



Arne Reidar Mortensen / © Equinor

JOHAN SVERDRUP

CASE STUDY

7 Alimak OS-Ex and 3 Alimak OS offshore elevators installed on the Johan Sverdrup oil field platforms

Access anytime, anywhere

ALIMAK

JOHAN SVERDRUP OIL FIELD

7 Alimak OS-Ex and 3 Alimak OS offshore elevators installed on the Johan Sverdrup oil field platforms

Alimak™ has played a crucial role in enhancing the operational capabilities of the Johan Sverdrup oil field, one of the largest oil fields on the Norwegian continental shelf and a major supplier of energy to Europe.

Situated about 140 km west of Stavanger, Norway, the field is notable not only for its substantial contribution to Norway's oil production, accounting for roughly one-third of the national output, but also for its environmental benchmarks, boasting some of the lowest CO2 emissions of any oil field globally.

In 2015, Alimak signed a comprehensive frame agreement with Equinor (formerly Statoil) to supply a fleet of elevators designed specifically for the harsh conditions of offshore oil platforms. This contract included delivering six cargo elevators for hazardous areas and three living quarter elevators for safer zones, with one additional cargo elevator for the second phase of Johan Sverdrup.

The Alimak OS-Ex cargo elevators are engineered to last 50 years in offshore environments and are tailored to the customer's application requirements. The elevators transport up to 10 tonnes of cargo,

offering substantial lifting heights from approximately 17 m to 47 m. Made from aluminium shafts, they are watertight and feature emergency ladders, permanent lighting, and a Teflon coating for added protection. The shafts are supported vertically at the lower landing and horizontally at each landing, with machine rooms located on the top, equipped with monorails, lifting lugs, light fixtures, smoke and gas detectors.

The heavy-duty elevator car frames are hot-dip galvanised with stainless steel walls and roofs. They include aluminium crash bars, a handrail, and a galvanised checker plate floor. Each car has an escape hatch with an emergency ladder, which automatically stops the elevator when opened. The car has two lighting fixtures and a horizontal centre-opening sliding door with a photocell system to prevent closure during entry.



JOHAN SVERDRUP OIL FIELD

The Alimak OS personnel and goods elevators provide easy access to living quarter decks, featuring high-quality finishes and low noise levels to ensure comfort near sleeping cabins.

Capacities range from 2,000 to 2,500 kg, and lifting heights from 21 m to 43 m. Similar to the cargo elevators, they are equipped with hatches and ladders for emergency evacuation, although self-evacuation is a last resort after other measures are attempted. The built-in telecom system allows two-way communication between the elevator car and the bridge for enhanced safety. Control panels are installed in machine rooms, with those for Ex-elevators located in safe areas. Complying with EN81 and offshore safety standards, all cables are flame-resistant and halogen-free, with Alimak's trailing cables providing additional flame retardancy.

All elevators are designed in accordance with Norsok (the competitive position of the Norwegian continental shelf) requirements. Their safety is ensured by technical compliance with EN81-1 A3 (the harmonised elevator standard with the European Lift Directive) and additional requirements provided in Norsok R-002, such as the ATEX Directive.

The Norwegian petroleum industry developed the Norsok standards to ensure adequate safety, value and cost-effectiveness for petroleum industry developments and operations. Norsok standards are, as far as possible, intended to replace oil company specifications and serve as references in the authority's regulations.

The Johan Sverdrup oil field is a major focus for Equinor's efforts to produce energy sustainably. With one of the lowest carbon footprints in global oil production, the field is a model for environmentally conscious energy extraction. Alimak's elevators contribute to this by providing reliable and efficient vertical access solutions, ensuring uninterrupted operations, minimising downtime, and enabling regular maintenance, all of which are crucial for the long-term sustainability of the platforms.



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Alimak continues to support the Johan Sverdrup oil field with ongoing service and maintenance agreements, ensuring the longevity and reliability of the elevator systems in one of the most challenging offshore environments.

ELEVATOR DETAILS

Location:	Johan Sverdrup Oil Field, North Sea
Application:	Process, Riser, Drilling, and Living Quarter Platforms
Elevator type:	Traction, with machine room

CARGO ELEVATORS

Protection class:	ATEX - Zone 2, Gas group IIA, Temp. Class T3
Elevator model:	Alimak OS-Ex
No. of elevators:	7
Capacity:	10,000 kg
Elevator car size:	4.5 (4.0) m x 2.5 m x 2.9 m (W x L x H)
Speed:	0.6 m/s
Lifting height:	Varies between 17 m to 47 m

LIVING QUARTER ELEVATORS

Protection class:	Safe area
Elevator model:	Alimak OS
No. of elevators:	3
Capacity:	2,000 and 2,500 kg
Elevator car size:	1.2 m x 1.3 m x 2.1 m (W x L x H)
Speed:	1.0 m/s
Lifting height:	Varies between 21 m to 43 m

