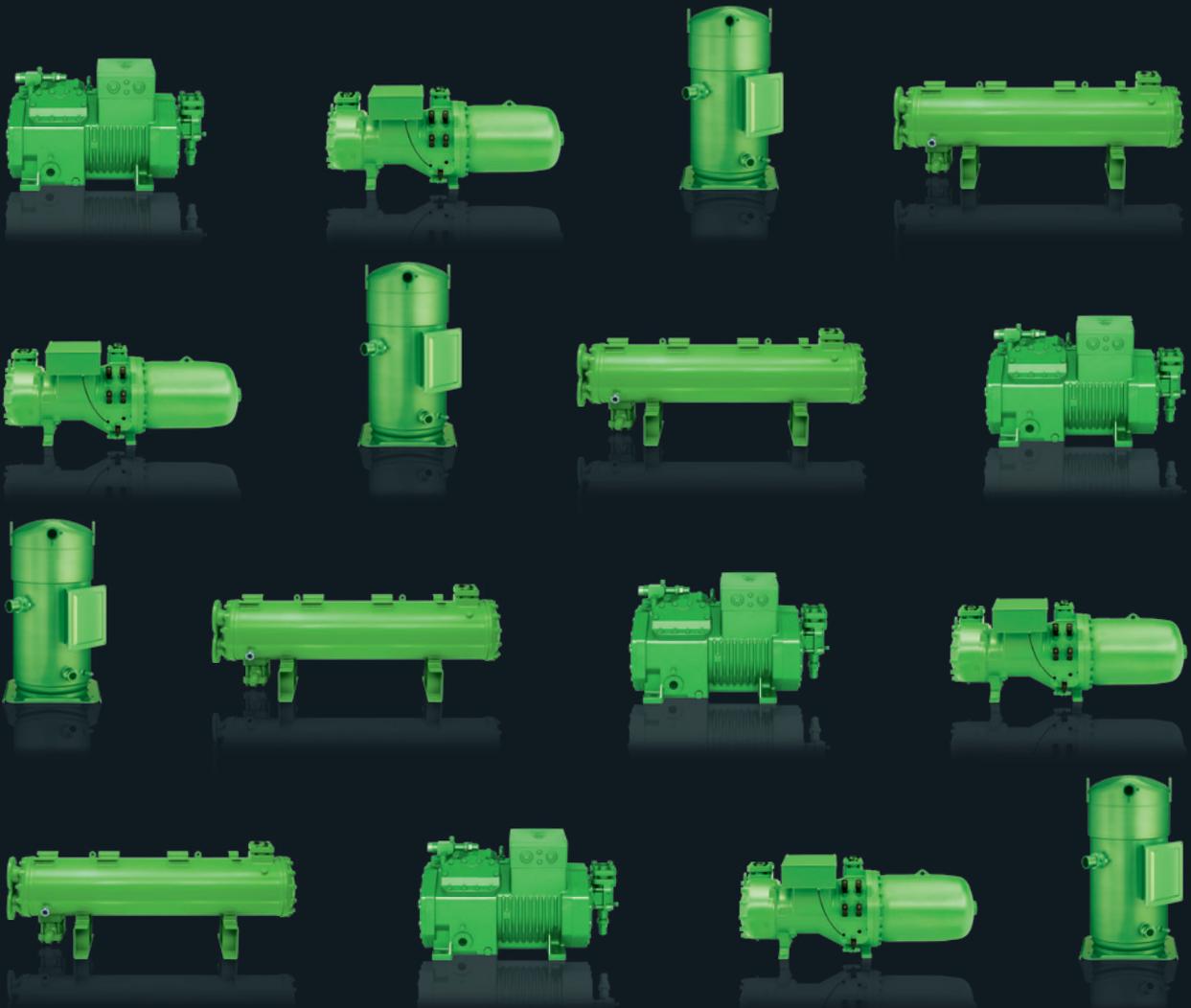




THE HEART OF FRESHNESS

# PRODUCT RANGE



# PERFORMANCE

// The compressor is the heart of every refrigeration or 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 2500 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. We have been developing and improving our technologies continuously since 1934. It is our aim to manufacture the most efficient and most environmentally friendly compressors in the world. You too can profit from the competence of the market leader. BITZER gives you exactly the right compressor for your specific application.

