



Canned motor pump for LCO₂ Loading and Unloading Stations

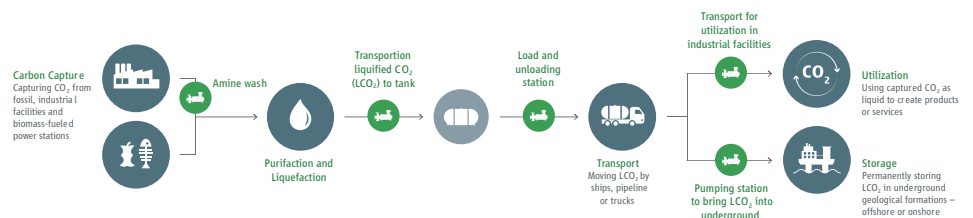
CO₂ capture plays a crucial role in various industrial processes. For efficient storage and reuse of captured CO₂, purification and liquefaction processes are advantageous. As a result, the CO₂ – referred to as LCO₂ – is available as a cooled liquid and stored in tanks for transportation. Using loading and unloading stations, the LCO₂ is transferred from the tank into transport systems such as trucks, railcars, or ships and taken to its next destination.

Your benefits

- Compliance: Manufacturer's declaration according to EC 1935/2004 available for purified CO₂
- Materials: Extensive pump portfolio in steel and stainless steel
- Efficiency: Lowest life cycle costs due to minimal maintenance requirements

Fields of Application

- Loading stations
- Unloading stations



Sealless Technology **Unlimited**

APPLICATION REPORT

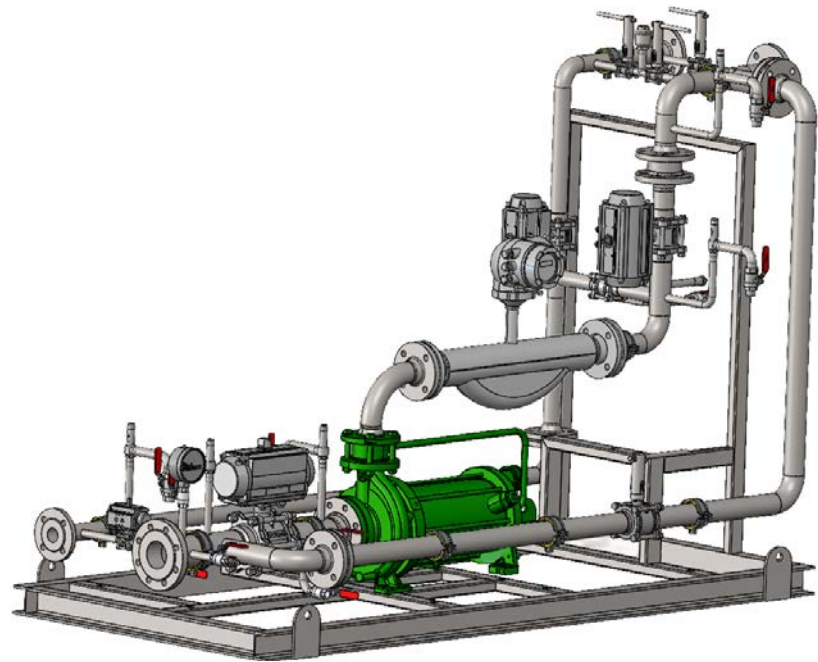
Loading Station for Purified LCO₂ in Methane Production

Requirements

In this application, the goal was to safely, efficiently, and autonomously transfer food grade LCO₂ from a storage tank to trucks. The filling process needed to be carried out as fast as technically feasible.

To ensure a smooth and autonomous long term operation without leakage and with extended maintenance intervals, canned motor pumps were selected.

HERMETIC developed a special pump design specifically for food grade LCO₂, including a manufacturer's declaration according to EC 1935/2004, ensuring safe and clean handling. This enables the transferred LCO₂ to be reused in the food industry or pharmaceutical applications.



