

REFRIGERANT CIRCULATION PUMPS

- DESIGNED AND OPTIMISED FOR CO₂ -



Use of refrigerant pumps made easy

With the introduction of the Grundfos RC refrigerant circulation pump the use of refrigerant pumps has been made significantly easier. The innovative pump design improves the performance of the refrigeration system and reduces the resources and time needed for installation. Minimum energy consumption is secured through variable speed capacity control and the elimination of the traditional loss generating protective devices (QMAX-Orifice and permanent by-pass).

More efficient, more compact solutions

Grundfos RC pumps are designed for commercial and industrial refrigeration applications. The multi-stage hydraulics has been optimised for the operating conditions of modern refrigeration systems, using variable speed to secure low head and control of pump differential pressure.

Grundfos RC pumps have been made much more compact and light weight, with a very low NPSH requirement. This makes overall system integration much easier, claiming fewer resources and less time for the installation process.

The first dedicated CO₂ refrigerant pump

The RC pumps have been designed from scratch, taking the particular needs of CO₂ into consideration. Other pump brands capable of using CO₂ as a refrigerant are available on the market, but all lack the specific requirements of the commercial and industrial refrigeration sectors. As a result, we have designed a pump for modern high-pressure CO₂ applications.

The barrel type pump with a canned motor has a semi-hermetic design with only one central O-ring seal between the pump sleeve and motor housing. In addition, the pump can be welded into the pipe system eliminating the possibilities for leakages in flanges. These features are relevant for all refrigeration applications – but ideal for those with CO₂ as refrigerant.



BENEFITS

High energy efficiency
Easy system integration
Compactness and light weight

APPLICATIONS

Liquid transport (distribution to evaporators or pressure boosting) in commercial and industrial refrigeration systems, and similar.



TECHNICAL DATA

Mains voltage: 3 x 220 V or 3 x 400 V for 50 Hz models, 3 x 230 V or 3 x 460 V for 60 Hz models.

Refrigerants: R744 (Carbon dioxide, CO₂), R717 (Ammonia, NH₃), R134a, R404A, R407C, R410A, R507A.

Materials: Metals in contact with media are EN 1.4301/304 AISI.

Variable speed: 25 to 50 Hz for all 50 Hz models, 30 to 60 Hz for all 60 Hz models.

OPERATING CONDITIONS

Max. system pressure: 25 bar g (360 psig), 40 bar g (580 psig), or 52 bar g (750 psig) depending on the refrigerant.

Liquid temperature: Between -55 °C and +40 °C (-70 °F to 105 °F) – however, the maximum system pressure must not be compromised.

Nominal volume flow: RC2 from 0.2 to 2 m³/h (0.9 to 9 GPM)
RC5 from 0.5 to 5 m³/h (2.2 to 22 GPM)
RC8 from 0.8 to 8 m³/h (3.5 to 35 GPM).

Nominal head: R744 (CO₂) from 8 to 40 m (26 to 130 ft)
R717 (NH₃) from 12 to 60 m (40 to 195 ft)
HFC from 6 to 28 m (20 to 90 ft)

Actual maximum and minimum head depend on pump variant and operating conditions.

The Grundfos cooling and refrigeration range



Grundfos RC pumps

Grundfos CM pumps

Grundfos CRN (MAGdrive) pumps

Grundfos AC pumps

Grundfos TP pumps

Grundfos NB/NK pumps

Grundfos MT pumps