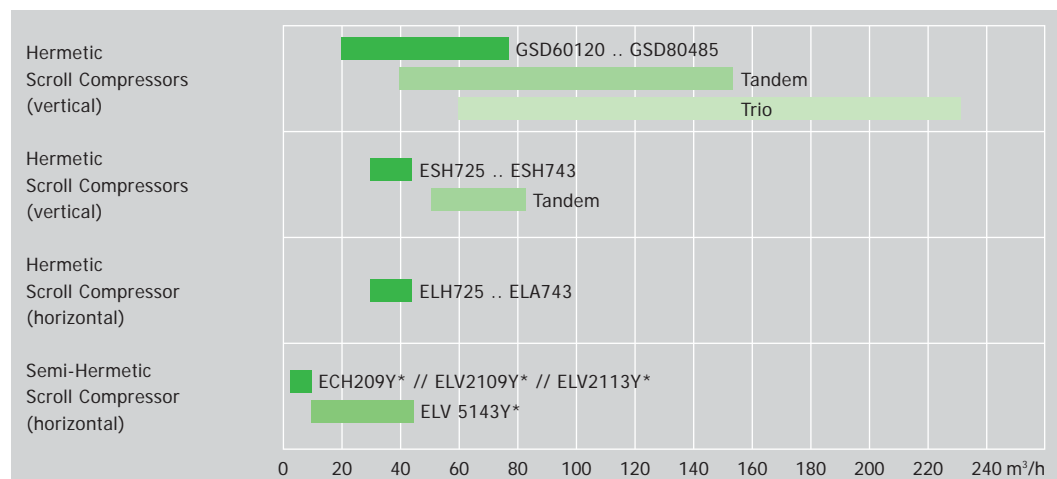
## SCREW COMPRESSORS

Theoretical Displacement at 50 Hz/2900 rpm



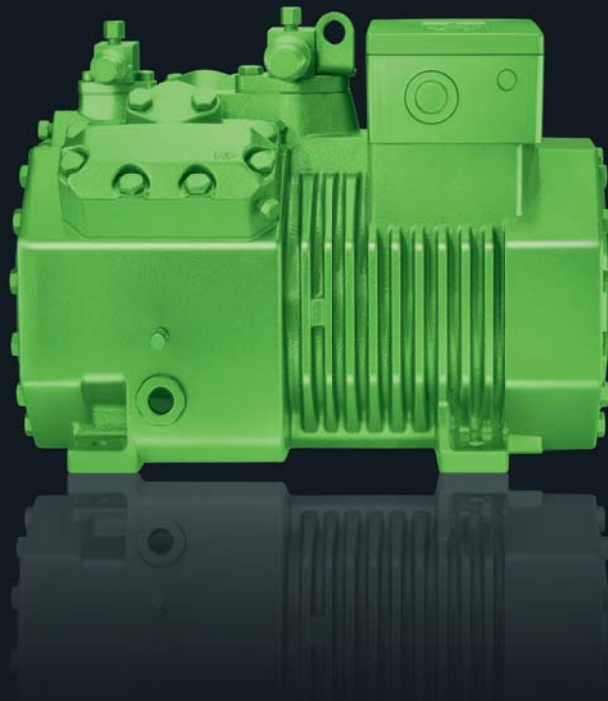
## SCROLL COMPRESSORS

Theoretical Displacement at 50 Hz/2900 rpm



\* At variable speed.

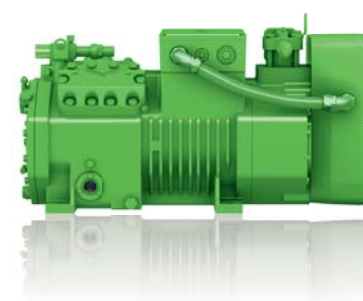
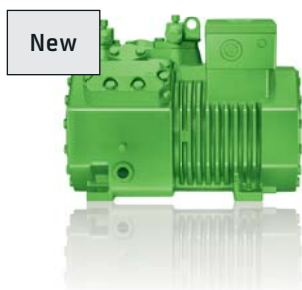
## THE CONTINUATION OF A SUCCESS STORY: OUR RECIPROCATING COMPRESSORS.



With our background of more than 80 years of experience in the manufacturing of refrigerant compressors, we continue to develop reciprocating compressor technology further. We do this while paying close attention to current market and customer demands. Every year, more than 200,000 BITZER reciprocating compressors leave our factories around the world. All over the world, they testify to the meaning of the word "reliability."



