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3S Lift Products

Elevating Health & Safety

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SAFE



SIMPLE



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Our Vision, Our Mission

The Leading Wind Turbine Tower Internals Solution Provider

Since our company was founded in 2005, it has been our mission to combat climate change. That's why we offer solutions that contribute to the effectiveness, efficiency and acceptance of renewable energy.

We want to enable people to service wind turbines safely and protect their health. We believe in delivering safe, innovative and cost-efficient wind turbine tower internals that benefit our customers, employees and the planet.

3S Lift | Company Introduction

Over the last two decades, 3S Lift has become a leading global supplier for tower internals and the No. 1 market leader in Asia. With a global presence of around 700 employees and locations in China, India, Europe and the US, 3S Lift provides a wide range of products to wind turbine manufacturers, tower manufacturers, service providers and wind farm owners across more than 40 countries. Our network of subsidiaries and service partners around the globe, allows us to provide prompt and thorough technical support to local customers everywhere.

In 2019, we expanded to our brand new manufacturing facility in Tianjin, China. This modern production site allows us to meet the growing global demand for 3S Lift products. As the one-stop-shop for our customers we offer tower internal components such as Service Lifts, Climb Auto Systems, Climb Assists, Aluminum Ladders, Fall Protection Systems, Auto Descending Devices, Blade Maintenance Platforms, Offshore Cranes and more. In addition to our broad product portfolio, we provide engineering services to develop and customize products according to customer needs.

3S Lift is driven by a culture of safety and innovation which is why we have obtained ISO9001, ISO14001 and OHSAS18001 certifications and hold over 300 patents.

Our more than 100 R&D engineers ensure that our solutions always fulfill our 3S brand promise: "safe, simple, specialized".

Worldwide, 3S Lift has supplied nearly 40,000 Climb Assists, 40,000 Climb Auto Systems and 20,000 Service Lifts. Through continuous research and development for new equipment and services, we strive to support our customers in creating clean energy for a sustainable future.

Service Lift

The Most Efficient and Ergonomic Way to Ascend Towers

Climbing the tower ladder and hoisting replacement parts are time-consuming and risky aspects of turbine maintenance. The repetitive motion of climbing is also physically demanding, causing countless injuries.

A Service Lift is the ideal solution. In addition to being the most efficient and ergonomic method of moving personnel and equipment up a tower, a Service Lift reduces climbing-related injuries and sick leave, thus promoting health and safety.



Wire Rope-Guided Service Lift

The wire rope-guided Service Lift has two guide wire ropes to prevent swiveling or tilting, in addition to a lifting wire rope and safety wire rope. The guide wire ropes are secured to the suspension beam at the top of the turbine and below the base platform.



Ladder-Guided Service Lift

The ladder-guided Service Lift travels up and down the guide ladder using two wire ropes for lifting and safety. Normal use of the ladder for climbing is not impaired. This highly reliable system features precisely engineered guide wheels for a particularly smooth ride.



Large Capacity Ladder-Guided Service Lift

The WindMaster 350 Service Lift has a higher weight capacity and greater storage space than standard Service Lifts. A popular choice for offshore wind turbines, it can accommodate up to 3 passengers and has a rated load of 350 kg.



Rack and Pinion Ladder-Guided Service Lift

The rack and pinion ladder-guided Service Lift travels up and down the guide ladder using a pinion hoist mechanism. Featuring exceptional reliability and streamlined maintenance routines that boost AEP, this model is particularly suitable for offshore wind turbines.



Safe & Reliable

For Efficiency & Peace of Mind

Available for all turbine types, our Service Lifts fulfill the highest standards in technical quality, reliability, and safety. They also possess all relevant international certifications (e.g. CE, CU-TR, AS/NZS).

3S Lift's patent-protected technologies are the product of nearly twenty years of engineering and design experience. We supply most major turbine manufacturers, including Vestas, Siemens-Gamesa, GE Renewable Energy, and every major Chinese OEM.



Fully Independent Lifting and Safety Systems

The Service Lift has two independent braking mechanisms: the lifting system and the safety system. These redundant braking systems ensure maximum safety and reliability.