# 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. You can thus count on exceptional reliability and efficiency. The outstanding quality of our products is a result of our strict monitoring. 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 over the long term.



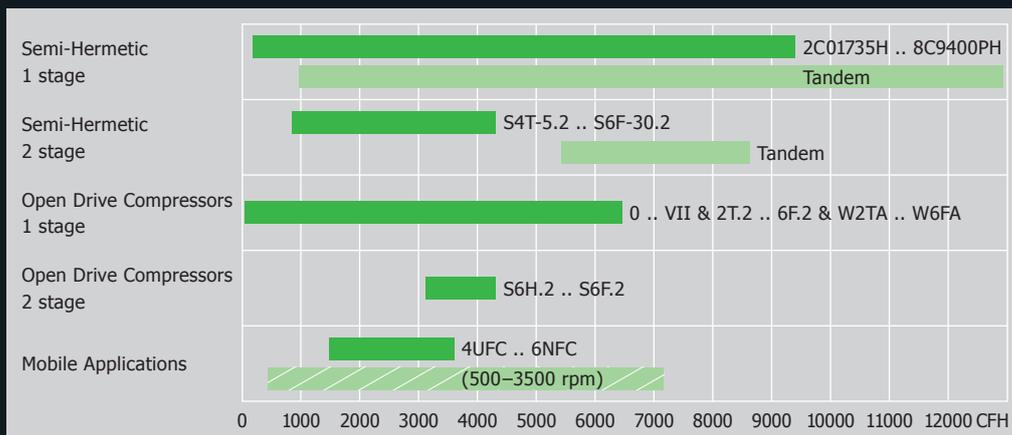
## OUR TECHNOLOGY IS EXCEPTIONAL. OUR SERVICE IS FIRST CLASS.

// BITZER is a technology leader in compressors for refrigeration and air conditioning systems. Our compressors are energy-efficient, reliable and always offer the optimal solution for both stationary and mobile applications. Like our products, BITZER customer service is unique. Thanks to our presence in over 90 countries, experienced BITZER experts are always right where they are needed. We also offer product-specific talks, seminars and workshops all over the world. These can take place either in our training centers or on your premises. With BITZER, you receive detailed technical documentation to an unparalleled degree. This is backed up by our software tools that support you in designing the compressor layout for your individual applications and in finding replacement parts. You can find all the information and tools online at [www.bitzer.de](http://www.bitzer.de).

