



## Canned motor pumps for vaccine production

While a world without vaccinations is no longer imaginable, the production of vaccines is often extremely difficult. A wide variety of challenges must be met in high-tech processes and a highly regulated environment. For example, some vaccines react very strongly to ambient temperature and temperature changes. Therefore, extremely low temperatures are necessary for various process steps. A high level of reliability is required of the pumps in refrigeration systems, even at adverse operating temperatures of  $-80^{\circ}\text{C}$  for example. Thanks to decades of experience, HERMETIC supports the pharmaceutical industry with tailor-made, safe pump solutions.

### Your benefits

- Flexibility: individual solutions exactly according to customer requirements
- Vast knowledge: Pump specialist for canned motor pumps for over 50 years
- Long service life: no dynamic seals and non-contact running on hydrodynamic plain bearings

### Typical areas of application

- Production of vaccines
- Vaccine freezing process
- Bottling of vaccines

APPLICATION REPORT

# Production of vaccines against COVID-19 disease

## Requirements

A reliable pump was sought for a refrigeration system designed in Germany for the production of vaccines that could ensure the long-term operation of the system without any failures. The vaccine is used to protect against COVID-19 disease. In the present case, the challenge was not in the operating point, the pressure range or the installation, but in the extremely low operating temperatures of  $-80^{\circ}\text{C}$ . The cast materials used as standard may become brittle at low temperatures. Therefore, the selection of suitable material was vital.

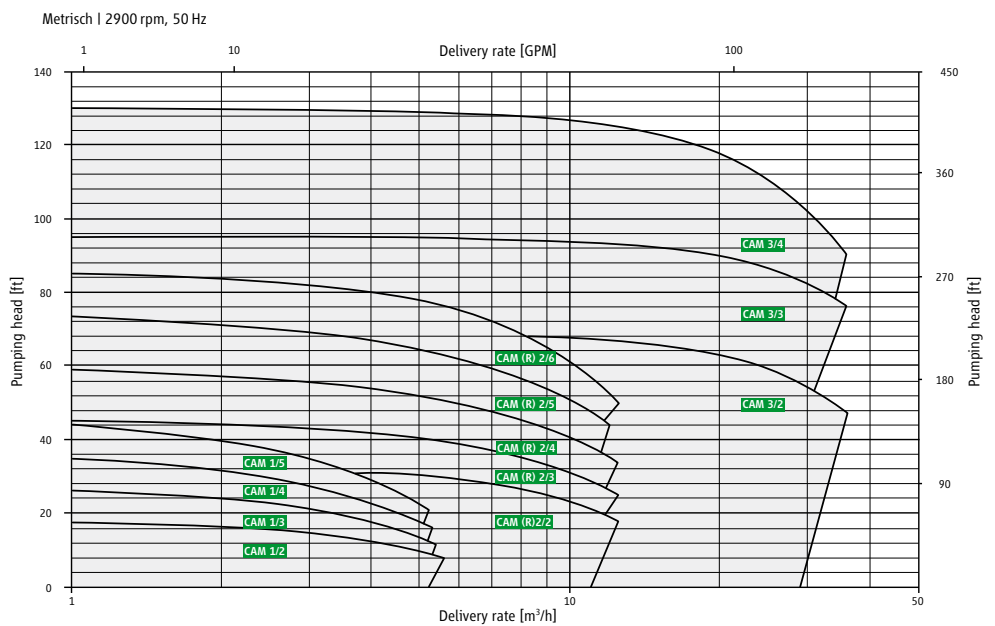
Delivery rate:	8 m <sup>3</sup> /h
Pumping head:	35 m
Operating temperature:	$-80^{\circ}\text{C}$
Refrigerant:	Lobotherm BT3
System type:	Cascade system



## The pump used

In the present case, a customer-specific, multi-stage canned motor pump of the type CAM was used – the four-stage pump CAM 2/4 with AGX3.0 motor. The standard version of the HERMETIC CAM series can be used down to a maximum of  $-50^{\circ}\text{C}$ . Due to the low temperatures, the decision was made to use a stainless-steel design. This applies particularly to all parts that come into contact with the medium. An external frequency inverter was used to maintain the exact operating point and prevent power losses.

Further information on the HERMETIC CAM series is available [here](#).



## Medium / refrigerant

The refrigerants LoboTherm BT are low-temperature transfer oils that consist of linear polydimethylsiloxanes and are available in varying viscosities. LoboTherm oils are also characterised by their environmental compatibility, low toxicity, low setting points and excellent corrosion properties. Due to the low setting point, the refrigerant can be used at temperatures down to  $-100^{\circ}\text{C}$  and is therefore used in refrigeration systems or freeze-drying processes using extremely low temperatures.

### We have the right pumps for your industry



**CAM(R)**



**CNF**



**CAMh**

Delivery rate:	max. 40 m <sup>3</sup> /h	max. 80 m <sup>3</sup> /h	max. 14 m <sup>3</sup> /h
Pumping head:	max. 180 m	max. 70 m	max. 120 m
Pressure rating:	PN25 and PN40	PN25 and PN40	PN52
Operating temperature:	$-50^{\circ}\text{C}$ to $+30^{\circ}\text{C}$	$-50^{\circ}\text{C}$ to $+30^{\circ}\text{C}$	$-50^{\circ}\text{C}$ to $+5^{\circ}\text{C}$
Speed:	2800 to 3500 rpm	2800 to 3500 rpm	2800 to 3500 rpm
Viscosity:	max. 20 mm <sup>2</sup> /s	max. 20 mm <sup>2</sup> /s	max. 20 mm <sup>2</sup> /s
	<a href="#">Learn more</a>	<a href="#">Learn more</a>	<a href="#">Learn more</a>

## Customizations

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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