Top Sensing Panel

When coming in contact with an obstacle, the panel is compressed and a sensor is triggered. This immediately stops the lift, preventing impact with the obstacle.

Manual Descent

In the event of power failure, the lift can be lowered safely and smoothly to the next platform using the manual descent function.

Mechanical Overload Protection

If the rated load is exceeded, an alarm sounds and the mechanical overload protection prevents the Service Lift from being operated until the load has been reduced.

Overspeed Protection

If the preset running speed of the lift is exceeded, the SafeLock will automatically engage, protecting the lift from falling or running at an unsafe speed.

High-Strength Load Bearing Structure

The Service Lift features a robust structural design that can withstand four times its rated load.

Bottom Sensing Panel

When coming in contact with an obstacle, the panel is compressed and a sensor is triggered. This immediately stops the lift, preventing impact with the obstacle.

Wire Rope- and Ladder-Guided Service Lift Specifications

Rated load	240 kg
Capacity	2 persons
Operation speed	9, 10.7, 18 m/min
Operating temperature range	-20°C – +60°C (custom-made low temperature)
Idle temperature range	-60°C – +75°C
Rated voltage	400 V / 690 V, 50 Hz / 60 Hz
Weight	Wire rope-guided: 200 kg Ladder-guided: 220 kg
Dimensions	960 x 600 x 2980 mm (L, R) 800 x 860 x 2980 mm (L)
Compliant with standard	EN 2006/42/EC, EN ISO 12100, EN 60204-1, EN1808
Certifications	CE, CU-TR

Rack and Pinion Ladder-Guided Service Lift Specifications

Rated load	240 kg–480 kg (custom-made)
Capacity	2 persons
Operation speed	18 m/min
Rated voltage	400 V / 690 V, 50 Hz / 60 Hz
Weight	280 kg
Dimensions	1090 x 750 x 2570 mm

Large Capacity Ladder-Guided Service Lift Specifications

Rated load	350 kg
Capacity	3 persons (max)
Operation speed	9, 10.7, 18 m/min
Rated voltage	400 V / 690 V, 50 Hz / 60 Hz
Weight	260 kg
Dimensions	950 x 860 x 2980 mm

Climb Auto System

Single Technician Ladder-Mounted Lift

Independent Fall Protection System

The fall protection system of the CAS is independent from the operator's fall arrester. Redundant fall protection guarantees the safety of personnel and equipment.