**IQ** INTELLIGENT  
COMPRESSORS



SEMI-HERMETIC CONSTRUCTION:  
ECOLINE

The universal reciprocating compressors: The ECOLINE series was already available for R134a and has now been optimized for numerous other refrigerants. The compressors are therefore much more versatile. Our ECOLINE compressors are ideal for all current applications of refrigeration, air conditioning, and heat pump technology. The series appeals due to its higher cooling performance, very good COP, and wide application limits.

The new CR11 control system also enables versatile capacity control. This means that BITZER offers flexibility and increased efficiency in all operating conditions.

4.1 .. 221 m<sup>3</sup>/h at 50 Hz

SEMI-HERMETIC CONSTRUCTION:  
OCTAGON CO<sub>2</sub>

Eco-friendly and efficient: The OCTAGON CO<sub>2</sub> compressor series offers future-oriented solutions for a number of applications. As a compressor pioneer for this natural refrigerant, BITZER has worked for over ten years to continuously optimize its products and model range. This means that you have reliable compressors for sub-critical applications, such as the CME series, at your disposal. These enable standstill pressure of up to 100 bar. With our 2-, 4-, and 6-cylinder versions, we also offer compressor solutions for transcritical applications.

For supermarkets, this opens up the possibility of hybrid cooling and refrigeration systems when used in combination with the ECOLINE series.

1.3 .. 46.9 m<sup>3</sup>/h at 50 Hz

SEMI-HERMETIC CONSTRUCTIONS  
WITH FREQUENCY INVERTER

BITZER is heralding a new era of refrigeration with intelligent compressors. The reason? The preprogrammed integrated frequency inverter. So you can boost the "IQ" of your systems for the best results in reliability and efficiency.

Proof of this is the intelligent VARISPEED series for ECOLINE and OCTAGON CO<sub>2</sub>. The integrated frequency inverter ensures infinitely variable speed control to minimize your energy costs. The frequency inverter's suction gas cooling increases operational reliability and renders regular maintenance unnecessary.

8.1 .. 99.2 m<sup>3</sup>/h based on variable speed



**SEMI-HERMETIC CONSTRUCTION:  
ECOLINE // PROPANE AND OTHER  
FLAMMABLE REFRIGERANTS**

The ECOLINE series has been adapted for use with propane and other flammable refrigerants. This makes its already wide range of applications even more universal. BITZER uses its long-standing experience to ensure favorable thermodynamic characteristics and low energy requirements in the compression of propane. The compressors also appeal because of their high cooling performance, good COP, and wide application limits. This means our ECOLINE series is extremely flexible, efficient and always a safe solution.

4.1 .. 221 m<sup>3</sup>/h at 50 Hz



**SEMI-HERMETIC 2-STAGE  
CONSTRUCTION**

Guaranteed reliability for extreme low-temperature cooling: These 2-stage compressors have proved themselves under the high demands of evaporation temperatures of down to -70°C. They are also highly flexible in application and can be used, for example, in environment simulation systems, freeze drying, and freezing systems. The optional liquid subcooler is available ex-works and increases energy efficiency substantially along with refrigeration capacity.

19.7 .. 101 m<sup>3</sup>/h at 50 Hz



**OPEN DRIVE CONSTRUCTION**

The solution for fluctuating quality of the main power supply: Our open compressors offer individual motor assignment and are therefore particularly service-friendly. The series is available, depending on size, with coupling housing or flywheel; if required, you can achieve a higher refrigeration capacity using larger pulleys.

There is also a series of models specially adapted for ammonia. We also offer the 0 .. VII compressor series as a solution for smaller refrigeration capacities.

0.96 .. 151 m<sup>3</sup>/h at 1450 revolutions per minute

**IQ** INTELLIGENT  
COMPRESSORS



CONDENSING UNITS: ECOSTAR

System intelligence: The ECOSTAR condensing unit is the most efficient solution for your cooling applications. The infinitely variable speed control of the integrated BITZER compressor with frequency inverter helps to minimize energy consumption significantly. The suction gas cooled, parametric frequency inverter, the active monitoring of parameters and the integrated Ethernet cable guarantee the highest operational reliability and flexibility. Moreover, perfectly coordinated components reduce start-up time and operating costs.

The new and optimized design as well as the low noise ventilators reduce the noise emissions. This ErP-ready conform series (ErP ready 2015) guarantees future-proofed compatibility.

