



SVANEN CRANE SHIP

CASE STUDY

Two high-performance elevators for the challenging conditions aboard the Svanen crane ship

Access anytime, anywhere

ALIMAK

SVANEN CRANE SHIP

Two high-performance elevators provide access for the challenging conditions aboard the Svanen crane ship

Alimak™ has showcased its engineering excellence with the installation of a second industrial elevator on the Svanen crane ship, enhancing its capabilities. This addition accommodates the vessel's 25-metre extension, increasing its height from 80 to 105 metres. Known as the world's largest crane vessel with a lifting capacity of 5,705 tonnes, the Svanen now benefits from improved operational efficiency, safety, and accessibility in demanding offshore environments.

Initially used as a crane for bridge construction projects, the Svanen has been widely utilised as a vital part of the construction infrastructure for around 650 offshore foundations. This includes the vast majority of monopole installations driven into the seabed of the key Baltic Sea region.

Alimak™ were initially 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



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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. 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.

ELEVATOR DETAILS

Location:	Travelling offshore vessel
Application type:	Crane ship
Elevator model:	ALIMAK™ SE 500
No. of elevators:	2
Payload capacity:	500 kg
Elevator car size:	1040 x 1170 x 2170 mm (W x L x H)
Speed:	0.4 m/s
Lifting height:	69 m and 25 m
No. of landings:	3
Installation years:	2020 and 2024



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 100 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 is part of Alimak Group which is headquartered in Stockholm, Sweden.



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