Operator's personal fall arrester

Climb Auto System's fall protection device

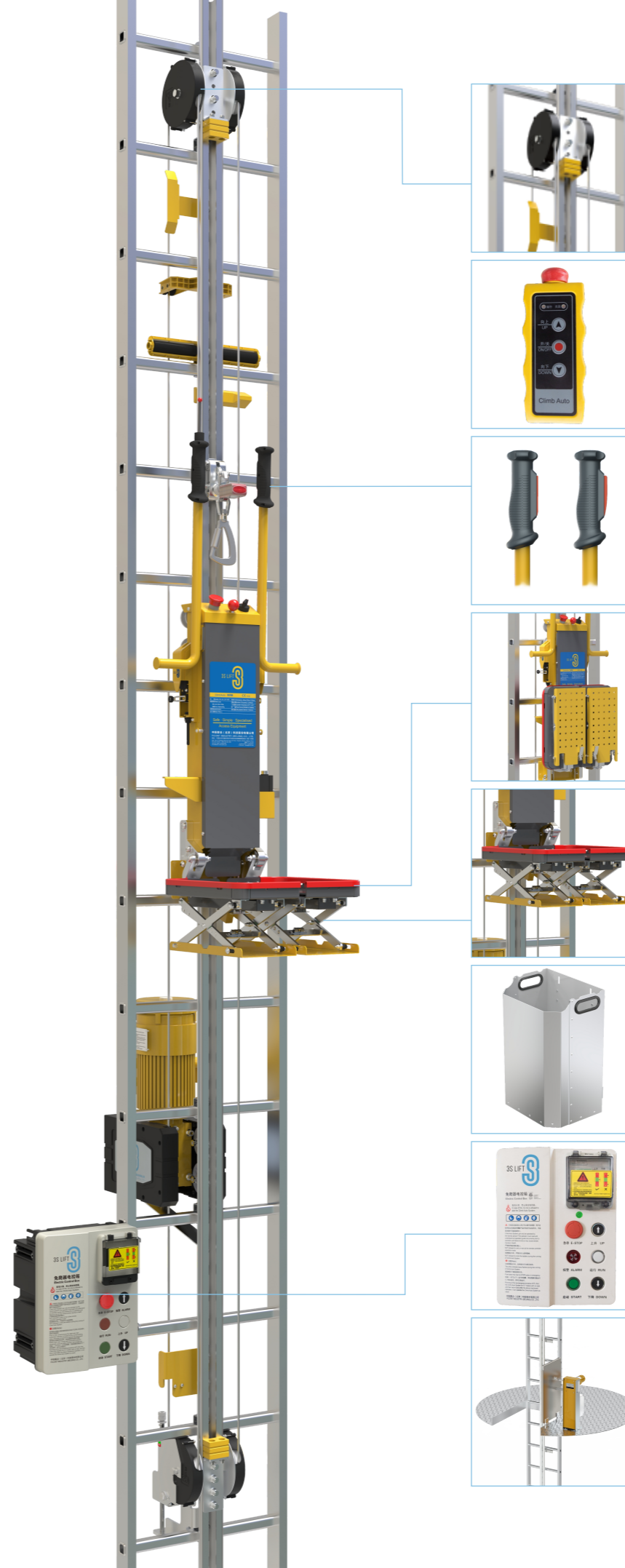


No more climbing – thanks to the 3S Lift Climb Auto System. The CAS is a single technician ladder-mounted lift that completely eliminates the physical and mental strain of climbing. It improves health and safety while reducing the cost of ownership.

On every wind farm there are countless soft tissue injuries due to the repetitive motion of climbing. These injuries can lead to sick leave, long term health issues and reduced motivation among wind turbine technicians. With the CAS, technicians can safely reach the top of the tower while putting zero stress on their muscles and joints.

Climb Auto System Specifications

Constructing materials	Aluminium, steel
Rated load	Man load capacity: 120 kg / 140 kg (265 lbs / 310 lbs) Freight load capacity: 60 kg (132 lbs)
Speed	18 m/min
Control method	Frequency conversion vectorial technology
Rated voltage	Single / 3 phase, AC, 220 V, 50 Hz / 60 Hz (400 V optional)
Dimensions	415 x 390 x 1180 mm (customizable)
Certification	CE, ETL, UL, OSHA compliant



Top Sheave

The top sheave's compact design allows the CAS car to reach the uppermost platform.

Remote Control

The convenient remote control feature allows technicians to call the car to their position in the tower or send equipment to a co-worker on another platform.

Two-Handle Start-Up Switch

To use the CAS car, the operator must press and hold the switches on both handles simultaneously. If the operator releases either switch, the system stops immediately.

Collapsible Footboards

The collapsible footboards enable rapid evacuation in case of emergency.

Bottom Sensing Panel

When coming in contact with an obstacle, the panel is compressed and the sensor is triggered. This immediately stops the CAS car, thus preventing collision.

Toolbox

The custom metal toolbox can be firmly attached to the footboards to send materials up or down tower via remote control.

Control Cabinet

Located down-tower, the control cabinet is used to power the system up and down. It can also be used to operate the CAS car remotely.

Optional Auto Hatch System

The Auto Hatch System makes CAS operation even more convenient by automatically opening and closing platform hatches as the car passes through them.

Climb Assist

Climbing Assistance for Improved Health & Safety

The repetitive motion of climbing the turbine tower is time-consuming and strenuous. Our Climb Assist provides a constant lifting force during tower ascent and descent, significantly reducing fatigue and strain. This boosts health and safety while also augmenting employee satisfaction and retention.