8.1 .. 99.2 m<sup>3</sup>/h based on variable speed



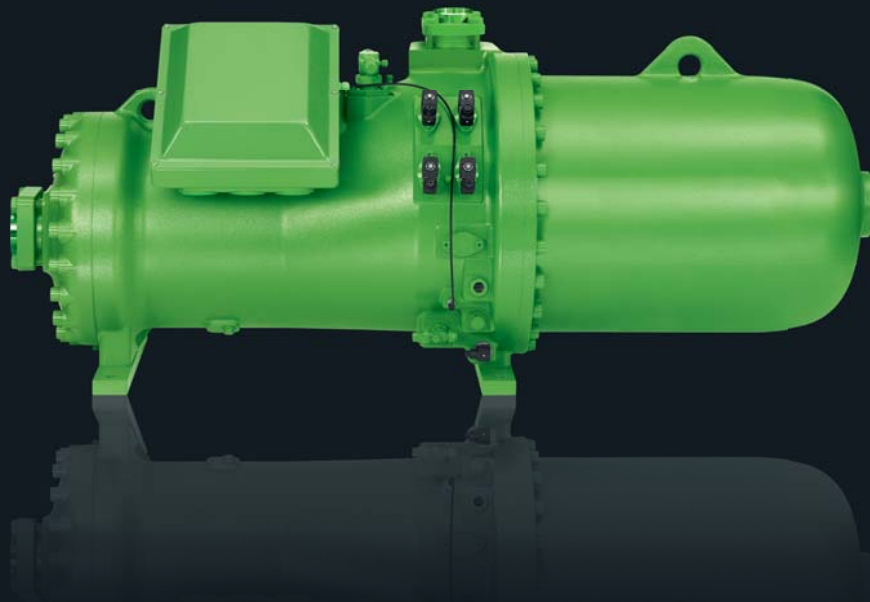
CONDENSING UNITS: LH UNITS

The advanced series: LH condensing units are suitable for use in all climate conditions.

Special compressor and condenser combinations for high ambient temperatures complement the standard range. The use of low noise EC ventilators means reduced noise emissions, while minichannel technology on the heat exchangers guarantees exceptional efficiency. Reduction of the duct rows, compact design, and low refrigerant charge mean a reduction in weight and therefore a new benchmark in terms of cost-effectiveness. Thanks to its ErP-ready state (ErP ready 2015), you'll be on the safe side for the future too.

4.1 .. 65 m<sup>3</sup>/h at 50 Hz

## LEADING IN TECHNOLOGY AND EFFICIENCY: OUR SCREW COMPRESSORS.



With over 30 years of experience, BITZER is one of the world's biggest independent manufacturers of screw compressors. With our innovative developments, we continue to set standards for this compressor technology. Our screw compressors impress with their versatility in application, energy-efficient operation, and long service life. Our many patents speak loud and clear: with BITZER you have every refrigeration, air conditioning, and heat pump application under control.

**IQ** INTELLIGENT  
COMPRESSORS



SEMI-HERMETIC COMPACT  
CONSTRUCTION: CS

Improved energy efficiency: We have continued to develop our compact screw compressors of the CS.3 series. They feature an integrated oil separator and a 4-step or infinite capacity control. You can thus easily link these compressors into short circuits. Thanks to the economizer operation mode, you can significantly increase refrigeration capacity in both full- and part-load operation.

Our CSW series screw compressors are specially optimized for R134a-based applications and low condensing temperatures. The CSH series, on the other hand, is particularly suited to applications with higher condensing temperatures and being used in heat pumps.

137 .. 1120 m<sup>3</sup>/h at 50 Hz



SEMI-HERMETIC COMPACT  
CONSTRUCTION WITH  
FREQUENCY INVERTER: CSV

The screw compressor that thinks with you: The CSV series of intelligent, networkable compact screw compressors boasts unrivalled full- and part-load efficiency thanks to their ultra-modern technology. A huge time saver: All components are operatively pre-wired and tested. The fully integrated frequency inverter is chilled by refrigerant and guarantees the right temperature profile. Integrated monitoring of the application limits guarantees the highest operational reliability.

In addition to the CSVH series for high condensing temperatures, we also offer the CSVW series especially for low condensing temperatures in air cooled and water cooled applications.

109 .. 1156 m<sup>3</sup>/h based on variable speed



### SEMI-HERMETIC CONSTRUCTION: HS

The concept of our proven semi-hermetic screw compressors offers the highest level of flexibility thanks to external oil separators and coolers.

