

Pilot study



BOCK 2-stage StarCO₂mpressor HRZ60

New transcritical CO₂ compressor
for low temperature

BOCK

colour the world
of tomorrow



BOCK goes low temperature – with 2-stage CO₂ compressors in the "Star" design!

Six-cylinder with wide frequency range for flexible low temperature capacities.

Designed for low temperature applications: The new transcritical CO₂ compressor BOCK HRZX60-2 CO₂ T V (vertical) offers a wide frequency range for flexible capacity adaption and great application potentials, especially for high partial load requirements. For optimal coverage of these requirements, the 6-cylinder with innovative BOCK "Star" engine design operates in two stages: in the first stage with 4 cylinders, in the second stage with 2 cylinders and an outstanding wide frequency range from 13 to 75 Hz. This allows flexible low-temperature applications with only single compressor. A perfect solution for efficient use in condensing units, especially in stationary commercial applications such as freezer rooms and consumer markets. Another plus of the robust, reliable compressor: low weight and slim design combined with high running comfort and energy efficiency.

Cooling capacity – HRZX60-2 CO₂ T V



*-35°C / 35°C (90 bar) / 10 K / 13 – 75 Hz | preliminary data

| 50 Hz

Suction and discharge connections on both compressor stages

Flexible system design with e.g. integration of a desuperheater (intercooler)

Innovative BOCK "Star" drive gear design

Cylinders arrayed in star-shape around the crankshaft cylinders, designed for transcritical 2-stage use with the natural refrigerant R744

High-performance oil pump

Constantly reliable oil supply for bearings and drives ensures highest reliability



Welded, robust steel housing

Low leakage potential and high reliability

Low space requirement due to compact design

Wide speed range for flexible adaptation of the capacity requirements

Frequency range 13 – 75 Hz

Technology that sets standards

2-stage six-cylinder radial piston compressor
HRZX60-2 CO₂ T V (vertical)

Eccentric shaft with **cylinders in "Star" arrangement**

Max. permissible overpressure:
100 bar/100 bar/150 bar (LP/MP/HP)

Weight: **<100 kg**

Overall width: **approx. 220 mm**

Overall height: **approx. 600 mm**

Displacement at 50 Hz / 2,900 1/min:
7.3 m³/h / 3.6 m³/h (LP/HP)

Frequency range: **13 – 75 Hz** (750 to 4,350 U/min)
for flexible capacity adaption

Cooling capacity: **~10 kW¹** (50 Hz) **~2÷14 kW¹** (13 – 75 Hz)

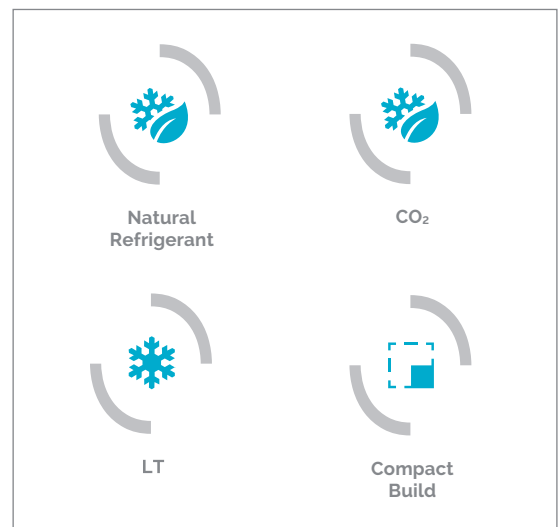
Robust and reliable design for transcritical CO₂ application

Flexible low temperature applications with single compressor



StarCO₂mpressor[®]

Superior compressor technology by BOCK



¹⁾ -35°C/ 35°C (90 bar) / 10 K | preliminary data



BOCK is one of the world's technology and innovation leaders in the development of environmentally friendly, economical solutions in the field of refrigeration and air-conditioning technology, including heat pumps and heat recovery – with one of the world's largest portfolios of compressors for natural refrigerants such as CO₂ (R744), hydrocarbons and other low-GWP refrigerants.

BOCK

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