The 3S Lift Climb Assist features an advanced design that automatically adapts to the climber's speed. Variable-frequency vector control assures precisely attuned assistance, whether climbing up or down the tower. No manual operation is required to start or stop the system, allowing the operator to always maintain a safe hold on the ladder.

Climb Assist Specifications

Lifting force	Adjustable from 30–50 kg
Wire rope diameter	6 mm
Protection class	Motor: IP 55; control box: IP 66
Power supply	Single / 3 phase, 220 V, 50 / 60 Hz. Optional: 3 phase, 400 V, 50 Hz
Lifting speed	Adapts to climber's speed; max. 37 m/min
Operating temperature	-40°C – +60°C
Weight	Control box: 3.3 kg; motor: 17 kg
Certification	CE, ETL, OSHA compliant



Advanced Speed-Adapting Technology

Equipped with advanced speed adapting technology, the Climb Assist provides steady assistive force, adapting dynamically to the climber's speed.

Variable-Frequency Vector Control

Variable-frequency vector control enables excellent dynamic performance and comfortable assistive force.

Ascent and Descent Assistance

The Climb Assist offers a constant lifting force of 30–50 kg (65–110 lbs) during ascent and 30 kg (65 lbs) during descent. This reduces stress on the body, especially on the knees and ankles.

Minimal Maintenance

The drive and the control box are designed to require no annual maintenance, reducing the overall maintenance time of the Climb Assist to a minimum.

Top Sheave

The top sheave fits between the top two rungs, thus minimizing required installation space.



Traction Wire Rope

The traction wire rope is made of steel, providing safe and reliable performance in addition to extraordinary durability.



Control Box

The lightweight control box is waterproof and vibration-proof. It features an industrial cable plug for convenient and quick connection. If desired, it can be used as a portable device to support multiple Climb Assist units.



Motor

The motor provides a continuous lifting force of 30–50 kg.



Auto Descending Device

Safe Evacuation When Working At Height

The Auto Descending Device is used for emergency descent and assisted rescue. It enables the fully automatic, controlled evacuation of up to two people simultaneously. The dual-brake mechanism with active heat dissipation ensures reliable performance, even when descending heavy loads from great heights.

Bi-Directional Design

The bi-directional design of the Auto Descending Device allows for the uninterrupted descent or rescue of several people. Both ends of the rope can be used for descent, enabling continuous abseiling. This allows for more people to be evacuated in a short amount of time. In addition, the intuitive design prevents human error, thus increasing safety.

High-Strength Aluminum Alloy

The high-strength aluminum-alloy construction is lightweight and corrosion-resistant.

Ball Bearing Rope Routing

The ball bearing design of the rope routing ensures maximum durability and stability.

Auto Descending Device Specifications

Model	Sosaf-2	Sosaf-2R
Descending speed	~0.9 m/s	~0.9 m/s
Rope diameter	9.6 mm	9.6 mm
Temperature range:	-40°C – +60°C	-40°C – +60°C
Device weight	1.9 kg (excl. rope)	2.5 kg (excl. rope)
Descent load	1 person: 150 kg, max. descent height: 500 m 2 persons: 250 kg, max. descent height: 250 m 2 persons: 282 kg, max. descent height: 150 m	
Hoisting function	No	Yes
Certification	ANSI/ASSE, CE, CU-TR	
Static rope compliant with standard	EN 1891 Type A	
Connector compliant with standard	EN 362; anchor point: EN 795	
Auto Descending Device compliant with standard	EN 341:2011/A EN 1496:2006/A ANSI/ASSE Z359.4-2013 CSA/CAN Z259.2.3-12/1/A	

Sosaf-2R



Rescue & Recovery Model

With its integrated spoke handwheel, the Sosaf-2R model can be used for hoisting.

Sosaf-2



Self-Cooling Double Brake

The dual-brake mechanism with active heat dissipation provides stable descent at uniform speed. Even heavy loads can be abseiled from tall towers, enabling simultaneous two-person evacuation.

Bi-Directional Design

The bi-directional design allows for the uninterrupted descent or rescue of several people. Both ends of the rope can be used for descent, enabling continuous abseiling. This allows for continuous rescue.

