

Product profile



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BITZER CSH2T compact screw compressors for applications with fluid outlet temperatures of up to +120°C

Many industrial processes require thermal energy at high temperatures. Using high temperature heat pumps to utilise valuable waste heat provides the opportunity to reduce dependence on fossil fuels and promote decarbonisation. The importance of high temperature heat pumps is also increasing in local and district heating networks. BITZER CSH2T compact screw compressors make it possible to provide fluid outlet temperatures of up to +120°C in these applications.

CSH2T compressors are specially designed for high system temperatures. With more than 40 years of experience in screw compressor technology, BITZER has optimised all the components for these operating conditions, from motors and bearings to the refrigeration compressor oil used. With the CSH2T series, BITZER not only offers its customers a suitable compressor for efficient system designs in the expanding market of high temperature heat pumps, but also supports users with a comprehensive range of advice services.

CSH2T compressors are suitable for operation with the refrigerants R1233zd(E) and R245fa and come in two displacement volumes – 972 m³/h at 60 Hz (CSH2T9583) and 845 m³/h at 60 Hz (CSH2T9573) – for use exclusively with the BITZER external VARIPACK frequency inverter. This combination enables efficient control of compressor speed and ensures maximum operating reliability for this complex system technology. Applications with hydrocarbons are also undergoing testing.

High performance for high temperature heat pumps

With evaporation temperatures between +20°C and +80°C and condensing temperatures between +55°C and +125°C, the CSH2T series supports fluid outlet temperatures of up to +120°C. Heating

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capacities of up to 1 MW* per compressor are possible (*operating conditions: $t_0 = +70^{\circ}\text{C}$, $t_c = +120^{\circ}\text{C}$ at 60 Hz, design: CSH2T9583-240-35D with R1233zd(E) in economiser operation). CSH2T compressors are therefore the ideal high-performance core in many high-temperature applications. High fluid outlet temperatures are required for pressurising water for a variety of industrial heating processes such as drying, boiling and distillation. Alternatively, low-pressure steam can be generated and used as an efficient energy source in many industrial applications. The CSH2T series also showcases its benefits in sustainable heat generation in local and district heating networks.

Thanks to the integrated oil separator and suction gas cooled high-temperature motor, the CSH2T series enables compact system dimensions. The compressors are fitted with the SE-i1 compressor protection device as standard, which ensures reliable operation by monitoring motor, discharge gas and oil temperatures as well as the direction of rotor rotation. The BEST SOFTWARE can be incorporated to visualise and evaluate operating data and thus assist with compressor commissioning and maintenance.



As an independent specialist for refrigeration, air conditioning and heat pump technology, BITZER is present all over the world: with products and services for refrigeration, air conditioning and process cooling as well as transport, BITZER ensures optimum temperature conditions for trade in goods, industry processes and indoor climate control – always striving for the highest possible energy efficiency and quality. BITZER is represented all over the world with 75 sites in 40 countries, including its sales companies and production facilities. Trade and service partners included, the BITZER network of manufacturing, development and sales extends to almost all countries in the world. In 2023, more than 4,300 employees generated a turnover of €1.01 billion; expenditure for research and development totalled €61 million.

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Image: BITZER CSH2T compact screw compressors are specially designed for use in high temperature heat pumps