



VAN OORD SVANEN CRANE SHIP

CASE STUDY

A high-performance elevator for the challenging conditions aboard the Van Oord Svanen crane ship

Access anytime, anywhere

ALIMAK

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In terms of marine elevator design and installation, no project comes bigger than the Van Oord Svanen crane ship, the largest crane vessel anywhere in the world, boasting a lifting capacity of a staggering 8,000 tonnes. Initially used as a crane for bridge construction projects, the Svanen has been widely utilized as a vital part of the construction infrastructure for around 650 offshore foundations. This includes the vast majority of monopole installations driven into the sea bed of the key Baltic Sea region.

Alimak were selected as the ideal provider for a high functioning industrial elevator on board the Svanen based on our strong history of experience and expertise in the offshore industry, particularly in marine elevator and explosion proof elevator projects. We were also able to offer the client peace of mind and confidence in our ability to develop a practical industrial elevator solution for this specific purpose while remaining flexible on the location in order to avoid extensive modifications to this valuable ship. One potential location would have made for a more costly solution due to a surrounding angled structure. Through detailed forward thinking, assessment and planning processes, however, the Alimak team was able to site the industrial elevator in an optimum location while avoiding interference with essential cabling.

A further challenge in this kind of marine elevator vertical access system is the immense forces offshore vessels must deal with during construction work and in everyday operations. The crane itself is used to drive the base of the wind turbines deep into the ocean floor. The elevator developed for the particular needs of this project therefore uses special bolts and mounting methods to avoid the risk of them working loose under this extreme force and the safety hazard of a bolt dropping for up to 70 meters. The environmental forces faced by industrial offshore crane vessels such as the Svanen also present a number of specific vertical access challenges, particularly the high wind conditions. This was further complicated by the high requirements for approval of elevators installed on Lloyds classified vessels.



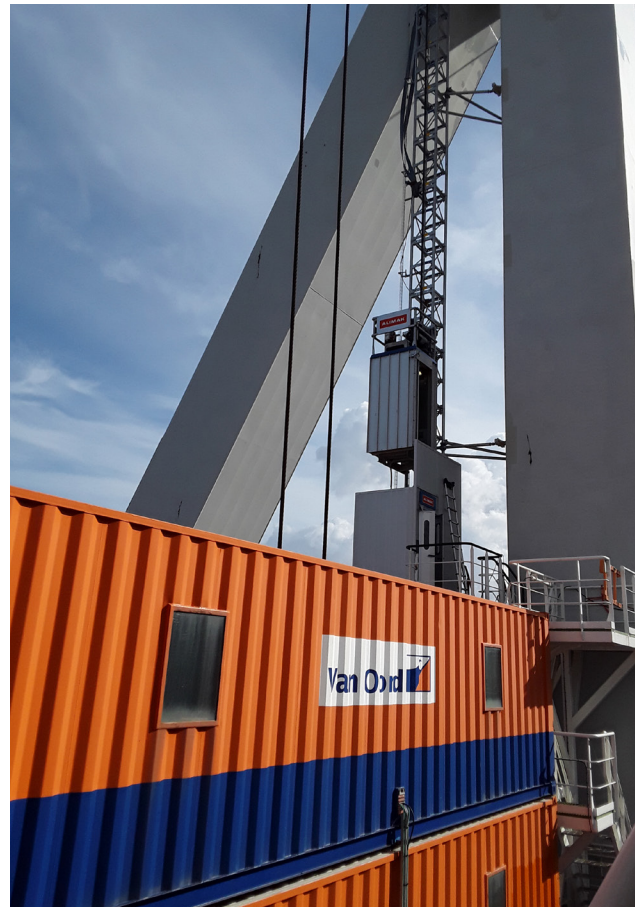
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The optimum solution was to engineer an enclosure which allowed for the wind to flow through it on the first and second landing and decrease the stress caused by extreme weather conditions. The standard Lloyds regulations, however, did not cover approval for this particular approach. Alimak therefore carried out detailed risk assessments and worked closely with Lloyds to secure unit verification for this application.

In addition to the forces exerted by heavy machinery and environmental conditions, offshore vertical access solutions also commonly involve hazardous environments which require the enhanced safety of an explosion proof elevator. Alimak are recognised as a name to trust when it comes to safety in vertical access solutions for a broad range of high-risk industrial applications.



Van Oord Svanen Crane Ship



ELEVATOR DETAILS

Location:	Travelling offshore vessel
Application:	Crane ship
Elevator type:	Rack and pinion
Elevator model:	ALIMAK SE 500
Capacity:	500 kg
Elevator car size:	1040 x 1170 x 2170 mm
Speed:	0.4 m/s
Lifting height:	69m
No. of landings	3
Installation year	2020

Alimak is a global market leader and pioneer in the design and manufacture of vertical access solutions for industrial and construction industries. The company provides high quality rack and pinion and traction elevators, construction hoists and work platforms. Alimak has a well-established global sales, service and distribution platform across more than 90 countries with strong market presence. The company has a large global installed base of over 23,000 units which provides unique know-how of all industrial application areas. Alimak was founded in 1948 and employs over 1,200 people across the world. Alimak is part of Alimak Group which is headquartered in Stockholm, Sweden.

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