High-Performance Rope

Designed for application on- and offshore, the highly robust kernmantle rope is resistant to wear, fire, saltwater spray, and high and low temperatures.

Customizable Rope

The rope length can be customized based on usage requirements.



Fall Protection

Guide Rail Fall Protection System

Fall protection is paramount for safety when working at height. Should a technician slip or miss a rung on the ladder, the Fall Arrester will lock immediately, preventing a fall.

Our fall protection system consists of two components: a guide rail and a Fall Arrester. The Fall Arrester moves with the technician, travelling along the guide rail. Made from high-strength aluminum alloy that is resistant to acid, alkali and corrosion, our fall protection systems are suitable for deployment even in the harshest conditions.

The system is suitable for installation on any aluminum or steel ladder.

TF-R Guide Rail Fall Protection System



TF-R Guide Rail Fall Protection System Specifications

Guide rail type	Inner rail type
Corresponding fall arrester	SL-R60S, SL-R50E, SL-R50
Ladder	Aluminum ladders and steel ladders
Max. static load	16 kN
Compliant with standard	EN 353-1, CAN/CSA Z259.2.1, ANSI Z359.16, ANSI A14.3, CAN/CSA Z259.2.4, AS/NZS 1891.3
Certification	CE



SL-R60S / SL-R50E / SL-R50 Fall Arrester

The Fall Arrester is attached to the ladder-mounted safety guide rail. It slides along the rail and engages automatically in the event of a fall.

Our corrosion- and abrasion-resistant Fall Arresters are suitable for deployment in demanding conditions, both on- and offshore.

Energy Absorber

To dampen the impact when falling, our Fall Arresters feature an energy absorber. This further improves safety while making the system more comfortable for the user. The SL-R50E and SL-R60S even come with 2 separate energy absorbers, ensuring excellent performance.

Anti-Inversion Design

The intuitive design of our fall arresters only allows installation in one direction, thus preventing operator error.

Attachment at any Position

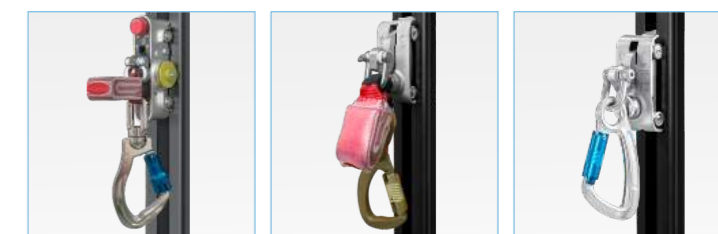
The Fall Arresters can be attached and removed at any position on the guide rail.

Comfortable and Convenient Use

Our Fall Arresters are designed to be particularly comfortable and convenient. They smoothly track the climber's movement while moving along the guide rail and require no manual tugging.

Secondary Locking Mechanism

SL-R60S offers an added level of safety by providing a secondary locking mechanism in addition to the primary one.



Fall Arrester Specifications

Model	SL-R60S	SL-R50E	SL-R50
Corresponding Fall Protection System	TF-R	TF-R	TF-R
Rated load	140 kg	140 kg	140 kg
Max. static load	16 kN	16 kN	16 kN
Compliant with standard	ANSI Z359.16 ANSI A14.3 CAN/CSA Z259.2.4 AS/NZS 1891.3	EN 353-1 ANSI Z359.16 CSA Z259.2.4	EN 353-1
Certification	CE, ETL	CE, UL	CE

Wire Rope Fall Protection System

TF-83/10



Top Mounting Bracket
The wire rope is attached to the top of the ladder using a durable, long-life mounting bracket.

Optional Shock Absorber
Installed at the top mounting bracket, the shock absorber increases safety and comfort.

Fixed Clamps
Wire rope clamps prevent the rope from swinging and causing abrasion to the rope or ladder.

SL-810S Fall Arrester
The Fall Arrester can be attached and removed at any position on the wire rope.

Bottom Mounting Bracket with Optional Tensioner
The tensioning device at the bottom mounting bracket allows for easy adjustment of the tensioning force.

