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BITZER launches new high-efficiency version of CSW compact screw compressors

Sindelfingen/Rottenburg, 13.07.2021. BITZER presents its new compact screw compressor CSW85/95 motor version 4 for improved efficiency in water-cooled high-performance liquid chillers. The new compressor motor selection allows manufacturers to achieve the latest efficiency requirements.

CSW motor version 4 is a combination of the well-known BITZER CSW screw compressor with a special selected motor version 4 and special oil charge. This concept has already been successfully implemented for the Chinese market for high reliability and excellent efficiency at water-cooled chiller conditions. Due to increasing efficiency requirements and corresponding customer demand, especially from Europe and India, BITZER now started the manufacture of its CSW for the corresponding markets ex works the BITZER Rottenburg-Ergenzingen site.

The number of water-cooled systems is notably increasing in Europe – also due to the requirements of the Ecodesign Directive. CSW enables OEM screw chiller manufacturers to design and produce water-cooled air conditioning chillers that fulfil the highest international energy efficiency standards like the European Ecodesign 2016/2281 tier 2 and the Indian BEE-ECBC – ISEER star rating.

New possibilities for chiller manufacturers

The product range covers nine models with displacements between 410 m³/h and 1,120 m³/h at 50 Hz as well as 495 m³/h and 1,351 m³/h at 60 Hz. Their application envelope was designed for highly efficient water-cooled air conditioning and process chiller applications with maximum condensing temperatures up to 46°C, which is why their technical concept includes various measures to improve the compressor's efficiency: the motor features increased efficiency in the target application envelope

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and a reduced maximum operating current. This gives the possibility to use smaller contactors and smaller mains cable diameters, resulting in an overall system cost reduction. CSW was designed for low-pressure medium and low GWP refrigerants like R134a, R1234yf, R513A, R450A, R1234zeE and R515B. Also, the internal gas flow has been optimised and the internal pressure drop further reduced.

The combination CSW with motor version 4 and the optimised oil version allows for efficiency to meet the specifications, for example, in a water cooled air conditioning liquid chiller set under European standard EU 2016/2281 where the CSW motor version 4 enables the chiller's Seasonal Energy Efficiency Ratio (SEER) to be improved by up to 8 per cent compared to a standard CSW compressor, at typical motor cooled chiller operating conditions.

Elaborate capacity concept

The mechanical capacity control with single-slider concept can be adjusted between 100 and 25 per cent. This CSW version is also suitable for operation with an external frequency inverter at a frequency range between 20 and 60 Hz. The variable speed range depends on given operating conditions and input voltage range.



As an independent specialist for refrigeration and air conditioning 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 72 sites in 37 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 2020, 3,800 employees generated a turnover of €808 million; expenditure for research and development totalled €45 million.

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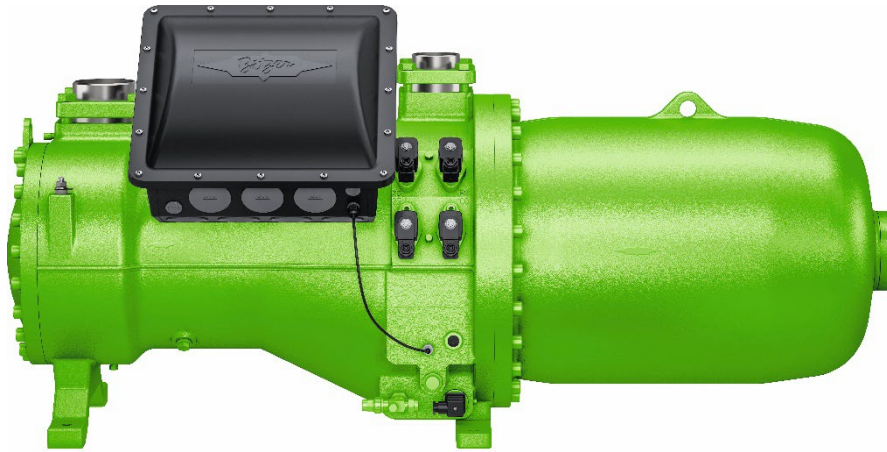


Image: CSW motor version 4 enables OEM screw chiller manufacturers to design and produce water cooled air conditioning chillers that fulfil the highest international energy efficiency standards