# APPLICATIONS OF THE TECHNOLOGIES

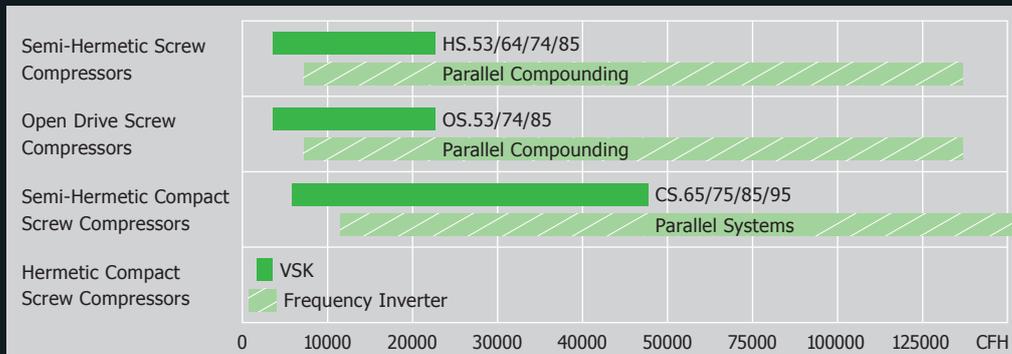
## RECIPROCATING COMPRESSORS

// Theoretical Displacement (Standard Series) at 60 Hz/1750 rpm



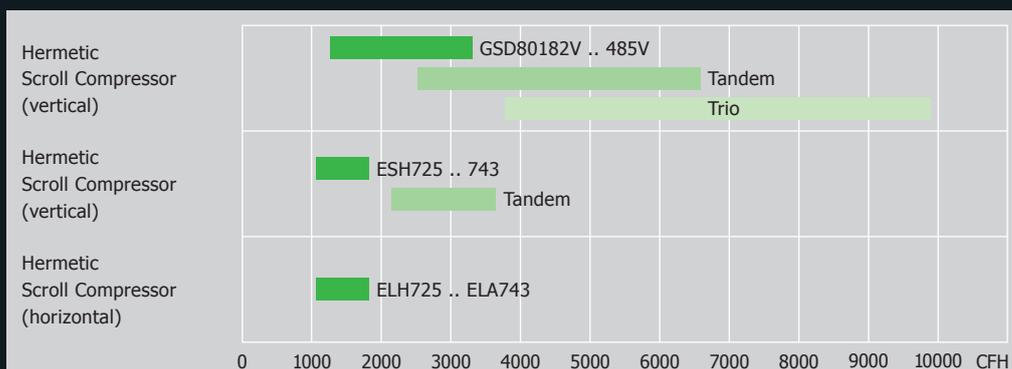
## SCREW COMPRESSORS

// Theoretical Displacement at 60 Hz/3500 rpm



## SCROLL COMPRESSORS

// Theoretical Displacement (Standard Series) at 60 Hz



# CONTENTS

## RECIPROCATING COMPRESSORS

// Page 06–09



## SCREW COMPRESSORS

// Page 10–13



## SCROLL COMPRESSORS

// Page 14–15



## PRESSURE VESSELS

// Page 16–17

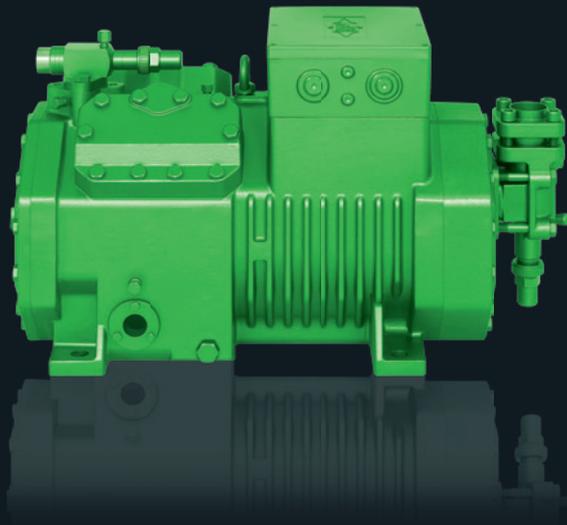


## TRANSPORT COMPRESSORS

// Page 18–19



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



With our background of more than 70 years of experience in the manufacture 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."



### SEMI-HERMETIC RECIPROCATING COMPRESSORS

// BITZER's success range: The familiar reciprocating compressors of the OCTAGON series and the B5 and B6 product families are efficient, robust and dependable.

// They offer solutions for heat pumps, refrigeration and air conditioning applications with small to medium capacities. The OCTAGON design guarantees optimal suitability for speed control and maximum flexibility.

// The BITZER ECOLINE, OCTAGON CO<sub>2</sub> sub-critical and trans-critical and OCTAGON VARISPEED series offer future-proof solutions that operate with particular economy of resources and energy.

0.5 .. 70 HP (nominal motor power) //  
173 .. 9400 CFH based on 60 Hz operation



### SEMI-HERMETIC 2-STEP RECIPROCATING COMPRESSORS

// Guaranteed reliability for extreme low-temperature cooling: These 2-step compressors have proved themselves under the high loads of evaporation temperatures of down to -94°F. They are also highly flexible in application and can be used, for example, in environment simulation systems, freeze drying and tunnel freezer systems. The liquid subcooler optionally available ex works increases energy efficiency substantially along with refrigeration capacity.

5.5 .. 30 HP (nominal motor power) //  
830 .. 4270 CFH (LP) based on 60 Hz  
operation



### OPEN DRIVE RECIPROCATING COMPRESSORS

// The solution for fluctuating mains power quality: Our open compressors offer individual motor assignment and are therefore particularly service-friendly. The series is available with coupling housing or fly-wheel; if required, you can achieve a higher refrigeration capacity using larger pulleys.