Our wire rope fall protection system prevents falling and keeps personnel safe while working at height. It is made up of two components: a guide wire rope and a Fall Arrester.

The TF-83/10 Wire Rope Fall Protection System can be installed on any aluminum or steel ladder. It consists of mounting brackets, a wire rope, tensioning device and wire rope clamps. The wire rope is installed between the upper and lower mounting brackets.

TF-83/10 Fall Protection System Specifications

Safety wire rope	8.3 mm / 9.5 mm
Corresponding fall arrester	SL-810S
Shock absorber	Optional
Tensioner	Optional
Compliant with standard	EN 353-1, ANSI Z 359.16, CSA Z259.2.5
Certification	CE, ETL, OSHA compliant

SL-810S Fall Arrester

The SL-810S Fall Arrester slides smoothly along the wire rope of the WTF-83/10 Wire Rope Fall Protection System. It slides along the rope and engages automatically in the event of a fall.

Our corrosion- and abrasion-resistant Fall Arresters are suitable for deployment in harsh conditions, both on- and offshore. They can be attached and removed at any position on the rope and also feature an anti-inversion design, which prevents incorrect operation.

Secure Locking System

The internal spring mechanism of the SL-810S ensures secure locking.

Optional Energy Absorber

To dampen the impact when falling, the Fall Arrester can be equipped with an energy absorber. This further improves safety while making the system more comfortable for the user.

Anti-Inversion Design

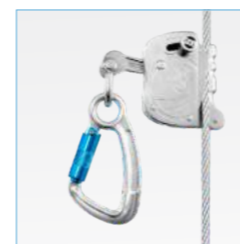
The intuitive design of the SL-810S allows installation only in one direction, thus preventing operator error.

Stainless Steel

Featuring the strongest possible anti-corrosion grade C5-M, the stainless steel Fall Arrester is designed for adverse conditions.

8 mm to 10 mm Wire Ropes

The SL-810S can accommodate 8 to 10 mm wire ropes.



SL-810S Fall Arrester Specifications

Corresponding Fall Protection System	TF-83 / 10
Rated load	140 kg
Max. static load	16 kN
Compliant with standard	EN 353-1, ANSI Z359.16, CSA Z259.2.5
Certification	CE, ETL, OSHA compliant



Aluminum Ladder

High Strength, Easy to Assemble, Customizable

3S Lift aluminum ladders are made from high-strength aluminum alloy, with high compressive capacity and impact resistance. The ladders are easy to assemble and exceed international standards. The ladders are manufactured using a flaring and riveting technique that guarantees a firm connection between the rungs and the stiles. The ladder width can be customized to meet customer requirements.



Aluminum Ladder Specifications

Standard width	470 / 490 / 575 mm
Custom width	400-1000 mm
Section length	5880 mm
Rung distance	280 mm
Rung dimensions	30 x 30 mm
Stile dimensions	60 x 25 mm or 74 x 25 mm

Certification and standards CE, EN 131, EN ISO14122-4, AS 1657, ANSI-ASC 14.3, DIN 18799-1/05.09, OSHA 1910.23, OSHA 1926.1053, GB/T 17888.4, GB/T 17889.2

Dimensions can be customized according to customer requirements

Tower Internal Solutions

Engineering, Manufacturing and Procurement Expertise

One-Stop-Shop

3S Lift is your one-stop-shop for the entire scope of wind turbine tower internals. Through a combination of in-house production and procurement of parts from sub-suppliers, we can offer the full range of key tower internal components: Platforms, platform galleries, Service Lifts, Climb Auto Systems, Climb Assists, Fall Protection Systems, Auto Descending Devices, cable trays, Aluminum Ladders, brackets, stair cases, and doors.

Kitsetting and Logistics Services

3S Lift offers kitsetting and logistic services so that customers can maximize the efficiency of their operation. With our engineering expertise, we can even support you in the design of your tower internals.

Production Expertise

We have extensive in-house production capabilities, manufacturing a wide range of tower internal components. Our factory processes steel and aluminum by means of stamping, welding, bending, and cutting. Our welding process is EN 1090 and ISO 15614 certified.