The HS series are characterized by a broad range of services and are ideal for parallel operation for larger applications in industrial and commercial refrigeration. The HS.85 series offers you an integrated control slider for 3-step or infinite capacity control. Even in part-load operation you can thus achieve good capacity control and system efficiency. Additionally, with economiser operation you can increase both refrigeration capacity and energy efficiency.

84 .. 535 m<sup>3</sup>/h at 50 Hz



### OPEN DRIVE CONSTRUCTION: OS

The solution for special requirements: We have developed our open drive screw compressors for use with a flange-on motor. The compressors are flanged directly onto the motor by means of a coupling and coupling housing. The separation of the refrigerant circuit from the motor allows us to achieve a high level of flexibility and service friendliness. For a wider performance range in ammonia applications, such as industrial refrigeration, the existing series has been extended with the OS.A95. In addition, we offer versions of our open screw compressors for NH<sub>3</sub> and for explosion protection zones.

84 .. 1015 m<sup>3</sup>/h at 2900 revolutions per minute



## ACCESSORIES: OIL SEPARATORS // OIL COOLERS

Highly reliable and comprehensive: BITZER offers primary, secondary, and combined oil separators in various sizes, as well as water and air cooled oil coolers. Our finely graded series are suited for use with single compressors and with compound systems – and with the new OAC, they can also be used for wider capacity ranges in the future. Additionally, we can provide special series for refrigeration systems using  $\text{NH}_3$  or with flooded evaporators. BITZER oil separators are equipped with centrifugal and gravity separation, whereby minimal oil carryover rates and a high separation rate under full- and part-load operation are achieved.

Use for theoretical displacements of 160 to 2500  $\text{m}^3/\text{h}$  // Oil charge from 18 to 250  $\text{dm}^3$

PERFECTION IN A COMPACT FORM:  
**OUR SCROLL COMPRESSORS.**



BITZER is also extremely innovative in the field of scroll compressors. You can benefit from our expertise and we guarantee you the highest levels of energy efficiency and reliability. Our scroll compressors are your best choice for small- to medium-capacity stationary applications, particularly in air conditioning systems and heat pumps.





### HERMETIC CONSTRUCTION: ESH7

High in performance and efficiency: We have optimized the ESH7 series of compressors for small- and medium-capacity air conditioning and heat pump applications. The special cooling process ensures that the spirals are at an equal temperature at all operating points. By this means, our compressors achieve the best efficiencies, high operational reliability, and low noise and vibration levels. These compressors are also available as parallel compounding in a tandem version.

25 .. 43 m<sup>3</sup>/h at 50 Hz  
(single compressor)



### HERMETIC CONSTRUCTION: ORBIT 6

The ORBIT 6 series for R410A combines compact dimensions with a wide spectrum of applications and has the lowest noise levels in their class. ORBIT 6 offers the highest possible condensing temperature, making it ideal for reversible heat pumps. The series is equipped to provide high energy efficiency at full- and part-load conditions for air conditioning and heat pump applications. The result? Very high EER, ESEER/IPLV and SCOP values and, therefore, particularly low operating costs.

The ORBIT series can also be equipped with the new BITZER Advanced Header Technology (BAHT). This enables compressors with various refrigerating capacities to be configured as an asymmetric tandem or trio compounding.

19.8 .. 37.6 m<sup>3</sup>/h at 50 Hz  
(single compressor)