// There is also a series of models specially adapted for ammonia and the 0 .. VII compressor series for smaller refrigeration capacities.

40.9 .. 6463 CFH based on 1750 rpm



REFRIGERANT TABLE

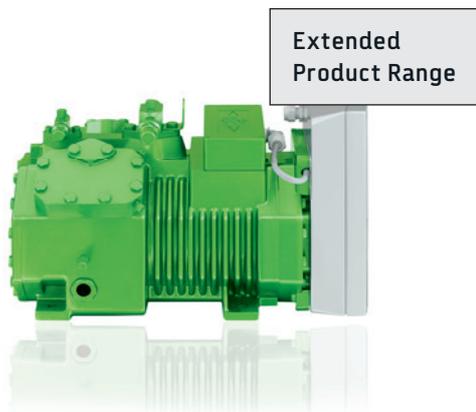
Refrigerant	Series, Design // Compressor Types	Displacement*
<b>Refrigerant-Optimized Versions</b>		
R134a	BITZER ECOLINE // 4VES-6Y .. 6FE-50Y	1469 .. 6424 CFH
R410A	OCTAGON R410A // 4FDC-5Y .. 4NDC-20Y	529 .. 1999 CFH
<b>Natural Refrigerants</b>		
R744	OCTAGON CO <sub>2</sub> sub-critical // 2MHC-05K .. 4NHC-30K	68 .. 1988 CFH
R744	OCTAGON CO <sub>2</sub> trans-critical // 4MTC-7K .. 4FTC-30K	275 .. 754.3 CFH
R717 (R723)	Open Drive NH <sub>3</sub> // W2TA .. W6FA(L)	834 .. 6424 CFH
R290 // R1270	Semi-hermetic R290 // 2KC-05.2P .. 8FC-70.2P	173 .. 9400 CFH

\* With 1750 rpm // 60 Hz operation

REFRIGERANT-OPTIMIZED VERSION

// Exceptional performance: With the BITZER ECOLINE range, we are the first compressor manufacturer to have optimized a complete semi-hermetic reciprocating compressor series for R134a. This series lets you lower energy costs simply and efficiently. The renowned systems engineering guarantees you easy installation and high operating reliability, even at extreme ambient temperatures. These compressors are best suited to inverter operation and can be used for medium temperature, air conditioning and heat pump applications.

6 .. 50 HP (nominal motor power) //  
1469 .. 6424 CFH based on 60 Hz operation



## COMPRESSORS WITH FREQUENCY INVERTER

// This performance is exceptional: The built-in frequency inverter gives you infinite control over the speed of the compressor. BITZER supplies the OCTAGON VARISPEED with the integrated frequency inverter, programmed and ready for operation. The built-in suction-gas cooling increases operational reliability and makes regular maintenance unnecessary. We thus guarantee you increased system efficiency and uncomplicated solutions for all refrigeration systems and heat pump applications.

3 .. 20 HP (nominal motor power) //  
282 .. 3425 CFH based on variable speed



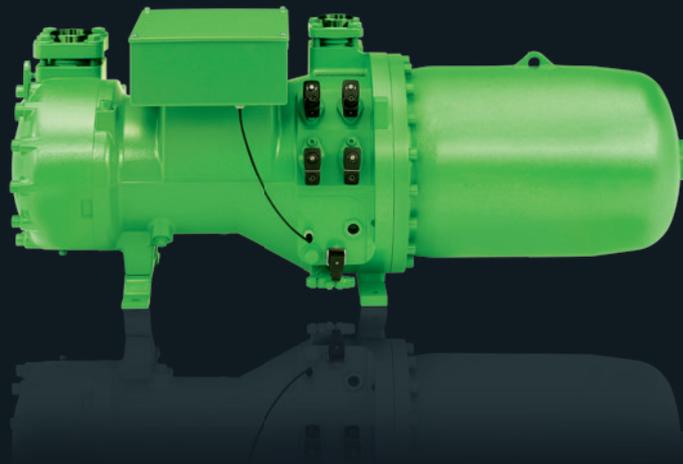
## CONDENSING UNITS

// Individual solutions for every application: BITZER offers air-cooled and water-cooled condensing units in various versions with 1 and 2-step reciprocating compressors. Along with the renowned standard series, optimized versions are available for high ambient temperatures, enhanced sound insulation requirements, and reduced heights. Our extensive range of accessories such as oil separators and collectors offer you high flexibility and versatile application options.

