

Gas cooler / condenser for CO₂

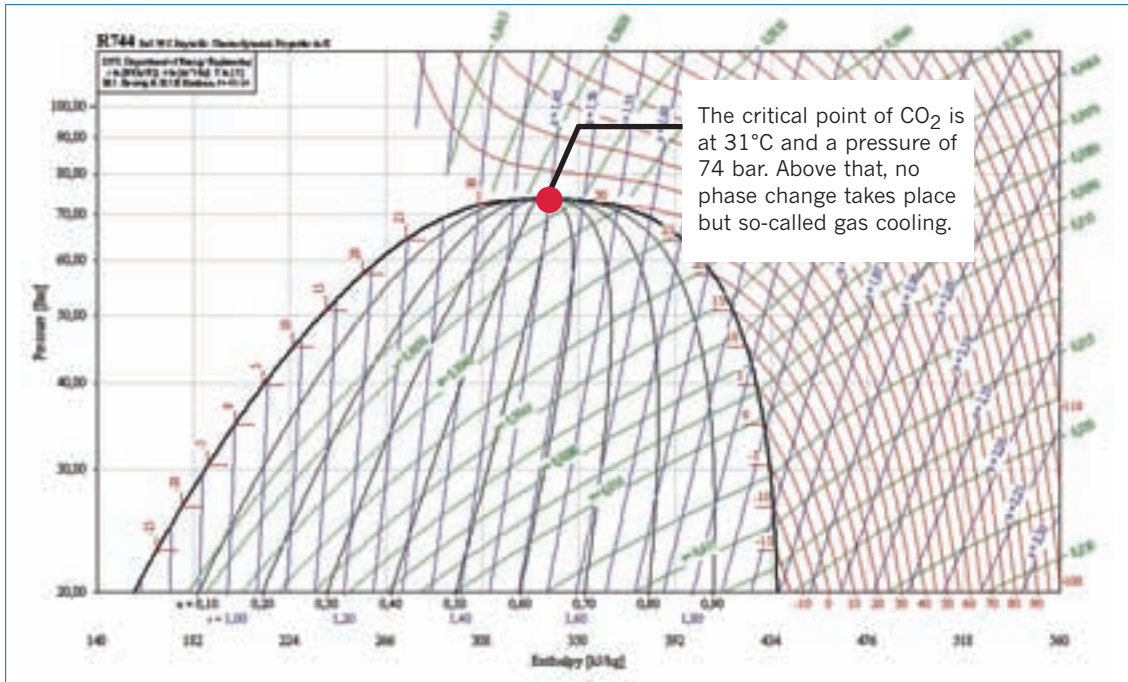


The perfect partnership of technological know-how and the exceptional thermodynamic properties of CO₂

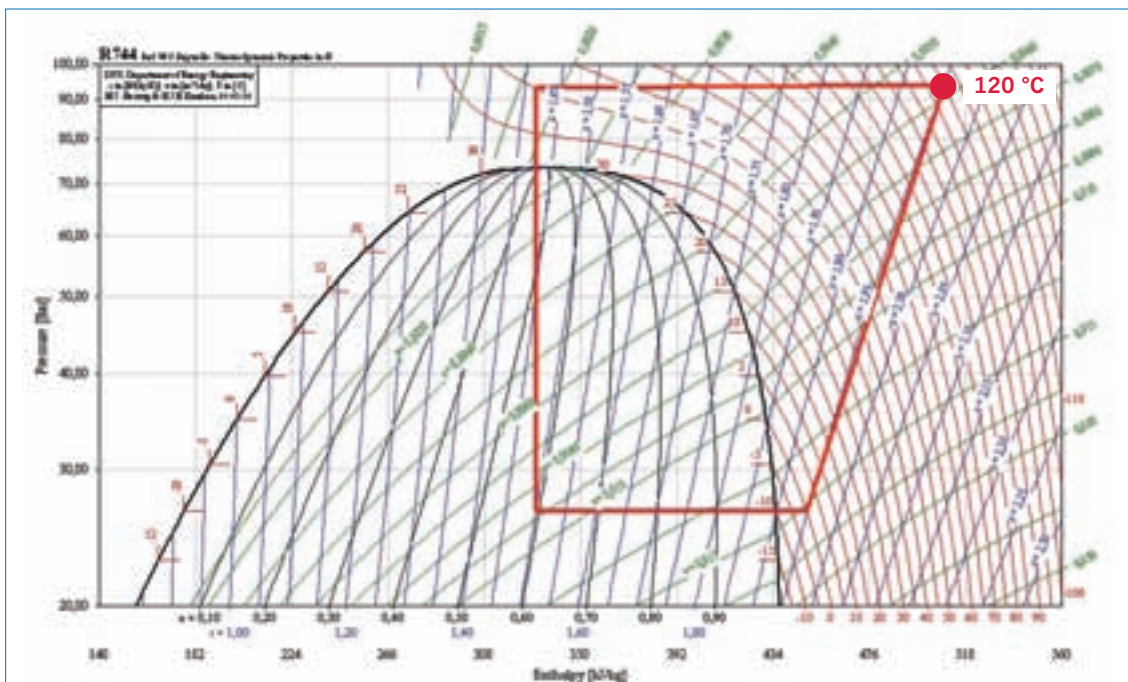
- Energy saving
- Reliable
- Environmentally friendly
- 120 bar / 150 °C