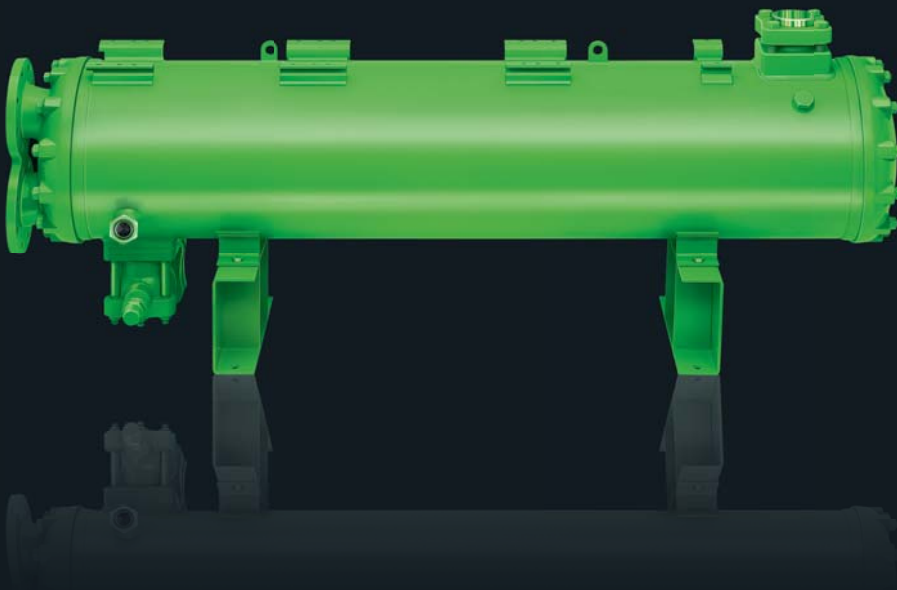
### HERMETIC CONSTRUCTION: ORBIT 8

Just the way to meet all of your R410A application needs: Our standard ORBIT 8 series is optimized for use with high condensing temperatures. With the ORBIT 8 Boreal, we offer even more – a variant designed especially for low condensing temperatures.

The ORBIT 8 series allows you to achieve maximum energy efficiency in every application. In addition, these compressors are extremely smooth, compact, and have a particularly low oil discharge rate. They are also available as parallel compounding in tandem and trio versions with BITZER Advanced Header Technology (BAHT).

29 .. 77.2 m<sup>3</sup>/h at 50 Hz  
(single compressor)

## IMPRESSIVE QUALITY AND PERFORMANCE: OUR PRESSURE VESSELS.



As the market leader in refrigeration and air conditioning systems, we have guaranteed the outstanding quality and reliability of our pressure vessels for half a century. Whether it is stationary or mobile applications and whether it is condensers, liquid receivers, oil separators, or oil coolers, each individual product is manufactured in BITZER's modern production facilities and then tested. Our pressure vessels comply with the European Pressure Equipment Directive 97/23/EC (PED) and the regulations of marine classification societies recognized worldwide.



## SHELL AND TUBE CONDENSERS

Top performance technology: Thanks to the high-performance finned tubes, which are brazed in, we prevent leakages, while the "low fouling" structure of the grooved pipes ensures low contamination. The compact construction and low water consumption of our shell and tube condensers guarantee particularly low operating costs and maximum reliability. Fixing rails or assembly panels allow you to add compressors or accessories. Additionally, our condensers are also available in a seawater resistant version and in a propane version or with a second refrigerant outlet.

Capacity 8 .. 913 kW



## LIQUID RECEIVERS

Flexible and versatile: BITZER offers you a wide product spectrum of horizontal and vertical collectors and series with extra-large connections. Pressure vessels for both standard and natural ( $\text{NH}_3$ ,  $\text{CO}_2$ , hydrocarbon) refrigerants are available. All our receivers naturally satisfy the requirements of the European Pressure Equipment Directive. For accessories, we provide you with electronic charge level monitoring and fixing rails for mounting the compressor.

Vessel volume 6.8 .. 550 dm<sup>3</sup>

RELIABLE COMPANIONS ON EVERY  
ROUTE: **OUR TRANSPORT COMPRESSORS.**



In the area of transport applications, you can rely on BITZER's decades of experience in all kinds of air conditioning and refrigeration applications. We guarantee you innovative and efficient solutions, and our compressors impress with their low weight, compact construction, quiet operation, and the proven, reliable BITZER quality. You can find out more in our Transport Applications brochure (A-250-3).



### OPEN DRIVE RECIPROCATING COMPRESSORS: BITZER ROADSTAR

Benefits upon benefits: The BITZER compressors of the ROADSTAR series for mobile applications are lightweight, compact, energy efficient, and have a wide speed range. Thanks to the oil collection chamber, the additional oil drain plugs and the positioning of the oil sight glasses, these models are particularly service-friendly. With this innovative technology, we set the standard for bus air conditioning. The BITZER ROADSTAR series is available in a 2-, 4-, or 6-cylinder version.