// The new ECOSTAR models offer an Ethernet connection and a microchannel condenser. All ECOSTAR have an integrated frequency inverter and a pre-programmed control system.

0.5 .. 50 HP (nominal motor power) //  
173 .. 6460 CFH based on 60 Hz operation

# LEADERS IN DESIGN AND EFFICIENCY: OUR SCREW COMPRESSORS.



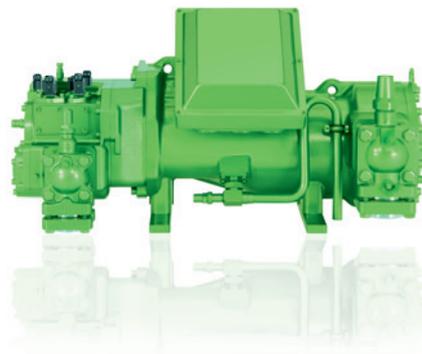
BITZER is the largest independent manufacturer of screw compressors worldwide. With our innovative developments, we continue to set new standards for this compressor technology. Our screw compressors impress with their versatility in application, energy-efficient operation and long service life. Our many patents speak loud and clear: With BITZER you have every refrigeration, air conditioning and heat pump application under control.



## SEMI-HERMETIC COMPACT SCREW COMPRESSORS

// 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 slider 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 to use in heat pumps.

35 .. 320 HP (nominal motor power) //  
5830 .. 47710 CFH based on 60 Hz operation



## SEMI-HERMETIC SCREW COMPRESSORS

// Almost 30 years of success: Our renowned semi-hermetic screw compressors. The HS.85 series offers you an integrated slider for 3-step or infinite capacity control. This concept, featuring an external oil separator and oil cooler, makes parallel operation simple for larger applications in industrial and commercial settings. Even in part-load operation you can thus achieve good control of capacity and plant efficiency. Additionally, with economizer operation you can increase both refrigeration capacity and energy efficiency.

20 .. 160 HP (nominal motor power) //  
3560 .. 22672 CFH based on 60 Hz operation



## OPEN DRIVE SCREW COMPRESSORS

// The solution for special applications: We have developed our open drive screw compressors for use with a flange-mounted 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 service friendliness. In addition, we offer versions of our open screw compressors for NH<sub>3</sub> and for explosion protection zones.

3540 .. 22672 CFH based on 3500 rpm



## ACCESSORIES FOR SCREW COMPRESSORS: OIL SEPARATORS AND OIL COOLERS

// Highly reliable and comprehensive: BITZER offers primary, secondary and new combination oil separators in various sizes and also water and air cooled oil coolers. Our finely graded series are suited for use with single compressors and with compound systems. Additionally, we can provide you with special series for refrigeration systems using NH<sub>3</sub> or with flooded evaporators. BITZER oil separators are equipped with centrifugal and gravity separation, whereby minimal oil carry-over rates and a high separation rate under full and part load operation are achieved.

Use for compressors with theoretical displacement up to 88280 CFH // Oil charge from 633 to 8800 fl.oz

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



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



## HERMETIC SCROLL COMPRESSORS

// ORBIT 8 – the right compressor for every R410A application: The Standard Range is optimized for use with high condensing temperatures. With the ORBIT 8 Boreal, we are the first manufacturer of scroll compressors to offer a variant especially for low condensing temperatures. Therefore the ORBIT 8 series will allow you to achieve maximum energy efficiency in every application.