CO₂ Skid



Flow rate:	40 m ³ /h
Head:	38 m
Operating temperature:	-27 °C
Refrigerant:	CO ₂ / LCO ₂
Plant type:	Loading station



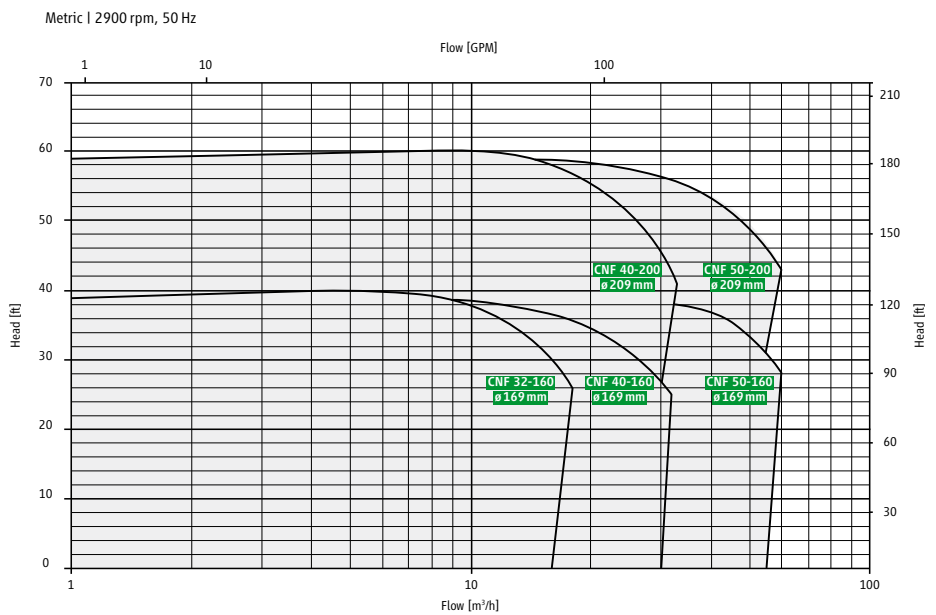
The pump used

The special design incorporates dedicated food grade materials. For this reason, the pump is built in stainless steel, including special bearings and seals. To ensure the highest quality, all LCO₂ wetted parts come with material certificates according to EN 10204 3.1.

For fast truck unloading, a CNF 50 200 with a CKPx 12.0 motor was selected. This is a single stage canned motor pump, designed for PN25 pressure rating.

This pump series is particularly suitable for high flow rates and medium discharge heads.

The customer was especially convinced by the pump's long maintenance free operating life.



Medium / refrigerant

Purified, liquefied CO₂ can be reused in the food industry or pharma sector, contributing significantly to reducing the CO₂ footprint.

CO₂ is increasingly used as a refrigerant as well. Common applications include supermarket refrigeration and industrial cooling systems. It can be used in different system designs:

- Subcritical in cascade systems
- Transcritical in all CO₂ systems
- As a secondary refrigerant

CO₂ offers major advantages such as excellent heat transfer coefficients, very low viscosity, and high environmental compatibility.

Everything you need to know about CO₂ is available [here](#).

We have the right pumps for your industry:



CAM Stainless steel | Steel

CNF Stainless steel | Steel

Delivery rate	max. 40 m ³ /h	max. 85 m ³ /h
Delivery head	max. 180 m	max. 90 m
Material	Stainless steel, steel	Stainless steel, steel
Pressure rating	PN 16 / PN 25 PN 40 (steel)	PN 16 / PN 25 PN 40 (steel)
Operating temperature with CO ₂	-50 °C to +0 °C	-50 °C to +0 °C
Speed	2800 to 3500 U/min	2800 to 3500 U/min
EC 1935/2004 manufacturer's declaration	Available for stainless steel versions	Available for stainless steel versions

[Learn more](#)

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Customisations

If you cannot find a suitable pump series? We are happy to help you with a customised solution regardless of the quantity. Please contact us.

[Contact now](#)



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