20.7 .. 84.4 m<sup>3</sup>/h at 1450 revolutions per minute



### SEMI- AND FULL-HERMETIC SCROLL COMPRESSORS: SPEEDLITE ELV21 // ELV51

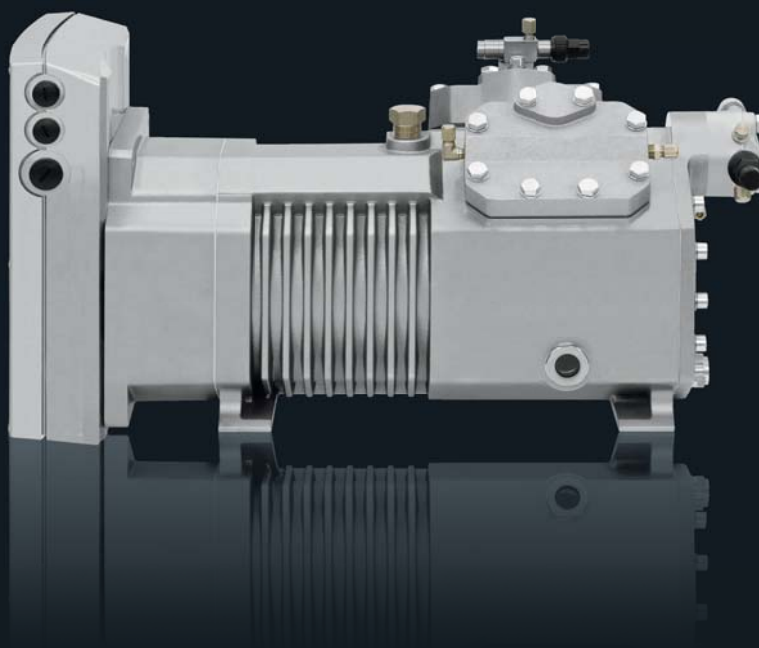
Real lightweights: the two construction sizes of the SPEEDLITE series. They impress with their compact design, low installation height and light aluminium construction. The integrated maintenance-free EC motors run at high speeds and can be controlled independently of the vehicle engine. Low noise and vibration levels, as well as a reliable oil supply, make the ELV series the optimal solution for all mobile applications: whether bus, train, electric bus, cabin air conditioning, or transport refrigeration.

1.3 .. 9 m<sup>3</sup>/h based on variable speed

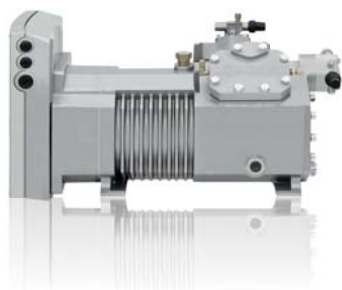


10 .. 43 m<sup>3</sup>/h based on variable speed

TAILORED TO MEET YOUR NEEDS:  
**OUR SPECIFIC CUSTOMER AND BRANCH  
SOLUTIONS.**



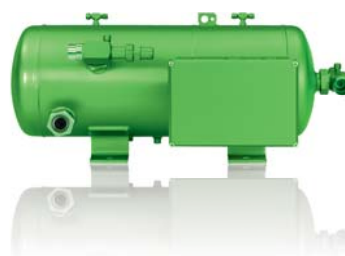
Our promise: At BITZER, you will always find the right compressor for your needs. If you still need a more specific solution, then we will develop one for you and carry out extensive testing until it is market-ready. That's how you always find the compressor you're looking for – as promised – with the same high BITZER quality.



### COMPRESSORS FOR CONTAINER COOLING: S4BCF-5.2{Y}

Always at the perfect temperature: The StarCool container cooling system is the result of an extensive partnership between Maersk Container Industry and BITZER. It is designed for use in containers to control the temperature of perishable goods such as groceries. The heart of the system is an especially compact, lightweight, and vibration-free 2-stage aluminum compressor. It is equipped with an integrated frequency inverter for outstanding efficiency and operational reliability. It's a concept that works: Within seven years, the StarCool system won market shares of roughly 30 percent. And we will continue with this success story to ensure perfect temperature control in containers worldwide.

9.5 .. 41.8 m<sup>3</sup>/h based on variable speed



### HERMETIC SCREW COMPRESSORS: VSK

Fits perfectly: The hermetic VSK compressors from BITZER are designed to perfectly meet the specific needs of mobile air conditioning, for example in trains or hybrid buses. This makes them highly efficient. With its horizontal construction, the compressor can be mounted without problems. A further advantage of our hermetic screw compressors is their wide control range with frequency inverter operation, which allows you infinite control over the cooling capacity.

46 .. 80 m<sup>3</sup>/h at 50 Hz

### COMPRESSORS FOR YOUR INDIVIDUAL SOLUTION

In addition to compressors designed for container cooling, BITZER has already implemented further customer and branch specific products, such as VSK solutions for railway vehicles and hybrid buses.

Do you also need a customized solution? We would be happy to help turn your idea into a reality. We look forward to your request: [bitzer@bitzer.de](mailto:bitzer@bitzer.de)



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