15 .. 40 HP\* //  
1260 .. 3300 CFH based on 60 Hz operation  
\* Single compressor

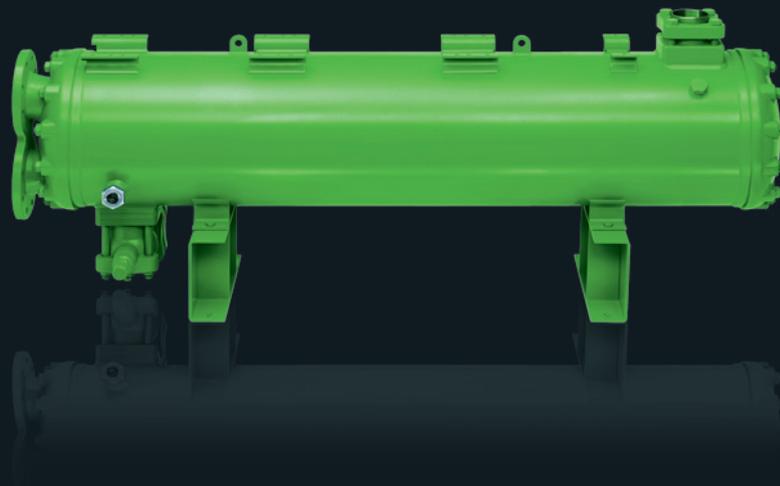


## HERMETIC SCROLL COMPRESSORS

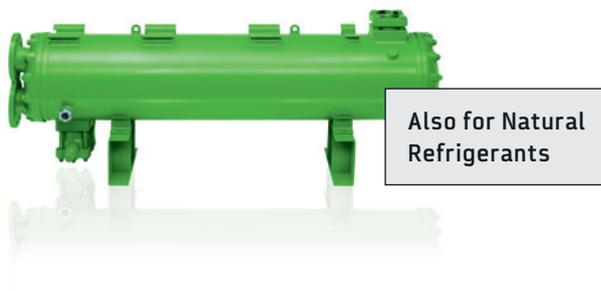
// High in performance and efficiency, we have optimized the ESH7 series of compressors for small and medium-capacity air conditioning and heat pump applications. The special cooling process ensures that the spirals are at equal temperature at all operating points. By this means our compressors achieve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

9 .. 15 HP\* //  
1066 .. 1833 CFH based on 60 Hz operation  
\* Single compressor

## MAKING AN IMPRESSION IN 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 ribbed pipes ensure 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 sea-water-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 ( $\text{NH}_3$ ,  $\text{CO}_2$  Hydro Carbon) 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 239 .. 19357 fl.oz

## DEPENDABLE COMPANIONS ON EVERY ROUTE: OUR TRANSPORT COMPRESSORS.



In the area of transport applications, you can depend on BITZER's decades of experience in air conditioning and refrigeration applications of all kinds. We guarantee you innovative and efficient solutions, and our compressors impress with their low weight, compact construction, quiet operation and the famously dependable BITZER quality.



### OPEN DRIVE RECIPROCATING COMPRESSORS

// Benefits upon benefits: The BITZER transport compressor types 4UFC to 6NFC and the F400 are lightweight, compact, energy efficient and have a wide speed range. Thanks to the newly designed oil collector, the additional oil drain plug and the repositioned oil sight glass, these models are particularly service-friendly. With this innovative technology, we are setting new standards for air conditioning in buses.

24.4 .. 59.1 CIR //  
1480 .. 3600 CFH based on 1750 rpm



### HERMETIC SCREW COMPRESSORS

// Perfect for any train: The hermetic VSK compressors from BITZER are tailored exactly to the special requirements of train air conditioning. 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.

15 .. 25 HP //  
1980 .. 3390 CFH based on 60 Hz operation



### SEMI- AND FULL-HERMETIC SCROLL COMPRESSORS

// EL7 series – High performance and efficiency: Our EL7 horizontal hermetic scroll compressors are ideally suited to use in air conditioning in transport applications. Their advantages are low noise and vibration levels, reliable oil supply and an exceptionally compact construction.

// ECH209Y – These are true lightweights: BITZER scroll compressors in aluminum for mobile applications. The ECH209Y with a built-in electronically commutated motor offers high system efficiency, speed independent of the vehicle engine and low maintenance.

EL7 series // 7.5 .. 15 HP //  
1066 .. 1833 CFH based on 60 Hz operation

ECH209Y // 130 .. 300 CFH based on  
variable speed



MIX

Aus verantwortungsvollen Quellen  
From responsible sources

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