The challenge



- high pressure state at ambient temperature
- critical point already reached at low temperatures
- transcritical cycle at high ambient temperatures
- high final compression temperature

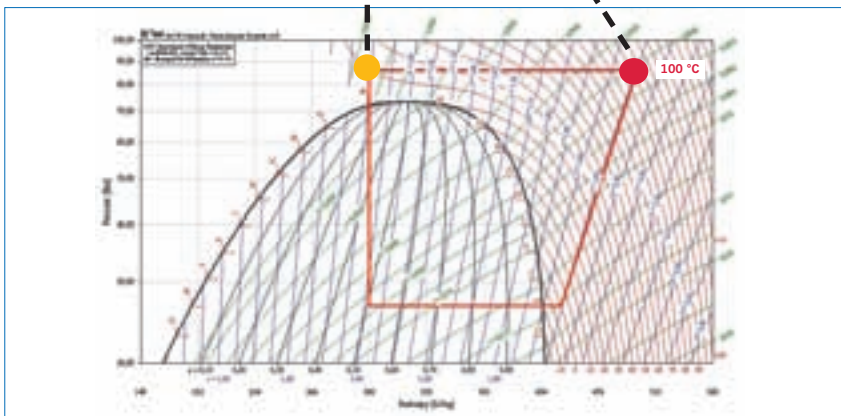
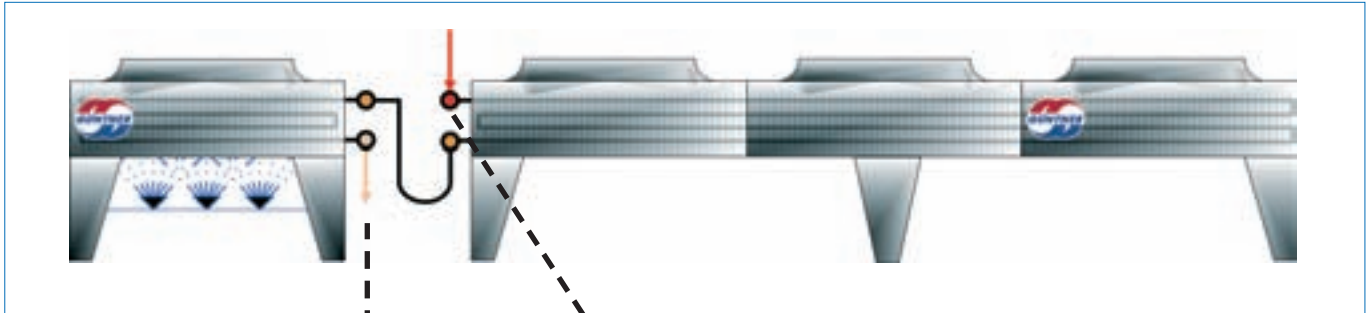