Offshore Crane

Specifically Designed for the Harsh Ocean Environment

The 3S Lift Offshore Crane is made for safe and quick loading and unloading of spare parts from the supply ship at sea and has a service life of more than 25 years.

The high-quality components of the 3S Lift Offshore Crane are specifically designed for the harsh ocean environment and ensure a long service life of your assets. The Offshore Crane boasts high safety, reliability, and multiple anti-corrosion treatments. Sturdy and durable, it offers high impact resistance and carrying capacity even in extreme conditions.

Offshore Crane Specifications

Model	OC-2	OC-5
Rated load	1000 kg	1000 kg / 1200 kg
Lifting speed	18 m/min	20 m/min
Rated power	3.7 kW	5.5 kW
Max. lifting height	≤20 m	≤25 m
Wire rope diameter	8 mm	11 mm
Operating temperature range	-30 – +60°C	
Lifting arm length	1.3–5 m (customizable)	
Protection level	IP67	
Rotation angle	0–360° (customizable)	
Power supply	3 phase, 380 / 690 V	
Applicable sea condition	1.8 m (significant wave height), below 15 m/s wind speed	
Compliant with standard	EN 13852-1, API Spec 2C-2004	



OC-2

Safe and Quick Loading and Unloading

The Offshore Crane is installed on the base platform of offshore wind turbines for the safe and convenient lifting of equipment, tools, and spare parts from supply ships. In addition, the crane can also be used for personnel rescue. The length of the lifting arm is customizable from 1.3 to 5 meters.

Precision Rotation Device

The rotation mechanism is made up of two primary components – a precision bearing rotation system and a helical cylindrical transmission gear. Together, they ensure extraordinarily precise and smooth operation.

Extremely Durable

The crane features class-F insulation, impact and temperature resistance as well as multiple layers of anti-corrosion treatment.

25 Year+ Service Life

The 3S Lift Offshore Crane provides high reliability and quality with a service life of more than 25 years.

Minimal Maintenance

Designed to improve wind-farm efficiency, the Offshore Crane requires minimal maintenance and training. High-quality components and lubricants minimize the number of services, while the thoughtful design decreases total maintenance time.



OC-5

Customizable

With multiple adjustable components, including the mounting platform, arm length, angle, and rotating system, the 3S Lift Offshore Crane can be customized to fit a wide range of customer needs.



Blade Maintenance Platform

Wind Turbine Blade Service and Repair

With its patented three-point lifting technology, 3S Lift provides a safe, reliable, and cost-effective way to perform blade maintenance and repair work. We offer off-the-shelf and custom solutions for our industrial maintenance platforms to meet the challenges of these tasks. Our comprehensive training helps customers assemble the platforms and rigging equipment on site and provides instructions for the work procedures.

Convenient Blade Repair Without Crane Usage

The platforms consist of a railing, hoist, SafeLock, and support arm. They can automatically move up and down the blade without the usual need for additional auxiliary equipment such as a crane.

Customizable for Various Uses

Blade maintenance platforms can be customized for a variety of maintenance activities, including standard inspections, applying leading edge protection, blade cleaning services, and blade and tower painting.

Nearly 20 Years of Experience

Our engineers and technicians have more than twenty years of experience in the manufacture and use our blade maintenance platforms, producing more than 300 units.

Sofit-11 Specifications

Rated load	240 kg
Speed	9 m/min
Power	1.5 kW
Rated voltage	3 phase, 400 V
Weight	170 kg
Dimensions	1500 x 700 x 1100 mm



Sofit-22 Specifications

Rated load	280 kg
Speed	9 m/min
Power	1.5 kW
Rated voltage	3 phase, 400 V
Weight	235 kg
Dimensions	2000 x 700 x 1100 mm



Sofit-W3 Specifications

Rated load	660 kg
Speed	9 m/min
Power	1.8 kW
Rated voltage	3 phase, 400 V
Weight	800 kg
Dimensions	6600 x 4470 x 1100 mm