The modern solution by Güntner

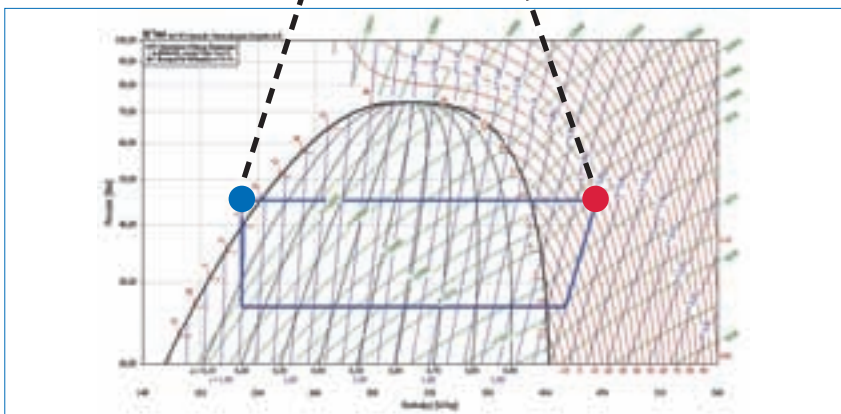
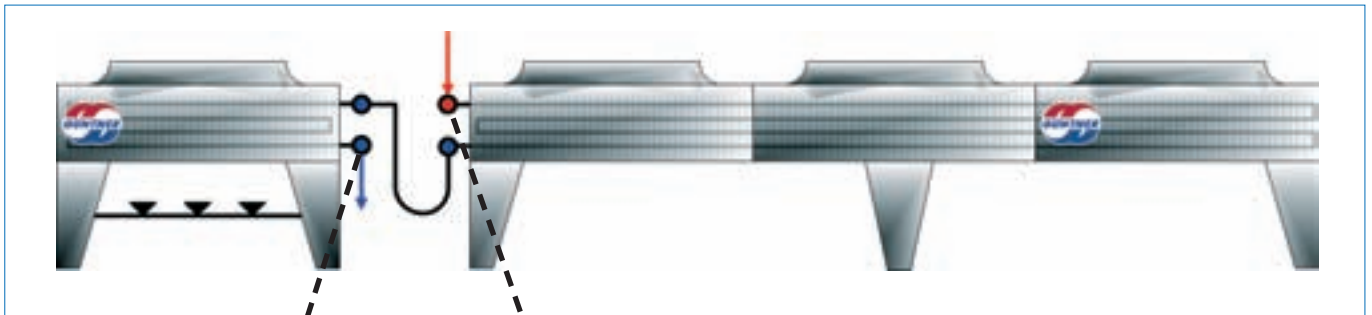
Güntner gas cooler / condenser with summer / winter operation for CO₂

Summer operation with small sprayed surface area



The gas cooler outlet temperature is reduced significantly by spraying a separate heat exchanger during the temperature peaks in high summer. A special cathodic dip coating protects the sprayed heat exchanger from corrosion.

Winter operation unsprayed with sub cooler function



The system functions 'subcritically' during operation below a certain ambient temperature. The larger heat exchanger operates as condenser, the smaller one as sub cooler; the spraying is stopped.



The advantages of CO₂:

Very low greenhouse effect

GWP of CO ₂ :	1
GWP of R134a:	1300

No ozone depletion potential

ODP of CO ₂ :	0
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Utilisation of the exceptional heat transfer properties of CO₂

Exceptional heat transfer coefficient α_i

Excellent COP

Very low minimal condensing temperature
High pressure difference even with slight temperature difference (dp/dT 6 times as great as with R134a)

Advantages of the overall concept:

Small sprayed surface

Excellent protection of the sprayed part by means of cathodic dip coating

Increase in evaporation enthalpy

Therefore reduced mass flow rates

No risk to gas cooler as result of spraying

Available with added switch cabinet and integrated control units for ventilator speed and spraying

Low water costs as a result of spraying as required

Tubes and header outlet are constructed in stainless steel for optimum pressure resistance (VA)

The units are pressure tested individually and designed for a maximum operating pressure of 120 bar at 150°C

Secure for the future in case of a HFC ban

If you require further information, please contact our sales team:

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